HGL Restoring the Environment. Protecting Our Future.

May 3, 2024

Ms. Natasha Darre
NASA
Mail Code SI-E2
Building K6-1547 (Logistics Facility)
Room 2910A
Kennedy Space Center, Florida 32899-0001

Re: Contract Number: 80KSC019D0012
Task Order Number: 80KSC019F0063
2023 Annual Long Term Monitoring (LTM) Report, Revision 0; Components Cleaning Facility (CCF) West, Solid Waste Management Unit (SWMU) #030
Kennedy Space Center, Florida

Dear Ms. Darre,

HydroGeoLogic, Inc. (HGL) is pleased to resubmit the 2023 Annual LTM Report, Revision 0, for CCF West with requested revisions. The report now contains the November 2023 meeting minutes and is ready for STRIVES submittal. This work was authorized on September 15, 2021, by Task Order 80KSC019F0063.

Please feel free to contact us to discuss any comments and/or questions you have regarding this submittal.

Please call (813) 340-6256 should you have any questions.

Sincerely,

Richard Smith, P.E.

Senior Project Manager

FLORIDA OPERATIONS
2405 N. Courtenay Parkway, Suite 203
Merritt Island, Florida 32953
407-737-7881

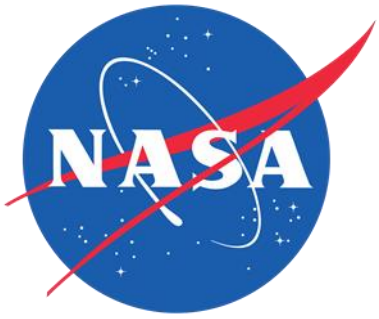
www.hgl.com

This page was intentionally left blank.

COMPONENTS CLEANING FACILITY WEST
SWMU 030
2023 ANNUAL LONG TERM MONITORING REPORT

KENNEDY SPACE CENTER, FLORIDA

Prepared for



National Aeronautics and Space Administration
John F. Kennedy Space Center

May 2024
Revision 0

Prepared by

HydroGeoLogic, Inc.
2405 North Courtenay Parkway, Suite 203
Merritt Island, FL 32953
(407) 737-1881

This page was intentionally left blank.

CERTIFICATION AND APPROVAL

COMPONENTS CLEANING FACILITY WEST
SWMU 030
2023 ANNUAL LONG TERM MONITORING REPORT

I hereby certify that in my professional judgment this document entitled: Components Cleaning Facility West, SWMU 030, 2023 Annual Long Term Monitoring Report, and dated May 2024, satisfies the requirements set forth in Chapter 471, Florida Statues. I have completed and/or been in responsible charge of work completed by qualified professionals working directly under my supervision, and the applicable portions of this document and associated work comply with Chapter 62-780, Florida Administrative Code (FAC) and Rule 62-780.400(1), FAC.

May 3, 2024

Richard G. Smith, P.E.
Principal Engineer
Florida Professional Engineer Number: 39089
Certificate of Authorization Number: 26814

Date

This item has been electronically signed and sealed by Richard G. Smith using a Digital Signature and date. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Smith, Richard
dc=com, dc=hgl, ou=HGL,
ou=Merritt Island, ou=Users,
cn=Smith, Richard,
email=rsmith@hgl.com
2024.05.03 16:36:09 -04'00'
2024.002.20687

This page was intentionally left blank.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF FIGURES (Continued)

LIST OF APPENDICES

LIST OF ACRONYMS AND ABBREVIATIONS

ADP	Advance Data Package
AOI	area of influence
AS	air sparge
bls	below land surface
CCF	Components Cleaning Facility
cDCE	cis-1,2-dichloroethene
CMD	Corrective Measures Design
CMS	Corrective Measures Study
COC	constituent of concern
CVOC	chlorinated volatile organic compound
DEP	Department of Environmental Protection
DNAPL	dense non-aqueous phase liquid
DO	dissolved oxygen
DPT	direct push technology
EPA	U.S. Environmental Protection Agency
ft	feet
ft/ft	feet per foot
GCTL	groundwater cleanup target level
HGL	HydroGeoLogic, Inc.
HSW	HSW Environmental Group
ICM	Interim Corrective Measure
IGWM	Interim groundwater monitoring
IM	interim measures
KSC	Kennedy Space Center
KSCRT	Kennedy Space Center Remediation Team
LTM	long term monitoring
M-K	Mann-Kendall
µg/L	microgram per liter
mg/L	milligram per liter
mV	millivolt

LIST OF ACRONYMS AND ABBREVIATIONS (Continued)

NADC	natural attenuation default concentration
NASA	National Aeronautics and Space Administration
NTU	Nephelometric turbidity unit
ORP	oxidation-reduction potential
%	percent
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyl
RCRA	Resource Conservation and Recovery Act
SAP	Sampling and Analysis Plan
SOP	standard operating procedure
SU	standard unit
SVE	soil vapor extraction
SWMU	Solid Waste Management Unit
TCE	trichloroethene
tDCE	trans-1,2-dichloroethene
Tetra Tech	Tetra Tech, Inc.
VC	vinyl chloride
VOC	volatile organic compound
WP	Work Plan

EXECUTIVE SUMMARY

The National Aeronautics and Space Administration (NASA) Resource Conservation and Recovery Act (RCRA) permit requires identification and evaluation of known Solid Waste Management Units (SWMU) located at the Kennedy Space Center (KSC). The Components Cleaning Facility (CCF; the "site") is designated SWMU 030 under the NASA RCRA permit. CCF West refers to the section of the site that is approximately 0.25 mile west of Saturn Causeway and Fluid Servicing Road, comprising mostly undeveloped land consisting of grass and shrubs. This report summarizes 2023 annual monitoring activities completed by HydroGeoLogic, Inc. (HGL) between April and September 2023 at CCF West to monitor chlorinated volatile organic compound-affected groundwater concentrations above the state of Florida groundwater cleanup target levels (GCTL) in Chapter 62-777, Florida Administrative Code.

The recommendations from the 2022 semiannual monitoring activities were presented to the KSC Remediation Team (KSCRT) during the February 2023 meeting (HGL, 2023a). Consensus was reached at the February 2023 KSCRT meeting to conduct annual long term monitoring (LTM) of volatile organic compounds (VOCs) by U.S. Environmental Protection Agency (EPA) Method 8260B. Consensus was additionally reached on the installation of one new monitoring well, the abandonment of IW0031, the optimized LTM well network, and the proposed LTM frequency (annual sampling with semiannual water level measurement during the dry and wet seasons) (Minute 2302-M13, Decisions 2302-D24 through D26).

MONITORING WELL INSTALLATION

On April 6, 2023, monitoring well IW0092 was installed using a direct push technology (DPT) rig. The well was installed in accordance with the Brevard County and Volusia County Health Departments' and St. Johns River Water Management District's rules and guidelines.

MONITORING WELLS SURVEY

On June 28, 2023, the new monitoring well (IW0092) was surveyed by Kugelmann Land Surveying, Inc. Additionally, monitoring wells IW0037 and IW0039 were re-surveyed in accordance with the 2022 Semiannual LTM Report (HGL, 2023b).

GROUNDWATER MONITORING

The 2023 sampling and analysis plan specified the annual sampling of 36 monitoring wells for VOCs. In addition to sampling activities, groundwater levels were collected semiannually during the dry and wet seasons from 48 monitoring wells to evaluate groundwater flow. The dry season water level measurements were conducted on April 24, 2023, and the wet season event was conducted on September 12, 2023.

During 2023, various concentrations of trichloroethene (TCE); cis-1,2-dichloroethene (cDCE); and vinyl chloride (VC) were detected above their respective groundwater cleanup target levels (GCTLs). Concentrations of trans-1,2-DCE (tDCE) were not detected above the GCTL. Concentrations of cDCE, and VC did not exceed their respective natural attenuation default concentrations (NADCs). As of April 28, 2023, the concentration of TCE at IW0003S

(493 micrograms per liter [µg/L]) increased to above the NADC of 300 µg/L. A sample was re-collected from IW0003S on May 24, 2023, and the result (807 µg/L) confirmed the NADC exceedance. A summary of the results from the sitewide groundwater sampling at CCF West are summarized below.

- TCE: Concentrations were detected in 11 of 36 monitoring wells. Excluding the anomalously high concentrations of 493 and 807 µg/L detected at IW0003S, the concentrations of TCE ranged from 1.4 µg/L to 84.5 µg/L. GCTL exceedances were reported in 5 of the 11 detections, with concentrations ranging from 10.2 µg/L to 84.5 µg/L.
- cDCE: Concentrations were detected in 24 of the 36 wells, with concentrations ranging from 0.99 J µg/L to 133 µg/L. Concentrations of cDCE exceeded the GCTL in two wells.
- tDCE: Concentrations were detected in 19 of the 36 wells, with concentrations ranging from 0.59 J µg/L to 65.3 µg/L. No GCTL exceedances were detected.
- VC: Concentrations were detected in 15 of the 36 wells, with concentrations ranging from 0.64 J µg/L to 78.4 µg/L. GCTL exceedances were reported in all but one of the detections.

SUMMARY AND CONCLUSIONS

A NADC exceedance of TCE was detected at IW0003S and was confirmed through re-sampling. Various GCTL exceedances of TCE, cDCE, and VC remain on site. One groundwater monitoring well was installed.

PATH FORWARD AND RECOMMENDATIONS

In response to the NADC exceedance of TCE detected at IW0003S in 2023, further groundwater investigation is scheduled near IW0003S for 2024. The investigation will include lithologic characterization of a soil core next to IW0003S down to 30 feet below land surface; and up to 5 days of DPT groundwater sampling for VOCs using EPA Method 8260B. The proposed DPT locations and screened intervals will be determined during evaluation of the soil core and presented as a basket item at an early 2024 KSCRT meeting.

The results from the 2023 annual LTM activities were presented at the November 2023 KSCRT meeting and consensus was reached on the following recommendations. The November 2023 KSCRT meeting minutes are included in **Appendix A**.

1. Proposed LTM Monitoring Well Network:
    a) Sample 36 wells for site TCE, tDCE, cDCE, , and VC by EPA Method 8260B (IW0003S, IW0003IS, IW0003ID, IW0004IS, IW0005ID, IW0011IS, IW0011ID, IW0029ID, IW0037, IW0042, IW0045, IW0046, IW0059, IW0061, IW0062, IW0063, IW0064, IW0067, IW0070, IW0079, IW0080S, IW0080IS, IW0081, IW0082, IW0083S, IW0083IS, IW0083ID, IW0084, IW0085, IW0086, IW0087, IW0088, IW0089, IW0090, IW0091, and IW0092).

b) Collect water levels from 48 monitoring wells (IW0003S, IW0003IS, IW0003ID, IW0003D, IW0004IS, IW0004D, IW0005ID, IW0011IS, IW0011ID, IW0017S, IW0021S, IW0025IS, IW0029ID, IW0030, IW0032, IW0036, IW0037, IW0039, IW0042, IW0044, IW0045, IW0046, IW0059, IW0061, IW0062, IW0063, IW0064, IW0067, IW0068, IW0069, IW0070, IW0079, IW0080S, IW0080IS, IW0081, IW0082, IW0083S, IW0083IS, IW0083ID, IW0084, IW0085, IW0086, IW0087, IW0088, IW0089, IW0090, IW0091, and IW0092).

2. Proposed LTM frequency: annual sampling with annual water level measurements during the event.

3. Proposed soil lithology location adjacent to IW0003S.

This page was intentionally left blank.

CCF WEST
2023 ANNUAL LONG TERM MONITORING REPORT
(REVISION 0)
KENNEDY SPACE CENTER, FLORIDA

1.0 INTRODUCTION

HydroGeoLogic, Inc. (HGL) has prepared this 2023 Annual Long Term Monitoring (LTM) Report for the National Aeronautics and Space Administration (NASA), John F. Kennedy Space Center (KSC), Florida, under Contract Number 80KSC019D0012, Task Order 80KSC019F0063.

Components Cleaning Facility (CCF; the "site") is located at KSC, Florida, and is designated Solid Waste Management Unit (SWMU) 030 under KSC's Resource Conservation and Recovery Act (RCRA) Corrective Action Program. This document presents and summarizes the 2023 groundwater monitoring activities and the abandonment and installation of groundwater monitoring wells in order to monitor the natural attenuation of chlorinated volatile organic compound (CVOC)-affected groundwater with concentrations above the state of Florida Chapter 62-777, Florida Administrative Code, groundwater cleanup target levels (GCTLs).

1.1 PURPOSE

The purpose of the 2023 Annual LTM Report is to summarize the LTM of the low concentration plume where CVOC concentrations exceed the GCTLs but are less than the natural attenuation default concentrations (NADCs).

1.2 CORRECTIVE ACTION OBJECTIVE

The overall corrective action objective for the site is to reduce concentrations of constituents of concern (COC) to the state of Florida GCTLs. The COCs at CCF are trichloroethene (TCE); cis-1,2-dichloroethene (cDCE); trans-1,2-dichloroethene (tDCE); and vinyl chloride (VC).

COC	GCTL (µg/L)	NADC (µg/L)
TCE	3	300
cDCE	70	700
tDCE	100	1,000
VC	1	100

µg/L = micrograms per liter

1.3 REPORT ORGANIZATION

The remainder of this report is organized as follows:

- Section 2: Site Location, Description, and History. This section describes the site location, its history, and prior investigations.

- Section 3: 2023 Annual LTM Overview. This section describes the annual monitoring activities conducted in 2023.
- Section 4: 2023 Semiannual Groundwater Elevations and Annual LTM Analytical Results. This section provides the sampling objectives and methodologies.
- Section 5: Recommendations. This section provides recommendations for 2024 LTM based on the evaluation of monitoring data.
- Section 6: References. This section lists documents cited throughout the report.

2.0 SITE LOCATION, DESCRIPTION, AND HISTORY

2.1 SITE LOCATION

KSC is centrally located on the east coast of Florida, to the north and west of Cape Canaveral (**Figure 2.1**). It is situated in Brevard and Volusia Counties between the Merritt Island Barge Canal to the south, the town of Oak Hill to the north; the Atlantic Ocean and Cape Canaveral Space Force Station to the east; and the Indian River to the west. A large portion of the area, between the Indian River and the Atlantic Ocean, is in the northern part of Brevard County on Merritt Island, with the extreme north boundary extending about 7 miles into Volusia County.

CCF is located within the Launch Complex 39 Area of KSC. The site is at the northwest corner of the intersection of Saturn Causeway and Fluid Servicing Road and is approximately 14 acres in size. CCF West refers to the section of the site that is approximately 0.25 mile west of Saturn Causeway and Fluid Servicing Road. The eastern portion of CCF, known as CCF East, is also undergoing remedial activities that are currently managed and documented under a separate IDIQ task order contract. To the south of CCF West is 516S West, which is part of SWMU 100 (Area South of Building K7-0516) (**Figure 2.2**).

2.2 SITE DESCRIPTION

CCF was established in 1962 and served as a cleaning and refurbishment facility for hardware with an associated analytical laboratory (HSW, 2001a). Operations were discontinued during the early 2000s. All site buildings were demolished by 2006 except for K7-560, the former remediation structure.

CCF is bordered by drainage ditches to the north, south, and west. In addition, the crawler way lies immediately south of the site fence line. These ditches are seasonally influenced by the wet and dry seasons. During the winter months (dry season), ditches are generally dry, as the water table is lower than the elevation of the ditch floor; conversely, during the summer months (wet season), standing water is observed within the ditches. Tracks from the former railroad system fall within the site to the north between the crawler way and Converter Compressor Road.

2.3 SITE HYDROGEOLOGY

The site's lithology generally comprises silty sand, fine sands, and shell fragments from the ground surface to approximately 55 feet (ft) below land surface (bls). Silty sands and some clay lenses are observed between approximately 60 to 75 ft bls. A confining, low-permeability layer is encountered at an approximate depth of 75 ft bls that extends to approximately 85 ft bls. Historical groundwater flow at the site has been observed to be predominantly west in direction. A west-northwest trend of flow direction has been observed on the west side of the site.

2.3.1 Historical Investigations

The historical investigations are as follows:

- 1994 to 1997 – RCRA Facility Investigation activities were conducted to determine the extent and characterization of the COCs to obtain sufficient data to perform human health and ecological risk evaluations as well as a corrective measures study (CMS).
- 1998 to 2001 – Additional investigation activities, which included the installation of additional groundwater monitoring wells, were conducted to delineate dense non-aqueous phase liquids (DNAPL).
- 2001 – CMS was submitted. Findings included Freon DNAPL, polychlorinated biphenyls (PCBs), polynuclear aromatic hydrocarbons (PAH), and metals detected in soil and sediment exceeding state of Florida soil cleanup target levels (HSW, 2001a). The CMS determined a combination air sparge (AS)/soil vapor extraction (SVE) remediation system was the best overall approach to remediate the site. This approach included treating Freon above 210,000 micrograms per liter (µg/L).
- 2002 to 2004 – An Interim Corrective Measure (ICM) system was operated between October 2002 and March 2004 with the objective of reducing or eliminating the TCE DNAPL presence near building K7-514.
- 2004 – The implemented ICM system provided little reduction to the TCE DNAPL area; therefore, soil was excavated in the vicinity of building K7-514 to remove a hot spot of TCE-contaminated soil. A sediment removal action was also completed to remove PCB- and PAH-contaminated soil and sediment from the CCF north and south ditches.
- 2005 – The ICM remediation system was constructed based on the 2003 Corrective Measures Design (CMD). The remediation system was completed in 2005 and subsequently began operation. The ICM system comprised a groundwater recovery, treatment, and disposal system running in conjunction with an AS and vapor extraction system. This system consisted of AS/SVE and hydraulic containment through a network of recovery wells.
- 2006 – Supplemental groundwater investigation was conducted to determine the extent of contamination on the west side of the site allowing for the optimization of the systems treatment.
- 2007 – Additional investigation using direct push technology (DPT) sampling was conducted. This assessment identified more widespread CVOC contamination, deeper than previously identified.
- 2008 – Based on the additional site investigations in December 2008, 24 AS wells were replaced with deeper wells to address the deeper contamination.
- 2009 to 2010 – The Groundwater Corrective Measures Report – Year 4 concluded that COCs were more widely spread than understood during the generation of the CMD (Jacobs Engineering, 2009). The KSC Remediation Team (KSCRT) decided to shut the system down (December 2009) and proposed performing a Step 1 Engineering Evaluation (Meeting Minute 0912-M2, Decision 0912-Decision 2) (**Appendix A**). Accordingly, the system was shut down and deactivated during the same time that an additional groundwater investigation was being conducted to determine the extent of CVOC impacts at CCF.

- 2010 – Site characterization (formerly known as Step 1 Engineering Evaluation) of the low concentration plume (exceeds GCTL) was completed.
- 2011 – Site characterization of the high concentration plume (exceeds NADC) and the hot spot (exceeds 10 times NADC; designated as Hot Spot 1) area was completed.
- 2012 – The Hot Spot 1 and Remedial Alternatives Evaluation (formerly known as a Step 2 Engineering Evaluation) and Interim Measures (IM) Design (formerly known as a Step 3 Engineering Evaluation) was completed.
- 2011 to 2012 – System remedial components were inspected and evaluated for future re-use potential. The Decommission and Disposal of the Remedial System Work Plan (WP) was submitted in October 2012. Decommissioning activities commenced in November 2012. The DPT groundwater investigation continued through the summer of 2012 to fully characterize the horizontal and vertical extent of CVOC groundwater impacts. Interim groundwater monitoring (IGWM) data was collected to gather information about CCF groundwater contamination. IGWM at CCF was included under the Fluid Servicing Road Area IGWM program. DPT groundwater investigations conducted at CCF West demonstrated CVOCs with concentrations exceeding 10 times the NADC (Tetra Tech, Inc., 2011). Historical maximum concentrations of TCE, cDCE, tDCE, and VC within the area defined as Hot Spot 1 were 17,000 µg/L, 12,000 µg/L, 4,500 µg/L, and 6,000 µg/L, respectively (HSW, 2001a). The KSCRT reached consensus that delineation was complete (Meeting Minute 1110-M1, Decision 4) (**Appendix A**).
- 2013 – CCF Hot Spot 1 IMWP submitted (Tetra Tech, 2013).
- 2016 – Pre-IM DPT groundwater sampling conducted across CCF Hot Spot 1 between February 2016 and April 2016 to assess extent of AS treatment area. Results of the investigation provided evidence of a change in plume conditions and led to a partial redesign of the AS system layout and AS treatment area of influence (AOI) (Jacobs Engineering, 2016).
- 2017 – AS system construction and operation initiated.
- 2018 – Additional DPT performance monitoring was conducted in July, August, and October of 2018. DPT data displayed a gap between the north and south AS zones resulting in the addition of 14 AS wells to increase the AS treatment area.
- 2019 – Additional installation of eight performance monitoring wells and continuation of AS operation and performance monitoring.
- 2021 – A DPT investigation was conducted between March 15 and May 7, 2021, to determine the effectiveness of the AS system at CCF Hot Spot 1 and delineate COCs below GCTLs. No NADC exceedances were observed within the AS AOI. Florida Department of Environmental Protection (DEP) provided a letter of concurrence to terminate the AS operations at CCF West on June 7, 2021 (HGL, 2021). System shutdown and lock out/tag out was completed on June 24, 2021.
- 2022 – CCF West was transitioned into LTM. LTM activities conducted at CCF West between January and September 2022 included the abandonment of 12 monitoring wells,

installation of 16 new monitoring wells, repair of 2 monitoring wells, and the completion of 2 semiannual groundwater sampling events during the dry and wet season.

3.0 2023 ANNUAL LONG-TERM MONITORING OVERVIEW

3.1 WELL INSTALLATION

Based on the results of the 2022 semiannual groundwater monitoring events, installation of one monitoring well was recommended for the annual LTM well network (HGL, 2023a). The recommendation to install the well was presented to the KSCRT at the February 2023 meeting and consensus to install the well was reached (Minute 2302-M13, Decision 24).

On April 6, 2023, the monitoring well (IW0092) was installed using a DPT rig. The well was installed in accordance with the Brevard County Health Department's permit and St. Johns River Water Management District's rules and guidelines. The new well identification, coordinates, and screened interval can be found in **Table 3-1** and is presented on **Figure 3.1**. Well installation field notes, construction and development log, and survey data are provided in **Appendix B**. Permits and approvals are provided in **Appendix C**.

3.2 2023 ANNUAL LONG TERM MONITORING WELL NETWORK

3.2.1 Water Level Measurements

The annual monitoring event in April 2023 (dry season) was preceded by measuring depth to water and depth to bottom of each accessible monitoring well at CCF West. Additionally, water level measurements were collected during the wet season in September 2023. There are 5 wells with screen bottom depths of 12 to 15 ft bls; 7 wells with screen bottom depths of 25 to 30 ft bls; 7 wells with screen bottom depths of 35 to 40 ft bls; 18 wells with screen bottom depths of 45 to 50 ft bls; 6 wells with screen bottom depths of 55 to 57 ft bls; 4 wells with screen bottom depths of 65 to 67 ft bls; and 2 wells with screen bottom depths of 76 ft bls for a total of 49 monitoring wells at CCF West.

Monitoring wells IW0037 and IW0039 were re-surveyed on June 28, 2023, in accordance with the 2022 Semiannual LTM Report (HGL, 2023b). The updated elevation, northing, and easting for IW0037 and IW0039 is listed in **Table 3-1**, and the survey report is provided in **Appendix B**. Consensus was reached at the February 2023 KSCRT meeting to abandon monitoring well IW0031 (Minute 2302-M13, Decision D-23). Attempts to record the depth to bottom of the well were made during the 2023 groundwater measurements, but the obstruction was confirmed. The well is tentatively scheduled to be abandoned in 2024.

The groundwater level measurements were used to assess the hydraulic gradient and flow direction of the site's surficial aquifer. Prior to measuring groundwater elevations, the monitoring wells were uncapped to allow for equilibration. All water levels were measured from the same permanent point identified on the top of the casing to ensure consistency with historical measurements. Measurements were made to the nearest 0.01 ft using an electronic water level meter. To calculate the groundwater elevation in ft, the depth to water was subtracted from the top of casing elevation.

Water level measurements from the semiannual events were used to develop groundwater contours and are consistent with historical data. **Table 3-1** lists the identification, screened intervals, elevation, northing, easting, and groundwater elevations for each well.

3.2.2 Groundwater Sampling

LTM activities were conducted between April 25 and May 24, 2023 (dry season). Groundwater samples were collected from 36 monitoring wells and analyzed for site COCs (TCE, cDCE, tDCE, and VC) by U.S. Environmental Protection Agency (EPA) Method 8260B. Groundwater samples were collected from 3 monitoring wells with sample depths of 8 to 10 ft bls (IW0003S, IW0079, IW0080S); 6 monitoring wells with sample depths of 20 to 25 ft bls (IW0037, IW0062, IW0080IS, IW0081, IW0082, and IW0083S); 6 monitoring wells with sample depths of 30 to 35 ft bls (IW0003IS, IW0004IS, IW0011IS, IW0042, IW0083IS, and IW0084); 14 monitoring wells with sample depths of 40 to 45 ft bls (IW0029ID, IW0045, IW0046, IW0059, IW0061, IW0063, IW0064, IW0067, IW0083ID, IW0085, IW0086, IW0087, IW0088, and IW0092); and 6 monitoring wells with sample depths of 50 to 55 ft bls (IW0003ID, IW0005ID, IW0011ID, IW0070, IW0089, and IW0090); and 1 monitoring well with a sample depth of 60 ft bls (IW0091). Sampling activities were conducted in accordance with Florida DEP standard operating procedure (SOP) FS2200 (Florida DEP, 2018) and the KSC Sampling and Analysis Plan (SAP) (NASA, 2017). The sampling locations, screened intervals, and analyses are listed in **Table 3-2** and shown on **Figure 3.1**.

Prior to sampling, each monitoring well was purged using a peristaltic pump with dedicated, Teflon-lined tubing and medical-grade silicon tubing. Groundwater was purged from each well until pH, temperature, and specific conductivity measurements were within ±10 percent (%); turbidity was less than 20 Nephelometric Turbidity Units (NTUs); and dissolved oxygen (DO) was less than 20% saturation for three consecutive readings in accordance with Florida DEP SOP. Oxidation-reduction potential (ORP) and depth to water also were measured, and any groundwater color and/or odor was recorded.

4.0 2023 SEMIANNUAL GROUNDWATER ELEVATIONS AND ANNUAL LONG TERM MONITORING ANALYTICAL RESULTS

4.1 SITEWIDE GROUNDWATER ELEVATIONS AND FLOW DIRECTION

Sitewide depth-to-water measurements collected on April 24 (dry season) and September 12, 2023 (wet season) are summarized in **Table 3-1**. Groundwater flow direction was evaluated for wells with screen bottom depths of 12 to 15 ft bls; 25 to 30 ft bls; 35 to 40 ft bls; 45 to 50 ft bls; 55 to 57 ft bls; 65 to 67 ft bls; and 76 ft bls. Groundwater flow contours for each zone are presented in **Figures 4.1** through **4.12**. Water level measurements collected from April and September 2023 were used to develop groundwater contours and are consistent with historical data. Field documentation of groundwater sampling is provided in **Appendix D**.

4.1.1 Groundwater Flow Directions and Hydraulic Gradients (2023 Dry Season)

4.1.1.1 Wells with Screen Bottom Depths of 12 to 15 ft bls

For wells with screen bottom depths of 12 to 15 ft bls, groundwater flowed in a westerly direction. Based on the groundwater elevations, the hydraulic gradient from IW0003S to IW0080S during the April 2023 event was estimated to be 0.0015 ft per foot (ft/ft). Groundwater flow contours are presented on **Figure 4.1**.

4.1.1.2 Wells with Screen Bottom Depths of 25 to 30 ft bls

For wells with screen bottom depths of 25 to 30 ft bls, groundwater flowed west. Based on groundwater elevations from IW00062 and IW0080IS in the northeast section of the site, the estimated hydraulic gradient during the April 2023 event was estimated to be 0.0026 ft/ft. Based on groundwater elevations in the southwest section of the site, the hydraulic gradient from IW0037 to IW0081 was estimated to be 0.00073 ft/ft. Groundwater flow contours are presented on **Figure 4.2**.

4.1.1.3 Wells with Screen Bottom Depths of 35 to 40 ft bls

For wells with screen bottom depths of 35 to 40 ft bls, groundwater flowed from IW0042 toward IW0036 in a westerly direction. Based on groundwater elevations, the hydraulic gradient during the April 2023 event was estimated to be 0.0012 ft/ft. Groundwater flow contours are presented on **Figure 4.3**.

4.1.1.4 Wells with Screen Bottom Depths of 45 to 50 ft bls

For wells with screen bottom depths of 45 to 50 ft bls, groundwater flowed in a westerly direction. Based on groundwater elevations from IW0061 and IW0087, the hydraulic gradient during the April 2023 event was estimated to be 0.0014 ft/ft. Groundwater flow contours are presented on **Figure 4.4**.

4.1.1.5 Wells with Screen Bottom Depths of 55 to 57 ft bls

For wells with screen bottom depths of 55 to 57 ft bls, groundwater flow was interpreted to be in a westerly direction. The hydraulic gradient during the April 2023 event was estimated to be 0.0012 ft/ft from IW0070 toward IW0090. Groundwater flow contours are presented in **Figure 4.5**.

4.1.1.6 Wells with Screen Bottom Depths of 65 to 67 ft bls

For wells with screen bottom depths of 65 to 67 ft bls, groundwater flow was interpreted to be predominantly westerly. The hydraulic gradient during the April 2023 event was estimated to be 0.0006 ft/ft. Groundwater flow contours are presented on **Figure 4.6**.

4.1.1.7 Wells with Screen Bottom Depth of 76 ft bls

For wells with screen bottom depth of 76 ft bls, groundwater flow was interpreted to be predominantly westerly. The hydraulic gradient during the April 2023 event was estimated to be 0.0008 ft/ft, based on groundwater elevations from IW0003D and IW0004D. Groundwater contouring was not performed due to the limited number of wells with a bottom screen depth of 76 ft bls.

4.1.2 Groundwater Flow Directions and Hydraulic Gradients (2023 Wet Season)

4.1.2.1 Wells with Screen Bottom Depths of 12 to 15 ft bls

For wells with screen bottom depths of 12 to 15 ft bls, groundwater flowed in a westerly direction. Based on the groundwater elevations, the hydraulic gradient from IW0003S to IW0080S during the September 2023 event was estimated to be 0.0016 feet per ft/ft. Groundwater flow contours are presented on **Figure 4.7**.

4.1.2.2 Wells with Screen Bottom Depths of 25 to 30 ft bls

For wells with screen bottom depths of 25 to 30 ft bls, groundwater flowed west. Based on groundwater elevations from IW00062 and IW0080IS in the northeast section of the site, the estimated hydraulic gradient during the September 2023 event was estimated to be 0.0018 ft/ft. Based on groundwater elevations in the southwest section of the site, the hydraulic gradient from IW0037 to IW0081 was estimated to be 0.0014 ft/ft. Groundwater flow contours are presented on **Figure 4.8**.

4.1.2.3 Wells with Screen Bottom Depths of 35 to 40 ft bls

For wells with screen bottom depths of 35 to 40 ft bls, groundwater flowed from IW0042 toward IW0036 in a westerly direction. Based on groundwater elevations, the hydraulic gradient during the September 2023 event was estimated to be 0.0014 ft/ft. Groundwater flow contours are presented on **Figure 4.9**.

4.1.2.4 Wells with Screen Bottom Depths of 45 to 50 ft bls

For wells with screen bottom depths of 45 to 50 ft bls, groundwater flowed in a westerly direction. Based on groundwater elevations from IW0061 and IW0087, the hydraulic gradient during the September 2023 event was estimated to be 0.0015 ft/ft. Groundwater flow contours are presented on **Figure 4.10**.

4.1.2.5 Wells with Screen Bottom Depths of 55 to 57 ft bls

For wells with screen bottom depths of 55 to 57 ft bls, groundwater flow was interpreted to be in a westerly direction. The hydraulic gradient during the September 2023 event was estimated to be 0.0012 ft/ft from IW0070 toward IW0090. Groundwater flow contours are presented on **Figure 4.11**.

4.1.2.6 Wells with Screen Bottom Depths of 65 to 67 ft bls

For wells with screen bottom depths of 65 to 67 ft bls, groundwater flow was interpreted to be predominantly westerly. The hydraulic gradient during the September 2023 event was estimated to be 0.0016 ft/ft. Groundwater flow contours are presented on **Figure 4.12**.

4.1.2.7 Wells with Screen Bottom Depth of 76 ft bls

For wells with a screen bottom depth of 76 ft bls, groundwater flow was interpreted to be predominantly westerly. The hydraulic gradient during the September 2023 event was estimated to be 0.001 ft/ft, based on groundwater elevations from IW0003D and IW0004D. Groundwater contouring was not performed due to the limited number of wells with a bottom screen depth of 76 ft bls.

In summary, groundwater elevation data collected from the 2023 semiannual monitoring events indicated the groundwater flow direction was generally in the west-northwest direction.

4.2 ANNUAL LTM RESULTS SUMMARY

Groundwater samples were collected from 36 monitoring wells during the dry season between April 25 and May 1, 2023. A sample was re-collected from IW0003S on May 24, 2023. Various GCTL exceedances of TCE, cDCE, and VC were observed. No GCTL exceedances of tDCE were detected. A NADC exceedance of TCE was detected at one well (IW0003S). The analytical results are summarized across the site based on well screen intervals. The analytical results summary of the LTM sampling event is presented in **Table 4-1** and shown on **Figure 4.13** through **4.18**. Field documentation of groundwater sampling is provided in **Appendix D**. Laboratory analytical reports are provided in **Appendix E**.

4.2.1 Monitoring Wells with Sample Depths at 8 to 10 ft bls

Groundwater samples were collected from three monitoring wells (IW0003S, IW0079, and IW0080S) with sample depths at 8 to 10 ft bls. GCTL exceedances were detected only in IW0003S.

Additionally, a NADC exceedance was detected in IW0003S. Analytical results for the four COCs are presented in **Table 4-1**, illustrated on **Figure 4.13**, and summarized below:

- TCE – The concentration reported for IW0003S (493 µg/L) exceeded the NADC of 300 µg/L. A sample was re-collected from IW0003S on May 24, 2023, and the result (807 µg/L) confirmed the NADC exceedance. The volatile organic compound (VOC) was not detected in IW0079 and IW0080S (both non-detections reported as 0.50 U µg/L).
- cDCE – The VOC was only detected in IW0003S (109 µg/L) and IW0079 (4.5 µg/L). The VOC was also detected in the sample re-collected from IW0003S on May 24, 2023 (133 µg/L). The concentrations of 109 µg/L and 133 µg/L, both from IW0003S, exceeded the GCTL of 70 µg/L but were less than the NADC of 700 µg/L.
- tDCE – The VOC was only detected in IW0079 (1.7 µg/L). Estimated concentrations for the non-detects ranged from 0.50 U µg/L to 50 U µg/L. Concentrations exceeding the GCTL of 100 µg/L were not detected.
- VC – The VOC was not detected. Estimated concentrations for the non-detects ranged from 0.50 U µg/L to 50 U µg/L.

In summary, a NADC exceedance of TCE was detected only in IW0003S during the April 2023 event. Additionally, the only GCTL exceedance detected was cDCE in IW0003S. The sample interval COC maximum detections were 807 µg/L of TCE and 133 µg/L of cDCE at IW0003S.

4.2.2 Monitoring Wells with Sample Depths at 20 to 25 ft bls

Groundwater samples were collected from six monitoring wells (IW0037, IW0062, IW0080IS, IW0081, IW0082, and IW0083S) with sample depths at 20 to 25 ft bls. GCTL exceedances were detected in wells IW0037, IW0062, and IW0082. All groundwater results were below their respective NADC standards. Analytical results for the four COCs are presented in **Table 4-1**, illustrated on **Figure 4.14**, and summarized below.

- TCE – Concentrations ranged from 0.50 U µg/L to 16.8 µg/L. Only the maximum detection of 16.8 µg/L in IW0062 exceeded the GCTL of 3 µg/L.
- cDCE – Concentrations ranged from 0.50 U µg/L to 93.8 µg/L. Only the maximum detection of 93.8 µg/L in IW0062 exceeded the GCTL of 70 µg/L.
- tDCE – Concentrations ranged from 0.50 U µg/L to 65.3 µg/L. No GCTL exceedances were detected in the six wells screened within this interval during the 2023 event.
- VC – Concentrations exceeding the GCTL were detected in IW0037 (19.5 µg/L) and IW0082 (78.4 µg/L). The VOC was detected in IW0080IS (0.64 J µg/L), but the concentration was less than the GCTL. The VOC was not detected in IW0062, IW0081, and IW0083S.

In summary, various GCTL exceedances of TCE, cDCE, and VC were detected during the April 2023 sampling event. The sample interval COC maximum detections were 16.8 µg/L of TCE at

IW0062; 93.8 µg/L of cDCE at IW0062; 65.3 µg/L of tDCE at IW0082; and 78.4 µg/L of VC at IW0082.

4.2.3 Monitoring Wells with Sample Depths at 30 to 35 ft bls

Groundwater samples were collected from six monitoring wells (IW0003IS, IS0004IS, IW0011S, IW0042, IW0083IS, and IW0084) with sample depths at 30 to 35 ft bls. GCTL exceedances were detected in IW0003IS and IW0042. No NADC exceedances were detected. Analytical results for the four COCs are presented in **Table 4-1**, illustrated on **Figure 4.15**, and are summarized below.

- TCE – Concentrations ranged from 0.50 U µg/L to 84.5 µg/L. Only the maximum detection of 84.5 µg/L reported for IW0003IS exceeded the GCTL of 3 µg/L.
- cDCE – Concentrations ranged from 0.50 U µg/L to 69.5 µg/L. No GCTL exceedances were detected.
- tDCE – Concentrations ranged from 0.50 U µg/L to 15.3 µg/L. No GCTL exceedances were detected.
- VC – The only detection of VC was reported for IW0042 (3.8 µg/L), which exceeded the GCTL. The VOC was not detected in the other five monitoring wells.

In summary, no GCTL exceedances of cDCE and tDCE were detected during the April 2023 sampling event. The sample interval COC maximum detections were 84.5 µg/L of TCE at IW0003IS; 69.5 µg/L of cDCE at IW0003IS; 15.3 µg/L of tDCE at IW0042; and 3.8 µg/L of VC at IW0042.

4.2.4 Monitoring Wells with Sample Depths at 40 to 45 ft bls

Groundwater samples were collected from 14 monitoring wells (IW0029ID, IW0045, IW0046, IW0059, IW0061, IW0063, IW0064, IW0067, IW0083ID, IW0085, IW0086, IW0087, IW0088, and IW0092) with samples depths at 40 to 45 ft bls. No GCTL exceedances were detected in IW0083ID, IW0086, IW0087, and the new well IW0092. All groundwater results were below their respective NADC standards. Analytical results for the four COCs are presented in **Table 4-1**, illustrated on **Figure 4.16**, and are summarized below.

- TCE – GCTL exceedances were detected in 3 of the 14 monitoring wells (IW0045, IW0046, and IW0088) with concentrations ranging from 10.2 µg/L to 13.0 µg/L.
- cDCE – Concentrations ranged from 0.50 U µg/L to 38.7 µg/L. No GCTL exceedances were detected.
- tDCE –Concentrations ranged from 0.50 U µg/L to 42.7 µg/L. No GCTL exceedances were detected.
- VC – GCTL exceedances were detected in 8 of the 14 monitoring wells (IW0029ID, IW0045, IW0059, IW0061, IW0063, IW0064, IW0067, and IW0085) with concentrations ranging from 1.7 µg/L to 41.9 µg/L.

In summary, GCTL exceedances of TCE and VC were detected during the April 2023 annual monitoring event. The maximum detections of COCs were all detected in IW0045 and were 13.0 µg/L of TCE; 38.7 µg/L of cDCE; 42.7 µg/L of tDCE; and 41.9 µg/L of VC.

4.2.5 Monitoring Wells with Sample Depths at 50 to 55 ft bls

Groundwater samples were collected from six monitoring wells (IW0003ID, IW0005ID, IW0011ID, IW0070, IW0089, and IW0090) with sample depths at 50 to 55 ft bls. No GCTL exceedances of TCE, cDCE, and tDCE were detected. GCTL exceedances of VC were detected in three of the six wells (IW0005ID, IW0070, IW0090). All groundwater results were below their respective NADC standards. Analytical results for the four COCs are presented in **Table 4-1**, illustrated on **Figure 4.17**, and summarized below.

- TCE – The VOC was detected in one of the six wells (IW0070) at a concentration of 1.8 µg/L. No other TCE detections were reported within this interval.
- cDCE – Concentrations ranged from 0.50 U µg/L to 20.1 µg/L.
- tDCE – Concentrations ranged from 0.50 U µg/L to 9.1 µg/L.
- VC – GCTL exceedances were detected in three wells (IW0005ID, IW0070, and IW0090) with concentrations ranging from 9.7 µg/L to 28.9 µg/L. The VOC was not detected in the other three wells (IW0003ID, IW0011ID, and IW0089).

In summary, GCTL exceedances of VC were detected during the April 2023 annual monitoring event. The sample interval COC maximum detections were 1.8 µg/L of TCE at IW0070; 20.1 µg/L of cDCE at IW0090; 9.1 µg/L of tDCE at IW0090; and 28.9 µg/L of VC at IW0090.

4.2.6 Monitoring Wells with Sample Depth at 60 ft bls

A groundwater sample was collected from one monitoring well (IW0091) with a sample depth of 60 ft bls. No detections of TCE, cDCE, tDCE, and VC were reported. All groundwater results were below their respective GCTL and NADC standards. Analytical results for the four COCs are presented in **Table 4-1** and illustrated in **Figure 4.18**.

4.3 FIELD GEOCHEMICAL PARAMETERS

The geochemical parameters collected during sitewide monitoring well sampling was used to evaluate if aquifer conditions are favorable for the natural reductive dechlorination of CVOCs. The field geochemical parameters collected during sitewide monitoring well sampling are summarized in **Table 4-2**. The following sub-sections provide an evaluation of select geochemical parameters collected during site-wide monitoring well sampling.

4.3.1 pH Evaluation

The desirable pH range for microbial activities is approximately between 5 and 9 standard units (SU) (Air Force Center for Engineering and the Environment, 2004). The groundwater pH measurements collected during the 2023 annual monitoring event ranged from 3.97 (IW0080IS)

to 8.71 (IW0042) SU (average 6.85 SU). The average pH remained near neutral pH of 7 SU, and within the desirable range for microbial activity.

4.3.2 Dissolved Oxygen and Oxidation Reduction Potential

The anoxic and reducing conditions in groundwater are suitable for naturally occurring reductive dechlorination of CVOCs. The DO and ORP measurements measured during the 2023 annual monitoring event are detailed below:

- DO ranged from 0.07 milligrams per liter (mg/L) in IW0080S and IW0081 to 0.32 mg/L in IW0083IS. The average DO was 0.14 mg/L; and
- ORP readings ranged from -365.7 millivolt (mV) at IW0029ID to 194.8 mV at IW0080IS. The average ORP was -145.2 mV.

Anaerobic bacteria are reported to function less effectively at DO concentrations over 0.5 mg/L (Wiedemeier et al., 2006). DO concentrations were below 0.5 mg/L and ORP values were less than 0 mV. These conditions are indicative of an anoxic reducing environment; therefore, these results indicate that sub-surface conditions will support the reductive dechlorination of CVOCs.

4.4 DISCUSSION OF ANALYTICAL RESULTS

4.4.1 Groundwater Concentration Trend Analysis

A Mann-Kendall (M-K) trend analysis was conducted for each analyte at a given well detected at a concentration greater than the GCTL or NADC. The entire period of record for the given well was analyzed. Half of the reporting limit was used as a proxy concentration for non-detect results. A M-K analysis was not performed for wells with three or fewer data points. Accordingly, a M-K analysis was performed on the following wells and analytes:

Monitoring Wells With Sample Depths at 8 to 10 ft bls:

- IW0003S: TCE and cDCE

Monitoring Wells With Sample Depths at 20 to 25 ft bls:

- IW0037: VC
- IW0062: TCE and cDCE

Monitoring Wells With Sample Depths at 30 to 35 ft bls:

- IW0003IS: TCE
- IW0042: VC

Monitoring Wells With Sample Depths at 40 to 45 ft bls:

- IW0029ID: VC
- IW0045: TCE and VC
- IW0046: TCE

- IW0059: VC
- IW0061: VC
- IW0063: VC
- IW0064: VC
- IW0067: VC

Monitoring Wells With Sample Depths at 50 to 55 ft bls:

- IW0005ID: VC
- IW0070: VC

The M-K trend analyses and graphs are provided in **Appendix F** and are summarized in **Table 4-3**. The results are discussed below.

- TCE:
  - The M-K analysis identified a decreasing trend across the entire period of record for IW0003IS. When evaluating only the last 6 sampling events TCE has shown an increasing trend.
  - No trend was identified for IW0003S, IW0045, and IW0062. When only the last six sampling events are evaluated, the trend of IW0003S is increasing; and the trend for IW0045 and IW0062 is stable. Recent detections at IW0003S have been increasing, indicating that the increasing trend is ongoing.
- cDCE:
  - The M-K analysis identified a decreasing trend across the entire period of record for IW0003IS and IW0046.
  - No trend was identified for IW0003S. Evaluation of only the last six sampling events resulted in no change.
- VC:
  - The M-K analysis identified a decreasing trend across the entire period of record for IW0042, IW0045, IW0059, IW0063, and IW0067.
  - A probably decreasing trend was identified for IW0037.
  - The M-K analysis identified a probably increasing trend for IW0064.
  - A stable trend was identified for IW0070.
  - No trend was identified for IW0005ID and IW0061. When only the last six sampling events are evaluated, the M-K analysis identified an increasing trend for IW0005ID and a decreasing trend for IW0061. Recent detections support these trends.

4.4.2 Conclusions

LTM activities conducted at CCF West between April and September 2023 included the installation of one new monitoring well, the completion of one groundwater sampling event, and the completion of two semiannual groundwater level measurements during the dry and wet season.

Groundwater samples from the annual sampling event were analyzed for site COCs (TCE, cDCE, tDCE, and VC) using a fixed laboratory.

A NADC exceedance of TCE was detected at IW0003S and confirmed through re-sampling. The last NADC exceedance of TCE detected at IW0003S occurred in January 2000 (**Appendix G**). No other NADC exceedances were observed during the 2023 annual sampling event.

Various GCTL exceedances of TCE, cDCE, and VC remain on site. No GCTL exceedances of tDCE were detected during the 2023 sampling event. The annual sampling event confirmed that remaining concentrations of site COCs within the former AS AOI (formerly CCF Hot Spot 1) remain below their respective NADCs. Monitoring well IW0003S is outside the former AS AOI. VC concentrations in IW0090 (screened interval 45-55 ft bls) over the last three sampling events have shown an increase in concentration. If concentrations continue to show an increasing trend, further evaluation of this area and downgradient of this location may be needed with the installation of additional wells to track VC migration. Currently, no action is recommended.

This page was intentionally left blank.

5.0 RECOMMENDATIONS

The results from the 2023 annual LTM activities were presented in an Advance Data Package (ADP) to the KSCRT at the November 2023 meeting, and consensus was reached on the following recommendations (HGL, 2023c). At the time of this report, draft meeting minutes for the November 2023 KSCRT meeting were unavailable but will be included in **Appendix A** of the final report. The ADP for the 2023 CCF West Annual LTM is provided in **Appendix H**. The well identifications, screened intervals, analysis, and sampling frequency are provided in **Table 5-1**. The 2024 sitewide LTM monitoring well locations are provided on **Figure 5.1**.

1. Proposed 2024 LTM Monitoring Well Network:
    - Sample 36 wells for site COCs (TCE, cDCE, tDCE, and VC) by EPA Method 8260B (IW0003S, IW0003IS, IW0003ID, IW0004IS, IW0005ID, IW0011IS, IW0011ID, IW0029ID, IW0037, IW0042, IW0045, IW0046, IW0059, IW0061, IW0062, IW0063, IW0064, IW0067, IW0070, IW0079, IW0080S, IW0080IS, IW0081, IW0082, IW0083S, IW0083IS, IW0083ID, IW0084, IW0085, IW0086, IW0087, IW0088, IW0089, IW0090, IW0091, and IW0092).
    - Collect water levels from 48 monitoring wells (IW0003S, IW0003IS, IW0003ID, IW0003D, IW0004IS, IW0004D, IW0005ID, IW0011IS, IW0011ID, IW0017S, IW0021S, IW0025IS, IW0029ID, IW0030, IW0032, IW0036, IW0037, IW0039, IW0042, IW0044, IW0045, IW0046, IW0059, IW0061, IW0062, IW0063, IW0064, IW0067, IW0068, IW0069, IW0070, IW0079, IW0080S, IW0080IS, IW0081, IW0082, IW0083S, IW0083IS, IW0083ID, IW0084, IW0085, IW0086, IW0087, IW0088, IW0089, IW0090, IW0091, and IW0092).
2. Proposed LTM frequency: annual sampling with annual water level measurements during the dry and wet seasons.
3. Proposed soil lithology location adjacent to IW0003S.

Sampling activities will be conducted in accordance with Florida DEP SOPs (Florida DEP, 2018) and the KSC SAP (NASA, 2017). Prior to sampling, each monitoring well will be purged using a peristaltic pump with dedicated, Teflon-lined tubing and medical-grade silicon tubing. Groundwater will be purged from each well until pH, temperature, and specific conductivity measurements are within ±10%; turbidity is less than 20 NTU; and DO is less than 20% saturation for three consecutive readings in accordance with Florida DEP SOP. ORP and depth to water will also be measured, and any groundwater color and/or odor will be recorded.

During sampling events, water level measurements will be collected from all monitoring wells on site to monitor the hydraulic gradient and flow direction. Prior to measuring groundwater elevations, the monitoring wells will be uncapped to allow for equilibration. All water levels will be measured from the same permanent point identified on the top of the casing to ensure consistency with historical measurements. Measurements will be made to the nearest 0.01 ft using an electronic water level meter. To calculate the groundwater elevation in ft, the depth to water will be subtracted from the top of casing elevation.

5.1 INVESTIGATION AROUND WELL CLUSTER IW0003

In response to the NADC exceedance of TCE detected at IW0003S during the 2023 sampling event, an investigation around IW0003S is planned for 2024.

- One soil core will be collected to a depth of 30 ft bls next to IW0003S for lithologic characterization.
- The proposed DPT locations and screen intervals will be selected based on evaluation of the subsurface geology (soil core) and presented as a basket item at an early 2024 KSCRT meeting.
- Up to 5 days of a DPT groundwater investigation will be conducted around well cluster IW0003 to delineate the NADC exceedance of TCE below NADC laterally and vertically.
- Up to 75 groundwater samples shall be analyzed by a fixed laboratory using EPA Method 8260B for VOCs.

The analytical data will be presented in the 2024 LTM Report and ADP.

6.0 REFERENCES

Air Force Center for Engineering and the Environment, 2004. Principles and Practices of Enhanced Anaerobic Bioremediation of Chlorinated Solvents. *U.S. Department of Defense, Air Force Center for Environmental Excellence and the Environmental Security Technology Certification Program (ESTCP)*. Washington, DC.

Florida Department of Environmental Protection (DEP), 2018. Bureau of Laboratories, Environmental Assessment Section. Department of Environmental Protection Standard Operating Procedures for Field Activities, DEP-SOP-001/01. April.

HSW Environmental Group (HSW), 2001a. RCRA Corrective Measures Study Report for the Components Clean Facility (SWMU #30), Kennedy Space Center, Florida. February.

HSW, 2001b. Interim Corrective Measures Study Work Plan, Components Clean Facility, Kennedy Space Center, Florida. June.

HydroGeoLogic, Inc. (HGL), 2021. Operations, Maintenance and Monitoring Report and Long Term Monitoring Work Plan. December.

HGL, 2023a. 2022 Semiannual Long Term Monitoring Report, Advance Data Package, Components Cleaning Facility West, Solid Waste Management Unit #030, Kennedy Space Center, Florida. January.

HGL, 2023b. 2022 Semiannual Long Term Monitoring Report, Revision 1, Components Cleaning Facility West, Solid Waste Management Unit #030, Kennedy Space Center, Florida. July.

HGL, 2023c. 2023 Annual Long Term Monitoring Report, Advance Data Package, Components Cleaning Facility West, Solid Waste Management Unit #030, Kennedy Space Center, Florida. November.

Jacobs Engineering, 2009. Groundwater Corrective Measures Report, Year 4, Kennedy Space Center, Florida (Revision 0). December.

Jacobs Engineering, 2016. Hot Spot 1 Interim Measures Construction Implementation Work Plan, Components Cleaning Facility, SWMU 030, Kennedy Space Center, Florida. October.

National Aeronautics and Space Administration (NASA), 2017. Sampling and Analysis Plan for the RCRA Corrective Action Program at the John F. Kennedy Space Center, Florida (Revision 5), prepared by Geosyntec Consultants, Boca Raton, Florida. August.

Tetra Tech, Inc. (Tetra Tech), 2011. High Concentration Plume/Hot Spot Engineering Evaluation Step 1A/B, SWMU 30, Components Cleaning Facility (CCF) and SWMU 100 Area South of K7-516 (516S). October.

Tetra Tech, 2013. Components Cleaning Facility Hot Spot 1 Area Interim Measure Work Plan, Kennedy Space Center, Florida (Revision 0). May.

Wiedemeier, Todd H., Michael J. Barden, Patrick E. Haas, and W. Zachary Dickson, 2006. *Designing Monitoring Programs to Effectively Evaluate the Performance of Natural Attenuation*. In David M. Nielsen, *Handbook of Environmental Site Characterization and Groundwater Monitoring* (573-637), Boca Raton, FL: CRC Press.

TABLES

This page was intentionally left blank.

Table 3-1
Semiannual Groundwater Elevation Data
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

Well ID (CCF-)	Screened Interval	Installation Date	Easting (m)	Northing (m)	TOC Elevation (ft NAVD)	24-Apr-23		12-Sep-23	
						Depth to Water (ft BTOC)	GW Elevation (ft NAVD)	Depth to Water (ft BTOC)	GW Elevation (ft NAVD)
Well Screen Bottom Depths 12 to 15 ft bls									
IW0003S	3-13	06/13/1996	235222.4828	471635.3923	7.15	5.30	1.85	5.24	1.91
IW0017S	2-12	08/26/1997	235108.7008	471599.2797	8.54	7.16	1.38	7.00	1.54
IW0021S	5-15	07/20/2000	235056.2147	471617.7099	6.83	5.46	1.37	5.31	1.52
IW0079	5-15	01/26/2022	235092.730	471572.163	8.58	7.41	1.17	7.23	1.35
IW0080S	5-15	01/24/2022	235150.730	471624.880	8.38	6.86	1.52	6.79	1.59
Well Screen Bottom Depths 25 to 30 ft bls									
IW0025IS	20-30	06/19/2007	235093.17	471526.38	12.51	11.04	1.47	10.89	1.62
IW0037	20-30	09/29/2011	235091.5985	471555.9922	6.81	5.55	1.26	5.39	1.42
IW0062	15-25	05/03/2017	235184.26	471620.3807	8.77	7.11	1.66	6.92	1.85
IW0080IS	15-25	01/24/2022	235146.089	471625.050	7.29	5.95	1.34	5.68	1.61
IW0081	15-25	01/25/2022	235042.973	471581.486	8.04	6.89	1.15	6.75	1.29
IW0082	15-25	02/02/2022	235077.403	471529.734	9.03	7.91	1.12	7.63	1.40
IW0083S	15-25	01/25/2022	235057.246	471520.573	5.60	4.44	1.16	4.24	1.36
Well Screen Bottom Depths 35 to 40 ft bls									
IW0003IS	25-35	06/13/1996	235220.9862	471634.3986	7.36	5.80	1.56	5.31	2.05
IW0004IS	27-37	06/14/1996	235012.9325	471573.7558	7.52	6.30	1.22	6.16	1.36
IW0011IS	25-35	06/25/1996	235148.2338	471655.4759	9.76	8.24	1.52	8.01	1.75
IW0036	25-35	09/22/2011	235075.3446	471589.243	7.85	6.69	1.16	6.53	1.32
IW0042	30-40	09/29/2011	235151.4525	471576.4144	7.58	6.15	1.43	6.03	1.55
IW0083IS	25-35	01/25/2022	235059.847	471523.227	5.82	4.56	1.26	4.44	1.38
IW0084	25-35	01/24/2022	235121.741	471625.388	7.59	6.29	1.30	6.08	1.51
Well Screen Bottom Depths 45 to 50 ft bls									
IW0029ID	40-45	11/27/2007	235101.6308	471492.41	8.93	6.19	2.74	6.09	2.84
IW0039	40-50	09/22/2011	471554.1805	235142.0403	11.41	10.02	1.39	9.99	1.42
IW0044	40-50	09/29/2011	235171.8512	471597.0291	8.43	6.97	1.46	6.84	1.59
IW0045	40-50	09/22/2011	235193.3254	471567.2765	11.59	9.90	1.69	9.70	1.89
IW0046	40-50	09/22/2011	235231.3903	471563.9775	12.27	10.54	1.73	10.35	1.92
IW0059	35-45	05/03/2017	235078.4827	471604.4872	8.20	6.90	1.30	6.72	1.48
IW0061	35-45	05/03/2017	235115.2014	471572.396	7.37	5.89	1.48	5.71	1.66
IW0063	40-50	02/19/2019	235132.882	471619.3751	7.67	6.31	1.36	6.17	1.50
IW0064	40-50	02/19/2019	235141.8578	471603.3978	8.29	6.83	1.46	6.70	1.59
IW0067	40-50	02/20/2019	235187.7927	471581.1705	11.08	9.51	1.57	9.39	1.69
IW0068	40-50	02/20/2019	235195.0463	471543.5332	12.33	10.69	1.64	10.58	1.75

Table 3-1 (continued)
Semiannual Groundwater Elevation Data
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

Well ID (CCF-)	Screened Interval	Installation Date	Easting (m)	Northing (m)	TOC Elevation (ft NAVD)	24-Apr-23		12-Sep-23	
						Depth to Water (ft BTOC)	GW Elevation (ft NAVD)	Depth to Water (ft BTOC)	GW Elevation (ft NAVD)
IW0069	40-50	02/20/2019	235210.1126	471557.5817	13.49	11.78	1.71	11.81	1.68
IW0083ID	35-45	01/25/2022	235056.689	471523.170	5.80	4.59	1.21	4.41	1.39
IW0085	35-45	01/26/2022	235150.663	471496.276	10.03	8.61	1.42	8.43	1.60
IW0086	35-45	01/24/2022	235146.694	471664.843	9.44	7.99	1.45	7.91	1.53
IW0087	35-45	01/25/2022	235009.134	471588.463	8.50	7.52	0.98	7.36	1.14
IW0088	35-45	01/25/2022	235236.349	471640.822	7.83	6.09	1.74	5.89	1.94
IW0092	40-50	04/06/2023	235065.642	471444.329	8.55	7.33	1.22	7.16	1.39
Well Screen Bottom Depths 55 to 57 ft bls									
IW0003ID	46-56	06/13/1996	235219.2519	471633.4446	7.21	5.41	1.80	5.19	2.02
IW0005ID	46-56	06/28/1996	235159.3697	471500.1244	9.81	8.16	1.65	8.02	1.79
IW0011ID	47-57	06/16/1996	235150.212	471658.2892	9.63	7.97	1.66	7.87	1.76
IW0070	45-55	02/21/2019	235221.0665	471552.4093	12.92	11.19	1.73	11.08	1.84
IW0089	45-55	01/24/2022	235091.912	471617.035	6.51	5.23	1.28	5.10	1.41
IW0090	45-55	01/26/2022	235078.549	471546.495	8.54	7.33	1.21	7.20	1.34
Well Screen Bottom Depths 65 to 67 ft bls									
IW0030	57-67	09/24/2010	235154.4055	471568.126	11.59	10.13	1.46	10.00	1.59
IW0031	57-67	09/24/2010	235166.8034	471565.0139	11.58	NM	NM	NM	NM
IW0032	57-67	09/24/2010	235170.7912	471575.3749	11.39	9.81	1.58	9.88	1.51
IW0091	55-65	01/26/2022	235211.635	471575.080	12.24	10.59	1.65	10.40	1.84
Well Screen Bottom Depths 76 ft bls									
IW0003D	71-76	06/13/1996	235217.3408	471632.6552	7.31	5.42	1.89	5.18	2.13
IW0004D	71-76	06/26/1996	235009.8235	471572.7591	7.58	6.26	1.32	6.14	1.44

Notes

1. Coordinate system is NAD 1983 SPCS Zone Florida East (Meters)
2. Monitoring wells IW0037 and IW0039 were re-surveyed on June 28, 2023.
3. IW0092 was installed on April 6, 2023 and surveyed on June 28, 2023.

Acronyms

CCF = Components Cleaning Facility
bls = below land surface
BTOC = below top of casing
ft = feet
GW = groundwater
NAD = North American Datum
NAVD = National American Vertical Datum
NM = not measured
TOC = top of casing

Table 3-2
2023 Annual LTM Sampling and Analysis Plan
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

Well ID (CCF-)	Screened Interval (ft bls)	Analysis	Frequency
Well Screen Bottom Depths 12 to 15 ft bls		TCE, cDCE, tDCE, and VC (EPA Method 8260B)	Annual
IW0003S	3-13		
IW0079	5-15		
IW0080S	5-15		
Well Screen Bottom Depths 25 to 30 ft bls			
IW0037	20-30		
IW0062	15-25		
IW0080IS	15-25		
IW0081	15-25		
IW0082	15-25		
IW0083S	15-25		
Well Screen Bottom Depths 35 to 40 ft bls			
IW0003IS	25-35		
IW0004IS	27-37		
IW0011IS	25-35		
IW0042	30-40		
IW0083IS	25-35		
IW0084	25-35		
Well Screen Bottom Depths 45 to 50 ft bls			
IW0029ID	40-45		
IW0045	40-50		
IW0046	40-50		
IW0059	35-45		
IW0061	35-45		
IW0063	40-50		
IW0064	40-50		
IW0067	40-50		
IW0083ID	35-45		
IW0085	35-45		
IW0086	35-45		
IW0087	35-45		
IW0088	35-45		
IW0092*	40-50		
Well Screen Bottom Depths 55 to 57 ft bls			
IW0003ID	46-56		
IW0005ID	46-56		
IW0011ID	47-57		
IW0070	45-55		
IW0089	45-55		
IW0090	45-55		
Well Screen Bottom Depths 65 to 67 ft bls			
IW0091	55-65		

Notes

*IW0092 was installed on April 6, 2023.

Defintions

CCF = Components Cleaning Facility
cDCE = cis-1,2-dichloroethene
ft bls = feet below land surface
EPA = U.S. Environmental Protection Agency
TCE = trichloroethene
tDCE = trans-1,2-dichloroethene
VC = vinyl chloride

Table 4-1
Annual LTM Analytical Results Summary
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

		Analyte	*TCE*	*cDCE*	*tDCE*	*VC*
		GCTL (µg/L)	3	70	100	1
		NADC (µg/L)	300	700	1000	100
Well ID (CCF-)	**Screened Interval (ft bls)**	**Sample Date**				
Sample Depths 8 to 10 ft bls						
IW0003S	3-13	02/03/2022	**70.4**	**2.1 J**	2.5 U	2.5 U
		09/01/2022	**85.8**	**9.8**	0.50 U	0.50 U
		04/28/2023	**493**	**109**	5.0 U	5.0 U
		05/24/2023	**807**	**133**	50 U	50 U
IW0079	5-15	02/01/2022	0.50 U	0.50 U	0.50 U	0.50 U
		09/02/2022	0.50 U	**0.93 J**	**0.62 J**	0.50 U
		04/25/2023	0.50 U	**4.5**	**1.7**	0.50 U
IW0080S	5-15	02/03/2022	0.50 U	**0.69 J**	0.50 U	0.50 U
		08/31/2022	0.50 U	**1.0**	0.50 U	0.50 U
		04/27/2023	0.50 U	0.50 U	0.50 U	0.50 U
Sample Depths 20 to 25 ft bls						
IW0037	20-30	02/01/2022	**1.3**	**62.7**	**89.0**	**10.9**
		09/02/2022	**1.3**	**29.8**	**42.7**	**15.4**
		04/25/2023	**1.4**	**27.2**	**40**	**19.5**
IW0062	15-25	02/03/2022	**11.5**	**44.4**	**7.6**	**8.8**
		09/01/2022	**11.5**	**55.2**	**7.1**	**4.8**
		04/28/2023	**16.8**	**93.8**	**3.0**	0.50 U
IW0080IS	15-25	02/03/2022	**1.4**	**6.9**	**0.75 J**	0.50 U
		08/31/2022	**1.7**	**7.5**	**1**	0.50 U
		04/27/2023	0.50 U	**4.9**	**0.59 J**	**0.64 J**
IW0081	15-25	02/02/2022	0.50 U	0.50 U	0.50 U	0.50 U
		08/31/2022	0.50 U	0.50 U	0.50 U	0.50 U
		04/27/2023	0.50 U	0.50 U	0.50 U	0.50 U
IW0082	15-25	02/04/2022	5.0 U	**76.2**	**66.2**	**6.1 J**
		09/02/2022	1.0 U	**53.3**	**83**	**25.9**
		04/25/2023	0.50 U	**70.1**	**65.3**	**78.4**
IW0083S	15-25	02/01/2022	0.50 U	0.50 U	0.50 U	0.50 U
		09/07/2022	**1**	0.50 U	0.50 U	0.50 U
		05/01/2023	0.50 U	0.50 U	0.50 U	0.50 U
Sample Depths 30 to 35 ft bls						
IW0003IS	25-35	02/03/2022	**84.3**	**51.6**	**0.94 J**	0.50 U
		09/01/2022	**59**	**44.5 J**	25 U	25 U
		05/01/2023	**84.5**	**69.5**	**1.4**	0.50 U
IW0004IS	27-37	02/02/2022	0.50 U	0.50 U	0.50 U	0.50 U
		08/31/2022	0.50 U	0.50 U	0.50 U	0.50 U
		04/27/2023	0.50 U	0.50 U	0.50 U	0.50 U
IW0011IS	25-35	02/03/2022	**0.60 J**	**0.64 J**	0.50 U	0.50 U
		09/01/2022	**0.66 J**	**1.2**	0.50 U	0.50 U
		04/28/2023	0.50 U	**0.99 J**	0.50 U	0.50 U
IW0042	30-40	01/31/2022	**1.5**	**7.9**	**11.4**	**1.7**
		09/06/2022	**3.9**	**8.7**	**10**	**2.4**
		04/26/2023	**2.3**	**12.4**	**15.3**	**3.8**
IW0083IS	25-35	02/01/2022	0.50 U	**0.76 J**	0.50 U	0.50 U
		09/07/2022	**0.77 J**	**1.9**	**0.33 J**	0.50 U
		05/01/2023	0.50 U	**3.1**	**0.60 J**	0.50 U
IW0084	25-35	02/02/2022	0.50 U	**0.44 J**	**0.39 J**	**0.78 J**
		08/31/2022	0.50 U	**0.44 J**	**0.34 J**	**0.51 J**
		04/27/2023	0.50 U	0.50 U	0.50 U	0.50 U

Table 4-1 (continued)
Annual LTM Analytical Results Summary
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

		Analyte	*TCE*	*cDCE*	*tDCE*	*VC*
		GCTL (µg/L)	3	70	100	1
		NADC (µg/L)	300	700	1000	100
Well ID (CCF-)	**Screened Interval (ft bls)**	**Sample Date**				
Sample Depths 40 to 45 ft bls						
IW0029ID	40-45	02/01/2022	0.50 U	**5.3**	**1.4**	**5.1**
		09/06/2022	**0.73 J**	**4.6**	**1.3**	**5.7**
		05/01/2023	0.50 U	**4.1**	**1.0**	**4.2**
IW0045	40-50	01/31/2022	**12.9**	**41.4**	**44.4**	**24.8**
		09/06/2022	**12.7**	**39**	**41.4**	**36.7**
		04/26/2023	**13.0**	**38.7**	**42.7**	**41.9**
IW0046	40-50	01/31/2022	**9.9**	**5.9**	**5.8**	**0.63 J**
		09/01/2022	50 U	50 U	50 U	50 U
		04/26/2023	**12.7**	**8.3**	**9.4**	0.50 U
IW0059	35-45	02/02/2022	0.50 U	0.50 U	0.50 U	**1.5**
		08/31/2022	0.50 U	0.50 U	0.50 U	**1.7**
		04/27/2023	0.50 U	0.50 U	0.50 U	**1.7**
IW0061	35-45	01/31/2022	**3.5**	**93.6**	**130**	**26.3**
		09/02/2022	**3**	**24**	**57.2**	**20.3**
		04/25/2023	**1.9**	**17.7**	**42.2**	**18.3**
IW0063	40-50	02/02/2022	0.50 U	**1.2**	**2.2**	**1.3**
		08/31/2022	**0.62 J**	**2.9**	**3.3**	**3.2**
		04/27/2023	0.50 U	**3.9**	**2.6**	**1.7**
IW0064	40-50	02/02/2022	**2.7**	**20.7**	**3.0**	**6.9**
		09/01/2022	**4.4**	**40.8**	**8.6**	**15.9**
		04/27/2023	**2.9**	**27.9**	**11.1**	**22.7**
IW0067	40-50	01/31/2022	**2.7**	**31.2**	**41.7**	**16.6**
		09/06/2022	**5**	**12.2**	**12.1**	**2.4**
		04/26/2023	**3.4**	**12.8**	**13.0**	**4.3**
IW0083ID	35-45	02/01/2022	0.50 U	0.50 U	0.50 U	0.50 U
		09/07/2022	**0.84 J**	**1.6**	**0.80 J**	0.50 U
		05/01/2023	0.50 U	**3.5**	**1.8**	0.50 U
IW0085	35-45	01/31/2022	0.50 U	**6.7**	**2.2**	**9.9**
		09/02/2022	0.50 U	**2.8**	**0.65 J**	**5.5**
		04/25/2023	0.50 U	**1.3**	0.50 U	**2.2**
IW0086	35-45	02/03/2022	0.50 U	0.50 U	0.50 U	0.50 U
		08/31/2022	0.50 U	0.50 U	0.50 U	0.50 U
		04/28/2023	0.50 U	0.50 U	0.50 U	0.50 U
IW0087	35-45	02/02/2022	0.50 U	0.50 U	0.50 U	0.50 U
		08/31/2022	0.50 U	0.50 U	0.50 U	0.50 U
		04/27/2023	0.50 U	0.50 U	0.50 U	0.50 U
IW0088	35-45	02/03/2022	**14.8**	**1.6**	0.50 U	0.50 U
		09/01/2022	500 U	500 U	500 U	500 U
		04/28/2023	**10.2**	**1.6**	0.50 U	0.50 U
IW0092	40-50	05/01/2023	0.50 U	0.50 U	0.50 U	0.50 U
Sample Depths 50 to 55 ft bls						
IW0003ID	46-56	02/03/2022	0.50 U	0.50 U	0.50 U	0.50 U
		09/01/2022	0.50 U	0.50 U	0.50 U	0.50 U
		05/01/2023	0.50 U	0.50 U	0.50 U	0.50 U
IW0005ID	46-56	02/01/2022	0.50 U	0.50 U	0.50 U	0.50 U
		09/02/2022	0.50 U	**1.2**	0.50 U	**3.5**
		04/25/2023	0.50 U	**5.2**	**1.1**	**9.7**

Table 4-1 (continued)
Annual LTM Analytical Results Summary
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

		Analyte	*TCE*	*cDCE*	*tDCE*	*VC*
		GCTL (µg/L)	3	70	100	1
		NADC (µg/L)	300	700	1000	100
Well ID (CCF-)	**Screened Interval (ft bls)**	**Sample Date**				
IW0011ID	47-57	02/03/2022	0.50 U	0.50 U	0.50 U	0.50 U
		09/01/2022	0.50 U	0.50 U	0.50 U	0.50 U
		04/28/2023	0.50 U	0.50 U	0.50 U	0.50 U
IW0070	45-55	01/31/2022	**1.1**	**2.3**	**5.2**	**23.7**
		09/06/2022	**2.4**	**2.9**	**4.9**	**19.9**
		04/26/2023	**1.8**	**3.4**	**6.1**	**22.7**
IW0089	45-55	02/02/2022	0.50 U	0.50 U	0.50 U	0.50 U
		08/31/2022	0.50 U	0.50 U	0.50 U	0.50 U
		04/27/2023	0.50 U	0.50 U	0.50 U	0.50 U
IW0090	45-55	02/01/2022	0.50 U	**10.9**	**10.7**	**1.7**
		09/02/2022	0.50 U	**17.5**	**9.1**	**23.6**
		04/25/2023	0.50 U	**20.1**	**9.1**	**28.9**
Sample Depth 60 ft bls						
IW0091	55-65	01/31/2022	0.50 U	0.50 U	0.50 U	0.50 U
		09/01/2022	0.50 U	0.50 U	0.50 U	0.50 U
		04/26/2023	0.50 U	0.50 U	0.50 U	0.50 U

Notes

1. The GCTL criteria are from the Final Technical Report: Development of Cleanup Target Levels for Chapter 62-777, Florida Administrative Code, University of Florida, February 2005.
2. Groundwater samples were collected at the mid-point of the screened interval.
3. A groundwater sample was re-collected on May 24, 2023 from IW0003S to confirm the NADC exceedance of TCE detected on April 28, 2023.

Definitions and Acronyms

CCF = Components Cleaning Facility
cDCE = cis-1,2-dichloroethene
ft bls = feet below land surface
GCTL = groundwater cleanup target level
ID = Identification
NADC = natural attenuation default concentration
TCE = trichloroethene
tDCE = trans-1,2-dichloroethene
µg/L = micrograms per liter
VC = vinyl chloride

Qualifiers

Bolded results indicate the analyte was detected at the specified concentration.
Yellow highlight indicates the analyte exceeded the GCTL.
Orange highlight indicates the analyte exceeded the NADC.
U = analyte was not detected, value is the limit of detection.
J = analyte was detected at an estimated value.

Table 4-2
Annual LTM Field Geochemical Measurements
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

Well ID (CCF-)	Screened Interval (ft bls)	Sample Date	Temperature (°C)	ORP (mV)	Turbidity (NTU)	pH	DO (mg/L)	Conductivity (mS/cm)
Well Screen Bottom Depths 10 to 15 ft bls								
IW0003S	2.7-13	04/28/2023	25.3	25.0	2.74	4.91	0.12	0.4798
IW0079	5-15	04/25/2023	24.5	-49.6	17.7	5.39	0.10	2.143
IW0080S	5-15	04/27/2023	25.8	-134	17.8	6.68	0.07	0.3042
Well Screen Bottom Depths 25 to 30 ft bls								
IW0037	20-30	04/25/2023	24.1	-102.0	19.3	6.88	0.11	1.307
IW0062	15-25	04/28/2023	26.4	-21.0	4.87	5.76	0.11	1.267
IW0080IS	15-25	04/27/2023	25.5	194.8	3.13	3.97	0.10	2.282
IW0081	15-25	04/27/2023	25.1	-174.8	3.23	6.44	0.07	2.069
IW0082	15-25	04/25/2023	23.1	-178.8	2.19	7.14	0.16	1.037
IW0083S	15-25	05/01/2023	22.6	-362.5	3.23	6.94	0.08	1.468
Well Screen Bottom Depths 35 to 40 ft bls								
IW0003IS	25-35	05/01/2023	23.7	-159.1	8.53	6.67	0.12	1.650
IW0004IS	27-37	04/27/2023	24.3	-103.5	1.52	6.71	0.17	2.549
IW0011IS	25-35	04/28/2023	23.3	-299.9	0.21	8.56	0.15	0.850
IW0042	30-40	04/26/2023	25.4	-180.4	4.48	8.71	0.26	2.851
IW0083IS	25-35	05/01/2023	22.5	-339.3	17.1	7.02	0.32	2.037
IW0084	25-35	04/27/2023	25.3	-94.0	17.3	7.02	0.12	0.877
Well Screen Bottom Depths 45 to 50 ft bls								
IW0029ID	40-45	05/01/2023	23.5	-365.7	4.91	7.21	0.10	2.292
IW0045	40-50	04/26/2023	26.7	-278.3	1.69	6.72	0.14	0.993
IW0046	40-50	04/26/2023	24.4	-88.7	4.06	6.69	0.19	0.740
IW0059	35-45	04/27/2023	25.9	-101.3	8.13	6.72	0.13	1.708
IW0061	35-45	04/25/2023	25.1	-86.2	8.13	7.04	0.12	2.537
IW0063	40-50	04/27/2023	26.1	-113.8	0.72	6.77	0.11	2.102
IW0064	40-50	04/27/2023	27.1	-81.3	0.91	6.82	0.13	1.854
IW0067	40-50	04/26/2023	25.4	-252.7	0.67	7.64	0.26	1.792
IW0083ID	35-45	05/01/2023	22.2	-276.2	3.67	7.08	0.10	1.765
IW0085	35-45	04/25/2023	23.6	-133.6	3.41	7.43	0.14	0.649
IW0086	35-45	04/28/2023	24.2	-101.9	8.82	7.04	0.15	0.733
IW0087	35-45	04/27/2023	24.8	-82.4	7.81	6.75	0.11	2.358
IW0088	35-45	04/28/2023	26.3	-55.5	8.72	6.83	0.11	1.178
IW0092	40-50	05/01/2023	24.8	-343.5	5.51	7.58	0.08	0.585
Well Screen Bottom Depths 55 to 65 ft bls								
IW0003ID	45.8-56	05/01/2023	23.8	-217.5	2.19	7.14	0.08	1.944
IW0005ID	45.7-56	04/25/2023	24.9	-114.3	1.04	7.38	0.22	0.961
IW0011ID	46.8-57	04/28/2023	24.2	118.6	1.14	7.16	0.21	0.628
IW0070	45-55	04/26/2023	26.1	-247.4	0.52	6.79	0.16	1.039
IW0089	45-55	04/27/2023	25.2	-125.2	9.48	7.07	0.11	1.102
IW0090	45-55	04/25/2023	23.7	-157.5	8.42	7.04	0.16	2.907
IW0091	55-65	04/26/2023	26.2	-144.9	1.23	6.95	0.15	1.938

Defintions
CCF = Components Cleaning Facility
°C = degrees Celsius
DO = dissolved oxygen
ft bls = feet below land surface
mS/cm = micro Siemens per centimeter
mg/L = milligrams per liter
mV = millivolts
NTU = Nephelometric turbidity units
ORP = oxidation reduction potential

Table 4-3
Mann-Kendall Trend Analysis Summary
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

Well ID (CCF-)	Screened Interval (ft bls)	*TCE*	*cDCE*	*tDCE*	*VC*
Sample Depths 8 to 10 ft bls					
IW0003S	3-13	**No Trend**	**No Trend**	--	--
IW0079	5-15	--	--	--	--
IW0080S	5-15	--	--	--	--
Sample Depths 20 to 25 ft bls					
IW0037	20-30	--	--	--	**Probably Decreasing**
IW0062	15-25	**No Trend**	**Decreasing**	--	--
IW0080IS	15-25	--	--	--	--
IW0081	15-25	--	--	--	--
IW0082	15-25	--	--	--	--
IW0083S	15-25	--	--	--	--
Sample Depths 30 to 35 ft bls					
IW0003IS	25-35	**Decreasing**	--	--	--
IW0004IS	27-37	--	--	--	--
IW0011IS	25-35	--	--	--	--
IW0042	30-40	--	--	--	**Decreasing**
IW0083IS	25-35	--	--	--	--
IW0084	25-35	--	--	--	--
Sample Depths 40 to 45 ft bls					
IW0029ID	40-45	--	--	--	**No Trend**
IW0045	40-50	**No Trend**	--	--	**Decreasing**
IW0046	40-50	**Decreasing**	--	--	--
IW0059	35-45	--	--	--	**Decreasing**
IW0061	35-45	--	--	--	**No Trend**
IW0063	40-50	--	--	--	**Decreasing**
IW0064	40-50	--	--	--	**Probably Increasing**
IW0067	40-50	--	--	--	**Decreasing**
IW0083ID	35-45	--	--	--	--
IW0085	35-45	--	--	--	--
IW0086	35-45	--	--	--	--
IW0087	35-45	--	--	--	--
IW0088	35-45	--	--	--	--
IW0092	40-50	--	--	--	--
Sample Depths 50 to 55 ft bls					
IW0003ID	46-56	--	--	--	--
IW0005ID	46-56	--	--	--	**No Trend**
IW0011ID	47-57	--	--	--	--
IW0070	45-55	--	--	--	**Stable**
IW0089	45-55	--	--	--	--
IW0090	45-55	--	--	--	--
Sample Depth 60 ft bls					
IW0091	55-65	--	--	--	--

Notes

-- indicates Mann-Kendall (M-K) trend analysis was not conducted because either analyte detected below the GCTL; or three or fewer data points.

Definitions and Acronyms

CCF = Components Cleaning Facility
cDCE = cis-1,2-dichloroethene
ft bls = feet below land surface
GCTL = groundwater cleanup target level
ID = Identification
TCE = trichloroethene
tDCE = trans-1,2-dichloroethene
VC = vinyl chloride

Table 5-1
2024 Annual LTM Proposed Sampling and Analysis Plan
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

Well ID (CCF-)	Screened Interval (ft bls)	Analysis	Frequency
Well Screen Bottom Depths 12 to 15 ft bls		TCE, cDCE, tDCE, and VC (EPA Method 8260B)	Annual
IW0003S	3-13		
IW0079	5-15		
IW0080S	5-15		
Well Screen Bottom Depths 25 to 30 ft bls			
IW0037	20-30		
IW0062	15-25		
IW0080IS	15-25		
IW0081	15-25		
IW0082	15-25		
IW0083S	15-25		
Well Screen Bottom Depths 35 to 40 ft bls			
IW0003IS	25-35		
IW0004IS	27-37		
IW0011IS	25-35		
IW0042	30-40		
IW0083IS	25-35		
IW0084	25-35		
Well Screen Bottom Depths 45 to 50 ft bls			
IW0029ID	40-45		
IW0045	40-50		
IW0046	40-50		
IW0059	35-45		
IW0061	35-45		
IW0063	40-50		
IW0064	40-50		
IW0067	40-50		
IW0083ID	35-45		
IW0085	35-45		
IW0086	35-45		
IW0087	35-45		
IW0088	35-45		
IW0092	40-50		
Well Screen Bottom Depths 55 to 57 ft bls			
IW0003ID	46-56		
IW0005ID	46-56		
IW0011ID	47-57		
IW0070	45-55		
IW0089	45-55		
IW0090	45-55		
Well Screen Bottom Depths 65 to 67 ft bls			
IW0091	55-65		

Notes

Water levels will be collected on a semiannual basis.

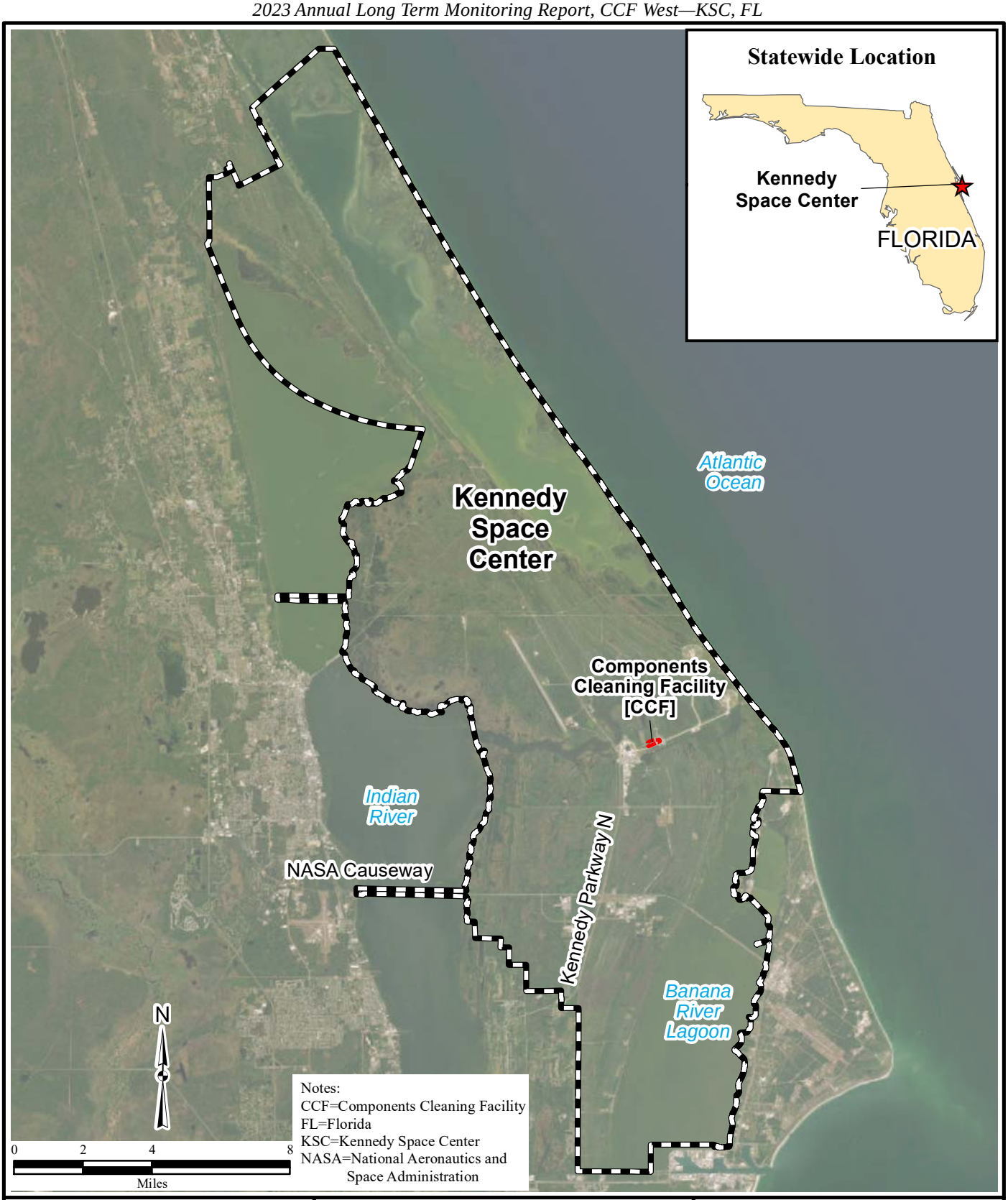
Acronyms

CCF = Components Cleaning Facility
cDCE = cis-1,2-dichloroethene
ft bls = feet below land surface
EPA = U.S. Environmental Protection Agency
TCE = trichloroethene
tDCE = trans-1,2-dichloroethene
VC = vinyl chloride

This page was intentionally left blank.

FIGURES

This page was intentionally left blank.



\\Srv-gst-01\hglgis\KSC_NS1002\CCF\Semiannual_LTM\(2-01)Site_Location.mxd
1/10/2024 TB
Source: HGL, 3E Consultants
ArcGIS Online Imagery

Legend

- Site Location
- Components Cleaning Facility Boundary
- Kennedy Space Center

Figure 2.1
Site Location Map

This page was intentionally left blank.

Figure 2.2
Site Layout

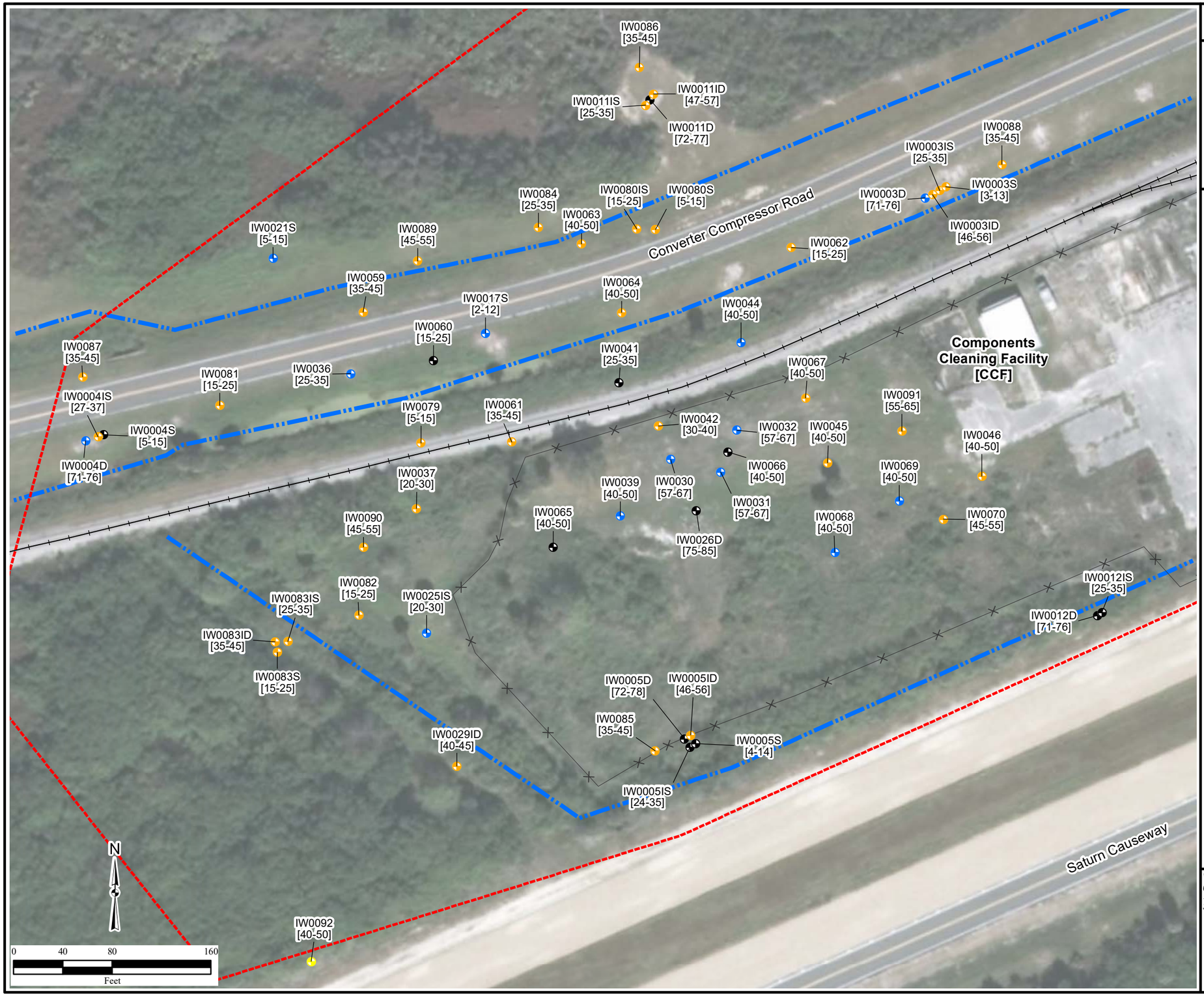
Legend

- Fence
- Railroad
- Site Boundary

Notes:
CCF=Components Cleaning Facility
FL=Florida
KSC=Kennedy Space Center

\\srv-gst-01\hglgis\KSC_NS1002\CCF\Annual_GWMR\2023
(2-02)Site_Layout.mxd
1/10/2024 TB
Source: HGL,
ArcGIS Online Imagery

Figure 3.1
2023 Monitoring Well Locations



Legend

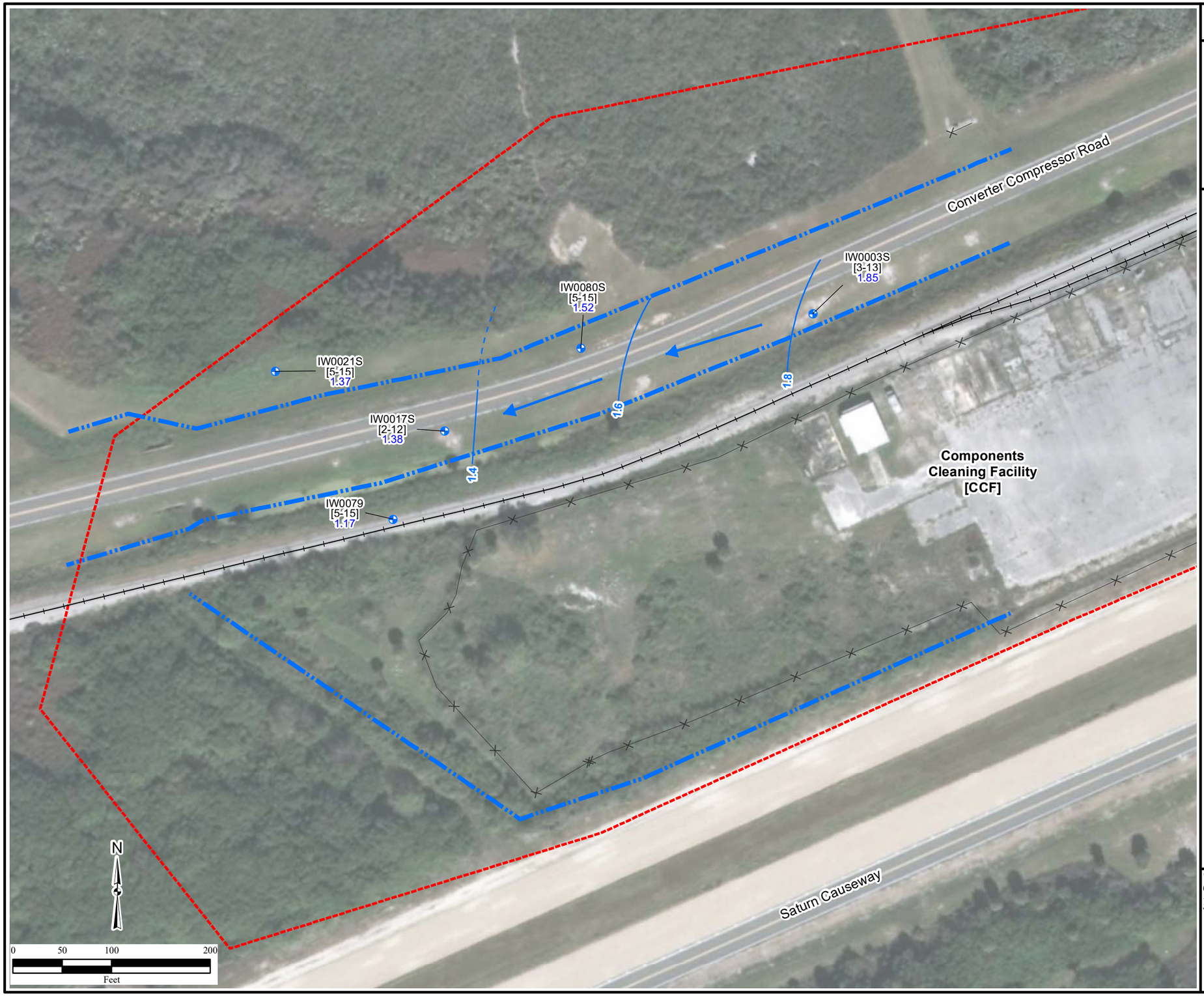
- Monitoring Well (Collected Water Level Only)
- Monitoring Well (Collected Sample and Water Level)
- New Monitoring Well (Collected Sample and Water Level)
- Abandoned Monitoring Well
- [xx-xx] Screen Interval in ft bls. Sample collected at the Mid-point of the Screen
- Swale
- Fence
- Railroad
- Site Boundary

Notes:
All monitoring wells begin with prefix, CCF-

CCF=Components Cleaning Facility
ft bls=feet below land surface
FL=Florida
KSC=Kennedy Space Center

\\srv-gst-01\hglgis\KSC_NS1002\CCF\Annual_GWMR\2023\(3-01)SA-LTM-2022MWLocs.mxd
1/10/2024 TB
Source: HGL, ArcGIS Online Imagery

Figure 4.1
Groundwater Elevations
Monitoring Well Screen Depths
of 12 to 15 ft bls
April 2023



Legend

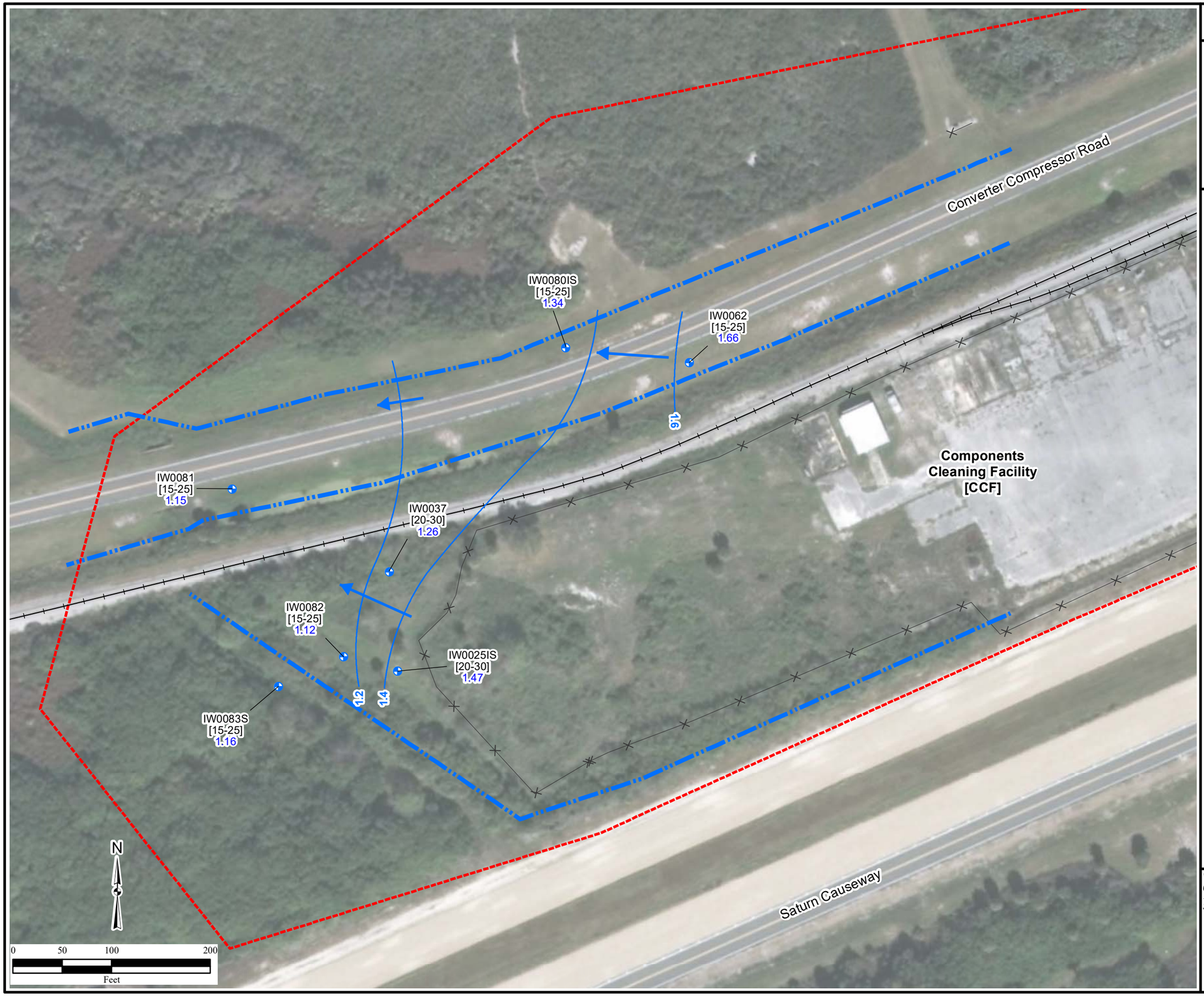
⊕	Monitoring Well
IW003S	Sample/Well Identification
[3-13]	Sample Collected at the Mid-point of the Screen
2.32	Groundwater Elevation (ft NAVD88) April 24, 2023
→	Groundwater Flow Direction
—1.2—	Groundwater Elevation Contour (ft bls, dashed where inferred)
×——	Fence
+—+	Railroad
▬·▬	Swale
▭	Site Boundary

Notes:
All monitoring wells begin with prefix, CCF-
Elevation is referenced to the North American Datum of 1988 (NAVD88).

CCF=Components Cleaning Facility
bls=below land surface
ft=feet
FL=Florida
KSC=Kennedy Space Center
NAVD=North American Vertical Datum

\\srv-gst-01\hglgis\KSC_NS1002\CCF\Annual_GWMR\2023
(4-01)GWE_2022_12-15.mxd
1/18/2024 TB
Source: HGL,
ArcGIS Online Imagery

Figure 4.2
Groundwater Elevations
Monitoring Well Screen Depths
of 25 to 30 ft bls
April 2023



Legend

●	Monitoring Well
IW0062	Sample/Well Identification
[15-25]	Sample Collected at the Mid-point of the Screen
1.66	Groundwater Elevation (ft NAVD88) April 24, 2023
→	Groundwater Flow Direction
—1.2—	Groundwater Elevation Contour (ft bls, dashed where inferred)
	Fence
	Railroad
	Swale
	Site Boundary

Notes:
All monitoring wells begin with prefix, CCF-
Elevation is referenced to the North American Datum of 1988 (NAVD88).

CCF=Components Cleaning Facility
bls=below land surface
ft=feet
FL=Florida
KSC=Kennedy Space Center
NAVD=North American Vertical Datum

\\srv-gst-01\hglgis\KSC_NS1002\CCF\Annual_GWMR\2023\(4-02)GWE_2022_25-30.mxd
1/18/2024 TB
Source: HGL, ArcGIS Online Imagery

Figure 4.3
Groundwater Elevations
Monitoring Well Screen Depths
of 35 to 40 ft bls
April 2023

Legend

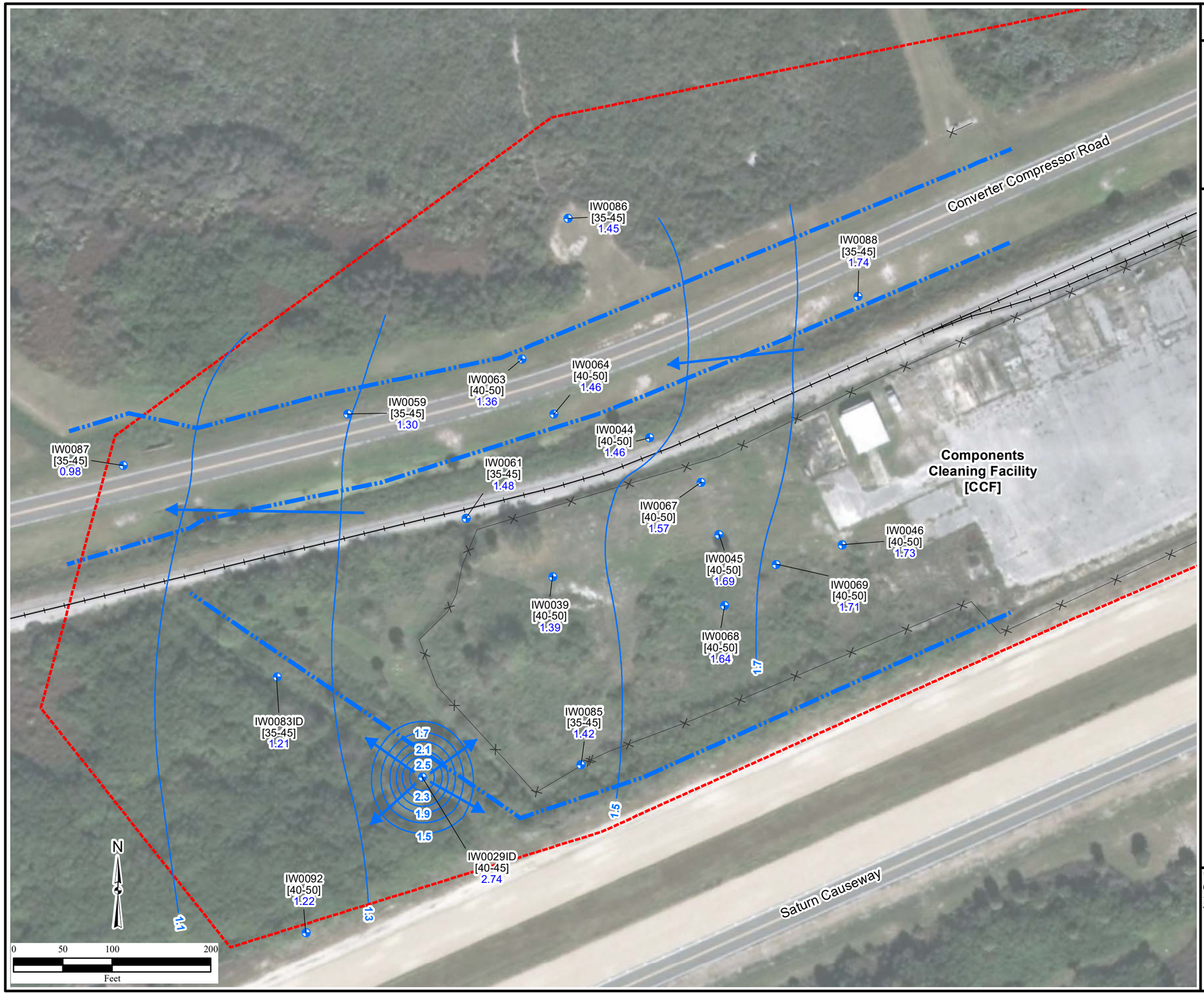
⊕	Monitoring Well
IW0003IS	Sample/Well Identification
[25-35]	Sample Collected at the Mid-point of the Screen
1.56	Groundwater Elevation (ft NAVD88) April 24, 2023
→	Groundwater Flow Direction
—1.5—	Groundwater Elevation Contour (ft bls, dashed where inferred)
×———	Fence
——+——+——	Railroad
——·——·——	Swale
▭	Site Boundary

Notes:
All monitoring wells begin with prefix, CCF-
Elevation is referenced to the North American Datum of 1988 (NAVD88).

CCF=Components Cleaning Facility
bls=below land surface
ft=feet
FL=Florida
KSC=Kennedy Space Center
NAVD=North American Vertical Datum

\\srv-gst-01\hglgis\KSC_NS1002\CCF\Annual_GWMR\2023
(4-03)GWE_2022_35-40.mxd
1/18/2024 TB
Source: HGL,
ArcGIS Online Imagery

Figure 4.4
Groundwater Elevations
Monitoring Well Screen Depths
of 45 to 50 ft bls
April 2023



Legend

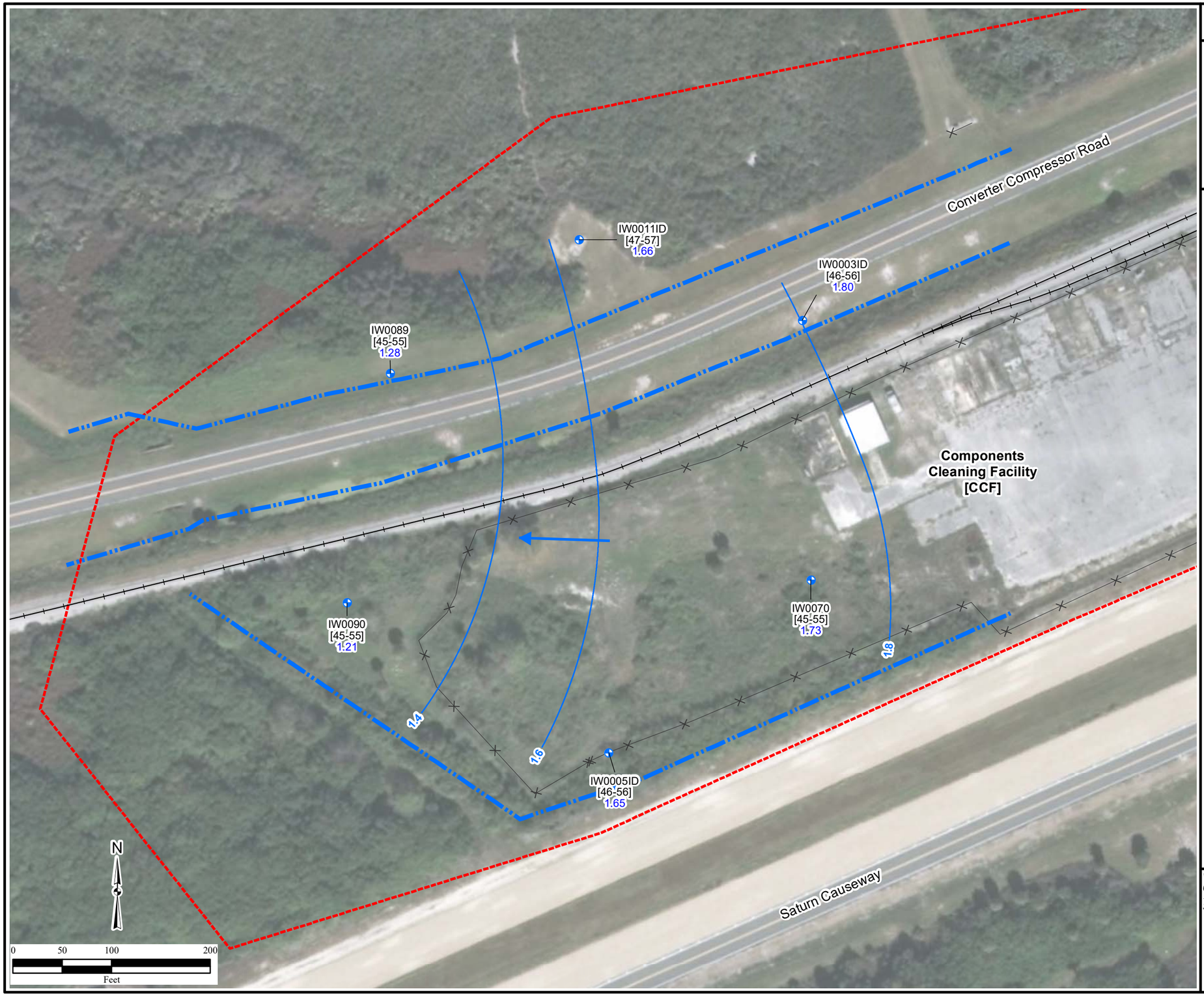
●	Monitoring Well
IW0067	Sample/Well Identification
[40-50]	Sample Collected at the Mid-point of the Screen
1.57	Groundwater Elevation (ft NAVD88) April 24, 2023
→	Groundwater Flow Direction
—1.7—	Groundwater Elevation Contour (ft bls, dashed where inferred)
×——	Fence
——+——	Railroad
——·——	Swale
▭	Site Boundary

Notes:
All monitoring wells begin with prefix, CCF-
Elevation is referenced to the North American Datum of 1988 (NAVD88).

CCF=Components Cleaning Facility
bls=below land surface
ft=feet
FL=Florida
KSC=Kennedy Space Center
NAVD=North American Vertical Datum

\\srv-gst-01\hglgis\KSC_NS1002\CCF\Annual_GWMR\2023
(4-04)GWE_2022_45-50.mxd
1/18/2024 TB
Source: HGL,
ArcGIS Online Imagery

Figure 4.5
Groundwater Elevations
Monitoring Well Screen Depths
of 55 to 57 ft bls
April 2023



Legend

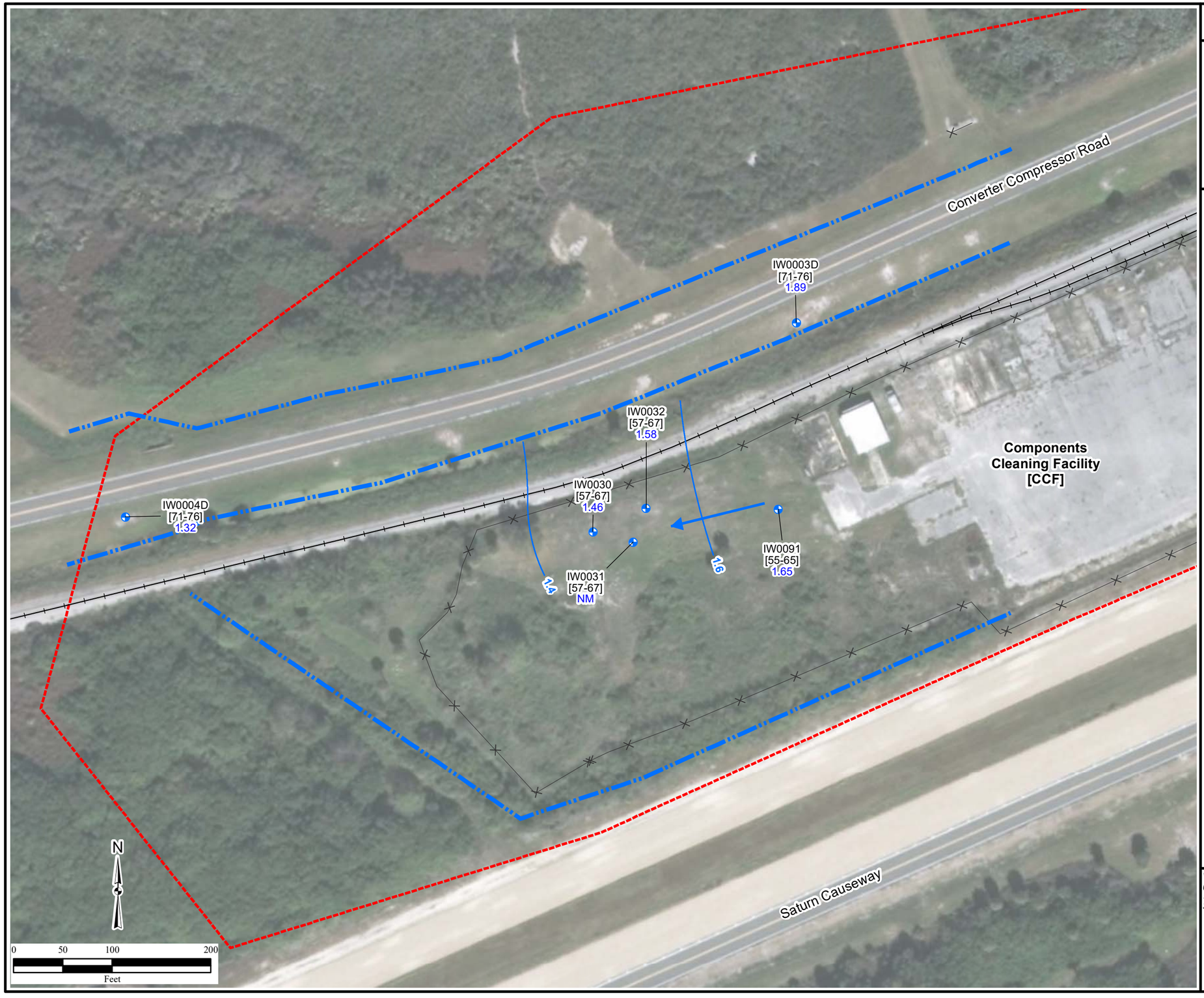
	Monitoring Well
IW0003ID	Sample/Well Identification
[46-56]	Sample Collected at the Mid-point of the Screen
1.80	Groundwater Elevation (ft NAVD88) April 24, 2023
	Groundwater Flow Direction
—1.4—	Groundwater Elevation Contour (ft bls, dashed where inferred)
	Fence
	Railroad
	Swale
	Site Boundary

Notes:
All monitoring wells begin with prefix, CCF-
Elevation is referenced to the North American Datum of 1988 (NAVD88).

CCF=Components Cleaning Facility
bls=below land surface
ft=feet
FL=Florida
KSC=Kennedy Space Center
NAVD=North American Vertical Datum

\\srv-gst-01\hglgis\KSC_NS1002\CCF\Annual_GWMR\2023
(4-05)GWE_2022_55-60.mxd
1/18/2024 TB
Source: HGL,
ArcGIS Online Imagery

Figure 4.6
Groundwater Elevations
Monitoring Well Screen Depths
of 65 to 76 ft bls
April 2023



Legend

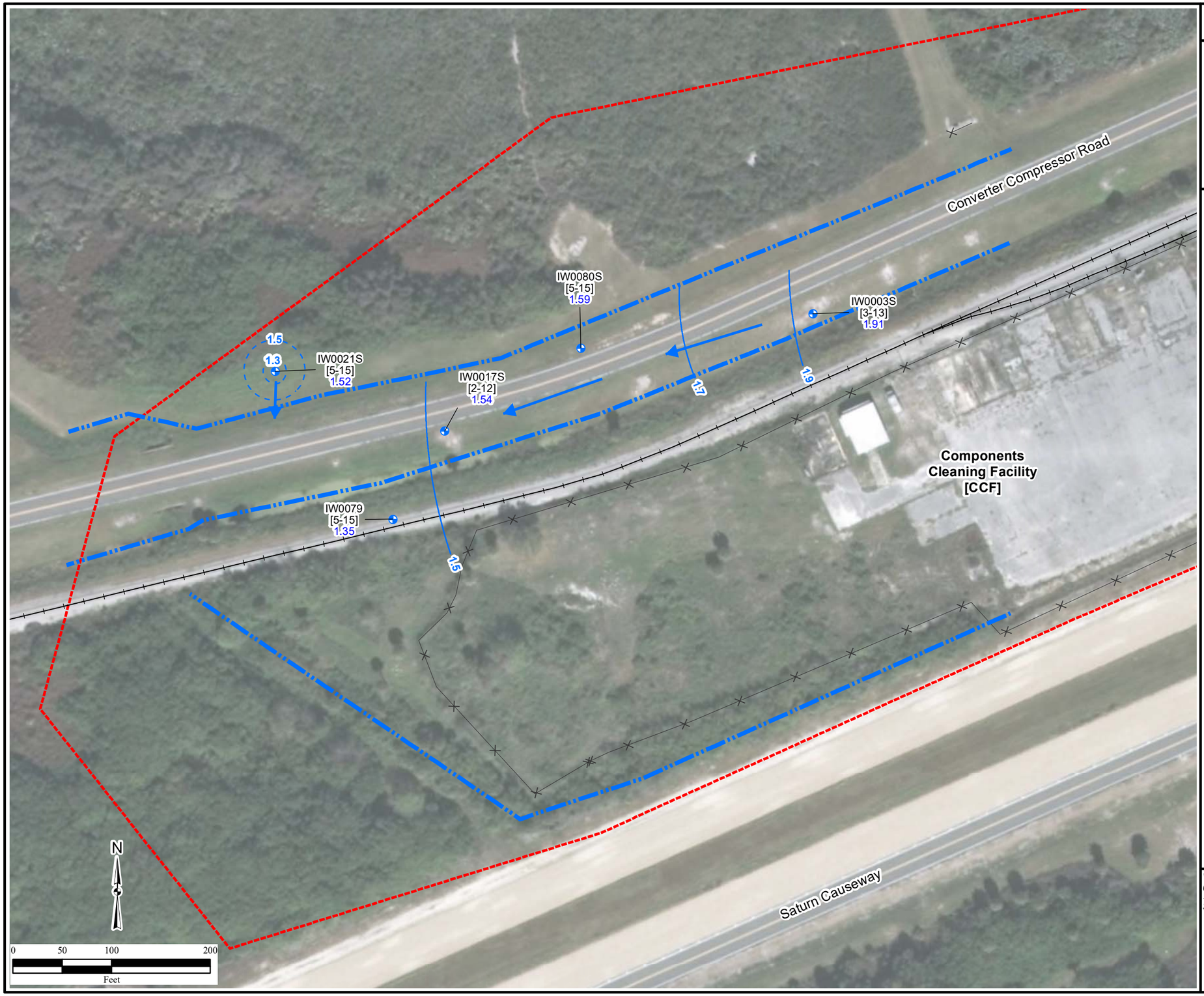
◔	Monitoring Well
CCF-IW0003D	Sample/Well Identification
[71-76]	Sample Collected at the Mid-point of the Screen
1.89	Groundwater Elevation (ft NAVD88) April 24, 2023
→	Groundwater Flow Direction
—1.4—	Groundwater Elevation Contour (ft bls, dashed where inferred)
×——	Fence
——+——	Railroad
——·——	Swale
▭	Site Boundary

Notes:
All monitoring wells begin with prefix, CCF-
Monitoring well IW0031 was recommended to be abandoned at the February 2023 KSC Remediation Team meeting because of an obstruction that could not be repaired. The obstruction was confirmed during the 2023 semiannual groundwater level measurements and is tentatively scheduled to be abandoned in 2024.
Elevation is referenced to the North American Datum of 1988 (NAVD88).

CCF=Components Cleaning Facility
bls=below land surface
ft=feet
FL=Florida
KSC=Kennedy Space Center
NAVD=North American Vertical Datum
NM=not measured

\\srv-gst-01\hglgis\KSC_NS1002\CCF\Annual_GWMR\2023\(4-06)GWE_2022_65-76.mxd
1/18/2024 JM
Source: HGL,
ArcGIS Online Imagery

Figure 4.7
Groundwater Elevations
Monitoring Well Screen Depths
of 12 to 15 ft bls
September 2023



Legend

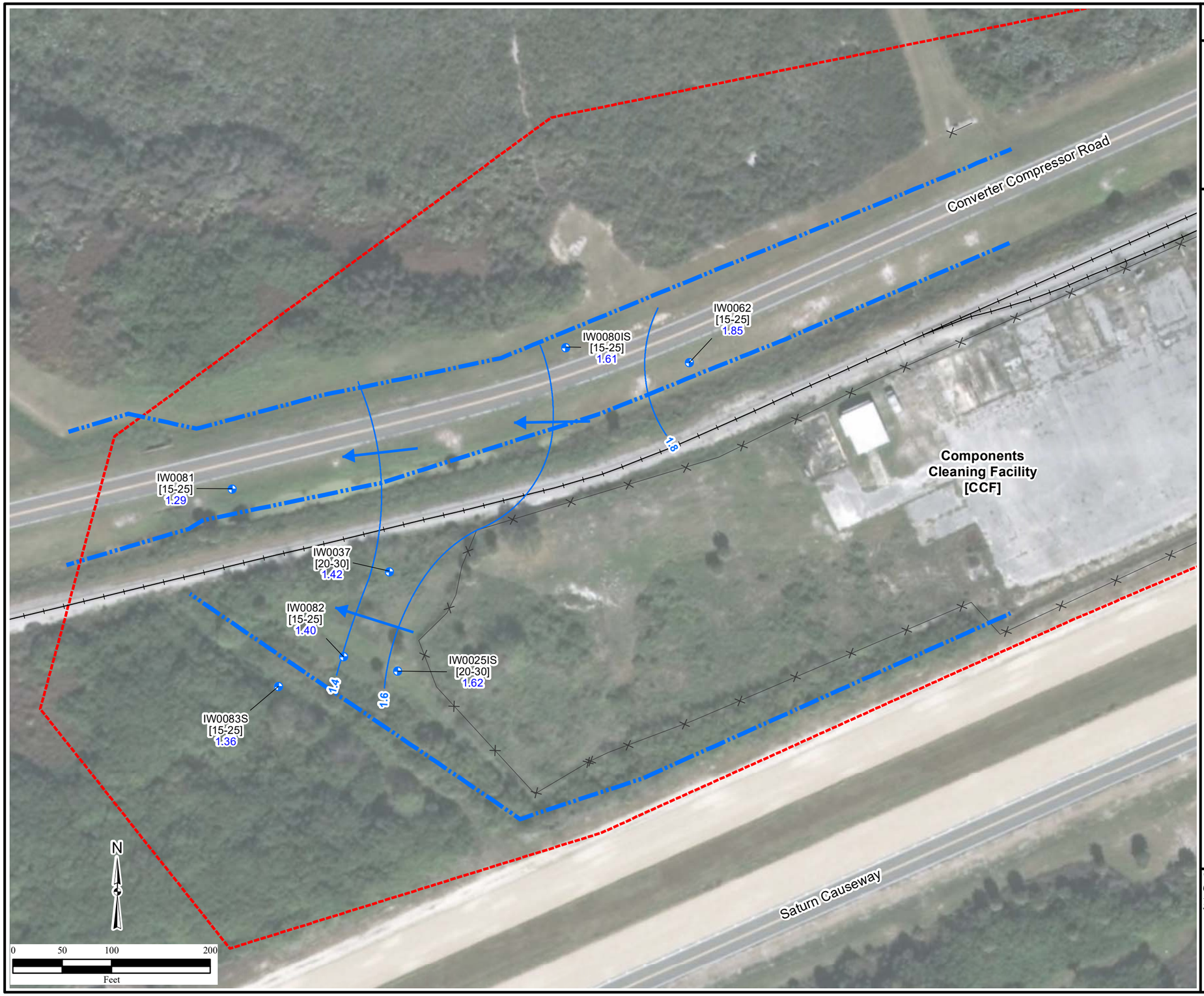
⊕	Monitoring Well
IW003S	Sample/Well Identification
[3-13]	Sample Collected at the Mid-point of the Screen
1.91	Groundwater Elevation (ft NAVD88) September 12, 2023
→	Groundwater Flow Direction
—1.9—	Groundwater Elevation Contour (ft bls, dashed where inferred)
×——	Fence
—+—	Railroad
— · —	Swale
▭	Site Boundary

Notes:
All monitoring wells begin with prefix, CCF-
Elevation is referenced to the North American Datum of 1988 (NAVD88).

CCF=Components Cleaning Facility
bls=below land surface
ft=feet
FL=Florida
KSC=Kennedy Space Center
NAVD=North American Vertical Datum

\\srv-gst-01\hglgis\KSC_NS1002\CCF\Annual_GWMR\2023
(4-07)GWE_2023-09_12-15.mxd
1/18/2024 TB
Source: HGL,
ArcGIS Online Imagery

Figure 4.8
Groundwater Elevations
Monitoring Well Screen Depths
of 25 to 30 ft bls
September 2023



Legend

◔	Monitoring Well
IW0062	Sample/Well Identification
[15-25]	Sample Collected at the Mid-point of the Screen
1.85	Groundwater Elevation (ft NAVD88) September 12, 2023
→	Groundwater Flow Direction
—1.8—	Groundwater Elevation Contour (ft bls, dashed where inferred)
	Fence
	Railroad
	Swale
	Site Boundary

Notes:
All monitoring wells begin with prefix, CCF-
Elevation is referenced to the North American Datum of 1988 (NAVD88).

CCF=Components Cleaning Facility
bls=below land surface
ft=feet
FL=Florida
KSC=Kennedy Space Center
NAVD=North American Vertical Datum

\\srv-gst-01\hglgis\KSC_NS1002\CCF\Annual_GWMR\2023\(4-08)GWE_2023-09_25-30.mxd
1/18/2024 TB
Source: HGL, ArcGIS Online Imagery

Figure 4.9
Groundwater Elevations
Monitoring Well Screen Depths
of 35 to 40 ft bls
September 2023

Legend

●	Monitoring Well
IW0003IS	Sample/Well Identification
[25-35]	Sample Collected at the Mid-point of the Screen
2.05	Groundwater Elevation (ft NAVD88) September 12, 2023
→	Groundwater Flow Direction
—2.0—	Groundwater Elevation Contour (ft bls, dashed where inferred)
×——	Fence
——+——	Railroad
▬·▬	Swale
▭	Site Boundary

Notes:
All monitoring wells begin with prefix, CCF-
Elevation is referenced to the North American Datum of 1988 (NAVD88).

CCF=Components Cleaning Facility
bls=below land surface
ft=feet
FL=Florida
KSC=Kennedy Space Center
NAVD=North American Vertical Datum

\\srv-gst-01\hglgis\KSC_NS1002\CCF\Annual_GWMR\2023
(4-09)GWE_2023-09_35-40.mxd
1/18/2024 TB
Source: HGL,
ArcGIS Online Imagery

Figure 4.10
Groundwater Elevations
Monitoring Well Screen Depths
of 45 to 50 ft bls
September 2023

Legend

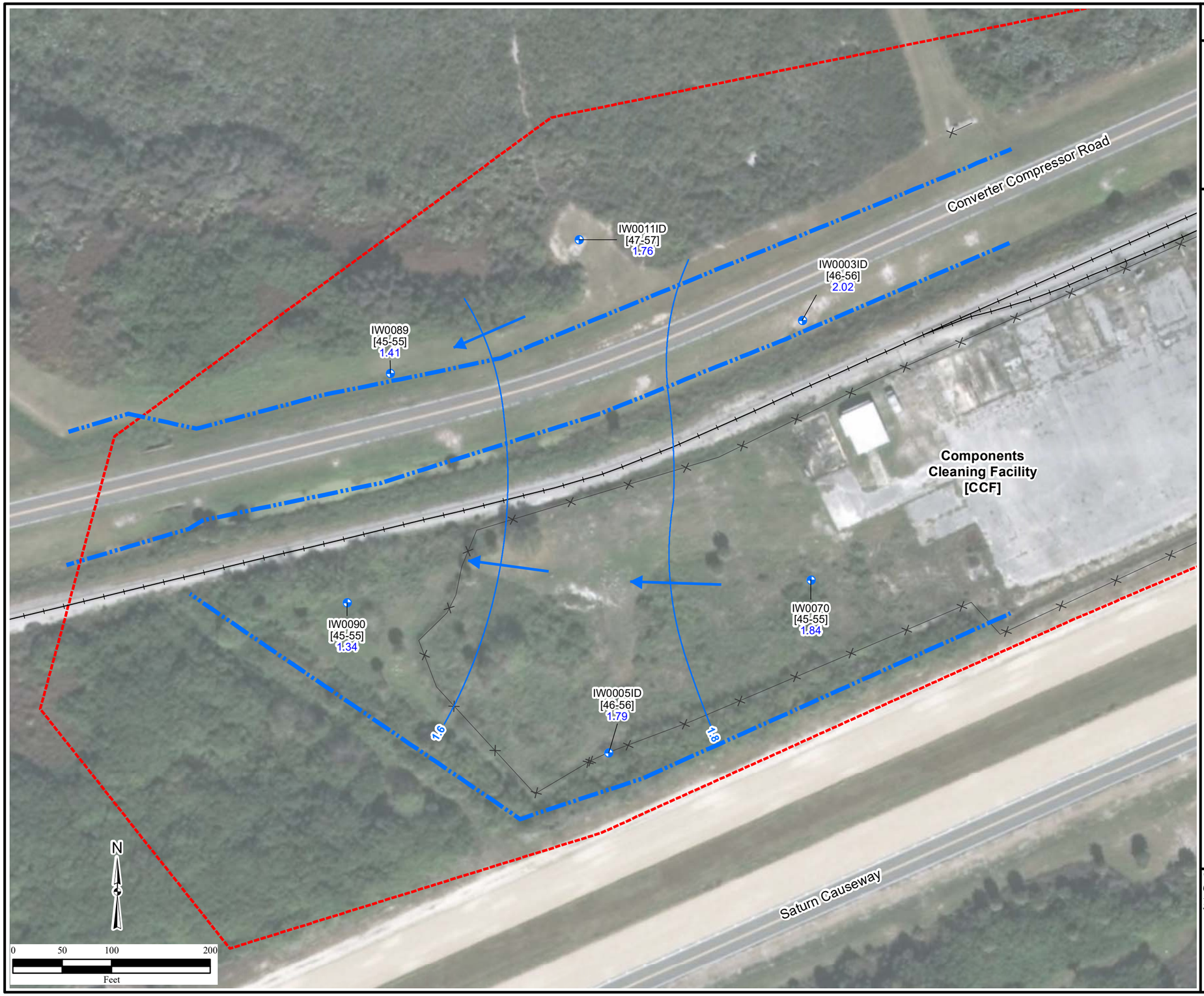
●	Monitoring Well
IW0067	Sample/Well Identification
[40-50]	Sample Collected at the Mid-point of the Screen
2.05	Groundwater Elevation (ft NAVD88) September 12, 2023
→	Groundwater Flow Direction
—1.2—	Groundwater Elevation Contour (ft bls, dashed where inferred)
	Groundwater Elevation Contour Depression
	Fence
	Railroad
	Swale
	Site Boundary

Notes:
All monitoring wells begin with prefix, CCF-
Elevation is referenced to the North American Datum of 1988 (NAVD88).

CCF=Components Cleaning Facility
bls=below land surface
ft=feet
FL=Florida
KSC=Kennedy Space Center
NAVD=North American Vertical Datum

\\srv-gst-01\hglgis\KSC_NS1002\CCF\Annual_GWMR\2023
(4-10)GWE_2023-09_45-50.mxd
1/18/2024 TB
Source: HGL,
ArcGIS Online Imagery

Figure 4.11
Groundwater Elevations
Monitoring Well Screen Depths
of 55 to 57 ft bls
September 2023



Legend

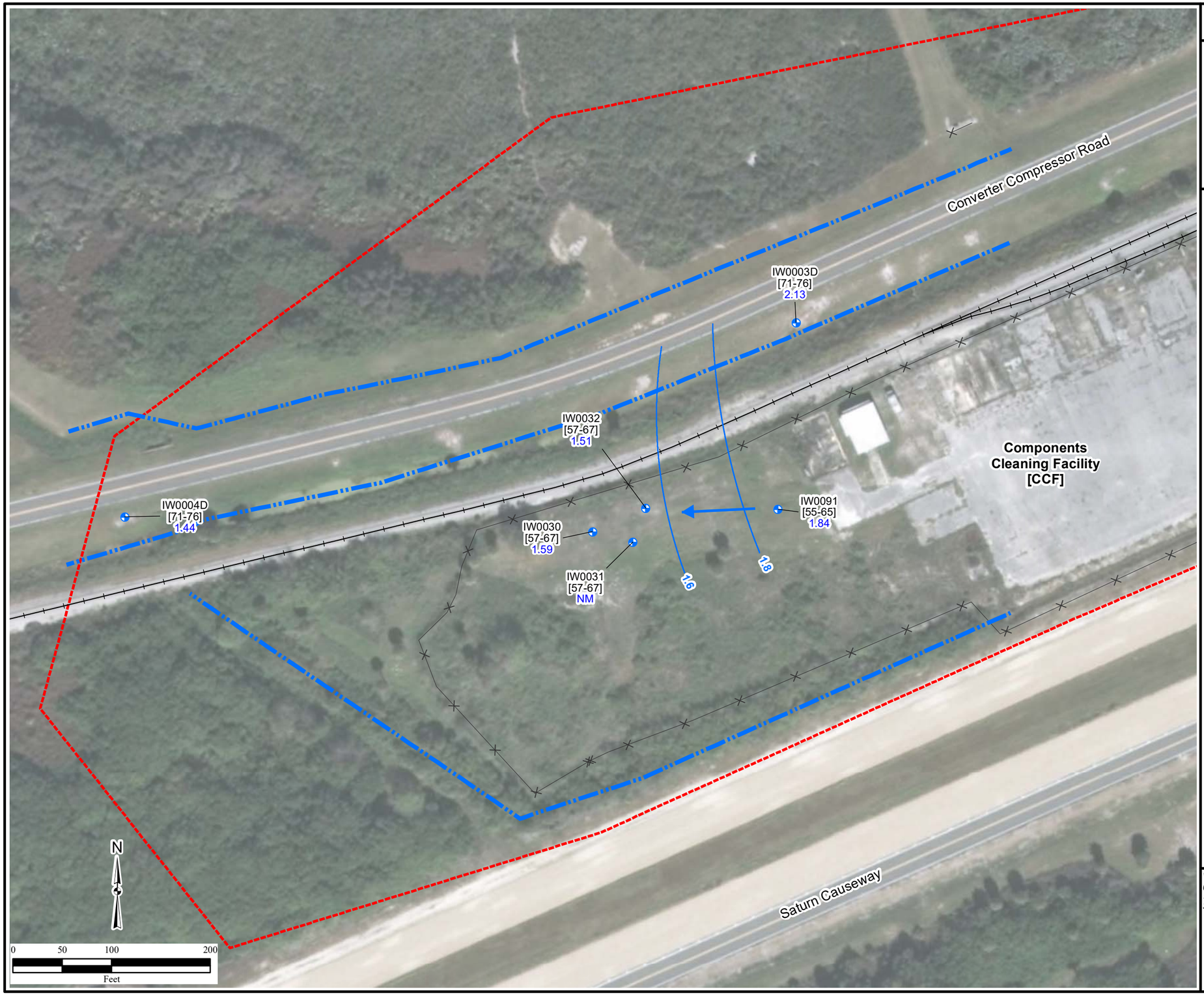
●	Monitoring Well
IW0003ID	Sample/Well Identification
[46-56]	Sample Collected at the Mid-point of the Screen
2.02	Groundwater Elevation (ft NAVD88) September 12, 2023
→	Groundwater Flow Direction
—1.8—	Groundwater Elevation Contour (ft bls, dashed where inferred)
×—	Fence
—+—	Railroad
-·-·-	Swale
▭	Site Boundary

Notes:
All monitoring wells begin with prefix, CCF-
Elevation is referenced to the North American Datum of 1988 (NAVD88).

CCF=Components Cleaning Facility
bls=below land surface
ft=feet
FL=Florida
KSC=Kennedy Space Center
NAVD=North American Vertical Datum

\\srv-gst-01\hglgis\KSC_NS1002\CCF\Annual_GWMR\2023
(4-11)GWE_2023-09_55-60.mxd
1/18/2024 TB
Source: HGL,
ArcGIS Online Imagery

Figure 4.12
Groundwater Elevations
Monitoring Well Screen Depths
of 65 to 76 ft bls
September 2023



Legend

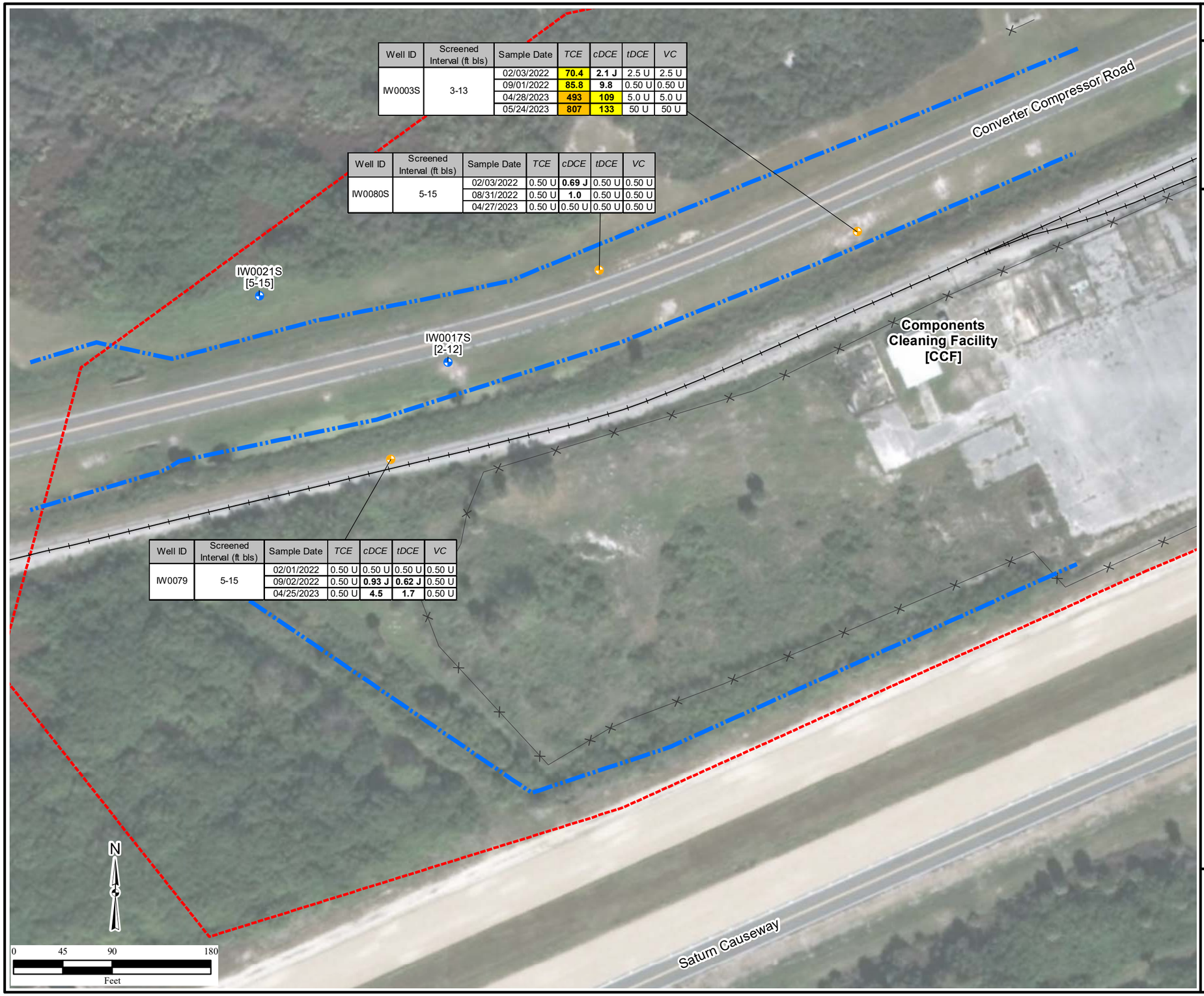
●	Monitoring Well
CCF-IW0003D	Sample/Well Identification
[71-76]	Sample Collected at the Mid-point of the Screen
2.02	Groundwater Elevation (ft NAVD88) September 12, 2023
→	Groundwater Flow Direction
—1.8—	Groundwater Elevation Contour (ft bls, dashed where inferred)
×——	Fence
——+——	Railroad
—·—·—	Swale
▭	Site Boundary

Notes:
All monitoring wells begin with prefix, CCF-
Elevation is referenced to the North American Datum of 1988 (NAVD88).
Monitoring well IW0031 was recommended to be abandoned at the February 2023 KSC Remediation Team meeting because of an obstruction that could not be repaired. The obstruction was confirmed during the 2023 semiannual groundwater level measurements and is tentatively scheduled to be abandoned in 2024.

CCF=Components Cleaning Facility
bls=below land surface
ft=feet
FL=Florida
KSC=Kennedy Space Center
NAVD=North American Vertical Datum
NM=not measured

\\srv-gst-01\hglgis\KSC_NS1002\CCF\Annual_GWMR\2023
(4-12)GWE_2023-09_65-76.mxd
1/18/2024 TB
Source: HGL,
ArcGIS Online Imagery

Figure 4.13
2023 Annual LTM
Analytical Results Summary
Sample Depths at 8 to 10 ft bls



Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0003S	3-13	02/03/2022	**70.4**	**2.1 J**	2.5 U	2.5 U
		09/01/2022	**85.8**	**9.8**	0.50 U	0.50 U
		04/28/2023	**493**	**109**	5.0 U	5.0 U
		05/24/2023	**807**	**133**	50 U	50 U

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0080S	5-15	02/03/2022	0.50 U	**0.69 J**	0.50 U	0.50 U
		08/31/2022	0.50 U	**1.0**	0.50 U	0.50 U
		04/27/2023	0.50 U	0.50 U	0.50 U	0.50 U

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0079	5-15	02/01/2022	0.50 U	0.50 U	0.50 U	0.50 U
		09/02/2022	0.50 U	**0.93 J**	**0.62 J**	0.50 U
		04/25/2023	0.50 U	**4.5**	**1.7**	0.50 U

Legend

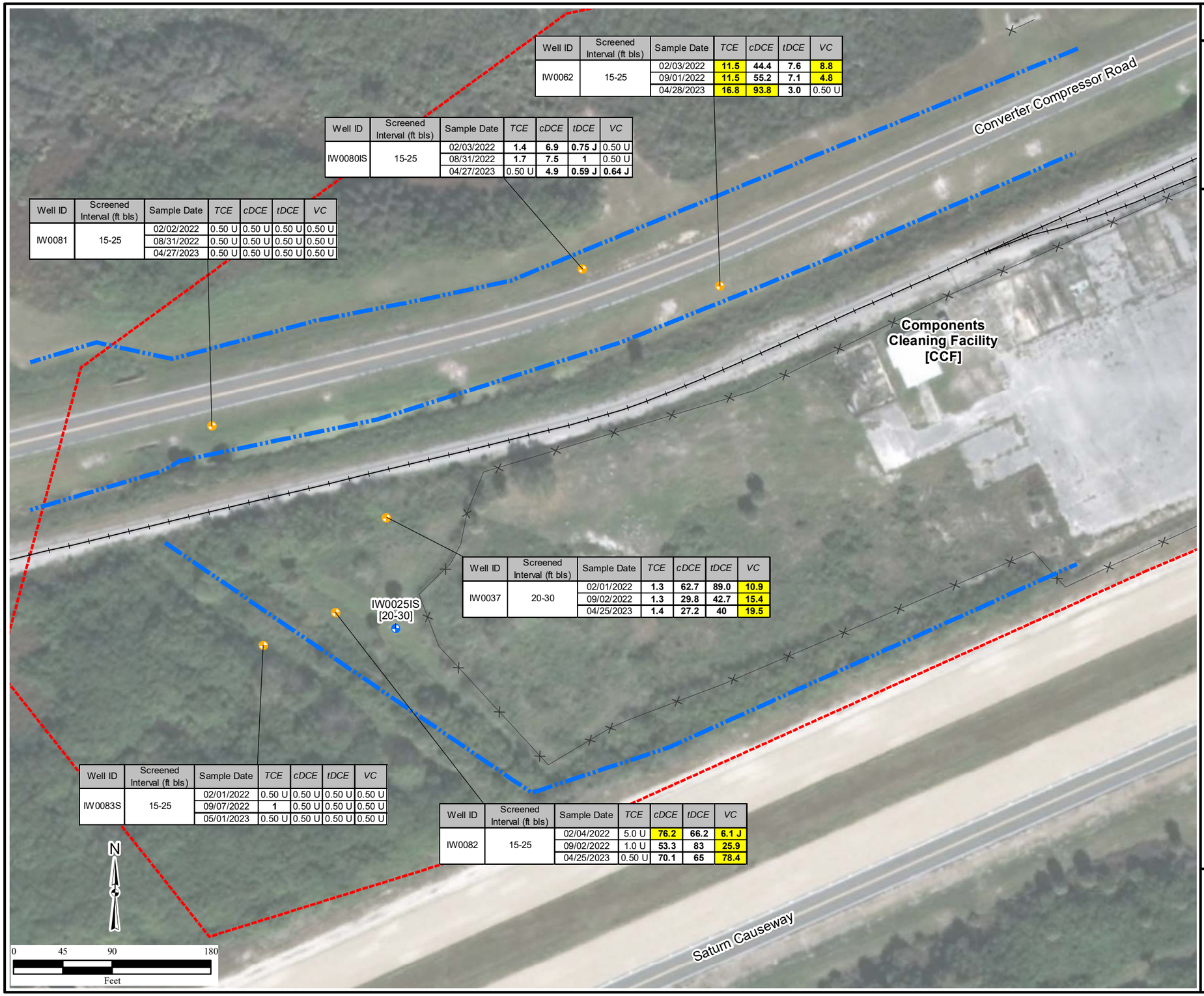
- Monitoring Well (Collected Water Level Only)
- Monitoring Well (Collected Sample and Water Level)
- [xx-xx] Screen Interval in ft bls.
- Fence
- Railroad
- Swale
- Site Boundary

Analyte	TCE	cDCE	tDCE	VC
GCTL (µg/L)	3	70	100	1
NADC (µg/L)	300	700	1000	100

Notes:
All monitoring wells begin with prefix, CCF-
Groundwater samples were collected at the mid-point of the screened interval.
The GCTL criteria are from the Final Technical Report: Development of Cleanup Target Levels for Chapter 62-777, Florida Administrative Code, University of Florida, February 2005.
Bolded results indicate the analyte was detected at the specified concentration.
Yellow=the analyte exceeded the GCTL
Orange=the analyte exceeded the NADC
CCF=Components Cleaning Facility
cDCE=cis-1,2-dichloroethene
ft bls=feet below land surface
FL=Florida
GCTL=groundwater cleanup target level
ID=Identification
J=analyte was detected at an estimated value
KSC=Kennedy Space Center
LTM=Long Term Monitoring
µg/L = micrograms per liter
NADC=natural attenuation default concentration
tDCE = trans-1,2-dichloroethene
TCE=trichloroethene
VC=vinyl chloride
U=analyte not detected, value is the limit of detection

\\srv-gst-01\hglgis\KSC_NS1002\CCF\Annual_GWMR\2023\(4-13)SA-LTM_Analytical_Results_Summary_10.mxd
1/18/2024 TB
Source: HGL,
ArcGIS Online Imagery

Figure 4.14
2023 Annual LTM
Analytical Results Summary
Sample Depths at 20 to 25 ft bls



Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0062	15-25	02/03/2022	**11.5**	**44.4**	**7.6**	**8.8**
		09/01/2022	**11.5**	**55.2**	**7.1**	**4.8**
		04/28/2023	**16.8**	**93.8**	**3.0**	0.50 U

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0080IS	15-25	02/03/2022	**1.4**	**6.9**	**0.75 J**	0.50 U
		08/31/2022	**1.7**	**7.5**	**1**	0.50 U
		04/27/2023	0.50 U	**4.9**	**0.59 J**	**0.64 J**

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0081	15-25	02/02/2022	0.50 U	0.50 U	0.50 U	0.50 U
		08/31/2022	0.50 U	0.50 U	0.50 U	0.50 U
		04/27/2023	0.50 U	0.50 U	0.50 U	0.50 U

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0037	20-30	02/01/2022	**1.3**	**62.7**	**89.0**	**10.9**
		09/02/2022	**1.3**	**29.8**	**42.7**	**15.4**
		04/25/2023	**1.4**	**27.2**	**40**	**19.5**

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0083S	15-25	02/01/2022	0.50 U	0.50 U	0.50 U	0.50 U
		09/07/2022	**1**	0.50 U	0.50 U	0.50 U
		05/01/2023	0.50 U	0.50 U	0.50 U	0.50 U

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0082	15-25	02/04/2022	5.0 U	**76.2**	**66.2**	**6.1 J**
		09/02/2022	1.0 U	**53.3**	**83**	**25.9**
		04/25/2023	0.50 U	**70.1**	**65**	**78.4**

Legend

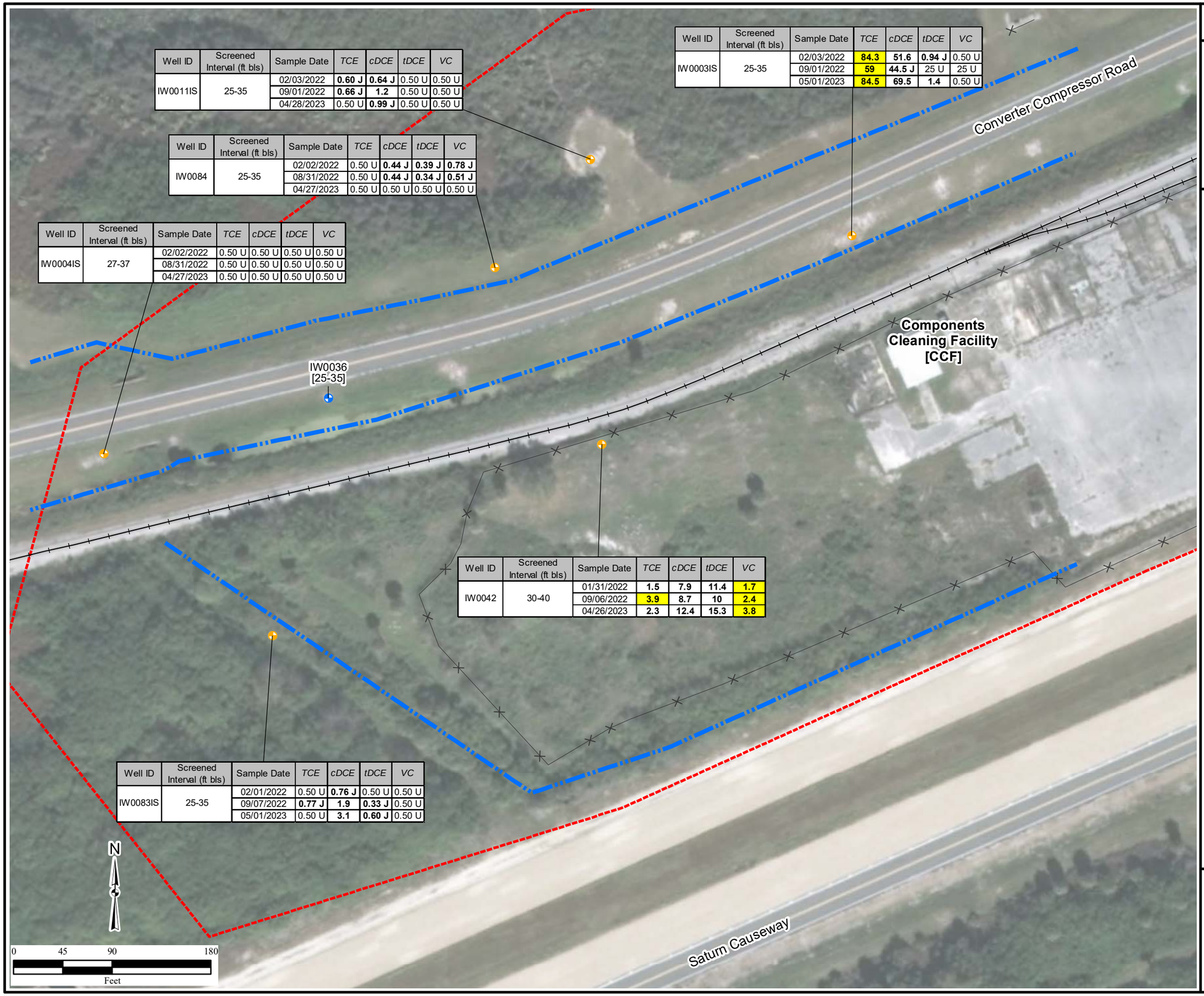
- Monitoring Well (Collected Water Level Only)
- Monitoring Well (Collected Sample and Water Level)
- [xx-xx] Screen Interval in ft bls.
- Fence
- Railroad
- Swale
- Site Boundary

Analyte	TCE	cDCE	tDCE	VC
GCTL (µg/L)	3	70	100	1
NADC (µg/L)	300	700	1000	100

Notes:
All monitoring wells begin with prefix, CCF-
Groundwater samples were collected at the mid-point of the screened interval.
The GCTL criteria are from the Final Technical Report: Development of Cleanup Target Levels for Chapter 62-777, Florida Administrative Code, University of Florida, February 2005.
Bolded results indicate the analyte was detected at the specified concentration.
Yellow=the analyte exceeded the GCTL
CCF=Components Cleaning Facility
cDCE=cis-1,2-dichloroethene
ft bls=feet below land surface
FL=Florida
GCTL=groundwater cleanup target level
ID=Identification
J=analyte was detected at an estimated value
KSC=Kennedy Space Center
LTM=Long Term Monitoring
µg/L = micrograms per liter
NADC=natural attenuation default concentration
tDCE = trans-1,2-dichloroethene
TCE=trichloroethene
VC=vinyl chloride
U=analyte was not detected above the reporting limit

\\srv-gst-01\hglgis\KSC_NS1002\CCF\Annual_GWMR\2023\(4-14)SA-LTM_Analytical_Results_Summary_20.mxd
1/10/2024 TB
Source: HGL, ArcGIS Online Imagery

Figure 4.15
2023 Annual LTM
Analytical Results Summary
Sample Depths at 30 to 35 ft bls



Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0011IS	25-35	02/03/2022	**0.60 J**	**0.64 J**	0.50 U	0.50 U
		09/01/2022	**0.66 J**	**1.2**	0.50 U	0.50 U
		04/28/2023	0.50 U	**0.99 J**	0.50 U	0.50 U

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0003IS	25-35	02/03/2022	**84.3**	**51.6**	**0.94 J**	0.50 U
		09/01/2022	**59**	**44.5 J**	25 U	25 U
		05/01/2023	**84.5**	**69.5**	**1.4**	0.50 U

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0084	25-35	02/02/2022	0.50 U	**0.44 J**	**0.39 J**	**0.78 J**
		08/31/2022	0.50 U	**0.44 J**	**0.34 J**	**0.51 J**
		04/27/2023	0.50 U	0.50 U	0.50 U	0.50 U

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0004IS	27-37	02/02/2022	0.50 U	0.50 U	0.50 U	0.50 U
		08/31/2022	0.50 U	0.50 U	0.50 U	0.50 U
		04/27/2023	0.50 U	0.50 U	0.50 U	0.50 U

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0042	30-40	01/31/2022	**1.5**	**7.9**	**11.4**	**1.7**
		09/06/2022	**3.9**	**8.7**	**10**	**2.4**
		04/26/2023	**2.3**	**12.4**	**15.3**	**3.8**

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0083IS	25-35	02/01/2022	0.50 U	**0.76 J**	0.50 U	0.50 U
		09/07/2022	**0.77 J**	**1.9**	**0.33 J**	0.50 U
		05/01/2023	0.50 U	**3.1**	**0.60 J**	0.50 U

Legend

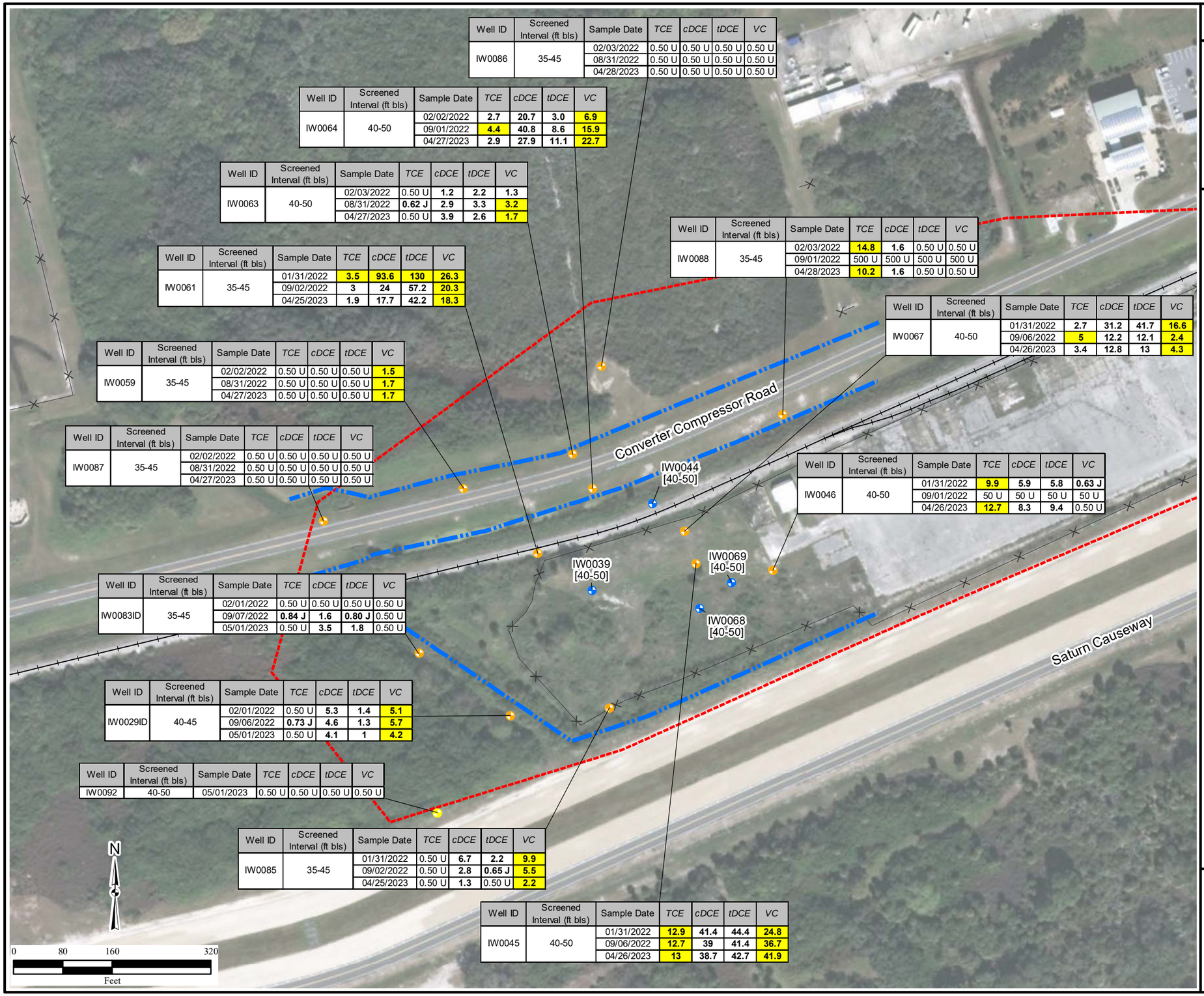
- Monitoring Well (Collected Water Level Only)
- Monitoring Well (Collected Sample and Water Level)
- [xx-xx] Screen Interval in ft bls.
- Fence
- Railroad
- Swale
- Site Boundary

Analyte	TCE	cDCE	tDCE	VC
GCTL (µg/L)	3	70	100	1
NADC (µg/L)	300	700	1000	100

Notes:
All monitoring wells begin with prefix, CCF-
Groundwater samples were collected at the mid-point of the screened interval.
The GCTL criteria are from the Final Technical Report: Development of Cleanup Target Levels for Chapter 62-777, Florida Administrative Code, University of Florida, February 2005.
Bolded results indicate the analyte was detected at the specified concentration.
Yellow=the analyte exceeded the GCTL
CCF=Components Cleaning Facility
cDCE=cis-1,2-dichloroethene
ft bls=feet below land surface
FL=Florida
GCTL=groundwater cleanup target level
ID=Identification
J=analyte was detected at an estimated value
KSC=Kennedy Space Center
LTM=Long Term Monitoring
µg/L = micrograms per liter
NADC=natural attenuation default concentration
tDCE = trans-1,2-dichloroethene
TCE=trichloroethene
VC=vinyl chloride
U=analyte was not detected above the reporting limit

\\srv-gst-01\hglgis\KSC_NS1002\CCF\Annual_GWMR\2023\(4-15)SA-LTM_Analytical_Results_Summary_30.mxd
1/10/2024 TB
Source: HGL, ArcGIS Online Imagery

Figure 4.16
2023 Annual LTM
Analytical Results Summary
Sample Depths at 40 to 45 ft bls



Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0086	35-45	02/03/2022	0.50 U	0.50 U	0.50 U	0.50 U
		08/31/2022	0.50 U	0.50 U	0.50 U	0.50 U
		04/28/2023	0.50 U	0.50 U	0.50 U	0.50 U

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0064	40-50	02/02/2022	**2.7**	**20.7**	**3.0**	**6.9**
		09/01/2022	**4.4**	**40.8**	**8.6**	**15.9**
		04/27/2023	**2.9**	**27.9**	**11.1**	**22.7**

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0063	40-50	02/03/2022	0.50 U	**1.2**	**2.2**	**1.3**
		08/31/2022	**0.62 J**	**2.9**	**3.3**	**3.2**
		04/27/2023	0.50 U	**3.9**	**2.6**	**1.7**

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0088	35-45	02/03/2022	**14.8**	**1.6**	0.50 U	0.50 U
		09/01/2022	500 U	500 U	500 U	500 U
		04/28/2023	**10.2**	**1.6**	0.50 U	0.50 U

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0061	35-45	01/31/2022	**3.5**	**93.6**	**130**	**26.3**
		09/02/2022	**3**	**24**	**57.2**	**20.3**
		04/25/2023	**1.9**	**17.7**	**42.2**	**18.3**

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0067	40-50	01/31/2022	**2.7**	**31.2**	**41.7**	**16.6**
		09/06/2022	**5**	**12.2**	**12.1**	**2.4**
		04/26/2023	**3.4**	**12.8**	**13**	**4.3**

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0059	35-45	02/02/2022	0.50 U	0.50 U	0.50 U	**1.5**
		08/31/2022	0.50 U	0.50 U	0.50 U	**1.7**
		04/27/2023	0.50 U	0.50 U	0.50 U	**1.7**

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0087	35-45	02/02/2022	0.50 U	0.50 U	0.50 U	0.50 U
		08/31/2022	0.50 U	0.50 U	0.50 U	0.50 U
		04/27/2023	0.50 U	0.50 U	0.50 U	0.50 U

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0046	40-50	01/31/2022	**9.9**	**5.9**	**5.8**	**0.63 J**
		09/01/2022	50 U	50 U	50 U	50 U
		04/26/2023	**12.7**	**8.3**	**9.4**	0.50 U

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0083ID	35-45	02/01/2022	0.50 U	0.50 U	0.50 U	0.50 U
		09/07/2022	**0.84 J**	**1.6**	**0.80 J**	0.50 U
		05/01/2023	0.50 U	**3.5**	**1.8**	0.50 U

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0029ID	40-45	02/01/2022	0.50 U	**5.3**	**1.4**	**5.1**
		09/06/2022	**0.73 J**	**4.6**	**1.3**	**5.7**
		05/01/2023	0.50 U	**4.1**	**1**	**4.2**

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0092	40-50	05/01/2023	0.50 U	0.50 U	0.50 U	0.50 U

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0085	35-45	01/31/2022	0.50 U	**6.7**	**2.2**	**9.9**
		09/02/2022	0.50 U	**2.8**	**0.65 J**	**5.5**
		04/25/2023	0.50 U	**1.3**	0.50 U	**2.2**

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0045	40-50	01/31/2022	**12.9**	**41.4**	**44.4**	**24.8**
		09/06/2022	**12.7**	**39**	**41.4**	**36.7**
		04/26/2023	**13**	**38.7**	**42.7**	**41.9**

Legend

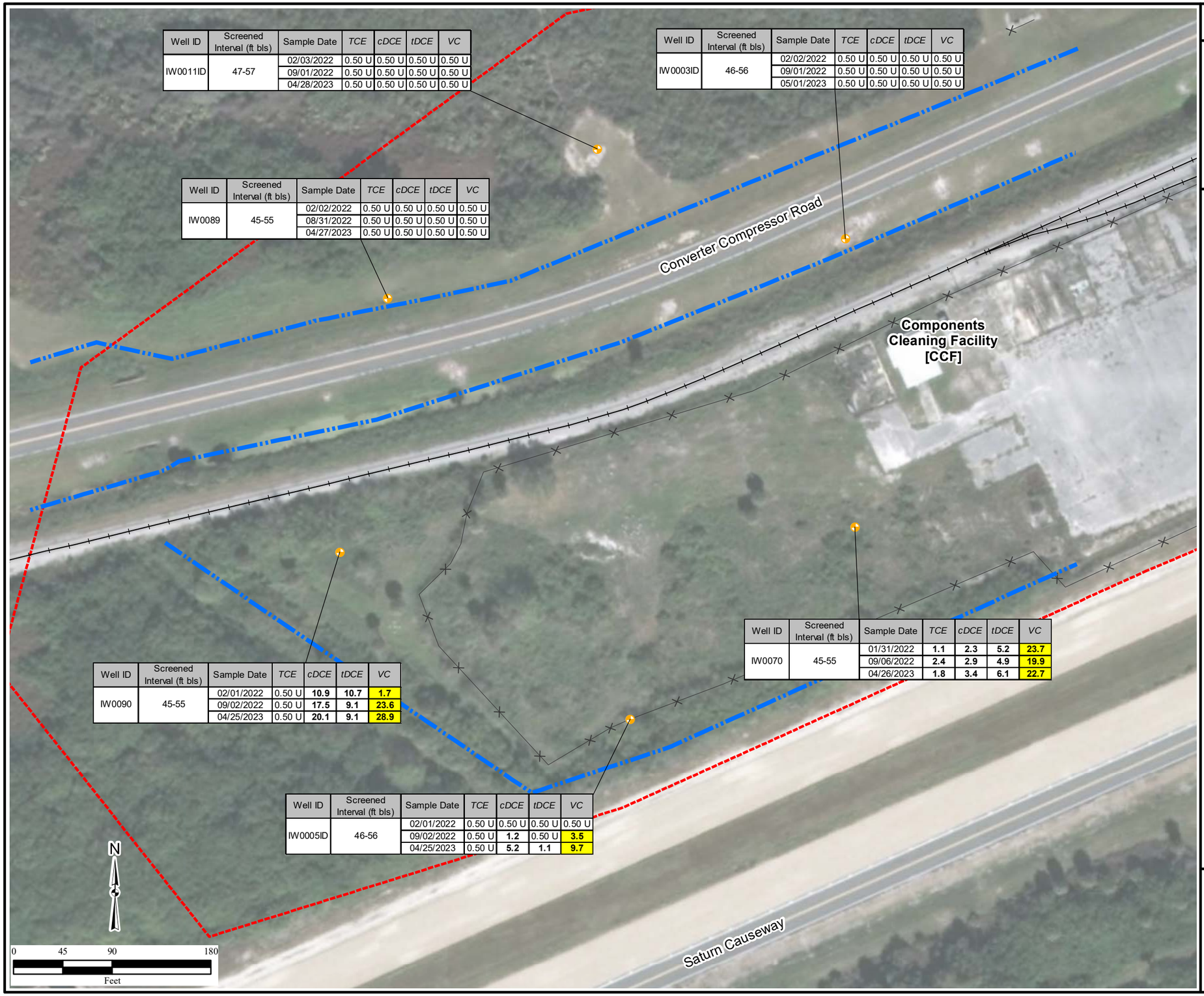
- Monitoring Well (Collected Water Level Only)
- Monitoring Well (Collected Sample and Water Level)
- New LTM Well (Collected Sample and Water Level)
- [xx-xx] Screen Interval in ft bls.
- Fence
- Railroad
- Swale
- Site Boundary

Analyte	TCE	cDCE	tDCE	VC
GCTL (µg/L)	3	70	100	1
NADC (µg/L)	300	700	1000	100

Notes:
All monitoring wells begin with prefix, CCF-
Groundwater samples were collected at the mid-point of the screened interval.
The GCTL criteria are from the Final Technical Report: Development of Cleanup Target Levels for Chapter 62-777, Florida Administrative Code, University of Florida, February 2005.
Bolded results indicate the analyte was detected at the specified concentration.
Yellow=the analyte exceeded the GCTL
CCF=Components Cleaning Facility
cDCE=cis-1,2-dichloroethene
ft bls=feet below land surface
FL=Florida
GCTL=groundwater cleanup target level
ID=Identification
J=analyte was detected at an estimated value
KSC=Kennedy Space Center
LTM=Long Term Monitoring
µg/L = micrograms per liter
NADC=natural attenuation default concentration
tDCE = trans-1,2-dichloroethene
TCE=trichloroethene
VC=vinyl chloride
U=analyte was not detected above the reporting limit

\\srv-gst-01\hglgis\KSC_NS1002\CCF\Annual_GWMR\2023\(4-16)SA-LTM_Analytical_Results_Summary_40.mxd
1/10/2024 TB
Source: HGL, ArcGIS Online Imagery

Figure 4.17
2023 Annual LTM
Analytical Results Summary
Sample Depths at 50 to 55 ft bls



Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0011ID	47-57	02/03/2022	0.50 U	0.50 U	0.50 U	0.50 U
		09/01/2022	0.50 U	0.50 U	0.50 U	0.50 U
		04/28/2023	0.50 U	0.50 U	0.50 U	0.50 U

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0003ID	46-56	02/02/2022	0.50 U	0.50 U	0.50 U	0.50 U
		09/01/2022	0.50 U	0.50 U	0.50 U	0.50 U
		05/01/2023	0.50 U	0.50 U	0.50 U	0.50 U

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0089	45-55	02/02/2022	0.50 U	0.50 U	0.50 U	0.50 U
		08/31/2022	0.50 U	0.50 U	0.50 U	0.50 U
		04/27/2023	0.50 U	0.50 U	0.50 U	0.50 U

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0090	45-55	02/01/2022	0.50 U	**10.9**	**10.7**	**1.7**
		09/02/2022	0.50 U	**17.5**	**9.1**	**23.6**
		04/25/2023	0.50 U	**20.1**	**9.1**	**28.9**

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0005ID	46-56	02/01/2022	0.50 U	0.50 U	0.50 U	0.50 U
		09/02/2022	0.50 U	**1.2**	0.50 U	**3.5**
		04/25/2023	0.50 U	**5.2**	**1.1**	**9.7**

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0070	45-55	01/31/2022	**1.1**	**2.3**	**5.2**	**23.7**
		09/06/2022	**2.4**	**2.9**	**4.9**	**19.9**
		04/26/2023	**1.8**	**3.4**	**6.1**	**22.7**

Legend

- Monitoring Well (Collected Sample and Water Level)
- [xx-xx] Screen Interval in ft bls.
- Fence
- Railroad
- Swale
- Site Boundary

Analyte	TCE	cDCE	tDCE	VC
GCTL (µg/L)	3	70	100	1
NADC (µg/L)	300	700	1000	100

Notes:
All monitoring wells begin with prefix, CCF-
Groundwater samples were collected at the mid-point of the screened interval.
The GCTL criteria are from the Final Technical Report: Development of Cleanup Target Levels for Chapter 62-777, Florida Administrative Code, University of Florida, February 2005.
Bolded results indicate the analyte was detected at the specified concentration.
Yellow=the analyte exceeded the GCTL
CCF=Components Cleaning Facility
cDCE=cis-1,2-dichloroethen
ft bls=feet below land surface
FL=Florida
GCTL=groundwater cleanup target level
ID=Identification
J=analyte was detected at an estimated value
KSC=Kennedy Space Center
LTM=Long Term Monitoring
µg/L = micrograms per liter
NADC=natural attenuation default concentration
tDCE = trans-1,2-dichloroethene
TCE=trichloroethene
VC=vinyl chloride
U=analyte was not detected above the reporting limit

\\srv-gst-01\hglgis\KSC_NS1002\CCF\Annual_GWMR\2023\(4-17)SA-LTM_Analytical_Results_Summary_50.mxd
1/10/2024 TB
Source: HGL, ArcGIS Online Imagery

Figure 4.18
2023 Annual LTM
Analytical Results Summary
Sample Depth at 60 ft bls

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0091	55-65	01/31/2022	0.50 U	0.50 U	0.50 U	0.50 U
		09/01/2022	0.50 U	0.50 U	0.50 U	0.50 U
		04/26/2023	0.50 U	0.50 U	0.50 U	0.50 U

Legend

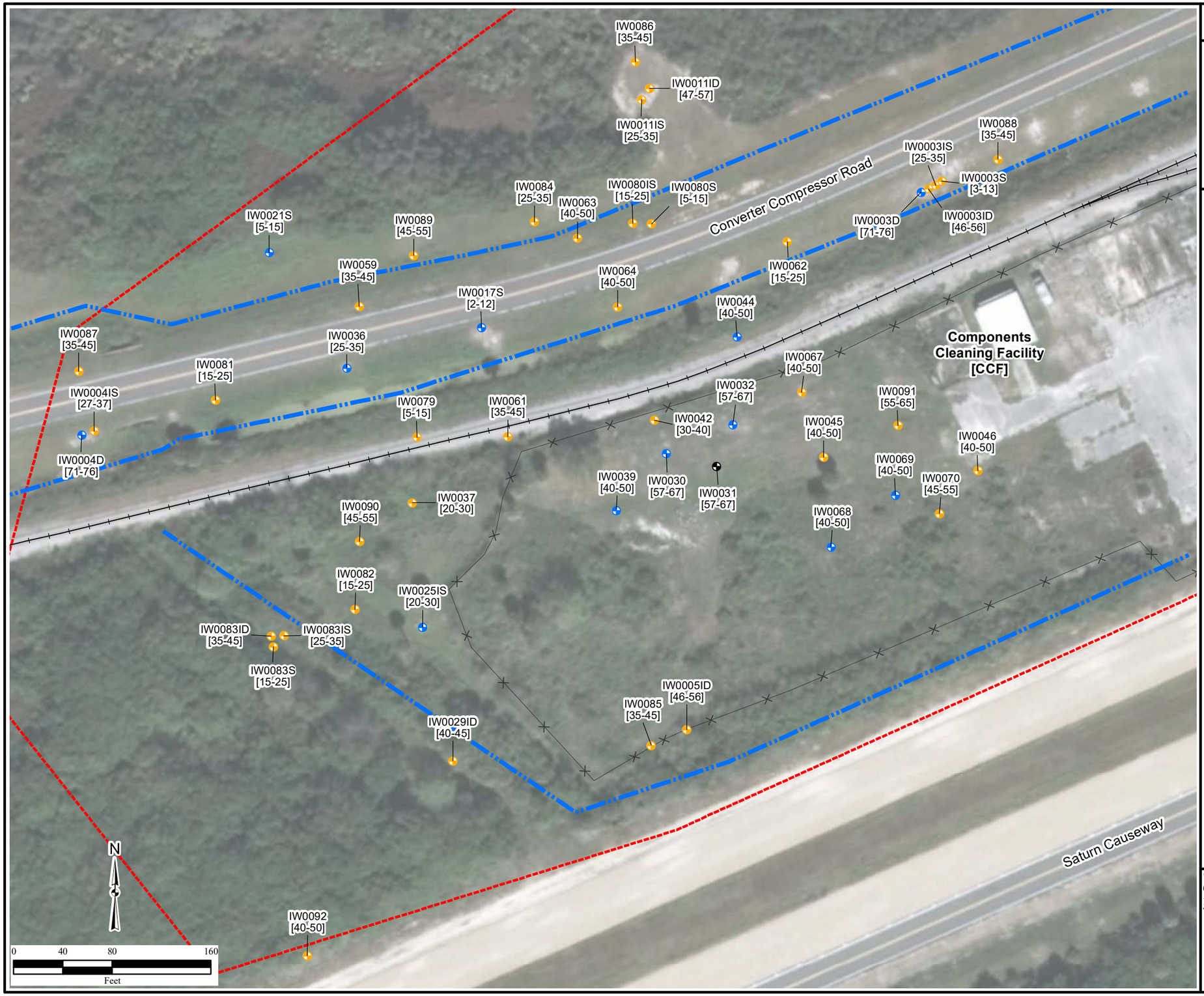
- Monitoring Well (Collected Water Level Only)
- Monitoring Well (Collected Sample and Water Level)
- Monitoring Well Abandoned
- [xx-xx] Screen Interval in ft bls.
- Fence
- Railroad
- Swale
- Site Boundary

Analyte	TCE	cDCE	tDCE	VC
GCTL (µg/L)	3	70	100	1
NADC (µg/L)	300	700	1000	100

Notes:
All monitoring wells begin with prefix, CCF-
Groundwater samples were collected at the mid-point of the screened interval.
The GCTL criteria are from the Final Technical Report: Development of Cleanup Target Levels for Chapter 62-777, Florida Administrative Code, University of Florida, February 2005.
CCF=Components Cleaning Facility
cDCE=cis-1,2-dichloroethene
ft bls=feet below land surface
FL=Florida
GCTL=groundwater cleanup target level
ID=Identification
J=analyte was detected at an estimated value
KSC=Kennedy Space Center
LTM=Long Term Monitoring
µg/L = micrograms per liter
NADC=natural attenuation default concentration
tDCE = trans-1,2-dichloroethene
TCE=trichloroethene
VC=vinyl chloride
U=analyte was not detected above the reporting limit

\\srv-gst-01\hglgis\KSC_NS1002\CCF\Annual_GWMR\2023\(4-18)SA-LTM_Analytical_Results_Summary_60.mxd
1/10/2024 TB
Source: HGL,
ArcGIS Online Imagery

Figure 5.1
CCF West
Proposed 2024
LTM Well Network



Legend

- Monitoring Well (Water Level Only)
- Monitoring Well (Collect Sample and Water Level)
- Proposed Monitoring Well for Abandonment
- [xx-xx] Screen Interval in ft bls. Sample to be collected at the mid-point of the screen
- Swale
- Fence
- Railroad
- Site Boundary

Notes:
All monitoring wells begin with prefix, CCF-
CCF=Components Cleaning Facility
ft bls=feet below land surface
FL=Florida
LTM=Long Term Monitoring
KSC=Kennedy Space Center

\\srv-gst-01\hglgis\KSC_NS1002\CCF\Annual_GWMR\2023\(5-01)Prop_2024LTMWNW.mxd
1/10/2024 TB
Source: HGL, ArcGIS Online Imagery

This page was intentionally left blank.

APPENDIX A

KSCRT MEETING MINUTES

This page was intentionally left blank.

Meeting Minutes Summary Report

Meeting Start Date:	Meeting ID:	Minute ID:	Presenter:	PRL / SWMU:
12/09/2009	141	2	Johansen, Deda	COMPONENT CLEANING FACILITY (SWMU 030)

Topic:

Components Cleaning Facility (CCF) (SWMU 030)

Discussion:

Presentation was given by Deda and Mark Jonnet (TT). The presentation provided a remediation history of the site. Groundwater extraction and treatment through August 2009 has resulted in 71.6 million gallons of water treated, approximately 225 lbs of VOCs removed (excluding Freon 113), and 3.14 lbs of contaminants removed per 1 million gallons of water. Influent sampling is conducted monthly with average concentration above NADC for TCE and above GCTLs for VC. Effluent sampling is conducted monthly and all parameters met GCTLs. Stack emission and ambient air sampling are conducted monthly and no excursions above the PELs. Quarterly recovery well sampling results indicate that the average concentrations of all contaminants are below NADC. Summary of results for air sparging through August 2009: operated 28,293 hours, 12.1 million gallons of water treated, and approximately 232 lbs of VOCs removed (excluding Freon 113). The treatment cost per pound is approximately $7,405. There is contamination outside the footprint of the system. Where the system is it has been effective based on the footprint of the plumes at the various intervals contoured. Air sparge zone 2 and 3 and much of zones 1 and 4 have treated contamination to below the system goals of ½ NADC. Some contamination exceeding the ½ NADC is within the influence of the system in zones 1 and 4. Recovery wells have reduced contaminant migration to the north. Recovery wells 3 and 5 positioned near contaminants above ½ NADC, but capture does not appear very efficient. Additional contamination exists beyond the system's influence horizontally and vertically as well as other areas outside the current system boundaries. For the non-Freon source area the CMS remediation plan assumed that the source contamination was shallow and would be removed by IMs. The deep contamination in this area was discovered in 2007 and invalidates the original site model. Sparge zones 2 and 3 have met system performance targets and zones 1 and 4 treat 20% of the area with contaminants above ½ NADC. Currently 20% of the system is treating above ½ NADC. To run 20% of the system would cost as much as running 100% system. The regenerative blowers will fail first if the system is left on. The compressor is running well. The system will be available to be reactivated if monitoring results and/or the team decides it is necessary. There are still significant source areas on the site. 1,4-Dioxane sampling will be conducted in new wells as they are installed. May 2010 semi-annual sampling event results will be reviewed by the team. The monitoring well network will be modified based on the results of the DPT investigation. Team consensus reached to turn remediation system off, conduct sampling, and re-evaluate in 6 months the status of the system. Team consensus reached to continue DPT delineation and bring back proposed monitoring well plan to team. Future plans will be to perform an engineering review and develop an area groundwater model which includes surrounding sites.

Goal:

Obtain team consensus on path forward.

Decision:2	Team consensus reached to turn remediation system off, conduct sampling, and re-evaluate in 6 months the status of the system.
Decision:3	Team consensus reached to continue DPT delineation and bring back proposed monitoring well plan to team.

Meeting Minutes Report

Attendees:

(LFR) Joe Applegate, (Geosyntec) Jim Langenbach, (FDEP) John Armstrong, (Geosyntec) Rebecca C. Daprato, (NASA) Mike Deliz, (Geosyntec) Melissa Hensley, (Geosyntec) Jill Johnson, (NASA) Bob Kline, (NASA) Rosaly Santos-Ebaugh, (Tetra Tech) Mark Speranza, (Tetra Tech) Rob Simcik, (NASA) Harry Plaza, (NASA) Dinh Vo, (Tetra Tech) Mark Jonnet, (IHA) Sue Tzareff, (IHA) Michele Cielukowski, (NASA) Anne Chrest, (Tetra Tech) Deborah Wilson, (Tetra Tech) Chris Hook, (Geosyntec) Rachel Donahue

October 2011 Team Meeting

Meeting Date From: 10/5/2011 To: 10/6/2011

Meeting ID: 1110

Location Description: Kennedy Space Center-FL

Meeting Type: Full Partnering Team Meeting

Meeting Topic:	**Action items, deliverable, and meeting minutes**		
Minute: 1110-M1	**Site:**	**Goal:**	**Discussion:**
Presenter: TEAM, TEAM	KSC PROGRAM DOCUMENTS		Team consensus reached that revision 2 meeting minutes for the August 2011 team meeting are final. Closed action item 0608-04 and 1007-A01 as these were addressed in the SAP submitted in June 2011. 1103-A03 was closed as the Engineering Evaluation process was discussed in the August 2011 and this team meeting.
Decision:1	Team consensus reached that revision 2 meeting minutes for the August 2011 team meeting are final.		

Meeting Minutes Report

October 2011 Team Meeting

Meeting Date From: 10/5/2011 To: 10/6/2011

Meeting ID: 1110

Location Description: Kennedy Space Center-FL

Meeting Type: Full Partnering Team Meeting

Meeting Topic:	**DNAPL Round Table**		
Minute: 1110-M2	**Site:**	**Goal:**	**Discussion:**
Presenter: Deliz, Mike	KSC PROGRAM DOCUMENTS		Team discussed how we define source zones. Where do you develop a COA before or after? Now with Step 2 and 3s we are changing potential areas and therefore are changing corrective action objectives (CAO). CAOs should really be done for each area as you go along in the process. DNAPL 1% solubility, what does that mean? The 1% solubility means that there is potential for DNAPL to be within an interval, but it does not mean that the DNAPL is in the entire area. Do we have pooled DNAPL? The 1% solubility value is a very conservative number. There are those in the technical community that feels the values are somewhere in the range of 1 to 10%. Sorbed mass calculations should include results from saturated zone sampling. Are we painting ourselves in the corner by having the phrase DNAPL source zone? Think about developing CAOs later in the process than sooner. Do not call these areas of concern DNAPL source zone; instead just call a source zone. 1% solubility are not really drivers, VC to 1 is the main driver with long timeframe to get there. Try to get an idea of where most of the mass is and determine if we can even quantify mass. Need to get a common view whether it is 10X NADC or etc. If you define 10X NADC, the TCE will not be driving an action. From the regulatory standpoint there is a lot of talk within FDEP regarding source removal. FDEP feels we are going in the right direction in regards to evaluating source areas. Each site is a little different and need to consider what type of lithology is at the site. Team agreed that the need is to use various areas of evidence to determine source zones.

Meeting Minutes Report

October 2011 Team Meeting

Meeting Date From: 10/5/2011 To: 10/6/2011

Meeting ID: 1110

Location Description: Kennedy Space Center-FL

Meeting Type: Full Partnering Team Meeting

Meeting Topic:	**CCF (SWMU 30)/516S (SWMU 100) High Concentration Plume Step 1A**		
Minute: 1110-M3	**Site:**	**Goal:**	**Discussion:**
Presenter: Jonnet, Mark	COMPONENT CLEANING FACILITY (SWMU 030)	Obtain team consensus on the Step 1 EE HCP delineation, Step 1 EE CCF Hot Spots 1 and 2, and Hot Spot 516S delineation, and Step 1 EE Source Zone Delineation within CCF Hot Spot 2.	Added a slide to the presentation for Oct/Nov 2007 soil results in the CCF Hot Spot 2 area. As a program everyone should be grouting DPTs in areas of high concentration. Team consensus reached that the high concentration plumes are delineated in the CCF areas as presented in the October 2011 ADP. Team consensus reached that the high concentration plumes are delineated in the 516S areas as presented in the October 2011 ADP. Team consensus reached that all hot spots presented in the October 2011 ADP are delineated: CCF Hot Spot 1, CCF Hot Spot 2, CCF Fenceline, 516S Hot Spot, and isolated 10xNADC detections delineated at CCF-DPT0099 and CCF-DPT0202.
Decision:2	Team consensus reached that the high concentration plumes are delineated in the CCF areas as presented in the October 2011 ADP.		
Decision:3	Team consensus reached that the high concentration plumes are delineated in the 516S areas as presented in the October 2011 ADP.		
Decision:4	Team consensus reached that all hot spots presented in the October 2011 ADP are delineated: CCF Hot Spot 1, CCF Hot Spot 2, CCF Fenceline, and isolated 10xNADC detections delineated at CCF-DPT0099 and CCF-DPT0202.		
Decision:5	Team consensus reached that all hot spots presented in the October 2011 ADP are delineated.		

Meeting Topic:	**CCF (SWMU 30)/516S (SWMU 100) High Concentration Plume Step 1B**

Minute: 1110-M4	Site:	Goal:	Discussion:
Presenter: Hook, Chris	COMPONENT CLEANING FACILITY (SWMU 030)	Obtain team consensus on proposed technologies for Step 2 EE.	This presentation was created to be a technology screening tool and discussion vehicle for remedial technology in support of transition to Step 2 EE(s). NASA will utilize the format of this presentation as a Step 1B template for future Step 1 B EEs. The CAO is now part of the Step 2 process and will not be included in the Step 1. Do we want to retain a thermal technology within HS2 source zone at this stage? There was a general consensus to retain ERH due to the presence of a source zone within a low permeability unit. Source zone area at this site is approximately 5,700 ft2. For the HCP, concern was expressed with the elimination of MNA as a technology to move forward into the Step 2 process at this time. The current goal for this site is to reduce concentrations. Active interim measures are preferred by NASA in HCP rather than MNA. MNA will be reevaluated as remedial progress occurs within the various plume intervals. NASA implements remedies in interim measures and the intent of the Step 1 B EE was to retain a list of technologies within each plume interval to support Step 2 EE alternative development and screening. This is an iterative process; NASA can revisit these tables once each IM achieves a remediation goal and/or decision point. Team can come back to Step 1B for these areas to refine the list of technologies based on the current conditions of the site. This is the packaging NASA wants to see from everyone and expects a broad range of technologies to be considered, inclusive of non-aggressive to aggressive technologies. Team consensus reached for the LCP to maintain land use controls and continue interim monitoring program. Team consensus reached for the HCP to retain air sparging (SVE optional), anaerobic enhanced bioremediation (bioaugmentation optional), and aerobic enhanced bioremediation (bioaugmentation optional) for HCP Step 2 EE. Team consensus reached for HS to retain ISCO, EZVI, Air sparging (SVE optional), anaerobic enhanced bioremediation (bioaugmentation optional), and aerobic enhanced bioremediation (bioaugmentation optional) for HS Step 2 EE. Team consensus reached for the source zone to retain ERH (SVE optional), ISCO, EZVI, air sparging (SVE optional), and anaerobic enhanced bioremediation (bioaugmentation optional) for SZ Step 2 EE. Team consensus reached on the CCF West (Hot Spot 1 and DPT0099) refinement of retained technologies for Step 2 EE, including ISCO, EZVI, air sparging (SVE optional), and anaerobic enhanced bioremediation (bioaugmentation optional), and to proceed to a Step 2 EE for the CCF West (Hot Spot 1 and DPT0099) Hot Spot area.
Decision:6	Team consensus reached for the LCP to maintain land use controls and continue interim monitoring program.		

Meeting Minutes Report

October 2011 Team Meeting

Meeting Date From: 10/5/2011 To: 10/6/2011

Meeting ID: 1110

Location Description: Kennedy Space Center-FL

Meeting Type: Full Partnering Team Meeting

Decision:7	Team consensus reached for the LCP to maintain land use controls and continue interim monitoring program.
Decision:8	Team consensus reached for the HCP to retain air sparging (SVE optional), anaerobic enhanced bioremediation (bioaugmentation optional), and aerobic enhanced bioremediation (bioaugmentation optional)for HCP Step 2 EE.
Decision:9	Team consensus reached for the HCP to retain air sparging (SVE optional), anaerobic enhanced bioremediation (bioaugmentation optional), and aerobic enhanced bioremediation (bioaugmentation optional) for HCP Step 2 EE.
Decision:10	Team consensus reached for HS to retain ISCO, EZVI, Air sparging (SVE optional), anaerobic enhanced bioremediation (bioaugmentation optional), and aerobic enhanced bioremediation (bioaugmentation optional) for HS Step 2 EE.
Decision:11	Team consensus reached for HS to retain ISCO, EZVI, Air sparging (SVE optional), anaerobic enhanced bioremediation (bioaugmentation optional), and aerobic enhanced bioremediation (bioaugmentation optional) for HS Step 2 EE.
Decision:12	Team consensus reached for the source zone to retain ERH (SVE optional), ISCO, EZVI, air sparging (SVE optional), and anaerobic enhanced bioremediation (bioaugmentation optional) for SZ Step 2 EE.
Decision:13	Team consensus reached on the CCF West (Hot Spot 1 and DPT0099) refinement of retained technologies for Step 2 EE, including ISCO, EZVI, air sparging (SVE optional), and anaerobic enhanced bioremediation (bioaugmentation optional), and to proceed to a Step 2 EE for the CCF West (Hot Spot 1 and DPT0099) Hot Spot area.

Revision 1 Meeting Minutes for November 30, 2023

Attendees:

1. TJ Touran/FDEP
2. Bob Kline/NASA
3. Ryan O'Meara/NASA
4. Deda Johansen/NASA
5. Anne Chrest/NASA
6. Chris Adkison/NASA
7. Michelle Moore/NEMCON
8. Mark Jonnet/Tetra Tech
9. Mark Speranza/Tetra Tech
10. Laura Barrett/Tetra Tech
11. Theresa Thompson/Tetra Tech
12. Jennifer Gootee/AECOM
13. Linnea King Clark/AECOM
14. Matt Zenker/AECOM
15. Richard Smith/HGL
16. Jason Bublitz/HGL
17. Robert Lynch/HGL
18. James Montague/HGL
19. Robert Lynch/HGL
20. Michael Morris/HGL
21. Jennifer Byrd/HGL
22. Megan Matteazzi/HGL

2311-M01 Michelle Moore/NEMCON

Meeting Minutes and Miscellaneous Items

Objective:

Test Team consensus on the meeting minutes from the October 2023 Kennedy Space Center (KSC) Remediation Team (KSCRT) meeting and reviewed open action items for possible closure.

Discussion:

Team consensus was reached that Revision 1 of the meeting minutes and action/decision items for the October 2023 KSCRT meeting will become final. Team members acknowledged and did not object to the fact that these meeting minutes may become public as part of a final report at a later date **(2311-D01).**

The following open action items were reviewed and closed out:

Industrial Area Long-Term Monitoring (LTM), February 2021 (Orsino Storage Yard [ORSY] SWMU #096 Site): The Florida Department of Environmental Protection **(**FDEP) inquired about past results for monitoring well ORSY-DRM-MW0001I. The National Aeronautics and Space Administration (NASA) stated they will

investigate the historical sampling results and get back with the Team.

NASA compiled the historical data, and the findings were presented in the April 2023 KSCRT meeting to close this action item out **(2102-A07).**

Industrial Area LTM, February 2021 (Environmental Health Facility [EHF] SWMU #079 Site): FDEP and NASA discussed the EHF site. NASA stated that the monitored natural attenuation (MNA) program is routinely optimized, but this site was never included in an engineering evaluation process. Mounding takes place at this location, and a building was removed in the past few years. NASA took an action item to review the sampling data in the RFI for this location.

NASA compiled the historical data, and the findings were presented in the April 2023 KSCRT meeting to close this action item out **(2102-A08).**

Industrial Area LTM Building M7-505 site (SWMU #031), February 2021: NASA took an action item to investigate if there are deeper data points around the location of MW0033 at this site.

NASA compiled the historical data, and the findings were presented in the April 2023 KSCRT meeting to close this action item out **(2102-A10).**

Industrial Area LTM, February 2021 (GSA Seized Property [GSSP] Site): FDEP inquired if this site was delineated to the northwest of the lake, and if we have vertical delineation at this location. NASA stated a site characterization was performed in 2012. In 2009, Direct Push Technology (DPT)55 was placed on the west side of the pond (west of MW0035) and DPT56 was located on the east side of the pond (20ft northwest of the location of monitoring wells MW0033, MW0034, and MW0035). On the west side there were no detections of contaminants of concern, and on the east side there were low detections. Surface water was also sampled here. NASA took an action item to provide this data to FDEP for reference following the meeting.

NASA compiled the historical data, and the findings were presented in the April 2023 KSCRT meeting to close this action item out **(2102-A11).**

Industrial Area LTM, February 2021 (KARS Park 1 Site): FDEP inquired if this was a skeet range previously? NASA stated there was a rifle/pistol range with a skeet range to the west (reference slide 154). FDEP inquired on the groundwater in the rifle/pistol range area? NASA stated that the groundwater was not monitored in that area. Tetra Tech pulled up the old wells in a previous presentation figure during the meeting. The only well shown in the area of discussion was in the lead shot area (KP1-MW0007). FDEP stated they would like to know what happened west of LOC 9 if NASA can provide that data. NASA took an action item to investigate this.

NASA compiled the historical data, and the findings were presented in the April 2023 KSCRT meeting to close this action item out **(2102-A12).**

Industrial Area (IA) LTM Update, March 2022: FDEP requested a brief letter report with the findings to support discontinuing the MNA at this Orsino Storage Yard (OSRY) (SWMU 004) site for groundwater. NASA confirmed they would provide this.

The letter was submitted to FDEP by NASA to close this action item out **(2203-A05).**

2311-M02 Jason French & TJ Touran/FDEP

FDEP Program Update:

FDEP representative TJ has conducted a comprehensive review of all the outstanding documents to make sure he has a good handle on what FDEP has in-house for review.

The Center-wide 2022 Per- and polyfluoroalkyl substances (PFAS) document and Center-wide PFAS Confirmatory Sampling Report (CSR) were sent out for contractor review.

FDEP lost another person to the Department of Defense (DoD). TJ has more sites as a result of this. In addition, KSC, Cape Canaveral

Space Force Station (CCSFS), and Patrick Air Force Base (PAFB) are all very active remediation programs.

TJ is working on priority documents identified by NASA. The No Further Action (NFA) request for the West Crawler Park Site (WCPS) submitted in January 2022 is under review to resolve and ensure the correct language is being used. Please let TJ know what other documents reviews would serve the immediate needs of the team. If NASA can prioritize the list of documents, this will ensure that FDEP focuses first on the right documents.

NASA offered that when we can obtain consensus in the team meeting, NASA uses those decisions as our marching orders for project development. If FDEP has later comments, NASA addresses those comments upon receipt.

FDEP is responding to dewatering requests as quickly as possible.

NASA clarified for the Team that when on site projects have dewatering plans for site operations, NASA requests the contractors keep discharge locations within the plume area and prevent from discharge into the adjacent surface waters. For team members edification, NASA is working with FDEP to obtain concurrence for routine dewatering manholes that we just maintain our current approach but only submit for ones that are large construction projects. This might help with the submittal load.

2311-M03 Anne Chrest/ NASA

NASA KSC Remediation Program Update

Objective: Provide a program update.

Discussion:

From NASA KSC Remediation Program there is not much to share. NASA went over staffing changes and the introduction of Bob Kline as the Branch Chief for the KSC Environmental Assurance Branch (EAB). Bob will be with us as the NASA EAB Branch Chief for the next year.

2311-M04 Matt Zenker/AECOM

PlumeStop™ Pilot Study Work Plan Base Support Building (SWMU 014)

Objective: Present conceptual model, review the proposed injection event and placement validation, and test consensus on proceeding with a PlumeStop™ Pilot Study.

Discussion:

The PlumeStop™ pilot work plan was presented to the Team as outlined in the Advanced Data Package (ADP). The objective is to evaluate the performance of colloidal activated carbon in limiting migration of groundwater affected by per- and polyfluorinated alkyl substances (PFAS) at KSC. The briefing covered design criteria, verification testing, injection event and placement validation, and performance monitoring.

The pilot study will take place around the Base Support Building (SWMU 014), where approximately 20 gallons of aqueous film-forming foam (AFFF) was released during maintenance repairs on a fire engine on November 2, 2006. Other non-reported AFFF releases likely occurred at this location during routine fire engine maintenance activities.

A permeable reactive barrier will be constructed by injection of Regenesis' proprietary colloidal activated carbon, PlumeStop™. PlumeStop™ sequesters PFAS and, thus, prevents or limits migration beyond its limits. The barrier will be 30 ft. long and extend from 3 to 13 ft. below ground surface, perpendicular to groundwater flow direction. Passive flux meters will be deployed pre- and post-injection, and performance monitoring samples will be collected. The pilot study will run for up to two years.

An HGL team member inquired to AECOM if HGL members had provided the additional data they had for this area? AECOM stated they had not seen it yet. HGL will see that the more recent data is relayed to AECOM.

FDEP asked if we have data on the current mass flux? AECOM responded that we could infer it with gradients and hydraulic conductivity. We can perform an indirect method to determine mass

flux and use the same two wells for the data points. Passive flux meters will be deployed during the pilot study.

FDEP inquired what is the life cycle of this material? AECOM responded that decades is what the vendor claims, but there is no way to empirically prove this because it was just developed a few years ago. The effective life is dependent upon the background total organic carbon, how much PFAS there is and what types. In general, the longer PFAS will stick better than the 4-carbon chains. As it matures and standards change, we may want to reevaluate this remedy. Carbon can absorb a lot, but the actual proprietary film (suspendable colloid) will eventually break down and the carbon will fall out as a particulate. It is currently unknown if the PFAS will be released when this happens.

FDEP inquired if there was technical literature from EPA on this material? AECOM said all that is currently available is from Regenesis. NASA recognizes the concern about the effective life of this product and added that is why we are deploying this pilot in a place and at a depth we can easily dig it up.

2311-M05 Jason Bublitz/HGL

Communications, Maintenance and Storage (CM&S) (SWMU 082) Site Characterization

Objective: The objective of the Advance Data Package (ADP) is to summarize the site description, history, and previous investigation, discuss data gaps, present site characterization which includes site-wide delineation, present screening of remedial technologies and obtain team consensus.

Discussion:

SITE CHARACTERIZATION

RCRA Facility Investigation (RFI) activities were conducted from 2004 through 2007 and identified tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (cDCE), trans-1,2-dichloroethene (tDCE), 1,1-dichloroethene (1-1-DCE), and vinyl chloride (VC) as constituents of concern (COC) greater than groundwater cleanup target levels (GCTLs) at the site. A Site Characterization Engineering Evaluation (EE) was performed in

2011 and delineated PCE, TCE, cDCE, and VC. Based upon the EE, consensus was reached to implement Long Term Monitoring (LTM) on an annual basis until an interim measure was warranted. The LTM remedy was selected since multiple sites with dense non-aqueous phase liquid were also undergoing remedy evaluation and CM&S was ranked with a lower priority due to no parent products (PCE or TCE) identified at significant concentrations.

Referring to Slide 13, NASA added for FDEP's reference that if they suspect a source zone at a site, direct push groundwater samples will be collected every 10ft horizontally. Spacing for hot spot sampling is 25ft on-center.

In 2019 through 2020, direct-push technology (DPT) was utilized to obtain groundwater data to identify greater than Natural Attenuation Default Concentration (NADC) plume(s) at CM&S. These results, when compared to earlier data, identified a significant westward migration of the high concentration plume (HCP) defined as concentrations greater than NADC as well as "Hot Spot" plume defined as greater than 10-times NADC.

FDEP inquired as to when this plume data was generated. HGL and NASA responded that most exceedances were generated in 2019.

Site recharacterization activities were conducted at the CM&S from 2019 through 2023. DPT sampling was conducted from 2019 through 2023 and sampling locations focused on previously defined low concentration plume (greater than GCTLs), HCP, and Hot Spot plume boundaries.

From 2019-2023, site characterization activities identified PCE, TCE, cDCE, tDCE, 1,1-DCE, and VC all greater than their respective GCTLs. TCE, cDCE, and VC reported concentrations greater than their respective NADC and 10X NADC.

Regarding Slide 31, FDEP inquired what is the reason for recommending sampling on the north? HGL responded that there are no clean boundary points for this location in the intervals with cDCE exceedances.

FDEP asked if the plume was degrading or is the parent compound breaking down? HGL confirmed the parent compound is breaking down based upon changing ratios of TCE to cDCE and VC.

Data gaps remaining for this site recharacterization included additional DPT sampling to complete delineation of TCE and cDCE in the 6 to 20 feet (ft) below ground surface (bgs) intervals and tDCE in the 6 to 10 ft bgs interval. Deeper samples were also recommended from two locations (DPT0258 and DPT0382) to complete vertical delineation.

Summary of site COCs:

- PCE – Concentrations exceeding the GCTL were reported from 6 to 20 ft bgs. Only GCTL exceedances identified. Horizontal and vertical delineation achieved.
- TCE – Concentrations exceeding GCTL, NADC, and 10X NADC identified from 6 to 50 ft bgs. Horizontal and vertical delineation of GCTL achieved with the exception of the 6 to 20 and beyond 50 ft bgs intervals in the vicinity of DPT0382.
- cDCE – Concentrations exceeding GCTL, NADC, and 10X NADC identified from 6 to 45 ft bgs. Vertical delineation achieved. Additional sampling is recommended from 6 to 20 ft bgs in the vicinity of DPT0382 to achieve horizontal delineation.
- tDCE – Concentrations exceeding the GCTL identified from 6 to 15 ft bgs. Only GCTL exceedances identified. Horizontal and vertical delineation achieved with the exception of the 6 to 10 ft bgs interval north of DPT0284.
- 1,1-DCE – Concentrations exceeding the GCTL were reported from 21 to 50 ft bgs. Only GCTL exceedances identified. Horizontal and vertical delineation achieved.
- VC concentrations exceeding GCTL, NADC, and 10X NADC have been identified from 6 to 62 ft bgs. Horizontal delineation has been achieved with some boundary points greater than the GCTL, but low concentrations were adequate for delineation purposes. Additional sampling is recommended at DPT0258 to achieve vertical delineation.

Several remedial technologies were screened in the presentation. Institutional controls, monitoring, containment, removal, Ex Situ Treatment, In Situ Treatments, and disposal were retained and recommended for remedial alternatives evaluation.

The retained remedial alternatives are listed below:

1. Enhanced Reductive Dechlorination (ERD): Series of treatment curtains, inject carbon substrate only for hot spots and HCP.
2. ERD: Series of treatment curtains, inject a combination of carbon substrate and zero valent ion (ZVI) for hot spots and HCP.

3. ERD: Hot Spot Technology – Combination of carbon substrate and ZVI. HCP Technology – Carbon substrate only.
4. ERD/Air Sparge (AS): Hot Spot Technology – ERD using a combination of carbon substrate and ZVI. HCP Technology – AS treatment curtain spanning HCP at leading edge of the plume.
5. AS: Series of treatment curtains spanning the hot spots and HCP, may include soil vapor extraction (SVE) as warranted.
6. ERD with Hydraulic Control: Series of treatment curtains, inject a combination of carbon substrate and ZVI. Series of extraction wells along the upgradient (east) side of the building to provide hydraulic control. Extracted groundwater will be treated with an air stripper and discharged to the drainage ditch located on the south side of the site. This would treat hot spots and HCP.

FDEP noted the sampling that is proposed for vertical delineation and inquired if there is potential that drag down is the cause of the current results. HGL responded with yes. FDEP inquired if we have a MW in the area of DPT382? There is a well there, but NASA doesn't think it reflected the exceedance because it is a shallow well.

NASA asked if we went with the hydraulic control option, would we be releasing to ditches instead of back into the ground? HGL confirmed that is how the option was being presented. NASA stated releasing water into the stormwater system is not typically standard practice at KSC. Also, injecting back into the ground can help with hydraulic capture, creating a gradient from the other side of the building. Other aspects of a potential hydraulic containment system were discussed, such as increasing dissolved oxygen in the groundwater through reinjection of treated water. If per- and polyfluorinated substances are present, would granular activated carbon be used for treatment rather than AS? We will need to look this during the remedial alternatives evaluation.

The Team discussed whether evaluating 6 alternatives are too many for this site, since there are typically 3 or 4 alternatives. The Team noted that the 6 alternatives are different combinations of 3 technologies (ERD, AS and hydraulic control), so the building blocks for estimates will be similar. Taking particular note of possibly applying EZVI outside of a hot spot, the Team asked that alternatives that are ranked low in technical screening not be carried forward into full estimates.

NASA noted that this seems like a lot of alternatives evaluated for The Team also noted that when creating a remedial alternatives evaluation, it is important to submit a KSC Environmental Checklist so you understand all the potential environmental constraints for the likely alternatives. During the design phase, Site Plan review is a good idea, as well.

FDEP inquired if there was originally no plume under the CM&S building.? HGL explained that it was a low concentration plume (LCP) in the past. In recent years, we have seen expansion of the HCP to the southwest corner of the building.

The Team reached consensus that horizontal and vertical delineation are complete for the LCP, HCP, and HS site COC plumes with the exception of:

- TCE and cDCE in the 6 to 20 ft bgs intervals
- tDCE in the 6 to 10 ft bgs interval.
- Deeper samples at DPT0382 (51 to 55 & 56 to 60 ft bgs) for TCE and DPT0258 (51 to 55, 56 to 60, and 61 to 65 ft bgs) for VC to complete vertical delineation **(2311-D02).**

The Team reached consensus to conduct additional DPT sampling as follows:

- 6 to 20 ft bgs intervals to complete delineation of TCE and cDCE,
- 6 to 10 ft bgs interval for tDCE,
- 51 to 60 ft bgs at DPT0382 for TCE
- 51 to 65 ft bgs at DPT0258 for VC
  - a monitoring well may be installed instead of DPT sampling **(2311-D03).**

The Team reached consensus to proceed with Remedial Alternatives Evaluation based on the technologies discussed **(2311-D04).**

HGL and the RPM will evaluate the monitoring well network based on the plume recharacterization, including the upcoming DPT results. If any additional wells are needed, they will present recommendations to the Team as a basket item. The wells would be sampled, and results presented as part of the remedial alternatives evaluation **(2311-A01).**

Before implementing an interim measure, we want to characterize PFAS more in this area.

The Team will submit as a progress report and to describe the process of recharacterizing groundwater at CM&S and preparing a remedial alternatives evaluation. For the time being, LTM will continue since the interim measure is not funded at this time.

Results: Decision Items 2311-D02 through 2311-D04
Action Item 2311-A01

2311-M06 Jason Bublitz/HGL

Fluid Servicing Road Area Groundwater Monitoring (SWMUs 37 and 102)

Objective: This briefing is for the Fluid Servicing Road Area (FSRA) Interim Groundwater Monitoring (IGWM) at the Former Drum Storage Area (FDSA), Solid Waste Management Unit (SWMU) 37, and the Propellants Support Building Area (PSBA, SWMU 102. The objective of the ADP is to summarize the site description and history, discuss sampling results, present recommendations, and obtain consensus for both the PSBA and the FDSA.

Discussion:

IGWM at PSBA
The site-wide IGWM activities at PSBA were completed in December 2022 and results were presented along with a summary of the site assessment history and background. The sampling and analysis plan specified the sampling of 8 annual monitoring wells for the contaminants of concern (COC): trichloroethene (TCE), cis-1,2-dichloroethene (cDCE), trans-1,2-dichloroethene (tDCE), and vinyl chloride (VC). Groundwater level measurements were collected from 36 wells. During the final phase of the 5-year plume assessment, direct-push technology (DPT) samples were also collected at 30 locations.

Groundwater flow at the site is away from the topographically higher areas. In the 30-40 feet (ft.) below ground surface (bgs) interval, this is to the east or the west. In the 40-50 ft. bgs interval, this is to the east, west or south.

VC is the only COC detected above its groundwater cleanup target level (GCTL) in monitoring well samples. TCE, cDCE and VC were detected above GCTLs in DPT groundwater samples, with some cDCE and VC results also above their respective natural attenuation default concentrations (NADC). There are two unconnected plumes; one on the north of the site and an east-to-west plume south of that. The data evaluation indicates that concentrations of VC are generally stable in both the north and east/west plumes for the 30 to 40 and 40 to 50 ft bgs intervals. The high and low concentration plumes have migrated to the west/southwest. The DPT investigation provided additional data showing the western migration of the plume.

FDEP inquired if there was a hypothesis explaining the increasing trend in the wells to the west-southwest? HGL hypothesizes that it is breakdown of TCE into daughter products as groundwater on that side of the divide migrates to the west.

FDEP inquired if there were plans to sample on the west end of the plume? HGL stated they have sampled as far west as possible but couldn't get the drill rig any further west because of wetlands. If we have physical barriers, FDEP understands that.

FDEP mentioned that one of the challenges faced with significant changes in trends is explaining them. Statistical rigor is needed to test hypotheses. In the remedial alternatives evaluation, please address "why is this happening?" Are we seeing the concentrations in center going lower and edges higher?

HGL provided it is currently lower on edge. FDEP asked if trend wise is it increasing on the interior and exterior? HGL clarified a decreasing trend to the west and to the east. We can do better summarizing that we have completed modeling to match that the site evolved how we thought the site was going to.

NASA showed the groundwater model from 2011 in real time to provide background on the site and modeled groundwater flow over time.

Recommendations made were as follows:

- Continue annual and biennial interim groundwater monitoring.

- The 5 Year DPT sampling effort confirmed the presence of greater than NADC (>NADC) plumes and that plumes have been migrating west/southwest. It is recommended to conduct a Remedial Alternatives Evaluation.

The Team reached consensus for the 2023-2024 PSBA Sampling Plan to include the sampling of8 annual wells and 14 biennial wells to be sampled in December 2023 for TCE, cDCE, tDCE and VC, and collection of annual water level data from 37 wells **(2311-D05).**

The next steps for this site are to conduct a Remedial Alternatives Evaluation to determine an appropriate path forward and to evaluate optimization of the monitoring program on annual basis.

IGWM at FDSA
The site wide IGWM activities at FDSA were completed from June 2022 to June 2023 and results are presented along with a summary of the site assessment history and background. The sampling and analysis plan specified semi-annual sampling of one well, annual sampling of 27 monitoring wells and groundwater level measurements from 78 wells.

Prior to the biennial sampling event, results have remained below the NADC since the air sparge system was shut down in phases from 2016 to 2018. COC concentrations are stable/decreasing in the 0 to 10 ft interval below ground surface (bgs), although two of the four monitoring wells did report increased TCE concentrations. In the 10 to 20 ft depth interval, COC concentrations ranged from decreasing to increasing. Slightly increased TCE concentrations were reported in three of the eleven monitoring wells and a significant increase in TCE and cDCE concentrations were observed at MW0059. In the 20 to 30 ft depth interval, COC trends were generally increasing. There were slight TCE increases in two of the eight monitoring wells. In the 40 to 50 ft interval, COCs were generally increasing in the five annual monitoring wells. All COC concentrations were below groundwater cleanup target levels (GCTLs) with the exception of cDCE at one well. TCE concentrations in this well decreased while cDCE concentrations have increased, suggesting that reductive dichlorination is occurring.

At MW0059, TCE concentrations rose from 3.1 micrograms per liter (µg/L) in December 2021 to 555 µg/L in December 2022. To

confirm the result, the well was re-sampled in January 2023 and the TCE result was 737 µg/L. Based upon the significant increase in TCE and cDCE concentrations, following the next round of sampling (December 2023), one soil core will be collected to a depth of 30 ft bgs near MW0059 for lithologic characterization. Following the evaluation of the soil core, up to five (5) days of direct-push technology (DPT) will be conducted around MW0059. The proposed DPT locations will be presented as a basket item at the next KSCRT meeting.

FDEP inquired if the same lab conducted the analysis in 2021 and 2022? HGL confirmed it did. FDEP inquired if there are any activities in this specific area that suggest a TCE source? HGL responded no, that there used to be helium tank pressure testing here, but nothing there currently.

FDEP inquired that prior to 2014, were there any results in this area? Figures from the Site Characterization were reviewed, which show a high concentration plume had been delineated in this general area. There were air sparge wells in that high concentration area. NASA noted that we have learned through site assessments that conditions can change within a matter of feet, which is the reason for recommending additional investigation. There is potentially some mass just beyond where we ended the air sparge.

NASA still has air lines running back to a manifold at the Converter Compressor Building. If we reactivate the system to treat the MW0059 area, we could run it off the Component Cleaning Facility East site.

The following recommendations were made:

- Continue Annual/Biennial IGWM of TCE, cDCE, tDCE, and VC.
- Conduct DPT investigation in the vicinity of MW0059.

The Team reached consensus on the 2023 FDSA Sampling Plan that includes the semi-annual sampling of 1 well (MW0061, near Outstanding Florida Waters [OFW]) for TCE, cDCE, tDCE, and VC in December 2023 and July 2024, the biennial event sampling of 41 wells for TCE, cDCE, tDCE, and VC in December 2023, and the collection of annual water level data from 78 wells **(2311-D06).**

The Team reached consensus to collect one DPT soil core in the vicinity of MW0059 from the proposed location **(2311-D07).**

The exit strategy will be to continue monitoring to evaluate natural attenuation and concentration trends and to evaluate optimization of monitoring program on annual basis.

Result: Decision Item 2311-D05 through D07

2311-M07 Robert Lynch/HGL

Component Cleaning Facility (CCF) SWMU #030 West Long-Term Monitoring (LTM)

Objective: The objective of the briefing is to summarize and present the 2023 Annual LTM activities and results. Additionally, the briefing includes the proposed LTM well network, sample frequency, and proposed groundwater investigation around well cluster IW0003.

Discussion:

On April 6, 2023, monitoring well IW0092 was installed using direct push technology (DPT). The well was constructed using of 1-inch diameter PVC Sch. 40 pipe; 0.010-inch slot screen installed at 40 to 50 feet (ft) below land surface (bls). The well provides a sentinel monitoring point in the southwest quadrant of the toe of the CCF West volatile organic compound (VOC) plume, as well as the northwest quadrant of the 516S West (SWMU #100) VOC plume.

2023 Annual LTM Activities

The 2023 LTM activities were conducted in accordance with the recommendations presented and approved at the February 2023 KSC Remediation Team (KSCRT) meeting. The 2023 annual groundwater sampling event was conducted between April 24 and May 1, 2023. Groundwater samples were collected from 36 monitoring wells during the sampling event and analyzed for the following site contaminants of concern (COCs) by U.S. Environmental Protection Agency (EPA) Method SW846-8260B: trichloroethene (TCE), cis-1,2-dichloroethene (cDCE), trans-1,2-dichloroethene (tDCE), and vinyl chloride (VC). A groundwater sample was re-collected from IW0003S on May 28, 2023, to confirm

a natural attenuation default concentration (NADC) exceedance of TCE detected in the sample collected on April 28, 2023.

Groundwater level measurements were collected from all accessible on-site monitoring wells (48 wells total) during the annual sampling event on April 24, 2023 (considered the dry season) and again on September 12, 2023 (considered the wet season). A consensus was reached at the February 2023 KSCRT meeting to abandon IW0031 due to an obstruction at 10 ft below top of casing. The well is tentatively scheduled to be abandoned in early 2024. NASA inquired if we should reinstall IW00031? HGL will confirm the sample results history at this well and recommend whether a replacement will be needed for site closure **(2311-A02).**

2023 Site-Wide Groundwater Elevations and Flow Direction

The groundwater level measurements were used to assess the hydraulic gradient and flow direction of the site's surficial aquifer. Groundwater flow directions were evaluated for wells with screen bottom depths of 12 to 15 ft bls; 25 to 30 ft bls; 35 to 40 ft bls; 45 to 50 ft bls; 55 to 57 ft bls; and 65 to 76 ft bls. Groundwater flow contour maps for each zone, during each semiannual water levels measurements event, were presented. Groundwater flow at CCF West is predominantly to the west and is consistent with historical data. Groundwater flow has been evaluated at the site during dry and wet season and seasonal changes are not pronounced.

2023 LTM Results Summary

The detection of TCE at IW0003S on April 28, 2023 (493 micrograms per liter [µg/L]) exceeded the NADC of 300 µg/L. To confirm the NADC exceedance, the sample was re-collected from IW0003S on May 24, 2023. The May 2023 result of 807 µg/L confirmed the NADC exceedance. No other NADC exceedances of site COCs were detected.

No groundwater cleanup target level (GCTL) exceedances of tDCE were detected. Various GCTL exceedances of site COCs (TCE, cDCE, and VC) were detected, and are summarized below:

- TCE above GCTL at 6 wells: Highest detection at IW0003S (807 µg/L) with the second highest at IW0003IS (84.5 µg/L). Remaining 4 detections above the GCTL were under 20 µg/L.

- cDCE above GCTL at 2 wells: Highest detection at IW0003S (133 µg/L in the sample collected on May 24, 2023), followed by IW0062 (93.8 µg/L).

- VC above GCTL at 14 wells: Highest detection at IW0082 (78.4 µg/L); followed by IW0045 (41.9 µg/L); IW0090 (28.9 µg/L); and IW0064 and IW00670 (both 22.7 µg/L). Remaining 9 detections above the GCTL were under 20 µg/L.

FDEP asked where the AS system was in relation to the MW0003S area. The locations of the nearest AS wells were pointed out to the south of MW0003S.

FDEP inquired if the water levels have been consistent in MW0003S? HGL confirmed that it is pretty shallow groundwater and the water level fluctuates a couple of feet. NASA noted that there have been TCE NADC exceedances at IW0003S historically. Areas in the rest of the site had hot spot concentrations (10 times NADC) and we focused the interim measures in those areas. Now, COC concentrations have been reduced in the rest of the site, so we are coming back to look at this area.

Mann-Kendall Statistical Trend Analyses

A Mann-Kendall (M-K) trend analysis was conducted for each analyte at a given well detected at a concentration greater than the GCTL or NADC. The entire period of record for the given well was analyzed. Half of the reporting limit was used as a proxy concentration for non-detect results. The M-K trend analysis was not conducted for wells with three of fewer data points.

The M-K analysis for TCE showed no trend at IW0003S, IW0045, and IW0062 but showed a decreasing trend at IW0003IS and IW0046. When only evaluating the last six sampling events only, the TCE trend changed to increasing at IW0003S: and stable at IW0045 and IW0062.

The M-K analysis for cDCE showed no trend at IW0003S but a decreasing trend at IW0062. Evaluation of only the last six sampling events at IW0003S resulted in no change.

The M-K analysis for VC identified a decreasing trend at IW0042 IW0045, IW0059, IW0063, and IW0067; and a probably decreasing trend at IW0037. A probably increasing trend was identified for

IW0064. A stable trend was identified for IW0070; and no trend was identified for IW0005ID, IW0029ID, and IW0061. When only the last six sampling events are evaluated, the M-K analysis identified an increasing trend for IW0005ID and a decreasing trend for IW0061.

Conclusions

Various GCTL exceedances of TCE, cDCE, and VC were detected in 2023. The concentration of TCE increased to above the NADC at IW0003S for the first time since January 2000. The 2023 annual sampling event confirmed remaining concentrations of site COCs within the former air sparge treatment area of influence (formerly CCF Hot Spot 1) remain below their respective NADCs. Monitoring well IW0003S is outside the former air sparge treatment area of influence.

Path Forward

In response to the NADC exceedance of TCE detected at IW0003S in 2023, further investigation is scheduled for groundwater near IW0003S. The investigation is planned for early 2024. The investigation shall be conducted as follows:

- One soil core will be collected to a depth of 30 ft bls next to IW0003S for lithologic characterization.
- Up to five days of a DPT groundwater investigation around well cluster IW0003 will be conducted.
- All DPT locations and screen intervals will be selected based on evaluation of the subsurface geology (soil core).
- The proposed DPT sample locations will be presented as a basket item at the next KSCRT meting (early 2024).
- Up to 75 groundwater samples shall be analyzed by a mobile laboratory using EPA Method 8260B for VOCs.

The investigation and analytical data will be presented to the KSCRT via the 2024 LTM Report and associated ADP. The next groundwater event will be conducted in 2024 as follows:

- Collect groundwater samples from 36 monitoring wells and analyze for site COCs (TCE, cDCE, tDCE, and VC) by EPA Method 8260B.
- Water level measurements will be collected from up to 48 monitoring wells annually during the sampling event.

Abandonment of IW0031 (tentatively scheduled during the groundwater investigation regarding IW0003S)

- Document monitoring activities into a LTM Report and submit to Florida Department of Environmental Protection.
- Document LTM activities in an ADP and present results to the KSCRT.

On monitoring well (MW)00069, the detection limit for 582 was 500 U. It was unusual. We used to sample for freon here, but it was always lower than FDEP GCTLs. We continue to sample for this COC every 5 years at the site.

The Team reached consensus on the proposed LTM Monitoring Well Network to include:

a) sampling of 36 wells for site COCs (TCE, cDCE, tDCE, and VC) by EPA Method 8260B (IW0003S, IW0003IS, IW0003ID, IW0004IS, IW0005ID, IW0011IS, IW0011ID, IW0029ID, IW0037, IW0042, IW0045, IW0046, IW0059, IW0061, IW0062, IW0063, IW0064, IW0067, IW0070, IW0079, IW0080S, IW0080IS, IW0081, IW0082, IW0083S, IW0083IS, IW0083ID, IW0084, IW0085, IW0086, IW0087, IW0088, IW0089, IW0090, IW0091, and IW0092) **(2311-D08).**

b) Collecting water levels from 48 monitoring wells (IW0003S, IW0003IS, IW0003ID, IW0003D, IW0004IS, IW0004D, IW0005ID, IW0011IS, IW0011ID, IW0017S, IW0021S, IW0025IS, IW0029ID, IW0030, IW0032, IW0036, IW0037, IW0039, IW0042, IW0044, IW0045, IW0046, IW0059, IW0061, IW0062, IW0063, IW0064, IW0067, IW0068, IW0069, IW0070, IW0079, IW0080S, IW0080IS, IW0081, IW0082, IW0083S, IW0083IS, IW0083ID, IW0084, IW0085, IW0086, IW0087, IW0088, IW0089, IW0090, IW0091, and IW0092) **(2311-D09).**

The Team reached consensus on the proposed LTM frequency: annual sampling with annual water level measurements during the event **(2311-D10).**

The Team reached consensus on the proposed soil lithology location **(2311-D11).**

Results: Decision Items 2311-D08 through D11
Action Item 2311-A02

2311-M08 Linnea King Clark/AECOM

Wilson Corners Air Sparge System Construction Completion and LTM Results (SWMU 001)

Objective: This advance data package (ADP) provides a summary of the Air Sparge (AS) system construction and startup, results of Quarter 1 (Q1) AS system operations and maintenance, baseline, and Quarter 1 performance monitoring, and 2023 Long-Term Monitoring (LTM) results.

Discussion:
A brief site history was presented to the Team along with lithology cross sections.

The site depth to groundwater ranges between three and ten feet below land surface (bls). Groundwater flow direction is generally to the west, with northwest and southwest flow components.

The IM objective is to remediate chlorinated volatile organic compounds (CVOCs) levels for transition to full-site LTM. The AS system is comprised of six legs operated as five zones, which run on 4.8-hour intervals. The AS wells are designed to operate at 5 cubic feet per minute (cfm) with a pressure of 24 pound per square inch (psi).

Three hundred and nineteen AS wells were installed. Compressed air is distributed through 1-inch diameter high-density polyethylene (HDPE) transfer pipe from the manifold trailer to individual AS wells. Five newly constructed manifold trailers were installed onsite; each housing the AS well manifolds for one or two zones:

- Manifold trailers 1 (Zone 1) through 4 (Zone 4) are fed by a 4-inch header/transmission line from the compressor equipment trailer
- Manifold trailer 5 (Zone 5) is fed by both 4-inch (Leg 5) and 2-inch (Leg 6) header/transmission lines since it houses manifolds for two separate legs

Modifications include installation of 319 rather than the proposed 340 AS wells. Ten AS wells in Zone 2 and 6 wells in Zone 3, located adjacent to Beach Road were not installed due to conflicts with utilities. The number of angled wells in Zone 5 from Leg 6 along

Beach Road was reduced from 28 to 21 due to potential utility conflicts. Remaining AS wells were shifted to the north to prevent conflict with underground utilities.

At system start up, baseline ambient air samples were collected before startup activities. Air monitoring will be conducted weekly for the first month of system operation. Measurements were taken across the site for volatile organic compounds (VOCs) with a photoionization detector (PID) every two hours for an eight-hour period. VOCs were not detected during the weekly measuring events. Passive air samples via regulated summa canisters were collected for 8 hours within each hot spot and analyzed for site specific VOCs. No analytes were detected above OSHA's occupational exposure limits.

Remote monitoring of the system is performed daily. Monthly site visits include:

- Inspect system for leaks, abnormal noises, excessive vibration, and monitor temperature;
- Check oil level and filters in compressor;
- Drain condensate from collection system and remove any dirt built up in vacuum inlet;
- Record system operational data (flow, temperature, and pressure) for each zone;
- Collect depth to water (DTW), pressure, dissolved oxygen (DO), and oxidation reduction potential (ORP) at 17 to 29 monitoring wells per zone;
- Balance flow and pressure of individual sparge wells;
- Maintain vegetation along pathways and areas around trailer;
- Perform housekeeping to ensure job site is well kept; and
- Routine equipment maintenance by Atlas Copco every 4,000 hours.

Total Q1 runtime was 1,998.4 out of a possible 2,193.4 hours (91%). During Q1, average monthly energy consumption was 29,672.4 kilowatt- hours (kWh). The system compressor is sustaining a pressure of approximately 105 pounds per square inch gauge (PSIG).

Baseline and Q1 performance monitoring results were presented. Compared to baseline, the maximum trichloroethene and cis-1,2-dichloroethene results were reduced by an order of magnitude in Q1.

The maximum vinyl chloride result in Q1 was 80 percent below the baseline maximum. The LTM results for 2023 were also reviewed. There may be some expansion of the plume to the southeast, but the overall footprint is fairly consistent with the 2021 extent. Some optimization of the monitoring network is recommended.

The system is performing as designed. AS system performance monitoring recommendations include continuing system operation, replacing 10 monitoring wells destroyed during construction, and retrofitting up to 48 monitoring wells that were damaged during system installation or require a modified well cap to withstand air pressure generated from surrounding sparge wells.

The Team reached consensus to continue LTM on an annual basis, with the next annual LTM sampling event scheduled in Spring 2024 **(2311-D12).**

The Team reached consensus to add existing monitoring well WILC-MW0057S (2-12 feet bls) to the LTM Plan in the 2-to-15-foot interval. Historical LTM data from 2015 were below groundwater cleanup target levels (GCTLs) but 2020 direct push groundwater sampling results in this area were above GCTLs **(2311-D13).**

The Team reached consensus to install one monitoring well northeast of WILC-MW0152 (5-15 feet bls) to verify plume extents if VOC concentrations exhibit an increasing trend after one year of system operation **(2311-D14).**

The Team reached consensus to install up to four additional monitoring wells in the 15-to-34-foot interval, screened 24 to 34 feet, to verify GCTL plume boundary to the north and west if VOC concentrations exhibit an increasing trend after one year of system operation **(2311-D15).**

The Team reached consensus to add an existing monitoring well WILC-MW0057D (40-45 feet bls) to the LTM plan for evaluating plume extents in the 34-to-48-foot interval **(2311-D16).**

The Team reached consensus to continue monitoring the deepest well WILC-MW0183 (70-80 feet bls) in the greater than 48 ft interval. If concentrations begin to exhibit an increasing trend, the well will be abandoned to eliminate a potential vertical migration pathway **(2311-D17).**

Results: Decision Items 2311-D12 through D17

2311-M09 Alex Murphy/Tetra Tech

Central Heat Plant Year 2 Performance Monitoring (PM) (SWMU 45)

Objective: The goal of this presentation is to review the Year 2 operation and maintenance of the air sparging (AS) system from October 2022 through September 2023, introduce the intermediate interval monitoring well network, present the Year 2 groundwater and ambient air analytical results, and present the path forward for Team consensus.

Discussion: Central Heat Plant (CHP) is located in the KSC Industrial Area on the corner of 3rd Street SE and C Avenue SE. CHP was constructed between 1963 and 1964 and is no longer active. The facility produced high temperature water for use in the Industrial Area. A brief history of investigations and interim measures (IM) was discussed. Installation of the AS system was conducted in 2019-2021, with full-scale startup in July 2021.

The objective of this interim measure (IM) is to reduce chlorinated volatile organic compounds (CVOCs) within the AS treatment area to concentrations that facilitate a transition to long term monitoring (LTM). The medium of concern is groundwater. The AS treatment area is approximately 1.3 acres. AS wells were installed at two distinct intervals: shallow (20-22 feet bls) and deep (47-54 feet bls). The AS system includes two prefabricated treatment trailers: the "hot" compressor is capable of 240 cubic feet per minute (cfm) and 35 pounds per square inch (psi) and the "cold" compressor is capable of 350 cfm at 100 psi. There are two distribution manifold trailers, each centrally located to the AS well network. There are 240 2-inch PVC AS wells and 27 2-inch stainless steel AS wells. The "hot" zones operate at 1 hour on and 5 hours off, then the cycle repeats. The "cold" zones operate continuously at 4-hour intervals, cycling between the different zones. The "cold' system operated for an average of 69 percent and the "hot" system operated for an average of 71-percent over the available runtime during Year 2 operation. Contributing factors to downtime included scheduled compressor maintenance, powering down for hurricane, un-notified power

shutdowns, performance sampling, variable speed drive (VSD) downtime and replacement, and valve replacement.

In October 2022, a confirmation direct push technology (DPT) sampling event was conducted to confirm the Year 1 performance monitoring analytical results of the Source Zone (SZ), Hot Spot (HS), and high concentration plume (HCP), and to determine whether any SZ or HS plume migration has occurred that is not captured by the current monitoring well network. Results indicated that tetrachloroethene (PCE) and trichloroethene (TCE) were below their respective method detection limits (MDLs) throughout most of the HCP and HSs, cis-1,2-dichloroethene (cDCE) was detected in two sampling at concentrations exceeding the natural attenuation default concentrations (NADC), and vinyl chloride (VC) was detected in two samples at concentrations exceeding the NADC. Multiple groundwater cleanup target level (GCTL) exceedances were observed in the intermediate interval (23 to 42 feet bls) during this event.

Year 2 performance monitoring included quarterly and semi-annul groundwater sampling and ambient air monitoring. Additionally, 12 monitoring wells (5 existing and 7 newly installed) in the intermediate interval were added to the performance program based on the October 2022 DPT event results.

Potentiometric flows were reported as follows:

- Shallow Interval (2-20 feet bls) – March 2023: radial flow at MW0008, trending northwest, west and south
- Shallow Interval (2-20 feet bls) – September 2023: broad hydraulic ridge from northwest to the southeast, with radial flows
- Deep Interval (45-65 feet bls) – March 2023: northern flow with convergence toward the center
- Deep Interval (45-65 feet bls) – September 2023: gentle sloping, defined mounding.

Analytical results were reported as:

Shallow Interval:
- 7 shallow wells sampled in March 2023 (Mar-23) and September (Sep-23)
- No detections of PCE, TCE, cDCE or VC greater than their respective GCTLs

Intermediate Interval:

- 8 wells sampled in Jun-23 and 9 wells sampled Sep-23
- PCE – 1 detection greater than (>) GCTL in Jun-23 at MW0033
- TCE – 1 detection >GCTL in Jun and Sep-23 at MW0033
- cDCE – 1 detection > GCTL in Sep-23 at MW0066
- VC – 3 wells had detection >GCTL in both events with a maximum concentration of 26 µg/L at MW0066 in Sep-23

Deep Interval:

- 15 monitoring wells sampled in March and September 2023
- PCE – 2 wells had detections >GCTL, MW0053 in Mar-23 and MW0046 in Sep-23. Max. concentration in MW0046 at 31 µg/L.
- TCE - 2 wells had detections >GCTL, MW0053 in Mar-23 and MW0046 in Sep-23. Max. concentration in MW0046 at 58 µg/L.
- cDCE – 4 wells had detections >GCTL in Mar-23 and 5 wells had detections >GCTL in Sep-23. Max concentration observed in MW0056 during the Mar-23 event at 220 µg/L.
- VC – 10 wells had detections >GCTL during in Mar-23 event. 8 wells have detection >GCTL and 2 wells had detections >NADC in Sep-23. Max. concentration observed in MW0056 was 160 µg/L during the Sep-23 event.

Temperature readings in the monitoring wells during the Year 2 period indicated the Hot sparging does not seem to have an impact on shallow zone groundwater temperatures. Average temperatures were relatively the same as for the Cold AS area. The deep zone showed a slight increase in average temperatures. The difference is not great enough to conclude the magnitude of influence. A Spatial Analyst tool was used to generate heat maps that compared baseline groundwater temperatures to those in 2022 and 2023.

FDEP inquired about the significance of temperature with regards to AS? Tetra Tech explained that the heat helps to accelerate the volatilization out of the low permeability highly organic soils. In-ground thermostats are reading between 120-130 F.

FDEP inquired about the impact of high temperature on lateral dispersion of the VOCs. Tetra Tech stated higher temperatures could go a little outside of the radius of influence (ROI), but air will find preferential pathways. However, the AS well layout was designed to encompass the HCP, so there would still be treatment beyond the Hot AS area. We also have the downgradient monitoring wells as

sentinels. Further, the AS well spacing has a design ROI of 10ft instead of 15-25ft to ensure no gaps unaddressed as a result of the tight soils at this location.

CVOC mass removal calculations show that 3.12 pounds (lbs) of PCE, 7.66 lbs of TCE, 139.46 lbs of cDCE, and 25.62 lbs of VC have been removed compared to the baseline mass estimate. Total CVOC source mass removal since baseline is 175.86 lbs.

Air monitoring was conducted in March, June, and September 2023. PCE was detected at ambient air locations AMB02 and AMB03 in March 2023, but results were well below the Occupational Safety and Health Administration's Permissible Exposure Limits and the American Conference of Governmental Industrial Hygienists' Threshold Limit Value. TCE, cDCE and VC results were not detected throughout the reporting period. Additionally, 10 vapor points are located throughout the treatment area to monitor vapors in the vadose zone. Soil gas VOCs were measured during routine site visits using a photoionization detector. No detections were observed.

Overall, the AS system is operating as designed and is effective in achieving the IM objective of reducing VOC concentrations within the HCP. Currently, COC concentrations from monitoring wells within the radius of influence remain low or have experienced significant decline, indicating hot and cold air sparging is achieving its objective. Wells in the eastern and western areas have experienced significant concentration decreases since baseline and September 2023 results were all less than GCTL. In the north and southeastern areas, wells are still producing concentrations greater than GCTL. Recommend continuing hot air sparging in the deep interval.

Noting in particular the VC results for all intervals, FDEP inquired if it is normal to see these types of fluctuations in concentrations? Tetra Tech responded it is, especially early in operations. The October 2022 DPT sampling was conducted to capture a wider area than the monitoring wells to evaluate whether there is a treatment gap. No untreated source zone popped up in that sampling.

Recommendations for Team Consensus:

Consensus on the following decisions was tested at the meeting, with full consensus reached following FDEP's further review of the data.

Consensus was reached to transition the following sample frequency to:

- Quarterly: MW0001I, MW0024, MW0025, MW0033, MW0034, MW0064 through MW0070
- Semi-Annual: MW0042, MW0046, MW0049, MW0050, MW0051, MW0053, MW0054, MW0056 through MW0061
- Annual: MW0002, MW0007, MW0008, MW0030, MW0048, MW0052, MW0055, MW0062, and MW0063 **(2311-D18).**

Consensus was reached to continue with operation and maintenance of the air sparging interim measure **(2311-D19).**

Prepare Year 3 Performance Monitoring Report and submit to NASA for review and subsequent submittal to FDEP.

Consensus was reached to develop a DPT groundwater sampling plan to investigate the low-concentration plume boundaries for the deep and intermediate intervals and conduct confirmation sampling to determine if PCE and TCE are still present in concentrations greater than GCTL **(2311-D20).**

Results: Decision Items (2311-D18 through D20)

2311-M10 Alex Murphy /Tetra Tech

Components Refurbishment and Chemical Analysis (SWMU 041) Year 4 Performance Monitoring

Goal: The goal of this presentation is to review the Year 4 operation and maintenance (O&M) of the hydraulic containment system (HCS); review results for performance monitoring groundwater sampling, sub-slab soil gas sampling, and ambient air sampling to date; present conclusions; and make recommendations for Team consensus.

Discussion: The Components Refurbishment and Chemical Analysis (CRCA) facility is located along Contractors Road, just south of the Vehicle Assembly Building area. The facility was constructed in 1998 in support of the NASA space program, is approximately 3.0 acres in size, and is used primarily used for cleaning and refurbishment of mechanical and operational parts. A brief history of

the investigations was provided. In April/May 2019, the HCS was installed. It includes 3 extraction wells with dedicated pumps capable of 7 gpm, 7 injection wells, conveyance piping, and a treatment trailer housing an air stripper. Startup of the HCS system occurred in July/August 2019. It has continually operated since, with monthly O&M, quarterly air sampling, sub-slab vapor monitoring, and groundwater sampling.

The Interim Measure (IM) objective is (1) primarily to attain hydraulic control of dissolved phase chlorinated volatile organic compounds (CVOCs) plume and (2) secondarily to reduce concentrations of CVOCs in Hot Spot 1 (HS1) and the high concentration plume (HCP) via the IM to support transition to long term monitoring (LTM). The medium of concern is groundwater, and the contaminants of concern are vinyl chloride (VC) and trans-1,2-dichloroethene (tDCE). Initial plume conditions included a 6.5-acre low concentration plume (LCP), 2.1-acre HCP, and 0.8-acre HS. Approximately 99 percent of the CVOC plume mass is VC.

HCS O&M consists of weekly site visits for inspection of flow meters, differential pressures, scale inhibitors, and repair and cleanout of equipment as needed. Monthly O&M consists of recording system operation data, routine cleaning of the air stripper, inspection for scale buildup and cleaning as needed, and replacement of bag filters as needed. During Year 4 of operation, extraction wells operated at 7.0 to 7.1 gallons per minute (gpm) at an average pressure of 19.2 to 22.0 pounds per square inch (psi). Injection wells operated at 5.0 to 7.5 gpm and an average pressure of 13.7 to 18.0 psi. A total of 4.9 million gallon of water was treated during Year 4, and over 32.5 million gallons of water have been treated since startup. The HCS system operated at an average monthly runtime of 93 percent during Year 4. Year 4 system influent concentration difference of VC from startup is 97.9 percent.

Six monitoring wells were sampled during Year 4 for performance monitoring. In the intermediate interval: MW0002 (30-35 feet bls) and MW0013 (25-30 feet bls). In the deep interval: MW0018 (53-63 feet bls), MW0019 (53-63 feet bls), MW0031 (53-63 feet bls), and MW0032 (53-63 feet bls). Ambient air sampling was conducted in January and July 2023 at 2 locations and sub-slab vapor monitoring at 4 locations for VOCs via Method TO-15.

Potentiometric flows in the shallow interval in January and July 2023 flowed radially at the center of the site and to the southwest toward Contractors Road. In the intermediate and deep intervals, potentiometric flows were generally due west in January and July 2023.

Analytical results during this reporting period showed:

- tDCE was below the laboratory method detection limit in all wells sampled, except for MW0002 in January 2023 had a slight detection at 0.30 µg/L
- VC results showed:
  - Greater than the Florida Groundwater Cleanup Target Level (GCTL) in 3 monitoring wells
  - Less than its natural attenuation default concentration (NADC) in all monitoring wells
  - Peak concentration of VC was reported in January 2023 in MW0018 at a concentration of 22.3 µg/L
  - Downgradient monitoring well MW0032 continued to show fluctuating VC concentrations greater than GCTL

FDEP inquired about the downgradient (west) plume extent. Is the ditch on the west side of Kennedy Parkway acting as a physical barrier? Is the plan just to monitor this location? Tetra Tech responded yes; the VC is very low (9 µg/L) on the east side of the ditch and a well nest was installed to monitor the intervals where the direct push results were above the VC GCTL. Tetra Tech also noted that wells around CRCA are sampled for methane, ethane, ethene and the microbe Dehaloccocoides as indicators of natural biodegradation of CVOCs. There is some level of treatment which may be occurring naturally in this area. It was noted that the site south of CRCA, Contractors Road Heavy Equipment Area, has a similar downgradient CVOC plume that dissipates on the west side of Kennedy Parkway. We will see what happens with both downgradient plumes over time.

Sub-slab soil gas and ambient air analytical results showed no CVOCs above their respective EPA Commercial Vapor Intrusion Screening Levels (VISLs) and no CVOCs above Occupational Safety and Health Administration Permissible Exposure Limits (PELs).

Overall, hydraulic capture is performing as designed and mitigating downgradient migration of VC. VC concentrations are decreasing over time, as was projected in the Year 1 and Year 2 groundwater models. Concentrations in the treatment system influent have decreased 98 percent since startup.

Recommendations for Team Consensus:

The Team reached consensus to proceed with Year 5 of Hydraulic Containment System operation, including monthly influent and effluent sampling **(2311-D21).**

The Team reached consensus to transition the two ambient air and four sub-slab soil gas sampling locations from quarterly to annual **(2311-D22).**

The Team reached consensus to continue semi-annual sampling of performance monitoring wells MW0002 and MW0013 **(2311-D23).**

The Team reached consensus to transition four monitoring wells MW0018, MW0019, MW0031, and MW0032 from quarterly to semi-annual sampling **(2311-D24).**

The Team reached consensus to prepare the Year 4 Performance Monitoring Report and submit to FDEP/NASA **(2311-D25).**

The Team reached consensus to incorporate the following additional monitoring wells (14 new and 3 existing) into the sampling program to monitor plume-wide conditions:

- 4 proposed nested locations (30-40, 40-50, and 50-60 feet bls) to monitor plume boundaries,
- 1 proposed nested location (40-50 and 50-60 feet bls) to monitor the downgradient plume centerline conditions,
- 3 existing nested wells (MW0026, MW0027, and MW0028) to monitor the southeastern plume boundary **(2311-D26).**

Results: Decision Items 2311-D21 through D26

2311-M11 Chad Lee

GSA Reclamation Yard (GSRY), Solid Waste Management Unit #10 Basket Item

Objective: Present figure and test consensus on proposed monitoring well locations and depths for monitoring of per- and polyfluorinated alkyl substances (PFAS).#

Discussion:

A figure was provided. Installation of six monitoring wells is proposed to monitor PFAS at GSA Reclamation Yard and the adjoining Corrosion Control yard. The proposed locations are based on direct push technology (DPT) groundwater PFAS results, which had exceedances of the EPA regional screening level for perfluorooctane sulfonic acid (PFOS).

In the southern area at DPT190, we have a location with exceedances of PFOS. The proposed well depths in this location are 2-12ft and 20-30ft.

FDEP inquired why stop at 20-30ft at DPT190 when there are exceedances known in the deeper intervals. What about a 25-35ft install?

The Team tested consensus to add MW0064 to the sampling plan and install six monitoring wells at the locations presented in the figure presented. At DPT 190 (location F), AECOM will revise the depth to 25-35ft depth. The Remediation Program Technical Lead will review the data and proposed locations further and will reply via email.

Post meeting and data review by NASA, a revised figure was provided to FDEP with updated proposed well installations and additional sampling for PFAS at the General Services Administration Reclamation Yard (GSRY) SWMU 010. The updated figure represented the Phase I of well installation and sampling, with additional proposed subsequent phases as needed.

The Team reached consensus by email that NASA will be taking a phased approach of well installation for the PFAS investigation at

the GSA Reclamation Yard (SWMU 010). The updated Phase I of well installation and sampling includes: the removal of old location F (20-30 feet bls) from the DPT0190 area (note that a deeper well (or wells) in this location is currently planned to be proposed for Phase II); the addition of new location F (2-12 feet bls) adjacent to GSRY-MW0074 to investigate the presence of PFAS at the water table in that area; and the addition of existing monitoring wells GSRY-MW0002S and GSRY-MW0008S to the PFAS Sampling Program **(2311-D27).**

Monitoring well MW0064 had a PFOS result above the screening level at 20-30 feet below ground surface. A Team member asked if a deeper sample should be collected. The NASA Remediation Project Manager for the site stated we will collect samples in the vicinity of MW0064 following a pending dewatering effluent discharge there, and we can take a sample from that location after discharge.

Results: Decision Item 2311-D27

2311-M12 Chris Adkison/ NASA

CAMP Deliverable Look Ahead

The CAMP has been updated. Looking ahead, we have a few that we will be submitting in the next couple of days to FDEP. Sometimes there can be a delay in NASA's internal approvals for release due to the holidays and, as a result, some reports may get bumped to January 2024.

FDEP inquired when to expect the Site Rehabilitation Completion Report for SWMU #104, the former Headquarters Building since they understand it should be eligible for closure. NASA said the Interim Measures Report is in FDEP's queue for review. FDEP asked that NASA flag that document as a priority on the next CAMP submittal **(2311-A03).**

Results: Action Item 2311-A03

2311-M13 KSCRT

Miscellaneous Discussion

2024 Meeting Dates (will continue the hybrid option in 2024)

- February 6th and 7th
- June 4th and 5th
- October 1st and 2nd

NASA's Anne Chrest will get with John Langett on the Space Force to coordinate future meeting dates.

FDEP

15-20-minute FDEP update by Program Manager
Anne Chrest is the team leader next meeting so email topics to this individual after the meeting is over.

This page was intentionally left blank.

APPENDIX B

FIELD DOCUMENTATION
(MONITORING WELL ABANDONMENT AND INSTALLATION ACTIVITIES)

This page was intentionally left blank.

KUGELMANN LAND SURVEYING, INC

6/28/2023

30 N TROPICAL TRL, STE B, MERRITT ISLAND, FL 32953

klsinc@cfl.rr.com KLS#2020097 LB6575

HYDROGEOLOGIC, INC

CCF, KENNEDY SPACE CENTER

POINT #	NORTHING (FT)	EASTING (FT)	NORTHING (M)	EASTING (M)	TOC EL (FT)	GND EL (FT)	DESC	ID
50	1547096.60	771296.35	471555.992	235091.599	6.81	3.8	MW	CCF-IW0037
53	1547090.66	771461.84	471554.180	235142.040	11.41	7.9	MW	CCF-IW0039
54	1546730.26	771211.19	471444.329	235065.642	8.55	5.4	MW	CCF-IW0092I

SURVEYOR'S NOTES:

1. THE PURPOSE OF THIS SURVEY IS TO DETERMINE THE HORIZONTAL AND VERTICAL LOCATION OF GROUNDWATERING WELLS.
2. HORIZONTAL COORDINATES ARE REFERENCED TO THE FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, NORTH AMERICAN DATUM OF 1983 (NAD83), 1990 ADJUSTMENT AND ARE BASED ON THE UNITED STATES COAST AND GEODETIC MONUMENT "NITRO", HAVING PUBLISHED COORDINATES OF N.1551711.25, E.771583.25.
3. ELEVATIONS DEPICTED HEREON ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 1988) AND ARE BASED ON UNITED STATES COAST AND GEODETIC SURVEY MONUMENT "NITRO" HAVING A PUBLISHED ELEVATION OF 15.64 FEET.
4. UNDERGROUND FOUNDATIONS AND/OR UTILITIES NOT LOCATED AT TIME OF SURVEY.
5. THIS SURVEY WAS PREPARED FOR THE EXCLUSIVE USE OF THE CLIENT(S) SHOWN HEREON AND COPIES ARE VALID ONLY WHEN SIGNED, DATED AND EMBOSSED WITH THE SURVEYOR'S SEAL.

ABBREVIATIONS

TOC =	TOP OF CASING	DESC =	DESCRIPTION	(M)=	METERS
GND =	GROUND	ID =	IDENTIFICATION	(FT)=	FEET
EL =	ELEVATION	MW =	MONITORING WELL		

HGL
HydroGeoLogic, Inc
Exceeding Expectations

SAFETY MEETING/TRAINING LOG

- [x] Tailgate (daily)
- [ ] Activity Hazard Analysis
- [ ] Pre-Task Hazard Analysis (prior to new task or operation)
- [ ] Site Safety Orientation (new personnel)
- [ ] Supervisor's (monthly)
- [ ] Supervisor's (weekly)
- [ ] UXO Awareness
- [ ] Asbestos Awareness
- [ ] Health and Safety Plan Addendum: _____
- [ ] Other: ___

Date/Time: 4/6/23

Client: NASA

Location: SWMU 114 & CCF West

Job No.: NS1010.02.03 & NS1003.04.02

Meeting/training conducted by: J. Vojak

Work Activities: DPT GW Sampling & MW Installation

Safety / Training Topics Presented

Chemical Hazards: PFCs/DNAPL

Physical Hazards: Slips, Trips, Falls, Pinch Points, Sun Exposure, Heat Stress, Wildlife

Specific Safety Topic(s): Proper lifting technique

Specific Training Covered: NA.

Attendees

Name Printed and Employee Number:	Signature:
J. Vojak	
Micky Ritter	
Blake Handbooke	

HydroGeoLogic, Inc
Exceeding Expectations

Drill Rig Inspection Checklist

Project Name/Number: SUMM 114 / CCF West

Make/Model Number: TBS 2822

Equipment Number: 195

Hours/Mileage: NA

Rig clean and free of soils, oils, and other debris.	✓	Tracks in good condition.	✓
All hydraulic fittings and hoses free of damage, tightened, and not leaking.	✓	Tires fully inflated and in good condition.	NA
Rig controls clearly labeled and in working condition.	✓	Back-up alarm working.	NA
Rig Kill Switch in working order.	✓	First Aid Kit accessible and stocked.	✓
All of the Rig's connections tightened and leak-free.	✓	Fire Extinguisher accessible and fully charged.	✓
Parking brake functions properly.	NA	Eye Wash full and accessible.	✓
Steering controls in working order and clear of obstacles.	NA	Hearing protection available and is being used during hammering.	✓
Copy of the manual for all drilling equipment available.	✓	All overhead and underground hazards identified.	✓

√ = OK
N/A = Not Applicable
X = Defective

These items are to be checked each shift before operating this piece of equipment.
Report all items requiring repair to supervisor.

Notes:
Operator/Inspector: Micky Ritter Date: 4-6-23

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number:	Site Name:	FDEP Facility I.D. Number:	Well Install Date(s):
CCF-IW0092	CCF West	NA	4/6/23

Well Location and Type (check appropriate boxes):
- [x] On-Site
- [ ] Right-of-Way
- [ ] Off-Site Private Property
- [x] Above Grade (AG)
- [ ] Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- [ ] Perched Monitoring
- [ ] Shallow (Water-Table) Monitoring
- [x] Intermediate or Deep Monitoring
- [ ] Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: NA

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
50	50	3	6	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1" Schd 40 PVC	[x] Flush-Threaded [ ] Other (describe)	40 feet from 40 feet to Surface feet

Screen Diameter and Material:	Screen Slot Size:	Screen Length:
1" Schd 40 PVC	10 slot	10 feet from 50 feet to 40 feet

1st Surface Casing Material:	1st Surface Casing I.D. (inches):	1st Surface Casing Length:
also check: [ ] Permanent [ ] Temporary		feet from feet to feet

2nd Surface Casing Material:	2nd Surface Casing I.D. (inches):	2nd Surface Casing Length:
also check: [ ] Permanent [ ] Temporary		feet from feet to feet

3rd Surface Casing Material:	3rd Surface Casing I.D. (inches):	3rd Surface Casing Length:
also check: [ ] Permanent [ ] Temporary		feet from feet to feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
20/30 Silica Sand	[ ] Yes [x] No	12 feet from 50 feet to 38 feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
30/65 Silica Sand	2 feet from 38 feet to 36 feet

Surface Seal Material:	Surface Seal Length:
Portland Cement	36 feet from 36 feet to Surface feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one):	
4/6/23	[ ] Surge/Pump [x] Pump [ ] Compressed Air [ ] Other (describe)	

Development Pump Type (check):	Depth to Groundwater (before developing in feet):
[ ] Centrifugal [ ] Peristaltic [ ] Submersible [x] Other (describe) Honda Pump	8.37

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one):
0.85	NA	[ ] Yes [x] No

Pumping Condition (check one):	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one):
[x] Continuous [ ] Intermittent	51	60	[x] Yes [ ] No

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:
Brn, N.O.	Clear, N.O.

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Location CCF West Date 4/6/23

Project / Client NASA

Scope: MW Installation.
Crew: J. Vojak (H&C), M. Ritter, B. Hanibuder (Drill Pro)
Equipment: Work Trucks, DPT Track Rig, Honda Pump
Weather: 69-83° F, Clear
1300- Mob to CCF West from CCF IDW yard.
1310- Arrive to well CCF-IW0092 location. Offload r.i.g & set up for MW installation. *Location is CAT A
1315- Hand clear to 5'.
1336- TD @ 50'. Begin well installation
Screen (50-40') 1" Sch 40 PVC, 10 slot
Filter Pack (50-38') 20/30 Silica Sand
Pack Seal (38-36') 30/65 Silica Sand
Grout (36'-Surface) Portland Cement
1405- Installation complete. Proceed to set surface completion. (2'X2') concrete pad w/ 6" PVC Stickup
1445- Pad complete, Rig down.
1455- Drill Pro departs.

Location CCF West Date 4/6/23

Project / Client NASA

1500- Begin development for CCF-IW0092. DTW: 8.37', Brn, N.O., Honda Pump, 0.85 gpm.
1600- Development complete. Clear, N.O., Proceed to r.i.g down
1602- Mob to CCF IDW yard.
1611- Transfer development water to drum #229652 on pallet # 229654. Drum @ 90% capacity.
1642- Transfer complete. Depart site.
1700- Arrive to Merritt Island office. End of job.

This page was intentionally left blank.

APPENDIX C

PERMITS AND APPROVALS

This page was intentionally left blank.

Permit Request: 21277 (Status: Pending) Rev 0

IMPORTANT : By accepting this permit, you are agreeing to abide by the following procedures. Failure to do so may result in safety risks, work stoppages, and other financial consequences.

	Timeframe	Responsibility	Procedure
1	Permit Submission	**Requestor**	Contact KSC permit office with contractor contact information. If not known at time of permit submission, requestor is responsible to contact KSC Permit Office with actual contractor contact once work is awarded / known.
2	No earlier than 21 days – no later than 72 hours before work start	**Contractor**	**Call Sunshine 811 at 800-432-4770 or 811 (cell).** *Create an account and request at www.online811.com* **811 Location (nearest Intersections):** East of Ordnance Rd, North of of Saturn Cswy Obtain your sunshine 811 ticket number and copy that ticket number to this Permit (below in signature section)
3	No earlier than 21 days – no later than 72 hours before work start	**Contractor**	**After contacting 811,** Call KSC Utility Locator to schedule utility locate and approve this Permit. Primary: **321-749-4840** Alternate: **321-529-4796**
4	Day of utility Locate	**Contractor**	Meet with KSC Utility Locator with a copy of this permit for approval. **Once signed, you will be authorized to begin work.** The Excavator shall maintain a copy of the EPI signed/ approved permit on site at all times. This Permit will be **immediately suspended** should digging begin prior to approval from the KSC Utility Locator. **Excavation or heavy equipment use is prohibited during utility locating.**

Continue on next page

Permit Request: 21277 (Status: Pending) Rev 0

	Timeframe	Responsibility	Procedure
5	After locate Before work start If work is delayed If scope of work changes	**Contractor**	**If the scope of work for the original Utility Locate/EPR is changed** or the completion date needs to be extended, you are required to call KSC Permit Office 321-867-2406. **If digging does not begin within 21 days from the time of utility locate (permit approval), this permit shall be suspended** and work will not be permitted until a new 811 locate and KSC utility locate is performed. **Excavator is responsible to maintain the paint markings. Failure to do so will result in this permit being suspended** and work will not be permitted until a new 811 locate and KSC utility locate is performed.
6	At the start of work – During work before backfill	**Contractor**	**You must hand dig within 24 inches** in either direction of all Locator paint markings. **You must hand dig within 36 inches** of building walls or overhangs. Do **not remove or disturb concrete thrust blocks.** When excavating soil at location known to contain buried water or sewer lines, **do not remove any buried concrete without prior NASA POC approval.** **Contact the KSC Survey for utility survey prior to backfilling or directional drilling of all new utilities.** **Primary: 321-288-3031 Alternate: 321-749-2474** Failure to contact KSC Survey prior to backfill may result in additional excavating to expose buried utilities for survey.
7	End of work	**Requestor / Contractor**	Contact KSC Permit Office 321-867-2406 to close permit.

Safety and Contact Information

Accidental Gas Main damage ***EVACUATE THE AREA!***	Call: **321-867-7911** (cell) or 911 (landline only) Call: Work Control Center 321-861-5050
Accidental Utility line damage (excluding Gas main damage)	**Work Control Center (Duty Office)** 321-861-5050
Questions regarding your Utility Locate/Excavation Permit Request, such as approving, revising the time or scope of work, updating any information within this permit.	**KSC Permit Office** Phone: 321-867-2406 Email: KSC-BOSS-DIGPERMIT@mail.nasa.gov
Questions regarding your Utility Locate/Surveying, such as utilities markings and area surveying.	**KSC Survey Office Supervisor** Phone: 321-861-7945 Email: david.j.irwin@nasa.gov
Questions regarding Florida City Gas owned natural gas utilities not including: emergencies, gas leaks, and locate requests.	**Florida City Gas** Phone: 786-459-3655 Email: FSmalley@aglresources.com
Questions regarding environmental-related issues, comments stated within KSC Environmental Review (below).	**KSC Environmental** Phone: 321-867-8430

Permit Request: 21277 (Status: Pending) Rev 0

Permit Scope of Work / Justification
Conduct 1 day of drilling (1 monitoring well installation) at CCF West. The well will be drilled to a depth of 50 feet and installed with a scoped surface completion. The attached figure shows the proposed well location at the site. If possible, classify the drilling location as Cat A.

Requestor Contact Information	
Submitter Name, Company*	Justin Vojak, HGL
Submitter Email Address	jvojak@hgl.com
Submitter Phone: 321-391-3668 Fax:	

Contractor / Excavator Contact Information	
Contractor / Excavator Name, Company	HGL
Contractor Contact Email Address	jvojak@hgl.com
Contractor Contact Phone* 321-391-3668	

NASA Technical / Project Contact Information	
NASA POC Name	Natasha Darre
NASA POC Email Address	natasha.c.darre@nasa.gov
NASA POC Phone	352-327-1360

Permit Request Info
Permit Start Date: 3/20/2023 **Permit Expiration Date:** 9/21/2023

Facility Info
Facility ID: K7-0709 **Name:** REPEATER BUILDING #1 **Secondary Location:** CCF West

Additional Forms and Identifying Numbers	
Work Order Number:	**Environmental Check List Completed:** No

Reviews			
Reviewed By:	**Date:**	**Results:**	**Comments:**
Locator	3/21/2023	Agree	JM
Environmental	3/23/2023	Agree	Please abide by requirements stipulated in REC #12215 issued 03/22/2023.
Master Planner	3/21/2023	Agree	RS
Final	3/23/2023	Agree	AL

Permit Request: 21277 (Status: Pending) Rev 0

Map of Permitted Area of Work

The permitted area of work is displayed as the outlined shapes on the above map. It is the permit-holder's responsibility to ensure digging operations are contained within the permitted area of work. Failure to stay with permitted area of work will result in permit suspension and work stoppage.
If the scope of the project changes and the permitted area of work needs to be modified, it is the permit holder's responsibility to notify the excavation permit administrator to discuss the changes and impact.

Assigned Category Codes	
Category A	Normally, excavation may proceed during all launch operations. However, other restrictions may be imposed on any given day.

Permit Request: 21277 (Status: Pending) Rev 0

Sunshine 811 Call Ticket Number	
Ticket Number	085300636

3/27/23

Approved by: Jeff McDowell

Approved by: Alfredo George

Excavation Restriction

Notes:

[ ] ENTIRE LOCATED AREA TO BE HAND EXCAVATED ONLY!

Locator's Signature: _____

Reason for Hand Excavation:

WELL COMPLETION LOG

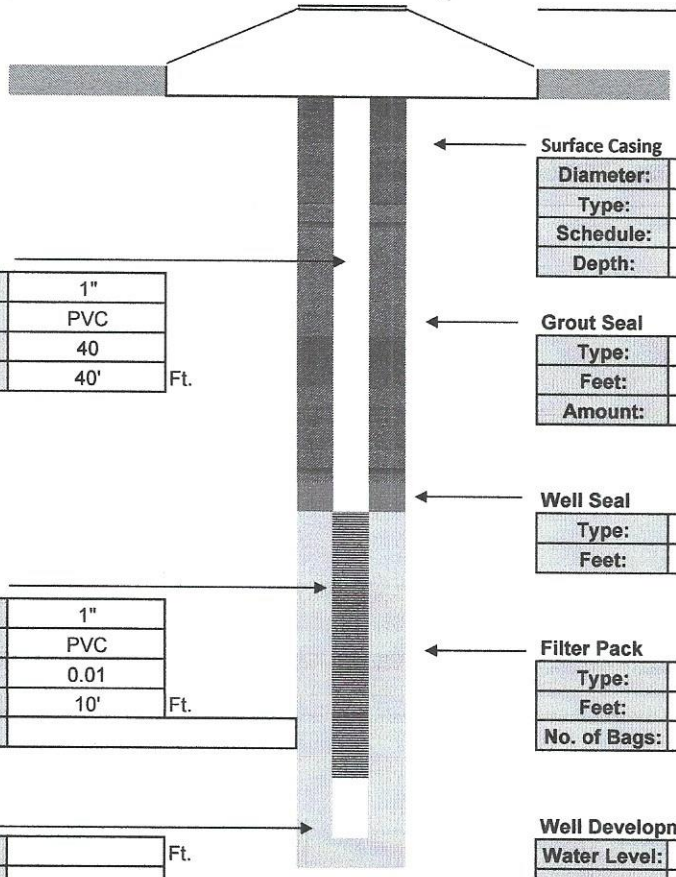
Water Mgmt. Dist.:
Permit Number:

Work Order: 423004
Type of Well: Monitor
Well Number: CCF IW 0092
Method Used: DPT
Borehole Diaz. 3"

Site Information:
Name: CCF Site
Address:
C,S,Z: KSC, FL
S/T/R:

Client / Consultant Information
Consultant: HGL
Field Rep: Justin V

Well Diameter	Well Type	Well Depth	Screen Length	Casing Length	Bags Grout	Sand Bags/Weight	Filter Type	Well Seal
1"	PVC	50'	10'	40'	2	1 / 50 lbs.	20/30	30/65
40 ←		Slot Size: →	0.01		37'	← Feet →	12'	1'



Surface Completion
8" BD

Surface Casing		Intermediate Casing	
Diameter:		Diameter:	
Type:		Type:	
Schedule:		Schedule:	
Depth:		Depth:	

Well Casing

Diameter:	1"
Type:	PVC
Schedule:	40
Length:	40' Ft.

Grout Seal

Type:	I / II PORTLAND
Feet:	37'
Amount:	2 Bags

Well Seal

Type:	30/65
Feet:	1'

Well Screen

Diameter:	1"
Type:	PVC
Slot:	0.01
Length:	10' Ft.
Note:	

Filter Pack

Type:	20/30
Feet:	12'
No. of Bags:	1 / 50 lbs.

Sump

Length:	Ft.
Type:	

Well Development

Water Level:	8'		
Method:	Honda		
Start:	Grey	Finish:	Clear
Time:	.5 Hr.		
GPM:	0.5		

Contractor Information

Contractor #:	9311
Completion:	4/6/2023
Driller:	Mickey Ritter
Lead Hand:	Blake Handibode
3rd Man:	NA
Drill Rig:	7822

Company:	Drillpro LLC d/b/a Groundwater Protection
Address:	2300 Silver Star Road
C,S,Z:	Orlando, Florida 32804-3310
Phone/FAX:	(407) 426-7885 / (407) 426-7586

STATE OF FLORIDA PERMIT APPLICATION TO CONSTRUCT, REPAIR, MODIFY, OR ABANDON A WELL

Permit No:	MW-200284-1
Florida Unique ID	
Permit Stipulations Required (See Attached)	
MW-1	
62-524 Quad No. 3706NE	Delineation No.
CUP/WUP Application No.	

ABOVE THIS LINE FOR OFFICIAL USE ONLY

- [ ] Southwest
- [ ] Northwest
- [ ] St. Johns River
- [ ] South Florida
- [ ] Suwannee River
- [ ] DEP
- [x] Delegated Authority (If Applicable) **Brevard DOH**

PLEASE, FILL OUT ALL APPLICABLE FIELDS
(*Denotes Required Fields Where Applicable)

The water well contractor is responsible for completing this form and forwarding the permit application to the appropriate delegated authority where applicable.

1. **United States Of America** (*Owner, Legal Name if Corporation) | **1849 Nw C St Rm 5665** (*Address) | **Washington** (*City) | **DC** (*State) | **20240** (*Zip) | **7037364565** (*Telephone Number)

2. **CCF West off of Saturn Causeway 1/4 mile East of the VAB, KSC, FL 32953** (*Well Location – Address, Road Name or Number, City)

3. **22 3708-00-*-** (*Parcel ID No. (PIN) or Alternate Key (Circle One)) | Lot | Block | Unit

4. **8** (*Section or Land Grant) | **22S** (*Township) | **37E** (*Range) | **Brevard** (*County) | Subdivision | Check if 62-524: Yes **X** No

5. **James P Hinst** (*Water Well Contractor) | **9311** (*License Number) | **4074267885** (*Telephone Number) | **jim@drillprollc.com** (E-mail Address)

6. **2300 Silver Star Rd** (*Water Well Contractor's Address) | **Orlando** (City) | **FL** (State) | **32804-3310** (ZIP)

7. *Type of Work: **X** Construction ____ Repair ____ Modification ____ Abandonment ____ (*Reason for Repair, Modification, or Abandonment)

8. *Number of Proposed Wells **1**

9. *Specify Intended Use(s) of Well(s):

____ Domestic
____ Bottled Water Supply
____ Public Water Supply (Limited Use/DOH)
____ Public Water Supply (Community orNon-Community/DEP)
____ Class I Injection
____ Landscape Irrigation
____ Recreation Area Irrigation
____ Agricultural Irrigation
____ Livestock
____ Nursery Irrigation
____ Commercial/Industrial
____ Golf Course Irrigation
____ Site Investigation
X Monitoring
____ Test
____ Earth-Coupled Geothermal
____ HVAC Supply
____ HVAC Return

Class V Injection: ____ Recharge ____ Commercial/Industrial Disposal ____ Aquifer Storage and Recovery ____ Drainage

Remediation: ____ Recovery ____ Air Sparge ____ Other (Describe) ____

Other (Describe) ____ (Note: Not all types of wells are permitted by a given permitting authority)

Date Stamp
Confirmation# **816684**
Date: **03/30/2023**
Official Use Only

10. *Distance from Septic System if ≤ 200 ft. ____ 11. Facility Description **Undefined - Reserved For Future Use** 12. Estimated Start Date **04/07/2023**

13. *Estimated Well Depth **50** ft. *Estimated Casing Depth **40** ft. *Primary Casing Diameter **1** in. Open Hole: From ____ To ____ ft.

14. Estimated Screen Interval: From **40** To **50** ft.

15. *Primary Casing Material: ____ Black Steel ____ Galvanized **X** PVC ____ Stainless Steel ____ Not Cased ____ Other: ____

16. Secondary Casing: ____ Telescope Casing ____ Liner ____ Surface Casing Diameter ____ in.

17. Secondary Casing Material: ____ Black Steel ____ Galvanized ____ PVC ____ Stainless Steel ____ Other ____

18. *Method of Construction, Repair, or Abandonment: ____ Auger ____ Cable Tool ____ Jetted ____ Rotary ____ Sonic ____ Combination (Two or More Methods) ____ Hand Driven (Well Point, Sand Point) **X** Hydraulic Point (Direct Push) ____ Horizontal Drilling ____ Plugged by Approved Method ____ Other (Describe) ____

19. Proposed Grouting Interval for the Primary, Secondary, and Additional Casing:

From **0**	To **40**	Seal Material (	____ Bentonite	____ Neat Cement	**X** Other	**Cement with Bentonite, < 5% by weight**)
From ____	To ____	Seal Material (	____ Bentonite	____ Neat Cement	____ Other	____)
From ____	To ____	Seal Material (	____ Bentonite	____ Neat Cement	____ Other	____)
From ____	To ____	Seal Material (	____ Bentonite	____ Neat Cement	____ Other	____)

20. Indicate total number of existing wells on site ____ List number of existing unused wells on site ____

21. *Is this well or any existing well or water withdrawal on the owner's contiguous property covered under a Consumptive/Water Use Permit (CUP/WUP) or CUP/WUP Application? ____ Yes **X** No If Yes, complete the following: CUP/WUP No. ____ District Well ID No. **541670**

22. Latitude **283517.51** Longitude **803829.45**

23. Data Obtained From: ____ GPS **X** Map ____ Survey Datum: ____ NAD 27 **X** NAD 83 ____ WGS 84

I hereby certify that I will comply with the applicable rules of Title 40, Florida Administration Code, and that a water use permit or artificial recharge permit, if needed, has been or will be obtained prior to commencement of well construction. I further certify that information provided in this application is accurate and that I will obtain necessary approval from other federal, state, or local governments, if applicable. I agree to provide a well completion report to the District within 30 days after completion of the construction, repair, modification, or abandonment authorized by this permit, or the permit expiration, whichever occurs first.

James P Hinst (*Signature of Contractor) | **9311** (*License No.)

I certify that I am the owner of the property, that the information provided is accurate, and that I am aware of my responsibilities under Chapter 373, Florida Statutes, to maintain or properly abandon this well; or, I certify that I am the agent for the owner, that the information provided is accurate, and that I have informed the owner of his responsibilities as stated above. Owner consents to allowing personnel of this WMD or Delegated Authority access to the well site during the construction, repair, modification, or abandonment authorized by this permit.

James P Hinst (*Signature of Owner or Agent) | **03/30/2023** (*Date)

BELOW THIS LINE – FOR OFFICIAL USE ONLY

Approval Granted By *Cynthia Leckey* Issue Date **03/30/2023** Expiration Date **03/29/2024** Hydrologist Approval ____ initials

Fee Received $ **50** Receipt No. **101018** Check No. **OnLine-62736J-816684**

THIS PERMIT IS NOT VALID UNTIL PROPERLY SIGNED BY AUTHORIZED OFFICER OR REPRESENTATIVE OF THE WMD OR DELEGATED AUTHORITY. THE PERMIT SHALL BE AVAILABLE AT THE WELL SITE DURING ALL CONSTRUCTION, MODIFICATION, OR ABANDONMENT ACTIVITIES.

FDOH Brevard ePermit Payment

Your Order

Print This Page

Total Amount: USD **50.00**

This order is now complete. Transaction approved!

Here is your receipt:

```
========== TRANSACTION RECORD ==========
BREVARD COUNTY - EPERMIT
2725 JUDGE FRAN JAMIESON
VIERA, FL 32940
United States


TYPE: Purchase

ACCT: Mastercard              $ 50.00 USD

CARDHOLDER NAME : James Hinst
CARD NUMBER     : ############8374
DATE/TIME       : 30 Mar 23 10:59:43
REFERENCE #     : 001 0376509 M
AUTHOR. #       : 62736J
TRANS. REF.     : WWC 816684

    Approved - Thank You 100


Please retain this copy for your records.

Cardholder will pay above amount to
card issuer pursuant to cardholder
agreement.
========================================
```

Continue

STATE OF FLORIDA WELL COMPLETION REPORT

[ ] Southwest
[ ] Northwest
[ ] St. Johns River
[ ] South Florida
[ ] Suwannee River
[ ] DEP
[X] Delegated Authority (If Applicable) **Brevard DOH**

PLEASE, FILL OUT ALL APPLICABLE FIELDS
(*Denotes Required Fields Where Applicable)

Date Stamp

Confirmation# 822630

Date:05/02/2023

Official Use Only

1. *Permit Number MW-200284-1 *CUP/WUP Number _____ *DID Number 541670 62-524 Delineation No. _____
2. *Number of permitted wells constructed, repaired, or abandoned 1 *Number of permitted wells not constructed, repaired, or abandoned 0
3. *Owner's Name United States Of America 4.*Completion Date 04/06/2023 5. Florida Unique ID _____
6. CCF West off of Saturn Causeway 1/4 mile East of the VAB, KSC, FL 32953
   *Well Location – Address, Road Name or Number, City, ZIP
7. *County Brevard *Section 8 Land Grant _____ *Township 22S *Range 37E
8. Latitude 283517.51 Longitude 803829.45
9. Data Obtained From: ___GPS __X__Map ___Survey Datum: ___NAD 27 __X__NAD 83 ___WGS 84

10. *Type of Work: __X__Construction ___Repair ___Modification ___Abandonment Reason: _____
11. *Specify Intended Use(s) of Well(s):

___Domestic
___Bottled Water Supply
___Public Water Supply (Limited Use/DOH)
___Public Water Supply (Community or Non-Community/DEP)
___Class I Injection
___Landscape Irrigation
___Recreation Area Irrigation
___Agricultural Irrigation
___Livestock
___Nursery Irrigation
___Commercial/Industrial
___Golf Course Irrigation
___Site Investigation
__X__Monitoring
___Test
___Earth-Coupled Geothermal
___HVAC Supply
___HVAC Return

Class V Injection: ___Recharge ___Commercial/Industrial Disposal ___Aquifer Storage and Recovery ___Drainage
Remediation: ___Recovery ___Air Sparge ___Other (Describe) _____
___Other (Describe) _____

12. *Drill Method: ___Auger ___Cable Tool ___Rotary ___Combination (Two or More Methods) ___Jetted ___Sonic
___Horizontal Drilling __X__Hydraulic Point (Direct Push) ___Other _____
13. *Measured Static Water Level 8 ft. Measured Pumping Water Level 8 ft. After 1 Hours at 1 GPM
14. *Measuring Point (Describe) ground surface Which is .4 ft. ___Above __X__Below Land Surface *Flowing: ___Yes __X__No
15. *Casing Material: ___Black Steel ___Galvanized __X__PVC ___Stainless Steel ___Not Cased ___Other _____
16. *Total Well Depth 50 ft. Cased Depth 40 ft. *Open Hole: From ___To___ft. *Screen: From 40 To 50 ft. Slot Size .01

17. *Abandonment: Other(Explain _____)
From ___ft. To ___ft. No. of Bags___ Seal Material (Check One):___Neat Cement ___Bentonite ___Other___
From ___ft. To ___ft. No. of Bags___ Seal Material (Check One):___Neat Cement ___Bentonite ___Other___
From ___ft. To ___ft. No. of Bags___ Seal Material (Check One):___Neat Cement ___Bentonite ___Other___
From ___ft. To ___ft. No. of Bags___ Seal Material (Check One):___Neat Cement ___Bentonite ___Other___
From ___ft. To ___ft. No. of Bags___ Seal Material (Check One):___Neat Cement ___Bentonite ___Other___

18. *Surface Casing Diameter and Depth:
Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One):___Neat Cement ___Bentonite ___Other___
Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One):___Neat Cement ___Bentonite ___Other___

19. *Primary Casing Diameter and Depth:

Cement with Bentonite, <

Dia 1 in. From 0 ft. To 37 ft. No. of Bags 2 Seal Material (Check One):___Neat Cement ___Bentonite __X__Other 5% by weight
Dia 1 in. From 37 ft. To 40 ft. No. of Bags 1 Seal Material (Check One):___Neat Cement ___Bentonite __X__Other Sand
Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One):___Neat Cement ___Bentonite ___Other___
Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One):___Neat Cement ___Bentonite ___Other___
Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One):___Neat Cement ___Bentonite ___Other___

20. *Liner Casing Diameter and Depth:
Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One):___Neat Cement ___Bentonite ___Other___
Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One):___Neat Cement ___Bentonite ___Other___
Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One):___Neat Cement ___Bentonite ___Other___

21. *Telescope Casing Diameter and Depth:
Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One):___Neat Cement ___Bentonite ___Other___
Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One):___Neat Cement ___Bentonite ___Other___
Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One):___Neat Cement ___Bentonite ___Other___

22. Pump Type (If known):
___Centrifugal ___Jet ___Submersible ___Turbine
Horsepower _____ Pump Capacity (GPM) _____
Pump Depth ___ft. Intake Depth ___ft.

23. Chemical Analysis (When Required):
Iron ___ppm Sulfate ___ppm Chloride ___ppm
___Laboratory Test ___Field Test Kit

24. Water Well Contractor:
*Contractor Name James P Hinst *License Number 9311 E-mail Address jim@drillprollc.com
*Contractor's Signature **James P Hinst** (I certify that the information provided in this report is accurate and true.) *Driller's Name (Print or Type) Mickey Ritter

*Permit No. MW-200284-1

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
2379 BROAD STREET, BROOKSVILLE, FL 34604-6899
PHONE: (352) 796-7211 or (800) 423-1476
WWW.SWFWMD.STATE.FL.US

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
4049 REID STREET, PALATKA, FL 32178-1429
PHONE: (386) 329-4500
WWW.SJRWMD.COM

NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT
152 WATER MANAGEMENT DR., HAVANA, FL 32333-4712
(U.S. Highway 90, 10 miles west of Tallahassee)
PHONE: (850) 539-5999
WWW.NWFWMD.STATE.FL.US

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
P.O. BOX 24680
3301 GUN CLUB ROAD
WEST PLAM BEACH, FL 33416-4680
PHONE: (561) 686-8800
WWW.SFWMD.GOV

SUWANNEE RIVER WATER MANAGEMENT DISTRICT
9225 CR 49
LIVE OAK, FL 32060
PHONE: (386) 362-1001 or (800) 226-1066 (Florida only)
WWW.MYSUWANNEERIVER.COM

***DRILL CUTTINGS LOG** (Examine cuttings every 20 ft. or at formation changes. Note cavities and depth to producing zone. Grain Size: F=Fine, M=Medium, and C=Coarse)

From 0 ft. To 50 ft. Color N/A Grain Size (F, M, C) N/A Material No Sample
From ft. To ft. Color Grain Size (F, M, C) Material
From ft. To ft. Color Grain Size (F, M, C) Material
From ft. To ft. Color Grain Size (F, M, C) Material
From ft. To ft. Color Grain Size (F, M, C) Material
From ft. To ft. Color Grain Size (F, M, C) Material
From ft. To ft. Color Grain Size (F, M, C) Material
From ft. To ft. Color Grain Size (F, M, C) Material
From ft. To ft. Color Grain Size (F, M, C) Material
From ft. To ft. Color Grain Size (F, M, C) Material
From ft. To ft. Color Grain Size (F, M, C) Material
From ft. To ft. Color Grain Size (F, M, C) Material
From ft. To ft. Color Grain Size (F, M, C) Material
From ft. To ft. Color Grain Size (F, M, C) Material
From ft. To ft. Color Grain Size (F, M, C) Material
From ft. To ft. Color Grain Size (F, M, C) Material
From ft. To ft. Color Grain Size (F, M, C) Material
From ft. To ft. Color Grain Size (F, M, C) Material
From ft. To ft. Color Grain Size (F, M, C) Material
From ft. To ft. Color Grain Size (F, M, C) Material
From ft. To ft. Color Grain Size (F, M, C) Material
From ft. To ft. Color Grain Size (F, M, C) Material
From ft. To ft. Color Grain Size (F, M, C) Material
From ft. To ft. Color Grain Size (F, M, C) Material
From ft. To ft. Color Grain Size (F, M, C) Material
From ft. To ft. Color Grain Size (F, M, C) Material

Comments:
GP WO 423004
CCF IW 0092

Avoid Verbal Orders

TO: SI-E2/Natasha Darre **DATE: 03/22/2023**

FROM: SI-E3/Environmental Management Branch

SUBJECT: KSC Record of Environmental Consideration (REC) **REC #: 12215**

1. PROJECT INFORMATION

Project Title: CCF NAM Activities

Project Lead: Natasha Darre, SI-E2, 867-6987

Project No.: 80KSC019F0063_CCF_11-01-2021 (REV B)

Project Description:

03/20/2023: Conduct 1 day of drilling (1 monitoring well installation) at CCF West SWMU #030. The well will be drilled to a depth of 50 feet and installed with a scoped surface completion. The attached figure shows the proposed well location at the site.

07/22/2022 Update: Repairing two monitoring wells. The repair work requires digging around the well to replace the well pad and possibly the outer casing. This will not be completed using any heavy machinery, instead, it will be completed manually.

Original Project Description: Installation of up to 17 permanent monitoring wells, and abandonment of up 12 permanent monitoring wells throughout CCF West. Monitoring wells will be installed at various depths (15 to 65 feet below land surface) using a direct push technology (DPT) drill rig. Monitoring wells to be abandoned will be grouted in place from the bottom up. Concrete pads, if any, will be removed and the areas restored to ground level surfaces. Risers will be cut 1 foot below land surface. Attached figure shows locations for wells to be installed (yellow circles) and wells to be abandoned (black circles).

EPB Reviewer: LPH **Facility No.:** K7-0516/Component Cleaning Facility

2. NEPA DETERMINATIONS

- ☑ **a. Categorical Exclusions per 14 CFR Part 1216.304(d)**
- ☐ **b. Environmental Assessment (EA) Required**
- ☐ **c. Environmental Impact Statement (EIS) Required**
- ☐ **d. Existing FONSI or ROD**
- ☐ **e. Centerwide EIS**
- ☐ **f. AF Project on KSC/813**
- ☐ **g. NASA Project on CCAFS/813**

3. ENVIRONMENTAL REQUIREMENTS

a. Non-Permit Requirements	☑ **YES**	☐ **NO**
b. Permit Requirements	☑ **YES**	☐ **NO**

**********ORIGINAL REC ISSUED 11/02/2021**********
**********REC UPDATE 07/25/2022 Changed Lead/RPM, biological survey POC**********
**********REC 11884 UPDATE 03/22/2023 Updated excavation permit statement**********

2.a.1. CATEGORICAL EXCLUSION (CATEX): This project is categorically excluded (CATEX) from further NEPA review as defined in 14 CFR 1216.304(d)(2)(i) Routine maintenance, minor construction or rehabilitation, minor demolition, minor modification, minor repair, and continuing or altered operations at, or of, existing NASA or NASA-funded or -approved facilities and equipment, such as buildings, roads, grounds, utilities, communication systems, and ground support systems, such as space tracking and data systems. For additional information, please contact Don Dankert of the NASA Environmental Management Branch (SI-E3, 321-861-1196).

3.a.1. SOLID WASTE MANAGEMENT UNIT (SWMU): The proposed project is located within the boundary of SWMU #030 Component Cleaning Facility (CCF) being investigated by the Remediation Group of the NASA Environmental Assurance Branch (SI-E2). Contact the NASA Remediation Project Manager (RPM) Natasha Darre at 867-6987 for guidance regarding handling of groundwater at this location.

Avoid Verbal Orders

TO: SI-E2/Natasha Darre **DATE: 03/22/2023**

FROM: SI-E3/Environmental Management Branch

SUBJECT: KSC Record of Environmental Consideration (REC) **REC #: 12215**

A Land Use Control Implementation Plan (LUCIP) has been prepared for the SWMU. These controls are necessary to prohibit residential exposure to groundwater present at the site. All workers involved in subsurface/dewatering work must be notified (HAZCOM) of the potential for the presence of contamination. Handle potentially contaminated soils or groundwater in accordance with site work plan. Utilize PPE as required by Health and Safety Plan.

3.a.2. HAZARDOUS/NON-HAZARDOUS WASTE: All hazardous and non-hazardous wastes generated during the interim measure must be properly containerized, stored, labeled, manifested, shipped, and disposed of in full regulatory compliance. Hazardous wastes generated by this activity must be manifested, shipped, and disposed of under either the remediation contractor's or NASA's Environmental Protection Agency (EPA) identification number. The contractor shall maintain copies of waste management records and manifests onsite and make them available for review by NASA upon request.

If wastes are managed, controlled and disposed of using the NASA EPA identification number, the KSC Waste Management requirements outlined in KNPR 8500.1 must be followed. A Process Waste Questionnaire (PWQ), KSC Form 26-551 along with any supporting documentation (MSDS, product formulation, lab analyses) must be submitted to the NEMCON Waste Management Office for each waste stream generated. That office will then generate a Technical Response Package (TRP) which will give direction on proper handling, storage, and disposal of the waste stream. Please contact NEMCON Waste Management Services at 867-8642 if assistance is required.

The remediation contractor is responsible for any spills, releases, or other environmental contamination that occurs as a result of the proposed activities. A KSC Pollution Incident Report (PIR) Form (KSC Form 21-555) must be completed and submitted to the NASA Environmental Assurance Branch within three (3) working days of the incident.

It is also requested that the remediation contractor remove all excess grout from around the DPT bore holes or monitoring wells after it dries and dispose of it properly.

3.a.3. THREATENED AND ENDANGERED SPECIES: This project has the potential to affect protected and/or threatened and endangered species; which may include the Florida Scrub-jay, Eastern indigo snake, and gopher tortoise. Measures must be taken to minimize impacts to their habitat. A biological survey will be required to identify potential impacts prior to disturbance of soil or any vegetated area. Please contact Russ Lowers (NEM-022, 321-759-6022), 14 days before beginning work to schedule a biological survey.

3.a.4. CONCRETE WASHOUT: Water used to rinse out concrete trucks and other equipment used for concrete work must not be allowed to discharge to surface waters. Concrete washout water shall be diverted to a settling pond where suspended material will settle out and the water can percolate into the ground. Contact Doug Durham (SI-E2, 867-8429) with any question on this requirement.
Remove and dispose of hardened concrete waste consistent with your handling of other construction wastes. After drying/settling, the residue may be disposed of at the Diverted Aggregate Reclamation and Collection Yard (DARCY); and the ground restored. Clean, unstained, unpainted concrete residue is accepted at the DARCY without any sampling and analysis. Contact Alexander Garcia (SI-E2, 867-8448) with any questions on this requirement.

3.a.5. CONCRETE RECYCLING/DISPOSAL: Clean, unstained, unpainted concrete is accepted at the Diverted Aggregate Reclamation and Collection Yard (DARCY) without any sampling and analysis. Painted concrete must have PCB and Total Metals analyses (limited to Pb, Cd, and Cr) performed to determine whether it will be accepted at the DARCY for reuse. The results of the analysis must show metal concentrations below the residential cleanup level (Pb =

400 ppm, Cd = 82 ppm, Cr = 210 ppm) and PCB levels below 0.5 ppm. If no testing is done or if PCB and/or Total Metals concentrations are above residential cleanup levels, coated concrete goes to the landfill as construction/demolition debris. When feasible, painted concrete should be segregated from unpainted concrete for placement in the DARCY. No oil-stained concrete will be accepted at the DARCY. Due to the potential for PCB contamination, all removed concrete associated with oil-containing electrical equipment must be disposed through the KSC Waste Management Office as regulated PCB waste. To coordinate or for more information, contact Alexander Garcia (SI-E2, 867-8448).

3.b.1. EXCAVATION PERMIT: A KSC Excavation Permit will be required for any digging proposed by this project. Please contact the Utility Locate/Excavation Permit Request Customer Helpline at 867-2406 or go to website at http://epr.ksc.nasa.gov/Home/ for an underground utility scan and dig permit. NOTE: If a trench or pit is to be left open all day or overnight, the trench/pit must be checked for trapped animals at the beginning and end of each work shift. If an animal is observed trapped, contact Russ Lowers (NEM-022, 321-759-6022) or the Duty Office (861-5050, email KSC-BOSS-DutyOffice@mail.nasa.gov) to arrange removal/release. Do not handle the animal(s). If any archaeological material (e.g., artifacts and/or cultural features or human remains) is found, work must stop immediately, and the discovery reported to the KSC Cultural Resources Manager (CRM). For questions or to report a discovery, contact Katherine Zeringue (SI-E3) at 867-8454.
03/22/2023: EPR 21277 is under review for the proposed well installation.

3.b.2. WATER WELL: Installation or abandonment of a water well requires use of a licensed contractor, a KSC dig permit, and registration of the well with St. Johns River Water Management District (SJRWMD). Dependent on water use, wells may require a Florida Department of Health (FDOH) operating permit. Contact Doug Durham (SI-E2, 867-8429) for details.

No other environmental issues were identified based upon the information provided in the KSC Environmental Checklist. This Record of Environmental Consideration (REC) does not relinquish the project lead from obtaining and complying with any other internal NASA permits or directives necessary to ensure all organizations potentially impacted by this project are notified and concur with the proposed project.
Due to potential changes in regulations, permit requirements and environmental conditions, statements in this REC are valid for 6 months, and subject to review after this period. It is the responsibility of the project lead to submit current project information for a REC update prior to project commencement if REC is older than 6 months; and also to notify the Environmental Management Branch (SI-E3) if the scope of the project changes at any time after the REC is issued.
N. Darre/SI-E2

cc:
J. Vojak/HGL, Inc.
R. Lynch/HGL, Inc.
R. Lowers/NEM-022

4. Upon evaluation of the subject project, the above determinations have been made and identified. Contact the Environmental Management Branch (SI-E3) at 861-1196 for re-evaluation should there be any modifications to the scope of work.

03/22/2023 17:44

Avoid Verbal Orders

TO: SI-E2/Natasha Darre **DATE: 03/22/2023**

FROM: SI-E3/Environmental Management Branch

SUBJECT: KSC Record of Environmental Consideration (REC) **REC #: 12215**

Jeffrey Collins **Date**

APPENDIX D

FIELD DOCUMENTATION
(GROUNDWATER SAMPLING ACTIVITIES)

This page was intentionally left blank.

HGL
HydroGeologic, Inc.

CALIBRATION LOG

Project Name: CCF West

By: William Duttenhaver

Project No.: NS1003.04.03

Page 1 of 1

Date/Time	Instrument	STD	STD CONC ppm	Meter Reading	Comments
04/24/2023 08:00	YSI Pro-48524	DO	Sat Air	100.4	Pass
"	"	conductivity	1.413 ms/cm	1.42	Pass
"	"	ORP	240.0 MV	240.3	Pass
"	"	PH	4	3.99	Pass
"	"	PH	7	7.01	Pass
"	"	PH	10	10.04	Pass
04/24/2023 08:33	HACH 2100Q - 21539	NTU	20	20.8	Pass
"	"	NTU	100	99.0	Pass
"	"	NTU	800	806	Pass
"	"	NTU	10	10.3	Pass

HGL HydroGeoLogic, Inc Exceeding Expectations

STATIC WATER LEVEL FORM

PROJECT NAME: CCF West DATE: 04/24/2023

WATER LEVEL INDICATOR ID #: 361494

LOCATION: NASA/KSC

Well ID	Time Gauged	Installed Well Depth	DTW (ft BTOC)	Total Well Depth* (ft BTOC)	Notes
IW0046	09:26	50	10.54	53.31	
IW0070	09:28	55	11.19	59.35	
IW0069	09:32	50	11.78	54.09	
IW0068	09:35	50	10.69	54.11	
IW0091	09:38	65	10.59	67.47	
IW0045	09:42	50	9.90	53.10	
IW0067	09:45	50	9.51	53.52	
IW0044	09:49	50	6.97	53.39	
IW0032	09:53	67	9.81	69.51	
IW0030	09:57	67	10.13	69.43	
IW0042	10:00	40	6.15	42.85	
IW0039	10:03	50	10.02	50.42	
IW0085	10:07	45	8.61	47.84	
IW0005ID	10:10	56	8.16	58.45	
IW0061	10:15	45	5.89	48.14	
IW0079	10:19	15	7.41	18.15	
IW0037	10:22	30	5.55	32.66	
IW0090	10:24	55	7.33	57.70	
IW0082	10:27	25	7.91	27.96	
IW0025IS	10:30	30	11.04	33.00	

*Note: Total well depth to be measured at time of gauging.

Sampler Paul Dutton Observer _____

HGL HydroGeoLogic, Inc Exceeding Expectations

STATIC WATER LEVEL FORM

PROJECT NAME: CCF West DATE: 04/24/2023

WATER LEVEL INDICATOR ID #: 361494

LOCATION: NASA/KSC

Well ID	Time Gauged	Installed Well Depth	DTW (ft BTOC)	Total Well Depth* (ft BTOC)	Notes
IW0004D	10:50	76	6.26	79.43	
IW0004IS	10:53	37	6.30	40.20	
IW0087	10:55	45	7.52	47.95	
IW0081	10:58	25	6.89	28.03	
IW0036	11:02	35	6.69	38.21	
IW0021S	11:04	15	5.46	17.25	
IW0059	11:07	45	6.90	48.21	
IW0089	11:11	55	5.23	56.60	
IW0017S	11:15	12	7.16	14.95	
IW0084	11:17	35	6.29	37.89	missing cap
IW0063	11:20	50	6.31	53.85	
IW0080IS	11:23	25	5.95	27.91	
IW0080S	11:26	15	6.86	18.10	
IW0011IS	11:28	35	8.24	37.83	
IW0011ID	11:30	57	7.97	59.99	
IW0086	11:33	45	7.99	47.86	
IW0064	11:37	50	6.83	53.65	
IW0062	11:44	25	7.11	28.15	
IW0003D	11:47	76	5.42	80.28	
IW0003ID	11:49	56	5.41	59.19	

*Note: Total well depth to be measured at time of gauging.

Sampler [signature] Observer _____

HGL HydroGeoLogic, Inc Exceeding Expectations

STATIC WATER LEVEL FORM

PROJECT NAME: CCF West DATE: 04/24/2023

WATER LEVEL INDICATOR ID #: 361494

LOCATION: NASA/KSC

Well ID	Time Gauged	Installed Well Depth	DTW (ft BTOC)	Total Well Depth* (ft BTOC)	Notes
IW0003IS	11:52	35	5.80	37.51	
IW0003S	11:55	13	5.30	15.57	
IW0088	12:00	45	6.09	47.91	
IW0092	12:17	50	7.33	53.31	
IW0029ID	12:20	45	6.19	47.95	
IW0083S	12:23	25	4.44	27.95	
IW0083ID	12:25	45	4.59	47.81	
IW0083IS	12:28	35	4.56	37.26	
IW0031	—	—	—	—	Proposed for Abandonment

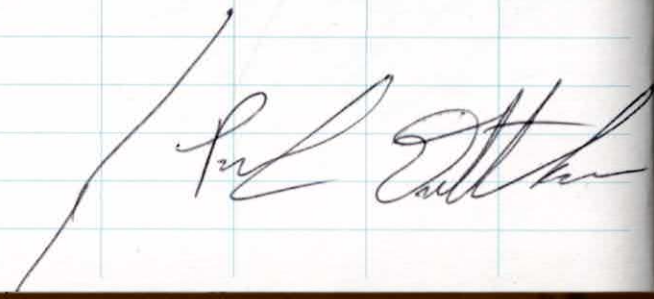
*Note: Total well depth to be measured at time of gauging.

Sampler [signature] Observer _____

126 Location CCF West Date 04/24/23

Project / Client NASA/KSC
NS1003.04.03

Purpose- collect water levels / MW sampling
Personnel- William Duttenhaver
Equipment- YSI Pro, HACH 2100Q, water level meter
Weather- H: 78 L: 67, 90% chance of rain
wind E 10 mph, mostly cloudy
06:00- Picked up equipment and
sample bottles from Merritt Island office
07:00- Prepared work truck for
sampling event.
08:00- calibrated sampling equipment
09:20- on site started collecting water levels
12:35- Finished collecting water levels
heading to field office to
scan in paperwork. currently
in a phase two. Off site
site secure
13:00 Scanning in todays paperwork
and preparing for sampling
tomorrow at the CCSFS Field office.



DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CCF West	SITE LOCATION: NASA/KSC	
WELL NO: CCF-IW0082	SAMPLE ID: CCF-IW0082-020.0-20230425	DATE: 04/25/23

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 15 feet to 25 feet	STATIC DEPTH TO WATER (feet): 7.55	PURGE PUMP TYPE OR BAILER: PP

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (5.3 mL/foot X 23 feet) + 200 mL = 321.9 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20	PURGING INITIATED AT: 07:30	PURGING ENDED AT: 07:52	TOTAL VOLUME PURGED (liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µS/cm	DISSOLVED OXYGEN (circle units) mg/L	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
07:40	2.0	2.0	200	7.70	7.15	23.1	1038	0.37	3.33	-168.0	clear none
07:43	.6	2.6	200	7.71	7.15	23.0	1037	0.20	2.67	-168.4	"
07:46	.6	3.2	200	7.71	7.14	23.1	1037	0.19	2.23	-168.5	"
07:49	.6	3.8	200	7.71	7.15	23.1	1037	0.18	2.07	-187.7	"
07:52	.6	4.4	200	7.71	7.14	23.1	1037	0.16	2.19	-178.8	"

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

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HGL William Duttenhaver	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 07:54	SAMPLING ENDED AT: 07:54
PUMP OR TUBING DEPTH IN WELL (feet): 20	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	3	CG	40mL	HCL	N/A		V8260SL	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

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

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CCF West	SITE LOCATION: NASA/KSC	
WELL NO: CCF-IW0090	SAMPLE ID: CCF-IW0090-050.0-20230425	DATE: 04/25/23

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 45 feet to 55 feet	STATIC DEPTH TO WATER (feet): 7.05	PURGE PUMP TYPE OR BAILER: PP

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (5.3 mL/foot X 53 feet) + 200 mL = 480.9 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 50	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 50	PURGING INITIATED AT: 08:12	PURGING ENDED AT: 08:34	TOTAL VOLUME PURGED (liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µS/cm	DISSOLVED OXYGEN (circle units) mg/L	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
08:22	2.0	2.0	200	7.15	7.04	23.7	2866	0.27	71.7	-155.9	clear none
08:25	.6	2.6	200	7.16	7.05	23.7	2877	0.22	46.4	-156.0	"
08:28	.6	3.2	200	7.16	7.05	23.7	2886	0.20	22.1	-157.7	"
08:31	.6	3.8	200	7.16	7.04	23.7	2901	0.17	12.4	-157.9	"
08:34	.6	4.4	200	7.16	7.04	23.7	2907	0.16	8.42	-157.5	"

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

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HGL William Duttenhaver	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 08:36	SAMPLING ENDED AT: 08:36
PUMP OR TUBING DEPTH IN WELL (feet): 50	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	3	CG	40mL	HCL	N/A		V8260SL	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

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

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CCF West	SITE LOCATION: NASA/KSC	
WELL NO: CCF-IW0037	SAMPLE ID: CCF-IW0037-025.0-20230425	DATE: 04/25/23

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 20 feet to 30 feet	STATIC DEPTH TO WATER (feet): 5.31	PURGE PUMP TYPE OR BAILER: PP

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (5.3 mL/foot X 28 feet) + 200 mL = 348.4 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25	PURGING INITIATED AT: 09:04	PURGING ENDED AT: 09:35	TOTAL VOLUME PURGED (liters): 6.2

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µS/cm	DISSOLVED OXYGEN (circle units) mg/L	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
09:14	2.0	2.0	200	5.39	6.88	24.0	1303	0.21	34.6	-98.2	clear none
09:17	.6	2.6	200	5.40	6.87	24.0	1305	0.14	56.8	-99.5	"
09:20	.6	3.2	200	5.40	6.86	24.0	1306	0.12	55.3	-101.0	"
09:23	.6	3.8	200	5.41	6.87	24.1	1307	0.12	47.9	-101.3	"
09:26	.6	4.4	200	5.41	6.87	24.1	1307	0.12	44.2	-101.7	"
09:29	.6	5.0	200	5.41	6.87	24.1	1307	0.12	31.2	-102.0	"
09:32	.6	5.6	200	5.41	6.88	24.1	1306	0.12	27.2	-102.0	"
09:35	.6	6.2	200	5.41	6.88	24.1	1307	0.11	19.3	-102.0	"

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

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HGL William Duttenhaver	SAMPLER(S) SIGNATURE(S): Paul Duttenhaver	SAMPLING INITIATED AT: 09:37	SAMPLING ENDED AT: 09:37
PUMP OR TUBING DEPTH IN WELL (feet): 25	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	3	CG	40mL	HCL	N/A		V8260SL	APP	200

REMARKS: High Effervescence

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

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

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

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CCF West	SITE LOCATION: NASA/KSC	
WELL NO: CCF-IW0079	SAMPLE ID: CCF-IW0079-010.0-2023 0425	DATE: 04/25/23

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 5 feet to 15 feet	STATIC DEPTH TO WATER (feet): 7.07	PURGE PUMP TYPE OR BAILER: PP

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (5.3 mL/foot X 13 feet) + 200 mL = 268.9 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 10	PURGING INITIATED AT: 10:02	PURGING ENDED AT: 10:36	TOTAL VOLUME PURGED (liters): 5.6

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µS/cm	DISSOLVED OXYGEN (circle units) mg/L	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
10:12	2.0	2.0	200	7.22	5.38	24.5	2124	0.16	57.3	-34.8	clear none
10:15	.6	2.6	200	7.22	5.39	24.5	2164	0.14	48.1	-37.8	"
10:18	.6	3.2	200	7.22	5.38	24.6	2165	0.13	42.0	-40.4	"
10:21	.6	3.8	200	7.22	5.38	24.6	2156	0.11	40.9	-43.2	"
10:24	.6	4.4	200	7.22	5.39	24.6	2155	0.10	27.4	-46.1	"
10:27	.6	5.0	200	7.22	5.38	24.5	2149	0.11	21.6	-47.4	"
10:30	.6	5.6	200	7.22	5.39	24.5	2143	0.10	17.7	-49.6	"

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

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HGL William Duttenhaver	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 10:32	SAMPLING ENDED AT: 10:32
PUMP OR TUBING DEPTH IN WELL (feet): 10	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
1	3	CG	40mL	HCL	N/A		V8260SL	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

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

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

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CCF West	SITE LOCATION: NASA/KSC	
WELL NO: CCF-IW0061	SAMPLE ID: CCF-IW0061-040.0-2023~~04~~25	DATE: 04/25/23

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 35 feet to 45 feet	STATIC DEPTH TO WATER (feet): 5.59	PURGE PUMP TYPE OR BAILER: PP

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (5.3 mL/foot X 43 feet) + 200 mL = 427.9 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 40	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 40	PURGING INITIATED AT: 10:54	PURGING ENDED AT: 11:16	TOTAL VOLUME PURGED (liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µS/cm	DISSOLVED OXYGEN (circle units) mg/L	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
11:04	2.0	2.0	200	5.62	6.99	24.9	2500	0.17	32.0	-74.8	clear none
11:07	.6	2.6	200	5.63	7.01	25.2	2521	0.13	19.9	-79.1	"
11:10	.6	3.2	200	5.63	7.02	25.3	2529	0.11	12.0	-82.7	"
11:13	.6	3.8	200	5.63	7.02	25.2	2531	0.12	9.72	-84.0	"
11:16	.6	4.4	200	5.63	7.04	25.1	2537	0.12	8.13	-86.2	"

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

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HGL William Duttenhaver	SAMPLER(S) SIGNATURE(S): Paul Sutton	SAMPLING INITIATED AT: 11:18	SAMPLING ENDED AT: 11:18
PUMP OR TUBING DEPTH IN WELL (feet): 40	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type: P.P.	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	3	CG	40mL	HCL	N/A		V8260SL	APP	200

REMARKS: High Effervescence

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

NOTES: **1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

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

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CCF West	SITE LOCATION: NASA/KSC	
WELL NO: CCF-IW0005ID	SAMPLE ID: CCF-IW0005ID-051.0-2023**0425**	DATE: 04/25/23

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 46 feet to 56 feet	STATIC DEPTH TO WATER (feet): 7.92	PURGE PUMP TYPE OR BAILER: PP

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (5.3 mL/foot X 54 feet) + 200 mL = 486.2 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 51	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 51	PURGING INITIATED AT: 11:44	PURGING ENDED AT: 12:06	TOTAL VOLUME PURGED (liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µS/cm	DISSOLVED OXYGEN (circle units) mg/L	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
11:54	2.0	2.0	200	8.10	7.41	24.8	960	0.24	4.64	-105.8	clear none
11:57	.6	2.6	200	8.11	7.40	24.9	961	0.22	1.85	-108.8	"
12:00	.6	3.2	200	8.11	7.39	24.6	956	0.20	1.17	-114.1	"
12:03	.6	3.8	200	8.11	7.39	24.9	959	0.21	1.23	-112.8	"
12:06	.6	4.4	200	8.11	7.38	24.9	961	0.22	1.04	-114.3	"

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

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HGL William Duttenhaver	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 12:08	SAMPLING ENDED AT: 12:08
PUMP OR TUBING DEPTH IN WELL (feet): 51	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	3	CG	40mL	HCL	N/A		V8260SL	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

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

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CCF West	SITE LOCATION: NASA/KSC	
WELL NO: CCF-IW0085	SAMPLE ID: CCF-IW0085-040.0-20230425	DATE: 04/25/23

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4 PE/HDPE	WELL SCREEN INTERVAL DEPTH: 35 feet to 45 feet	STATIC DEPTH TO WATER (feet): 8.40	PURGE PUMP TYPE OR BAILER: PP

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (5.3 mL/foot X 43 feet) + 200 mL = 427.9 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 40	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 40	PURGING INITIATED AT: 12:22	PURGING ENDED AT: 12:44	TOTAL VOLUME PURGED (liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µS/cm	DISSOLVED OXYGEN (circle units) mg/L	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
12:32	2.0	2.0	200	8.47	7.40	23.4	639	0.16	5.32	-117.2	clear none
12:35	.6	2.6	200	8.47	7.42	23.6	641	0.15	4.96	-123.3	"
12:38	.6	3.2	200	8.48	7.42	23.5	645	0.14	3.21	-125.5	"
12:41	.6	3.8	200	8.48	7.43	23.6	647	0.13	3.87	-126.7	"
12:44	.6	4.4	200	8.48	7.43	23.6	649	0.14	3.41	-133.6	"

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

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HGL William Duttenhaver	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 12:46	SAMPLING ENDED AT: 12:46
PUMP OR TUBING DEPTH IN WELL (feet): 40	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N (replaced))	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	3	CG	40mL	HCL	N/A		V8260SL	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

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

SGS North America Inc - Orlando

Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # : PAGE_____OF_____

SGS - ORLANDO Quote # | SKIFF #

Client / Reporting Information

Company Name: Hydrogeologic INC.
Address: 2405 N Courtenay Pkwy Suite 203
City: Merritt Island State: Florida Zip: 32953
Project Contact: Denise Rivers Email: driversahgl.com
Phone #: 910-233-8460
Sampler(s) Name(s) (Printed) Sampler 1: William Duttenhaver Sampler 2:

Project Information

Project Name: CCF West
Street
City NASA/KSC State Florida
Project # NS1003.04.06
Fax #
Client Purchase Order #

Analytical Information

V8260STD

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	CONTAINER INFORMATION: OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	V8260STD
	CCF-TB-20230425-01	04/25	07:00	P.E	WW	2			X							X
	CCF-IW0082-020.0-20230425	04/25	07:54	P.E	GW	3			X							X
	CCF-IW0090-050.0-20230425	04/25	08:36	P.E	GW	3			X							X
	CCF-IW0037-025.0-20230425	04/25	09:37	P.E	GW	3			X							X
	CCF-IW0079-010.0-20230425	04/25	10:32	P.E	GW	3			X							X
	CCF-IW0061-040.0-20230425	04/25	11:18	P.E	GW	3			X							X
	CCF-IW0005ID-051.0-20230425	04/25	12:08	P.E	GW	3			X							X
	CCF-IW0085-040.0-20230425	04/25	12:46	P.E	GW	3			X							X

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid

LAB USE ONLY

Turnaround Time (Business days)

10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [ ] EDD'S

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1		2	3		4
Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
5		6	7		8

Lab Use Only : Cooler Temperature (s) Celsius (corrected):_____

Location CCF west Date 04/25/23

Project / Client NASA/KSC

NS1003.04.03

Purpose- MW sampling
Personnel- William Duttenhaver
Equipment - YSI Pro, Hach2100Q, water level meter
Weather- H: 77° L: 67°, 80% chance of rain
06:30 - Arrived at field office to get work truck and Ice. Sampling equipment calibrated on 04/24/23 and never used.
07:15 - on site
07:54 - sampled IW0082
08:36 - Sampled IW0090
09:37 - Sampled IW0037
10:32 - Sampled IW0079
11:18 - sampled IW0061
12:08 - Sampled IW0005ID
12:46 - Sampled IW0085
13:15 - calling it due to heavy rain showers
13:20 - Dumped IDW into drum 229652 on Pallett 229654
13:25 - Headed to field office to calibrate sampling equipment for 4/26/23 and scan in paperwork.
13:27 - site secure / off site

Paul Duttenhaver

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CCF West	SITE LOCATION: NASA/KSC	
WELL NO: CCF-IW0042	SAMPLE ID: CCF-IW0042-035.0-20230426	DATE: 04/26/23

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 30 feet to 40 feet	STATIC DEPTH TO WATER (feet): 5.81	PURGE PUMP TYPE OR BAILER: PP

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (5.3 mL/foot X 38 feet) + 200 mL = 401.4 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35	PURGING INITIATED AT: 7:40	PURGING ENDED AT: 08:02	TOTAL VOLUME PURGED (liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µS/cm	DISSOLVED OXYGEN (circle units) mg/L	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
07:50	2.0	2.0	200	5.87	8.71	25.2	2820	0.36	9.50	-154.6	Clear none
07:53	.6	2.6	200	5.87	8.72	25.3	2834	0.33	8.69	-166.7	"
07:56	.6	3.2	200	5.88	8.72	25.3	2838	0.28	5.86	-174.8	"
07:59	.6	3.8	200	5.88	8.71	25.4	2845	0.25	5.20	-181.1	"
08:02	.6	4.4	200	5.88	8.71	25.4	2851	0.26	4.48	-180.4	"

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

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HGL William Duttenhaver	SAMPLER(S) SIGNATURE(S): Paul Duttenhaver	SAMPLING INITIATED AT: 08:04	SAMPLING ENDED AT: 08:04
PUMP OR TUBING DEPTH IN WELL (feet): 35	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	3	CG	40mL	HCL	N/A		V8260SL	APP	200

REMARKS: Very High Effervescence

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

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

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

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CCF West	SITE LOCATION: NASA/KSC	
WELL NO: CCF-IW0067	SAMPLE ID: CCF-IW0067-045.0-20230426	DATE: 04/26/23

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 40 feet to 50 feet	STATIC DEPTH TO WATER (feet): 9.25	PURGE PUMP TYPE OR BAILER: PP

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (5.3 mL/foot X 48 feet) + 200 mL = 454.4 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 45	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 45	PURGING INITIATED AT: 08:28	PURGING ENDED AT: 08:50	TOTAL VOLUME PURGED (liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µS/cm	DISSOLVED OXYGEN (circle units) mg/L	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
08:38	2.0	2.0	200	9.30	7.62	24.9	1797	0.31	1.71	-223.2	clear none
08:41	.6	2.6	200	9.31	7.61	25.4	1796	0.30	1.11	-224.7	"
08:44	.6	3.2	200	9.31	7.63	25.5	1794	0.28	0.89	-233.9	"
08:47	.6	3.8	200	9.31	7.64	25.5	1792	0.28	0.74	-245.5	"
08:50	.6	4.4	200	9.31	7.64	25.4	1792	0.26	0.67	-252.7	"

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

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HGL William Duttenhaver	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 08:52	SAMPLING ENDED AT: 08:52
PUMP OR TUBING DEPTH IN WELL (feet): 45	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
1	3	CG	40mL	HCL	N/A		V8260SL	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

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

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

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CCF West	SITE LOCATION: NASA/KSC	
WELL NO: CCF-IW0045	SAMPLE ID: CCF-IW0045-045.0-20230426	DATE: 04/26/23

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 40 feet to 50 feet	STATIC DEPTH TO WATER (feet): 9.60	PURGE PUMP TYPE OR BAILER: PP

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (5.3 mL/foot X 48 feet) + 200 mL = 4544 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 45	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 45	PURGING INITIATED AT: 11:06	PURGING ENDED AT: 11:28	TOTAL VOLUME PURGED (liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µS/cm	DISSOLVED OXYGEN (circle units) mg/L	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
11:16	2.0	2.0	200	9.67	6.70	26.7	977	0.22	10.9	-255.1	clear none
11:19	.6	2.6	200	9.67	6.70	26.7	982	0.17	5.36	-266.8	"
11:22	.6	3.2	200	9.67	6.72	26.6	986	0.15	1.51	-264.5	"
11:25	.6	3.8	200	9.68	6.71	26.7	990	0.14	1.44	-270.1	"
11:28	.6	4.4	200	9.68	6.72	26.7	993	0.14	1.69	-278.3	"

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

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: William Duttenhaver H&L	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 11:30	SAMPLING ENDED AT: 11:30
PUMP OR TUBING DEPTH IN WELL (feet): 45	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	3	CG	40mL	HCL	N/A		V8260SL	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

NOTES: **1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

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

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CCF West	SITE LOCATION: NASA/KSC	
WELL NO: CCF-IW0070	SAMPLE ID: CCF-IW0070-050.0-20230426	DATE: 04/26/23

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 45 feet to 55 feet	STATIC DEPTH TO WATER (feet): 11.01	PURGE PUMP TYPE OR BAILER: PP

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (5.3 mL/foot X 53 feet) + 200 mL = 480.9 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 50	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 50	PURGING INITIATED AT: 11:54	PURGING ENDED AT: 12:16	TOTAL VOLUME PURGED (liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µS/cm	DISSOLVED OXYGEN (circle units) mg/L	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
12:04	2.0	2.0	200	11.08	6.79	26.3	995	0.19	1.71	-205.4	Clear none
12:07	.6	2.6	200	11.08	6.79	26.1	1022	0.22	1.60	-262.1	"
12:10	.6	3.2	200	11.09	6.78	26.3	1027	0.19	1.16	-263.4	"
12:13	.6	3.8	200	11.09	6.78	26.0	1032	0.17	0.71	-251.7	"
12:16	.6	4.4	200	11.09	6.79	26.1	1039	0.16	0.52	-247.4	"

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

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HGL William Duttenhaver	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 12:18	SAMPLING ENDED AT: 12:18
PUMP OR TUBING DEPTH IN WELL (feet): 50	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	3	CG	40mL	HCL	N/A		V8260SL	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

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

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CCF West	SITE LOCATION: NASA/KSC	
WELL NO: CCF-IW0046	SAMPLE ID: CCF-IW0046-045.0-2023**0426**	DATE: 04/26/23

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 40 feet to 50 feet	STATIC DEPTH TO WATER (feet): 10.25	PURGE PUMP TYPE OR BAILER: PP

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (5.3 mL/foot X 48 feet) + 200 mL = 454.4 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 45	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 45	PURGING INITIATED AT: 12:36	PURGING ENDED AT: 12:58	TOTAL VOLUME PURGED (liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µS/cm	DISSOLVED OXYGEN (circle units) mg/L	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
12:46	2.0	2.0	200	10.38	6.71	25.8	711	0.21	15.2	-81.4	Clear none
12:49	.6	2.6	200	10.38	6.70	25.5	728	0.20	5.92	-88.2	"
12:52	.6	3.2	200	10.38	6.69	25.4	734	0.19	4.47	-88.5	"
12:55	.6	3.8	200	10.38	6.70	25.4	737	0.17	5.15	-87.5	"
12:58	.6	4.4	200	10.38	6.69	24.4	740	0.19	4.06	-88.7	"

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

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HGL William Duttenhaver	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 13:00	SAMPLING ENDED AT: 13:00
PUMP OR TUBING DEPTH IN WELL (feet): 45	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	3	CG	40mL	HCL	N/A		V8260SL	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

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

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CCF West	SITE LOCATION: NASA/KSC	
WELL NO: CCF-IW0091	SAMPLE ID: CCF-IW0091-060.0-2023 0426	DATE: 04/26/23

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 55 feet to 65 feet	STATIC DEPTH TO WATER (feet): 10.35	PURGE PUMP TYPE OR BAILER: PP

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (5.3 mL/foot X 63 feet) + 200 mL = 533.9 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 60	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 60	PURGING INITIATED AT: 13:17	PURGING ENDED AT: 13:39	TOTAL VOLUME PURGED (liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µS/cm	DISSOLVED OXYGEN (circle units) mg/L	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
13:27	2.0	2.0	200	10.84	6.96	25.9	1933	0.17	7.79	-137.6	clear none
13:30	.6	2.6	200	10.84	6.96	26.1	1934	0.15	5.87	-131.5	"
13:33	.6	3.2	200	10.83	6.95	26.1	1938	0.15	3.48	-121.6	"
13:36	.6	3.8	200	10.83	6.95	26.2	1939	0.15	2.14	-118.6	"
13:39	.6	4.4	200	10.83	6.95	26.2	1938	0.15	1.23	-144.9	"

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

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HGL William Dutterhaver	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 13:41	SAMPLING ENDED AT: 13:41
PUMP OR TUBING DEPTH IN WELL (feet): 60	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) replaced	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	3	CG	40mL	HCL	N/A		V8260SL	APP	200

REMARKS: High Effervescence

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

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

HGL HydroGeologic, Inc

CALIBRATION LOG

Project Name: CCF West

By: William Duttenhaver

Project No.: NS1003.04.03

Page 1 of 1

Date/Time	Instrument	STD	STD CONC ppm	Meter Reading	Comments
04/25/2023 14:20	YSI Pro-48524	DO	sat Air	100.8	Pass
"	"	conductivity	1.413 ms/cm	1.41	Pass
"	"	ORP	240.0 Mv	239.8	Pass
"	"	PH	4	4.02	Pass
"	"	PH	7	6.99	Pass
"	"	PH	10	10.01	Pass
04/25/2023 15:00	HACH 2100Q-21539	NTU	20	20.4	Pass
"	"	NTU	100	102	Pass
"	"	NTU	800	808	Pass
"	"	NTU	10	10.2	Pass

SGS North America Inc - Orlando

Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # :

Client / Reporting Information		Project Information		SGS - ORLANDO Quote #	SKIFF #
Company Name: Hydrogeologic INC.		Project Name: CCF West			
Address: 2405 N Courtenay Pkwy Suite 203		Street			
City: Merritt Island State: Florida Zip: 32953		City NASA/KSC State Florida			
Project Contact: Denise Rivers Email: driversahgl.com		Project # NS1003.04.06			
Phone #: 910-233-8460		Fax #			
Sampler(s) Name(s) (Printed) Sampler 1: William Duttenhaver Sampler 2:		Client Purchase Order #			

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	CONTAINER INFORMATION MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	Analytical Information: V8260STD → TCE, cDCE, tDCE, VC only	Matrix Codes
	CCF-TB-20230425-01	04/25	07:00	P.E	WW	2			X							X	DW - Drinking Water
	CCF-IW0082-020.0-20230425	04/25	07:54	P.E	GW	3			X							X	GW - Ground Water
	CCF-IW0090-050.0-20230425	04/25	08:36	P.E	GW	3			X							X	WW - Water
	CCF-IW0037-025.0-20230425	04/25	09:37	P.E	GW	3			X							X	SW - Surface Water
	CCF-IW0079-010.0-20230425	04/25	10:32	P.E	GW	3			X							X	SO - Soil
	CCF-IW0061-040.0-20230425	04/25	11:18	P.E	GW	3			X							X	SL- Sludge
	CCF-IW0005ID-051.0-20230425	04/25	12:08	P.E	GW	3			X							X	OI - Oil
	CCF-IW0085-040.0-20230425	04/25	12:46	P.E	GW	3			X							X	LIQ - Other Liquid
	CCF-IW0042-035.0-20230426	04/26	08:04	P.E	GW	3			X							X	AIR - Air
	CCF-IW0067-045.0-20230426	04/26	08:52	P.E	GW	3			X							X	SOL - Other Solid
	CCF-IW0045-045.0-20230426	04/26	11:30	P.E	GW	3			X							X	
	CCF-IW0070-050.0-20230426	04/26	12:18	P.E	GW	3			X							X	LAB USE ONLY

Turnaround Time (Business days)

10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- ☐ COMMERCIAL "A" (RESULTS ONLY)
- ☐ COMMERCIAL "B" (RESULTS PLUS QC)
- ☐ REDT1 (EPA LEVEL 3)
- ☐ FULLT1 (EPA LEVEL 4)
- ☐ EDD'S

Comments / Remarks

(V8260 STD) TCE, cDCE, tDCE, VC only

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1		2	3		4
Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
5		6	7		8

Lab Use Only : Cooler Temperature (s) Celsius (corrected):

SGS North America Inc - Orlando

Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # :

SGS - ORLANDO Quote #

SKIFF #

Client / Reporting Information

Company Name: Hydrogeologic INC.
Address: 2405 N Courtenay Pkwy Suite 203
City: Merritt Island State: Florida Zip: 32953
Project Contact: Denise Rivers Email: drivers@hgl.com
Phone #: 910-233-8460
Sampler(s) Name(s) (Printed) Sampler 1: William Duttenhaver Sampler 2:

Project Information

Project Name: CCF West
Street
City NASA/KSC State Florida
Project # NS1003.04.06
Fax #
Client Purchase Order #

Analytical Information

V8260 STD + TCE, cDCE, tDCE, VC only

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	V8260 STD + TCE, cDCE, tDCE, VC only	LAB USE ONLY
	CCF-IW0046-045.0-20230426	04/26	13:00	P.O	GW	3			X							X	
	CCF-IW0091-060.0-20230426	04/26	13:41	P.O	GW	3			X							X	

Turnaround Time (Business days)

10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [ ] EDD'S

Comments / Remarks

(V8260 STD) TCE, cDCE, tDCE, VC only

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1		2	3		4
Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
5		6	7		8

Lab Use Only : Cooler Temperature (s) Celsius (corrected):

128

Location CCF west Date 04/26/23

Project / Client NASA / KSC

NS1003.04.03

Purpose- collect MW samples

Personel- William Duttenhaver

Equipment- YSI pro, Hach 2100Q, water level meter

Weather- H: 81° L: 69°, 70% chance of rain

06:30 - Arrive at field office to get truck, ice, and drum for IDW

07:15 - on site. staged new drum for IDW

08:04 - Sampled IW0042

08:52 - Sampled IW0067

09:00 - Addressing possible YSI problem

10:55 - Back on site after resolving issues with YSI PH Probe

11:30 - Sampled IW0045

12:18 - sampled IW0070

13:00 - Sampled IW0046

13:41 - Sampled IW0091

14:15 - Dumped IDW in drum 229687. Headed back to field office to prepare samples for courier. currently in a phase two.

14:17 - off site / Site secure.

William Duttenhaver

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CCF West	SITE LOCATION: NASA/KSC	
WELL NO: CCF-IW0004IS	SAMPLE ID: CCF-IW0004IS-032.0-20230427	DATE: 04/27/23

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 27 feet to 37 feet	STATIC DEPTH TO WATER (feet): 6.05	PURGE PUMP TYPE OR BAILER: PP

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (5.3 mL/foot X 35 feet) + 200 mL = 385.5 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 32	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 32	PURGING INITIATED AT: 07:31	PURGING ENDED AT: 07:53	TOTAL VOLUME PURGED (liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µS/cm	DISSOLVED OXYGEN (circle units) mg/L	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
07:41	2.0	2.0	200	6.11	7.78	24.2	2294	0.17	4.57	-90.5	clear none
07:44	.6	2.6	200	6.11	6.88	24.2	2498	0.25	2.06	-96.9	"
07:47	.6	3.2	200	6.12	6.72	24.3	2546	0.20	2.11	-99.0	"
07:50	.6	3.8	200	6.12	6.72	24.3	2548	0.18	2.02	-102.3	"
07:53	.6	4.4	200	6.12	6.71	24.3	2549	0.17	1.52	-103.5	"

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

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HGL William Duttenhaver	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 07:55	SAMPLING ENDED AT: 07:55

PUMP OR TUBING DEPTH IN WELL (feet): 32	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm

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

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	3	CG	40mL	HCL	N/A		V8260SL	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

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

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CCF West	SITE LOCATION: NASA/KSC	
WELL NO: CCF-IW0087	SAMPLE ID: CCF-IW0087-040.0-2023 0427	DATE: 04/27/23

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 35 feet to 45 feet	STATIC DEPTH TO WATER (feet): 7.22	PURGE PUMP TYPE OR BAILER: PP

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (5.3 mL/foot X 43 feet) + 200 mL = 427.9 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 40	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 40	PURGING INITIATED AT: 08:10	PURGING ENDED AT: 08:32	TOTAL VOLUME PURGED (liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µS/cm	DISSOLVED OXYGEN (circle units) mg/L	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
08:20	2.0	2.0	200	7.27	6.76	24.7	2357	0.18	10.6	-80.0	clear none
08:23	.6	2.6	200	7.27	6.76	24.8	2358	0.15	8.35	-80.5	"
08:26	.6	3.2	200	7.28	6.76	24.8	2358	0.13	8.55	-81.5	"
08:29	.6	3.8	200	7.28	6.76	24.8	2358	0.13	8.42	-81.6	"
08:32	.6	4.4	200	7.28	6.75	24.8	2358	0.11	7.81	-82.4	"

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

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HGL William Duttenhaver	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 08:34	SAMPLING ENDED AT: 08:34
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	3	CG	40mL	HCL	N/A		V8260SL	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

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

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CCF West	SITE LOCATION: NASA/KSC	
WELL NO: CCF-IW0081	SAMPLE ID: CCF-IW0081-020.0-2023**0427**	DATE: 04/27/23

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 15 feet to 25 feet	STATIC DEPTH TO WATER (feet): 6.63	PURGE PUMP TYPE OR BAILER: PP

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (5.3 mL/foot X 23 feet) + 200 mL = 321.9 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20	PURGING INITIATED AT: 08:53	PURGING ENDED AT: 09:15	TOTAL VOLUME PURGED (liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µS/cm	DISSOLVED OXYGEN (circle units) mg/L	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
09:03	2.0	2.0	200	6.74	6.46	25.0	1819	0.13	7.33	-160.5	clear sulfur
09:06	.6	2.6	200	6.74	6.44	25.1	1972	0.11	7.35	-166.1	"
09:09	.6	3.2	200	6.75	6.44	25.1	2050	0.08	4.86	-169.8	"
09:12	.6	3.8	200	6.74	6.45	25.1	2065	0.07	3.61	-173.6	"
09:15	.6	4.4	200	6.75	6.44	25.1	2069	0.07	3.23	-174.8	"

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

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HGL William Duttenhaver	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 09:17	SAMPLING ENDED AT: 09:17
PUMP OR TUBING DEPTH IN WELL (feet): 20	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	3	CG	40mL	HCL	N/A		V8260SL	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

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

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CCF West	SITE LOCATION: NASA/KSC	
WELL NO: CCF-IW0059	SAMPLE ID: CCF-IW0059-040.0-20230427	DATE: 04/27/23

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 35 feet to 45 feet	STATIC DEPTH TO WATER (feet): 6.58	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X mL/foot = ~~427~~ P.O. mL

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (5.3 mL/foot X 43 feet) + 200 mL = 427.9 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 40	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 40	PURGING INITIATED AT: 09:35	PURGING ENDED AT: 09:57	TOTAL VOLUME PURGED (liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µS/cm	DISSOLVED OXYGEN (circle units) mg/L	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
09:45	2.0	2.0	200	6.62	6.74	25.7	1664	0.22	5.65	-95.9	Clear none
09:48	.6	2.6	200	6.63	6.73	25.8	1686	0.20	8.02	-97.8	"
09:51	.6	3.2	200	6.63	6.73	25.8	1692	0.17	9.23	-98.9	"
09:54	.6	3.8	200	6.63	6.73	25.9	1699	0.15	8.44	-100.2	"
09:57	.6	4.4	200	6.63	6.72	25.9	1708	0.13	8.13	-101.3	"

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

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HGL William Duttenhaver	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 09:59	SAMPLING ENDED AT: 09:59
PUMP OR TUBING DEPTH IN WELL (feet): 40	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	3	CG	40mL	HCL	N/A		V8260SL	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

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

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CCF West	SITE LOCATION: NASA/KSC	
WELL NO: CCF-IW0084	SAMPLE ID: CCF-IW0084-030.0-20230427	DATE: 04/27/23

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 25 feet to 35 feet	STATIC DEPTH TO WATER (feet): 6.02	PURGE PUMP TYPE OR BAILER: PP

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (5.3 mL/foot X 33 feet) + 200 mL = 3749 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 30	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 30	PURGING INITIATED AT: 10:22	PURGING ENDED AT: 10.44	TOTAL VOLUME PURGED (liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µS/cm	DISSOLVED OXYGEN (circle units) mg/L	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
10:32	2.0	2.0	200	6.07	7.02	25.0	873	0.18	30.8	-90.5	clear none
10:35	.6	2.6	200	6.07	7.01	25.3	879	0.17	35.8	-91.0	"
10:38	.6	3.2	200	6.08	7.01	25.4	880	0.17	31.0	-91.6	"
10:41	.6	3.6	200	6.08	7.01	25.4	880	0.14	21.8	-93.1	"
10:44	.6	44	200	6.08	7.02	25.3	877	0.12	17.3	-94.0	"

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

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: H&L William Duttenhaver	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 10:46	SAMPLING ENDED AT: 10:46
PUMP OR TUBING DEPTH IN WELL (feet): 30	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	3	CG	40mL	HCL	N/A		V8260SL	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

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

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CCF West	SITE LOCATION: NASA/KSC	
WELL NO: CCF-IW0089	SAMPLE ID: CCF-IW0089-050.0-20230427	DATE: 04/27/23

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 45 feet to 55 feet	STATIC DEPTH TO WATER (feet): 5.01	PURGE PUMP TYPE OR BAILER: PP

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (5.3 mL/foot X 53 feet) + 200 mL = 480.9 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 50	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 50	PURGING INITIATED AT: 11:01	PURGING ENDED AT: 11:23	TOTAL VOLUME PURGED (liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µS/cm	DISSOLVED OXYGEN (circle units) mg/L	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
11:11	2.0	2.0	200	5.15	7.06	25.0	999	0.16	13.1	-127.3	clear none
11:14	.6	2.6	200	5.15	7.09	25.1	1071	0.16	9.71	-127.1	"
11:17	.6	3.2	200	5.16	7.08	25.2	1088	0.14	8.63	-127.5	"
11:20	.6	3.8	200	5.16	7.08	25.2	1094	0.12	9.21	-126.9	"
11:23	.6	4.4	200	5.16	7.07	25.2	1102	0.11	9.48	-125.2	"

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

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HGL William Duttenhaver	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 11:25	SAMPLING ENDED AT: 11:25
PUMP OR TUBING DEPTH IN WELL (feet): 50	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	3	CG	40mL	HCL	N/A		V8260SL	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

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

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

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CCF West	SITE LOCATION: NASA/KSC	
WELL NO: CCF-IW0063	SAMPLE ID: CCF-IW0063-045.0-20230427	DATE: 04/27/23

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 40 feet to 50 feet	STATIC DEPTH TO WATER (feet): 6.08	PURGE PUMP TYPE OR BAILER: PP

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (53 mL/foot X 48 feet) + 200 mL = 4544 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 45	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 45	PURGING INITIATED AT: 11:50	PURGING ENDED AT: 12:12	TOTAL VOLUME PURGED (liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µS/cm	DISSOLVED OXYGEN (circle units) mg/L	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
12:00	2.0	2.0	200	6.16	6.79	26.2	2084	0.19	10.6	-116.1	clear none
12:03	.6	2.6	200	6.16	6.78	26.2	2079	0.16	1.11	-118.2	"
12:06	.6	3.2	200	6.17	6.78	26.2	2091	0.12	0.64	-115.2	"
12:09	.6	3.8	200	6.17	6.79	26.2	2095	0.11	0.97	-114.2	"
12:12	.6	4.4	200	6.17	6.77	26.1	2102	0.11	0.72	-113.8	"

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

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HGL William Duttenhaver	SAMPLER(S) SIGNATURE(S): Paul Duttenhaver	SAMPLING INITIATED AT: 12:14	SAMPLING ENDED AT: 12:14
PUMP OR TUBING DEPTH IN WELL (feet): 45	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	3	CG	40mL	HCL	N/A		V8260SL	APP	200

REMARKS: High Effervescence

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

NOTES: **1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

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

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CCF West	SITE LOCATION: NASA/KSC	
WELL NO: CCF-IW0080IS	SAMPLE ID: CCF-IW0080IS-020.0-20230427	DATE: 04/27/23

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 15 feet to 25 feet	STATIC DEPTH TO WATER (feet): 5.65	PURGE PUMP TYPE OR BAILER: PP

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (5.3 mL/foot X 23 feet) + 200 mL = 321.9 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20	PURGING INITIATED AT: 12:36	PURGING ENDED AT: 12:58	TOTAL VOLUME PURGED (liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µS/cm	DISSOLVED OXYGEN (circle units) mg/L	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
12:46	2.0	2.0	200	5.71	3.98	25.5	2260	0.14	21.8	191.4	clear none
12:49	.6	2.6	200	5.71	3.97	25.3	2262	0.14	6.33	189.1	"
12:52	.6	3.2	200	5.72	3.98	25.5	2272	0.12	4.36	190.3	"
12:55	.6	3.8	200	5.72	3.97	25.5	2277	0.11	3.87	193.4	"
12:58	.6	4.4	200	5.72	3.97	25.5	2282	0.10	3.13	194.8	"

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

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HGL William Puttenhaver	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 13:00	SAMPLING ENDED AT: 13:00
PUMP OR TUBING DEPTH IN WELL (feet): 20	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	3	CG	40mL	HCL	N/A		V8260SL	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

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

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CCF West	SITE LOCATION: NASA/KSC	
WELL NO: CCF-IW0080S	SAMPLE ID: CCF-IW0080S-010.0-20230427	DATE: 04/27/23

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 5 feet to 15 feet	STATIC DEPTH TO WATER (feet): 6.73	PURGE PUMP TYPE OR BAILER: PP

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (5.3 mL/foot X 13 feet) + 200 mL = 268.9 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 10	PURGING INITIATED AT: 13:12	PURGING ENDED AT: 13:37	TOTAL VOLUME PURGED (liters): 5.0

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µS/cm	DISSOLVED OXYGEN (circle units) mg/L	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
13:22	2.0	2.0	200	6.78	6.61	25.8	281.3	0.09	48.7	-125.7	Clear none
13:25	.6	2.6	200	6.79	6.67	25.8	287.2	0.09	45.3	-127.4	"
13:28	.6	3.2	200	6.79	6.67	25.8	289.4	0.07	38.3	-129.6	"
13:31	.6	3.8	200	6.79	6.69	25.9	291.7	0.07	29.3	-133.1	"
13:34	.6	4.4	200	6.79	6.69	25.9	298.4	0.07	23.0	-134.2	"
13:37	.6	5.0	200	6.79	6.68	25.8	304.2	0.07	17.8	-134.0	"

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

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HGL William Duttenhaver	SAMPLER(S) SIGNATURE(S): Paul Duttenhaver	SAMPLING INITIATED AT: 13:39	SAMPLING ENDED AT: 13:39
PUMP OR TUBING DEPTH IN WELL (feet): 10	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	3	CG	40mL	HCL	N/A		V8260SL	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

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

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

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CCF West	SITE LOCATION: NASA/KSC	
WELL NO: CCF-IW0064	SAMPLE ID: CCF-IW0064-045.0-2023 0427	DATE: 04/27/23

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 40 feet to 50 feet	STATIC DEPTH TO WATER (feet): 6.65	PURGE PUMP TYPE OR BAILER: PP

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (5.3 mL/foot X 48 feet) + 200 mL = 454 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 45	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 45	PURGING INITIATED AT: 14:00	PURGING ENDED AT: 14:21	TOTAL VOLUME PURGED (liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µS/cm	DISSOLVED OXYGEN (circle units) mg/L	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
14:10	2.0	2.0	200	6.68	6.83	27.2	1866	0.19	5.20	-85.3	clear none
14:13	.6	2.6	200	6.68	6.82	27.3	1867	0.15	4.20	-82.2	"
14:16	.6	3.2	200	6.69	6.81	27.2	1863	0.13	1.47	-81.7	"
14:19	.6	3.8	200	6.69	6.82	27.2	1859	0.14	0.89	-79.6	"
14:21	.6	4.4	200	6.69	6.82	27.1	1854	0.13	0.91	-81.3	"

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

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HGL William Duttenhaver	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 14:23	SAMPLING ENDED AT: 14:23
PUMP OR TUBING DEPTH IN WELL (feet): 45	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	3	CG	40mL	HCL	N/A		V8260SL	APP	200

REMARKS: High Effervescence

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

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

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

HGL HydroGeoLogic, Inc

CALIBRATION LOG

Project Name: CCF West

By: William Duttenhaver

Project No.: NS1003.04.03

Page 1 of 1

Date/Time	Instrument	STD	STD CONC ppm	Meter Reading	Comments
04/26/2023 15:30	YSI Pro-48524	DO	Sat Air	100.5	Pass
"	"	conductivity	1.413 ms/cm	1.42	Pass
"	"	ORP	240.0 MV	239.9	Pass
"	"	PH	7	6.98	Pass
"	"	PH	10	10.01	Pass
"	"	PH	4	3.98	Pass
04/26/2023 16:05	HACH 2100Q-21539	NTU	20	20.0	Pass
"	"	NTU	100	103	Pass
"	"	NTU	800	814	Pass
"	"	NTU	10	10.2	Pass

SGS North America Inc - Orlando

Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # : PAGE_____OF_____

SGS - ORLANDO Quote # | SKIFF #

Client / Reporting Information

Company Name:
Address:
City: State: Zip:
Project Contact: Email:
Phone #:
Sampler(s) Name(s) (Printed)
Sampler 1: Sampler 2:

Project Information

Project Name:
Street
City State
Project #
Fax #
Client Purchase Order #

Analytical Information

1,4-Dioxane 8260 STD2
TCE, cDCE, tDCE, VC only

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid

LAB USE ONLY

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	1,4-Dioxane 8260 STD2	TCE, cDCE, tDCE, VC only
	CCF-TB-20230427-02	04/27	07:00	PO	WW	2			X							X	
	CCF-IW0004IS-032.0-20230427	04/27	07:55	PO	GW	3			X							X	
	CCF-IW0087-040.0-20230427	04/27	08:34	PO	GW	3			X							X	
	CCF-IW0081-020.0-20230427	04/27	09:17	PO	GW	3			X							X	
	CCF-IW0059-040.0-20230427	04/27	09:59	PO	GW	3			X							X	
	CCF-IW0084-030.0-20230427	04/27	10:46	PO	GW	3			X							X	
	CCF-IW0089-050.0-20230427	04/27	11:25	PO	GW	3			X							X	
	CCF-IW0063-045.0-20230427	04/27	12:14	PO	GW	3			X							X	
	CCF-IW0080IS-020.0-20230427	04/27	13:00	PO	GW	3			X							X	
	CCF-IW0080S-010.0-20230427	04/27	13:39	PO	GW	3			X							X	
	CCF-IW0064-045.0-20230427	04/27	14:23	PO	GW	3			X							X	

Turnaround Time (Business days)

10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [ ] EDD'S

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation 1	Date Time:	Received By/Affiliation 2	Relinquished By/Affiliation 3	Date Time:	Received By/Affiliation 4
Relinquished by/Affiliation 5	Date Time:	Received By/Affiliation 6	Relinquished By/Affiliation 7	Date Time:	Received By/Affiliation 8

Lab Use Only : Cooler Temperature (s) Celsius (corrected):_____

Location CCF West Date 04/27/23

Project / Client NASA/KSC

NS1003.04.03

Purpose- Collect MW samples
Personnel- William Dutterhaver
Equipment- YSI pro, Hach 2100q, water level meter
Weather- H: 80° L: 72°, 80% chance of rain
06:30- Arrive at field office to get truck & Ice
07:18- on site
07:55- Sampled IW0004IS
08:34- sampled IW0087
09:17- sampled IW0081
09:59- sampled IW0059
10:46- Sampled IW0084
11:25- Sampled IW0089
12:14- Sampled IW0063
13:00- Sampled IW0080IS
13:39- Sampled IW0080S
14:23- Sampled IW0064
Note: Calibrated equipment on the afternoon of 04/26/23
14:50- Dumped IDW into drum 229687. Headed back to field offic to scan in paperwork and calibrate equipment. Site secure / off site.

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CCF West	SITE LOCATION: NASA/KSC	
WELL NO: CCF-IW0011IS	SAMPLE ID: CCF-IW0011IS-030.0-20230428	DATE: 04/28/23

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 25 feet to 35 feet	STATIC DEPTH TO WATER (feet): 7.30	PURGE PUMP TYPE OR BAILER: PP

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (5.3 mL/foot X 33 feet) + 200 mL = 374.9 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 30	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 30	PURGING INITIATED AT: 07:20	PURGING ENDED AT: 07:42	TOTAL VOLUME PURGED (liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µS/cm	DISSOLVED OXYGEN (circle units) mg/L	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
07:30	2.0	2.0	200	7.36	8.84	23.4	8.46	0.22	1.69	-337.1	clear none
07:33	.6	2.6	200	7.36	8.66	23.4	849	0.21	0.64	-293.4	"
07:36	.6	3.2	200	7.37	8.58	23.3	850	0.20	0.55	-325.6	"
07:39	.6	3.8	200	7.37	8.57	23.4	851	0.18	0.33	-325.0	"
07:42	.6	4.4	200	7.37	8.56	23.3	850	0.15	0.21	-299.9	"

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

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HGL William Duttenhaver	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 07:44	SAMPLING ENDED AT: 07:44
PUMP OR TUBING DEPTH IN WELL (feet): 30	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	3	CG	40mL	HCL	N/A		V8260SL	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

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

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CCF West	SITE LOCATION: NASA/KSC	
WELL NO: CCF-IW0011ID	SAMPLE ID: CCF-IW0011ID-052.0-20230428	DATE: 04/28/23

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 47 feet to 57 feet	STATIC DEPTH TO WATER (feet): 7.11	PURGE PUMP TYPE OR BAILER: PP

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (5.3 mL/foot X 55 feet) + 200 mL = 491.5 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 52	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 52	PURGING INITIATED AT: ~~08:49~~ 10:27	PURGING ENDED AT: 10:49	TOTAL VOLUME PURGED (liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µS/cm	DISSOLVED OXYGEN (circle units) mg/L 0.24	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
10:37	2.0	2.0	200	7.18	7.21	24.1	596	~~156.0~~	2.40	154.5	clear none
10:40	.6	2.6	200	7.18	7.16	24.1	613	0.20	1.89	146.8	"
10:43	.6	3.2	200	7.19	7.16	24.1	617	0.20	2.15	142.1	"
10:46	.6	3.8	200	7.19	7.15	24.2	621	0.23	1.65	129.4	"
10:49	.6	4.4	200	7.19	7.16	24.2	628	0.21	1.14	118.6	"

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

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HGL William Duttenhaver	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 10:51	SAMPLING ENDED AT: 10:51
PUMP OR TUBING DEPTH IN WELL (feet): 52	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	3	CG	40mL	HCL	N/A		V8260SL	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

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

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

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CCF West	SITE LOCATION: NASA/KSC	
WELL NO: CCF-IW0086	SAMPLE ID: CCF-IW0086-040.0-2023**0428**	DATE: 04/28/23

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 35 feet to 45 feet	STATIC DEPTH TO WATER (feet): 6.99	PURGE PUMP TYPE OR BAILER: PP

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (5.3 mL/foot X 43 feet) + 200 mL = 4279 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 40	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 40	PURGING INITIATED AT: 11:03	PURGING ENDED AT: 11:27	TOTAL VOLUME PURGED (liters): 5.0

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µS/cm	DISSOLVED OXYGEN (circle units) mg/L	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
11:13	2.0	2.0	200	7.03	7.06	24.0	727	0.23	12.8	-99.1	Clear none
11:16	.6	2.6	200	7.03	7.04	24.0	731	0.23	33.5	-100.7	"
11:19	.6	3.2	200	7.04	7.06	24.1	728	0.20	25.3	-100.9	"
11:21	.6	3.8	200	7.04	7.05	24.1	730	0.17	22.0	-101.1	"
11:24	.6	4.4	200	7.04	7.04	24.2	732	0.15	14.0	-101.4	"
11:27	.6	5.0	200	7.05	7.04	24.2	733	0.15	8.82	-101.9	"

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

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HGL William Duttenhaver	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 11:29	SAMPLING ENDED AT: 11:29
PUMP OR TUBING DEPTH IN WELL (feet): 40	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	3	CG	40mL	HCL	N/A		V8260SL	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

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

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CCF West	SITE LOCATION: NASA/KSC	
WELL NO: CCF-IW0062	SAMPLE ID: CCF-IW0062-020.0-20230428	DATE: 04/28/23

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 15 feet to 25 feet	STATIC DEPTH TO WATER (feet): 6.26	PURGE PUMP TYPE OR BAILER: PP

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (5.3 mL/foot X 23 feet) + 200 mL = 321.9 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20	PURGING INITIATED AT: 11:42	PURGING ENDED AT: 12:04	TOTAL VOLUME PURGED (liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µS/cm	DISSOLVED OXYGEN (circle units) mg/L	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
11:52	2.0	2.0	200	6.27	5.79	26.3	1245	0.19	7.83	-15.5	clear none
11:55	.6	2.6	200	6.28	5.78	26.4	1257	0.17	5.04	-17.1	"
11:58	.6	3.2	200	6.29	5.76	26.4	1263	0.16	6.34	-18.5	"
12:01	.6	3.8	200	6.29	5.77	26.5	1268	0.13	5.41	-20.2	"
12:04	.6	4.4	200	6.29	5.76	26.4	1267	0.11	4.87	-21.0	"

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

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HGL William Duttenhaver	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 12:06	SAMPLING ENDED AT: 12:06
PUMP OR TUBING DEPTH IN WELL (feet): 20	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
1	3	CG	40mL	HCL	N/A		V8260SL	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

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

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CCF West	SITE LOCATION: NASA/KSC	
WELL NO: CCF-IW0088	SAMPLE ID: CCF-IW0088-040.0-2023**0428**	DATE: 04/28/23

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 35 feet to 45 feet	STATIC DEPTH TO WATER (feet): 5.29	PURGE PUMP TYPE OR BAILER: PP

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (5.3 mL/foot X 43 feet) + 200 mL = 427.9 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 40	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 40	PURGING INITIATED AT: 12:23	PURGING ENDED AT: 12:45	TOTAL VOLUME PURGED (liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µS/cm	DISSOLVED OXYGEN (circle units) mg/L	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
12:33	2.0	2.0	200	5.32	6.82	26.3	1162	0.21	10.4	-47.6	Clear none
12:36	.6	2.6	200	5.32	6.84	26.3	1169	0.17	13.8	-49.0	"
12:39	.6	3.2	200	5.33	6.85	26.4	1178	0.14	11.6	-52.0	"
12:42	.6	3.8	200	5.33	6.86	26.3	1178	0.14	9.87	-54.7	"
12:45	.6	4.4	200	5.33	6.83	26.3	1178	0.11	8.72	-55.5	"

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

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HGL William Duttenhaver	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 12:47	SAMPLING ENDED AT: 12:47
PUMP OR TUBING DEPTH IN WELL (feet): 40	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	3	CG	40mL	HCL	N/A		V8260SL	APP	200

REMARKS: High Effervescence

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

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

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CCF West	SITE LOCATION: NASA/KSC	
WELL NO: CCF-IW0003S	SAMPLE ID: CCF-IW0003S-008.0-2023 0428	DATE: 04/28/23

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 3 feet to 13 feet	STATIC DEPTH TO WATER (feet): 4.60	PURGE PUMP TYPE OR BAILER: PP

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (5.3 mL/foot X 11 feet) + 200 mL = 258 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 8	PURGING INITIATED AT: 13:10	PURGING ENDED AT: 13:32	TOTAL VOLUME PURGED (liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µS/cm	DISSOLVED OXYGEN (circle units) mg/L	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
13:20	2.0	2.0	200	4.67	4.90	25.5	488.7	0.14	5.20	37.0	clear none
13:23	.6	2.6	200	4.67	4.90	25.4	486.2	0.13	3.16	33.0	"
13:26	.6	3.2	200	4.67	4.92	25.3	482.6	0.12	3.68	26.7	"
13:29	.6	3.8	200	4.67	4.92	25.3	480.0	0.12	2.87	25.3	"
13:32	.6	4.4	200	4.67	4.91	25.3	479.8	0.12	2.74	25.0	"

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

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HGL William Duttenhaver	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 13:34	SAMPLING ENDED AT: 15:34
PUMP OR TUBING DEPTH IN WELL (feet): 8	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
1	3	CG	40mL	HCL	N/A		V8260SL	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

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

HGL HydroGeoLogic, Inc

CALIBRATION LOG

Project Name: CCF West

By: William Duttenhaver

Project No.: NS1003.04.03

Page 1 of 1

Date/Time	Instrument	STD	STD CONC ppm	Meter Reading	Comments
04/27/2023 15:45	YSI Pro-48524	DO	sat Air	100.3	Pass
"	"	conductivity	1.413 ms/cm	1.42	Pass
"	"	ORP	240.0 MV	240.0	Pass
"	"	PH	7	6.99	Pass
"	"	PH	10	10.02	Pass
"	"	PH	4	3.99	Pass
04/27/2023 16:15	HACH 2100Q-21539	NTU	20	20.0	Pass
"	"	NTU	100	102	Pass
"	"	NTU	800	817	Pass
"	"	NTU	10	10.3	Pass

SGS North America Inc - Orlando

Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # :

Client / Reporting Information		Project Information		SGS - ORLANDO Quote #	SKIFF #
Company Name: Hydrogeologic INC.		Project Name: CCF West			
Address: 2405 N Courtenay PKWY suite 203		Street			
City: Merritt Island	State: Florida Zip: 32953	City NASA/KSC	State Florida		
Project Contact: Denise Rivers	Email: drivers@hgl.com	Project # NS1003.04.06			
Phone #: 910-233-8460		Fax #			
Sampler(s) Name(s) (Printed) Sampler 1:	William Puttenhaver Sampler 2:	Client Purchase Order #			

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	V8260 STD) TCE, cDCE, tDCE, VC only	Analytical Information	Matrix Codes	LAB USE ONLY
	CCF-TB-20230427-01	04/27	07:00	P.O	WW	2			X							X		DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL- Sludge OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid	
	CCF-IW0004IS-032.0-20230427	04/27	07:55	P.O	GW	3			X							X			
	CCF-IW0087-040.0-20230427	04/27	08:34	P.O	GW	3			X							X			
	CCF-IW0081-020.0-20230427	04/27	09:17	P.O	GW	3			X							X			
	CCF-IW0059-040.0-20230427	04/27	09:59	P.O	GW	3			X							X			
	CCF-IW0084-030.0-20230427	04/27	10:46	P.O	GW	3			X							X			
	CCF-IW0089-050.0-20230427	04/27	11:25	P.O	GW	3			X							X			
	CCF-IW0063-045.0-20230427	04/27	12:14	P.O	GW	3			X							X			
	CCF-IW0080IS-020.0-20230427	04/27	13:00	P.O	GW	3			X							X			
	CCF-IW0080S-010.0-20230427	04/27	13:39	P.O	GW	3			X							X			
	CCF-IW0064-045.0-20230427	04/27	14:23	P.O	GW	3			X							X			
	CCF-IW0081IS-030.0-20230428	04/28	07:44	P.O	GW	3			X							X			

Turnaround Time (Business days)

10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- ☐ COMMERCIAL "A" (RESULTS ONLY)
- ☐ COMMERCIAL "B" (RESULTS PLUS QC)
- ☐ REDT1 (EPA LEVEL 3)
- ☐ FULLT1 (EPA LEVEL 4)
- ☐ EDD'S

Comments / Remarks

(V8260 STD) TCE, cDCE, tDCE, VC only

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1		2	3		4
Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
5		6	7		8

Lab Use Only : Cooler Temperature (s) Celsius (corrected):

SGS North America Inc - Orlando

Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # :

SGS - ORLANDO Quote #

SKIFF #

Client / Reporting Information

Company Name: Hydrogeologic INC.
Address: 2405 N Courtenay Pkwy Suite 203
City: Merritt Island State: Florida Zip: 32953
Project Contact: Denise Rivers Email: drivers@hgl.com
Phone #: 910-233-8460
Sampler(s) Name(s) (Printed) William Duttonhaver
Sampler 1: Sampler 2:

Project Information

Project Name: CCF West
Street
City NASA/KSC State Florida
Project # NS1003.04.06
Fax #
Client Purchase Order #

Analytical Information

V8260 STD + TCE, cDCE, tDCE, VC only

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid

LAB USE ONLY

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NaOH+ZNAA	DI WATER	MEOH	V8260 STD + TCE, cDCE, tDCE, VC only
	CCF-IW0011ID-052.0-20230428	04/28	10:51	P.O	GW	3			X							X
	CCF-IW0086-040.0-20230428	04/28	11:29	P.O	GW	3			X							X
	CCF-IW0062-020.0-20230428	04/28	12:06	P.O	GW	3			X							X
	CCF-IW0088-040.0-20230428	04/28	12:47	P.O	GW	3			X							X
	CCF-IW0035-008.0-20230428	04/28	13:34	P.O	GW	3			X							X

Turnaround Time (Business days)

10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [ ] EDD'S

Comments / Remarks

(V8260 STD) TCE, cDCE, tDCE, VC only.
Last sample ID was IW zero, zero, zero, three, the letter "S"

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1		2	3		4
Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
5		6	7		8

Lab Use Only : Cooler Temperature (s) Celsius (corrected):

Location CCF West Date 04/28/23

Project / Client NASA/KSC

Purpose- collect MW Samples
Personel- William Duttenhaver
Equipment- YIS Pro, HACH 21000, water level meter
Weather- H: 82° L 67°, 70% chance of rain
06:30- Arrive at field office to get truck and Ice, calibrated equipment 04/27/23
07:08- on site
07:44- Sampled IW0011IS
07:55- Having trouble with YSI pH probe
08:35- PH Probe working correctly
08:45- PH Probe malfunctioning
10:23- Back on site from field office where I checked PH calibration with different solution.
10:51- Sampled IW0011ID
11:29- Sampled IW0086
12:06- Sampled IW0062
12:47- sampled IW0088
13:34- Sampled IW0003.5
14:10- Dumped IDW into drum 229687
Headed back to field office to prepare samples for courier.
site secure / off site.

/ Paul Duttenhaver

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CCF West	SITE LOCATION: NASA/KSC	
WELL NO: CCF-IW0003IS	SAMPLE ID: CCF-IW0003IS-030.0-2023**0501**	DATE: 05/01/23

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 25 feet to 35 feet	STATIC DEPTH TO WATER (feet): 4.46	PURGE PUMP TYPE OR BAILER: PP

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (5.3 mL/foot X 33 feet) + 200 mL = 3749 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 30	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 30	PURGING INITIATED AT: 07:34	PURGING ENDED AT: 07:56	TOTAL VOLUME PURGED (liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µS/cm	DISSOLVED OXYGEN (circle units) mg/L	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
07:44	2.0	2.0	200	4.48	6.67	23.6	1649	0.14	15.3	-143.4	clear/ sulfur
07:47	.6	2.6	200	4.49	6.67	23.7	1649	0.13	12.2	-145.8	"
07:50	.6	3.2	200	4.50	6.67	23.7	1649	0.12	12.7	-150.7	"
07:53	.6	3.8	200	4.50	6.67	23.8	1652	0.12	8.41	-155.7	"
07:56	.6	4.4	200	4.50	6.67	23.7	1650	0.12	8.53	-159.1	"

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

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HGL William Duttenhaver	SAMPLER(S) SIGNATURE(S): Paul Duttenhaver	SAMPLING INITIATED AT: 07:59	SAMPLING ENDED AT: 07:59
PUMP OR TUBING DEPTH IN WELL (feet): 30	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
1	3	CG	40mL	HCL	N/A		V8260SL	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

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

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CCF West	SITE LOCATION: NASA/KSC	
WELL NO: CCF-IW0003ID	SAMPLE ID: CCF-IW0003ID-051.0-20230501	DATE: 05/01/23

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 46 feet to 56 feet	STATIC DEPTH TO WATER (feet): 4.33	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: **1 WELL VOLUME** = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X mL/foot = mL

EQUIPMENT VOLUME PURGE: **1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (5.3 mL/foot X 54 feet) + 200 mL = 486.2 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 51	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 51	PURGING INITIATED AT: 08:15	PURGING ENDED AT: 08:37	TOTAL VOLUME PURGED (liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µS/cm	DISSOLVED OXYGEN (circle units) mg/L	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
08:25	2.0	2.0	200	4.38	7.24	23.8	1921	0.11	5.86	-196.8	clear none
08:28	.6	2.6	200	4.38	7.15	23.8	1935	0.09	2.54	-201.0	"
08:31	.6	3.2	200	4.39	7.14	24.0	1940	0.08	2.68	-207.8	"
08:34	.6	3.8	200	4.40	7.14	23.9	1939	0.08	2.02	-216.5	"
08:37	.6	4.4	200	4.40	7.14	23.8	1944	0.08	2.19	-217.5	"

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

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HGL William Duttenhaver	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 08:39	SAMPLING ENDED AT: 08:39
PUMP OR TUBING DEPTH IN WELL (feet): 51	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	3	CG	40mL	HCL	N/A		V8260SL	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

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

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

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CCF West	SITE LOCATION: NASA/KSC	
WELL NO: CCF-IW0083ID	SAMPLE ID: CCF-IW0083ID-040.0-20230501	DATE: 05/01/23

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 35 feet to 45 feet	STATIC DEPTH TO WATER (feet): 3.41	PURGE PUMP TYPE OR BAILER: PP

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (5.3 mL/foot X 43 feet) + 200 mL = 427.9 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 40	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 40	PURGING INITIATED AT: 09:11	PURGING ENDED AT: 09:33	TOTAL VOLUME PURGED (liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µS/cm	DISSOLVED OXYGEN (circle units) mg/L	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
09:21	2.0	2.0	200	3.46	7.09	22.0	1742	0.12	10.4	-267.3	Clear None
09:24	.6	2.6	200	3.46	7.09	22.1	1751	0.10	9.81	-270.8	"
09:27	.6	3.2	200	3.47	7.08	22.1	1756	0.11	6.35	-274.0	"
09:30	.6	3.6	200	3.47	7.08	22.1	1761	0.09	4.60	-275.6	"
09:33	.6	4.4	200	3.47	7.08	22.2	1765	0.10	3.67	-276.2	"

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

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HGL William Duttenhaver	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 09:35	SAMPLING ENDED AT: 09:35
PUMP OR TUBING DEPTH IN WELL (feet): 40	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	3	CG	40mL	HCL	N/A		V8260SL	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

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

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CCF West	SITE LOCATION: NASA/KSC	
WELL NO: CCF-IW0083IS	SAMPLE ID: CCF-IW0083IS-030.0-2023<u>0501</u>	DATE: 05/01/23

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 25 feet to 35 feet	STATIC DEPTH TO WATER (feet): 3.47	PURGE PUMP TYPE OR BAILER: PP

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (5.3 mL/foot X 33 feet) + 200 mL = 374.9 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 30	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 30	PURGING INITIATED AT: 09:48	PURGING ENDED AT: 10:10	TOTAL VOLUME PURGED (liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µS/cm	DISSOLVED OXYGEN (circle units) mg/L	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
09:58	2.0	2.0	200	3.51	7.00	22.3	2050	0.49	54.7	-280.1	clear none
PD 10:01	.6	2.6	200	3.52	7.01	22.3	2046	0.36	44.3	-287.6	"
10:04	.6	3.2	200	3.53	7.02	22.4	2074	0.38	36.0	-307.2	"
10:07	.6	3.8	200	3.53	7.02	22.5	2036	0.37	24.6	-326.4	"
10:10	.6	4.4	200	3.53	7.02	22.5	2037	0.32	17.1	-339.3	"

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

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HGL William Duttenhaver	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 10:12	SAMPLING ENDED AT: 10:12
PUMP OR TUBING DEPTH IN WELL (feet): 30	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	3	CG	40mL	HCL	N/A		V8260SL	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

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

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CCF West	SITE LOCATION: NASA/KSC	
WELL NO: CCF-IW0083S	SAMPLE ID: CCF-IW0083S-020.0-20230501	DATE: 05/01/23

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 15 feet to 25 feet	STATIC DEPTH TO WATER (feet): 3.30	PURGE PUMP TYPE OR BAILER: PP

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (5.3 mL/foot X 23 feet) + 200 mL = 321.9 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20	PURGING INITIATED AT: 10:25	PURGING ENDED AT: 10:47	TOTAL VOLUME PURGED (liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µS/cm	DISSOLVED OXYGEN (circle units) mg/L	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
10:35	2.0	2.0	200	3.37	6.91	22.5	1479	0.11	7.80	-336.9	clear none
10:38	.6	2.6	200	3.37	6.93	22.5	1479	0.10	4.80	-343.1	"
10:41	.6	3.2	200	3.37	6.93	22.6	1472	0.09	3.90	-350.0	"
10:44	.6	3.8	200	3.37	6.94	22.6	1467	0.08	3.92	-359.3	"
10:47	.6	4.4	200	3.37	6.94	22.6	1468	0.08	3.23	-362.5	"

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

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HGL William Duttenhaver	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 10:49	SAMPLING ENDED AT: 10:49
PUMP OR TUBING DEPTH IN WELL (feet): 20	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	3	CG	40mL	HCL	N/A		V8260SL	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

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

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

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CCF West	SITE LOCATION: NASA/KSC	
WELL NO: CCF-IW0029ID	SAMPLE ID: CCF-IW0029ID-042.5-20230501	DATE: 05/01/23

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 40 feet to 45 feet	STATIC DEPTH TO WATER (feet): 5.11	PURGE PUMP TYPE OR BAILER: PP

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (5.3 mL/foot X 45.5 feet) + 200 mL = 441.15 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	PURGING INITIATED AT: 11:04	PURGING ENDED AT: 11:26	TOTAL VOLUME PURGED (liters): ~~11.26~~ 4.4 PO.

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µS/cm	DISSOLVED OXYGEN (circle units) mg/L	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
11:14	2.0	2.0	200	5.17	7.18	23.4	2017	0.13	7.11	-275.7	clear none
11:17	.6	2.6	200	5.17	7.17	23.5	2243	0.13	6.23	-297.4	"
11:20	.6	3.2	200	5.18	7.19	23.5	2285	0.11	6.18	-365.5	"
11:23	.6	3.8	200	5.18	7.21	23.5	2291	0.11	5.48	-367.3	"
11:26	.6	4.4	200	5.18	7.21	23.5	2292	0.10	4.91	-365.7	"

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

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HGL William Duttenhaver	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 11:29	SAMPLING ENDED AT: 11:29
PUMP OR TUBING DEPTH IN WELL (feet): 42.5	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	3	CG	40mL	HCL	N/A		V8260SL	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

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

62-160.800 F.A.C. Revision Date: January

2017 DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CCF West	SITE LOCATION: NASA/KSC	
WELL NO: CCF-IW0092	SAMPLE ID: CCF-IW0092-0000-20230501	DATE: 05/01/23

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 40 feet to 50 feet	STATIC DEPTH TO WATER (feet): 5.84	PURGE PUMP TYPE OR BAILER: PP

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (5.3 mL/foot X 48 feet) + 200 mL = 454.4 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 45	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 45	PURGING INITIATED AT: 11:47	PURGING ENDED AT: 12:09	TOTAL VOLUME PURGED (liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µS/cm	DISSOLVED OXYGEN (circle units) mg/L	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
11:57	2.0	2.0	200	5.88	7.59	24.6	572	0.12	28.8	-326.2	clear none
12:00	.6	2.6	200	5.88	7.57	24.5	573	0.10	18.3	-324.0	"
12:03	.6	3.2	200	5.89	7.57	24.6	577	0.09	12.4	-344.7	"
12:06	.6	3.8	200	5.89	7.57	24.7	583	0.08	8.74	-350.8	"
12:09	.6	4.4	200	5.89	7.58	24.8	585	0.08	5.51	-343.5	"

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

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HGL William Duttenhaver	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 12:11	SAMPLING ENDED AT: 12:11
PUMP OR TUBING DEPTH IN WELL (feet): 45	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	3	CG	40mL	HCL	N/A		V8260SL	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

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

HGL HydroGeologic, Inc.

CALIBRATION LOG

Project Name: CCF West

By: William Duttenhaver

Project No.: NS1003.04.03

Page 1 of 1

Date/Time	Instrument	STD	STD CONC ppm	Meter Reading	Comments
05/01/2023 06:15	YSI Pro-48513	DO	Sat Air	100.4	Pass
11	11	conductivity	1.413 ms/cm	1.42	Pass
11	11	ORP	240 mV	240.1	Pass
11	11	PH	7	6.98	Pass
11	11	PH	10	10.00	Pass
11	11	PH	4	4.01	Pass
05/01/2023 06:45	HACH 2100Q-21539	NTU	20	21.0	Pass
11	11	NTU	100	98.7	Pass
11	11	NTU	800	807	Pass
11	11	NTU	10	9.78	Pass

SGS North America Inc - Orlando

Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # : PAGE_____OF_____

SGS - ORLANDO Quote # | SKIFF #

Client / Reporting Information

Company Name: HGL, Inc.
Address: 2405 N. Courtney Parkway, STE 203
City: Merrit Island State: FL Zip:32937
Project Contact: Denise Rivers Email:drivers@hgl.com
Phone #:910-233-8460
Sampler(s) Name(s) (Printed)
Sampler 1: William Duttenhaver Sampler 2:

Project Information

Project Name: CCF West LTM
Street Kennedy Space Center
City Merritt Island State FL
Project # NS1003.04.06
Fax #
Client Purchase Order #

Analytical Information

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; OI - Oil; LIQ - Other Liquid; AIR - Air

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	(8260B) - TCE, cDCE, tDCE, and VC only	LAB USE ONLY
	CCF-IW0003IS-030.0-20230501	05/01	07:59	PE	GW	3			X							X	
	CCF-IW0003ID-051.0-20230501	05/01	08:39	PE	GW	3			X							X	
	CCF-IW0083ID-040.0-20230501	05/01	09:35	PE	GW	3			X							X	
	CCF-IW0083IS-030.0-20230501	05/01	10:12	PE	GW	3			X							X	
	CCF-IW0083S-020.0-20230501	05/01	10:49	PE	GW	3			X							X	
	CCF-IW0029ID-042.5-20230501	05/01	11:29	PE	GW	3			X							X	
	CCF-IW0092-045.0-20230501	05/01	12:11	PE	GW	3			X							X	
	CCF-TB-20230501-01	05/01	07:00	PE	WW	2			X							X	

Turnaround Time (Business days)

X 10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH* _____
2 Day *RUSH* _____
1 Day *RUSH* _____
Other _____
Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- ☐ COMMERCIAL "A" (RESULTS ONLY)
- ☐ COMMERCIAL "B" (RESULTS PLUS QC)
- ☐ REDT1 (EPA LEVEL 3)
- ☐ FULLT1 (EPA LEVEL 4)
- ☐ EDD'S

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1		2	3		4
Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
5		6	7		8

Lab Use Only : Cooler Temperature (s) Celsius (corrected):_____

Location CCF West Date 05/01/23

Project / Client NASA / KSC

NS1003.04.03

Purpose- collect MW Samples
personnel- william Duttenhaver
Equipment- YSI Pro, HACH 2100q, water level meter
weather- H: 83° L: 64°, 5% chance of rain
06:00- Arrive at field office to calibrate equipment and get sampling supplies along with work truck & Ice
07:23- on site
07:59- sampled ~~MW~~ IW0003IS
08:39- sampled IW0003ID
09:35- sampled IW0083ID
10:12- Sampled IW0083IS
10:49- sampled IW0083S
11:29- sampled IW0029ID
12:11- Sampled IW0092
12:35- Dumped IDW into drum 229687. Headed back to field office to scan in paperwork and return sampling equipment. Site secure / off site.

Rain in the Rain

HGL HydroGeologic, Inc.

CALIBRATION LOG

Project Name: CCF West

By: William Duttenhaver

Project No.: NS1003.04.03

Page 1 of 1

Date/Time	Instrument	STD	STD CONC ppm	Meter Reading	Comments
05/23/2023 11:50	YSI Pro-48513	DO %	Sat Air	100.6	Pass
"		conductivity	1.413 MS/CM	1.415	pass
"	"	ORP	240.0 MV	240.1	Pass
"	"	PH	7	7.00	Pass
"	"	PH	10	10.01	Pass
"	"	PH	4	3.99	Pass
05/23/2023 12:15	HACH 2100Q-21539	NTU	20	19.3	Pass
"	"	NTU	100	98.7	Pass
"	"	NTU	800	796	Pass
"	"	NTU	10	10.0	Pass

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CCF West	SITE LOCATION: NASA/KSC	
WELL NO: CCF-IW0003S	SAMPLE ID: CCF-IW0003S-008.0-20230524	DATE: 05/24/23

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 3 feet to 13 feet	STATIC DEPTH TO WATER (feet): 4.75	PURGE PUMP TYPE OR BAILER: PP

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (5.3 mL/foot X 11 feet) + 200 mL = 258.3 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 8	PURGING INITIATED AT: 06:57	PURGING ENDED AT: 07:19	TOTAL VOLUME PURGED (liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µS/cm	DISSOLVED OXYGEN (circle units) mg/L	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
07:07	2.0	2.0	200	4.83	4.41	24.6	546	0.14	4.93	-28.4	clear/ sulfur
07:10	.6	2.6	200	4.82	4.41	24.5	545	0.12	4.30	-32.4	"
07:13	.6	3.2	200	4.83	4.41	24.5	543	0.11	3.87	-37.9	"
07:16	.6	3.8	200	4.83	4.40	24.6	544	0.10	3.47	-40.2	"
07:19	.6	4.4	200	4.83	4.40	24.5	545	0.09	3.11	-42.4	"

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

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HGL William Duttenhaver	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 07:21	SAMPLING ENDED AT: 07:21
PUMP OR TUBING DEPTH IN WELL (feet): 8	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	3	CG	40mL	HCL	N/A		V8260SL	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

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

SGS North America Inc - Orlando

Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL: 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # : PAGE 1 OF 1

SGS - ORLANDO Quote #	SKIFF #

Client / Reporting Information

Company Name: HGL, Inc.
Address: 2405 N. Courtney Parkway, STE 203
City: Merrit Island State: FL Zip:32937
Project Contact: Denise Rivers Email:drivers@hgl.com
Phone #:910-233-8460
Sampler(s) Name(s) (Printed)
Sampler 1: William Duttenhaver Sampler 2:

Project Information

Project Name: CCF West LTM
Street Kennedy Space Center
City Merritt Island State FL
Project # NS1003.04.06
Fax #
Client Purchase Order #

Analytical Information

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	COLLECTION TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	(8260B) - TCE, cDCE, tDCE, and VC only	LAB USE ONLY
	CCF-IW0003S-008.0-20230524	5/24/23	07:21	WD	GW	3			X							X	
	CCF-TB-20230524-01	5/24/23	06:30	WD	WW	2			X							X	

Turnaround Time (Business days)

X 10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH* _____
2 Day *RUSH* _____
1 Day *RUSH* _____
Other _____
Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- ☐ COMMERCIAL "A" (RESULTS ONLY)
- ☐ COMMERCIAL "B" (RESULTS PLUS QC)
- ☐ REDT1 (EPA LEVEL 3)
- ☐ FULLT1 (EPA LEVEL 4)
- ☐ EDD'S

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1		2	3		4
Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
5		6	7		8

Lab Use Only : Cooler Temperature (s) Celsius (corrected):_____

http://www.sgs.com/en/terms-and-conditions

SGS North America Inc - Orlando

Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # : PAGE 1 OF 1

SGS - ORLANDO Quote #	SKIFF #

Client / Reporting Information

Company Name: HGL, Inc.
Address: 2405 N. Courtney Parkway, STE 203
City: Merrit Island State: FL Zip:32937
Project Contact: Denise Rivers Email:drivers@hgl.com
Phone #:910-233-8460
Sampler(s) Name(s) (Printed)
Sampler 1: William Duttenhaver Sampler 2:

Project Information

Project Name: CCF West LTM
Street Kennedy Space Center
City Merritt Island State FL
Project # NS1003.04.08
Fax #
Client Purchase Order #

Analytical Information

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NACH+ZNAC	DI WATER	MEOH	V8260STD VOCs	Nitrates (300.0)	Total Phosphorous (365.4)	LCQSM537DODFL-24 analytes + Genx	LAB USE ONLY
	CCF-IDW-229652-20230524	5/24/23	08:06	WD	GW	7	X	X	X			X				X	X	X	X	
	CCF-IDW-229687-20230524	5/24/23	08:30	WD	GW	7	X	X	X			X				X	X	X	X	

Turnaround Time (Business days)

X 10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH* _____
2 Day *RUSH* _____
1 Day *RUSH* _____
Other _____
Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- ☐ COMMERCIAL "A" (RESULTS ONLY)
- ☐ COMMERCIAL "B" (RESULTS PLUS QC)
- ☐ REDT1 (EPA LEVEL 3)
- ☐ FULLT1 (EPA LEVEL 4)
- ☐ EDD'S

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1		2	3		4
Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
5		6	7		8

Lab Use Only : Cooler Temperature (s) Celsius (corrected):_____

132 Location CCF west Date 05/24/23

Project / Client NASA / KSC

NS1003.04.03

Purpose- Collect MW and IDW samples
Personel- William Duttenhaver
Equipment- YSI Pro, HACH 2100Q, water level meter
Weather- H: 79° L: 74°, 80% chance of rain, cloudy
Note- calibrated equipment on 05/23/23
06:45- on site
07:21- Sampled IW0003S
08:06- Sampled IDW Drum 229652
08:30- Sampled IDW Drum 229687
09:00- Packed equipment up
09:05- Headed back to field office to pack coolers and to drop sampling equipment off at FedEx
09:10- Site secure / off site

Paul Duttenhaver

HGL

SAFETY MEETING/TRAINING LOG

- [x] Tailgate (daily)
- [ ] Activity Hazard Analysis
- [ ] Pre-Task Hazard Analysis (prior to new task or operation)
- [ ] Site Safety Orientation (new personnel)
- [ ] Supervisor's (monthly)
- [ ] Supervisor's (weekly)
- [ ] UXO Awareness
- [ ] Asbestos Awareness
- [ ] Health and Safety Plan Addendum: _____
- [ ] Other: ___

Date/Time: 09/12/2023 07:00 Client: NASA/KSC

Location: CCF West Job No.: NS1003.04.05

Meeting/training conducted by: William Duttenhaver

Work Activities: collect static water level readings

Safety / Training Topics Presented

Chemical Hazards: VOCs

Physical Hazards: Slips, trips, falls, biologicals, Pinch points

Specific Safety Topic(s): Heat Stress

Specific Training Covered: Being aware of your surroundings

Attendees

Name Printed and Employee Number:	Signature:
William Duttenhaver	
Meghan West	

HGL **STATIC WATER LEVEL FORM**

PROJECT NAME: CCF West DATE: 09/12/2023

WATER LEVEL INDICATOR ID#: 3614944

LOCATION: NASA / KSC

Well ID	Time Gauged	DTW (ft BTOC)	Total Well Depth* (ft BTOC)	Notes
IW0004D	0819	6.14	79.93	
IW0004IS	0822	6.16	40.41	
IW0087	0825	7.36	47.82	
IW0081	0829	6.75	28.11	
IW0036	0834	6.53	38.15	
IW0059	0838	6.72	48.25	
IW0021S	0842	5.31	17.28	
IW0089	0846	5.10	56.42	
IW0017S	0850	7.00	15.05	
IW0084	0853	6.08	37.90	
IW0063	0857	6.17	54.00	
IW0064	0904	6.70	53.88	
IW0080IS	0908	5.68	27.90	
IW0080S	0911	6.79	18.13	
IW0062	0914	6.92	28.15	
IW0086	0919	7.91	47.82	
IW0011ID	0922	7.87	60.71	
IW0011IS	0926	8.01	37.85	
IW003D	0936	5.18	80.59	
IW003ID	0941	5.19	59.35	
IW003IS	0943	5.31	37.81	
IW003S	0947	5.24	15.75	

*Note: Total well depth to be measured at time of gauging

Sampler William Duttenhaver Observer Meghan West

HGL **STATIC WATER LEVEL FORM**

PROJECT NAME: CCF West DATE: 09/12/2023

WATER LEVEL INDICATOR ID#: 3614944

LOCATION: Nasa / KSC

Well ID	Time Gauged	DTW (ft BTOC)	Total Well Depth* (ft BTOC)	Notes
IW0088	0949	5.89	47.90	
IW0046	1011	10.35	53.50	
IW0070	1015	11.08	59.29	
IW0068	1020	10.58	54.13	
IW0069	1023	11.81	54.24	
IW0045	1026	9.70	53.24	
IW0091	1029	10.40	67.21	
IW0067	1033	9.39	53.70	
IW0044	1036	6.84	53.44	
IW0032	1043	9.88	69.63	
IW0031	1050	9.75	–	obstruction at 10.73
IW0030	1054	10.00	69.44	
IW0042	1101	6.03	42.90	
IW0039	1105	9.99	50.42	
IW0085	1117	8.43	47.95	
IW0005ID	1120	8.02	58.88	
IW0061	1125	5.71	48.19	
IW0037	1131	5.39	32.69	
IW0079	1135	7.23	18.10	
IW0090	1140	7.20	57.73	
IW0082	1144	7.63	28.00	
IW0025IS	1147	10.89	33.03	

*Note: Total well depth to be measured at time of gauging

Sampler William Duttenhaver Observer Meghan West

HGL **STATIC WATER LEVEL FORM**

PROJECT NAME: CCF West DATE: 09/12/2023

WATER LEVEL INDICATOR ID#: 361494

LOCATION: NASA / KSC

Well ID	Time Gauged	DTW (ft BTOC)	Total Well Depth* (ft BTOC)	Notes
IW0092	1201	7.16	53.20	
IW0029ID	1214	6.09	47.95	
IW0083IS	1219	4.44	37.15	
IW0083S	1222	4.24	27.99	
IW0083ID	1225	4.41	47.81	

*Note: Total well depth to be measured at time of gauging

Sampler William Duttenhaver Observer Meghan West

Location CCF West Date 09/12/2023

Project / Client Nasa/KSC

NS 1003.04.05

Purpose- collect static water levels

Personnel- W. Duttenhaver and M. West

Equipment- static water level meter ~~model~~ solinst 101, work truck, hand tools, decon materials (5-gallon buckets, nitrile gloves, luminox, potable water, DI water), figures

Weather- high 90°F, low 76°F, sunny, precip. 0%, humidity 94%, wind 3mph NW

0700 - All personnel conducted TGSM at CCSFS field office

0710 - gather equipment and load in truck

0730 - MOB to site (Stopped for gas)

0815 - all personnel on site, started collecting water levels

1225 - completed collecting static water levels from 49 monitoring wells. See static water level form for exact times.

1246 Staged drum #230301 at CCF IDW Area on pallet #216883 and transferred 3.5 gallons of decon water into drum #230301

1300 site secured/offsite

- water level meter was decon'ed after each well gauging.

- Decon Process; potable water, Luminox wash, DI water

MW

1: Collecting static water level reading at monitoring well IW0088. (Photo was taken facing west.)

2: Collecting static water level reading at monitoring well IW0037. (Photo was taken facing north.)

3:

3: Collecting static water level reading at monitoring well IW0029ID. (Photo was taken facing east.)

4: Deconning static water level meter with potable water, Luminox wash, and DI water.

5: Staged new drum #230301 on pallet #216883 at the CCF IDW Area.

6: Transferring 3.5 gallons of decon water into drum #230301 on pallet # 216883 at CCF IDW Area.

APPENDIX E

LABORATORY ANALYTICAL REPORTS

This page was intentionally left blank.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Hydrogeologic, Inc.

CCF West NAM; KSC, FL

NS1003.04.06

SGS Job Number: FC5575

Sampling Dates: 04/25/23 - 04/26/23

Report to:

jtracy@hgl.com
drivers@hgl.com

ATTN: Distribution3

Total number of pages in report: **86**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Norm Farmer
Technical Director

Client Service contact: Ariel Hartney 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001) DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), AL, AK, AR, CT, IA, KY, MA, MI. MS, ND, NH, NV, OK, OR, IL, UT, VT, WA, WI, WV

Sections: 1 2 3 4 5 6

Table of Contents

Sample Summary

Hydrogeologic, Inc.

Job No: FC5575

CCF West NAM; KSC, FL
Project No: NS1003.04.06

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FC5575-1	04/25/23	07:00	WD	04/26/23	AQ	Trip Blank Water	CCF-TB-20230425-01
FC5575-2	04/25/23	07:54	WD	04/26/23	AQ	Ground Water	CCF-IW0082-020.0-20230425
FC5575-3	04/25/23	08:36	WD	04/26/23	AQ	Ground Water	CCF-IW0090-050.0-20230425
FC5575-4	04/25/23	09:37	WD	04/26/23	AQ	Ground Water	CCF-IW0037-025.0-20230425
FC5575-5	04/25/23	10:32	WD	04/26/23	AQ	Ground Water	CCF-IW0079-010.0-20230425
FC5575-6	04/25/23	11:18	WD	04/26/23	AQ	Ground Water	CCF-IW0061-040.0-20230425
FC5575-7	04/25/23	12:08	WD	04/26/23	AQ	Ground Water	CCF-IW0005ID-051.0-20230425
FC5575-8	04/25/23	12:46	WD	04/26/23	AQ	Ground Water	CCF-IW0085-040.0-20230425
FC5575-9	04/26/23	08:04	WD	04/26/23	AQ	Ground Water	CCF-IW0042-035.0-20230426
FC5575-10	04/26/23	08:52	WD	04/26/23	AQ	Ground Water	CCF-IW0067-045.0-20230426
FC5575-11	04/26/23	11:30	WD	04/26/23	AQ	Ground Water	CCF-IW0045-045.0-20230426
FC5575-12	04/26/23	12:18	WD	04/26/23	AQ	Ground Water	CCF-IW0070-050.0-20230426
FC5575-13	04/26/23	13:00	WD	04/26/23	AQ	Ground Water	CCF-IW0046-045.0-20230426

Sample Summary
(continued)

Hydrogeologic, Inc.

Job No: FC5575

CCF West NAM; KSC, FL
Project No: NS1003.04.06

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
FC5575-14	04/26/23	13:41	WD	04/26/23	AQ	Ground Water	CCF-IW0091-060.0-20230426

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Hydrogeologic, Inc. **Job No:** FC5575

Site: CCF West NAM; KSC, FL **Report Date:** 5/5/2023 3:40:45 PM

On 04/26/2023, 13 Sample(s), 1 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 5 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC5575 was assigned to the project.

Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section. Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Volatiles By Method SW846 8260D

Matrix: AQ **Batch ID:** V2O2944

Sample(s) FC5575-3MS, FC5575-3MSD were used as the QC samples indicated.

FC5575-5: Sample was treated with an anti-foaming agent.

FC5575-7: Sample was treated with an anti-foaming agent.

FC5575-10: Sample was treated with an anti-foaming agent.

FC5575-11: Sample was treated with an anti-foaming agent.

FC5575-12: Sample was treated with an anti-foaming agent.

Matrix: AQ **Batch ID:** VI2914

Sample(s) FC5683-28MS, FC5683-28MSD were used as the QC samples indicated.

Matrix Spike Recovery(s) for cis-1,2-Dichloroethylene are outside control limits. Outside control limits due to high level in sample relative to spike amount.

VI2914-MB: Sample was treated with an anti-foaming agent.

FC5575-2: Sample was treated with an anti-foaming agent.

SGS North America Inc. - Orlando certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted. Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria. SGS North America Inc.- Orlando is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety.

Narrative prepared by:

_____

Kim Benham, Client Services *(Signature on File)*

Summary of Hits

Job Number: FC5575
Account: Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL
Collected: 04/25/23 thru 04/26/23

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FC5575-1	**CCF-TB-20230425-01**					
No hits reported in this sample.						
FC5575-2	**CCF-IW0082-020.0-20230425**					
cis-1,2-Dichloroethylene [a]		70.1	1.0	0.50	ug/l	SW846 8260D
trans-1,2-Dichloroethylene [a]		65.3	1.0	0.50	ug/l	SW846 8260D
Vinyl Chloride		78.4	2.0	1.0	ug/l	SW846 8260D
FC5575-3	**CCF-IW0090-050.0-20230425**					
cis-1,2-Dichloroethylene		20.1	1.0	0.50	ug/l	SW846 8260D
trans-1,2-Dichloroethylene		9.1	1.0	0.50	ug/l	SW846 8260D
Vinyl Chloride		28.9	1.0	0.50	ug/l	SW846 8260D
FC5575-4	**CCF-IW0037-025.0-20230425**					
cis-1,2-Dichloroethylene		27.2	1.0	0.50	ug/l	SW846 8260D
trans-1,2-Dichloroethylene		40.0	1.0	0.50	ug/l	SW846 8260D
Trichloroethylene		1.4	1.0	0.50	ug/l	SW846 8260D
Vinyl Chloride		19.5	1.0	0.50	ug/l	SW846 8260D
FC5575-5	**CCF-IW0079-010.0-20230425**					
cis-1,2-Dichloroethylene [a]		4.5	1.0	0.50	ug/l	SW846 8260D
trans-1,2-Dichloroethylene [a]		1.7	1.0	0.50	ug/l	SW846 8260D
FC5575-6	**CCF-IW0061-040.0-20230425**					
cis-1,2-Dichloroethylene		17.7	1.0	0.50	ug/l	SW846 8260D
trans-1,2-Dichloroethylene		42.2	1.0	0.50	ug/l	SW846 8260D
Trichloroethylene		1.9	1.0	0.50	ug/l	SW846 8260D
Vinyl Chloride		18.3	1.0	0.50	ug/l	SW846 8260D
FC5575-7	**CCF-IW0005ID-051.0-20230425**					
cis-1,2-Dichloroethylene [a]		5.2	1.0	0.50	ug/l	SW846 8260D
trans-1,2-Dichloroethylene [a]		1.1	1.0	0.50	ug/l	SW846 8260D
Vinyl Chloride [a]		9.7	1.0	0.50	ug/l	SW846 8260D
FC5575-8	**CCF-IW0085-040.0-20230425**					
cis-1,2-Dichloroethylene		1.3	1.0	0.50	ug/l	SW846 8260D
Vinyl Chloride		2.2	1.0	0.50	ug/l	SW846 8260D

Summary of Hits

Job Number: FC5575
Account: Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL
Collected: 04/25/23 thru 04/26/23

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FC5575-9	**CCF-IW0042-035.0-20230426**					
cis-1,2-Dichloroethylene		12.4	1.0	0.50	ug/l	SW846 8260D
trans-1,2-Dichloroethylene		15.3	1.0	0.50	ug/l	SW846 8260D
Trichloroethylene		2.3	1.0	0.50	ug/l	SW846 8260D
Vinyl Chloride		3.8	1.0	0.50	ug/l	SW846 8260D
FC5575-10	**CCF-IW0067-045.0-20230426**					
cis-1,2-Dichloroethylene [a]		12.8	1.0	0.50	ug/l	SW846 8260D
trans-1,2-Dichloroethylene [a]		13.0	1.0	0.50	ug/l	SW846 8260D
Trichloroethylene [a]		3.4	1.0	0.50	ug/l	SW846 8260D
Vinyl Chloride [a]		4.3	1.0	0.50	ug/l	SW846 8260D
FC5575-11	**CCF-IW0045-045.0-20230426**					
cis-1,2-Dichloroethylene [a]		38.7	1.0	0.50	ug/l	SW846 8260D
trans-1,2-Dichloroethylene [a]		42.7	1.0	0.50	ug/l	SW846 8260D
Trichloroethylene [a]		13.0	1.0	0.50	ug/l	SW846 8260D
Vinyl Chloride [a]		41.9	1.0	0.50	ug/l	SW846 8260D
FC5575-12	**CCF-IW0070-050.0-20230426**					
cis-1,2-Dichloroethylene [a]		3.4	1.0	0.50	ug/l	SW846 8260D
trans-1,2-Dichloroethylene [a]		6.1	1.0	0.50	ug/l	SW846 8260D
Trichloroethylene [a]		1.8	1.0	0.50	ug/l	SW846 8260D
Vinyl Chloride [a]		22.7	1.0	0.50	ug/l	SW846 8260D
FC5575-13	**CCF-IW0046-045.0-20230426**					
cis-1,2-Dichloroethylene		8.3	1.0	0.50	ug/l	SW846 8260D
trans-1,2-Dichloroethylene		9.4	1.0	0.50	ug/l	SW846 8260D
Trichloroethylene		12.7	1.0	0.50	ug/l	SW846 8260D
FC5575-14	**CCF-IW0091-060.0-20230426**					

No hits reported in this sample.

(a) Sample was treated with an anti-foaming agent.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: CCF-TB-20230425-01
Lab Sample ID: FC5575-1
Matrix: AQ - Trip Blank Water
Method: SW846 8260D
Project: CCF West NAM; KSC, FL

Date Sampled: 04/25/23
Date Received: 04/26/23
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2O75918.D	1	05/01/23 12:09	DB	n/a	n/a	V2O2944
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	0.50 U	1.0	0.50	0.41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		83-118%
17060-07-0	1,2-Dichloroethane-D4	112%		79-125%
2037-26-5	Toluene-D8	96%		85-112%
460-00-4	4-Bromofluorobenzene	97%		83-118%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CCF-IW0082-020.0-20230425		
Lab Sample ID:	FC5575-2	**Date Sampled:**	04/25/23
Matrix:	AQ - Ground Water	**Date Received:**	04/26/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CCF West NAM; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	I756437.D	1	05/04/23 12:28	JW	n/a	n/a	VI2914
Run #2	2O75936.D	2	05/01/23 20:13	DB	n/a	n/a	V2O2944

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	70.1	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	65.3	1.0	0.50	0.22	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	78.4 [b]	2.0	1.0	0.82	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%	100%	83-118%
17060-07-0	1,2-Dichloroethane-D4	100%	111%	79-125%
2037-26-5	Toluene-D8	99%	98%	85-112%
460-00-4	4-Bromofluorobenzene	106%	97%	83-118%

(a) Sample was treated with an anti-foaming agent.
(b) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: CCF-IW0090-050.0-20230425
Lab Sample ID: FC5575-3
Matrix: AQ - Ground Water
Method: SW846 8260D
Project: CCF West NAM; KSC, FL

Date Sampled: 04/25/23
Date Received: 04/26/23
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2O75920.D	1	05/01/23 13:05	DB	n/a	n/a	V2O2944
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	20.1	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	9.1	1.0	0.50	0.22	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	28.9	1.0	0.50	0.41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		83-118%
17060-07-0	1,2-Dichloroethane-D4	105%		79-125%
2037-26-5	Toluene-D8	98%		85-112%
460-00-4	4-Bromofluorobenzene	98%		83-118%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CCF-IW0037-025.0-20230425		
Lab Sample ID:	FC5575-4	**Date Sampled:**	04/25/23
Matrix:	AQ - Ground Water	**Date Received:**	04/26/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CCF West NAM; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2O75921.D	1	05/01/23 13:32	DB	n/a	n/a	V2O2944
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	27.2	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	40.0	1.0	0.50	0.22	ug/l	
79-01-6	Trichloroethylene	1.4	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	19.5	1.0	0.50	0.41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		83-118%
17060-07-0	1,2-Dichloroethane-D4	110%		79-125%
2037-26-5	Toluene-D8	98%		85-112%
460-00-4	4-Bromofluorobenzene	97%		83-118%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CCF-IW0079-010.0-20230425		
Lab Sample ID:	FC5575-5	**Date Sampled:**	04/25/23
Matrix:	AQ - Ground Water	**Date Received:**	04/26/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CCF West NAM; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	2O75922.D	1	05/01/23 13:58	DB	n/a	n/a	V2O2944
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	4.5	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	1.7	1.0	0.50	0.22	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	0.50 U	1.0	0.50	0.41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		83-118%
17060-07-0	1,2-Dichloroethane-D4	111%		79-125%
2037-26-5	Toluene-D8	97%		85-112%
460-00-4	4-Bromofluorobenzene	97%		83-118%

(a) Sample was treated with an anti-foaming agent.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: CCF-IW0061-040.0-20230425
Lab Sample ID: FC5575-6
Matrix: AQ - Ground Water
Method: SW846 8260D
Project: CCF West NAM; KSC, FL

Date Sampled: 04/25/23
Date Received: 04/26/23
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2O75923.D	1	05/01/23 14:24	DB	n/a	n/a	V2O2944
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	17.7	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	42.2	1.0	0.50	0.22	ug/l	
79-01-6	Trichloroethylene	1.9	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	18.3	1.0	0.50	0.41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		83-118%
17060-07-0	1,2-Dichloroethane-D4	111%		79-125%
2037-26-5	Toluene-D8	96%		85-112%
460-00-4	4-Bromofluorobenzene	97%		83-118%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CCF-IW0005ID-051.0-20230425		
Lab Sample ID:	FC5575-7	**Date Sampled:**	04/25/23
Matrix:	AQ - Ground Water	**Date Received:**	04/26/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CCF West NAM; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	2O75924.D	1	05/01/23 14:58	DB	n/a	n/a	V2O2944
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	5.2	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	1.1	1.0	0.50	0.22	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	9.7	1.0	0.50	0.41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		83-118%
17060-07-0	1,2-Dichloroethane-D4	111%		79-125%
2037-26-5	Toluene-D8	95%		85-112%
460-00-4	4-Bromofluorobenzene	101%		83-118%

(a) Sample was treated with an anti-foaming agent.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CCF-IW0085-040.0-20230425		
Lab Sample ID:	FC5575-8	**Date Sampled:**	04/25/23
Matrix:	AQ - Ground Water	**Date Received:**	04/26/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CCF West NAM; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2O75925.D	1	05/01/23 15:24	DB	n/a	n/a	V2O2944
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	1.3	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	2.2	1.0	0.50	0.41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		83-118%
17060-07-0	1,2-Dichloroethane-D4	109%		79-125%
2037-26-5	Toluene-D8	96%		85-112%
460-00-4	4-Bromofluorobenzene	98%		83-118%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CCF-IW0042-035.0-20230426		
Lab Sample ID:	FC5575-9	**Date Sampled:**	04/26/23
Matrix:	AQ - Ground Water	**Date Received:**	04/26/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CCF West NAM; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2O75926.D	1	05/01/23 15:50	DB	n/a	n/a	V2O2944
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	12.4	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	15.3	1.0	0.50	0.22	ug/l	
79-01-6	Trichloroethylene	2.3	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	3.8	1.0	0.50	0.41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		83-118%
17060-07-0	1,2-Dichloroethane-D4	111%		79-125%
2037-26-5	Toluene-D8	96%		85-112%
460-00-4	4-Bromofluorobenzene	94%		83-118%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CCF-IW0067-045.0-20230426		
Lab Sample ID:	FC5575-10	**Date Sampled:**	04/26/23
Matrix:	AQ - Ground Water	**Date Received:**	04/26/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CCF West NAM; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	2O75927.D	1	05/01/23 16:16	DB	n/a	n/a	V2O2944
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	12.8	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	13.0	1.0	0.50	0.22	ug/l	
79-01-6	Trichloroethylene	3.4	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	4.3	1.0	0.50	0.41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		83-118%
17060-07-0	1,2-Dichloroethane-D4	111%		79-125%
2037-26-5	Toluene-D8	96%		85-112%
460-00-4	4-Bromofluorobenzene	99%		83-118%

(a) Sample was treated with an anti-foaming agent.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CCF-IW0045-045.0-20230426		
Lab Sample ID:	FC5575-11	**Date Sampled:**	04/26/23
Matrix:	AQ - Ground Water	**Date Received:**	04/26/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CCF West NAM; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	2O75928.D	1	05/01/23 16:42	DB	n/a	n/a	V2O2944
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	38.7	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	42.7	1.0	0.50	0.22	ug/l	
79-01-6	Trichloroethylene	13.0	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	41.9	1.0	0.50	0.41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		83-118%
17060-07-0	1,2-Dichloroethane-D4	113%		79-125%
2037-26-5	Toluene-D8	96%		85-112%
460-00-4	4-Bromofluorobenzene	99%		83-118%

(a) Sample was treated with an anti-foaming agent.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CCF-IW0070-050.0-20230426		
Lab Sample ID:	FC5575-12	**Date Sampled:**	04/26/23
Matrix:	AQ - Ground Water	**Date Received:**	04/26/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CCF West NAM; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	2O75929.D	1	05/01/23 17:09	DB	n/a	n/a	V2O2944
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	3.4	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	6.1	1.0	0.50	0.22	ug/l	
79-01-6	Trichloroethylene	1.8	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	22.7	1.0	0.50	0.41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		83-118%
17060-07-0	1,2-Dichloroethane-D4	112%		79-125%
2037-26-5	Toluene-D8	96%		85-112%
460-00-4	4-Bromofluorobenzene	98%		83-118%

(a) Sample was treated with an anti-foaming agent.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: CCF-IW0046-045.0-20230426
Lab Sample ID: FC5575-13
Matrix: AQ - Ground Water
Method: SW846 8260D
Project: CCF West NAM; KSC, FL

Date Sampled: 04/26/23
Date Received: 04/26/23
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2O75930.D	1	05/01/23 17:35	DB	n/a	n/a	V2O2944
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	8.3	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	9.4	1.0	0.50	0.22	ug/l	
79-01-6	Trichloroethylene	12.7	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	0.50 U	1.0	0.50	0.41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		83-118%
17060-07-0	1,2-Dichloroethane-D4	113%		79-125%
2037-26-5	Toluene-D8	97%		85-112%
460-00-4	4-Bromofluorobenzene	96%		83-118%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CCF-IW0091-060.0-20230426		
Lab Sample ID:	FC5575-14	**Date Sampled:**	04/26/23
Matrix:	AQ - Ground Water	**Date Received:**	04/26/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CCF West NAM; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2O75931.D	1	05/01/23 18:01	DB	n/a	n/a	V2O2944
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	0.50 U	1.0	0.50	0.41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		83-118%
17060-07-0	1,2-Dichloroethane-D4	112%		79-125%
2037-26-5	Toluene-D8	97%		85-112%
460-00-4	4-Bromofluorobenzene	96%		83-118%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- QC Evaluation: DOD QSM5.x Limits

FC5575

SGS

SGS North America Inc - Orlando
Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # : FC5575 PAGE 1 OF 2

SGS - ORLANDO Quote # | SKIFF #

Client / Reporting Information

Company Name: Hydrogeologic INC.
Address: 2405 N Courtenay Pkwy Suite 203
City: Merritt Island State: Florida Zip: 32953
Project Contact: Denise Rivers Email: driversa@hgl.com
Phone #: 910-233-8460
Sampler(s) Name(s) (Printed) William Duttenhaver
Sampler 1: Sampler 2:

Project Information

Project Name: CCF West
Street
City NASA/KSC State Florida
Project # NS1003.04.06
Fax #
Client Purchase Order #

Analytical Information

SGS Orlando Sample #	Field ID / Point of Collection	Collection Date	Collection Time	Sampled By:	Matrix	Total # of Bottles	Container Information: Other	None	HCl	NaOH	HNO3	H2SO4	NaOH+ZnAc	DI Water	MeOH	V8260 STD) TCE, cDCE, tDCE, VC only												
1	CCF-TB-20230425-01	04/25	07:00	P.E	WW	2			X							X												
2	CCF-IW0082-020.0-20230425	04/25	07:54	P.E	GW	3			X							X												
3	CCF-IW0090-050.0-20230425	04/25	08:36	P.E	GW	3			X							X												
4	CCF-IW0037-025.0-20230425	04/25	09:37	P.E	GW	3			X							X												
5	CCF-IW0079-010.0-20230425	04/25	10:32	P.E	GW	3			X							X												
6	CCF-IW0061-040.0-20230425	04/25	11:18	P.E	GW	3			X							X												
7	CCF-IW0005ID-051.0-20230425	04/25	12:08	P.E	GW	3			X							X												
8	CCF-IW0085-040.0-20230425	04/25	12:46	P.E	GW	3			X							X												
9	CCF-IW0042-035.0-20230426	04/26	08:04	P.E	GW	3			X							X												
10	CCF-IW0067-045.0-20230426	04/26	08:52	P.E	GW	3			X							X												
11	CCF-IW0045-045.0-20230426	04/26	11:30	P.E	GW	3			X							X												
12	CCF-IW0070-050.0-20230426	04/26	12:18	P.E	GW	3			X							X												

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid

LAB USE ONLY

INITIAL ASSESSMENT SP

LABEL VERIFICATION SP

Turnaround Time (Business days)

10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
Rush T/A Data Available VIA Email or Labllnk

Data Deliverable Information

- ☐ COMMERCIAL "A" (RESULTS ONLY)
- ☐ COMMERCIAL "B" (RESULTS PLUS QC)
- ☐ REDT1 (EPA LEVEL 3)
- ☐ FULLT1 (EPA LEVEL 4)
- ☐ EDD'S

Comments / Remarks

(V8260 STD) TCE, cDCE, tDCE, VC only

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Date Time:
1	HGL	04/26/23 16:30	2	4/26/2023 16:30
3		4/26/23 18:00	4	04/26/23 18:00
5	Relinquished by/Affiliation	Date Time:	6 Received By/Affiliation	
7	Relinquished By/Affiliation	Date Time:	8 Received By/Affiliation	

Lab Use Only: Cooler Temperature (s) Celsius (corrected): 5.0 IR#1

ORLD-SMT-0001-03-FORM-COC (4).xls Rev 031318

http://www.sgs.com/en/terms-and-conditions

SGS North America Inc - Orlando
Chain of Custody

FC5575

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # : PAGE 2 OF 2

SGS - ORLANDO Quote # | SKIFF #

Client / Reporting Information

Company Name: Hydrogeologic INC.
Address: 2405 N Courtenay PKWY Suite 203
City: Merritt Island State: Florida Zip: 32953
Project Contact: Denise Rivers Email: drivers@hgl.com
Phone #: 910-233-8460
Sampler(s) Name(s) (Printed) William Duttenhaver
Sampler 1: Sampler 2:

Project Information

Project Name: CCF West
Street
City NASA/KSC State Florida
Project # NS1003.04.06
Fax #
Client Purchase Order #

Analytical Information

V8260 STD) TCE, cDCE, tDCE, VC only

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NaOH+ZnAc	DI WATER	MeOH	LAB USE ONLY
13	CCF-IW0046-045.0-20230426	04/26	13:00	P.O	GW	3			X						X	
14	CCF-IW0091-060.0-20230426	04/26	13:41	P.O	GW	3			X						X	

Turnaround Time (Business days)

10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
Rush T/A Data Available VIA Email or Labiink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [ ] EDD'S

Comments / Remarks

(V8260 STD) TCE, cDCE, tDCE, VC only

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1	HGL	04/26 16:30	2 ARM	3		
4						1800 04/26/23
5	Relinquished by/Affiliation	Date Time:	Received By/Affiliation 6	Relinquished By/Affiliation 7	Date Time:	Received By/Affiliation 8

Lab Use Only : Cooler Temperature (s) Celsius (corrected):

ORLD-SMT-0001-03-FORM-COC (4).xls Rev 031318

http://www.sgs.com/en/terms-and-conditions

FC5575: Chain of Custody
Page 2 of 3

SGS Sample Receipt Summary

Job Number: FC5575 **Client:** HGL **Project:** CCF WEST

Date / Time Received: 4/26/2023 6:00:00 PM **Delivery Method:** COURIER **Airbill #'s:** N/A

Therm ID: IR 1; **Therm CF:** -0.1; **# of Coolers:** 1

Cooler Temps (Raw Measured) °C: Cooler 1: (5.1);

Cooler Temps (Corrected) °C: Cooler 1: (5.0);

Cooler Information	Y	or	N
1. Custody Seals Present	☑		☐
2. Custody Seals Intact	☑		☐
3. Temp criteria achieved	☑		☐
4. Cooler temp verification	IR Gun		
5. Cooler media	Ice (Bag)		

Trip Blank Information	Y	or	N	N/A
1. Trip Blank present / cooler	☑		☐	☐
2. Trip Blank listed on COC	☑		☐	☐

	W	or	S	N/A
3. Type Of TB Received	☑		☐	☐

Sample Information	Y	or	N	N/A
1. Sample labels present on bottles	☑		☐	
2. Samples preserved properly	☑		☐	
3. Sufficient volume/containers recvd for analysis:	☑		☐	
4. Condition of sample	Intact			
5. Sample recvd within HT	☑		☐	
6. Dates/Times/IDs on COC match Sample Label	☑		☐	
7. VOCs have headspace	☐		☑	☐
8. Bottles received for unspecified tests	☐		☑	
9. Compositing instructions clear	☐		☐	☑
10. Voa Soil Kits/Jars received past 48hrs?	☐		☐	☑
11. % Solids Jar received?	☐		☐	☑
12. Residual Chlorine Present?	☐		☐	☑

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____ Number of 5035 Field Kits: _____ Number of Lab Filtered Metals: _____

Test Strip Lot #s: pH 0-3 230320 pH 10-12 25BDH07 Other: (Specify) pH 1.0 - 12.0 222221

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: SHAYLAP Date: 4/26/2023 6:00:00 PM Reviewer: _____ Date: _____

QC Evaluation: DOD QSM5.x Limits

Job Number: FC5575
Account: Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL
Collected: 04/25/23 thru 04/26/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V2O2944	SW846 8260D						
V2O2944-BS	156-59-2	cis-1,2-Dichloroethylene	BSP	REC	106	%	78-123
V2O2944-BS	156-60-5	trans-1,2-Dichloroethylene	BSP	REC	107	%	75-124
V2O2944-BS	79-01-6	Trichloroethylene	BSP	REC	108	%	79-123
V2O2944-BS	75-01-4	Vinyl Chloride	BSP	REC	111	%	58-137
V2O2944-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	99	%	80-119
V2O2944-BS	17060-07-0	1,2-Dichloroethane-D4	BSP	SURR	114	%	81-118
V2O2944-BS	2037-26-5	Toluene-D8	BSP	SURR	95	%	89-112
V2O2944-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	95	%	85-114
FC5575-3MS	156-59-2	cis-1,2-Dichloroethylene	MS	REC	96	%	78-123
FC5575-3MS	156-60-5	trans-1,2-Dichloroethylene	MS	REC	99	%	75-124
FC5575-3MS	79-01-6	Trichloroethylene	MS	REC	105	%	79-123
FC5575-3MS	75-01-4	Vinyl Chloride	MS	REC	98	%	58-137
FC5575-3MS	1868-53-7	Dibromofluoromethane	MS	SURR	99	%	80-119
FC5575-3MS	17060-07-0	1,2-Dichloroethane-D4	MS	SURR	116	%	81-118
FC5575-3MS	2037-26-5	Toluene-D8	MS	SURR	93	%	89-112
FC5575-3MS	460-00-4	4-Bromofluorobenzene	MS	SURR	94	%	85-114
FC5575-3MSD	156-59-2	cis-1,2-Dichloroethylene	MSD	REC	96	%	78-123
FC5575-3MSD	156-59-2	cis-1,2-Dichloroethylene	MSD	RPD	0	%	20
FC5575-3MSD	156-60-5	trans-1,2-Dichloroethylene	MSD	REC	95	%	75-124
FC5575-3MSD	156-60-5	trans-1,2-Dichloroethylene	MSD	RPD	4	%	20
FC5575-3MSD	79-01-6	Trichloroethylene	MSD	REC	99	%	79-123
FC5575-3MSD	79-01-6	Trichloroethylene	MSD	RPD	5	%	20
FC5575-3MSD	75-01-4	Vinyl Chloride	MSD	REC	90	%	58-137
FC5575-3MSD	75-01-4	Vinyl Chloride	MSD	RPD	7	%	20
FC5575-3MSD	1868-53-7	Dibromofluoromethane	MSD	SURR	99	%	80-119
FC5575-3MSD	17060-07-0	1,2-Dichloroethane-D4	MSD	SURR	117	%	81-118
FC5575-3MSD	2037-26-5	Toluene-D8	MSD	SURR	94	%	89-112
FC5575-3MSD	460-00-4	4-Bromofluorobenzene	MSD	SURR	95	%	85-114
V2O2944-MB	1868-53-7	Dibromofluoromethane	MB	SURR	99	%	80-119
V2O2944-MB	17060-07-0	1,2-Dichloroethane-D4	MB	SURR	114	%	81-118
V2O2944-MB	2037-26-5	Toluene-D8	MB	SURR	98	%	89-112
V2O2944-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	97	%	85-114
FC5575-1	1868-53-7	Dibromofluoromethane	SAMP	SURR	97	%	80-119
FC5575-1	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	112	%	81-118
FC5575-1	2037-26-5	Toluene-D8	SAMP	SURR	96	%	89-112
FC5575-1	460-00-4	4-Bromofluorobenzene	SAMP	SURR	97	%	85-114
FC5575-2	1868-53-7	Dibromofluoromethane	SAMP	SURR	100	%	80-119
FC5575-2	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	111	%	81-118
FC5575-2	2037-26-5	Toluene-D8	SAMP	SURR	98	%	89-112
FC5575-2	460-00-4	4-Bromofluorobenzene	SAMP	SURR	97	%	85-114
FC5575-3	1868-53-7	Dibromofluoromethane	SAMP	SURR	96	%	80-119
FC5575-3	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	105	%	81-118

* Sample used for QC is not from job FC5575

QC Evaluation: DOD QSM5.x Limits

Job Number: FC5575
Account: Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL
Collected: 04/25/23 thru 04/26/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
FC5575-3	2037-26-5	Toluene-D8	SAMP	SURR	98	%	89-112
FC5575-3	460-00-4	4-Bromofluorobenzene	SAMP	SURR	98	%	85-114
FC5575-4	1868-53-7	Dibromofluoromethane	SAMP	SURR	99	%	80-119
FC5575-4	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	110	%	81-118
FC5575-4	2037-26-5	Toluene-D8	SAMP	SURR	98	%	89-112
FC5575-4	460-00-4	4-Bromofluorobenzene	SAMP	SURR	97	%	85-114
FC5575-5	1868-53-7	Dibromofluoromethane	SAMP	SURR	98	%	80-119
FC5575-5	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	111	%	81-118
FC5575-5	2037-26-5	Toluene-D8	SAMP	SURR	97	%	89-112
FC5575-5	460-00-4	4-Bromofluorobenzene	SAMP	SURR	97	%	85-114
FC5575-6	1868-53-7	Dibromofluoromethane	SAMP	SURR	99	%	80-119
FC5575-6	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	111	%	81-118
FC5575-6	2037-26-5	Toluene-D8	SAMP	SURR	96	%	89-112
FC5575-6	460-00-4	4-Bromofluorobenzene	SAMP	SURR	97	%	85-114
FC5575-7	1868-53-7	Dibromofluoromethane	SAMP	SURR	100	%	80-119
FC5575-7	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	111	%	81-118
FC5575-7	2037-26-5	Toluene-D8	SAMP	SURR	95	%	89-112
FC5575-7	460-00-4	4-Bromofluorobenzene	SAMP	SURR	101	%	85-114
FC5575-8	1868-53-7	Dibromofluoromethane	SAMP	SURR	99	%	80-119
FC5575-8	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	109	%	81-118
FC5575-8	2037-26-5	Toluene-D8	SAMP	SURR	96	%	89-112
FC5575-8	460-00-4	4-Bromofluorobenzene	SAMP	SURR	98	%	85-114
FC5575-9	1868-53-7	Dibromofluoromethane	SAMP	SURR	100	%	80-119
FC5575-9	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	111	%	81-118
FC5575-9	2037-26-5	Toluene-D8	SAMP	SURR	96	%	89-112
FC5575-9	460-00-4	4-Bromofluorobenzene	SAMP	SURR	94	%	85-114
FC5575-10	1868-53-7	Dibromofluoromethane	SAMP	SURR	99	%	80-119
FC5575-10	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	111	%	81-118
FC5575-10	2037-26-5	Toluene-D8	SAMP	SURR	96	%	89-112
FC5575-10	460-00-4	4-Bromofluorobenzene	SAMP	SURR	99	%	85-114
FC5575-11	1868-53-7	Dibromofluoromethane	SAMP	SURR	101	%	80-119
FC5575-11	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	113	%	81-118
FC5575-11	2037-26-5	Toluene-D8	SAMP	SURR	96	%	89-112
FC5575-11	460-00-4	4-Bromofluorobenzene	SAMP	SURR	99	%	85-114
FC5575-12	1868-53-7	Dibromofluoromethane	SAMP	SURR	99	%	80-119
FC5575-12	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	112	%	81-118
FC5575-12	2037-26-5	Toluene-D8	SAMP	SURR	96	%	89-112
FC5575-12	460-00-4	4-Bromofluorobenzene	SAMP	SURR	98	%	85-114
FC5575-13	1868-53-7	Dibromofluoromethane	SAMP	SURR	102	%	80-119
FC5575-13	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	113	%	81-118
FC5575-13	2037-26-5	Toluene-D8	SAMP	SURR	97	%	89-112
FC5575-13	460-00-4	4-Bromofluorobenzene	SAMP	SURR	96	%	85-114
FC5575-14	1868-53-7	Dibromofluoromethane	SAMP	SURR	98	%	80-119
FC5575-14	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	112	%	81-118
FC5575-14	2037-26-5	Toluene-D8	SAMP	SURR	97	%	89-112

* Sample used for QC is not from job FC5575

QC Evaluation: DOD QSM5.x Limits

Job Number: FC5575
Account: Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL
Collected: 04/25/23 thru 04/26/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
FC5575-14	460-00-4	4-Bromofluorobenzene	SAMP	SURR	96	%	85-114
VI2914	SW846 8260D						
VI2914-BS	156-59-2	cis-1,2-Dichloroethylene	BSP	REC	102	%	78-123
VI2914-BS	156-60-5	trans-1,2-Dichloroethylene	BSP	REC	104	%	75-124
VI2914-BS	79-01-6	Trichloroethylene	BSP	REC	101	%	79-123
VI2914-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	101	%	80-119
VI2914-BS	17060-07-0	1,2-Dichloroethane-D4	BSP	SURR	97	%	81-118
VI2914-BS	2037-26-5	Toluene-D8	BSP	SURR	102	%	89-112
VI2914-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	98	%	85-114
FC5683-28MS*	156-59-2	cis-1,2-Dichloroethylene	MS	REC	122 [a]	%	78-123
FC5683-28MS*	156-60-5	trans-1,2-Dichloroethylene	MS	REC	103	%	75-124
FC5683-28MS*	79-01-6	Trichloroethylene	MS	REC	99	%	79-123
FC5683-28MS*	1868-53-7	Dibromofluoromethane	MS	SURR	103	%	80-119
FC5683-28MS*	17060-07-0	1,2-Dichloroethane-D4	MS	SURR	105	%	81-118
FC5683-28MS*	2037-26-5	Toluene-D8	MS	SURR	100	%	89-112
FC5683-28MS*	460-00-4	4-Bromofluorobenzene	MS	SURR	97	%	85-114
FC5683-28MSD*	156-59-2	cis-1,2-Dichloroethylene	MSD	REC	107	%	78-123
FC5683-28MSD*	156-59-2	cis-1,2-Dichloroethylene	MSD	RPD	3	%	20
FC5683-28MSD*	156-60-5	trans-1,2-Dichloroethylene	MSD	REC	99	%	75-124
FC5683-28MSD*	156-60-5	trans-1,2-Dichloroethylene	MSD	RPD	3	%	20
FC5683-28MSD*	79-01-6	Trichloroethylene	MSD	REC	95	%	79-123
FC5683-28MSD*	79-01-6	Trichloroethylene	MSD	RPD	3	%	20
FC5683-28MSD*	1868-53-7	Dibromofluoromethane	MSD	SURR	104	%	80-119
FC5683-28MSD*	17060-07-0	1,2-Dichloroethane-D4	MSD	SURR	102	%	81-118
FC5683-28MSD*	2037-26-5	Toluene-D8	MSD	SURR	101	%	89-112
FC5683-28MSD*	460-00-4	4-Bromofluorobenzene	MSD	SURR	100	%	85-114
VI2914-MB	1868-53-7	Dibromofluoromethane	MB	SURR	98	%	80-119
VI2914-MB	17060-07-0	1,2-Dichloroethane-D4	MB	SURR	99	%	81-118
VI2914-MB	2037-26-5	Toluene-D8	MB	SURR	99	%	89-112
VI2914-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	104	%	85-114
FC5575-2	1868-53-7	Dibromofluoromethane	SAMP	SURR	100	%	80-119
FC5575-2	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	100	%	81-118
FC5575-2	2037-26-5	Toluene-D8	SAMP	SURR	99	%	89-112
FC5575-2	460-00-4	4-Bromofluorobenzene	SAMP	SURR	106	%	85-114

(a) Outside control limits due to high level in sample relative to spike amount.

* Sample used for QC is not from job FC5575

MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries
- Run Sequence Reports

Method Blank Summary

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2O2944-MB	2O75917.D	1	05/01/23	DB	n/a	n/a	V2O2944

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC5575-1, FC5575-2, FC5575-3, FC5575-4, FC5575-5, FC5575-6, FC5575-7, FC5575-8, FC5575-9, FC5575-10, FC5575-11, FC5575-12, FC5575-13, FC5575-14

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.35	ug/l	
75-01-4	Vinyl Chloride	ND	1.0	0.41	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	99%	83-118%
17060-07-0	1,2-Dichloroethane-D4	114%	79-125%
2037-26-5	Toluene-D8	98%	85-112%
460-00-4	4-Bromofluorobenzene	97%	83-118%

Method Blank Summary

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VI2914-MB [a]	I756434.D	1	05/04/23	JW	n/a	n/a	VI2914

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC5575-2

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.35	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	98%	83-118%
17060-07-0	1,2-Dichloroethane-D4	99%	79-125%
2037-26-5	Toluene-D8	99%	85-112%
460-00-4	4-Bromofluorobenzene	104%	83-118%

(a) Sample was treated with an anti-foaming agent.

Blank Spike Summary

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2O2944-BS	2O75915.D	1	05/01/23	DB	n/a	n/a	V2O2944

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC5575-1, FC5575-2, FC5575-3, FC5575-4, FC5575-5, FC5575-6, FC5575-7, FC5575-8, FC5575-9, FC5575-10, FC5575-11, FC5575-12, FC5575-13, FC5575-14

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
156-59-2	cis-1,2-Dichloroethylene	25	26.4	106	78-120
156-60-5	trans-1,2-Dichloroethylene	25	26.7	107	76-127
79-01-6	Trichloroethylene	25	26.9	108	81-126
75-01-4	Vinyl Chloride	25	27.8	111	69-159

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	99%	83-118%
17060-07-0	1,2-Dichloroethane-D4	114%	79-125%
2037-26-5	Toluene-D8	95%	85-112%
460-00-4	4-Bromofluorobenzene	95%	83-118%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VI2914-BS	I756432.D	1	05/04/23	JW	n/a	n/a	VI2914

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC5575-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
156-59-2	cis-1,2-Dichloroethylene	25	25.6	102	78-120
156-60-5	trans-1,2-Dichloroethylene	25	25.9	104	76-127
79-01-6	Trichloroethylene	25	25.3	101	81-126

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	101%	83-118%
17060-07-0	1,2-Dichloroethane-D4	97%	79-125%
2037-26-5	Toluene-D8	102%	85-112%
460-00-4	4-Bromofluorobenzene	98%	83-118%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FC5575-3MS	2O75938.D	5	05/01/23	DB	n/a	n/a	V2O2944
FC5575-3MSD	2O75939.D	5	05/01/23	DB	n/a	n/a	V2O2944
FC5575-3	2O75920.D	1	05/01/23	DB	n/a	n/a	V2O2944

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC5575-1, FC5575-2, FC5575-3, FC5575-4, FC5575-5, FC5575-6, FC5575-7, FC5575-8, FC5575-9, FC5575-10, FC5575-11, FC5575-12, FC5575-13, FC5575-14

CAS No.	Compound	FC5575-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
156-59-2	cis-1,2-Dichloroethylene	20.1		125	140	96	125	140	96	0	78-120/15
156-60-5	trans-1,2-Dichloroethylene	9.1		125	133	99	125	128	95	4	76-127/17
79-01-6	Trichloroethylene	1.0 U		125	131	105	125	124	99	5	81-126/15
75-01-4	Vinyl Chloride	28.9		125	152	98	125	142	90	7	69-159/18

CAS No.	Surrogate Recoveries	MS	MSD	FC5575-3	Limits
1868-53-7	Dibromofluoromethane	99%	99%	96%	83-118%
17060-07-0	1,2-Dichloroethane-D4	116%	117%	105%	79-125%
2037-26-5	Toluene-D8	93%	94%	98%	85-112%
460-00-4	4-Bromofluorobenzene	94%	95%	98%	83-118%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FC5683-28MS	I756455.D	25	05/04/23	JW	n/a	n/a	VI2914
FC5683-28MSD	I756456.D	25	05/04/23	JW	n/a	n/a	VI2914
FC5683-28	I756438.D	25	05/04/23	JW	n/a	n/a	VI2914

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC5575-2

CAS No.	Compound	FC5683-28 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
156-59-2	cis-1,2-Dichloroethylene	2070		625	2830	122* [a]	625	2740	107	3	78-120/15
156-60-5	trans-1,2-Dichloroethylene	38.8		625	681	103	625	659	99	3	76-127/17
79-01-6	Trichloroethylene	173		625	790	99	625	769	95	3	81-126/15

CAS No.	Surrogate Recoveries	MS	MSD	FC5683-28	Limits
1868-53-7	Dibromofluoromethane	103%	104%	101%	83-118%
17060-07-0	1,2-Dichloroethane-D4	105%	102%	100%	79-125%
2037-26-5	Toluene-D8	100%	101%	99%	85-112%
460-00-4	4-Bromofluorobenzene	97%	100%	104%	83-118%

(a) Outside control limits due to high level in sample relative to spike amount.

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample:	V2O2924-BFB	**Injection Date:**	04/11/23
Lab File ID:	2O75425.D	**Injection Time:**	09:39
Instrument ID:	GCMS2O		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	15110	17.2		Pass
75	30.0 - 60.0% of mass 95	42840	48.7		Pass
95	Base peak, 100% relative abundance	87968	100.0		Pass
96	5.0 - 9.0% of mass 95	6005	6.83		Pass
173	Less than 2.0% of mass 174	522	0.59	(0.73) [a]	Pass
174	50.0 - 100.0% of mass 95	71059	80.8		Pass
175	5.0 - 9.0% of mass 174	4935	5.61	(6.94) [a]	Pass
176	95.0 - 101.0% of mass 174	68445	77.8	(96.3) [a]	Pass
177	5.0 - 9.0% of mass 176	4228	4.81	(6.18) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2O2924-IC2924	2O75426.D	04/11/23	10:06	00:27	Initial cal 1
V2O2924-IC2924	2O75427.D	04/11/23	10:38	00:59	Initial cal 2
V2O2924-IC2924	2O75428.D	04/11/23	11:05	01:26	Initial cal 3
V2O2924-IC2924	2O75429.D	04/11/23	11:31	01:52	Initial cal 4
V2O2924-ICC2924	2O75430.D	04/11/23	11:56	02:17	Initial cal 5
V2O2924-IC2924	2O75431.D	04/11/23	12:22	02:43	Initial cal 6
V2O2924-IC2924	2O75432.D	04/11/23	12:48	03:09	Initial cal 7
V2O2924-ICV2924	2O75434.D	04/11/23	13:39	04:00	Initial cal verification 5
V2O2924-ICV2924	2O75435.D	04/11/23	14:04	04:25	Initial cal verification 4

Instrument Performance Check (BFB)

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample:	V2O2944-BFB	**Injection Date:**	05/01/23
Lab File ID:	2O75913.D	**Injection Time:**	09:49
Instrument ID:	GCMS2O		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	18060	17.4		Pass
75	30.0 - 60.0% of mass 95	52712	50.9		Pass
95	Base peak, 100% relative abundance	103555	100.0		Pass
96	5.0 - 9.0% of mass 95	7153	6.91		Pass
173	Less than 2.0% of mass 174	631	0.61	(0.80) [a]	Pass
174	50.0 - 100.0% of mass 95	79117	76.4		Pass
175	5.0 - 9.0% of mass 174	5901	5.70	(7.46) [a]	Pass
176	95.0 - 101.0% of mass 174	77405	74.7	(97.8) [a]	Pass
177	5.0 - 9.0% of mass 176	4973	4.80	(6.42) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2O2944-CC2924	2O75914.D	05/01/23	10:16	00:27	Continuing cal 5
V2O2944-BS	2O75915.D	05/01/23	10:47	00:58	Blank Spike
V2O2944-MB	2O75917.D	05/01/23	11:43	01:54	Method Blank
FC5575-1	2O75918.D	05/01/23	12:09	02:20	CCF-TB-20230425-01
ZZZZZZ	2O75919.D	05/01/23	12:39	02:50	(unrelated sample)
FC5575-3	2O75920.D	05/01/23	13:05	03:16	CCF-IW0090-050.0-20230425
FC5575-4	2O75921.D	05/01/23	13:32	03:43	CCF-IW0037-025.0-20230425
FC5575-5	2O75922.D	05/01/23	13:58	04:09	CCF-IW0079-010.0-20230425
FC5575-6	2O75923.D	05/01/23	14:24	04:35	CCF-IW0061-040.0-20230425
FC5575-7	2O75924.D	05/01/23	14:58	05:09	CCF-IW0005ID-051.0-20230425
FC5575-8	2O75925.D	05/01/23	15:24	05:35	CCF-IW0085-040.0-20230425
FC5575-9	2O75926.D	05/01/23	15:50	06:01	CCF-IW0042-035.0-20230426
FC5575-10	2O75927.D	05/01/23	16:16	06:27	CCF-IW0067-045.0-20230426
FC5575-11	2O75928.D	05/01/23	16:42	06:53	CCF-IW0045-045.0-20230426
FC5575-12	2O75929.D	05/01/23	17:09	07:20	CCF-IW0070-050.0-20230426
FC5575-13	2O75930.D	05/01/23	17:35	07:46	CCF-IW0046-045.0-20230426
FC5575-14	2O75931.D	05/01/23	18:01	08:12	CCF-IW0091-060.0-20230426
ZZZZZZ	2O75932.D	05/01/23	18:28	08:39	(unrelated sample)
ZZZZZZ	2O75933.D	05/01/23	18:54	09:05	(unrelated sample)
ZZZZZZ	2O75934.D	05/01/23	19:20	09:31	(unrelated sample)
ZZZZZZ	2O75935.D	05/01/23	19:47	09:58	(unrelated sample)
FC5575-2	2O75936.D	05/01/23	20:13	10:24	CCF-IW0082-020.0-20230425
FC5575-3MS	2O75938.D	05/01/23	21:05	11:16	Matrix Spike
FC5575-3MSD	2O75939.D	05/01/23	21:31	11:42	Matrix Spike Duplicate

Instrument Performance Check (BFB)

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample:	V2O2944-BFB	**Injection Date:**	05/01/23
Lab File ID:	2O75913.D	**Injection Time:**	09:49
Instrument ID:	GCMS2O		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2O2944-ECC2924	2O75940.D	05/01/23	21:58	12:09	Ending cal 5

Instrument Performance Check (BFB)

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2910-BFB
Lab File ID: I756321.D
Instrument ID: GCMSI
Injection Date: 05/02/23
Injection Time: 08:34

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	21651	22.8		Pass
75	30.0 - 60.0% of mass 95	50141	52.9		Pass
95	Base peak, 100% relative abundance	94821	100.0		Pass
96	5.0 - 9.0% of mass 95	6547	6.90		Pass
173	Less than 2.0% of mass 174	949	1.00	(1.23) [a]	Pass
174	50.0 - 100.0% of mass 95	77384	81.6		Pass
175	5.0 - 9.0% of mass 174	6046	6.38	(7.81) [a]	Pass
176	95.0 - 101.0% of mass 174	73883	77.9	(95.5) [a]	Pass
177	5.0 - 9.0% of mass 176	4942	5.21	(6.69) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VI2910-IC2910	I756322.D	05/02/23	09:04	00:30	Initial cal 1
VI2910-IC2910	I756323.D	05/02/23	09:29	00:55	Initial cal 2
VI2910-IC2910	I756325.D	05/02/23	10:18	01:44	Initial cal 4
VI2910-ICC2910	I756326.D	05/02/23	10:42	02:08	Initial cal 5
VI2910-IC2910	I756327.D	05/02/23	11:07	02:33	Initial cal 6
VI2910-IC2910	I756328.D	05/02/23	11:32	02:58	Initial cal 7
VI2910-IC2910	I756330.D	05/02/23	12:21	03:47	Initial cal 3
VI2910-ICV2910	I756331.D	05/02/23	13:02	04:28	Initial cal verification 5
VI2910-CC2910	I756331A.D	05/02/23	13:02	04:28	Continuing cal 5
VI2910-BS	I756332.D	05/02/23	13:26	04:52	Blank Spike
VI2910-MB	I756333.D	05/02/23	13:51	05:17	Method Blank
ZZZZZZ	I756334.D	05/02/23	14:19	05:45	(unrelated sample)
ZZZZZZ	I756335.D	05/02/23	14:44	06:10	(unrelated sample)
FC5532-2	I756336.D	05/02/23	15:09	06:35	(used for QC only; not part of job FC5575)
ZZZZZZ	I756337.D	05/02/23	15:34	07:00	(unrelated sample)
ZZZZZZ	I756338.D	05/02/23	15:59	07:25	(unrelated sample)
ZZZZZZ	I756339.D	05/02/23	16:25	07:51	(unrelated sample)
ZZZZZZ	I756340.D	05/02/23	16:50	08:16	(unrelated sample)
ZZZZZZ	I756341.D	05/02/23	17:15	08:41	(unrelated sample)
ZZZZZZ	I756342.D	05/02/23	17:40	09:06	(unrelated sample)
ZZZZZZ	I756343.D	05/02/23	18:05	09:31	(unrelated sample)
FC5532-2MS	I756344.D	05/02/23	18:30	09:56	Matrix Spike
FC5532-2MSD	I756345.D	05/02/23	18:55	10:21	Matrix Spike Duplicate
VI2910-ECC2910	I756346.D	05/02/23	19:20	10:46	Ending cal 5

Instrument Performance Check (BFB)

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2914-BFB
Lab File ID: I756430.D
Instrument ID: GCMSI
Injection Date: 05/04/23
Injection Time: 09:24

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	18794	22.6		Pass
75	30.0 - 60.0% of mass 95	43413	52.1		Pass
95	Base peak, 100% relative abundance	83320	100.0		Pass
96	5.0 - 9.0% of mass 95	5860	7.03		Pass
173	Less than 2.0% of mass 174	892	1.07	(1.29) [a]	Pass
174	50.0 - 100.0% of mass 95	69051	82.9		Pass
175	5.0 - 9.0% of mass 174	4833	5.80	(7.00) [a]	Pass
176	95.0 - 101.0% of mass 174	65685	78.8	(95.1) [a]	Pass
177	5.0 - 9.0% of mass 176	4491	5.39	(6.84) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VI2914-CC2910	I756431.D	05/04/23	09:54	00:30	Continuing cal 5
VI2914-BS	I756432.D	05/04/23	10:25	01:01	Blank Spike
VI2914-MB	I756434.D	05/04/23	11:14	01:50	Method Blank
ZZZZZZ	I756435.D	05/04/23	11:39	02:15	(unrelated sample)
ZZZZZZ	I756436.D	05/04/23	12:03	02:39	(unrelated sample)
FC5575-2	I756437.D	05/04/23	12:28	03:04	CCF-IW0082-020.0-20230425
FC5683-28	I756438.D	05/04/23	12:52	03:28	(used for QC only; not part of job FC5575)
ZZZZZZ	I756439.D	05/04/23	13:17	03:53	(unrelated sample)
ZZZZZZ	I756440.D	05/04/23	13:42	04:18	(unrelated sample)
ZZZZZZ	I756441.D	05/04/23	14:07	04:43	(unrelated sample)
ZZZZZZ	I756442.D	05/04/23	14:32	05:08	(unrelated sample)
ZZZZZZ	I756443.D	05/04/23	14:57	05:33	(unrelated sample)
ZZZZZZ	I756444.D	05/04/23	15:22	05:58	(unrelated sample)
ZZZZZZ	I756445.D	05/04/23	15:47	06:23	(unrelated sample)
ZZZZZZ	I756446.D	05/04/23	16:12	06:48	(unrelated sample)
ZZZZZZ	I756447.D	05/04/23	16:37	07:13	(unrelated sample)
ZZZZZZ	I756448.D	05/04/23	17:02	07:38	(unrelated sample)
ZZZZZZ	I756449.D	05/04/23	17:27	08:03	(unrelated sample)
ZZZZZZ	I756450.D	05/04/23	17:52	08:28	(unrelated sample)
ZZZZZZ	I756451.D	05/04/23	18:17	08:53	(unrelated sample)
ZZZZZZ	I756452.D	05/04/23	18:42	09:18	(unrelated sample)
ZZZZZZ	I756453.D	05/04/23	19:07	09:43	(unrelated sample)
ZZZZZZ	I756454.D	05/04/23	19:32	10:08	(unrelated sample)
FC5683-28MS	I756455.D	05/04/23	19:57	10:33	Matrix Spike

Instrument Performance Check (BFB)

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample:	VI2914-BFB	**Injection Date:**	05/04/23
Lab File ID:	I756430.D	**Injection Time:**	09:24
Instrument ID:	GCMSI		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
FC5683-28MSD	I756456.D	05/04/23	20:23	10:59	Matrix Spike Duplicate
VI2914-ECC2910	I756457.D	05/04/23	20:48	11:24	Ending cal 5

Internal Standard Area Summary

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Check Std:	V2O2944-CC2924	**Injection Date:**	05/01/23
Lab File ID:	2O75914.D	**Injection Time:**	10:16
Instrument ID:	GCMS2O	**Method:**	SW846 8260D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
Initial Cal [a]	437363	4.03	318093	6.04	172809	7.80
Check Std [b]	461294	4.03	355836	6.03	193447	7.79
Upper Limit [c]	922588	4.20	711672	6.20	386894	7.96
Lower Limit [d]	230647	3.86	177918	5.86	96724	7.62

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
V2O2944-BS	437662	4.02	332034	6.04	180014	7.79
V2O2944-MB	428790	4.03	311905	6.04	170639	7.79
FC5575-1	422186	4.01	312050	6.03	167189	7.79
ZZZZZZ	410065	4.03	300816	6.04	160937	7.80
FC5575-3	402854	4.03	291683	6.04	151558	7.79
FC5575-4	407184	4.03	298848	6.04	161345	7.80
FC5575-5 [e]	395263	4.03	294875	6.04	159536	7.80
FC5575-6	389793	4.03	290546	6.04	155441	7.80
FC5575-7 [e]	383275	4.02	284623	6.04	152930	7.80
FC5575-8	393301	4.03	292045	6.04	156128	7.80
FC5575-9	391281	4.03	291310	6.04	155838	7.80
FC5575-10 [e]	383975	4.03	286103	6.04	152659	7.80
FC5575-11 [e]	377640	4.03	284419	6.04	152192	7.80
FC5575-12 [e]	379832	4.03	283614	6.04	152045	7.80
FC5575-13	366800	4.03	274917	6.04	147495	7.80
FC5575-14	387857	4.03	288400	6.04	152890	7.80
ZZZZZZ	386661	4.03	288340	6.04	153999	7.80
ZZZZZZ	375177	4.03	278570	6.04	146966	7.80
ZZZZZZ	388140	4.03	287046	6.04	152331	7.80
ZZZZZZ	383070	4.03	285535	6.04	149111	7.80
FC5575-2	388774	4.03	285746	6.04	152497	7.80
FC5575-3MS	410167	4.03	317528	6.04	168396	7.80
FC5575-3MSD	421525	4.03	320595	6.04	171787	7.80
V2O2944-ECC2924	434990	4.03	332540	6.04	177434	7.80

IS 1 = Fluorobenzene
IS 2 = Chlorobenzene-D5
IS 3 = 1,4-Dichlorobenzene-d4

(a) Initial Cal is: V2O2924-ICC2924 2O75430.D 04/11/23 11:56
(b) Check Std Limit = -50 to + 100% of initial cal area.
(c) Upper Limit = + 100% of check standard area; Retention time + 0.167 minutes.
(d) Lower Limit = -50% of check standard area; Retention time -0.167 minutes.

Internal Standard Area Summary

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Check Std:	V2O2944-CC2924	**Injection Date:**	05/01/23
Lab File ID:	2O75914.D	**Injection Time:**	10:16
Instrument ID:	GCMS2O	**Method:**	SW846 8260D

Lab Sample ID	IS 1 AREA	IS 1 RT	IS 2 AREA	IS 2 RT	IS 3 AREA	IS 3 RT

(e) Sample was treated with an anti-foaming agent.

Internal Standard Area Summary

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Check Std:	VI2914-CC2910	**Injection Date:**	05/04/23
Lab File ID:	I756431.D	**Injection Time:**	09:54
Instrument ID:	GCMSI	**Method:**	SW846 8260D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
Initial Cal [a]	621830	7.85	449216	11.01	237042	13.37
Check Std [b]	549424	7.85	393935	11.01	204257	13.37
Upper Limit [c]	1098848	8.02	787870	11.18	408514	13.54
Lower Limit [d]	274712	7.68	196968	10.84	102129	13.20

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
VI2914-BS	530389	7.85	376538	11.01	198477	13.37
VI2914-MB [e]	506797	7.86	364350	11.01	176108	13.38
ZZZZZZ	492359	7.85	355086	11.01	173290	13.38
ZZZZZZ	510531	7.85	371302	11.01	178406	13.38
FC5575-2 [e]	508676	7.85	369165	11.01	174327	13.38
FC5683-28	537968	7.85	390119	11.01	189334	13.38
ZZZZZZ	527924	7.85	384203	11.01	185540	13.38
ZZZZZZ	513612	7.85	379086	11.01	178525	13.38
ZZZZZZ	523959	7.85	384277	11.01	185955	13.38
ZZZZZZ	508096	7.85	367681	11.01	177244	13.38
ZZZZZZ	520450	7.85	380402	11.01	181971	13.38
ZZZZZZ	529171	7.85	393297	11.01	191451	13.38
ZZZZZZ	525036	7.85	385868	11.01	185507	13.38
ZZZZZZ	536018	7.85	395602	11.01	193725	13.37
ZZZZZZ	516489	7.85	377844	11.01	180085	13.38
ZZZZZZ	510539	7.85	370300	11.01	181431	13.38
ZZZZZZ	533366	7.85	389743	11.01	187134	13.38
ZZZZZZ	511292	7.85	376107	11.01	179312	13.38
ZZZZZZ	521061	7.85	384666	11.01	183999	13.38
ZZZZZZ	521596	7.86	381404	11.01	182343	13.38
ZZZZZZ	511914	7.85	377102	11.01	179990	13.38
ZZZZZZ	524494	7.85	388411	11.01	187780	13.38
FC5683-28MS	541484	7.85	394772	11.01	215664	13.37
FC5683-28MSD	555007	7.85	405923	11.01	214642	13.37
VI2914-ECC2910	554047	7.85	408415	11.01	217861	13.37

IS 1 = Fluorobenzene
IS 2 = Chlorobenzene-D5
IS 3 = 1,4-Dichlorobenzene-d4

(a) Initial Cal is: VI2910-ICC2910 I756326.D 05/02/23 10:42
(b) Check Std Limit = -50 to + 100% of initial cal area.
(c) Upper Limit = + 100% of check standard area; Retention time + 0.167 minutes.

Internal Standard Area Summary

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Check Std:	VI2914-CC2910	**Injection Date:**	05/04/23
Lab File ID:	I756431.D	**Injection Time:**	09:54
Instrument ID:	GCMSI	**Method:**	SW846 8260D

Lab Sample ID	IS 1 AREA	IS 1 RT	IS 2 AREA	IS 2 RT	IS 3 AREA	IS 3 RT

(d) Lower Limit = -50% of check standard area; Retention time -0.167 minutes.
(e) Sample was treated with an anti-foaming agent.

Surrogate Recovery Summary

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Method: SW846 8260D **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
FC5575-1	2O75918.D	97	112	96	97
FC5575-2	I756437.D	100	100	99	106
FC5575-2	2O75936.D	100	111	98	97
FC5575-3	2O75920.D	96	105	98	98
FC5575-4	2O75921.D	99	110	98	97
FC5575-5	2O75922.D	98	111	97	97
FC5575-6	2O75923.D	99	111	96	97
FC5575-7	2O75924.D	100	111	95	101
FC5575-8	2O75925.D	99	109	96	98
FC5575-9	2O75926.D	100	111	96	94
FC5575-10	2O75927.D	99	111	96	99
FC5575-11	2O75928.D	101	113	96	99
FC5575-12	2O75929.D	99	112	96	98
FC5575-13	2O75930.D	102	113	97	96
FC5575-14	2O75931.D	98	112	97	96
FC5575-3MS	2O75938.D	99	116	93	94
FC5575-3MSD	2O75939.D	99	117	94	95
FC5683-28MS	I756455.D	103	105	100	97
FC5683-28MSD	I756456.D	104	102	101	100
V2O2944-BS	2O75915.D	99	114	95	95
V2O2944-MB	2O75917.D	99	114	98	97
VI2914-BS	I756432.D	101	97	102	98
VI2914-MB	I756434.D	98	99	99	104

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	83-118%
S2 = 1,2-Dichloroethane-D4	79-125%
S3 = Toluene-D8	85-112%
S4 = 4-Bromofluorobenzene	83-118%

Initial Calibration Summary

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2924-ICC2924
Lab FileID: 2O75430.D

Response Factor Report MSVOA12

Method : C:\msdchem\2\met...V2O_04-11-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

Calibration Files
1 =2O75426.D 2 =2O75427.D 3 =2O75428.D 4 =2O75429.D
5 =2O75430.D 6 =2O75431.D 7 =2O75432.D

Compound	1	2	3	4	5	6	7	Avg	%RSD
1) I Fluorobenzene	----------ISTD----------								
2) Dichlorodifluorom	0.174	0.192	0.204	0.214	0.204	0.217	0.221	0.204	8.12
3)P Chloromethane	0.206	0.214	0.217	0.228	0.217	0.229	0.230	0.220	4.15
4) 1,3-butadiene	0.333	0.250	0.237	0.228	0.218	0.224	0.219	0.244	16.65
---- Linear regr., Force(0,0) ---- Coefficient = 0.9997									
Response Ratio = 0.00000 + 0.22082 *A									
5)C Vinyl Chloride	0.168	0.218	0.217	0.238	0.224	0.232	0.233	0.219	10.80
6) Bromomethane	0.162	0.169	0.157	0.168	0.163	0.174	0.178	0.167	4.30
7) Chloroethane	0.139	0.156	0.151	0.128	0.072	0.042		0.115	40.75
---- Quadratic regression ---- Coefficient = 0.9902									
Response Ratio = -0.00057 + 0.17007 *A + -0.09694 *A^2									
8) Trichlorofluorome	0.343	0.407	0.411	0.437	0.414	0.392	0.314	0.388	11.23
9) Ethyl Ether	0.151	0.177	0.171	0.172	0.176	0.181	0.178	0.172	5.72
10) Ethanol	0.001	0.004	0.004	0.004	0.004	0.005	0.004	0.004	29.64
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9997									
Response Ratio = 0.00000 + 0.00453 *A + -0.00000 *A^2									
11) 1,2-Dichlorotrifl	0.223	0.254	0.262	0.267	0.249	0.272	0.268	0.256	6.63
12)C 1,1-Dichloroethen	0.319	0.321	0.323	0.333	0.323	0.342	0.346	0.329	3.30
13) Freon 113	0.178	0.200	0.230	0.232	0.219	0.237	0.238	0.219	10.15
14) Carbon Disulfide	0.623	0.646	0.653	0.646	0.620	0.644	0.645	0.640	1.97
15) Iodomethane	0.261	0.299	0.344	0.368	0.363	0.379	0.382	0.342	13.34
16) Acrolein	0.046	0.061	0.062	0.066	0.066	0.069	0.069	0.063	12.53
17) Allyl chloride	0.251	0.258	0.253	0.250	0.256	0.264	0.255	0.255	1.83
18) Methylene Chlorid	0.818	0.396	0.357	0.318	0.288	0.292	0.288	0.394	48.66
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9991									
Response Ratio = 0.00000 + 0.30830 *A + -0.01070 *A^2									
19) Acetone	0.153	0.129	0.120	0.119	0.118	0.121	0.120	0.126	9.88
20) Methyl acetate	0.277	0.297	0.288	0.291	0.287	0.294	0.291	0.289	2.24
21) trans-1,2-Dichlor	0.265	0.310	0.328	0.325	0.318	0.329	0.330	0.315	7.34
22) Hexane	0.157	0.155	0.169	0.173	0.164	0.173	0.174	0.166	4.78
23) Methyl Tert Butyl	0.522	0.596	0.587	0.613	0.619	0.644	0.647	0.604	7.05
24) Tert Butyl Alcoho	0.029	0.041	0.044	0.046	0.049	0.053	0.055	0.045	19.50
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9999									
Response Ratio = 0.00000 + 0.04510 *A + 0.00051 *A^2									
25) Acetonitrile	0.059	0.049	0.047	0.046	0.046	0.045	0.041	0.047	11.73
26) Di-isopropyl ethe	0.566	0.637	0.646	0.649	0.649	0.670	0.670	0.641	5.52
27) Chloroprene	0.281	0.315	0.294	0.295	0.294	0.314	0.317	0.301	4.63
28)P 1,1-Dichloroethan	0.375	0.414	0.410	0.419	0.408	0.419	0.418	0.409	3.84
29) Acrylonitrile	0.120	0.124	0.122	0.121	0.119	0.124	0.122	0.122	1.59
30) ETBE	0.447	0.568	0.579	0.600	0.602	0.631	0.642	0.581	11.15
31) Vinyl acetate	0.404	0.451	0.458	0.474	0.473	0.507	0.505	0.467	7.48

Initial Calibration Summary

Job Number: FC5575 **Sample:** V2O2924-ICC2924
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 2O75430.D
Project: CCF West NAM; KSC, FL

32)	cis-1,2-Dichloroe	0.234	0.256	0.259	0.257	0.256	0.260	0.256	0.254	3.63
33)	2,2-Dichloropropa	0.232	0.254	0.270	0.276	0.279	0.304	0.307	0.275	9.64
34)	Bromochloromethan	0.131	0.138	0.139	0.139	0.135	0.139	0.137	0.137	2.26
35)	Cyclohexane	0.294	0.302	0.356	0.359	0.337	0.358	0.358	0.338	8.32
36)C	Chloroform	0.419	0.441	0.447	0.451	0.444	0.454	0.443	0.443	2.58
37)	Ethyl acetate	0.350	0.360	0.358	0.369	0.366	0.385	0.382	0.367	3.47
38)	Tetrahydrofuran	0.122	0.142	0.146	0.144	0.141	0.147	0.146	0.141	6.23
39)S	Dibromofluorometh	0.273	0.275	0.273	0.274	0.280	0.283	0.282	0.277	1.59
40)	Carbon Tetrachlor	0.230	0.250	0.274	0.281	0.288	0.306	0.312	0.277	10.59
41)	1,1,1-Trichloroet	0.326	0.359	0.349	0.370	0.351	0.377	0.384	0.359	5.47
42)	2-Butanone	0.193	0.209	0.210	0.212	0.207	0.214	0.215	0.209	3.48
43)	1,1-Dichloroprope	0.274	0.292	0.317	0.328	0.314	0.324	0.323	0.310	6.40
44)	tert-Butyl format	0.062	0.068	0.073	0.081	0.087	0.099	0.105	0.082	19.49

---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9996
Response Ratio = 0.00000 + 0.07694 *A + 0.00287 *A^2

45)	Propionitrile	0.057	0.067	0.060	0.062	0.062	0.063	0.062	0.062	4.96
46)	Methacrylonitrile	0.203	0.216	0.209	0.206	0.208	0.216	0.209	0.210	2.32
47)	Benzene	0.862	0.932	0.937	0.932	0.914	0.931	0.913	0.917	2.84
48)	TAME	0.413	0.534	0.540	0.555	0.565	0.599	0.603	0.544	11.69
49)	Isobutyl alcohol	0.013	0.015	0.017	0.018	0.021	0.022	0.022	0.018	18.83

---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9985
Response Ratio = 0.00000 + 0.01766 *A + 0.00012 *A^2

50)S	1,2-Dichloroethan	0.291	0.282	0.289	0.283	0.302	0.319	0.296	0.295	4.40
51)	1,2-Dichloroethan	0.298	0.333	0.329	0.329	0.325	0.335	0.338	0.327	4.04
52)	Tert Amyl Alcohol	0.019	0.030	0.033	0.037	0.039	0.042	0.044	0.035	24.47

---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9998
Response Ratio = 0.00000 + 0.03555 *A + 0.00044 *A^2

53)	Trichloroethene	0.257	0.265	0.271	0.267	0.262	0.266	0.264	0.264	1.68
54)	Methylcyclohexane	0.274	0.319	0.356	0.371	0.353	0.376	0.373	0.346	10.73
55)	Dibromomethane	0.135	0.175	0.171	0.171	0.168	0.173	0.171	0.166	8.34
56)C	1,2-Dichloropropa	0.181	0.218	0.220	0.219	0.217	0.227	0.224	0.215	7.22
57)	Bromodichlorometh	0.269	0.280	0.280	0.296	0.300	0.317	0.320	0.295	6.56
58)	Methyl methacryla	0.219	0.243	0.232	0.231	0.241	0.257	0.261	0.241	6.09
59)	1,4-Dioxane	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.004	22.66

---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9999
Response Ratio = 0.00000 + 0.00443 *A + 0.00002 *A^2

60)	2-Chloroethyl vin	0.166	0.181	0.185	0.191	0.191	0.197	0.196	0.187	5.85
61)	cis-1,3-Dichlorop	0.227	0.290	0.307	0.335	0.341	0.362	0.368	0.319	15.42

---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9998
Response Ratio = 0.00000 + 0.32685 *A + 0.02145 *A^2

62) I	Chlorobenzene-d5	----------	----------	----------	ISTD	----------	----------	----------	----------	
63)S	Toluene-d8	1.387	1.381	1.364	1.362	1.349	1.346	1.356	1.364	1.13
64)C	Toluene	1.339	1.403	1.390	1.389	1.337	1.363	1.369	1.370	1.86
65)	2-Nitropropane	0.050	0.064	0.067	0.085	0.090	0.107	0.115	0.083	28.43

---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9993
Response Ratio = 0.00000 + 0.07655 *A + 0.00390 *A^2

66)	4-Methyl-2-pentan	0.430	0.507	0.494	0.502	0.489	0.500	0.505	0.490	5.50
67)	trans-1,3-Dichlor	0.284	0.399	0.420	0.454	0.454	0.476	0.486	0.425	16.20

---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9999
Response Ratio = 0.00000 + 0.43842 *A + 0.02413 *A^2

68)	Tetrachloroethene	0.376	0.389	0.389	0.398	0.384	0.395	0.388	0.388	1.88
69)	Ethyl methacrylat	0.252	0.358	0.370	0.392	0.402	0.428	0.435	0.377	16.40

Initial Calibration Summary

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2924-ICC2924
Lab FileID: 2O75430.D

```
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9998
               Response Ratio = 0.00000 + 0.38569 *A + 0.02547 *A^2

 70)  1,1,2-Trichloroet 0.272 0.278 0.281 0.281 0.272 0.275 0.277 0.276   1.33
 71)  Dibromochlorometh 0.206 0.286 0.304 0.328 0.332 0.357 0.361 0.311  17.09
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9997
               Response Ratio = 0.00000 + 0.30822 *A + 0.02850 *A^2

 72)  1,3-Dichloropropa 0.443 0.526 0.526 0.522 0.507 0.513 0.510 0.506   5.75
 73)  1,2-Dibromoethane 0.263 0.349 0.349 0.368 0.357 0.368 0.368 0.346  10.85
 74)  3,3-dimethyl-1-bu 0.037 0.050 0.056 0.065 0.069 0.074 0.076 0.061  22.93
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9997
               Response Ratio = 0.00000 + 0.06306 *A + 0.00014 *A^2

 75)  2-hexanone        0.394 0.486 0.487 0.502 0.491 0.516 0.528 0.486   8.94
 76)  1-Chlorohexane    0.478 0.412 0.431 0.431 0.414 0.425 0.428 0.431   5.09
 77)C Ethylbenzene      1.373 1.511 1.518 1.516 1.446 1.490 1.491 1.478   3.56
 78)P Chlorobenzene     0.877 0.946 0.948 0.939 0.913 0.928 0.931 0.926   2.66
 79)  1,1,1,2-Tetrachlo 0.205 0.272 0.294 0.309 0.303 0.321 0.326 0.290  14.39
 80)  m,p-Xylene        1.031 1.169 1.187 1.185 1.143 1.164 1.172 1.150   4.72
 81)  o-Xylene          1.088 1.157 1.176 1.189 1.160 1.173 1.186 1.161   2.96
 82)  Styrene           0.725 0.894 0.925 0.961 0.937 0.973 0.972 0.912   9.58
 83)P Bromoform         0.107 0.175 0.184 0.201 0.212 0.237 0.249 0.195  24.17
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9997
               Response Ratio = 0.00000 + 0.19140 *A + 0.02968 *A^2

 84)  Isopropylbenzene  1.180 1.406 1.431 1.461 1.417 1.449 1.457 1.400   7.09

 85) I   1,4-Dichlorobenzene-d ----------------ISTD---------------------
 86)S 4-Bromofluorobenz 0.766 0.771 0.764 0.775 0.745 0.753 0.765 0.763   1.35
 87)  cis-1,4-Dichloro- 0.166 0.219 0.221 0.235 0.231 0.253 0.260 0.226  13.51
 88)  n-Propylbenzene   2.786 3.132 3.218 3.249 3.018 3.135 3.159 3.100   5.05
 89)  Bromobenzene      0.594 0.727 0.700 0.724 0.674 0.695 0.701 0.688   6.55
 90)P 1,1,2,2-Tetrachlo 0.787 0.981 0.950 0.980 0.931 0.985 0.993 0.944   7.70
 91)  1,3,5-Trimethylbe 1.827 2.191 2.269 2.314 2.186 2.258 2.274 2.188   7.58
 92)  2-Chlorotoluene   1.944 2.226 2.119 2.202 2.000 2.056 2.085 2.090   4.88
 93)  trans-1,4-Dichlor 0.130 0.211 0.205 0.204 0.198 0.221 0.230 0.200  16.35
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9996
               Response Ratio = 0.00000 + 0.18954 *A + 0.02047 *A^2

 94)  1,2,3-Trichloropr 0.300 0.326 0.307 0.312 0.299 0.308 0.322 0.311   3.32
 95)  Cyclohexanone     0.025 0.032 0.036 0.039 0.039 0.042 0.044 0.037  18.35
             ---- Linear regr., Force(0,0) ----  Coefficient =  0.9982
               Response Ratio = 0.00000 + 0.04307 *A

 96)  4-Chlorotoluene   1.649 2.024 1.988 2.024 1.897 1.934 1.949 1.924   6.74
 97)  tert-Butylbenzene 1.044 1.209 1.199 1.237 1.174 1.198 1.215 1.182   5.39
 98)  a-Methyl styrene                                              0.000  -1.00
 99)  1,2,4-Trimethylbe 1.673 2.220 2.224 2.313 2.170 2.275 2.261 2.162  10.20
100)  Pentachloroethane 0.171 0.251 0.256 0.295 0.305 0.339 0.357 0.282  22.25
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9998
               Response Ratio = 0.00000 + 0.27629 *A + 0.04099 *A^2

101)  sec-Butylbenzene  2.294 2.595 2.705 2.748 2.572 2.708 2.715 2.620   6.03
102)  4-Isopropyltoluen 1.938 2.236 2.340 2.419 2.282 2.399 2.386 2.286   7.30
103)  1,3-Dichlorobenze 1.212 1.444 1.391 1.387 1.336 1.367 1.377 1.359   5.32
104)  1,2,3-Trimethylbe 1.971 2.333 2.273 2.376 2.255 2.319 2.316 2.263   5.96
105)  1,4-Dichlorobenze 1.212 1.464 1.418 1.420 1.334 1.390 1.401 1.377   5.98
106)  n-Butylbenzene    0.728 1.054 1.123 1.188 1.132 1.193 1.204 1.089  15.37
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9998
```

Initial Calibration Summary

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2924-ICC2924
Lab FileID: 2O75430.D

```
               Response Ratio = 0.00000 + 1.13062 *A + 0.03768 *A^2

107)  Benzyl Chloride   0.090 0.176 0.197 0.254 0.277 0.326 0.353 0.239  38.28
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9995
               Response Ratio = 0.00000 + 0.23003 *A + 0.06278 *A^2

108)  1,2-Dichlorobenze 1.200 1.301 1.291 1.311 1.254 1.309 1.312 1.283   3.24
109)  1,2-Dibromo-3-Chl 0.099 0.170 0.179 0.197 0.196 0.221 0.227 0.184  23.21
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9995
               Response Ratio = 0.00000 + 0.18522 *A + 0.02158 *A^2

110)  Hexachlorobutadie 0.179 0.276 0.302 0.297 0.269 0.291 0.297 0.273  15.83
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9992
               Response Ratio = 0.00000 + 0.27210 *A + 0.01263 *A^2

111)  1,2,4-Trichlorobe 0.602 0.777 0.781 0.842 0.805 0.823 0.820 0.779  10.42
112)  Naphthalene       2.009 2.678 2.719 2.964 2.863 3.017 3.035 2.755  12.97
113)  1,2,3-Trichlorobe 0.596 0.741 0.747 0.784 0.758 0.776 0.774 0.739   8.81
 ----------------------------------------------------------------------------
 (#) = Out of Range

          V2O_04-11-2023.M        Tue Apr 11 14:43:59 2023
```

Initial Calibration Verification

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2924-ICV2924
Lab FileID: 2O75434.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\2\data\2023-04-11\2O75434.D Vial: 10
Acq On : 11 Apr 2023 1:39 pm Operator: davidb2
Sample : ICV2924-5 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,, Multiplr: 1.00
MS Integration Params: big.p

Method : C:\msdchem\2\met...V2O_04-11-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Tue Apr 11 14:22:12 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	103	0.00	4.03
2	Dichlorodifluoromethane	0.204	0.239	-17.2	121	0.00	1.23
3 P	Chloromethane	0.220	0.230	-4.5	109	0.00	1.38
	----------	Amount	Calc.	%Drift	----------		
4	1,3-butadiene		----------NA----------				
	----------	AvgRF	CCRF	%Dev	----------		
5 C	Vinyl Chloride	0.219	0.230	-5.0	106	0.00	1.44
6	Bromomethane	0.167	0.173	-3.6	109	0.00	1.67
	----------	Amount	Calc.	%Drift	----------		
7	Chloroethane	40.000	30.661	23.3#	121	0.00	1.76
	----------	AvgRF	CCRF	%Dev	----------		
8	Trichlorofluoromethane	0.388	0.404	-4.1	101	0.00	1.85
9	Ethyl Ether	0.172	0.198	-15.1	116	0.00	2.07
	----------	Amount	Calc.	%Drift	----------		
10	Ethanol	800.000	786.589	1.7	102	0.00	2.17
	----------	AvgRF	CCRF	%Dev	----------		
11	1,2-Dichlorotrifluoroetha	0.256	0.289	-12.9	120	0.00	2.19
12 C	1,1-Dichloroethene	0.329	0.340	-3.3	109	0.00	2.19
13	Freon 113		----------NA----------				
14	Carbon Disulfide	0.640	0.673	-5.2	112	0.00	2.21
15	Iodomethane	0.342	0.389	-13.7	111	0.00	2.28
16	Acrolein	0.063	0.075	-19.0	119	0.00	2.39
17	Allyl chloride	0.255	0.284	-11.4	115	0.00	2.48
	----------	Amount	Calc.	%Drift	----------		
18	Methylene Chloride	40.000	41.309	-3.3	111	0.00	2.54
	----------	AvgRF	CCRF	%Dev	----------		
19	Acetone	0.126	0.106	15.9	93	0.00	2.57
20	Methyl acetate	0.289	0.294	-1.7	106	0.00	2.64
21	trans-1,2-Dichloroethene	0.315	0.335	-6.3	109	0.00	2.64
22	Hexane	0.166	0.183	-10.2	115	0.00	2.69
23	Methyl Tert Butyl Ether	0.604	0.679	-12.4	113	0.00	2.70
	----------	Amount	Calc.	%Drift	----------		
24	Tert Butyl Alcohol	400.000	397.040	0.7	103	0.00	2.75

Initial Calibration Verification

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2924-ICV2924
Lab FileID: 2O75434.D

			AvgRF	CCRF	%Dev			
25		Acetonitrile	0.047	0.046	2.1	105	0.00	2.84
26		Di-isopropyl ether	0.641	0.693	-8.1	110	0.00	2.92
27		Chloroprene	0.301	0.276	8.3	97	0.00	2.98
28	P	1,1-Dichloroethane	0.409	0.413	-1.0	104	0.00	2.99
29		Acrylonitrile	0.122	0.120	1.6	104	0.00	3.02
30		ETBE	0.581	0.665	-14.5	114	0.00	3.13
31		Vinyl acetate	0.467	0.467	0.0	102	0.00	3.13
32		cis-1,2-Dichloroethene	0.254	0.259	-2.0	104	0.00	3.30
33		2,2-Dichloropropane	0.275	0.329	-19.6	122	0.00	3.37
34		Bromochloromethane	0.137	0.145	-5.8	111	0.00	3.42
35		Cyclohexane	0.338	0.375	-10.9	115	0.00	3.42
36	C	Chloroform	0.443	0.456	-2.9	106	0.00	3.45
37		Ethyl acetate	0.367	0.354	3.5	100	0.00	3.51
38		Tetrahydrofuran	0.141	0.143	-1.4	105	0.00	3.54
39	S	Dibromofluoromethane	0.277	0.277	0.0	102	0.00	3.56
40		Carbon Tetrachloride	0.277	0.302	-9.0	108	0.00	3.54
41		1,1,1-Trichloroethane	0.359	0.381	-6.1	112	0.00	3.58
42		2-Butanone	0.209	0.219	-4.8	109	0.00	3.62
43		1,1-Dichloropropene	0.310	0.337	-8.7	111	0.00	3.65

			Amount	Calc.	%Drift			
44		tert-Butyl formate	200.000	225.841	-12.9	120	0.00	3.71

			AvgRF	CCRF	%Dev			
45		Propionitrile	0.062	0.061	1.6	101	0.00	3.79
46		Methacrylonitrile	0.210	0.215	-2.4	107	0.00	3.81
47		Benzene	0.917	0.953	-3.9	108	0.00	3.79
48		TAME	0.544	0.605	-11.2	111	0.00	3.85

			Amount	Calc.	%Drift			
49		Isobutyl alcohol	800.000	804.276	-0.5	99	0.00	3.89

			AvgRF	CCRF	%Dev			
50	S	1,2-Dichloroethane-d4	0.295	0.300	-1.7	103	0.00	3.87
51		1,2-Dichloroethane	0.327	0.339	-3.7	108	0.00	3.90

			Amount	Calc.	%Drift			
52		Tert Amyl Alcohol	400.000	394.822	1.3	102	0.00	3.95

			AvgRF	CCRF	%Dev			
53		Trichloroethene	0.264	0.274	-3.8	108	0.00	4.13
54		Methylcyclohexane	0.346	0.377	-9.0	110	0.00	4.13
55		Dibromomethane	0.166	0.178	-7.2	109	0.00	4.38
56	C	1,2-Dichloropropane	0.215	0.237	-10.2	113	0.00	4.45
57		Bromodichloromethane	0.295	0.307	-4.1	105	0.00	4.48
58		Methyl methacrylate	0.241	0.254	-5.4	109	0.00	4.56

			Amount	Calc.	%Drift			
59		1,4-Dioxane	800.000	821.914	-2.7	105	0.00	4.60

			AvgRF	CCRF	%Dev			
60		2-Chloroethyl vinyl ether	0.187	0.192	-2.7	103	0.00	4.82

			Amount	Calc.	%Drift			
61		cis-1,3-Dichloropropene	40.000	42.325	-5.8	111	0.00	4.87

			AvgRF	CCRF	%Dev			

Initial Calibration Verification

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2924-ICV2924
Lab FileID: 2O75434.D

62	I	Chlorobenzene-d5	1.000	1.000	0.0	102	0.00	6.04
63	S	Toluene-d8	1.364	1.353	0.8	102	0.00	4.99
64	C	Toluene	1.370	1.419	-3.6	108	0.00	5.02
			Amount	Calc.	%Drift			
65		2-Nitropropane	200.000	192.748	3.6	100	0.00	5.17
			AvgRF	CCRF	%Dev			
66		4-Methyl-2-pentanone	0.490	0.515	-5.1	108	0.00	5.26
			Amount	Calc.	%Drift			
67		trans-1,3-Dichloropropene	40.000	40.195	-0.5	103	0.00	5.29
			AvgRF	CCRF	%Dev			
68		Tetrachloroethene	0.388	0.400	-3.1	106	0.00	5.28
			Amount	Calc.	%Drift			
69		Ethyl methacrylate	40.000	43.316	-8.3	112	0.00	5.38
			AvgRF	CCRF	%Dev			
70		1,1,2-Trichloroethane	0.276	0.283	-2.5	106	0.00	5.40
			Amount	Calc.	%Drift			
71		Dibromochloromethane	40.000	43.213	-8.0	110	0.00	5.52
			AvgRF	CCRF	%Dev			
72		1,3-Dichloropropane	0.506	0.574	-13.4	116	0.00	5.59
73		1,2-Dibromoethane	0.346	0.379	-9.5	108	0.00	5.69
			Amount	Calc.	%Drift			
74		3,3-dimethyl-1-butanol	2000.000	2037.047	-1.9	104	0.00	5.81
			AvgRF	CCRF	%Dev			
75		2-hexanone	0.486	0.481	1.0	100	0.00	5.83
76		1-Chlorohexane	0.431	0.436	-1.2	108	0.00	6.03
77	C	Ethylbenzene	1.478	1.527	-3.3	108	0.00	6.07
78	P	Chlorobenzene	0.926	0.952	-2.8	106	0.00	6.06
79		1,1,1,2-Tetrachloroethane	0.290	0.321	-10.7	108	0.00	6.10
80		m,p-Xylene	1.150	1.205	-4.8	107	0.00	6.18
81		o-Xylene	1.161	1.194	-2.8	105	0.00	6.49
82		Styrene	0.912	0.990	-8.6	108	0.00	6.53
			Amount	Calc.	%Drift			
83	P	Bromoform	40.000	40.305	-0.8	104	0.00	6.55
			AvgRF	CCRF	%Dev			
84		Isopropylbenzene	1.400	1.465	-4.6	105	0.00	6.73
85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	100	0.00	7.80
86	S	4-Bromofluorobenzene	0.763	0.758	0.7	102	0.00	6.95
87		cis-1,4-Dichloro-2-butene		----------NA----------				
88		n-Propylbenzene	3.100	3.194	-3.0	106	0.00	7.05
89		Bromobenzene	0.688	0.745	-8.3	111	0.00	7.02
90	P	1,1,2,2-Tetrachloroethane	0.944	1.002	-6.1	108	0.00	7.09
91		1,3,5-Trimethylbenzene	2.188	2.353	-7.5	108	0.00	7.20
92		2-Chlorotoluene	2.090	2.162	-3.4	108	0.00	7.17
			Amount	Calc.	%Drift			
93		trans-1,4-Dichloro-2-Bute	40.000	41.719	-4.3	109	0.00	7.23

Initial Calibration Verification

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2924-ICV2924
Lab FileID: 2O75434.D

		AvgRF	CCRF	%Dev			
94	1,2,3-Trichloropropane	0.311	0.334	-7.4	112	0.00	7.20
		Amount	Calc.	%Drift			
95	Cyclohexanone	200.000	245.805	-22.9#	135	0.00	7.24
		AvgRF	CCRF	%Dev			
96	4-Chlorotoluene	1.924	1.989	-3.4	105	0.00	7.30
97	tert-Butylbenzene	1.182	1.253	-6.0	107	0.00	7.45
98	a-Methyl styrene		----------NA----------				
99	1,2,4-Trimethylbenzene	2.162	2.387	-10.4	110	0.00	7.50
		Amount	Calc.	%Drift			
100	Pentachloroethane	40.000	42.658	-6.6	109	0.00	7.46
		AvgRF	CCRF	%Dev			
101	sec-Butylbenzene	2.620	2.623	-0.1	102	0.00	7.59
102	4-Isopropyltoluene	2.286	2.395	-4.8	105	0.00	7.70
103	1,3-Dichlorobenzene	1.359	1.376	-1.3	103	0.00	7.75
104	1,2,3-Trimethylbenzene	2.263	2.367	-4.6	105	0.00	7.84
105	1,4-Dichlorobenzene	1.377	1.429	-3.8	107	0.00	7.82
		Amount	Calc.	%Drift			
106	n-Butylbenzene	40.000	43.698	-9.2	113	0.00	8.01
107	Benzyl Chloride	40.000	43.475	-8.7	112	0.00	8.00
		AvgRF	CCRF	%Dev			
108	1,2-Dichlorobenzene	1.283	1.332	-3.8	106	0.00	8.13
		Amount	Calc.	%Drift			
109	1,2-Dibromo-3-Chloropropa	40.000	43.105	-7.8	112	0.00	8.70
110	Hexachlorobutadiene	40.000	44.392	-11.0	117	0.00	9.16
		AvgRF	CCRF	%Dev			
111	1,2,4-Trichlorobenzene	0.779	0.853	-9.5	106	0.00	9.18
112	Naphthalene	2.755	3.046	-10.6	107	0.00	9.40
113	1,2,3-Trichlorobenzene	0.739	0.830	-12.3	110	0.00	9.53

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2O75430.D V2O_04-11-2023.M Tue Apr 11 14:43:02 2023

Initial Calibration Verification

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2924-ICV2924
Lab FileID: 2O75435.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\2\data\2023-04-11\2O75435.D Vial: 11
Acq On : 11 Apr 2023 2:04 pm Operator: davidb2
Sample : ICV2924-4 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,, Multiplr: 1.00
MS Integration Params: big.p

Method : C:\msdchem\2\met...V2O_04-11-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Tue Apr 11 14:22:12 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	106	0.00	4.03
2	Dichlorodifluoromethane		----------	NA	----------		
3 P	Chloromethane		----------	NA	----------		
	----------	Amount	Calc.	%Drift	----------		
4	1,3-butadiene	25.000	20.332	18.7	83	0.00	1.45
	----------	AvgRF	CCRF	%Dev	----------		
5 C	Vinyl Chloride		----------	NA	----------		
6	Bromomethane		----------	NA	----------		
	----------	Amount	Calc.	%Drift	----------		
7	Chloroethane		----------	NA	----------		
	----------	AvgRF	CCRF	%Dev	----------		
8	Trichlorofluoromethane		----------	NA	----------		
9	Ethyl Ether		----------	NA	----------		
	----------	Amount	Calc.	%Drift	----------		
10	Ethanol		----------	NA	----------		
	----------	AvgRF	CCRF	%Dev	----------		
11	1,2-Dichlorotrifluoroetha		----------	NA	----------		
12 C	1,1-Dichloroethene		----------	NA	----------		
13	Freon 113	0.219	0.225	-2.7	103	0.00	2.21
14	Carbon Disulfide		----------	NA	----------		
15	Iodomethane		----------	NA	----------		
16	Acrolein		----------	NA	----------		
17	Allyl chloride		----------	NA	----------		
	----------	Amount	Calc.	%Drift	----------		
18	Methylene Chloride		----------	NA	----------		
	----------	AvgRF	CCRF	%Dev	----------		
19	Acetone		----------	NA	----------		
20	Methyl acetate		----------	NA	----------		
21	trans-1,2-Dichloroethene		----------	NA	----------		
22	Hexane		----------	NA	----------		
23	Methyl Tert Butyl Ether		----------	NA	----------		
	----------	Amount	Calc.	%Drift	----------		
24	Tert Butyl Alcohol		----------	NA	----------		

Initial Calibration Verification

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2924-ICV2924
Lab FileID: 2O75435.D

			AvgRF	CCRF	%Dev			
25		Acetonitrile		NA				
26		Di-isopropyl ether		NA				
27		Chloroprene		NA				
28	P	1,1-Dichloroethane		NA				
29		Acrylonitrile		NA				
30		ETBE		NA				
31		Vinyl acetate		NA				
32		cis-1,2-Dichloroethene		NA				
33		2,2-Dichloropropane		NA				
34		Bromochloromethane		NA				
35		Cyclohexane		NA				
36	C	Chloroform		NA				
37		Ethyl acetate		NA				
38		Tetrahydrofuran		NA				
39	S	Dibromofluoromethane	0.277	0.277	0.0	107	0.00	3.56
40		Carbon Tetrachloride		NA				
41		1,1,1-Trichloroethane		NA				
42		2-Butanone		NA				
43		1,1-Dichloropropene		NA				

			Amount	Calc.	%Drift			
44		tert-Butyl formate		NA				

			AvgRF	CCRF	%Dev			
45		Propionitrile		NA				
46		Methacrylonitrile		NA				
47		Benzene		NA				
48		TAME		NA				

			Amount	Calc.	%Drift			
49		Isobutyl alcohol		NA				

			AvgRF	CCRF	%Dev			
50	S	1,2-Dichloroethane-d4	0.295	0.292	1.0	109	0.00	3.87
51		1,2-Dichloroethane		NA				

			Amount	Calc.	%Drift			
52		Tert Amyl Alcohol		NA				

			AvgRF	CCRF	%Dev			
53		Trichloroethene		NA				
54		Methylcyclohexane		NA				
55		Dibromomethane		NA				
56	C	1,2-Dichloropropane		NA				
57		Bromodichloromethane		NA				
58		Methyl methacrylate		NA				

			Amount	Calc.	%Drift			
59		1,4-Dioxane		NA				

			AvgRF	CCRF	%Dev			
60		2-Chloroethyl vinyl ether		NA				

			Amount	Calc.	%Drift			
61		cis-1,3-Dichloropropene		NA				

			AvgRF	CCRF	%Dev			

Initial Calibration Verification

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2924-ICV2924
Lab FileID: 2O75435.D

62	I	Chlorobenzene-d5	1.000	1.000	0.0	106	0.00	6.04
63	S	Toluene-d8	1.364	1.362	0.1	106	0.00	4.99
64	C	Toluene		----------NA----------				
		---------- Amount Calc. %Drift ----------						
65		2-Nitropropane		----------NA----------				
		---------- AvgRF CCRF %Dev ----------						
66		4-Methyl-2-pentanone		----------NA----------				
		---------- Amount Calc. %Drift ----------						
67		trans-1,3-Dichloropropene		----------NA----------				
		---------- AvgRF CCRF %Dev ----------						
68		Tetrachloroethene		----------NA----------				
		---------- Amount Calc. %Drift ----------						
69		Ethyl methacrylate		----------NA----------				
		---------- AvgRF CCRF %Dev ----------						
70		1,1,2-Trichloroethane		----------NA----------				
		---------- Amount Calc. %Drift ----------						
71		Dibromochloromethane		----------NA----------				
		---------- AvgRF CCRF %Dev ----------						
72		1,3-Dichloropropane		----------NA----------				
73		1,2-Dibromoethane		----------NA----------				
		---------- Amount Calc. %Drift ----------						
74		3,3-dimethyl-1-butanol		----------NA----------				
		---------- AvgRF CCRF %Dev ----------						
75		2-hexanone		----------NA----------				
76		1-Chlorohexane		----------NA----------				
77	C	Ethylbenzene		----------NA----------				
78	P	Chlorobenzene		----------NA----------				
79		1,1,1,2-Tetrachloroethane		----------NA----------				
80		m,p-Xylene		----------NA----------				
81		o-Xylene		----------NA----------				
82		Styrene		----------NA----------				
		---------- Amount Calc. %Drift ----------						
83	P	Bromoform		----------NA----------				
		---------- AvgRF CCRF %Dev ----------						
84		Isopropylbenzene		----------NA----------				
85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	109	0.00	7.80
86	S	4-Bromofluorobenzene	0.763	0.765	-0.3	107	0.00	6.95
87		cis-1,4-Dichloro-2-butene	0.226	0.267	-18.1	123	0.00	6.99
88		n-Propylbenzene		----------NA----------				
89		Bromobenzene		----------NA----------				
90	P	1,1,2,2-Tetrachloroethane		----------NA----------				
91		1,3,5-Trimethylbenzene		----------NA----------				
92		2-Chlorotoluene		----------NA----------				
		---------- Amount Calc. %Drift ----------						
93		trans-1,4-Dichloro-2-Bute		----------NA----------				

Initial Calibration Verification

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2924-ICV2924
Lab FileID: 2O75435.D

		AvgRF	CCRF	%Dev	
94	1,2,3-Trichloropropane		NA		
		Amount	Calc.	%Drift	
95	Cyclohexanone		NA		
		AvgRF	CCRF	%Dev	
96	4-Chlorotoluene		NA		
97	tert-Butylbenzene		NA		
98	a-Methyl styrene		NA		
99	1,2,4-Trimethylbenzene		NA		
		Amount	Calc.	%Drift	
100	Pentachloroethane		NA		
		AvgRF	CCRF	%Dev	
101	sec-Butylbenzene		NA		
102	4-Isopropyltoluene		NA		
103	1,3-Dichlorobenzene		NA		
104	1,2,3-Trimethylbenzene		NA		
105	1,4-Dichlorobenzene		NA		
		Amount	Calc.	%Drift	
106	n-Butylbenzene		NA		
107	Benzyl Chloride		NA		
		AvgRF	CCRF	%Dev	
108	1,2-Dichlorobenzene		NA		
		Amount	Calc.	%Drift	
109	1,2-Dibromo-3-Chloropropa		NA		
110	Hexachlorobutadiene		NA		
		AvgRF	CCRF	%Dev	
111	1,2,4-Trichlorobenzene		NA		
112	Naphthalene		NA		
113	1,2,3-Trichlorobenzene		NA		

(#) = Out of Range SPCC's out = 4 CCC's out = 6
2O75429.D V2O_04-11-2023.M Tue Apr 11 14:43:50 2023

Continuing Calibration Summary

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2944-CC2924
Lab FileID: 2O75914.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\2\data\2023-05-01\2O75914.D Vial: 2
Acq On : 1 May 2023 10:16 am Operator: davidb2
Sample : CC2924-5 Inst : MSVOA12
Misc : MS53846,V2O2944,,,,, Multiplr: 1.00
MS Integration Params: big.p

Method : C:\msdchem\2\met...V2O_04-11-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Tue Apr 11 14:22:12 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	105	0.00	4.03
2	Dichlorodifluoromethane	0.204	0.196	3.9	101	0.00	1.23
3 P	Chloromethane	0.220	0.199	9.5	97	0.00	1.39
	----------	Amount	Calc.	%Drift	----------		
4	1,3-butadiene	40.000	37.520	6.2	100	0.00	1.45
	----------	AvgRF	CCRF	%Dev	----------		
5 C	Vinyl Chloride	0.219	0.226	-3.2	106	0.00	1.44
6	Bromomethane	0.167	0.107	35.9#	69	0.00	1.67
	----------	Amount	Calc.	%Drift	----------		
7	Chloroethane	40.000	18.266	54.3#	89	0.00	1.75
	----------	AvgRF	CCRF	%Dev	----------		
8	Trichlorofluoromethane	0.388	0.400	-3.1	102	0.00	1.85
9	Ethyl Ether	0.172	0.186	-8.1	111	0.00	2.07
	----------	Amount	Calc.	%Drift	----------		
10	Ethanol	800.000	978.975	-22.4#	130	0.00	2.17
	----------	AvgRF	CCRF	%Dev	----------		
11	1,2-Dichlorotrifluoroetha	0.256	0.276	-7.8	117	0.00	2.18
12 C	1,1-Dichloroethene	0.329	0.341	-3.6	112	0.00	2.18
13	Freon 113	0.219	0.249	-13.7	120	0.00	2.21
14	Carbon Disulfide	0.640	0.664	-3.8	113	0.00	2.20
15	Iodomethane	0.342	0.133	61.1#	39#	0.00	2.28
16	Acrolein	0.063	0.072	-14.3	116	0.00	2.39
17	Allyl chloride	0.255	0.239	6.3	99	0.00	2.48
	----------	Amount	Calc.	%Drift	----------		
18	Methylene Chloride	40.000	39.804	0.5	109	0.00	2.54
	----------	AvgRF	CCRF	%Dev	----------		
19	Acetone	0.126	0.146	-15.9	131	0.00	2.57
20	Methyl acetate	0.289	0.323	-11.8	119	0.00	2.64
21	trans-1,2-Dichloroethene	0.315	0.329	-4.4	109	0.00	2.64
22	Hexane	0.166	0.187	-12.7	120	0.00	2.68
23	Methyl Tert Butyl Ether	0.604	0.670	-10.9	114	0.00	2.70
	----------	Amount	Calc.	%Drift	----------		
24	Tert Butyl Alcohol	400.000	520.113	-30.0#	141	0.00	2.75

Continuing Calibration Summary

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2944-CC2924
Lab FileID: 2O75914.D

			AvgRF	CCRF	%Dev			
25		Acetonitrile	0.047	0.050	-6.4	115	0.00	2.84
26		Di-isopropyl ether	0.641	0.689	-7.5	112	0.00	2.92
27		Chloroprene	0.301	0.331	-10.0	119	0.00	2.98
28	P	1,1-Dichloroethane	0.409	0.440	-7.6	114	0.00	2.99
29		Acrylonitrile	0.122	0.134	-9.8	119	0.00	3.01
30		ETBE	0.581	0.674	-16.0	118	0.00	3.12
31		Vinyl acetate	0.467	0.533	-14.1	119	0.00	3.13
32		cis-1,2-Dichloroethene	0.254	0.269	-5.9	111	0.00	3.29
33		2,2-Dichloropropane	0.275	0.322	-17.1	122	0.00	3.36
34		Bromochloromethane	0.137	0.139	-1.5	109	0.00	3.41
35		Cyclohexane	0.338	0.360	-6.5	113	0.00	3.42
36	C	Chloroform	0.443	0.497	-12.2	118	0.00	3.45
37		Ethyl acetate	0.367	0.412	-12.3	119	0.00	3.51
38		Tetrahydrofuran	0.141	0.151	-7.1	113	0.00	3.54
39	S	Dibromofluoromethane	0.277	0.276	0.4	104	0.00	3.55
40		Carbon Tetrachloride	0.277	0.335	-20.9#	123	0.00	3.54
41		1,1,1-Trichloroethane	0.359	0.405	-12.8	122	0.00	3.57
42		2-Butanone	0.209	0.242	-15.8	123	0.00	3.62
43		1,1-Dichloropropene	0.310	0.341	-10.0	115	0.00	3.64

			Amount	Calc.	%Drift			
44		tert-Butyl formate	200.000	230.734	-15.4	125	0.00	3.70

			AvgRF	CCRF	%Dev			
45		Propionitrile	0.062	0.073	-17.7	124	0.00	3.79
46		Methacrylonitrile	0.210	0.232	-10.5	118	0.00	3.81
47		Benzene	0.917	1.002	-9.3	116	0.00	3.79
48		TAME	0.544	0.630	-15.8	118	0.00	3.84

			Amount	Calc.	%Drift			
49		Isobutyl alcohol	800.000	1099.531	-37.4#	143	0.00	3.89

			AvgRF	CCRF	%Dev			
50	S	1,2-Dichloroethane-d4	0.295	0.339	-14.9	119	0.00	3.86
51		1,2-Dichloroethane	0.327	0.384	-17.4	125	0.00	3.90

			Amount	Calc.	%Drift			
52		Tert Amyl Alcohol	400.000	524.485	-31.1#	143	0.00	3.95

			AvgRF	CCRF	%Dev			
53		Trichloroethene	0.264	0.291	-10.2	117	0.00	4.12
54		Methylcyclohexane	0.346	0.385	-11.3	115	0.00	4.12
55		Dibromomethane	0.166	0.184	-10.8	115	0.00	4.37
56	C	1,2-Dichloropropane	0.215	0.239	-11.2	116	0.00	4.43
57		Bromodichloromethane	0.295	0.357	-21.0#	125	0.00	4.47
58		Methyl methacrylate	0.241	0.272	-12.9	119	0.00	4.56

			Amount	Calc.	%Drift			
59		1,4-Dioxane	800.000	1025.463	-28.2#	136	0.00	4.59

			AvgRF	CCRF	%Dev			
60		2-Chloroethyl vinyl ether	0.187	0.199	-6.4	110	0.00	4.82

			Amount	Calc.	%Drift			
61		cis-1,3-Dichloropropene	40.000	43.936	-9.8	117	0.00	4.86

			AvgRF	CCRF	%Dev			

Continuing Calibration Summary

Job Number: FC5575 **Sample:** V2O2944-CC2924
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 2O75914.D
Project: CCF West NAM; KSC, FL

62	I	Chlorobenzene-d5	1.000	1.000	0.0	112	-0.01	6.03
63	S	Toluene-d8	1.364	1.281	6.1	106	0.00	4.98
64	C	Toluene	1.370	1.399	-2.1	117	0.00	5.02
			Amount	Calc.	%Drift			
65		2-Nitropropane	200.000	272.948	-36.5#	166	0.00	5.16
			AvgRF	CCRF	%Dev			
66		4-Methyl-2-pentanone	0.490	0.538	-9.8	123	0.00	5.25
			Amount	Calc.	%Drift			
67		trans-1,3-Dichloropropene	40.000	43.875	-9.7	124	0.00	5.28
			AvgRF	CCRF	%Dev			
68		Tetrachloroethene	0.388	0.371	4.4	108	0.00	5.28
			Amount	Calc.	%Drift			
69		Ethyl methacrylate	40.000	43.524	-8.8	124	0.00	5.38
			AvgRF	CCRF	%Dev			
70		1,1,2-Trichloroethane	0.276	0.299	-8.3	123	0.00	5.39
			Amount	Calc.	%Drift			
71		Dibromochloromethane	40.000	43.299	-8.2	121	0.00	5.51
			AvgRF	CCRF	%Dev			
72		1,3-Dichloropropane	0.506	0.543	-7.3	120	-0.01	5.57
73		1,2-Dibromoethane	0.346	0.378	-9.2	118	0.00	5.68
			Amount	Calc.	%Drift			
74		3,3-dimethyl-1-butanol	2000.000	2673.116	-33.7#	154	-0.01	5.79
			AvgRF	CCRF	%Dev			
75		2-hexanone	0.486	0.601	-23.7#	137	0.00	5.82
76		1-Chlorohexane	0.431	0.417	3.2	113	0.00	6.02
77	C	Ethylbenzene	1.478	1.592	-7.7	123	-0.01	6.06
78	P	Chlorobenzene	0.926	0.941	-1.6	115	-0.01	6.04
79		1,1,1,2-Tetrachloroethane	0.290	0.330	-13.8	122	0.00	6.09
80		m,p-Xylene	1.150	1.238	-7.7	121	-0.01	6.17
81		o-Xylene	1.161	1.234	-6.3	119	-0.01	6.48
82		Styrene	0.912	0.986	-8.1	118	-0.01	6.52
			Amount	Calc.	%Drift			
83	P	Bromoform	40.000	44.155	-10.4	127	0.00	6.54
			AvgRF	CCRF	%Dev			
84		Isopropylbenzene	1.400	1.472	-5.1	116	-0.01	6.71
85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	112	-0.01	7.79
86	S	4-Bromofluorobenzene	0.763	0.721	5.5	108	-0.01	6.93
87		cis-1,4-Dichloro-2-butene	0.226	0.248	-9.7	120	-0.01	6.98
88		n-Propylbenzene	3.100	3.271	-5.5	121	-0.01	7.03
89		Bromobenzene	0.688	0.675	1.9	112	-0.01	7.01
90	P	1,1,2,2-Tetrachloroethane	0.944	1.055	-11.8	127	-0.01	7.08
91		1,3,5-Trimethylbenzene	2.188	2.307	-5.4	118	-0.01	7.19
92		2-Chlorotoluene	2.090	2.207	-5.6	124	-0.01	7.16
			Amount	Calc.	%Drift			
93		trans-1,4-Dichloro-2-Bute	40.000	44.576	-11.4	131	-0.01	7.22

Continuing Calibration Summary

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2944-CC2924
Lab FileID: 2O75914.D

		AvgRF	CCRF	%Dev			
94	1,2,3-Trichloropropane	0.311	0.336	-8.0	126	-0.01	7.19

		Amount	Calc.	%Drift			
95	Cyclohexanone	200.000	251.960	-26.0#	154	-0.01	7.23

		AvgRF	CCRF	%Dev			
96	4-Chlorotoluene	1.924	2.122	-10.3	125	-0.01	7.29
97	tert-Butylbenzene	1.182	1.300	-10.0	124	-0.02	7.43
98	a-Methyl styrene		----------NA----------				
99	1,2,4-Trimethylbenzene	2.162	2.329	-7.7	120	-0.01	7.49

		Amount	Calc.	%Drift			
100	Pentachloroethane	40.000	43.106	-7.8	123	-0.01	7.45

		AvgRF	CCRF	%Dev			
101	sec-Butylbenzene	2.620	2.765	-5.5	120	-0.01	7.57
102	4-Isopropyltoluene	2.286	2.377	-4.0	117	-0.01	7.68
103	1,3-Dichlorobenzene	1.359	1.361	-0.1	114	-0.01	7.74
104	1,2,3-Trimethylbenzene	2.263	2.461	-8.7	122	-0.01	7.82
105	1,4-Dichlorobenzene	1.377	1.389	-0.9	117	-0.01	7.81

		Amount	Calc.	%Drift			
106	n-Butylbenzene	40.000	43.674	-9.2	126	-0.01	8.00
107	Benzyl Chloride	40.000	43.084	-7.7	124	-0.01	7.99

		AvgRF	CCRF	%Dev			
108	1,2-Dichlorobenzene	1.283	1.312	-2.3	117	-0.01	8.12

		Amount	Calc.	%Drift			
109	1,2-Dibromo-3-Chloropropa	40.000	49.755	-24.4#	147	-0.02	8.69
110	Hexachlorobutadiene	40.000	37.851	5.4	111	-0.02	9.15

		AvgRF	CCRF	%Dev			
111	1,2,4-Trichlorobenzene	0.779	0.842	-8.1	117	-0.02	9.16
112	Naphthalene	2.755	3.054	-10.9	119	-0.01	9.39
113	1,2,3-Trichlorobenzene	0.739	0.807	-9.2	119	-0.02	9.51

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2O75430.D V2O_04-11-2023.M Mon May 01 10:32:00 2023

Continuing Calibration Summary

Job Number: FC5575 **Sample:** V2O2944-ECC2924
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 2O75940.D
Project: CCF West NAM; KSC, FL

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\ce...023\V2O2944\2O75940.d Vial: 28
Acq On : 1 May 2023 9:58 pm Operator: davidb2
Sample : ECC2924-5 Inst : MSVOA12
Misc : MS53898,V2O2944,,,,, Multiplr: 1.00
MS Integration Params: big.p

Method : C:\msdchem\1\met...V2O_04-11-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Tue Apr 11 14:22:12 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 50% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	99	0.00	4.03
2	Dichlorodifluoromethane	0.204	0.186	8.8	91	0.00	1.23
3 P	Chloromethane	0.220	0.198	10.0	91	0.00	1.39
	----------	True	Calc.	% Drift	----------		
4	1,3-butadiene	40.000	36.598	8.5	92	0.00	1.45
	----------	AvgRF	CCRF	% Dev	----------		
5 C	Vinyl Chloride	0.219	0.218	0.5	97	0.00	1.43
6	Bromomethane	0.167	0.135	19.2	82	0.00	1.67
	----------	True	Calc.	% Drift	----------		
7	Chloroethane	40.000	17.000	57.5#	80	0.00	1.75
	----------	AvgRF	CCRF	% Dev	----------		
8	Trichlorofluoromethane	0.388	0.373	3.9	89	0.00	1.85
9	Ethyl Ether	0.172	0.190	-10.5	108	0.00	2.07
	----------	True	Calc.	% Drift	----------		
10	Ethanol	800.000	1125.328	-40.7	140	0.01	2.18
	----------	AvgRF	CCRF	% Dev	----------		
11	1,2-Dichlorotrifluoroetha	0.256	0.267	-4.3	107	0.00	2.18
12 C	1,1-Dichloroethene	0.329	0.326	0.9	100	0.00	2.18
13	Freon 113	0.219	0.230	-5.0	104	0.00	2.21
14	Carbon Disulfide	0.640	0.580	9.4	93	0.00	2.20
15	Iodomethane	0.342	0.205	40.1	56	0.00	2.28
16	Acrolein	0.063	0.059	6.3	90	0.00	2.39
17	Allyl chloride	0.255	0.216	15.3	84	0.00	2.48
	----------	True	Calc.	% Drift	----------		
18	Methylene Chloride	40.000	39.512	1.2	102	0.00	2.54
	----------	AvgRF	CCRF	% Dev	----------		
19	Acetone	0.126	0.157	-24.6	133	0.00	2.57
20	Methyl acetate	0.289	0.348	-20.4	121	0.00	2.64
21	trans-1,2-Dichloroethene	0.315	0.316	-0.3	99	0.00	2.64
22	Hexane	0.166	0.164	1.2	99	0.00	2.68
23	Methyl Tert Butyl Ether	0.604	0.663	-9.8	106	0.00	2.70
	----------	True	Calc.	% Drift	----------		
24	Tert Butyl Alcohol	400.000	550.633	-37.7	141	0.00	2.76

Continuing Calibration Summary

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2944-ECC2924
Lab FileID: 2O75940.D

			AvgRF	CCRF	% Dev			
25		Acetonitrile	0.047	0.051	-8.5	111	0.00	2.84
26		Di-isopropyl ether	0.641	0.693	-8.1	106	0.00	2.92
27		Chloroprene	0.301	0.305	-1.3	103	0.00	2.98
28	P	1,1-Dichloroethane	0.409	0.426	-4.2	104	0.00	2.99
29		Acrylonitrile	0.122	0.137	-12.3	115	0.00	3.02
30		ETBE	0.581	0.651	-12.0	108	0.00	3.13
31		Vinyl acetate	0.467	0.403	13.7	85	0.00	3.13
32		cis-1,2-Dichloroethene	0.254	0.270	-6.3	105	0.00	3.30
33		2,2-Dichloropropane	0.275	0.156	43.3	56	0.00	3.36
34		Bromochloromethane	0.137	0.134	2.2	99	0.00	3.42
35		Cyclohexane	0.338	0.343	-1.5	101	0.00	3.42
36	C	Chloroform	0.443	0.479	-8.1	107	0.00	3.45
37		Ethyl acetate	0.367	0.416	-13.4	113	0.00	3.51
38		Tetrahydrofuran	0.141	0.167	-18.4	118	0.00	3.54
39	S	Dibromofluoromethane	0.277	0.270	2.5	96	0.00	3.56
40		Carbon Tetrachloride	0.277	0.292	-5.4	101	0.00	3.54
41		1,1,1-Trichloroethane	0.359	0.384	-7.0	109	0.00	3.57
42		2-Butanone	0.209	0.255	-22.0	122	0.00	3.62
43		1,1-Dichloropropene	0.310	0.324	-4.5	103	0.00	3.65

			True	Calc.	% Drift			
44		tert-Butyl formate	200.000	172.680	13.7	85	0.00	3.70

			AvgRF	CCRF	% Dev			
45		Propionitrile	0.062	0.077	-24.2	124	0.00	3.79
46		Methacrylonitrile	0.210	0.238	-13.3	114	0.00	3.81
47		Benzene	0.917	0.965	-5.2	105	0.00	3.79
48		TAME	0.544	0.614	-12.9	108	0.00	3.85

			True	Calc.	% Drift			
49		Isobutyl alcohol	800.000	1475.692	-84.5#	190	0.00	3.89

			AvgRF	CCRF	% Dev			
50	S	1,2-Dichloroethane-d4	0.295	0.339	-14.9	112	0.00	3.86
51		1,2-Dichloroethane	0.327	0.386	-18.0	118	0.00	3.90

			True	Calc.	% Drift			
52		Tert Amyl Alcohol	400.000	536.065	-34.0	138	0.00	3.95

			AvgRF	CCRF	% Dev			
53		Trichloroethene	0.264	0.285	-8.0	108	0.00	4.13
54		Methylcyclohexane	0.346	0.355	-2.6	100	0.00	4.13
55		Dibromomethane	0.166	0.180	-8.4	106	0.00	4.38
56	C	1,2-Dichloropropane	0.215	0.234	-8.8	107	0.00	4.44
57		Bromodichloromethane	0.295	0.330	-11.9	109	0.00	4.47
58		Methyl methacrylate	0.241	0.280	-16.2	116	0.00	4.56

			True	Calc.	% Drift			
59		1,4-Dioxane	800.000	1191.038	-48.9	150	0.00	4.60

			AvgRF	CCRF	% Dev			
60		2-Chloroethyl vinyl ether	0.187	0.197	-5.3	102	0.00	4.82

			True	Calc.	% Drift			
61		cis-1,3-Dichloropropene	40.000	38.695	3.3	97	0.00	4.87

			AvgRF	CCRF	% Dev			

Continuing Calibration Summary

Job Number: FC5575 **Sample:** V2O2944-ECC2924
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 2O75940.D
Project: CCF West NAM; KSC, FL

62	I	Chlorobenzene-d5	1.000	1.000	0.0	105	0.00	6.04
63	S	Toluene-d8	1.364	1.295	5.1	100	0.00	4.99
64	C	Toluene	1.370	1.347	1.7	105	0.00	5.02
			True	Calc.	% Drift			
65		2-Nitropropane	200.000	224.235	-12.1	123	0.00	5.17
			AvgRF	CCRF	% Dev			
66		4-Methyl-2-pentanone	0.490	0.556	-13.5	119	0.00	5.26
			True	Calc.	% Drift			
67		trans-1,3-Dichloropropene	40.000	38.742	3.1	102	0.00	5.29
			AvgRF	CCRF	% Dev			
68		Tetrachloroethene	0.388	0.548	-41.2	149	0.00	5.28
			True	Calc.	% Drift			
69		Ethyl methacrylate	40.000	44.122	-10.3	117	0.00	5.38
			AvgRF	CCRF	% Dev			
70		1,1,2-Trichloroethane	0.276	0.295	-6.9	113	0.00	5.39
			True	Calc.	% Drift			
71		Dibromochloromethane	40.000	40.082	-0.2	104	0.00	5.52
			AvgRF	CCRF	% Dev			
72		1,3-Dichloropropane	0.506	0.547	-8.1	113	0.00	5.58
73		1,2-Dibromoethane	0.346	0.366	-5.8	107	0.00	5.68
			True	Calc.	% Drift			
74		3,3-dimethyl-1-butanol	2000.000	2817.611	-40.9	152	0.00	5.80
			AvgRF	CCRF	% Dev			
75		2-hexanone	0.486	0.631	-29.8	134	0.00	5.82
76		1-Chlorohexane	0.431	0.405	6.0	102	0.00	6.03
77	C	Ethylbenzene	1.478	1.524	-3.1	110	0.00	6.07
78	P	Chlorobenzene	0.926	0.922	0.4	106	0.00	6.05
79		1,1,1,2-Tetrachloroethane	0.290	0.307	-5.9	106	0.00	6.09
80		m,p-Xylene	1.150	1.197	-4.1	109	0.00	6.17
81		o-Xylene	1.161	1.203	-3.6	108	-0.01	6.48
82		Styrene	0.912	0.964	-5.7	108	0.00	6.52
			True	Calc.	% Drift			
83	P	Bromoform	40.000	39.235	1.9	104	0.00	6.54
			AvgRF	CCRF	% Dev			
84		Isopropylbenzene	1.400	1.415	-1.1	104	0.00	6.72
85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	103	0.00	7.80
86	S	4-Bromofluorobenzene	0.763	0.727	4.7	100	0.00	6.94
87		cis-1,4-Dichloro-2-butene	0.226	0.195	13.7	86	0.00	6.98
88		n-Propylbenzene	3.100	3.198	-3.2	109	0.00	7.04
89		Bromobenzene	0.688	0.665	3.3	101	0.00	7.02
90	P	1,1,2,2-Tetrachloroethane	0.944	1.027	-8.8	113	0.00	7.09
91		1,3,5-Trimethylbenzene	2.188	2.263	-3.4	106	-0.01	7.19
92		2-Chlorotoluene	2.090	2.194	-5.0	113	-0.01	7.16
			True	Calc.	% Drift			
93		trans-1,4-Dichloro-2-Bute	40.000	36.005	10.0	95	0.00	7.23

Continuing Calibration Summary

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2944-ECC2924
Lab FileID: 2O75940.D

		AvgRF	CCRF	% Dev			
94	1,2,3-Trichloropropane	0.311	0.346	-11.3	119	0.00	7.20

		True	Calc.	% Drift			
95	Cyclohexanone	200.000	281.947	-41.0	158	0.00	7.23

		AvgRF	CCRF	% Dev			
96	4-Chlorotoluene	1.924	2.077	-8.0	112	0.00	7.29
97	tert-Butylbenzene	1.182	1.265	-7.0	111	-0.01	7.44
98	a-Methyl styrene		----------NA----------				
99	1,2,4-Trimethylbenzene	2.162	2.295	-6.2	109	0.00	7.49

		True	Calc.	% Drift			
100	Pentachloroethane	40.000	8.032	79.9#	19	0.00	7.46

		AvgRF	CCRF	% Dev			
101	sec-Butylbenzene	2.620	2.658	-1.5	106	0.00	7.58
102	4-Isopropyltoluene	2.286	2.262	1.0	102	0.00	7.69
103	1,3-Dichlorobenzene	1.359	1.333	1.9	102	0.00	7.74
104	1,2,3-Trimethylbenzene	2.263	2.425	-7.2	110	-0.01	7.82
105	1,4-Dichlorobenzene	1.377	1.361	1.2	105	0.00	7.81

		True	Calc.	% Drift			
106	n-Butylbenzene	40.000	37.792	5.5	99	-0.01	8.00
107	Benzyl Chloride	40.000	17.985	55.0#	42	0.00	7.99

		AvgRF	CCRF	% Dev			
108	1,2-Dichlorobenzene	1.283	1.294	-0.9	106	0.00	8.12

		True	Calc.	% Drift			
109	1,2-Dibromo-3-Chloropropa	40.000	46.896	-17.2	126	-0.01	8.70
110	Hexachlorobutadiene	40.000	33.537	16.2	90	-0.01	9.15

		AvgRF	CCRF	% Dev			
111	1,2,4-Trichlorobenzene	0.779	0.819	-5.1	104	-0.01	9.17
112	Naphthalene	2.755	3.088	-12.1	111	-0.01	9.39
113	1,2,3-Trichlorobenzene	0.739	0.807	-9.2	109	-0.01	9.52

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2O75430.D V2O_04-11-2023.M Tue May 02 02:10:03 2023

Initial Calibration Summary

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2910-ICC2910
Lab FileID: I756326.D

Response Factor Report MSVOA16

Method : C:\msdchem\1\met...\VI-2023-05-02.m (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

Calibration Files
1 =I756322.D 2 =I756323.D 3 =I756330.D 4 =I756325.D
5 =I756326.D 6 =I756327.D 7 =I756328.D

Compound	1	2	3	4	5	6	7	Avg	%RSD
1) I Fluorobenzene	----------	ISTD	----------						
2) Dichlorodifluorom	0.189	0.129	0.145	0.164	0.148	0.160	0.143	0.154	12.45
3)P Chloromethane	0.364	0.212	0.256	0.231	0.218	0.221	0.198	0.243	23.15
---- Linear regr., Force(0,0) ---- Coefficient = 0.9954									
Response Ratio = 0.00000 + 0.21441 *A									
4)C Vinyl Chloride	0.290	0.192	0.224	0.226	0.214	0.225	0.202	0.225	13.92
5) 1,3-Butadiene	0.329	0.227	0.227	0.244	0.216	0.231	0.200	0.239	17.56
---- Linear regr., Force(0,0) ---- Coefficient = 0.9943									
Response Ratio = 0.00000 + 0.21770 *A									
6) Bromomethane	0.238	0.110	0.129	0.107	0.104	0.105	0.091	0.126	39.97
---- Linear regr., Force(0,0) ---- Coefficient = 0.9914									
Response Ratio = 0.00000 + 0.09706 *A									
7) Chloroethane	0.236	0.139	0.151	0.134	0.129	0.130	0.112	0.147	27.68
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9976									
Response Ratio = 0.00000 + 0.14831 *A + -0.01749 *A^2									
8) Trichlorofluorome	0.458	0.298	0.325	0.352	0.349	0.380	0.326	0.355	14.68
9) Ethyl Ether	0.247	0.193	0.199	0.189	0.193	0.202	0.186	0.201	10.39
10) 1,2-Dichlorotrifl	0.264	0.199	0.220	0.214	0.221	0.230	0.206	0.222	9.51
11)C 1,1-Dichloroethen	0.335	0.253	0.292	0.288	0.294	0.308	0.274	0.292	8.81
12) Ethanol	0.014	0.008	0.009	0.008	0.009	0.009	0.008	0.009	25.82
---- Linear regr., Force(0,0) ---- Coefficient = 0.9974									
Response Ratio = 0.00000 + 0.00836 *A									
13) Freon 113	0.192	0.157	0.183	0.180	0.182	0.190	0.170	0.179	6.80
14) Carbon Disulfide	0.693	0.482	0.548	0.521	0.530	0.562	0.502	0.548	12.62
15) Iodomethane	0.116	0.104	0.115	0.165	0.173	0.175		0.141	23.19
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9939									
Response Ratio = 0.00000 + 0.13640 *A + 0.03081 *A^2									
16) Acrolein	0.080	0.060	0.075	0.072	0.073	0.077	0.071	0.073	8.52
17) Allyl chloride	0.373	0.231	0.276	0.267	0.260	0.272	0.245	0.275	16.78
---- Linear regr., Force(0,0) ---- Coefficient = 0.9971									
Response Ratio = 0.00000 + 0.25861 *A									
18) Methylene Chlorid	0.501	0.302	0.309	0.300	0.297	0.305	0.275	0.327	23.74
---- Linear regr., Force(0,0) ---- Coefficient = 0.9977									
Response Ratio = 0.00000 + 0.29197 *A									
19) Acetone	0.214	0.134	0.158	0.156	0.150	0.151	0.146	0.158	16.20
---- Linear regr., Force(0,0) ---- Coefficient = 0.9989									
Response Ratio = 0.00000 + 0.14935 *A									

Initial Calibration Summary

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2910-ICC2910
Lab FileID: I756326.D

20)	Methyl acetate	0.326	0.279	0.311	0.324	0.332	0.357	0.331	0.323	7.39
21)	trans-1,2-Dichlor	0.349	0.247	0.282	0.272	0.284	0.295	0.265	0.285	11.27
22)	Hexane	0.178	0.130	0.152	0.152	0.151	0.158	0.135	0.151	10.35
23)	Methyl Tert Butyl	0.668	0.526	0.597	0.562	0.593	0.623	0.572	0.592	7.69
24)	Tert butyl alcoho	0.101	0.082	0.096	0.090	0.092	0.092	0.087	0.091	6.66
25)	Acetonitrile	0.073	0.048	0.056	0.055	0.053	0.054	0.051	0.056	14.72
26)	Di-isopropyl ethe	0.743	0.614	0.683	0.667	0.705	0.736	0.673	0.689	6.43
27)	Chloroprene	0.302	0.228	0.274	0.291	0.286	0.313	0.283	0.282	9.62
28)P	1,1-Dichloroethan	0.460	0.358	0.393	0.384	0.388	0.403	0.363	0.393	8.62
29)	Acrylonitrile	0.116	0.123	0.150	0.154	0.156	0.161	0.156	0.145	12.50
30)	ETBE	0.675	0.553	0.638	0.623	0.642	0.675	0.615	0.632	6.58
31)	Vinyl acetate	0.017	0.332	0.447	0.478	0.502	0.539	0.516	0.404	45.48

---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9977
Response Ratio = 0.00000 + 0.45233 *A + 0.00812 *A^2

32)	cis-1,2-Dichloroe	0.193	0.184	0.205	0.201	0.207	0.215	0.197	0.200	5.07
33)	2,2-Dichloropropa	0.284	0.219	0.277	0.271	0.268	0.275	0.241	0.262	9.00
34)	Bromochloromethan	0.113	0.088	0.105	0.099	0.101	0.101	0.093	0.100	8.12
35)	Cyclohexane	0.300	0.246	0.305	0.307	0.313	0.336	0.298	0.301	9.06
36)C	Chloroform	0.452	0.350	0.381	0.375	0.377	0.388	0.355	0.383	8.80
37)	Ethyl acetate	0.492	0.347	0.413	0.418	0.422	0.439	0.415	0.421	10.14
38)	Tetrahydrofuran	0.255	0.163	0.187	0.179	0.176	0.181	0.165	0.187	16.83

---- Linear regr., Force(0,0) ---- Coefficient = 0.9977
Response Ratio = 0.00000 + 0.17392 *A

39)S	Dibromofluorometh	0.280	0.275	0.282	0.281	0.287	0.287	0.289	0.283	1.73
40)	Carbon Tetrachlor	0.312	0.246	0.278	0.273	0.275	0.287	0.257	0.275	7.76
41)	1,1,1-Trichloroet	0.325	0.272	0.308	0.303	0.309	0.322	0.290	0.304	6.07
42)	2-Butanone	0.203	0.188	0.232	0.252	0.249	0.254	0.244	0.232	11.23
43)	1,1-Dichloroprope	0.244	0.215	0.252	0.248	0.253	0.265	0.236	0.245	6.52
44)	tert-Butyl Format	0.230	0.165	0.196	0.192	0.201	0.210	0.200	0.199	9.86
45)	Propionitrile	0.082	0.065	0.075	0.077	0.074	0.074	0.071	0.074	6.90
46)	Methacrylonitrile	0.286	0.208	0.236	0.227	0.219	0.223	0.208	0.230	11.67
47)	Benzene	0.886	0.693	0.788	0.769	0.776	0.802	0.718	0.776	8.04
48)	TAME	0.691	0.536	0.592	0.561	0.551	0.584	0.532	0.578	9.40
49)S	1,2-Dichloroethan	0.310	0.309	0.309	0.308	0.307	0.310	0.312	0.309	0.54
50)	Isobutyl alcohol	0.026	0.018	0.020	0.021	0.021	0.021	0.019	0.021	12.01
51)	1,2-Dichloroethan	0.381	0.287	0.307	0.285	0.295	0.308	0.280	0.306	11.28
52)	Tert Amyl Alcohol	0.088	0.073	0.081	0.077	0.078	0.078	0.072	0.078	6.52
53)	Trichloroethene	0.265	0.191	0.212	0.200	0.207	0.217	0.196	0.213	11.74
54)	Methylcyclohexane	0.264	0.209	0.258	0.249	0.255	0.277	0.248	0.251	8.44
55)	Dibromomethane	0.160	0.126	0.146	0.132	0.139	0.147	0.135	0.141	8.19
56)C	1,2-Dichloropropa	0.234	0.188	0.213	0.205	0.207	0.217	0.199	0.209	6.94
57)	Bromodichlorometh	0.328	0.259	0.289	0.278	0.278	0.299	0.276	0.287	7.71
58)	Methyl methacryla	0.069	0.158	0.212	0.230	0.242	0.262	0.256	0.204	33.84

---- Linear regr., Force(0,0) ---- Coefficient = 0.9975
Response Ratio = 0.00000 + 0.24834 *A

59)	1,4-Dioxane	0.003	0.001	0.006	0.006	0.006	0.007	0.006	0.005	47.04

---- Linear regr., Force(0,0) ---- Coefficient = 0.9970
Response Ratio = 0.00000 + 0.00635 *A

60)	2-Chloroethyl vin	0.130	0.118	0.151	0.158	0.166	0.173	0.164	0.152	13.40
61)	cis-1,3-Dichlorop	0.327	0.272	0.312	0.308	0.315	0.334	0.309	0.311	6.35
62)	I Chlorobenzene-d5	----------ISTD----------								
63)S	Toluene-d8	1.374	1.363	1.406	1.406	1.391	1.385	1.379	1.386	1.17
64)C	Toluene	1.335	1.003	1.126	1.092	1.096	1.141	1.023	1.117	9.75
65)	2-Nitropropane	0.172	0.135	0.154	0.151	0.154	0.161	0.146	0.153	7.48
66)	4-Methyl-2-pentan	0.748	0.551	0.663	0.650	0.627	0.615	0.572	0.632	10.28

Initial Calibration Summary

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2910-ICC2910
Lab FileID: I756326.D

```
 67)  trans-1,3-Dichlor 0.358 0.324 0.406 0.405 0.415 0.446 0.404 0.394  10.16
 68)  Tetrachloroethene 0.320 0.260 0.297 0.285 0.283 0.301 0.266 0.288   7.21
 69)  Ethyl methacrylat 0.281 0.246 0.347 0.381 0.378 0.399 0.380 0.345  16.88
             ---- Linear regr., Force(0,0) ----  Coefficient =  0.9975
               Response Ratio = 0.00000 + 0.38070 *A

 70)  1,1,2-Trichloroet 0.287 0.225 0.253 0.240 0.239 0.247 0.225 0.245   8.67
 71)  Dibromochlorometh 0.353 0.276 0.325 0.305 0.313 0.332 0.305 0.316   7.68
 72)  1,3-Dichloropropa 0.423 0.371 0.433 0.428 0.429 0.455 0.421 0.423   6.06
 73)  1,2-Dibromoethane 0.274 0.263 0.307 0.292 0.297 0.317 0.292 0.292   6.35
 74)  3,3-dimethyl-1-bu 0.147 0.106 0.132 0.127 0.126 0.123 0.113 0.125  10.64
 75)  2-hexanone        0.484 0.428 0.540 0.541 0.513 0.505 0.432 0.492   9.48
 76)  1-Chlorohexane    0.280 0.252 0.320 0.308 0.317 0.346 0.308 0.304   9.96
 77)C Ethylbenzene      1.431 1.082 1.275 1.220 1.235 1.286 1.156 1.241   8.85
 78)P Chlorobenzene     0.866 0.672 0.774 0.726 0.740 0.765 0.685 0.747   8.69
 79)  1,1,1,2-Tetrachlo 0.302 0.264 0.292 0.274 0.283 0.299 0.269 0.283   5.28
 80)  m,p-Xylene        0.897 0.760 0.922 0.920 0.942 1.003 0.890 0.905   8.16
 81)  o-Xylene          0.951 0.757 0.951 0.947 0.962 1.031 0.938 0.934   8.97
 82)  Styrene           0.549 0.534 0.664 0.688 0.723 0.772 0.708 0.663  13.45
 83)P Bromoform         0.238 0.198 0.239 0.234 0.238 0.255 0.232 0.233   7.36
 84)  Isopropylbenzene  1.064 0.892 1.104 1.102 1.116 1.197 1.074 1.078   8.60

 85) I   1,4-Dichlorobenzene-d ----------------ISTD--------------------
 86)S 4-Bromofluorobenz 0.780 0.796 0.775 0.751 0.775 0.776 0.796 0.778   1.96
 87)  cis-1,4-Dichloro- 0.148 0.191 0.213 0.216 0.218 0.229 0.223 0.205  13.66
 88)  n-Propylbenzene   2.863 2.411 2.573 2.489 2.571 2.712 2.462 2.583   6.09
 89)  Bromobenzene      0.727 0.557 0.597 0.560 0.566 0.590 0.542 0.591  10.63
 90)P 1,1,2,2-Tetrachlo 1.189 0.962 0.969 0.899 0.908 0.927 0.831 0.955  11.82
 91)  1,3,5-Trimethylbe 1.751 1.535 1.759 1.704 1.757 1.866 1.705 1.725   5.77
 92)  2-Chlorotoluene   2.236 1.734 1.819 1.743 1.788 1.818 1.659 1.828  10.31
 93)  trans-1,4-Dichlor 0.117 0.181 0.269 0.222 0.232 0.251 0.242 0.216  23.81
             ---- Linear regr., Force(0,0) ----  Coefficient =  0.9983
               Response Ratio = 0.00000 + 0.24269 *A

 94)  1,2,3-Trichloropr 0.292 0.277 0.289 0.274 0.272 0.278 0.251 0.276   4.84
 95)  Cyclohexanone     0.080 0.068 0.074 0.065 0.068 0.067 0.065 0.070   8.11
 96)  4-Chlorotoluene   1.708 1.326 1.569 1.527 1.585 1.655 1.522 1.556   7.82
 97)  tert-Butylbenzene 1.147 0.758 0.940 0.907 0.954 1.014 0.930 0.950  12.32
 98)  1,2,4-Trimethylbe 1.703 1.460 1.720 1.723 1.746 1.847 1.708 1.701   6.89
 99)  Pentachloroethane 0.401 0.297 0.328 0.325 0.315 0.323 0.302 0.327  10.57
100)  sec-Butylbenzene  2.133 1.793 1.999 1.960 2.024 2.144 1.940 1.999   6.03
101)  4-Isopropyltoluen 1.612 1.416 1.683 1.681 1.730 1.833 1.678 1.662   7.67
102)  1,3-Dichlorobenze 1.198 0.963 1.043 0.990 1.016 1.066 0.977 1.036   7.75
103)  1,2,3-Trimethylbe 2.145 1.738 1.919 1.859 1.870 1.945 1.770 1.892   7.09
104)  1,4-Dichlorobenze 1.496 1.119 1.143 1.066 1.074 1.103 0.997 1.143  14.25
105)  n-Butylbenzene    0.823 0.733 0.884 0.886 0.901 0.970 0.869 0.867   8.45
106)  Benzyl Chloride   0.161 0.209 0.301 0.293 0.304 0.309 0.274 0.264  21.63
             ---- Linear regr., Force(0,0) ----  Coefficient =  0.9957
               Response Ratio = 0.00000 + 0.28990 *A

107)  1,2-Dichlorobenze 1.065 0.948 1.021 0.976 0.997 1.025 0.936 0.995   4.60
108)  1,2-Dibromo-3-Chl 0.215 0.211 0.244 0.233 0.232 0.241 0.227 0.229   5.39
109)  Hexachlorobutadie 0.267 0.189 0.208 0.213 0.212 0.220 0.199 0.215  11.66
110)  1,2,4-Trichlorobe 0.471 0.475 0.558 0.549 0.545 0.584 0.550 0.533   8.06
111)  Naphthalene       2.025 1.664 2.024 2.032 2.073 2.250 2.152 2.031   8.96
112)  1,2,3-Trichlorobe 0.642 0.517 0.577 0.529 0.540 0.570 0.535 0.559   7.60
 ----------------------------------------------------------------------------
 (#) = Out of Range

          VI-2023-05-02.m        Tue May 02 13:48:56 2023
```

Initial Calibration Verification

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2910-ICV2910
Lab FileID: I756331.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\2023-05-02\I756331.D Vial: 11
Acq On : 2 May 2023 1:02 pm Operator: jeniferw
Sample : ICV2910-5 Inst : MSVOA16
Misc : MS53904,VI2910,,,,, Multiplr: 1.00
MS Integration Params: tiny.p

Method : C:\msdchem\1\met...\VI-2023-05-02.m (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Tue May 02 13:32:44 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	103	0.00	7.85
2	Dichlorodifluoromethane	0.154	0.235	-52.6#	163	0.00	2.35
		Amount	Calc.	%Drift			
3 P	Chloromethane	40.000	48.939	-22.3#	124	0.00	2.65
		AvgRF	CCRF	%Dev			
4 C	Vinyl Chloride	0.225	0.252	-12.0	121	0.00	2.76
		Amount	Calc.	%Drift			
5	1,3-Butadiene	40.000	43.394	-8.5	112	0.00	2.79
6	Bromomethane	40.000	44.465	-11.2	106	0.00	3.23
7	Chloroethane	40.000	41.534	-3.8	111	0.00	3.39
		AvgRF	CCRF	%Dev			
8	Trichlorofluoromethane	0.355	0.393	-10.7	116	0.00	3.58
9	Ethyl Ether	0.201	0.212	-5.5	113	0.00	4.01
10	1,2-Dichlorotrifluoroetha	0.222	0.261	-17.6	122	0.00	4.23
11 C	1,1-Dichloroethene	0.292	0.316	-8.2	111	0.00	4.26
		Amount	Calc.	%Drift			
12	Ethanol	800.000	834.407	-4.3	103	-0.01	4.23
		AvgRF	CCRF	%Dev			
13	Freon 113	0.179	0.219	-22.3#	124	0.00	4.31
14	Carbon Disulfide	0.548	0.597	-8.9	116	0.00	4.32
		Amount	Calc.	%Drift			
15	Iodomethane	40.000	41.272	-3.2	99	0.00	4.45
		AvgRF	CCRF	%Dev			
16	Acrolein	0.073	0.077	-5.5	109	0.00	4.68
		Amount	Calc.	%Drift			
17	Allyl chloride	40.000	44.287	-10.7	113	0.00	4.84
18	Methylene Chloride	40.000	43.302	-8.3	110	0.00	4.97
19	Acetone	200.000	202.407	-1.2	104	0.00	5.03
		AvgRF	CCRF	%Dev			
20	Methyl acetate	0.323	0.328	-1.5	101	0.00	5.17
21	trans-1,2-Dichloroethene	0.285	0.299	-4.9	108	0.00	5.17
22	Hexane	0.151	0.171	-13.2	116	0.00	5.27

Initial Calibration Verification

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2910-ICV2910
Lab FileID: I756331.D

23		Methyl Tert Butyl Ether	0.592	0.643	-8.6	112	0.00	5.29
24		Tert butyl alcohol	0.091	0.095	-4.4	106	0.00	5.40
25		Acetonitrile	0.056	0.056	0.0	108	0.00	5.56
26		Di-isopropyl ether	0.689	0.727	-5.5	106	0.00	5.73
27		Chloroprene	0.282	0.282	0.0	101	0.00	5.86
28	P	1,1-Dichloroethane	0.393	0.395	-0.5	105	0.00	5.88
29		Acrylonitrile	0.145	0.156	-7.6	103	0.00	5.92
30		ETBE	0.632	0.697	-10.3	112	0.00	6.13
		----------	Amount	Calc.	%Drift	----------		
31		Vinyl acetate	200.000	220.757	-10.4	110	0.00	6.13
		----------	AvgRF	CCRF	%Dev	----------		
32		cis-1,2-Dichloroethene	0.200	0.214	-7.0	106	0.00	6.49
33		2,2-Dichloropropane	0.262	0.295	-12.6	113	0.00	6.61
34		Bromochloromethane	0.100	0.103	-3.0	105	0.00	6.73
35		Cyclohexane	0.301	0.346	-15.0	114	0.00	6.75
36	C	Chloroform	0.383	0.398	-3.9	109	0.00	6.79
37		Ethyl acetate	0.421	0.429	-1.9	105	0.00	6.88
		----------	Amount	Calc.	%Drift	----------		
38		Tetrahydrofuran	40.000	40.727	-1.8	104	0.00	6.98
		----------	AvgRF	CCRF	%Dev	----------		
39	S	Dibromofluoromethane	0.283	0.285	-0.7	102	0.00	6.98
40		Carbon Tetrachloride	0.275	0.293	-6.5	110	0.00	6.97
41		1,1,1-Trichloroethane	0.304	0.328	-7.9	109	0.00	7.03
42		2-Butanone	0.232	0.249	-7.3	103	0.00	7.10
43		1,1-Dichloropropene	0.245	0.280	-14.3	114	0.00	7.16
44		tert-Butyl Formate	0.199	0.222	-11.6	114	0.00	7.25
45		Propionitrile	0.074	0.075	-1.4	104	0.00	7.41
46		Methacrylonitrile	0.230	0.230	0.0	108	0.00	7.43
47		Benzene	0.776	0.816	-5.2	108	0.00	7.43
48		TAME	0.578	0.611	-5.7	114	0.00	7.52
49	S	1,2-Dichloroethane-d4	0.309	0.305	1.3	102	0.00	7.55
50		Isobutyl alcohol	0.021	0.022	-4.8	106	0.00	7.59
51		1,2-Dichloroethane	0.306	0.304	0.7	106	0.00	7.63
52		Tert Amyl Alcohol	0.078	0.080	-2.6	106	0.00	7.70
53		Trichloroethene	0.213	0.216	-1.4	107	0.00	8.04
54		Methylcyclohexane	0.251	0.281	-12.0	113	0.00	8.05
55		Dibromomethane	0.141	0.147	-4.3	109	0.00	8.48
56	C	1,2-Dichloropropane	0.209	0.227	-8.6	113	0.00	8.56
57		Bromodichloromethane	0.287	0.288	-0.3	107	0.00	8.62
		----------	Amount	Calc.	%Drift	----------		
58		Methyl methacrylate	40.000	39.087	2.3	103	0.00	8.74
59		1,4-Dioxane	800.000	775.951	3.0	99	0.00	8.82
		----------	AvgRF	CCRF	%Dev	----------		
60		2-Chloroethyl vinyl ether	0.152	0.165	-8.6	102	0.00	9.15
61		cis-1,3-Dichloropropene	0.311	0.328	-5.5	107	0.00	9.25
62	I	Chlorobenzene-d5	1.000	1.000	0.0	101	0.00	11.01
63	S	Toluene-d8	1.386	1.413	-1.9	103	0.00	9.44
64	C	Toluene	1.117	1.165	-4.3	108	0.00	9.50
65		2-Nitropropane	0.153	0.158	-3.3	104	0.00	9.69
66		4-Methyl-2-pentanone	0.632	0.639	-1.1	103	0.00	9.83
67		trans-1,3-Dichloropropene	0.394	0.402	-2.0	98	0.00	9.90
68		Tetrachloroethene	0.288	0.308	-6.9	110	0.00	9.91

Initial Calibration Verification

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2910-ICV2910
Lab FileID: I756331.D

			Amount	Calc.	%Drift			
69		Ethyl methacrylate	40.000	44.517	-11.3	114	0.00	10.01
			AvgRF	CCRF	%Dev			
70		1,1,2-Trichloroethane	0.245	0.250	-2.0	106	0.00	10.05
71		Dibromochloromethane	0.316	0.334	-5.7	108	0.00	10.26
72		1,3-Dichloropropane	0.423	0.482	-13.9	114	0.00	10.33
73		1,2-Dibromoethane	0.292	0.315	-7.9	107	0.00	10.51
74		3,3-dimethyl-1-butanol	0.125	0.125	0.0	101	0.00	10.62
75		2-hexanone	0.492	0.518	-5.3	102	0.00	10.65
76		1-Chlorohexane	0.304	0.349	-14.8	112	0.00	10.96
77	C	Ethylbenzene	1.241	1.295	-4.4	106	0.00	11.02
78	P	Chlorobenzene	0.747	0.757	-1.3	104	0.00	11.02
79		1,1,1,2-Tetrachloroethane	0.283	0.289	-2.1	103	0.00	11.07
80		m,p-Xylene	0.905	0.990	-9.4	106	0.00	11.16
81		o-Xylene	0.934	1.007	-7.8	106	0.00	11.60
82		Styrene	0.663	0.762	-14.9	107	0.00	11.65
83	P	Bromoform	0.233	0.245	-5.2	104	0.00	11.71
84		Isopropylbenzene	1.078	1.166	-8.2	106	0.00	11.91
85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	104	0.00	13.37
86	S	4-Bromofluorobenzene	0.778	0.772	0.8	103	0.00	12.22
87		cis-1,4-Dichloro-2-butene	0.205	0.239	-16.6	114	0.00	12.26
88		n-Propylbenzene	2.583	2.634	-2.0	106	0.00	12.33
89		Bromobenzene	0.591	0.592	-0.2	109	0.00	12.35
90	P	1,1,2,2-Tetrachloroethane	0.955	0.926	3.0	106	0.00	12.39
91		1,3,5-Trimethylbenzene	1.725	1.836	-6.4	108	0.00	12.52
92		2-Chlorotoluene	1.828	1.765	3.4	103	0.00	12.52
			Amount	Calc.	%Drift			
93		trans-1,4-Dichloro-2-Bute	40.000	41.544	-3.9	113	0.00	12.57
			AvgRF	CCRF	%Dev			
94		1,2,3-Trichloropropane	0.276	0.295	-6.9	113	0.00	12.55
95		Cyclohexanone	0.070	0.232	-231.4#	357#	0.00	12.60
96		4-Chlorotoluene	1.556	1.618	-4.0	106	0.00	12.68
97		tert-Butylbenzene	0.950	0.979	-3.1	107	0.00	12.85
98		1,2,4-Trimethylbenzene	1.701	1.816	-6.8	108	0.00	12.93
99		Pentachloroethane	0.327	0.327	0.0	108	0.00	12.90
100		sec-Butylbenzene	1.999	2.016	-0.9	103	0.00	13.04
101		4-Isopropyltoluene	1.662	1.770	-6.5	106	0.00	13.17
102		1,3-Dichlorobenzene	1.036	1.018	1.7	104	0.00	13.30
103		1,2,3-Trimethylbenzene	1.892	1.826	3.5	101	0.00	13.38
104		1,4-Dichlorobenzene	1.143	1.094	4.3	106	0.00	13.39
105		n-Butylbenzene	0.867	0.983	-13.4	113	0.00	13.61
			Amount	Calc.	%Drift			
106		Benzyl Chloride	40.000	41.209	-3.0	102	0.00	13.63
			AvgRF	CCRF	%Dev			
107		1,2-Dichlorobenzene	0.995	0.999	-0.4	104	0.00	13.83
108		1,2-Dibromo-3-Chloropropa	0.229	0.247	-7.9	111	0.00	14.58
109		Hexachlorobutadiene	0.215	0.227	-5.6	111	0.00	15.15
110		1,2,4-Trichlorobenzene	0.533	0.566	-6.2	108	0.00	15.19
111		Naphthalene	2.031	2.126	-4.7	107	0.00	15.46
112		1,2,3-Trichlorobenzene	0.559	0.549	1.8	106	0.00	15.63

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Initial Calibration Verification

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2910-ICV2910
Lab FileID: I756331.D

I756326.D VI-2023-05-02.m Tue May 02 13:49:14 2023

Continuing Calibration Summary

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2914-CC2910
Lab FileID: I756431.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\2023-05-04\I756431.D Vial: 2
Acq On : 4 May 2023 9:54 am Operator: jeniferw
Sample : CC2910-5 Inst : MSVOA16
Misc : MS53924,VI2914,,,,, Multiplr: 1.00
MS Integration Params: tiny.p

Method : C:\msdchem\1\met...\VI-2023-05-02.m (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Tue May 02 13:32:44 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	88	0.00	7.85
2	Dichlorodifluoromethane	0.154	0.135	12.3	80	0.00	2.35
		Amount	Calc.	%Drift			
3 P	Chloromethane	40.000	40.977	-2.4	89	0.00	2.65
		AvgRF	CCRF	%Dev			
4 C	Vinyl Chloride	0.225	0.202	10.2	83	0.00	2.77
		Amount	Calc.	%Drift			
5	1,3-Butadiene	40.000	46.633	-16.6	104	0.00	2.79
6	Bromomethane	40.000	36.450	8.9	75	0.00	3.23
7	Chloroethane	40.000	37.951	5.1	88	0.01	3.40
		AvgRF	CCRF	%Dev			
8	Trichlorofluoromethane	0.355	0.342	3.7	87	0.01	3.59
9	Ethyl Ether	0.201	0.189	6.0	86	0.00	4.03
10	1,2-Dichlorotrifluoroetha	0.222	0.226	-1.8	91	0.00	4.24
11 C	1,1-Dichloroethene	0.292	0.301	-3.1	91	0.01	4.27
		Amount	Calc.	%Drift			
12	Ethanol	800.000	860.914	-7.6	92	0.00	4.23
		AvgRF	CCRF	%Dev			
13	Freon 113	0.179	0.192	-7.3	93	0.00	4.31
14	Carbon Disulfide	0.548	0.550	-0.4	92	0.01	4.32
		Amount	Calc.	%Drift			
15	Iodomethane	40.000	41.005	-2.5	85	0.00	4.46
		AvgRF	CCRF	%Dev			
16	Acrolein	0.073	0.073	0.0	88	0.00	4.68
		Amount	Calc.	%Drift			
17	Allyl chloride	40.000	42.161	-5.4	92	0.01	4.85
18	Methylene Chloride	40.000	42.921	-7.3	93	0.00	4.98
19	Acetone	200.000	202.858	-1.4	89	0.00	5.03
		AvgRF	CCRF	%Dev			
20	Methyl acetate	0.323	0.341	-5.6	91	0.00	5.17
21	trans-1,2-Dichloroethene	0.285	0.295	-3.5	92	0.00	5.18
22	Hexane	0.151	0.146	3.3	86	0.00	5.27

Continuing Calibration Summary

Job Number: FC5575 **Sample:** VI2914-CC2910
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** I756431.D
Project: CCF West NAM; KSC, FL

23		Methyl Tert Butyl Ether	0.592	0.600	-1.4	89	0.00	5.30
24		Tert butyl alcohol	0.091	0.093	-2.2	89	0.00	5.40
25		Acetonitrile	0.056	0.058	-3.6	96	0.00	5.57
26		Di-isopropyl ether	0.689	0.705	-2.3	88	0.00	5.73
27		Chloroprene	0.282	0.286	-1.4	88	0.00	5.87
28	P	1,1-Dichloroethane	0.393	0.410	-4.3	93	0.00	5.88
29		Acrylonitrile	0.145	0.160	-10.3	90	0.00	5.93
30		ETBE	0.632	0.649	-2.7	89	0.00	6.14
		----------	Amount	Calc.	%Drift	----------		
31		Vinyl acetate	200.000	207.403	-3.7	89	0.00	6.14
		----------	AvgRF	CCRF	%Dev	----------		
32		cis-1,2-Dichloroethene	0.200	0.215	-7.5	91	0.00	6.50
33		2,2-Dichloropropane	0.262	0.284	-8.4	93	0.00	6.62
34		Bromochloromethane	0.100	0.103	-3.0	90	0.00	6.73
35		Cyclohexane	0.301	0.303	-0.7	86	0.00	6.76
36	C	Chloroform	0.383	0.398	-3.9	93	0.00	6.79
37		Ethyl acetate	0.421	0.424	-0.7	89	0.00	6.89
		----------	Amount	Calc.	%Drift	----------		
38		Tetrahydrofuran	40.000	40.199	-0.5	88	0.00	6.98
		----------	AvgRF	CCRF	%Dev	----------		
39	S	Dibromofluoromethane	0.283	0.292	-3.2	90	0.00	6.99
40		Carbon Tetrachloride	0.275	0.281	-2.2	90	0.00	6.98
41		1,1,1-Trichloroethane	0.304	0.324	-6.6	93	0.00	7.04
42		2-Butanone	0.232	0.247	-6.5	87	0.00	7.10
43		1,1-Dichloropropene	0.245	0.264	-7.8	92	0.00	7.17
44		tert-Butyl Formate	0.199	0.201	-1.0	88	0.00	7.26
45		Propionitrile	0.074	0.075	-1.4	90	0.00	7.41
46		Methacrylonitrile	0.230	0.216	6.1	87	0.00	7.44
47		Benzene	0.776	0.800	-3.1	91	0.00	7.43
48		TAME	0.578	0.582	-0.7	93	0.00	7.52
49	S	1,2-Dichloroethane-d4	0.309	0.311	-0.6	90	0.00	7.56
50		Isobutyl alcohol	0.021	0.021	0.0	87	0.00	7.60
51		1,2-Dichloroethane	0.306	0.308	-0.7	92	0.00	7.63
52		Tert Amyl Alcohol	0.078	0.077	1.3	87	0.00	7.70
53		Trichloroethene	0.213	0.216	-1.4	92	0.00	8.04
54		Methylcyclohexane	0.251	0.246	2.0	85	0.00	8.05
55		Dibromomethane	0.141	0.141	0.0	90	0.00	8.48
56	C	1,2-Dichloropropane	0.209	0.213	-1.9	91	0.00	8.57
57		Bromodichloromethane	0.287	0.291	-1.4	92	0.00	8.62
		----------	Amount	Calc.	%Drift	----------		
58		Methyl methacrylate	40.000	38.689	3.3	88	0.00	8.74
59		1,4-Dioxane	800.000	823.853	-3.0	90	0.00	8.82
		----------	AvgRF	CCRF	%Dev	----------		
60		2-Chloroethyl vinyl ether	0.152	0.152	0.0	81	0.00	9.16
61		cis-1,3-Dichloropropene	0.311	0.325	-4.5	91	0.00	9.26
62	I	Chlorobenzene-d5	1.000	1.000	0.0	88	0.00	11.01
63	S	Toluene-d8	1.386	1.415	-2.1	89	0.00	9.44
64	C	Toluene	1.117	1.142	-2.2	91	0.00	9.50
65		2-Nitropropane	0.153	0.154	-0.7	88	0.00	9.69
66		4-Methyl-2-pentanone	0.632	0.612	3.2	86	0.00	9.83
67		trans-1,3-Dichloropropene	0.394	0.425	-7.9	90	0.00	9.90
68		Tetrachloroethene	0.288	0.296	-2.8	92	0.00	9.91

Continuing Calibration Summary

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2914-CC2910
Lab FileID: I756431.D

			Amount	Calc.	%Drift			
69		Ethyl methacrylate	40.000	39.818	0.5	88	0.00	10.01
			AvgRF	CCRF	%Dev			
70		1,1,2-Trichloroethane	0.245	0.244	0.4	90	0.00	10.05
71		Dibromochloromethane	0.316	0.328	-3.8	92	0.00	10.26
72		1,3-Dichloropropane	0.423	0.439	-3.8	90	0.00	10.34
73		1,2-Dibromoethane	0.292	0.305	-4.5	90	0.00	10.52
74		3,3-dimethyl-1-butanol	0.125	0.125	0.0	87	0.00	10.62
75		2-hexanone	0.492	0.493	-0.2	84	0.00	10.66
76		1-Chlorohexane	0.304	0.315	-3.6	87	0.00	10.96
77	C	Ethylbenzene	1.241	1.262	-1.7	90	0.00	11.02
78	P	Chlorobenzene	0.747	0.762	-2.0	90	0.00	11.02
79		1,1,1,2-Tetrachloroethane	0.283	0.292	-3.2	90	0.00	11.07
80		m,p-Xylene	0.905	0.962	-6.3	90	0.00	11.16
81		o-Xylene	0.934	0.991	-6.1	90	0.00	11.60
82		Styrene	0.663	0.721	-8.7	87	0.00	11.66
83	P	Bromoform	0.233	0.241	-3.4	89	0.00	11.71
84		Isopropylbenzene	1.078	1.133	-5.1	89	0.00	11.91
85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	86	0.00	13.37
86	S	4-Bromofluorobenzene	0.778	0.780	-0.3	87	0.00	12.22
87		cis-1,4-Dichloro-2-butene	0.205	0.156	23.9#	62	0.00	12.26
88		n-Propylbenzene	2.583	2.626	-1.7	88	0.00	12.33
89		Bromobenzene	0.591	0.585	1.0	89	0.00	12.35
90	P	1,1,2,2-Tetrachloroethane	0.955	0.920	3.7	87	0.00	12.39
91		1,3,5-Trimethylbenzene	1.725	1.799	-4.3	88	0.00	12.52
92		2-Chlorotoluene	1.828	1.813	0.8	87	0.00	12.52
			Amount	Calc.	%Drift			
93		trans-1,4-Dichloro-2-Bute	40.000	30.787	23.0#	69	0.00	12.57
			AvgRF	CCRF	%Dev			
94		1,2,3-Trichloropropane	0.276	0.284	-2.9	90	0.00	12.55
95		Cyclohexanone	0.070	0.072	-2.9	92	0.00	12.61
96		4-Chlorotoluene	1.556	1.619	-4.0	88	0.00	12.68
97		tert-Butylbenzene	0.950	0.974	-2.5	88	0.00	12.85
98		1,2,4-Trimethylbenzene	1.701	1.814	-6.6	90	0.00	12.93
99		Pentachloroethane	0.327	0.318	2.8	87	0.00	12.90
100		sec-Butylbenzene	1.999	2.040	-2.1	87	0.00	13.04
101		4-Isopropyltoluene	1.662	1.773	-6.7	88	0.00	13.17
102		1,3-Dichlorobenzene	1.036	1.047	-1.1	89	0.00	13.30
103		1,2,3-Trimethylbenzene	1.892	1.895	-0.2	87	0.00	13.38
104		1,4-Dichlorobenzene	1.143	1.097	4.0	88	0.00	13.39
105		n-Butylbenzene	0.867	0.913	-5.3	87	0.00	13.61
			Amount	Calc.	%Drift			
106		Benzyl Chloride	40.000	42.979	-7.4	88	0.00	13.63
			AvgRF	CCRF	%Dev			
107		1,2-Dichlorobenzene	0.995	1.002	-0.7	87	0.00	13.83
108		1,2-Dibromo-3-Chloropropa	0.229	0.240	-4.8	89	0.00	14.58
109		Hexachlorobutadiene	0.215	0.238	-10.7	97	0.00	15.15
110		1,2,4-Trichlorobenzene	0.533	0.583	-9.4	92	0.00	15.19
111		Naphthalene	2.031	2.252	-10.9	94	0.00	15.47
112		1,2,3-Trichlorobenzene	0.559	0.588	-5.2	94	0.00	15.63

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Continuing Calibration Summary

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2914-CC2910
Lab FileID: I756431.D

I756326.D VI-2023-05-02.m Thu May 04 10:39:40 2023

Continuing Calibration Summary

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2914-ECC2910
Lab FileID: I756457.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\Je...2023\VI2914\I756457.d Vial: 28
Acq On : 4 May 2023 8:48 pm Operator: jeniferw
Sample : ECC2910-5 Inst : MSVOA16
Misc : MS53930,VI2914,,,,, Multiplr: 1.00
MS Integration Params: tiny.p

Method : C:\msdchem\1\met...\VI-2023-05-02.m (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Tue May 02 13:32:44 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 50% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	89	0.00	7.85
2	Dichlorodifluoromethane	0.154	0.152	1.3	91	0.00	2.35
	---------- True	Calc.	% Drift	----------			
3 P	Chloromethane	40.000	38.986	2.5	85	0.00	2.65
	---------- AvgRF	CCRF	% Dev	----------			
4 C	Vinyl Chloride	0.225	0.217	3.6	91	0.00	2.76
	---------- True	Calc.	% Drift	----------			
5	1,3-Butadiene	40.000	45.516	-13.8	102	0.00	2.79
6	Bromomethane	40.000	37.821	5.4	78	0.00	3.23
7	Chloroethane	40.000	36.866	7.8	86	0.00	3.39
	---------- AvgRF	CCRF	% Dev	----------			
8	Trichlorofluoromethane	0.355	0.372	-4.8	95	0.00	3.57
9	Ethyl Ether	0.201	0.190	5.5	88	0.00	4.03
10	1,2-Dichlorotrifluoroetha	0.222	0.235	-5.9	95	0.00	4.24
11 C	1,1-Dichloroethene	0.292	0.308	-5.5	93	0.00	4.26
	---------- True	Calc.	% Drift	----------			
12	Ethanol	800.000	943.450	-17.9	101	0.00	4.24
	---------- AvgRF	CCRF	% Dev	----------			
13	Freon 113	0.179	0.197	-10.1	97	0.00	4.31
14	Carbon Disulfide	0.548	0.532	2.9	89	0.00	4.32
	---------- True	Calc.	% Drift	----------			
15	Iodomethane	40.000	39.449	1.4	82	0.00	4.45
	---------- AvgRF	CCRF	% Dev	----------			
16	Acrolein	0.073	0.068	6.8	83	0.00	4.68
	---------- True	Calc.	% Drift	----------			
17	Allyl chloride	40.000	39.104	2.2	87	0.00	4.85
18	Methylene Chloride	40.000	42.925	-7.3	94	0.00	4.98
19	Acetone	200.000	212.544	-6.3	94	0.00	5.04
	---------- AvgRF	CCRF	% Dev	----------			
20	Methyl acetate	0.323	0.275	14.9	74	0.00	5.18
21	trans-1,2-Dichloroethene	0.285	0.286	-0.4	90	0.00	5.18
22	Hexane	0.151	0.151	0.0	89	0.00	5.27

Continuing Calibration Summary

Job Number: FC5575 **Sample:** VI2914-ECC2910
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** I756457.D
Project: CCF West NAM; KSC, FL

23		Methyl Tert Butyl Ether	0.592	0.614	-3.7	92	0.00	5.31
24		Tert butyl alcohol	0.091	0.129	-41.8	126	0.00	5.41
25		Acetonitrile	0.056	0.057	-1.8	94	0.00	5.57
26		Di-isopropyl ether	0.689	0.703	-2.0	89	0.00	5.73
27		Chloroprene	0.282	0.304	-7.8	95	0.00	5.86
28	P	1,1-Dichloroethane	0.393	0.403	-2.5	92	0.00	5.88
29		Acrylonitrile	0.145	0.161	-11.0	91	0.00	5.93
30		ETBE	0.632	0.655	-3.6	91	0.00	6.14
		----------	True	Calc.	% Drift	----------		
31		Vinyl acetate	200.000	159.400	20.3	68	0.00	6.14
		----------	AvgRF	CCRF	% Dev	----------		
32		cis-1,2-Dichloroethene	0.200	0.209	-4.5	90	0.00	6.50
33		2,2-Dichloropropane	0.262	0.157	40.1	52	0.00	6.62
34		Bromochloromethane	0.100	0.107	-7.0	95	0.00	6.73
35		Cyclohexane	0.301	0.328	-9.0	93	0.00	6.75
36	C	Chloroform	0.383	0.397	-3.7	94	0.00	6.79
37		Ethyl acetate	0.421	0.339	19.5	72	0.00	6.89
		----------	True	Calc.	% Drift	----------		
38		Tetrahydrofuran	40.000	41.516	-3.8	91	0.00	6.99
		----------	AvgRF	CCRF	% Dev	----------		
39	S	Dibromofluoromethane	0.283	0.300	-6.0	93	0.00	6.99
40		Carbon Tetrachloride	0.275	0.306	-11.3	99	0.00	6.97
41		1,1,1-Trichloroethane	0.304	0.336	-10.5	97	0.00	7.04
42		2-Butanone	0.232	0.254	-9.5	91	0.00	7.10
43		1,1-Dichloropropene	0.245	0.270	-10.2	95	0.00	7.17
44		tert-Butyl Formate	0.199	0.000	100.0#	0#	-0.09	7.17
45		Propionitrile	0.074	0.077	-4.1	92	0.00	7.41
46		Methacrylonitrile	0.230	0.216	6.1	88	0.00	7.44
47		Benzene	0.776	0.779	-0.4	89	0.00	7.43
48		TAME	0.578	0.542	6.2	88	0.00	7.53
49	S	1,2-Dichloroethane-d4	0.309	0.318	-2.9	92	0.00	7.56
50		Isobutyl alcohol	0.021	0.021	0.0	88	0.00	7.60
51		1,2-Dichloroethane	0.306	0.310	-1.3	94	0.00	7.63
52		Tert Amyl Alcohol	0.078	0.080	-2.6	91	0.00	7.71
53		Trichloroethene	0.213	0.205	3.8	88	0.00	8.04
54		Methylcyclohexane	0.251	0.260	-3.6	91	0.00	8.05
55		Dibromomethane	0.141	0.146	-3.5	93	0.00	8.48
56	C	1,2-Dichloropropane	0.209	0.213	-1.9	92	0.00	8.57
57		Bromodichloromethane	0.287	0.298	-3.8	95	0.00	8.62
		----------	True	Calc.	% Drift	----------		
58		Methyl methacrylate	40.000	39.676	0.8	91	0.00	8.74
59		1,4-Dioxane	800.000	864.821	-8.1	95	0.00	8.82
		----------	AvgRF	CCRF	% Dev	----------		
60		2-Chloroethyl vinyl ether	0.152	0.000	100.0#	0#	0.10	9.26
61		cis-1,3-Dichloropropene	0.311	0.282	9.3	80	0.00	9.26
62	I	Chlorobenzene-d5	1.000	1.000	0.0	91	0.00	11.01
63	S	Toluene-d8	1.386	1.387	-0.1	91	0.00	9.44
64	C	Toluene	1.117	1.093	2.1	91	0.00	9.50
65		2-Nitropropane	0.153	0.157	-2.6	93	0.00	9.70
66		4-Methyl-2-pentanone	0.632	0.602	4.7	87	0.00	9.83
67		trans-1,3-Dichloropropene	0.394	0.379	3.8	83	0.00	9.90
68		Tetrachloroethene	0.288	0.276	4.2	89	0.00	9.91

Continuing Calibration Summary

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2914-ECC2910
Lab FileID: I756457.D

			True	Calc.	% Drift			
69		Ethyl methacrylate	40.000	39.631	0.9	91	0.00	10.01
			AvgRF	CCRF	% Dev			
70		1,1,2-Trichloroethane	0.245	0.242	1.2	92	0.00	10.06
71		Dibromochloromethane	0.316	0.323	-2.2	94	0.00	10.26
72		1,3-Dichloropropane	0.423	0.433	-2.4	92	0.00	10.34
73		1,2-Dibromoethane	0.292	0.310	-6.2	95	0.00	10.52
74		3,3-dimethyl-1-butanol	0.125	0.121	3.2	87	0.00	10.62
75		2-hexanone	0.492	0.480	2.4	85	0.00	10.66
76		1-Chlorohexane	0.304	0.317	-4.3	91	0.00	10.96
77	C	Ethylbenzene	1.241	1.211	2.4	89	0.00	11.03
78	P	Chlorobenzene	0.747	0.720	3.6	88	0.00	11.02
79		1,1,1,2-Tetrachloroethane	0.283	0.285	-0.7	92	0.00	11.07
80		m,p-Xylene	0.905	0.927	-2.4	90	0.00	11.16
81		o-Xylene	0.934	0.961	-2.9	91	0.00	11.60
82		Styrene	0.663	0.697	-5.1	88	0.00	11.66
83	P	Bromoform	0.233	0.242	-3.9	92	0.00	11.71
84		Isopropylbenzene	1.078	1.122	-4.1	91	0.00	11.91
85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	92	0.00	13.37
86	S	4-Bromofluorobenzene	0.778	0.780	-0.3	93	0.00	12.22
87		cis-1,4-Dichloro-2-butene	0.205	0.154	24.9	65	0.00	12.26
88		n-Propylbenzene	2.583	2.493	3.5	89	0.00	12.33
89		Bromobenzene	0.591	0.568	3.9	92	0.00	12.35
90	P	1,1,2,2-Tetrachloroethane	0.955	0.931	2.5	94	0.00	12.39
91		1,3,5-Trimethylbenzene	1.725	1.743	-1.0	91	0.00	12.52
92		2-Chlorotoluene	1.828	1.755	4.0	90	0.00	12.52
			True	Calc.	% Drift			
93		trans-1,4-Dichloro-2-Bute	40.000	28.776	28.1	69	0.00	12.57
			AvgRF	CCRF	% Dev			
94		1,2,3-Trichloropropane	0.276	0.279	-1.1	94	0.00	12.55
95		Cyclohexanone	0.070	0.067	4.3	91	0.00	12.61
96		4-Chlorotoluene	1.556	1.516	2.6	88	0.00	12.69
97		tert-Butylbenzene	0.950	0.954	-0.4	92	0.00	12.85
98		1,2,4-Trimethylbenzene	1.701	1.719	-1.1	90	0.00	12.93
99		Pentachloroethane	0.327	0.339	-3.7	99	0.00	12.90
100		sec-Butylbenzene	1.999	1.982	0.9	90	0.00	13.04
101		4-Isopropyltoluene	1.662	1.679	-1.0	89	0.00	13.18
102		1,3-Dichlorobenzene	1.036	1.002	3.3	91	0.00	13.30
103		1,2,3-Trimethylbenzene	1.892	1.819	3.9	89	0.00	13.38
104		1,4-Dichlorobenzene	1.143	1.054	7.8	90	0.00	13.39
105		n-Butylbenzene	0.867	0.807	6.9	82	0.00	13.61
			True	Calc.	% Drift			
106		Benzyl Chloride	40.000	20.195	49.5	44	0.00	13.63
			AvgRF	CCRF	% Dev			
107		1,2-Dichlorobenzene	0.995	0.966	2.9	89	0.00	13.83
108		1,2-Dibromo-3-Chloropropa	0.229	0.240	-4.8	95	0.00	14.58
109		Hexachlorobutadiene	0.215	0.207	3.7	90	0.00	15.15
110		1,2,4-Trichlorobenzene	0.533	0.539	-1.1	91	0.00	15.19
111		Naphthalene	2.031	2.113	-4.0	94	0.00	15.47
112		1,2,3-Trichlorobenzene	0.559	0.552	1.3	94	0.00	15.63

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Continuing Calibration Summary

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2914-ECC2910
Lab FileID: I756457.D

I756326.D VI-2023-05-02.m Fri May 05 01:44:22 2023

Run Sequence Report

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Run ID: V2O2924	**Method:** SW846 8260D	**Instrument ID:** GCMS2O

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
V2O2924-BFB	2O75425.D	04/11/23 09:39	n/a	BFB Tune
V2O2924-IC2924	2O75426.D	04/11/23 10:06	n/a	Initial cal 1
V2O2924-IC2924	2O75427.D	04/11/23 10:38	n/a	Initial cal 2
V2O2924-IC2924	2O75428.D	04/11/23 11:05	n/a	Initial cal 3
V2O2924-IC2924	2O75429.D	04/11/23 11:31	n/a	Initial cal 4
V2O2924-ICC2924	2O75430.D	04/11/23 11:56	n/a	Initial cal 5
V2O2924-IC2924	2O75431.D	04/11/23 12:22	n/a	Initial cal 6
V2O2924-IC2924	2O75432.D	04/11/23 12:48	n/a	Initial cal 7
V2O2924-ICV2924	2O75434.D	04/11/23 13:39	n/a	Initial cal verification 5
V2O2924-ICV2924	2O75435.D	04/11/23 14:04	n/a	Initial cal verification 4

Run Sequence Report

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Run ID: V2O2944	**Method:** SW846 8260D	**Instrument ID:** GCMS2O

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
V2O2944-BFB	2O75913.D	05/01/23 09:49	n/a	BFB Tune
V2O2944-CC2924	2O75914.D	05/01/23 10:16	n/a	Continuing cal 5
V2O2944-BS	2O75915.D	05/01/23 10:47	n/a	Blank Spike
V2O2944-MB	2O75917.D	05/01/23 11:43	n/a	Method Blank
FC5575-1	2O75918.D	05/01/23 12:09	n/a	CCF-TB-20230425-01
ZZZZZZ	2O75919.D	05/01/23 12:39	n/a	(unrelated sample)
FC5575-3	2O75920.D	05/01/23 13:05	n/a	CCF-IW0090-050.0-20230425
FC5575-4	2O75921.D	05/01/23 13:32	n/a	CCF-IW0037-025.0-20230425
FC5575-5	2O75922.D	05/01/23 13:58	n/a	CCF-IW0079-010.0-20230425
FC5575-6	2O75923.D	05/01/23 14:24	n/a	CCF-IW0061-040.0-20230425
FC5575-7	2O75924.D	05/01/23 14:58	n/a	CCF-IW0005ID-051.0-20230425
FC5575-8	2O75925.D	05/01/23 15:24	n/a	CCF-IW0085-040.0-20230425
FC5575-9	2O75926.D	05/01/23 15:50	n/a	CCF-IW0042-035.0-20230426
FC5575-10	2O75927.D	05/01/23 16:16	n/a	CCF-IW0067-045.0-20230426
FC5575-11	2O75928.D	05/01/23 16:42	n/a	CCF-IW0045-045.0-20230426
FC5575-12	2O75929.D	05/01/23 17:09	n/a	CCF-IW0070-050.0-20230426
FC5575-13	2O75930.D	05/01/23 17:35	n/a	CCF-IW0046-045.0-20230426
FC5575-14	2O75931.D	05/01/23 18:01	n/a	CCF-IW0091-060.0-20230426
ZZZZZZ	2O75932.D	05/01/23 18:28	n/a	(unrelated sample)
ZZZZZZ	2O75933.D	05/01/23 18:54	n/a	(unrelated sample)
ZZZZZZ	2O75934.D	05/01/23 19:20	n/a	(unrelated sample)
ZZZZZZ	2O75935.D	05/01/23 19:47	n/a	(unrelated sample)
FC5575-2	2O75936.D	05/01/23 20:13	n/a	CCF-IW0082-020.0-20230425
FC5575-3MS	2O75938.D	05/01/23 21:05	n/a	Matrix Spike
FC5575-3MSD	2O75939.D	05/01/23 21:31	n/a	Matrix Spike Duplicate
V2O2944-ECC2924	2O75940.D	05/01/23 21:58	n/a	Ending cal 5

Run Sequence Report

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Run ID: VI2910	**Method:** SW846 8260D	**Instrument ID:** GCMSI

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
VI2910-BFB	I756321.D	05/02/23 08:34	n/a	BFB Tune
VI2910-IC2910	I756322.D	05/02/23 09:04	n/a	Initial cal 1
VI2910-IC2910	I756323.D	05/02/23 09:29	n/a	Initial cal 2
VI2910-IC2910	I756325.D	05/02/23 10:18	n/a	Initial cal 4
VI2910-ICC2910	I756326.D	05/02/23 10:42	n/a	Initial cal 5
VI2910-IC2910	I756327.D	05/02/23 11:07	n/a	Initial cal 6
VI2910-IC2910	I756328.D	05/02/23 11:32	n/a	Initial cal 7
VI2910-IC2910	I756330.D	05/02/23 12:21	n/a	Initial cal 3
VI2910-ICV2910	I756331.D	05/02/23 13:02	n/a	Initial cal verification 5
VI2910-CC2910	I756331A.D	05/02/23 13:02	n/a	Continuing cal 5
VI2910-BS	I756332.D	05/02/23 13:26	n/a	Blank Spike
VI2910-MB	I756333.D	05/02/23 13:51	n/a	Method Blank
ZZZZZZ	I756334.D	05/02/23 14:19	n/a	(unrelated sample)
ZZZZZZ	I756335.D	05/02/23 14:44	n/a	(unrelated sample)
FC5532-2	I756336.D	05/02/23 15:09	n/a	(used for QC only; not part of job FC5575)
ZZZZZZ	I756337.D	05/02/23 15:34	n/a	(unrelated sample)
ZZZZZZ	I756338.D	05/02/23 15:59	n/a	(unrelated sample)
ZZZZZZ	I756339.D	05/02/23 16:25	n/a	(unrelated sample)
ZZZZZZ	I756340.D	05/02/23 16:50	n/a	(unrelated sample)
ZZZZZZ	I756341.D	05/02/23 17:15	n/a	(unrelated sample)
ZZZZZZ	I756342.D	05/02/23 17:40	n/a	(unrelated sample)
ZZZZZZ	I756343.D	05/02/23 18:05	n/a	(unrelated sample)
FC5532-2MS	I756344.D	05/02/23 18:30	n/a	Matrix Spike
FC5532-2MSD	I756345.D	05/02/23 18:55	n/a	Matrix Spike Duplicate
VI2910-ECC2910	I756346.D	05/02/23 19:20	n/a	Ending cal 5

Run Sequence Report

Job Number: FC5575
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Run ID: VI2914	**Method:** SW846 8260D	**Instrument ID:** GCMSI

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
VI2914-BFB	I756430.D	05/04/23 09:24	n/a	BFB Tune
VI2914-CC2910	I756431.D	05/04/23 09:54	n/a	Continuing cal 5
VI2914-BS	I756432.D	05/04/23 10:25	n/a	Blank Spike
VI2914-MB	I756434.D	05/04/23 11:14	n/a	Method Blank
ZZZZZZ	I756435.D	05/04/23 11:39	n/a	(unrelated sample)
ZZZZZZ	I756436.D	05/04/23 12:03	n/a	(unrelated sample)
FC5575-2	I756437.D	05/04/23 12:28	n/a	CCF-IW0082-020.0-20230425
FC5683-28	I756438.D	05/04/23 12:52	n/a	(used for QC only; not part of job FC5575)
ZZZZZZ	I756439.D	05/04/23 13:17	n/a	(unrelated sample)
ZZZZZZ	I756440.D	05/04/23 13:42	n/a	(unrelated sample)
ZZZZZZ	I756441.D	05/04/23 14:07	n/a	(unrelated sample)
ZZZZZZ	I756442.D	05/04/23 14:32	n/a	(unrelated sample)
ZZZZZZ	I756443.D	05/04/23 14:57	n/a	(unrelated sample)
ZZZZZZ	I756444.D	05/04/23 15:22	n/a	(unrelated sample)
ZZZZZZ	I756445.D	05/04/23 15:47	n/a	(unrelated sample)
ZZZZZZ	I756446.D	05/04/23 16:12	n/a	(unrelated sample)
ZZZZZZ	I756447.D	05/04/23 16:37	n/a	(unrelated sample)
ZZZZZZ	I756448.D	05/04/23 17:02	n/a	(unrelated sample)
ZZZZZZ	I756449.D	05/04/23 17:27	n/a	(unrelated sample)
ZZZZZZ	I756450.D	05/04/23 17:52	n/a	(unrelated sample)
ZZZZZZ	I756451.D	05/04/23 18:17	n/a	(unrelated sample)
ZZZZZZ	I756452.D	05/04/23 18:42	n/a	(unrelated sample)
ZZZZZZ	I756453.D	05/04/23 19:07	n/a	(unrelated sample)
ZZZZZZ	I756454.D	05/04/23 19:32	n/a	(unrelated sample)
FC5683-28MS	I756455.D	05/04/23 19:57	n/a	Matrix Spike
FC5683-28MSD	I756456.D	05/04/23 20:23	n/a	Matrix Spike Duplicate
VI2914-ECC2910	I756457.D	05/04/23 20:48	n/a	Ending cal 5

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Hydrogeologic, Inc.

CCF West NAM; KSC, FL

NS1003.04.06

SGS Job Number: FC5659

Sampling Dates: 04/27/23 - 04/28/23

Report to:

Hydrogeologic, Inc.

jtracy@hgl.com

ATTN: John Tracy

Total number of pages in report: **612**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Norm Farmer
Technical Director

Client Service contact: Ariel Hartney 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001) DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), AL, AK, AR, CT, IA, KY, MA, MI. MS, ND, NH, NV, OK, OR, IL, UT, VT, WA, WI, WV

May 15, 2023

Ms. Denise Rivers
HydroGeoLogic, Inc.
2405 N. Courtenay Parkway, Suite 203
Merritt Island, FL 32953

RE: SGS North America Inc. - Orlando job FC5659 Reissue

Dear Ms. Rivers,

The final report for job number FC5659 has been edited to reflect the following change(s):

Analytes C12DCE, T12DCE, TCE added for FC5659-4.

SGS North America, Inc. sincerely apologizes for any inconvenience this oversight may have presented. Please let us know if we can be of further assistance.

Sincerely,

SGS North America, Inc. - Orlando

Table of Contents

SGS North America Inc.

Sample Summary

Hydrogeologic, Inc.

Job No: FC5659

CCF West NAM; KSC, FL
Project No: NS1003.04.06

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FC5659-1	04/27/23	07:00	PDWH	04/28/23	AQ	Trip Blank Water	CCF-TB-20230427-01
FC5659-2	04/27/23	07:55	PDWH	04/28/23	AQ	Ground Water	CCF-IW0004IS-032.0-20230427
FC5659-3	04/27/23	08:34	PDWH	04/28/23	AQ	Ground Water	CCF-IW0087-040.0-20230427
FC5659-4	04/27/23	09:17	PDWH	04/28/23	AQ	Ground Water	CCF-IW0081-020.0-20230427
FC5659-5	04/27/23	09:59	PDWH	04/28/23	AQ	Ground Water	CCF-IW0059-040.0-20230427
FC5659-6	04/27/23	10:46	PDWH	04/28/23	AQ	Ground Water	CCF-IW0084-030.0-20230427
FC5659-7	04/27/23	11:25	PDWH	04/28/23	AQ	Ground Water	CCF-IW0089-050.0-20230427
FC5659-8	04/27/23	12:14	PDWH	04/28/23	AQ	Ground Water	CCF-IW0063-045.0-20230427
FC5659-9	04/27/23	13:00	PDWH	04/28/23	AQ	Ground Water	CCF-IW0080IS-020.0-20230427
FC5659-10	04/27/23	13:39	PDWH	04/28/23	AQ	Ground Water	CCF-IW0080S-010.0-20230427
FC5659-11	04/27/23	14:23	PDWH	04/28/23	AQ	Ground Water	CCF-IW0064-045.0-20230427
FC5659-12	04/28/23	07:44	PDWH	04/28/23	AQ	Ground Water	CCF-IW0011IS-030.0-20230428
FC5659-13	04/28/23	10:51	PDWH	04/28/23	AQ	Ground Water	CCF-IW0011ID-052.0-20230428

Sample Summary
(continued)

Hydrogeologic, Inc.

Job No: FC5659

CCF West NAM; KSC, FL
Project No: NS1003.04.06

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FC5659-14	04/28/23	11:29	PDWH	04/28/23	AQ	Ground Water	CCF-IW0086-040.0-20230428
FC5659-15	04/28/23	12:06	PDWH	04/28/23	AQ	Ground Water	CCF-IW0062-020.0-20230428
FC5659-16	04/28/23	12:47	PDWH	04/28/23	AQ	Ground Water	CCF-IW0088-040.0-20230428
FC5659-17	04/28/23	13:34	PDWH	04/28/23	AQ	Ground Water	CCF-IW0003S-008.0-20230428

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Hydrogeologic, Inc. **Job No:** FC5659

Site: CCF West NAM; KSC, FL **Report Date:** 5/8/2023 11:28:58 AM

On 04/28/2023, 16 Sample(s), 1 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 2.8 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC5659 was assigned to the project.

Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section. Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Volatiles By Method SW846 8260D

Matrix: AQ **Batch ID:** V2O2949

Sample(s) FC5679-12MS, FC5679-12MSD were used as the QC samples indicated.

Matrix: AQ **Batch ID:** V2O2955

Sample(s) FC5532-9MS, FC5532-9MSD were used as the QC samples indicated.

Matrix Spike Duplicate Recovery(s) for Vinyl Chloride are outside control limits. Probable cause is due to matrix interference.

RPD(s) for MSD for Vinyl Chloride are outside control limits for sample FC5532-9MSD. Probable cause is due to sample non-homogeneity.

Matrix: AQ **Batch ID:** V5E1766

Sample(s) FC5617-5MS, FC5617-5MSD were used as the QC samples indicated.

Matrix Spike Recovery(s) for Vinyl Chloride are outside control limits. Probable cause is due to matrix interference.

Matrix Spike Duplicate Recovery(s) for Vinyl Chloride are outside control limits. Probable cause is due to matrix interference.

Sample(s) FC5659-14, FC5659-15, FC5659-16 have surrogates outside control limits.

V5E1766-BS for 1,2-Dichloroethane-D4: Outside DOD QSM control limits.

V5E1766-MB for 1,2-Dichloroethane-D4: Outside DOD QSM control limits.

V5E1766-MB: Sample was treated with an anti-foaming agent.

FC5659-4: Sample was treated with an anti-foaming agent.

FC5659-14 for 1,2-Dichloroethane-D4: Outside DOD QSM control limits, sample is ND.

FC5659-14: Sample was treated with an anti-foaming agent.

FC5659-15 for Toluene-D8: Outside DOD QSM control limits.

FC5659-16 for 1,2-Dichloroethane-D4: Outside DOD QSM control limits.

FC5659-16: No sample available for re-analysis.

Matrix: AQ **Batch ID:** VI2913

Sample(s) FC5678-7MS, FC5678-7MSD were used as the QC samples indicated.

Matrix Spike Recovery(s) for cis-1,2-Dichloroethylene are outside control limits. Probable cause is due to matrix interference.

Matrix Spike Duplicate Recovery(s) for cis-1,2-Dichloroethylene are outside control limits. Probable cause is due to matrix interference.

VI2913-MB: Sample was treated with an anti-foaming agent.

FC5659-16: Sample was treated with an anti-foaming agent.

SGS North America Inc. - Orlando certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted. Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria. SGS North America Inc.- Orlando is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety.

Narrative prepared by:

_____

Kim Benham, Client Services *(Signature on File)*

Summary of Hits

Job Number: FC5659
Account: Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL
Collected: 04/27/23 thru 04/28/23

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FC5659-1	**CCF-TB-20230427-01**					
No hits reported in this sample.						
FC5659-2	**CCF-IW0004IS-032.0-20230427**					
No hits reported in this sample.						
FC5659-3	**CCF-IW0087-040.0-20230427**					
No hits reported in this sample.						
FC5659-4	**CCF-IW0081-020.0-20230427**					
No hits reported in this sample.						
FC5659-5	**CCF-IW0059-040.0-20230427**					
Vinyl Chloride		1.7	1.0	0.50	ug/l	SW846 8260D
FC5659-6	**CCF-IW0084-030.0-20230427**					
No hits reported in this sample.						
FC5659-7	**CCF-IW0089-050.0-20230427**					
No hits reported in this sample.						
FC5659-8	**CCF-IW0063-045.0-20230427**					
cis-1,2-Dichloroethylene		3.9	1.0	0.50	ug/l	SW846 8260D
trans-1,2-Dichloroethylene		2.6	1.0	0.50	ug/l	SW846 8260D
Vinyl Chloride		1.7	1.0	0.50	ug/l	SW846 8260D
FC5659-9	**CCF-IW0080IS-020.0-20230427**					
cis-1,2-Dichloroethylene		4.9	1.0	0.50	ug/l	SW846 8260D
trans-1,2-Dichloroethylene		0.59 J	1.0	0.50	ug/l	SW846 8260D
Vinyl Chloride		0.64 J	1.0	0.50	ug/l	SW846 8260D
FC5659-10	**CCF-IW0080S-010.0-20230427**					
No hits reported in this sample.						

Summary of Hits

Job Number: FC5659
Account: Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL
Collected: 04/27/23 thru 04/28/23

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FC5659-11	**CCF-IW0064-045.0-20230427**					
cis-1,2-Dichloroethylene		27.9	1.0	0.50	ug/l	SW846 8260D
trans-1,2-Dichloroethylene		11.1	1.0	0.50	ug/l	SW846 8260D
Trichloroethylene		2.9	1.0	0.50	ug/l	SW846 8260D
Vinyl Chloride		22.7	1.0	0.50	ug/l	SW846 8260D
FC5659-12	**CCF-IW0011IS-030.0-20230428**					
cis-1,2-Dichloroethylene		0.99 J	1.0	0.50	ug/l	SW846 8260D
FC5659-13	**CCF-IW0011ID-052.0-20230428**					
No hits reported in this sample.						
FC5659-14	**CCF-IW0086-040.0-20230428**					
No hits reported in this sample.						
FC5659-15	**CCF-IW0062-020.0-20230428**					
cis-1,2-Dichloroethylene		93.8	1.0	0.50	ug/l	SW846 8260D
trans-1,2-Dichloroethylene		3.0	1.0	0.50	ug/l	SW846 8260D
Trichloroethylene		16.8	1.0	0.50	ug/l	SW846 8260D
FC5659-16	**CCF-IW0088-040.0-20230428**					
cis-1,2-Dichloroethylene [a]		1.6	1.0	0.50	ug/l	SW846 8260D
Trichloroethylene [a]		10.2	1.0	0.50	ug/l	SW846 8260D
FC5659-17	**CCF-IW0003S-008.0-20230428**					
cis-1,2-Dichloroethylene		109	10	5.0	ug/l	SW846 8260D
Trichloroethylene		493	10	5.0	ug/l	SW846 8260D

(a) Sample was treated with an anti-foaming agent.

Sample Results

Report of Analysis

SGS North America Inc.

Report of Analysis

Client Sample ID: CCF-TB-20230427-01
Lab Sample ID: FC5659-1
Matrix: AQ - Trip Blank Water
Method: SW846 8260D
Project: CCF West NAM; KSC, FL

Date Sampled: 04/27/23
Date Received: 04/28/23
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2O76002.D	1	05/03/23 13:16	DB	n/a	n/a	V2O2949
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	0.50 U	1.0	0.50	0.41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	93%		83-118%
17060-07-0	1,2-Dichloroethane-D4	103%		79-125%
2037-26-5	Toluene-D8	95%		85-112%
460-00-4	4-Bromofluorobenzene	98%		83-118%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CCF-IW0004IS-032.0-20230427		
Lab Sample ID:	FC5659-2	**Date Sampled:**	04/27/23
Matrix:	AQ - Ground Water	**Date Received:**	04/28/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CCF West NAM; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2O76005.D	1	05/03/23 14:34	DB	n/a	n/a	V2O2949
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	0.50 U	1.0	0.50	0.41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		83-118%
17060-07-0	1,2-Dichloroethane-D4	105%		79-125%
2037-26-5	Toluene-D8	96%		85-112%
460-00-4	4-Bromofluorobenzene	98%		83-118%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CCF-IW0087-040.0-20230427		
Lab Sample ID:	FC5659-3	**Date Sampled:**	04/27/23
Matrix:	AQ - Ground Water	**Date Received:**	04/28/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CCF West NAM; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2O76006.D	1	05/03/23 15:00	DB	n/a	n/a	V2O2949
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	0.50 U	1.0	0.50	0.41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		83-118%
17060-07-0	1,2-Dichloroethane-D4	106%		79-125%
2037-26-5	Toluene-D8	95%		85-112%
460-00-4	4-Bromofluorobenzene	98%		83-118%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CCF-IW0081-020.0-20230427		
Lab Sample ID:	FC5659-4	**Date Sampled:**	04/27/23
Matrix:	AQ - Ground Water	**Date Received:**	04/28/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CCF West NAM; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	5E39466.D	1	05/04/23 15:36	JL	n/a	n/a	V5E1766
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	0.50 U	1.0	0.50	0.41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		83-118%
17060-07-0	1,2-Dichloroethane-D4	116%		79-125%
2037-26-5	Toluene-D8	105%		85-112%
460-00-4	4-Bromofluorobenzene	98%		83-118%

(a) Sample was treated with an anti-foaming agent.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: CCF-IW0059-040.0-20230427
Lab Sample ID: FC5659-5
Matrix: AQ - Ground Water
Method: SW846 8260D
Project: CCF West NAM; KSC, FL

Date Sampled: 04/27/23
Date Received: 04/28/23
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2O76008.D	1	05/03/23 16:38	DB	n/a	n/a	V2O2949
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	1.7	1.0	0.50	0.41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		83-118%
17060-07-0	1,2-Dichloroethane-D4	105%		79-125%
2037-26-5	Toluene-D8	96%		85-112%
460-00-4	4-Bromofluorobenzene	97%		83-118%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CCF-IW0084-030.0-20230427		
Lab Sample ID:	FC5659-6	**Date Sampled:**	04/27/23
Matrix:	AQ - Ground Water	**Date Received:**	04/28/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CCF West NAM; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	I756415.D	1	05/04/23 02:23	JW	n/a	n/a	VI2913
Run #2	5E39467.D	1	05/04/23 16:01	JL	n/a	n/a	V5E1766

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	0.50 U [a]	1.0	0.50	0.41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%	100%	83-118%
17060-07-0	1,2-Dichloroethane-D4	99%	116%	79-125%
2037-26-5	Toluene-D8	98%	103%	85-112%
460-00-4	4-Bromofluorobenzene	101%	98%	83-118%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CCF-IW0089-050.0-20230427		
Lab Sample ID:	FC5659-7	**Date Sampled:**	04/27/23
Matrix:	AQ - Ground Water	**Date Received:**	04/28/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CCF West NAM; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	I756416.D	1	05/04/23 02:48	JW	n/a	n/a	VI2913
Run #2	5E39468.D	1	05/04/23 16:25	JL	n/a	n/a	V5E1766

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	0.50 U [a]	1.0	0.50	0.41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%	99%	83-118%
17060-07-0	1,2-Dichloroethane-D4	103%	118%	79-125%
2037-26-5	Toluene-D8	98%	104%	85-112%
460-00-4	4-Bromofluorobenzene	101%	101%	83-118%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CCF-IW0063-045.0-20230427		
Lab Sample ID:	FC5659-8	**Date Sampled:**	04/27/23
Matrix:	AQ - Ground Water	**Date Received:**	04/28/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CCF West NAM; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	I756417.D	1	05/04/23 03:13	JW	n/a	n/a	VI2913
Run #2	5E39469.D	1	05/04/23 16:50	JL	n/a	n/a	V5E1766

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	3.9	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	2.6	1.0	0.50	0.22	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	1.7 [a]	1.0	0.50	0.41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%	101%	83-118%
17060-07-0	1,2-Dichloroethane-D4	105%	119%	79-125%
2037-26-5	Toluene-D8	98%	102%	85-112%
460-00-4	4-Bromofluorobenzene	99%	97%	83-118%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CCF-IW0080IS-020.0-20230427		
Lab Sample ID:	FC5659-9	**Date Sampled:**	04/27/23
Matrix:	AQ - Ground Water	**Date Received:**	04/28/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CCF West NAM; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	I756418.D	1	05/04/23 03:37	JW	n/a	n/a	VI2913
Run #2	5E39470.D	1	05/04/23 17:15	JL	n/a	n/a	V5E1766

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	4.9	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.59	1.0	0.50	0.22	ug/l	J
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	0.64 [a]	1.0	0.50	0.41	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%	101%	83-118%
17060-07-0	1,2-Dichloroethane-D4	100%	118%	79-125%
2037-26-5	Toluene-D8	100%	104%	85-112%
460-00-4	4-Bromofluorobenzene	102%	98%	83-118%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CCF-IW0080S-010.0-20230427		
Lab Sample ID:	FC5659-10	**Date Sampled:**	04/27/23
Matrix:	AQ - Ground Water	**Date Received:**	04/28/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CCF West NAM; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	I756419.D	1	05/04/23 04:02	JW	n/a	n/a	VI2913
Run #2	5E39471.D	1	05/04/23 17:39	JL	n/a	n/a	V5E1766

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	0.50 U [a]	1.0	0.50	0.41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%	101%	83-118%
17060-07-0	1,2-Dichloroethane-D4	100%	121%	79-125%
2037-26-5	Toluene-D8	99%	104%	85-112%
460-00-4	4-Bromofluorobenzene	103%	98%	83-118%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CCF-IW0064-045.0-20230427		
Lab Sample ID:	FC5659-11	**Date Sampled:**	04/27/23
Matrix:	AQ - Ground Water	**Date Received:**	04/28/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CCF West NAM; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	I756420.D	1	05/04/23 04:27	JW	n/a	n/a	VI2913
Run #2	5E39472.D	1	05/04/23 18:04	JL	n/a	n/a	V5E1766

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	27.9	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	11.1	1.0	0.50	0.22	ug/l	
79-01-6	Trichloroethylene	2.9	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	22.7 [a]	1.0	0.50	0.41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%	102%	83-118%
17060-07-0	1,2-Dichloroethane-D4	99%	120%	79-125%
2037-26-5	Toluene-D8	100%	104%	85-112%
460-00-4	4-Bromofluorobenzene	102%	98%	83-118%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CCF-IW0011IS-030.0-20230428		
Lab Sample ID:	FC5659-12	**Date Sampled:**	04/28/23
Matrix:	AQ - Ground Water	**Date Received:**	04/28/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CCF West NAM; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	I756421.D	1	05/04/23 04:51	JW	n/a	n/a	VI2913
Run #2	5E39473.D	1	05/04/23 18:29	JL	n/a	n/a	V5E1766

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	0.99	1.0	0.50	0.28	ug/l	J
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	0.50 U [a]	1.0	0.50	0.41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%	102%	83-118%
17060-07-0	1,2-Dichloroethane-D4	100%	120%	79-125%
2037-26-5	Toluene-D8	100%	102%	85-112%
460-00-4	4-Bromofluorobenzene	101%	97%	83-118%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CCF-IW0011ID-052.0-20230428		
Lab Sample ID:	FC5659-13	**Date Sampled:**	04/28/23
Matrix:	AQ - Ground Water	**Date Received:**	04/28/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CCF West NAM; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	I756422.D	1	05/04/23 05:16	JW	n/a	n/a	VI2913
Run #2	5E39474.D	1	05/04/23 18:54	JL	n/a	n/a	V5E1766

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	0.50 U [a]	1.0	0.50	0.41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%	103%	83-118%
17060-07-0	1,2-Dichloroethane-D4	100%	123%	79-125%
2037-26-5	Toluene-D8	99%	103%	85-112%
460-00-4	4-Bromofluorobenzene	104%	98%	83-118%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CCF-IW0086-040.0-20230428		
Lab Sample ID:	FC5659-14	**Date Sampled:**	04/28/23
Matrix:	AQ - Ground Water	**Date Received:**	04/28/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CCF West NAM; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	I756423.D	1	05/04/23 05:41	JW	n/a	n/a	VI2913
Run #2 [a]	5E39475.D	1	05/04/23 19:19	JL	n/a	n/a	V5E1766

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	0.50 U [b]	1.0	0.50	0.41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%	112%	83-118%
17060-07-0	1,2-Dichloroethane-D4	104%	134% [c]	79-125%
2037-26-5	Toluene-D8	99%	97%	85-112%
460-00-4	4-Bromofluorobenzene	101%	100%	83-118%

(a) Sample was treated with an anti-foaming agent.
(b) Result is from Run# 2
(c) Outside DOD QSM control limits, sample is ND.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CCF-IW0062-020.0-20230428		
Lab Sample ID:	FC5659-15	**Date Sampled:**	04/28/23
Matrix:	AQ - Ground Water	**Date Received:**	04/28/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CCF West NAM; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	I756424.D	1	05/04/23 06:05	JW	n/a	n/a	VI2913
Run #2	5E39476.D	1	05/04/23 19:44	JL	n/a	n/a	V5E1766

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	93.8	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	3.0	1.0	0.50	0.22	ug/l	
79-01-6	Trichloroethylene	16.8	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	0.50 U [a]	1.0	0.50	0.41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%	90%	83-118%
17060-07-0	1,2-Dichloroethane-D4	99%	122%	79-125%
2037-26-5	Toluene-D8	100%	136% [b]	85-112%
460-00-4	4-Bromofluorobenzene	101%	97%	83-118%

(a) Result is from Run# 2
(b) Outside DOD QSM control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CCF-IW0088-040.0-20230428		
Lab Sample ID:	FC5659-16	**Date Sampled:**	04/28/23
Matrix:	AQ - Ground Water	**Date Received:**	04/28/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CCF West NAM; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	I756425.D	1	05/04/23 06:30	JW	n/a	n/a	VI2913
Run #2 [b]	5E39477.D	1	05/04/23 20:09	JL	n/a	n/a	V5E1766

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	1.6	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
79-01-6	Trichloroethylene	10.2	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	0.50 U [c]	1.0	0.50	0.41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%	102%	83-118%
17060-07-0	1,2-Dichloroethane-D4	99%	136% [d]	79-125%
2037-26-5	Toluene-D8	100%	77% [d]	85-112%
460-00-4	4-Bromofluorobenzene	103%	99%	83-118%

(a) Sample was treated with an anti-foaming agent.
(b) No sample available for re-analysis.
(c) Result is from Run# 2
(d) Outside DOD QSM control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CCF-IW0003S-008.0-20230428		
Lab Sample ID:	FC5659-17	**Date Sampled:**	04/28/23
Matrix:	AQ - Ground Water	**Date Received:**	04/28/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CCF West NAM; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	I756426.D	10	05/04/23 06:55	JW	n/a	n/a	VI2913
Run #2	2O76116.D	10	05/05/23 18:47	DB	n/a	n/a	V2O2955

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	109	10	5.0	2.8	ug/l	
156-60-5	trans-1,2-Dichloroethylene	5.0 U	10	5.0	2.2	ug/l	
79-01-6	Trichloroethylene	493	10	5.0	3.5	ug/l	
75-01-4	Vinyl Chloride	5.0 U [a]	10	5.0	4.1	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%	95%	83-118%
17060-07-0	1,2-Dichloroethane-D4	98%	107%	79-125%
2037-26-5	Toluene-D8	100%	101%	85-112%
460-00-4	4-Bromofluorobenzene	103%	96%	83-118%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- QC Evaluation: DOD QSM5.x Limits

FC5659

SGS

SGS North America Inc - Orlando
Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # :

PAGE 1 OF 2

Client / Reporting Information

Company Name: Hydrogeologic INC.
Address: 2405 N Courtenay PKWY Suite 203
City: Merritt Island State: Florida Zip: 32953
Project Contact: Denise Rivers Email: driversdhgl.com
Phone #: 910-233-8460
Sampler(s) Name(s) (Printed) William Puttenhaver
Sampler 1: Sampler 2:

Project Information

Project Name: CCF West
Street
City NASA/KSC State Florida
Project # NS1003.04.06
Fax #
Client Purchase Order #

SGS - ORLANDO Quote # SKIFF #

Analytical Information

V8260 STD) TCE, cDCE, tDCE, VC only

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid

LAB USE ONLY

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	CONTAINER INFORMATION: OTHER	NONE	HCl	NaOH	HNO_3	H_2SO_4	NaOH+ZnAc	DI WATER	MEOH	V8260 STD) TCE, cDCE, tDCE, VC only
1	CCF-TB-20230427-01	04/27	07:00	PO	WW	2			X							X
2	CCF-IW0004IS-032.0-20230427	04/27	07:55	PO	GW	3			X							X
3	CCF-IW0087-040.0-20230427	04/27	08:34	PO	GW	3			X							X
4	CCF-IW0081-020.0-20230427	04/27	09:17	PO	GW	3			X							X
5	CCF-IW0059-040.0-20230427	04/27	09:59	PO	GW	3			X							X
6	CCF-IW0084-030.0-20230427	04/27	10:46	PO	GW	3			X							X
7	CCF-IW0089-050.0-20230427	04/27	11:25	PO	GW	3			X							X
8	CCF-IW0063-045.0-20230427	04/27	12:14	PO	GW	3			X							X
9	CCF-IW0080IS-020.0-20230427	04/27	13:00	PO	GW	3			X							X
10	CCF-IW0080S-010.0-20230427	04/27	13:39	PO	GW	3			X							X
11	CCF-IW0064-045.0-20230427	04/27	14:23	PO	GW	3			X							X
12	CCF-IW0041IS-030.0-20230428	04/28	07:44	PO	GW	3			X							X

INITIAL ASSESSMENT SP

LABEL VERIFICATION

Turnaround Time (Business days)

10 Day (Business)
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other

Approved By: / Date:

Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [ ] EDD'S

Comments / Remarks

(V8260 STD) TCE, cDCE, tDCE, VC only

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished By/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1	HGL	04/28/2023 15:10	2	3 4/28/2023	17:51	4 04/28/23 1751
5			6	7		8

Lab Use Only: Cooler Temperature (s) Celsius (corrected):

ORLD-SMT-0001-03-FORM-COC (4).xls Rev 031318

http://www.sgs.com/en/terms-and-conditions

2.8 FRM1

FC5659: Chain of Custody
Page 1 of 3

FC5659

SGS North America Inc - Orlando
Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # :

PAGE 2 OF 2

Client / Reporting Information

Company Name: Hydrogeologic INC.
Address: 2405 N Courtenay Pkwy Suite 203
City: Merritt Island State: Florida Zip: 32953
Project Contact: Denise Rivers Email: drivers@hgl.com
Phone #: 910-233-8460
Sampler(s) Name(s) (Printed) William Duttenhaver
Sampler 1: Sampler 2:

Project Information

Project Name: CCF West
Street
City NASA/KSC State Florida
Project # NS1003.04.06
Fax #
Client Purchase Order #

SGS - ORLANDO Quote # SKIFF #

Analytical Information

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	CONTAINER INFORMATION OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	V8260 STD + TCE, cDcE, tDcE, VC only	LAB USE ONLY
13	CCF-IW0011ID-052.0-20230428	04/28	10:51	P.O	GW	3			X							X	
14	CCF-IW0086-040.0-20230428	04/28	11:29	P.O	GW	3			X							X	
15	CCF-IW0062-020.0-20230428	04/28	12:06	P.O	GW	3			X							X	
16	CCF-IW0088-040.0-20230428	04/28	12:47	P.O	GW	3			X							X	
17	CCF-IW0035-008.0-20230428	04/28	13:34	P.O	GW	3			X							X	

Matrix Codes
DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid

Turnaround Time (Business days)

10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
Rush T/A Data Available VIA Email or Labtrack

Data Deliverable Information

- ☐ COMMERCIAL "A" (RESULTS ONLY)
- ☐ COMMERCIAL "B" (RESULTS PLUS QC)
- ☐ REDT1 (EPA LEVEL 3)
- ☐ FULLT1 (EPA LEVEL 4)
- ☐ EDD'S

Comments / Remarks

(V8260 STD) TCE, cDcE, tDcE, VC only.
Last sample ID was IW zero, zero, zero, three, the letter "S"

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1	HGL	04/28/2023 15:10	2 4/28/2023 15:10	3 4/28/23	17:55	4 04/28/23
5	Relinquished by/Affiliation	Date Time:	Received By/Affiliation 6	Relinquished By/Affiliation 7	Date Time:	Received By/Affiliation 8

Lab Use Only : Cooler Temperature (s) Celsius (corrected):

ORLD-SMT-0001-03-FORM-COC (4).xls Rev 031318

http://www.sgs.com/en/terms-and-conditions

FC5659: Chain of Custody
Page 2 of 3

SGS Sample Receipt Summary

Job Number: FC5659 **Client:** HGL **Project:** CCF WEST

Date / Time Received: 4/28/2023 5:51:00 PM **Delivery Method:** COURIER **Airbill #'s:** N/A

Therm ID: IR 1; **Therm CF:** -0.1; **# of Coolers:** 1

Cooler Temps (Raw Measured) °C: Cooler 1: (2.9);

Cooler Temps (Corrected) °C: Cooler 1: (2.8);

Cooler Information	Y	or	N
1. Custody Seals Present	☑		☐
2. Custody Seals Intact	☑		☐
3. Temp criteria achieved	☑		☐
4. Cooler temp verification	IR Gun		
5. Cooler media	Ice (Bag)		

Trip Blank Information	Y	or	N	N/A
1. Trip Blank present / cooler	☑		☐	☐
2. Trip Blank listed on COC	☑		☐	☐

	W	or	S	N/A
3. Type Of TB Received	☑		☐	☐

Sample Information	Y	or	N	N/A
1. Sample labels present on bottles	☑		☐	
2. Samples preserved properly	☑		☐	
3. Sufficient volume/containers recvd for analysis:	☑		☐	
4. Condition of sample	Intact			
5. Sample recvd within HT	☑		☐	
6. Dates/Times/IDs on COC match Sample Label	☑		☐	
7. VOCs have headspace	☐		☑	☐
8. Bottles received for unspecified tests	☐		☑	
9. Compositing instructions clear	☐		☐	☑
10. Voa Soil Kits/Jars received past 48hrs?	☐		☐	☑
11. % Solids Jar received?	☐		☐	☑
12. Residual Chlorine Present?	☐		☐	☑

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____ Number of 5035 Field Kits: _____ Number of Lab Filtered Metals: _____

Test Strip Lot #s: pH 0-3 230320 pH 10-12 25BDH07 Other: (Specify) pH 1.0 - 12.0 222221

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: SHAYLAP Date: 4/28/2023 5:51:00 PM Reviewer: _____ Date: _____

FC5659: Chain of Custody
Page 3 of 3

QC Evaluation: DOD QSM5.x Limits

Job Number: FC5659
Account: Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL
Collected: 04/27/23 thru 04/28/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V2O2949	SW846 8260D						
V2O2949-BS	156-59-2	cis-1,2-Dichloroethylene	BSP	REC	102	%	78-123
V2O2949-BS	156-60-5	trans-1,2-Dichloroethylene	BSP	REC	98	%	75-124
V2O2949-BS	79-01-6	Trichloroethylene	BSP	REC	99	%	79-123
V2O2949-BS	75-01-4	Vinyl Chloride	BSP	REC	98	%	58-137
V2O2949-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	98	%	80-119
V2O2949-BS	17060-07-0	1,2-Dichloroethane-D4	BSP	SURR	103	%	81-118
V2O2949-BS	2037-26-5	Toluene-D8	BSP	SURR	95	%	89-112
V2O2949-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	99	%	85-114
FC5679-12MS*	156-59-2	cis-1,2-Dichloroethylene	MS	REC	115	%	78-123
FC5679-12MS*	156-60-5	trans-1,2-Dichloroethylene	MS	REC	109	%	75-124
FC5679-12MS*	79-01-6	Trichloroethylene	MS	REC	106	%	79-123
FC5679-12MS*	75-01-4	Vinyl Chloride	MS	REC	114	%	58-137
FC5679-12MS*	1868-53-7	Dibromofluoromethane	MS	SURR	99	%	80-119
FC5679-12MS*	17060-07-0	1,2-Dichloroethane-D4	MS	SURR	110	%	81-118
FC5679-12MS*	2037-26-5	Toluene-D8	MS	SURR	93	%	89-112
FC5679-12MS*	460-00-4	4-Bromofluorobenzene	MS	SURR	98	%	85-114
FC5679-12MSD*	156-59-2	cis-1,2-Dichloroethylene	MSD	REC	106	%	78-123
FC5679-12MSD*	156-59-2	cis-1,2-Dichloroethylene	MSD	RPD	7	%	20
FC5679-12MSD*	156-60-5	trans-1,2-Dichloroethylene	MSD	REC	107	%	75-124
FC5679-12MSD*	156-60-5	trans-1,2-Dichloroethylene	MSD	RPD	2	%	20
FC5679-12MSD*	79-01-6	Trichloroethylene	MSD	REC	106	%	79-123
FC5679-12MSD*	79-01-6	Trichloroethylene	MSD	RPD	0	%	20
FC5679-12MSD*	75-01-4	Vinyl Chloride	MSD	REC	122	%	58-137
FC5679-12MSD*	75-01-4	Vinyl Chloride	MSD	RPD	7	%	20
FC5679-12MSD*	1868-53-7	Dibromofluoromethane	MSD	SURR	98	%	80-119
FC5679-12MSD*	17060-07-0	1,2-Dichloroethane-D4	MSD	SURR	110	%	81-118
FC5679-12MSD*	2037-26-5	Toluene-D8	MSD	SURR	94	%	89-112
FC5679-12MSD*	460-00-4	4-Bromofluorobenzene	MSD	SURR	99	%	85-114
V2O2949-MB	1868-53-7	Dibromofluoromethane	MB	SURR	94	%	80-119
V2O2949-MB	17060-07-0	1,2-Dichloroethane-D4	MB	SURR	105	%	81-118
V2O2949-MB	2037-26-5	Toluene-D8	MB	SURR	96	%	89-112
V2O2949-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	98	%	85-114
FC5659-1	1868-53-7	Dibromofluoromethane	SAMP	SURR	93	%	80-119
FC5659-1	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	103	%	81-118
FC5659-1	2037-26-5	Toluene-D8	SAMP	SURR	95	%	89-112
FC5659-1	460-00-4	4-Bromofluorobenzene	SAMP	SURR	98	%	85-114
FC5659-2	1868-53-7	Dibromofluoromethane	SAMP	SURR	96	%	80-119
FC5659-2	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	105	%	81-118
FC5659-2	2037-26-5	Toluene-D8	SAMP	SURR	96	%	89-112
FC5659-2	460-00-4	4-Bromofluorobenzene	SAMP	SURR	98	%	85-114
FC5659-3	1868-53-7	Dibromofluoromethane	SAMP	SURR	96	%	80-119
FC5659-3	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	106	%	81-118

* Sample used for QC is not from job FC5659

QC Evaluation: DOD QSM5.x Limits

Job Number: FC5659
Account: Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL
Collected: 04/27/23 thru 04/28/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
FC5659-3	2037-26-5	Toluene-D8	SAMP	SURR	95	%	89-112
FC5659-3	460-00-4	4-Bromofluorobenzene	SAMP	SURR	98	%	85-114
FC5659-5	1868-53-7	Dibromofluoromethane	SAMP	SURR	96	%	80-119
FC5659-5	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	105	%	81-118
FC5659-5	2037-26-5	Toluene-D8	SAMP	SURR	96	%	89-112
FC5659-5	460-00-4	4-Bromofluorobenzene	SAMP	SURR	97	%	85-114
V2O2955	SW846 8260D						
V2O2955-BS	75-01-4	Vinyl Chloride	BSP	REC	102	%	58-137
V2O2955-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	96	%	80-119
V2O2955-BS	17060-07-0	1,2-Dichloroethane-D4	BSP	SURR	113	%	81-118
V2O2955-BS	2037-26-5	Toluene-D8	BSP	SURR	98	%	89-112
V2O2955-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	97	%	85-114
FC5532-9MS*	75-01-4	Vinyl Chloride	MS	REC	94	%	58-137
FC5532-9MS*	1868-53-7	Dibromofluoromethane	MS	SURR	96	%	80-119
FC5532-9MS*	17060-07-0	1,2-Dichloroethane-D4	MS	SURR	112	%	81-118
FC5532-9MS*	2037-26-5	Toluene-D8	MS	SURR	98	%	89-112
FC5532-9MS*	460-00-4	4-Bromofluorobenzene	MS	SURR	98	%	85-114
FC5532-9MSD*	75-01-4	Vinyl Chloride	MSD	REC	29	%	58-137
FC5532-9MSD*	75-01-4	Vinyl Chloride	MSD	RPD	106	%	20
FC5532-9MSD*	1868-53-7	Dibromofluoromethane	MSD	SURR	96	%	80-119
FC5532-9MSD*	17060-07-0	1,2-Dichloroethane-D4	MSD	SURR	109	%	81-118
FC5532-9MSD*	2037-26-5	Toluene-D8	MSD	SURR	99	%	89-112
FC5532-9MSD*	460-00-4	4-Bromofluorobenzene	MSD	SURR	98	%	85-114
V2O2955-MB	1868-53-7	Dibromofluoromethane	MB	SURR	92	%	80-119
V2O2955-MB	17060-07-0	1,2-Dichloroethane-D4	MB	SURR	104	%	81-118
V2O2955-MB	2037-26-5	Toluene-D8	MB	SURR	99	%	89-112
V2O2955-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	96	%	85-114
FC5659-17	1868-53-7	Dibromofluoromethane	SAMP	SURR	95	%	80-119
FC5659-17	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	107	%	81-118
FC5659-17	2037-26-5	Toluene-D8	SAMP	SURR	101	%	89-112
FC5659-17	460-00-4	4-Bromofluorobenzene	SAMP	SURR	96	%	85-114
V5E1766	SW846 8260D						
V5E1766-BS	156-59-2	cis-1,2-Dichloroethylene	BSP	REC	80	%	78-123
V5E1766-BS	156-60-5	trans-1,2-Dichloroethylene	BSP	REC	89	%	75-124
V5E1766-BS	79-01-6	Trichloroethylene	BSP	REC	92	%	79-123
V5E1766-BS	75-01-4	Vinyl Chloride	BSP	REC	101	%	58-137
V5E1766-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	101	%	80-119
V5E1766-BS	17060-07-0	1,2-Dichloroethane-D4	BSP	SURR	120 [a]	%	81-118
V5E1766-BS	2037-26-5	Toluene-D8	BSP	SURR	107	%	89-112
V5E1766-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	96	%	85-114
FC5617-5MS*	156-59-2	cis-1,2-Dichloroethylene	MS	REC	35	%	78-123

* Sample used for QC is not from job FC5659

QC Evaluation: DOD QSM5.x Limits

Job Number: FC5659
Account: Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL
Collected: 04/27/23 thru 04/28/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
FC5617-5MS*	156-60-5	trans-1,2-Dichloroethylene	MS	REC	33	%	75-124
FC5617-5MS*	79-01-6	Trichloroethylene	MS	REC	47	%	79-123
FC5617-5MS*	75-01-4	Vinyl Chloride	MS	REC	45	%	58-137
FC5617-5MS*	1868-53-7	Dibromofluoromethane	MS	SURR	102	%	80-119
FC5617-5MS*	17060-07-0	1,2-Dichloroethane-D4	MS	SURR	120	%	81-118
FC5617-5MS*	2037-26-5	Toluene-D8	MS	SURR	107	%	89-112
FC5617-5MS*	460-00-4	4-Bromofluorobenzene	MS	SURR	99	%	85-114
FC5617-5MSD*	156-59-2	cis-1,2-Dichloroethylene	MSD	REC	46	%	78-123
FC5617-5MSD*	156-59-2	cis-1,2-Dichloroethylene	MSD	RPD	27	%	20
FC5617-5MSD*	156-60-5	trans-1,2-Dichloroethylene	MSD	REC	50	%	75-124
FC5617-5MSD*	156-60-5	trans-1,2-Dichloroethylene	MSD	RPD	41	%	20
FC5617-5MSD*	79-01-6	Trichloroethylene	MSD	REC	50	%	79-123
FC5617-5MSD*	79-01-6	Trichloroethylene	MSD	RPD	5	%	20
FC5617-5MSD*	75-01-4	Vinyl Chloride	MSD	REC	51	%	58-137
FC5617-5MSD*	75-01-4	Vinyl Chloride	MSD	RPD	13	%	20
FC5617-5MSD*	1868-53-7	Dibromofluoromethane	MSD	SURR	104	%	80-119
FC5617-5MSD*	17060-07-0	1,2-Dichloroethane-D4	MSD	SURR	119	%	81-118
FC5617-5MSD*	2037-26-5	Toluene-D8	MSD	SURR	111	%	89-112
FC5617-5MSD*	460-00-4	4-Bromofluorobenzene	MSD	SURR	95	%	85-114
V5E1766-MB	1868-53-7	Dibromofluoromethane	MB	SURR	101	%	80-119
V5E1766-MB	17060-07-0	1,2-Dichloroethane-D4	MB	SURR	120 [a]	%	81-118
V5E1766-MB	2037-26-5	Toluene-D8	MB	SURR	103	%	89-112
V5E1766-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	96	%	85-114
FC5659-4	1868-53-7	Dibromofluoromethane	SAMP	SURR	99	%	80-119
FC5659-4	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	116	%	81-118
FC5659-4	2037-26-5	Toluene-D8	SAMP	SURR	105	%	89-112
FC5659-4	460-00-4	4-Bromofluorobenzene	SAMP	SURR	98	%	85-114
FC5659-6	1868-53-7	Dibromofluoromethane	SAMP	SURR	100	%	80-119
FC5659-6	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	116	%	81-118
FC5659-6	2037-26-5	Toluene-D8	SAMP	SURR	103	%	89-112
FC5659-6	460-00-4	4-Bromofluorobenzene	SAMP	SURR	98	%	85-114
FC5659-7	1868-53-7	Dibromofluoromethane	SAMP	SURR	99	%	80-119
FC5659-7	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	118	%	81-118
FC5659-7	2037-26-5	Toluene-D8	SAMP	SURR	104	%	89-112
FC5659-7	460-00-4	4-Bromofluorobenzene	SAMP	SURR	101	%	85-114
FC5659-8	1868-53-7	Dibromofluoromethane	SAMP	SURR	101	%	80-119
FC5659-8	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	119	%	81-118
FC5659-8	2037-26-5	Toluene-D8	SAMP	SURR	102	%	89-112
FC5659-8	460-00-4	4-Bromofluorobenzene	SAMP	SURR	97	%	85-114
FC5659-9	1868-53-7	Dibromofluoromethane	SAMP	SURR	101	%	80-119
FC5659-9	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	118	%	81-118
FC5659-9	2037-26-5	Toluene-D8	SAMP	SURR	104	%	89-112
FC5659-9	460-00-4	4-Bromofluorobenzene	SAMP	SURR	98	%	85-114
FC5659-10	1868-53-7	Dibromofluoromethane	SAMP	SURR	101	%	80-119
FC5659-10	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	121	%	81-118

* Sample used for QC is not from job FC5659

QC Evaluation: DOD QSM5.x Limits

Job Number: FC5659
Account: Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL
Collected: 04/27/23 thru 04/28/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
FC5659-10	2037-26-5	Toluene-D8	SAMP	SURR	104	%	89-112
FC5659-10	460-00-4	4-Bromofluorobenzene	SAMP	SURR	98	%	85-114
FC5659-11	1868-53-7	Dibromofluoromethane	SAMP	SURR	102	%	80-119
FC5659-11	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	120	%	81-118
FC5659-11	2037-26-5	Toluene-D8	SAMP	SURR	104	%	89-112
FC5659-11	460-00-4	4-Bromofluorobenzene	SAMP	SURR	98	%	85-114
FC5659-12	1868-53-7	Dibromofluoromethane	SAMP	SURR	102	%	80-119
FC5659-12	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	120	%	81-118
FC5659-12	2037-26-5	Toluene-D8	SAMP	SURR	102	%	89-112
FC5659-12	460-00-4	4-Bromofluorobenzene	SAMP	SURR	97	%	85-114
FC5659-13	1868-53-7	Dibromofluoromethane	SAMP	SURR	103	%	80-119
FC5659-13	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	123	%	81-118
FC5659-13	2037-26-5	Toluene-D8	SAMP	SURR	103	%	89-112
FC5659-13	460-00-4	4-Bromofluorobenzene	SAMP	SURR	98	%	85-114
FC5659-14	1868-53-7	Dibromofluoromethane	SAMP	SURR	112	%	80-119
FC5659-14	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	134 [b]	%	81-118
FC5659-14	2037-26-5	Toluene-D8	SAMP	SURR	97	%	89-112
FC5659-14	460-00-4	4-Bromofluorobenzene	SAMP	SURR	100	%	85-114
FC5659-15	1868-53-7	Dibromofluoromethane	SAMP	SURR	90	%	80-119
FC5659-15	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	122	%	81-118
FC5659-15	2037-26-5	Toluene-D8	SAMP	SURR	136 [a]	%	89-112
FC5659-15	460-00-4	4-Bromofluorobenzene	SAMP	SURR	97	%	85-114
FC5659-16	1868-53-7	Dibromofluoromethane	SAMP	SURR	102	%	80-119
FC5659-16	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	136 [a]	%	81-118
FC5659-16	2037-26-5	Toluene-D8	SAMP	SURR	77 [a]	%	89-112
FC5659-16	460-00-4	4-Bromofluorobenzene	SAMP	SURR	99	%	85-114
VI2913	SW846 8260D						
VI2913-BS	156-59-2	cis-1,2-Dichloroethylene	BSP	REC	110	%	78-123
VI2913-BS	156-60-5	trans-1,2-Dichloroethylene	BSP	REC	100	%	75-124
VI2913-BS	79-01-6	Trichloroethylene	BSP	REC	97	%	79-123
VI2913-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	101	%	80-119
VI2913-BS	17060-07-0	1,2-Dichloroethane-D4	BSP	SURR	100	%	81-118
VI2913-BS	2037-26-5	Toluene-D8	BSP	SURR	100	%	89-112
VI2913-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	98	%	85-114
FC5678-7MS*	156-59-2	cis-1,2-Dichloroethylene	MS	REC	219	%	78-123
FC5678-7MS*	156-60-5	trans-1,2-Dichloroethylene	MS	REC	102	%	75-124
FC5678-7MS*	79-01-6	Trichloroethylene	MS	REC	98	%	79-123
FC5678-7MS*	1868-53-7	Dibromofluoromethane	MS	SURR	101	%	80-119
FC5678-7MS*	17060-07-0	1,2-Dichloroethane-D4	MS	SURR	104	%	81-118
FC5678-7MS*	2037-26-5	Toluene-D8	MS	SURR	99	%	89-112
FC5678-7MS*	460-00-4	4-Bromofluorobenzene	MS	SURR	99	%	85-114
FC5678-7MSD*	156-59-2	cis-1,2-Dichloroethylene	MSD	REC	264	%	78-123
FC5678-7MSD*	156-59-2	cis-1,2-Dichloroethylene	MSD	RPD	11	%	20

* Sample used for QC is not from job FC5659

QC Evaluation: DOD QSM5.x Limits

Job Number: FC5659
Account: Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL
Collected: 04/27/23 thru 04/28/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
FC5678-7MSD*	156-60-5	trans-1,2-Dichloroethylene	MSD	REC	116	%	75-124
FC5678-7MSD*	156-60-5	trans-1,2-Dichloroethylene	MSD	RPD	13	%	20
FC5678-7MSD*	79-01-6	Trichloroethylene	MSD	REC	108	%	79-123
FC5678-7MSD*	79-01-6	Trichloroethylene	MSD	RPD	10	%	20
FC5678-7MSD*	1868-53-7	Dibromofluoromethane	MSD	SURR	101	%	80-119
FC5678-7MSD*	17060-07-0	1,2-Dichloroethane-D4	MSD	SURR	100	%	81-118
FC5678-7MSD*	2037-26-5	Toluene-D8	MSD	SURR	100	%	89-112
FC5678-7MSD*	460-00-4	4-Bromofluorobenzene	MSD	SURR	102	%	85-114
VI2913-MB	1868-53-7	Dibromofluoromethane	MB	SURR	99	%	80-119
VI2913-MB	17060-07-0	1,2-Dichloroethane-D4	MB	SURR	99	%	81-118
VI2913-MB	2037-26-5	Toluene-D8	MB	SURR	98	%	89-112
VI2913-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	104	%	85-114
FC5659-6	1868-53-7	Dibromofluoromethane	SAMP	SURR	100	%	80-119
FC5659-6	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	99	%	81-118
FC5659-6	2037-26-5	Toluene-D8	SAMP	SURR	98	%	89-112
FC5659-6	460-00-4	4-Bromofluorobenzene	SAMP	SURR	101	%	85-114
FC5659-7	1868-53-7	Dibromofluoromethane	SAMP	SURR	100	%	80-119
FC5659-7	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	103	%	81-118
FC5659-7	2037-26-5	Toluene-D8	SAMP	SURR	98	%	89-112
FC5659-7	460-00-4	4-Bromofluorobenzene	SAMP	SURR	101	%	85-114
FC5659-8	1868-53-7	Dibromofluoromethane	SAMP	SURR	102	%	80-119
FC5659-8	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	105	%	81-118
FC5659-8	2037-26-5	Toluene-D8	SAMP	SURR	98	%	89-112
FC5659-8	460-00-4	4-Bromofluorobenzene	SAMP	SURR	99	%	85-114
FC5659-9	1868-53-7	Dibromofluoromethane	SAMP	SURR	99	%	80-119
FC5659-9	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	100	%	81-118
FC5659-9	2037-26-5	Toluene-D8	SAMP	SURR	100	%	89-112
FC5659-9	460-00-4	4-Bromofluorobenzene	SAMP	SURR	102	%	85-114
FC5659-10	1868-53-7	Dibromofluoromethane	SAMP	SURR	102	%	80-119
FC5659-10	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	100	%	81-118
FC5659-10	2037-26-5	Toluene-D8	SAMP	SURR	99	%	89-112
FC5659-10	460-00-4	4-Bromofluorobenzene	SAMP	SURR	103	%	85-114
FC5659-11	1868-53-7	Dibromofluoromethane	SAMP	SURR	100	%	80-119
FC5659-11	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	99	%	81-118
FC5659-11	2037-26-5	Toluene-D8	SAMP	SURR	100	%	89-112
FC5659-11	460-00-4	4-Bromofluorobenzene	SAMP	SURR	102	%	85-114
FC5659-12	1868-53-7	Dibromofluoromethane	SAMP	SURR	101	%	80-119
FC5659-12	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	100	%	81-118
FC5659-12	2037-26-5	Toluene-D8	SAMP	SURR	100	%	89-112
FC5659-12	460-00-4	4-Bromofluorobenzene	SAMP	SURR	101	%	85-114
FC5659-13	1868-53-7	Dibromofluoromethane	SAMP	SURR	101	%	80-119
FC5659-13	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	100	%	81-118
FC5659-13	2037-26-5	Toluene-D8	SAMP	SURR	99	%	89-112
FC5659-13	460-00-4	4-Bromofluorobenzene	SAMP	SURR	104	%	85-114
FC5659-14	1868-53-7	Dibromofluoromethane	SAMP	SURR	101	%	80-119

* Sample used for QC is not from job FC5659

QC Evaluation: DOD QSM5.x Limits

Job Number: FC5659
Account: Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL
Collected: 04/27/23 thru 04/28/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
FC5659-14	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	104	%	81-118
FC5659-14	2037-26-5	Toluene-D8	SAMP	SURR	99	%	89-112
FC5659-14	460-00-4	4-Bromofluorobenzene	SAMP	SURR	101	%	85-114
FC5659-15	1868-53-7	Dibromofluoromethane	SAMP	SURR	99	%	80-119
FC5659-15	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	99	%	81-118
FC5659-15	2037-26-5	Toluene-D8	SAMP	SURR	100	%	89-112
FC5659-15	460-00-4	4-Bromofluorobenzene	SAMP	SURR	101	%	85-114
FC5659-16	1868-53-7	Dibromofluoromethane	SAMP	SURR	101	%	80-119
FC5659-16	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	99	%	81-118
FC5659-16	2037-26-5	Toluene-D8	SAMP	SURR	100	%	89-112
FC5659-16	460-00-4	4-Bromofluorobenzene	SAMP	SURR	103	%	85-114
FC5659-17	1868-53-7	Dibromofluoromethane	SAMP	SURR	99	%	80-119
FC5659-17	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	98	%	81-118
FC5659-17	2037-26-5	Toluene-D8	SAMP	SURR	100	%	89-112
FC5659-17	460-00-4	4-Bromofluorobenzene	SAMP	SURR	103	%	85-114

(a) Outside DOD QSM control limits.
(b) Outside DOD QSM control limits, sample is ND.

* Sample used for QC is not from job FC5659

MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries
- Run Sequence Reports

Method Blank Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2O2949-MB	2O76001.D	1	05/03/23	DB	n/a	n/a	V2O2949

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC5659-1, FC5659-2, FC5659-3, FC5659-5

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.35	ug/l	
75-01-4	Vinyl Chloride	ND	1.0	0.41	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	94%	83-118%
17060-07-0	1,2-Dichloroethane-D4	105%	79-125%
2037-26-5	Toluene-D8	96%	85-112%
460-00-4	4-Bromofluorobenzene	98%	83-118%

Method Blank Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VI2913-MB [a]	I756408.D	1	05/03/23	JW	n/a	n/a	VI2913

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC5659-6, FC5659-7, FC5659-8, FC5659-9, FC5659-10, FC5659-11, FC5659-12, FC5659-13, FC5659-14, FC5659-15, FC5659-16, FC5659-17

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.35	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	99%	83-118%
17060-07-0	1,2-Dichloroethane-D4	99%	79-125%
2037-26-5	Toluene-D8	98%	85-112%
460-00-4	4-Bromofluorobenzene	104%	83-118%

(a) Sample was treated with an anti-foaming agent.

Method Blank Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5E1766-MB [a]	5E39461.D	1	05/04/23	JL	n/a	n/a	V5E1766

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC5659-4, FC5659-6, FC5659-7, FC5659-8, FC5659-9, FC5659-10, FC5659-11, FC5659-12, FC5659-13, FC5659-14, FC5659-15, FC5659-16

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.35	ug/l	
75-01-4	Vinyl Chloride	ND	1.0	0.41	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	101%	83-118%
17060-07-0	1,2-Dichloroethane-D4	120% [b]	79-125%
2037-26-5	Toluene-D8	103%	85-112%
460-00-4	4-Bromofluorobenzene	96%	83-118%

(a) Sample was treated with an anti-foaming agent.
(b) Outside DOD QSM control limits.

Method Blank Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2O2955-MB	2O76103.D	1	05/05/23	DB	n/a	n/a	V2O2955

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC5659-17

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl Chloride	ND	1.0	0.41	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	92%	83-118%
17060-07-0	1,2-Dichloroethane-D4	104%	79-125%
2037-26-5	Toluene-D8	99%	85-112%
460-00-4	4-Bromofluorobenzene	96%	83-118%

Blank Spike Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2O2949-BS	2O75999.D	1	05/03/23	DB	n/a	n/a	V2O2949

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC5659-1, FC5659-2, FC5659-3, FC5659-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
156-59-2	cis-1,2-Dichloroethylene	25	25.5	102	78-120
156-60-5	trans-1,2-Dichloroethylene	25	24.4	98	76-127
79-01-6	Trichloroethylene	25	24.7	99	81-126
75-01-4	Vinyl Chloride	25	24.6	98	69-159

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	98%	83-118%
17060-07-0	1,2-Dichloroethane-D4	103%	79-125%
2037-26-5	Toluene-D8	95%	85-112%
460-00-4	4-Bromofluorobenzene	99%	83-118%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VI2913-BS	I756404.D	1	05/03/23	JW	n/a	n/a	VI2913

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC5659-6, FC5659-7, FC5659-8, FC5659-9, FC5659-10, FC5659-11, FC5659-12, FC5659-13, FC5659-14, FC5659-15, FC5659-16, FC5659-17

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
156-59-2	cis-1,2-Dichloroethylene	25	27.4	110	78-120
156-60-5	trans-1,2-Dichloroethylene	25	24.9	100	76-127
79-01-6	Trichloroethylene	25	24.2	97	81-126

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	101%	83-118%
17060-07-0	1,2-Dichloroethane-D4	100%	79-125%
2037-26-5	Toluene-D8	100%	85-112%
460-00-4	4-Bromofluorobenzene	98%	83-118%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5E1766-BS	5E39458.D	1	05/04/23	JL	n/a	n/a	V5E1766

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC5659-4, FC5659-6, FC5659-7, FC5659-8, FC5659-9, FC5659-10, FC5659-11, FC5659-12, FC5659-13, FC5659-14, FC5659-15, FC5659-16

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
156-59-2	cis-1,2-Dichloroethylene	25	20.0	80	78-120
156-60-5	trans-1,2-Dichloroethylene	25	22.3	89	76-127
79-01-6	Trichloroethylene	25	23.1	92	81-126
75-01-4	Vinyl Chloride	25	25.2	101	69-159

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	101%	83-118%
17060-07-0	1,2-Dichloroethane-D4	120% [a]	79-125%
2037-26-5	Toluene-D8	107%	85-112%
460-00-4	4-Bromofluorobenzene	96%	83-118%

(a) Outside DOD QSM control limits.

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2O2955-BS	2O76101.D	1	05/05/23	DB	n/a	n/a	V2O2955

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC5659-17

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
75-01-4	Vinyl Chloride	25	25.4	102	69-159

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	96%	83-118%
17060-07-0	1,2-Dichloroethane-D4	113%	79-125%
2037-26-5	Toluene-D8	98%	85-112%
460-00-4	4-Bromofluorobenzene	97%	83-118%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FC5678-7MS	I756405.D	1	05/03/23	JW	n/a	n/a	VI2913
FC5678-7MSD	I756406.D	1	05/03/23	JW	n/a	n/a	VI2913
FC5678-7	I756409.D	1	05/03/23	JW	n/a	n/a	VI2913

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC5659-6, FC5659-7, FC5659-8, FC5659-9, FC5659-10, FC5659-11, FC5659-12, FC5659-13, FC5659-14, FC5659-15, FC5659-16, FC5659-17

CAS No.	Compound	FC5678-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
156-59-2	cis-1,2-Dichloroethylene	42.9		25	97.6	219*	25	109	264*	11	78-120/15
156-60-5	trans-1,2-Dichloroethylene	1.0 U		25	25.4	102	25	28.9	116	13	76-127/17
79-01-6	Trichloroethylene	1.0 U		25	24.5	98	25	27.1	108	10	81-126/15

CAS No.	Surrogate Recoveries	MS	MSD	FC5678-7	Limits
1868-53-7	Dibromofluoromethane	101%	101%	99%	83-118%
17060-07-0	1,2-Dichloroethane-D4	104%	100%	101%	79-125%
2037-26-5	Toluene-D8	99%	100%	99%	85-112%
460-00-4	4-Bromofluorobenzene	99%	102%	100%	83-118%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FC5679-12MS	2O76021.D	1	05/03/23	DB	n/a	n/a	V2O2949
FC5679-12MSD	2O76022.D	1	05/03/23	DB	n/a	n/a	V2O2949
FC5679-12	2O76019.D	1	05/03/23	DB	n/a	n/a	V2O2949

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC5659-1, FC5659-2, FC5659-3, FC5659-5

CAS No.	Compound	FC5679-12 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
156-59-2	cis-1,2-Dichloroethylene	5.3		25	34.1	115	25	31.7	106	7	78-120/15
156-60-5	trans-1,2-Dichloroethylene	1.0 U		25	27.3	109	25	26.8	107	2	76-127/17
79-01-6	Trichloroethylene	0.39	J	25	26.9	106	25	27.0	106	0	81-126/15
75-01-4	Vinyl Chloride	2.0 U		25	28.5	114	25	30.5	122	7	69-159/18

CAS No.	Surrogate Recoveries	MS	MSD	FC5679-12	Limits
1868-53-7	Dibromofluoromethane	99%	98%	96%	83-118%
17060-07-0	1,2-Dichloroethane-D4	110%	110%	105%	79-125%
2037-26-5	Toluene-D8	93%	94%	96%	85-112%
460-00-4	4-Bromofluorobenzene	98%	99%	95%	83-118%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FC5617-5MS	5E39482.D	5	05/04/23	JL	n/a	n/a	V5E1766
FC5617-5MSD	5E39483.D	5	05/04/23	JL	n/a	n/a	V5E1766
FC5617-5 [a]	5E39463.D	1	05/04/23	JL	n/a	n/a	V5E1766

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC5659-4, FC5659-6, FC5659-7, FC5659-8, FC5659-9, FC5659-10, FC5659-11, FC5659-12, FC5659-13, FC5659-14, FC5659-15, FC5659-16

CAS No.	Compound	FC5617-5 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
156-59-2	cis-1,2-Dichloroethylene	1.0 U		125	44.3	35*	125	58.0	46*	27*	78-120/15
156-60-5	trans-1,2-Dichloroethylene	1.0 U		125	41.0	33*	125	62.3	50*	41*	76-127/17
79-01-6	Trichloroethylene	1.0 U		125	59.1	47*	125	62.0	50*	5	81-126/15
75-01-4	Vinyl Chloride	1.0 U		125	56.2	45*	125	64.3	51*	13	69-159/18

CAS No.	Surrogate Recoveries	MS	MSD	FC5617-5	Limits
1868-53-7	Dibromofluoromethane	102%	104%	99%	83-118%
17060-07-0	1,2-Dichloroethane-D4	120%	119%	119%	79-125%
2037-26-5	Toluene-D8	107%	111%	105%	85-112%
460-00-4	4-Bromofluorobenzene	99%	95%	98%	83-118%

(a) Sample was treated with an anti-foaming agent.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FC5532-9MS	2O76124.D	5	05/05/23	DB	n/a	n/a	V2O2955
FC5532-9MSD	2O76125.D	5	05/05/23	DB	n/a	n/a	V2O2955
FC5532-9 [a]	2O76106.D	1	05/05/23	DB	n/a	n/a	V2O2955

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC5659-17

CAS No.	Compound	FC5532-9 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
75-01-4	Vinyl Chloride	ND		125	118	94	125	36.0	29*	106*	69-159/18

CAS No.	Surrogate Recoveries	MS	MSD	FC5532-9	Limits
1868-53-7	Dibromofluoromethane	96%	96%	93%	83-118%
17060-07-0	1,2-Dichloroethane-D4	112%	109%	105%	79-125%
2037-26-5	Toluene-D8	98%	99%	100%	85-112%
460-00-4	4-Bromofluorobenzene	98%	98%	97%	83-118%

(a) Sample re-analyzed beyond hold time.

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2924-BFB
Lab File ID: 2O75425.D
Instrument ID: GCMS2O
Injection Date: 04/11/23
Injection Time: 09:39

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	15110	17.2		Pass
75	30.0 - 60.0% of mass 95	42840	48.7		Pass
95	Base peak, 100% relative abundance	87968	100.0		Pass
96	5.0 - 9.0% of mass 95	6005	6.83		Pass
173	Less than 2.0% of mass 174	522	0.59	(0.73) [a]	Pass
174	50.0 - 100.0% of mass 95	71059	80.8		Pass
175	5.0 - 9.0% of mass 174	4935	5.61	(6.94) [a]	Pass
176	95.0 - 101.0% of mass 174	68445	77.8	(96.3) [a]	Pass
177	5.0 - 9.0% of mass 176	4228	4.81	(6.18) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2O2924-IC2924	2O75426.D	04/11/23	10:06	00:27	Initial cal 1
V2O2924-IC2924	2O75427.D	04/11/23	10:38	00:59	Initial cal 2
V2O2924-IC2924	2O75428.D	04/11/23	11:05	01:26	Initial cal 3
V2O2924-IC2924	2O75429.D	04/11/23	11:31	01:52	Initial cal 4
V2O2924-ICC2924	2O75430.D	04/11/23	11:56	02:17	Initial cal 5
V2O2924-IC2924	2O75431.D	04/11/23	12:22	02:43	Initial cal 6
V2O2924-IC2924	2O75432.D	04/11/23	12:48	03:09	Initial cal 7
V2O2924-ICV2924	2O75434.D	04/11/23	13:39	04:00	Initial cal verification 5
V2O2924-ICV2924	2O75435.D	04/11/23	14:04	04:25	Initial cal verification 4

Instrument Performance Check (BFB)

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2949-BFB
Lab File ID: 2O75997.D
Instrument ID: GCMS2O
Injection Date: 05/03/23
Injection Time: 10:54

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	16124	16.7		Pass
75	30.0 - 60.0% of mass 95	47811	49.6		Pass
95	Base peak, 100% relative abundance	96352	100.0		Pass
96	5.0 - 9.0% of mass 95	6860	7.12		Pass
173	Less than 2.0% of mass 174	606	0.63	(0.77) [a]	Pass
174	50.0 - 100.0% of mass 95	78856	81.8		Pass
175	5.0 - 9.0% of mass 174	5571	5.78	(7.06) [a]	Pass
176	95.0 - 101.0% of mass 174	77909	80.9	(98.8) [a]	Pass
177	5.0 - 9.0% of mass 176	5107	5.30	(6.56) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2O2949-CC2924	2O75998.D	05/03/23	11:21	00:27	Continuing cal 5
V2O2949-BS	2O75999.D	05/03/23	11:51	00:57	Blank Spike
V2O2949-MB	2O76001.D	05/03/23	12:50	01:56	Method Blank
FC5659-1	2O76002.D	05/03/23	13:16	02:22	CCF-TB-20230427-01
ZZZZZZ	2O76003.D	05/03/23	13:42	02:48	(unrelated sample)
ZZZZZZ	2O76004.D	05/03/23	14:08	03:14	(unrelated sample)
FC5659-2	2O76005.D	05/03/23	14:34	03:40	CCF-IW0004IS-032.0-20230427
FC5659-3	2O76006.D	05/03/23	15:00	04:06	CCF-IW0087-040.0-20230427
FC5659-5	2O76008.D	05/03/23	16:38	05:44	CCF-IW0059-040.0-20230427
ZZZZZZ	2O76009.D	05/03/23	17:04	06:10	(unrelated sample)
ZZZZZZ	2O76010.D	05/03/23	17:30	06:36	(unrelated sample)
ZZZZZZ	2O76011.D	05/03/23	17:56	07:02	(unrelated sample)
ZZZZZZ	2O76012.D	05/03/23	18:22	07:28	(unrelated sample)
ZZZZZZ	2O76013.D	05/03/23	18:48	07:54	(unrelated sample)
ZZZZZZ	2O76014.D	05/03/23	19:14	08:20	(unrelated sample)
ZZZZZZ	2O76015.D	05/03/23	19:40	08:46	(unrelated sample)
ZZZZZZ	2O76016.D	05/03/23	20:06	09:12	(unrelated sample)
ZZZZZZ	2O76017.D	05/03/23	20:32	09:38	(unrelated sample)
ZZZZZZ	2O76018.D	05/03/23	20:58	10:04	(unrelated sample)
FC5679-12	2O76019.D	05/03/23	21:24	10:30	(used for QC only; not part of job FC5659)
ZZZZZZ	2O76020.D	05/03/23	21:50	10:56	(unrelated sample)
FC5679-12MS	2O76021.D	05/03/23	22:16	11:22	Matrix Spike
FC5679-12MSD	2O76022.D	05/03/23	22:42	11:48	Matrix Spike Duplicate
V2O2949-ECC2924	2O76023.D	05/03/23	23:08	12:14	Ending cal 5

Instrument Performance Check (BFB)

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample:	V2O2949-BFB	**Injection Date:**	05/03/23
Lab File ID:	2O75997.D	**Injection Time:**	10:54
Instrument ID:	GCMS2O		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2O2950-CC2924	2O76023A.D	05/03/23	23:08	12:14	Continuing cal 5

Instrument Performance Check (BFB)

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2954-BFB
Lab File ID: 2O76099.D
Instrument ID: GCMS2O
Injection Date: 05/05/23
Injection Time: 11:14

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	14928	16.7		Pass
75	30.0 - 60.0% of mass 95	43560	48.7		Pass
95	Base peak, 100% relative abundance	89467	100.0		Pass
96	5.0 - 9.0% of mass 95	6404	7.16		Pass
173	Less than 2.0% of mass 174	263	0.29	(0.36) [a]	Pass
174	50.0 - 100.0% of mass 95	72808	81.4		Pass
175	5.0 - 9.0% of mass 174	5051	5.65	(6.94) [a]	Pass
176	95.0 - 101.0% of mass 174	70141	78.4	(96.3) [a]	Pass
177	5.0 - 9.0% of mass 176	4624	5.17	(6.59) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2O2954-CC2924	2O76100.D	05/05/23	11:41	00:27	Continuing cal 5
V2O2955-BS	2O76101.D	05/05/23	12:10	00:56	Blank Spike
V2O2954-BS	2O76101.D	05/05/23	12:10	00:56	Blank Spike
V2O2955-MB	2O76103.D	05/05/23	13:06	01:52	Method Blank
V2O2954-MB	2O76103.D	05/05/23	13:06	01:52	Method Blank
OP96704-LB	2O76104.D	05/05/23	13:32	02:18	Leachate Blank
FC5689-2L	2O76105.D	05/05/23	13:58	02:44	(used for QC only; not part of job FC5659)
FC5532-9	2O76106.D	05/05/23	14:25	03:11	(used for QC only; not part of job FC5659)
ZZZZZZ	2O76107.D	05/05/23	14:51	03:37	(unrelated sample)
ZZZZZZ	2O76108.D	05/05/23	15:17	04:03	(unrelated sample)
ZZZZZZ	2O76109.D	05/05/23	15:43	04:29	(unrelated sample)
ZZZZZZ	2O76110.D	05/05/23	16:10	04:56	(unrelated sample)
ZZZZZZ	2O76111.D	05/05/23	16:36	05:22	(unrelated sample)
ZZZZZZ	2O76112.D	05/05/23	17:02	05:48	(unrelated sample)
ZZZZZZ	2O76113.D	05/05/23	17:28	06:14	(unrelated sample)
ZZZZZZ	2O76114.D	05/05/23	17:54	06:40	(unrelated sample)
ZZZZZZ	2O76115.D	05/05/23	18:21	07:07	(unrelated sample)
FC5659-17	2O76116.D	05/05/23	18:47	07:33	CCF-IW0003S-008.0-20230428
ZZZZZZ	2O76117.D	05/05/23	19:13	07:59	(unrelated sample)
ZZZZZZ	2O76118.D	05/05/23	19:39	08:25	(unrelated sample)
ZZZZZZ	2O76119.D	05/05/23	20:06	08:52	(unrelated sample)
ZZZZZZ	2O76120.D	05/05/23	20:32	09:18	(unrelated sample)
ZZZZZZ	2O76121.D	05/05/23	20:58	09:44	(unrelated sample)
FC5689-2LMS	2O76122.D	05/05/23	21:24	10:10	Matrix Spike

Instrument Performance Check (BFB)

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample:	V2O2954-BFB	**Injection Date:**	05/05/23
Lab File ID:	2O76099.D	**Injection Time:**	11:14
Instrument ID:	GCMS2O		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
FC5689-2LMSD	2O76123.D	05/05/23	21:50	10:36	Matrix Spike Duplicate
FC5532-9MS	2O76124.D	05/05/23	22:16	11:02	Matrix Spike
FC5532-9MSD	2O76125.D	05/05/23	22:42	11:28	Matrix Spike Duplicate
V2O2954-ECC2924	2O76126.D	05/05/23	23:08	11:54	Ending cal 5

Instrument Performance Check (BFB)

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V5E1761-BFB
Lab File ID: 5E39333.D
Instrument ID: GCMS5E
Injection Date: 05/01/23
Injection Time: 15:38

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	31195	20.4		Pass
75	30.0 - 60.0% of mass 95	71832	47.0		Pass
95	Base peak, 100% relative abundance	152701	100.0		Pass
96	5.0 - 9.0% of mass 95	10139	6.64		Pass
173	Less than 2.0% of mass 174	1153	0.76	(0.92) [a]	Pass
174	50.0 - 100.0% of mass 95	124755	81.7		Pass
175	5.0 - 9.0% of mass 174	9900	6.48	(7.94) [a]	Pass
176	95.0 - 101.0% of mass 174	120829	79.1	(96.9) [a]	Pass
177	5.0 - 9.0% of mass 176	8032	5.26	(6.65) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V5E1761-IC1761	5E39334.D	05/01/23	16:03	00:25	Initial cal 1
V5E1761-IC1761	5E39335.D	05/01/23	16:29	00:51	Initial cal 2
V5E1761-IC1761	5E39336.D	05/01/23	16:55	01:17	Initial cal 3
V5E1761-IC1761	5E39337.D	05/01/23	17:20	01:42	Initial cal 4
V5E1761-ICC1761	5E39338.D	05/01/23	17:46	02:08	Initial cal 5
V5E1761-IC1761	5E39339.D	05/01/23	18:13	02:35	Initial cal 6
V5E1761-IC1761	5E39340.D	05/01/23	18:40	03:02	Initial cal 7
V5E1761-ICV1761	5E39342.D	05/01/23	19:33	03:55	Initial cal verification 5

Instrument Performance Check (BFB)

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V5E1766-BFB
Lab File ID: 5E39457.D
Instrument ID: GCMS5E
Injection Date: 05/04/23
Injection Time: 11:32

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	21771	23.7		Pass
75	30.0 - 60.0% of mass 95	48099	52.3		Pass
95	Base peak, 100% relative abundance	91880	100.0		Pass
96	5.0 - 9.0% of mass 95	6506	7.08		Pass
173	Less than 2.0% of mass 174	339	0.37	(0.43) [a]	Pass
174	50.0 - 100.0% of mass 95	79688	86.7		Pass
175	5.0 - 9.0% of mass 174	6761	7.36	(8.48) [a]	Pass
176	95.0 - 101.0% of mass 174	77840	84.7	(97.7) [a]	Pass
177	5.0 - 9.0% of mass 176	5208	5.67	(6.69) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V5E1766-CC1761	5E39457.D	05/04/23	11:32	00:00	Continuing cal 5
V5E1766-BS	5E39458.D	05/04/23	12:12	00:40	Blank Spike
V5E1766-MB	5E39461.D	05/04/23	13:23	01:51	Method Blank
ZZZZZZ	5E39462.D	05/04/23	13:59	02:27	(unrelated sample)
FC5617-5	5E39463.D	05/04/23	14:23	02:51	(used for QC only; not part of job FC5659)
ZZZZZZ	5E39464.D	05/04/23	14:47	03:15	(unrelated sample)
ZZZZZZ	5E39465.D	05/04/23	15:12	03:40	(unrelated sample)
FC5659-4	5E39466.D	05/04/23	15:36	04:04	CCF-IW0081-020.0-20230427
FC5659-6	5E39467.D	05/04/23	16:01	04:29	CCF-IW0084-030.0-20230427
FC5659-7	5E39468.D	05/04/23	16:25	04:53	CCF-IW0089-050.0-20230427
FC5659-8	5E39469.D	05/04/23	16:50	05:18	CCF-IW0063-045.0-20230427
FC5659-9	5E39470.D	05/04/23	17:15	05:43	CCF-IW0080IS-020.0-20230427
FC5659-10	5E39471.D	05/04/23	17:39	06:07	CCF-IW0080S-010.0-20230427
FC5659-11	5E39472.D	05/04/23	18:04	06:32	CCF-IW0064-045.0-20230427
FC5659-12	5E39473.D	05/04/23	18:29	06:57	CCF-IW0011IS-030.0-20230428
FC5659-13	5E39474.D	05/04/23	18:54	07:22	CCF-IW0011ID-052.0-20230428
FC5659-14	5E39475.D	05/04/23	19:19	07:47	CCF-IW0086-040.0-20230428
FC5659-15	5E39476.D	05/04/23	19:44	08:12	CCF-IW0062-020.0-20230428
FC5659-16	5E39477.D	05/04/23	20:09	08:37	CCF-IW0088-040.0-20230428
ZZZZZZ	5E39478.D	05/04/23	20:34	09:02	(unrelated sample)
ZZZZZZ	5E39479.D	05/04/23	20:59	09:27	(unrelated sample)
ZZZZZZ	5E39480.D	05/04/23	21:23	09:51	(unrelated sample)
ZZZZZZ	5E39481.D	05/04/23	21:48	10:16	(unrelated sample)
FC5617-5MS	5E39482.D	05/04/23	22:12	10:40	Matrix Spike

Instrument Performance Check (BFB)

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample:	V5E1766-BFB	**Injection Date:**	05/04/23
Lab File ID:	5E39457.D	**Injection Time:**	11:32
Instrument ID:	GCMS5E		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
FC5617-5MSD	5E39483.D	05/04/23	22:37	11:05	Matrix Spike Duplicate
V5E1766-ECC1761	5E39484.D	05/04/23	23:02	11:30	Ending cal 5

Instrument Performance Check (BFB)

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2910-BFB
Lab File ID: I756321.D
Instrument ID: GCMSI
Injection Date: 05/02/23
Injection Time: 08:34

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	21651	22.8		Pass
75	30.0 - 60.0% of mass 95	50141	52.9		Pass
95	Base peak, 100% relative abundance	94821	100.0		Pass
96	5.0 - 9.0% of mass 95	6547	6.90		Pass
173	Less than 2.0% of mass 174	949	1.00	(1.23) [a]	Pass
174	50.0 - 100.0% of mass 95	77384	81.6		Pass
175	5.0 - 9.0% of mass 174	6046	6.38	(7.81) [a]	Pass
176	95.0 - 101.0% of mass 174	73883	77.9	(95.5) [a]	Pass
177	5.0 - 9.0% of mass 176	4942	5.21	(6.69) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VI2910-IC2910	I756322.D	05/02/23	09:04	00:30	Initial cal 1
VI2910-IC2910	I756323.D	05/02/23	09:29	00:55	Initial cal 2
VI2910-IC2910	I756325.D	05/02/23	10:18	01:44	Initial cal 4
VI2910-ICC2910	I756326.D	05/02/23	10:42	02:08	Initial cal 5
VI2910-IC2910	I756327.D	05/02/23	11:07	02:33	Initial cal 6
VI2910-IC2910	I756328.D	05/02/23	11:32	02:58	Initial cal 7
VI2910-IC2910	I756330.D	05/02/23	12:21	03:47	Initial cal 3
VI2910-ICV2910	I756331.D	05/02/23	13:02	04:28	Initial cal verification 5
VI2910-CC2910	I756331A.D	05/02/23	13:02	04:28	Continuing cal 5
VI2910-BS	I756332.D	05/02/23	13:26	04:52	Blank Spike
VI2910-MB	I756333.D	05/02/23	13:51	05:17	Method Blank
ZZZZZZ	I756334.D	05/02/23	14:19	05:45	(unrelated sample)
ZZZZZZ	I756335.D	05/02/23	14:44	06:10	(unrelated sample)
FC5532-2	I756336.D	05/02/23	15:09	06:35	(used for QC only; not part of job FC5659)
ZZZZZZ	I756337.D	05/02/23	15:34	07:00	(unrelated sample)
ZZZZZZ	I756338.D	05/02/23	15:59	07:25	(unrelated sample)
ZZZZZZ	I756339.D	05/02/23	16:25	07:51	(unrelated sample)
ZZZZZZ	I756340.D	05/02/23	16:50	08:16	(unrelated sample)
ZZZZZZ	I756341.D	05/02/23	17:15	08:41	(unrelated sample)
ZZZZZZ	I756342.D	05/02/23	17:40	09:06	(unrelated sample)
ZZZZZZ	I756343.D	05/02/23	18:05	09:31	(unrelated sample)
FC5532-2MS	I756344.D	05/02/23	18:30	09:56	Matrix Spike
FC5532-2MSD	I756345.D	05/02/23	18:55	10:21	Matrix Spike Duplicate
VI2910-ECC2910	I756346.D	05/02/23	19:20	10:46	Ending cal 5

Instrument Performance Check (BFB)

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2913-BFB
Lab File ID: I756402.D
Instrument ID: GCMSI
Injection Date: 05/03/23
Injection Time: 21:01

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	21443	22.0		Pass
75	30.0 - 60.0% of mass 95	50173	51.5		Pass
95	Base peak, 100% relative abundance	97437	100.0		Pass
96	5.0 - 9.0% of mass 95	6404	6.57		Pass
173	Less than 2.0% of mass 174	939	0.96	(1.12) [a]	Pass
174	50.0 - 100.0% of mass 95	84056	86.3		Pass
175	5.0 - 9.0% of mass 174	6114	6.27	(7.27) [a]	Pass
176	95.0 - 101.0% of mass 174	80165	82.3	(95.4) [a]	Pass
177	5.0 - 9.0% of mass 176	5351	5.49	(6.67) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VI2913-CC2910	I756403.D	05/03/23	21:26	00:25	Continuing cal 5
VI2913-BS	I756404.D	05/03/23	21:51	00:50	Blank Spike
FC5678-7MS	I756405.D	05/03/23	22:16	01:15	Matrix Spike
FC5678-7MSD	I756406.D	05/03/23	22:41	01:40	Matrix Spike Duplicate
VI2913-MB	I756408.D	05/03/23	23:30	02:29	Method Blank
FC5678-7	I756409.D	05/03/23	23:55	02:54	(used for QC only; not part of job FC5659)
ZZZZZZ	I756410.D	05/04/23	00:20	03:19	(unrelated sample)
ZZZZZZ	I756411.D	05/04/23	00:44	03:43	(unrelated sample)
ZZZZZZ	I756412.D	05/04/23	01:09	04:08	(unrelated sample)
ZZZZZZ	I756413.D	05/04/23	01:34	04:33	(unrelated sample)
ZZZZZZ	I756414.D	05/04/23	01:59	04:58	(unrelated sample)
FC5659-6	I756415.D	05/04/23	02:23	05:22	CCF-IW0084-030.0-20230427
FC5659-7	I756416.D	05/04/23	02:48	05:47	CCF-IW0089-050.0-20230427
FC5659-8	I756417.D	05/04/23	03:13	06:12	CCF-IW0063-045.0-20230427
FC5659-9	I756418.D	05/04/23	03:37	06:36	CCF-IW0080IS-020.0-20230427
FC5659-10	I756419.D	05/04/23	04:02	07:01	CCF-IW0080S-010.0-20230427
FC5659-11	I756420.D	05/04/23	04:27	07:26	CCF-IW0064-045.0-20230427
FC5659-12	I756421.D	05/04/23	04:51	07:50	CCF-IW0011IS-030.0-20230428
FC5659-13	I756422.D	05/04/23	05:16	08:15	CCF-IW0011ID-052.0-20230428
FC5659-14	I756423.D	05/04/23	05:41	08:40	CCF-IW0086-040.0-20230428
FC5659-15	I756424.D	05/04/23	06:05	09:04	CCF-IW0062-020.0-20230428
FC5659-16	I756425.D	05/04/23	06:30	09:29	CCF-IW0088-040.0-20230428
FC5659-17	I756426.D	05/04/23	06:55	09:54	CCF-IW0003S-008.0-20230428
ZZZZZZ	I756427.D	05/04/23	07:20	10:19	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample:	VI2913-BFB	**Injection Date:**	05/03/23
Lab File ID:	I756402.D	**Injection Time:**	21:01
Instrument ID:	GCMSI		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	I756428.D	05/04/23	07:44	10:43	(unrelated sample)
VI2913-ECC2910	I756429.D	05/04/23	08:09	11:08	Ending cal 5

Internal Standard Area Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Check Std:	V2O2949-CC2924	**Injection Date:**	05/03/23
Lab File ID:	2O75998.D	**Injection Time:**	11:21
Instrument ID:	GCMS2O	**Method:**	SW846 8260D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
Initial Cal [a]	437363	4.03	318093	6.04	172809	7.80
Check Std [b]	399440	4.03	313378	6.04	171320	7.80
Upper Limit [c]	798880	4.20	626756	6.21	342640	7.97
Lower Limit [d]	199720	3.86	156689	5.87	85660	7.63

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
V2O2949-BS	416617	4.03	322604	6.04	168750	7.80
V2O2949-MB	382779	4.03	285743	6.04	151740	7.80
FC5659-1	390502	4.03	290147	6.04	152845	7.80
ZZZZZZ	377980	4.03	282039	6.04	147549	7.80
ZZZZZZ	365361	4.03	271638	6.04	144298	7.80
FC5659-2	376324	4.03	279051	6.04	147165	7.80
FC5659-3	364491	4.03	271589	6.04	141327	7.80
FC5659-5	369730	4.03	272648	6.04	146597	7.80
ZZZZZZ	357383	4.03	268237	6.04	143514	7.80
ZZZZZZ	391588	4.03	292914	6.04	154065	7.80
ZZZZZZ	367122	4.03	270822	6.04	144967	7.80
ZZZZZZ	372395	4.03	273148	6.04	145837	7.80
ZZZZZZ	360578	4.03	271989	6.04	142706	7.80
ZZZZZZ	374176	4.03	280243	6.04	148734	7.80
ZZZZZZ	379509	4.03	280406	6.04	147549	7.80
ZZZZZZ	367658	4.03	273324	6.04	144794	7.80
ZZZZZZ	371664	4.03	275508	6.04	144883	7.80
ZZZZZZ	366318	4.03	273539	6.04	145015	7.80
FC5679-12	356190	4.03	264874	6.04	142546	7.80
ZZZZZZ	361658	4.03	271517	6.04	154304	7.80
FC5679-12MS	375625	4.03	293615	6.04	159236	7.80
FC5679-12MSD	389726	4.03	303982	6.04	164947	7.80
V2O2949-ECC2924	395956	4.03	310901	6.04	170904	7.80

IS 1 = Fluorobenzene
IS 2 = Chlorobenzene-D5
IS 3 = 1,4-Dichlorobenzene-d4

(a) Initial Cal is: V2O2924-ICC2924 2O75430.D 04/11/23 11:56
(b) Check Std Limit = -50 to + 100% of initial cal area.
(c) Upper Limit = + 100% of check standard area; Retention time + 0.167 minutes.
(d) Lower Limit = -50% of check standard area; Retention time -0.167 minutes.

Internal Standard Area Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Check Std:	V2O2954-CC2924	**Injection Date:**	05/05/23
Lab File ID:	2O76100.D	**Injection Time:**	11:41
Instrument ID:	GCMS2O	**Method:**	SW846 8260D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
Initial Cal [a]	437363	4.03	318093	6.04	172809	7.80
Check Std [b]	423910	4.03	308394	6.04	162349	7.79
Upper Limit [c]	847820	4.20	616788	6.21	324698	7.96
Lower Limit [d]	211955	3.86	154197	5.87	81175	7.62

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
V2O2955-BS	431132	4.03	310315	6.04	163538	7.79
V2O2954-BS	431132	4.03	310315	6.04	163538	7.79
V2O2954-MB	398360	4.03	276142	6.04	142627	7.80
V2O2955-MB	398360	4.03	276142	6.04	142627	7.80
OP96704-LB	396228	4.03	275001	6.04	141537	7.80
FC5689-2L	398072	4.03	273772	6.04	140114	7.80
FC5532-9	383505	4.03	265931	6.04	135682	7.80
ZZZZZZ	387290	4.03	269649	6.04	135778	7.80
ZZZZZZ	384087	4.03	268670	6.04	136356	7.80
ZZZZZZ	386001	4.03	267868	6.04	135577	7.80
ZZZZZZ	390570	4.03	272191	6.04	137635	7.80
ZZZZZZ	398301	4.03	277329	6.04	139871	7.80
ZZZZZZ	381096	4.03	266126	6.04	135823	7.80
ZZZZZZ	382941	4.03	267730	6.04	136927	7.80
ZZZZZZ	381012	4.03	267267	6.04	133813	7.80
ZZZZZZ	381155	4.03	268288	6.04	135155	7.80
FC5659-17	375488	4.03	261988	6.04	133366	7.80
ZZZZZZ	386277	4.03	268344	6.04	134516	7.80
ZZZZZZ	384502	4.03	268221	6.04	134819	7.80
ZZZZZZ	374803	4.03	260304	6.04	135767	7.80
ZZZZZZ	376370	4.03	259067	6.04	131958	7.80
ZZZZZZ	366379	4.03	257184	6.04	128772	7.80

IS 1 = Fluorobenzene
IS 2 = Chlorobenzene-D5
IS 3 = 1,4-Dichlorobenzene-d4

(a) Initial Cal is: V2O2924-ICC2924 2O75430.D 04/11/23 11:56
(b) Check Std Limit = -50 to + 100% of initial cal area.
(c) Upper Limit = + 100% of check standard area; Retention time + 0.167 minutes.
(d) Lower Limit = -50% of check standard area; Retention time -0.167 minutes.

Internal Standard Area Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Check Std:	V5E1766-CC1761	**Injection Date:**	05/04/23
Lab File ID:	5E39457.D	**Injection Time:**	11:32
Instrument ID:	GCMS5E	**Method:**	SW846 8260D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
Initial Cal [a]	648995	8.47	561822	11.60	341252	13.96
Check Std [b]	433847	8.47	329858	11.60	198756	13.96
Upper Limit [c]	867694	8.64	659716	11.77	397512	14.13
Lower Limit [d]	216924	8.30	164929	11.43	99378	13.79

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
V5E1766-BS	432411	8.47	332100	11.60	201872	13.96
V5E1766-MB [e]	467499	8.47	360756	11.60	205704	13.96
ZZZZZZ	440937	8.47	336117	11.60	197088	13.96
FC5617-5	466209	8.47	355062	11.60	206854	13.96
ZZZZZZ	469331	8.47	356917	11.60	209661	13.96
ZZZZZZ	488757	8.47	370449	11.60	214103	13.96
FC5659-4 [e]	502344	8.47	380879	11.60	219746	13.96
FC5659-6	477698	8.47	363781	11.60	210869	13.96
FC5659-7	499540	8.47	382116	11.60	215733	13.96
FC5659-8	473233	8.47	357961	11.60	211638	13.96
FC5659-9	460019	8.47	351157	11.60	203952	13.96
FC5659-10	465101	8.47	355860	11.60	207785	13.96
FC5659-11	452235	8.47	346849	11.60	202053	13.96
FC5659-12	432328	8.47	334220	11.60	195218	13.96
FC5659-13	436789	8.47	337822	11.60	197339	13.96
FC5659-14 [e]	391090	8.47	335804	11.60	173280	13.96
FC5659-15	429543	8.47	245903	11.60	144300	13.96
FC5659-16 [f]	321179	8.47	335959	11.60	196335	13.96
ZZZZZZ	448842	8.47	248831	11.60	149771	13.96
ZZZZZZ	391601	8.47	339461	11.60	195392	13.96
ZZZZZZ	409811	8.47	358655	11.60	196088	13.96
ZZZZZZ	315880	8.47	245817	11.60	166131	13.96
FC5617-5MS	468734	8.47	346590	11.60	205604	13.96
FC5617-5MSD	449988	8.47	318110	11.60	153922	13.96
V5E1766-ECC1761	456391	8.47	349279	11.60	205961	13.96

IS 1 = Fluorobenzene
IS 2 = Chlorobenzene-D5
IS 3 = 1,4-Dichlorobenzene-d4

(a) Initial Cal is: V5E1761-ICC1761 5E39338.D 05/01/23 17:46
(b) Check Std Limit = -50 to + 100% of initial cal area.
(c) Upper Limit = + 100% of check standard area; Retention time + 0.167 minutes.

Internal Standard Area Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Check Std:	V5E1766-CC1761	**Injection Date:**	05/04/23
Lab File ID:	5E39457.D	**Injection Time:**	11:32
Instrument ID:	GCMS5E	**Method:**	SW846 8260D

Lab Sample ID	IS 1 AREA	IS 1 RT	IS 2 AREA	IS 2 RT	IS 3 AREA	IS 3 RT

(d) Lower Limit = -50% of check standard area; Retention time -0.167 minutes.
(e) Sample was treated with an anti-foaming agent.
(f) No sample available for re-analysis.

Internal Standard Area Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Check Std:	VI2913-CC2910	**Injection Date:**	05/03/23
Lab File ID:	I756403.D	**Injection Time:**	21:26
Instrument ID:	GCMSI	**Method:**	SW846 8260D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
Initial Cal [a]	621830	7.85	449216	11.01	237042	13.37
Check Std [b]	589250	7.85	430300	11.01	228595	13.37
Upper Limit [c]	1178500	8.02	860600	11.18	457190	13.54
Lower Limit [d]	294625	7.68	215150	10.84	114298	13.20

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
VI2913-BS	596474	7.85	433829	11.01	232214	13.37
FC5678-7MS	616991	7.85	450506	11.01	239238	13.37
FC5678-7MSD	610445	7.85	439449	11.01	229434	13.37
VI2913-MB [e]	578494	7.85	422743	11.01	204837	13.38
FC5678-7	579744	7.85	420091	11.01	207659	13.37
ZZZZZZ	568901	7.85	409732	11.01	202408	13.38
ZZZZZZ	569219	7.85	410178	11.01	200575	13.38
ZZZZZZ	565891	7.85	406178	11.01	199046	13.37
ZZZZZZ	565965	7.85	407207	11.01	196273	13.37
ZZZZZZ	528365	7.85	392007	11.01	197933	13.37
FC5659-6	552476	7.86	402504	11.01	195359	13.37
FC5659-7	552691	7.85	406329	11.01	199975	13.37
FC5659-8	545953	7.85	400179	11.01	199957	13.37
FC5659-9	548519	7.85	392544	11.01	190651	13.37
FC5659-10	541801	7.85	392419	11.01	189116	13.38
FC5659-11	548673	7.85	391772	11.01	189961	13.37
FC5659-12	534793	7.86	386059	11.01	188222	13.37
FC5659-13	542173	7.85	393951	11.01	184810	13.38
FC5659-14	547422	7.85	399516	11.01	198363	13.38
FC5659-15	547589	7.85	389477	11.01	189606	13.37
FC5659-16 [e]	548266	7.86	391060	11.01	192879	13.38
FC5659-17	553086	7.85	393569	11.01	187775	13.38
ZZZZZZ	534108	7.85	379541	11.01	187627	13.38
ZZZZZZ	519835	7.86	377226	11.01	178229	13.37
VI2913-ECC2910	561501	7.85	402985	11.01	211117	13.37

IS 1 = Fluorobenzene
IS 2 = Chlorobenzene-D5
IS 3 = 1,4-Dichlorobenzene-d4

(a) Initial Cal is: VI2910-ICC2910 I756326.D 05/02/23 10:42
(b) Check Std Limit = -50 to + 100% of initial cal area.
(c) Upper Limit = + 100% of check standard area; Retention time + 0.167 minutes.

Internal Standard Area Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Check Std:	VI2913-CC2910	**Injection Date:**	05/03/23
Lab File ID:	I756403.D	**Injection Time:**	21:26
Instrument ID:	GCMSI	**Method:**	SW846 8260D

Lab Sample ID	IS 1 AREA	IS 1 RT	IS 2 AREA	IS 2 RT	IS 3 AREA	IS 3 RT

(d) Lower Limit = -50% of check standard area; Retention time -0.167 minutes.
(e) Sample was treated with an anti-foaming agent.

Surrogate Recovery Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Method: SW846 8260D **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
FC5659-1	2O76002.D	93	103	95	98
FC5659-2	2O76005.D	96	105	96	98
FC5659-3	2O76006.D	96	106	95	98
FC5659-4	5E39466.D	99	116	105	98
FC5659-5	2O76008.D	96	105	96	97
FC5659-6	5E39467.D	100	116	103	98
FC5659-6	I756415.D	100	99	98	101
FC5659-7	5E39468.D	99	118	104	101
FC5659-7	I756416.D	100	103	98	101
FC5659-8	5E39469.D	101	119	102	97
FC5659-8	I756417.D	102	105	98	99
FC5659-9	5E39470.D	101	118	104	98
FC5659-9	I756418.D	99	100	100	102
FC5659-10	5E39471.D	101	121	104	98
FC5659-10	I756419.D	102	100	99	103
FC5659-11	5E39472.D	102	120	104	98
FC5659-11	I756420.D	100	99	100	102
FC5659-12	5E39473.D	102	120	102	97
FC5659-12	I756421.D	101	100	100	101
FC5659-13	5E39474.D	103	123	103	98
FC5659-13	I756422.D	101	100	99	104
FC5659-14	5E39475.D	112	134* [a]	97	100
FC5659-14	I756423.D	101	104	99	101
FC5659-15	5E39476.D	90	122	136* [b]	97
FC5659-15	I756424.D	99	99	100	101
FC5659-16	5E39477.D	102	136* [b]	77* [b]	99
FC5659-16	I756425.D	101	99	100	103
FC5659-17	2O76116.D	95	107	101	96
FC5659-17	I756426.D	99	98	100	103
FC5532-9MS	2O76124.D	96	112	98	98
FC5532-9MSD	2O76125.D	96	109	99	98
FC5617-5MS	5E39482.D	102	120	107	99
FC5617-5MSD	5E39483.D	104	119	111	95
FC5678-7MS	I756405.D	101	104	99	99
FC5678-7MSD	I756406.D	101	100	100	102
FC5679-12MS	2O76021.D	99	110	93	98
FC5679-12MSD	2O76022.D	98	110	94	99
V2O2949-BS	2O75999.D	98	103	95	99
V2O2949-MB	2O76001.D	94	105	96	98
V2O2955-BS	2O76101.D	96	113	98	97

Surrogate Recovery Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Method: SW846 8260D **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
V2O2955-MB	2O76103.D	92	104	99	96
V5E1766-BS	5E39458.D	101	120 [b]	107	96
V5E1766-MB	5E39461.D	101	120 [b]	103	96
VI2913-BS	I756404.D	101	100	100	98
VI2913-MB	I756408.D	99	99	98	104

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	83-118%
S2 = 1,2-Dichloroethane-D4	79-125%
S3 = Toluene-D8	85-112%
S4 = 4-Bromofluorobenzene	83-118%

(a) Outside DOD QSM control limits, sample is ND.
(b) Outside DOD QSM control limits.

Initial Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2924-ICC2924
Lab FileID: 2O75430.D

Response Factor Report MSVOA12

Method : C:\msdchem\2\met...V2O_04-11-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

Calibration Files
1 =2O75426.D 2 =2O75427.D 3 =2O75428.D 4 =2O75429.D
5 =2O75430.D 6 =2O75431.D 7 =2O75432.D

Compound	1	2	3	4	5	6	7	Avg	%RSD
1) I Fluorobenzene	----------ISTD----------								
2) Dichlorodifluorom	0.174	0.192	0.204	0.214	0.204	0.217	0.221	0.204	8.12
3)P Chloromethane	0.206	0.214	0.217	0.228	0.217	0.229	0.230	0.220	4.15
4) 1,3-butadiene	0.333	0.250	0.237	0.228	0.218	0.224	0.219	0.244	16.65
---- Linear regr., Force(0,0) ---- Coefficient = 0.9997									
Response Ratio = 0.00000 + 0.22082 *A									
5)C Vinyl Chloride	0.168	0.218	0.217	0.238	0.224	0.232	0.233	0.219	10.80
6) Bromomethane	0.162	0.169	0.157	0.168	0.163	0.174	0.178	0.167	4.30
7) Chloroethane	0.139	0.156	0.151	0.128	0.072	0.042		0.115	40.75
---- Quadratic regression ---- Coefficient = 0.9902									
Response Ratio = -0.00057 + 0.17007 *A + -0.09694 *A^2									
8) Trichlorofluorome	0.343	0.407	0.411	0.437	0.414	0.392	0.314	0.388	11.23
9) Ethyl Ether	0.151	0.177	0.171	0.172	0.176	0.181	0.178	0.172	5.72
10) Ethanol	0.001	0.004	0.004	0.004	0.004	0.005	0.004	0.004	29.64
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9997									
Response Ratio = 0.00000 + 0.00453 *A + -0.00000 *A^2									
11) 1,2-Dichlorotrifl	0.223	0.254	0.262	0.267	0.249	0.272	0.268	0.256	6.63
12)C 1,1-Dichloroethen	0.319	0.321	0.323	0.333	0.323	0.342	0.346	0.329	3.30
13) Freon 113	0.178	0.200	0.230	0.232	0.219	0.237	0.238	0.219	10.15
14) Carbon Disulfide	0.623	0.646	0.653	0.646	0.620	0.644	0.645	0.640	1.97
15) Iodomethane	0.261	0.299	0.344	0.368	0.363	0.379	0.382	0.342	13.34
16) Acrolein	0.046	0.061	0.062	0.066	0.066	0.069	0.069	0.063	12.53
17) Allyl chloride	0.251	0.258	0.253	0.250	0.256	0.264	0.255	0.255	1.83
18) Methylene Chlorid	0.818	0.396	0.357	0.318	0.288	0.292	0.288	0.394	48.66
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9991									
Response Ratio = 0.00000 + 0.30830 *A + -0.01070 *A^2									
19) Acetone	0.153	0.129	0.120	0.119	0.118	0.121	0.120	0.126	9.88
20) Methyl acetate	0.277	0.297	0.288	0.291	0.287	0.294	0.291	0.289	2.24
21) trans-1,2-Dichlor	0.265	0.310	0.328	0.325	0.318	0.329	0.330	0.315	7.34
22) Hexane	0.157	0.155	0.169	0.173	0.164	0.173	0.174	0.166	4.78
23) Methyl Tert Butyl	0.522	0.596	0.587	0.613	0.619	0.644	0.647	0.604	7.05
24) Tert Butyl Alcoho	0.029	0.041	0.044	0.046	0.049	0.053	0.055	0.045	19.50
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9999									
Response Ratio = 0.00000 + 0.04510 *A + 0.00051 *A^2									
25) Acetonitrile	0.059	0.049	0.047	0.046	0.046	0.045	0.041	0.047	11.73
26) Di-isopropyl ethe	0.566	0.637	0.646	0.649	0.649	0.670	0.670	0.641	5.52
27) Chloroprene	0.281	0.315	0.294	0.295	0.294	0.314	0.317	0.301	4.63
28)P 1,1-Dichloroethan	0.375	0.414	0.410	0.419	0.408	0.419	0.418	0.409	3.84
29) Acrylonitrile	0.120	0.124	0.122	0.121	0.119	0.124	0.122	0.122	1.59
30) ETBE	0.447	0.568	0.579	0.600	0.602	0.631	0.642	0.581	11.15
31) Vinyl acetate	0.404	0.451	0.458	0.474	0.473	0.507	0.505	0.467	7.48

Initial Calibration Summary

Job Number: FC5659 **Sample:** V2O2924-ICC2924
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 2O75430.D
Project: CCF West NAM; KSC, FL

32)	cis-1,2-Dichloroe	0.234	0.256	0.259	0.257	0.256	0.260	0.256	0.254	3.63
33)	2,2-Dichloropropa	0.232	0.254	0.270	0.276	0.279	0.304	0.307	0.275	9.64
34)	Bromochloromethan	0.131	0.138	0.139	0.139	0.135	0.139	0.137	0.137	2.26
35)	Cyclohexane	0.294	0.302	0.356	0.359	0.337	0.358	0.358	0.338	8.32
36)C	Chloroform	0.419	0.441	0.447	0.451	0.444	0.454	0.443	0.443	2.58
37)	Ethyl acetate	0.350	0.360	0.358	0.369	0.366	0.385	0.382	0.367	3.47
38)	Tetrahydrofuran	0.122	0.142	0.146	0.144	0.141	0.147	0.146	0.141	6.23
39)S	Dibromofluorometh	0.273	0.275	0.273	0.274	0.280	0.283	0.282	0.277	1.59
40)	Carbon Tetrachlor	0.230	0.250	0.274	0.281	0.288	0.306	0.312	0.277	10.59
41)	1,1,1-Trichloroet	0.326	0.359	0.349	0.370	0.351	0.377	0.384	0.359	5.47
42)	2-Butanone	0.193	0.209	0.210	0.212	0.207	0.214	0.215	0.209	3.48
43)	1,1-Dichloroprope	0.274	0.292	0.317	0.328	0.314	0.324	0.323	0.310	6.40
44)	tert-Butyl format	0.062	0.068	0.073	0.081	0.087	0.099	0.105	0.082	19.49

---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9996
Response Ratio = 0.00000 + 0.07694 *A + 0.00287 *A^2

45)	Propionitrile	0.057	0.067	0.060	0.062	0.062	0.063	0.062	0.062	4.96
46)	Methacrylonitrile	0.203	0.216	0.209	0.206	0.208	0.216	0.209	0.210	2.32
47)	Benzene	0.862	0.932	0.937	0.932	0.914	0.931	0.913	0.917	2.84
48)	TAME	0.413	0.534	0.540	0.555	0.565	0.599	0.603	0.544	11.69
49)	Isobutyl alcohol	0.013	0.015	0.017	0.018	0.021	0.022	0.022	0.018	18.83

---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9985
Response Ratio = 0.00000 + 0.01766 *A + 0.00012 *A^2

50)S	1,2-Dichloroethan	0.291	0.282	0.289	0.283	0.302	0.319	0.296	0.295	4.40
51)	1,2-Dichloroethan	0.298	0.333	0.329	0.329	0.325	0.335	0.338	0.327	4.04
52)	Tert Amyl Alcohol	0.019	0.030	0.033	0.037	0.039	0.042	0.044	0.035	24.47

---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9998
Response Ratio = 0.00000 + 0.03555 *A + 0.00044 *A^2

53)	Trichloroethene	0.257	0.265	0.271	0.267	0.262	0.266	0.264	0.264	1.68
54)	Methylcyclohexane	0.274	0.319	0.356	0.371	0.353	0.376	0.373	0.346	10.73
55)	Dibromomethane	0.135	0.175	0.171	0.171	0.168	0.173	0.171	0.166	8.34
56)C	1,2-Dichloropropa	0.181	0.218	0.220	0.219	0.217	0.227	0.224	0.215	7.22
57)	Bromodichlorometh	0.269	0.280	0.280	0.296	0.300	0.317	0.320	0.295	6.56
58)	Methyl methacryla	0.219	0.243	0.232	0.231	0.241	0.257	0.261	0.241	6.09
59)	1,4-Dioxane	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.004	22.66

---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9999
Response Ratio = 0.00000 + 0.00443 *A + 0.00002 *A^2

60)	2-Chloroethyl vin	0.166	0.181	0.185	0.191	0.191	0.197	0.196	0.187	5.85
61)	cis-1,3-Dichlorop	0.227	0.290	0.307	0.335	0.341	0.362	0.368	0.319	15.42

---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9998
Response Ratio = 0.00000 + 0.32685 *A + 0.02145 *A^2

62) I	Chlorobenzene-d5	----------	----------	----------	ISTD	----------	----------	----------	----------	
63)S	Toluene-d8	1.387	1.381	1.364	1.362	1.349	1.346	1.356	1.364	1.13
64)C	Toluene	1.339	1.403	1.390	1.389	1.337	1.363	1.369	1.370	1.86
65)	2-Nitropropane	0.050	0.064	0.067	0.085	0.090	0.107	0.115	0.083	28.43

---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9993
Response Ratio = 0.00000 + 0.07655 *A + 0.00390 *A^2

66)	4-Methyl-2-pentan	0.430	0.507	0.494	0.502	0.489	0.500	0.505	0.490	5.50
67)	trans-1,3-Dichlor	0.284	0.399	0.420	0.454	0.454	0.476	0.486	0.425	16.20

---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9999
Response Ratio = 0.00000 + 0.43842 *A + 0.02413 *A^2

68)	Tetrachloroethene	0.376	0.389	0.389	0.398	0.384	0.395	0.388	0.388	1.88
69)	Ethyl methacrylat	0.252	0.358	0.370	0.392	0.402	0.428	0.435	0.377	16.40

Initial Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2924-ICC2924
Lab FileID: 2O75430.D

```
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9998
               Response Ratio = 0.00000 + 0.38569 *A + 0.02547 *A^2

 70)  1,1,2-Trichloroet 0.272 0.278 0.281 0.281 0.272 0.275 0.277 0.276   1.33
 71)  Dibromochlorometh 0.206 0.286 0.304 0.328 0.332 0.357 0.361 0.311  17.09
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9997
               Response Ratio = 0.00000 + 0.30822 *A + 0.02850 *A^2

 72)  1,3-Dichloropropa 0.443 0.526 0.526 0.522 0.507 0.513 0.510 0.506   5.75
 73)  1,2-Dibromoethane 0.263 0.349 0.349 0.368 0.357 0.368 0.368 0.346  10.85
 74)  3,3-dimethyl-1-bu 0.037 0.050 0.056 0.065 0.069 0.074 0.076 0.061  22.93
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9997
               Response Ratio = 0.00000 + 0.06306 *A + 0.00014 *A^2

 75)  2-hexanone        0.394 0.486 0.487 0.502 0.491 0.516 0.528 0.486   8.94
 76)  1-Chlorohexane    0.478 0.412 0.431 0.431 0.414 0.425 0.428 0.431   5.09
 77)C Ethylbenzene      1.373 1.511 1.518 1.516 1.446 1.490 1.491 1.478   3.56
 78)P Chlorobenzene     0.877 0.946 0.948 0.939 0.913 0.928 0.931 0.926   2.66
 79)  1,1,1,2-Tetrachlo 0.205 0.272 0.294 0.309 0.303 0.321 0.326 0.290  14.39
 80)  m,p-Xylene        1.031 1.169 1.187 1.185 1.143 1.164 1.172 1.150   4.72
 81)  o-Xylene          1.088 1.157 1.176 1.189 1.160 1.173 1.186 1.161   2.96
 82)  Styrene           0.725 0.894 0.925 0.961 0.937 0.973 0.972 0.912   9.58
 83)P Bromoform         0.107 0.175 0.184 0.201 0.212 0.237 0.249 0.195  24.17
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9997
               Response Ratio = 0.00000 + 0.19140 *A + 0.02968 *A^2

 84)  Isopropylbenzene  1.180 1.406 1.431 1.461 1.417 1.449 1.457 1.400   7.09

 85) I   1,4-Dichlorobenzene-d ----------------ISTD---------------------
 86)S 4-Bromofluorobenz 0.766 0.771 0.764 0.775 0.745 0.753 0.765 0.763   1.35
 87)  cis-1,4-Dichloro- 0.166 0.219 0.221 0.235 0.231 0.253 0.260 0.226  13.51
 88)  n-Propylbenzene   2.786 3.132 3.218 3.249 3.018 3.135 3.159 3.100   5.05
 89)  Bromobenzene      0.594 0.727 0.700 0.724 0.674 0.695 0.701 0.688   6.55
 90)P 1,1,2,2-Tetrachlo 0.787 0.981 0.950 0.980 0.931 0.985 0.993 0.944   7.70
 91)  1,3,5-Trimethylbe 1.827 2.191 2.269 2.314 2.186 2.258 2.274 2.188   7.58
 92)  2-Chlorotoluene   1.944 2.226 2.119 2.202 2.000 2.056 2.085 2.090   4.88
 93)  trans-1,4-Dichlor 0.130 0.211 0.205 0.204 0.198 0.221 0.230 0.200  16.35
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9996
               Response Ratio = 0.00000 + 0.18954 *A + 0.02047 *A^2

 94)  1,2,3-Trichloropr 0.300 0.326 0.307 0.312 0.299 0.308 0.322 0.311   3.32
 95)  Cyclohexanone     0.025 0.032 0.036 0.039 0.039 0.042 0.044 0.037  18.35
             ---- Linear regr., Force(0,0) ----  Coefficient =  0.9982
               Response Ratio = 0.00000 + 0.04307 *A

 96)  4-Chlorotoluene   1.649 2.024 1.988 2.024 1.897 1.934 1.949 1.924   6.74
 97)  tert-Butylbenzene 1.044 1.209 1.199 1.237 1.174 1.198 1.215 1.182   5.39
 98)  a-Methyl styrene                                              0.000  -1.00
 99)  1,2,4-Trimethylbe 1.673 2.220 2.224 2.313 2.170 2.275 2.261 2.162  10.20
100)  Pentachloroethane 0.171 0.251 0.256 0.295 0.305 0.339 0.357 0.282  22.25
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9998
               Response Ratio = 0.00000 + 0.27629 *A + 0.04099 *A^2

101)  sec-Butylbenzene  2.294 2.595 2.705 2.748 2.572 2.708 2.715 2.620   6.03
102)  4-Isopropyltoluen 1.938 2.236 2.340 2.419 2.282 2.399 2.386 2.286   7.30
103)  1,3-Dichlorobenze 1.212 1.444 1.391 1.387 1.336 1.367 1.377 1.359   5.32
104)  1,2,3-Trimethylbe 1.971 2.333 2.273 2.376 2.255 2.319 2.316 2.263   5.96
105)  1,4-Dichlorobenze 1.212 1.464 1.418 1.420 1.334 1.390 1.401 1.377   5.98
106)  n-Butylbenzene    0.728 1.054 1.123 1.188 1.132 1.193 1.204 1.089  15.37
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9998
```

Initial Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2924-ICC2924
Lab FileID: 2O75430.D

```
               Response Ratio = 0.00000 + 1.13062 *A + 0.03768 *A^2

107)  Benzyl Chloride   0.090 0.176 0.197 0.254 0.277 0.326 0.353 0.239  38.28
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9995
               Response Ratio = 0.00000 + 0.23003 *A + 0.06278 *A^2

108)  1,2-Dichlorobenze 1.200 1.301 1.291 1.311 1.254 1.309 1.312 1.283   3.24
109)  1,2-Dibromo-3-Chl 0.099 0.170 0.179 0.197 0.196 0.221 0.227 0.184  23.21
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9995
               Response Ratio = 0.00000 + 0.18522 *A + 0.02158 *A^2

110)  Hexachlorobutadie 0.179 0.276 0.302 0.297 0.269 0.291 0.297 0.273  15.83
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9992
               Response Ratio = 0.00000 + 0.27210 *A + 0.01263 *A^2

111)  1,2,4-Trichlorobe 0.602 0.777 0.781 0.842 0.805 0.823 0.820 0.779  10.42
112)  Naphthalene       2.009 2.678 2.719 2.964 2.863 3.017 3.035 2.755  12.97
113)  1,2,3-Trichlorobe 0.596 0.741 0.747 0.784 0.758 0.776 0.774 0.739   8.81
 ----------------------------------------------------------------------------
 (#) = Out of Range

          V2O_04-11-2023.M        Tue Apr 11 14:43:59 2023
```

Initial Calibration Verification

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2924-ICV2924
Lab FileID: 2O75434.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\2\data\2023-04-11\2O75434.D Vial: 10
Acq On : 11 Apr 2023 1:39 pm Operator: davidb2
Sample : ICV2924-5 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,, Multiplr: 1.00
MS Integration Params: big.p

Method : C:\msdchem\2\met...V2O_04-11-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Tue Apr 11 14:22:12 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	103	0.00	4.03
2	Dichlorodifluoromethane	0.204	0.239	-17.2	121	0.00	1.23
3 P	Chloromethane	0.220	0.230	-4.5	109	0.00	1.38
		Amount	Calc.	%Drift			
4	1,3-butadiene		----------NA----------				
		AvgRF	CCRF	%Dev			
5 C	Vinyl Chloride	0.219	0.230	-5.0	106	0.00	1.44
6	Bromomethane	0.167	0.173	-3.6	109	0.00	1.67
		Amount	Calc.	%Drift			
7	Chloroethane	40.000	30.661	23.3#	121	0.00	1.76
		AvgRF	CCRF	%Dev			
8	Trichlorofluoromethane	0.388	0.404	-4.1	101	0.00	1.85
9	Ethyl Ether	0.172	0.198	-15.1	116	0.00	2.07
		Amount	Calc.	%Drift			
10	Ethanol	800.000	786.589	1.7	102	0.00	2.17
		AvgRF	CCRF	%Dev			
11	1,2-Dichlorotrifluoroetha	0.256	0.289	-12.9	120	0.00	2.19
12 C	1,1-Dichloroethene	0.329	0.340	-3.3	109	0.00	2.19
13	Freon 113		----------NA----------				
14	Carbon Disulfide	0.640	0.673	-5.2	112	0.00	2.21
15	Iodomethane	0.342	0.389	-13.7	111	0.00	2.28
16	Acrolein	0.063	0.075	-19.0	119	0.00	2.39
17	Allyl chloride	0.255	0.284	-11.4	115	0.00	2.48
		Amount	Calc.	%Drift			
18	Methylene Chloride	40.000	41.309	-3.3	111	0.00	2.54
		AvgRF	CCRF	%Dev			
19	Acetone	0.126	0.106	15.9	93	0.00	2.57
20	Methyl acetate	0.289	0.294	-1.7	106	0.00	2.64
21	trans-1,2-Dichloroethene	0.315	0.335	-6.3	109	0.00	2.64
22	Hexane	0.166	0.183	-10.2	115	0.00	2.69
23	Methyl Tert Butyl Ether	0.604	0.679	-12.4	113	0.00	2.70
		Amount	Calc.	%Drift			
24	Tert Butyl Alcohol	400.000	397.040	0.7	103	0.00	2.75

Initial Calibration Verification

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2924-ICV2924
Lab FileID: 2O75434.D

			AvgRF	CCRF	%Dev			
25		Acetonitrile	0.047	0.046	2.1	105	0.00	2.84
26		Di-isopropyl ether	0.641	0.693	-8.1	110	0.00	2.92
27		Chloroprene	0.301	0.276	8.3	97	0.00	2.98
28	P	1,1-Dichloroethane	0.409	0.413	-1.0	104	0.00	2.99
29		Acrylonitrile	0.122	0.120	1.6	104	0.00	3.02
30		ETBE	0.581	0.665	-14.5	114	0.00	3.13
31		Vinyl acetate	0.467	0.467	0.0	102	0.00	3.13
32		cis-1,2-Dichloroethene	0.254	0.259	-2.0	104	0.00	3.30
33		2,2-Dichloropropane	0.275	0.329	-19.6	122	0.00	3.37
34		Bromochloromethane	0.137	0.145	-5.8	111	0.00	3.42
35		Cyclohexane	0.338	0.375	-10.9	115	0.00	3.42
36	C	Chloroform	0.443	0.456	-2.9	106	0.00	3.45
37		Ethyl acetate	0.367	0.354	3.5	100	0.00	3.51
38		Tetrahydrofuran	0.141	0.143	-1.4	105	0.00	3.54
39	S	Dibromofluoromethane	0.277	0.277	0.0	102	0.00	3.56
40		Carbon Tetrachloride	0.277	0.302	-9.0	108	0.00	3.54
41		1,1,1-Trichloroethane	0.359	0.381	-6.1	112	0.00	3.58
42		2-Butanone	0.209	0.219	-4.8	109	0.00	3.62
43		1,1-Dichloropropene	0.310	0.337	-8.7	111	0.00	3.65

			Amount	Calc.	%Drift			
44		tert-Butyl formate	200.000	225.841	-12.9	120	0.00	3.71

			AvgRF	CCRF	%Dev			
45		Propionitrile	0.062	0.061	1.6	101	0.00	3.79
46		Methacrylonitrile	0.210	0.215	-2.4	107	0.00	3.81
47		Benzene	0.917	0.953	-3.9	108	0.00	3.79
48		TAME	0.544	0.605	-11.2	111	0.00	3.85

			Amount	Calc.	%Drift			
49		Isobutyl alcohol	800.000	804.276	-0.5	99	0.00	3.89

			AvgRF	CCRF	%Dev			
50	S	1,2-Dichloroethane-d4	0.295	0.300	-1.7	103	0.00	3.87
51		1,2-Dichloroethane	0.327	0.339	-3.7	108	0.00	3.90

			Amount	Calc.	%Drift			
52		Tert Amyl Alcohol	400.000	394.822	1.3	102	0.00	3.95

			AvgRF	CCRF	%Dev			
53		Trichloroethene	0.264	0.274	-3.8	108	0.00	4.13
54		Methylcyclohexane	0.346	0.377	-9.0	110	0.00	4.13
55		Dibromomethane	0.166	0.178	-7.2	109	0.00	4.38
56	C	1,2-Dichloropropane	0.215	0.237	-10.2	113	0.00	4.45
57		Bromodichloromethane	0.295	0.307	-4.1	105	0.00	4.48
58		Methyl methacrylate	0.241	0.254	-5.4	109	0.00	4.56

			Amount	Calc.	%Drift			
59		1,4-Dioxane	800.000	821.914	-2.7	105	0.00	4.60

			AvgRF	CCRF	%Dev			
60		2-Chloroethyl vinyl ether	0.187	0.192	-2.7	103	0.00	4.82

			Amount	Calc.	%Drift			
61		cis-1,3-Dichloropropene	40.000	42.325	-5.8	111	0.00	4.87

			AvgRF	CCRF	%Dev			

Initial Calibration Verification

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2924-ICV2924
Lab FileID: 2O75434.D

62	I	Chlorobenzene-d5	1.000	1.000	0.0	102	0.00	6.04
63	S	Toluene-d8	1.364	1.353	0.8	102	0.00	4.99
64	C	Toluene	1.370	1.419	-3.6	108	0.00	5.02
			Amount	Calc.	%Drift			
65		2-Nitropropane	200.000	192.748	3.6	100	0.00	5.17
			AvgRF	CCRF	%Dev			
66		4-Methyl-2-pentanone	0.490	0.515	-5.1	108	0.00	5.26
			Amount	Calc.	%Drift			
67		trans-1,3-Dichloropropene	40.000	40.195	-0.5	103	0.00	5.29
			AvgRF	CCRF	%Dev			
68		Tetrachloroethene	0.388	0.400	-3.1	106	0.00	5.28
			Amount	Calc.	%Drift			
69		Ethyl methacrylate	40.000	43.316	-8.3	112	0.00	5.38
			AvgRF	CCRF	%Dev			
70		1,1,2-Trichloroethane	0.276	0.283	-2.5	106	0.00	5.40
			Amount	Calc.	%Drift			
71		Dibromochloromethane	40.000	43.213	-8.0	110	0.00	5.52
			AvgRF	CCRF	%Dev			
72		1,3-Dichloropropane	0.506	0.574	-13.4	116	0.00	5.59
73		1,2-Dibromoethane	0.346	0.379	-9.5	108	0.00	5.69
			Amount	Calc.	%Drift			
74		3,3-dimethyl-1-butanol	2000.000	2037.047	-1.9	104	0.00	5.81
			AvgRF	CCRF	%Dev			
75		2-hexanone	0.486	0.481	1.0	100	0.00	5.83
76		1-Chlorohexane	0.431	0.436	-1.2	108	0.00	6.03
77	C	Ethylbenzene	1.478	1.527	-3.3	108	0.00	6.07
78	P	Chlorobenzene	0.926	0.952	-2.8	106	0.00	6.06
79		1,1,1,2-Tetrachloroethane	0.290	0.321	-10.7	108	0.00	6.10
80		m,p-Xylene	1.150	1.205	-4.8	107	0.00	6.18
81		o-Xylene	1.161	1.194	-2.8	105	0.00	6.49
82		Styrene	0.912	0.990	-8.6	108	0.00	6.53
			Amount	Calc.	%Drift			
83	P	Bromoform	40.000	40.305	-0.8	104	0.00	6.55
			AvgRF	CCRF	%Dev			
84		Isopropylbenzene	1.400	1.465	-4.6	105	0.00	6.73
85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	100	0.00	7.80
86	S	4-Bromofluorobenzene	0.763	0.758	0.7	102	0.00	6.95
87		cis-1,4-Dichloro-2-butene		----------NA----------				
88		n-Propylbenzene	3.100	3.194	-3.0	106	0.00	7.05
89		Bromobenzene	0.688	0.745	-8.3	111	0.00	7.02
90	P	1,1,2,2-Tetrachloroethane	0.944	1.002	-6.1	108	0.00	7.09
91		1,3,5-Trimethylbenzene	2.188	2.353	-7.5	108	0.00	7.20
92		2-Chlorotoluene	2.090	2.162	-3.4	108	0.00	7.17
			Amount	Calc.	%Drift			
93		trans-1,4-Dichloro-2-Bute	40.000	41.719	-4.3	109	0.00	7.23

Initial Calibration Verification

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2924-ICV2924
Lab FileID: 2O75434.D

		AvgRF	CCRF	%Dev			
94	1,2,3-Trichloropropane	0.311	0.334	-7.4	112	0.00	7.20
		Amount	Calc.	%Drift			
95	Cyclohexanone	200.000	245.805	-22.9#	135	0.00	7.24
		AvgRF	CCRF	%Dev			
96	4-Chlorotoluene	1.924	1.989	-3.4	105	0.00	7.30
97	tert-Butylbenzene	1.182	1.253	-6.0	107	0.00	7.45
98	a-Methyl styrene		----------NA----------				
99	1,2,4-Trimethylbenzene	2.162	2.387	-10.4	110	0.00	7.50
		Amount	Calc.	%Drift			
100	Pentachloroethane	40.000	42.658	-6.6	109	0.00	7.46
		AvgRF	CCRF	%Dev			
101	sec-Butylbenzene	2.620	2.623	-0.1	102	0.00	7.59
102	4-Isopropyltoluene	2.286	2.395	-4.8	105	0.00	7.70
103	1,3-Dichlorobenzene	1.359	1.376	-1.3	103	0.00	7.75
104	1,2,3-Trimethylbenzene	2.263	2.367	-4.6	105	0.00	7.84
105	1,4-Dichlorobenzene	1.377	1.429	-3.8	107	0.00	7.82
		Amount	Calc.	%Drift			
106	n-Butylbenzene	40.000	43.698	-9.2	113	0.00	8.01
107	Benzyl Chloride	40.000	43.475	-8.7	112	0.00	8.00
		AvgRF	CCRF	%Dev			
108	1,2-Dichlorobenzene	1.283	1.332	-3.8	106	0.00	8.13
		Amount	Calc.	%Drift			
109	1,2-Dibromo-3-Chloropropa	40.000	43.105	-7.8	112	0.00	8.70
110	Hexachlorobutadiene	40.000	44.392	-11.0	117	0.00	9.16
		AvgRF	CCRF	%Dev			
111	1,2,4-Trichlorobenzene	0.779	0.853	-9.5	106	0.00	9.18
112	Naphthalene	2.755	3.046	-10.6	107	0.00	9.40
113	1,2,3-Trichlorobenzene	0.739	0.830	-12.3	110	0.00	9.53

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2O75430.D V2O_04-11-2023.M Tue Apr 11 14:43:02 2023

Initial Calibration Verification

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2924-ICV2924
Lab FileID: 2O75435.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\2\data\2023-04-11\2O75435.D Vial: 11
Acq On : 11 Apr 2023 2:04 pm Operator: davidb2
Sample : ICV2924-4 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,, Multiplr: 1.00
MS Integration Params: big.p

Method : C:\msdchem\2\met...V2O_04-11-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Tue Apr 11 14:22:12 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	106	0.00	4.03
2	Dichlorodifluoromethane		----------NA----------				
3 P	Chloromethane		----------NA----------				
	----------	Amount	Calc.	%Drift	----------		
4	1,3-butadiene	25.000	20.332	18.7	83	0.00	1.45
	----------	AvgRF	CCRF	%Dev	----------		
5 C	Vinyl Chloride		----------NA----------				
6	Bromomethane		----------NA----------				
	----------	Amount	Calc.	%Drift	----------		
7	Chloroethane		----------NA----------				
	----------	AvgRF	CCRF	%Dev	----------		
8	Trichlorofluoromethane		----------NA----------				
9	Ethyl Ether		----------NA----------				
	----------	Amount	Calc.	%Drift	----------		
10	Ethanol		----------NA----------				
	----------	AvgRF	CCRF	%Dev	----------		
11	1,2-Dichlorotrifluoroetha		----------NA----------				
12 C	1,1-Dichloroethene		----------NA----------				
13	Freon 113	0.219	0.225	-2.7	103	0.00	2.21
14	Carbon Disulfide		----------NA----------				
15	Iodomethane		----------NA----------				
16	Acrolein		----------NA----------				
17	Allyl chloride		----------NA----------				
	----------	Amount	Calc.	%Drift	----------		
18	Methylene Chloride		----------NA----------				
	----------	AvgRF	CCRF	%Dev	----------		
19	Acetone		----------NA----------				
20	Methyl acetate		----------NA----------				
21	trans-1,2-Dichloroethene		----------NA----------				
22	Hexane		----------NA----------				
23	Methyl Tert Butyl Ether		----------NA----------				
	----------	Amount	Calc.	%Drift	----------		
24	Tert Butyl Alcohol		----------NA----------				

Initial Calibration Verification

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2924-ICV2924
Lab FileID: 2O75435.D

			AvgRF	CCRF	%Dev			
25		Acetonitrile		NA				
26		Di-isopropyl ether		NA				
27		Chloroprene		NA				
28	P	1,1-Dichloroethane		NA				
29		Acrylonitrile		NA				
30		ETBE		NA				
31		Vinyl acetate		NA				
32		cis-1,2-Dichloroethene		NA				
33		2,2-Dichloropropane		NA				
34		Bromochloromethane		NA				
35		Cyclohexane		NA				
36	C	Chloroform		NA				
37		Ethyl acetate		NA				
38		Tetrahydrofuran		NA				
39	S	Dibromofluoromethane	0.277	0.277	0.0	107	0.00	3.56
40		Carbon Tetrachloride		NA				
41		1,1,1-Trichloroethane		NA				
42		2-Butanone		NA				
43		1,1-Dichloropropene		NA				

			Amount	Calc.	%Drift			
44		tert-Butyl formate		NA				

			AvgRF	CCRF	%Dev			
45		Propionitrile		NA				
46		Methacrylonitrile		NA				
47		Benzene		NA				
48		TAME		NA				

			Amount	Calc.	%Drift			
49		Isobutyl alcohol		NA				

			AvgRF	CCRF	%Dev			
50	S	1,2-Dichloroethane-d4	0.295	0.292	1.0	109	0.00	3.87
51		1,2-Dichloroethane		NA				

			Amount	Calc.	%Drift			
52		Tert Amyl Alcohol		NA				

			AvgRF	CCRF	%Dev			
53		Trichloroethene		NA				
54		Methylcyclohexane		NA				
55		Dibromomethane		NA				
56	C	1,2-Dichloropropane		NA				
57		Bromodichloromethane		NA				
58		Methyl methacrylate		NA				

			Amount	Calc.	%Drift			
59		1,4-Dioxane		NA				

			AvgRF	CCRF	%Dev			
60		2-Chloroethyl vinyl ether		NA				

			Amount	Calc.	%Drift			
61		cis-1,3-Dichloropropene		NA				

			AvgRF	CCRF	%Dev			

Initial Calibration Verification

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2924-ICV2924
Lab FileID: 2O75435.D

62	I	Chlorobenzene-d5	1.000	1.000	0.0	106	0.00	6.04
63	S	Toluene-d8	1.364	1.362	0.1	106	0.00	4.99
64	C	Toluene		----------NA----------				
		---------- Amount Calc. %Drift ----------						
65		2-Nitropropane		----------NA----------				
		---------- AvgRF CCRF %Dev ----------						
66		4-Methyl-2-pentanone		----------NA----------				
		---------- Amount Calc. %Drift ----------						
67		trans-1,3-Dichloropropene		----------NA----------				
		---------- AvgRF CCRF %Dev ----------						
68		Tetrachloroethene		----------NA----------				
		---------- Amount Calc. %Drift ----------						
69		Ethyl methacrylate		----------NA----------				
		---------- AvgRF CCRF %Dev ----------						
70		1,1,2-Trichloroethane		----------NA----------				
		---------- Amount Calc. %Drift ----------						
71		Dibromochloromethane		----------NA----------				
		---------- AvgRF CCRF %Dev ----------						
72		1,3-Dichloropropane		----------NA----------				
73		1,2-Dibromoethane		----------NA----------				
		---------- Amount Calc. %Drift ----------						
74		3,3-dimethyl-1-butanol		----------NA----------				
		---------- AvgRF CCRF %Dev ----------						
75		2-hexanone		----------NA----------				
76		1-Chlorohexane		----------NA----------				
77	C	Ethylbenzene		----------NA----------				
78	P	Chlorobenzene		----------NA----------				
79		1,1,1,2-Tetrachloroethane		----------NA----------				
80		m,p-Xylene		----------NA----------				
81		o-Xylene		----------NA----------				
82		Styrene		----------NA----------				
		---------- Amount Calc. %Drift ----------						
83	P	Bromoform		----------NA----------				
		---------- AvgRF CCRF %Dev ----------						
84		Isopropylbenzene		----------NA----------				
85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	109	0.00	7.80
86	S	4-Bromofluorobenzene	0.763	0.765	-0.3	107	0.00	6.95
87		cis-1,4-Dichloro-2-butene	0.226	0.267	-18.1	123	0.00	6.99
88		n-Propylbenzene		----------NA----------				
89		Bromobenzene		----------NA----------				
90	P	1,1,2,2-Tetrachloroethane		----------NA----------				
91		1,3,5-Trimethylbenzene		----------NA----------				
92		2-Chlorotoluene		----------NA----------				
		---------- Amount Calc. %Drift ----------						
93		trans-1,4-Dichloro-2-Bute		----------NA----------				

Initial Calibration Verification

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2924-ICV2924
Lab FileID: 2O75435.D

		AvgRF	CCRF	%Dev	
94	1,2,3-Trichloropropane		NA		
		Amount	Calc.	%Drift	
95	Cyclohexanone		NA		
		AvgRF	CCRF	%Dev	
96	4-Chlorotoluene		NA		
97	tert-Butylbenzene		NA		
98	a-Methyl styrene		NA		
99	1,2,4-Trimethylbenzene		NA		
		Amount	Calc.	%Drift	
100	Pentachloroethane		NA		
		AvgRF	CCRF	%Dev	
101	sec-Butylbenzene		NA		
102	4-Isopropyltoluene		NA		
103	1,3-Dichlorobenzene		NA		
104	1,2,3-Trimethylbenzene		NA		
105	1,4-Dichlorobenzene		NA		
		Amount	Calc.	%Drift	
106	n-Butylbenzene		NA		
107	Benzyl Chloride		NA		
		AvgRF	CCRF	%Dev	
108	1,2-Dichlorobenzene		NA		
		Amount	Calc.	%Drift	
109	1,2-Dibromo-3-Chloropropa		NA		
110	Hexachlorobutadiene		NA		
		AvgRF	CCRF	%Dev	
111	1,2,4-Trichlorobenzene		NA		
112	Naphthalene		NA		
113	1,2,3-Trichlorobenzene		NA		

(#) = Out of Range SPCC's out = 4 CCC's out = 6
2O75429.D V2O_04-11-2023.M Tue Apr 11 14:43:50 2023

Continuing Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2949-CC2924
Lab FileID: 2O75998.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\2\data\2023-05-03\2O75998.D Vial: 2
Acq On : 3 May 2023 11:21 am Operator: davidb2
Sample : CC2924-5 Inst : MSVOA12
Misc : MS53846,V2O2949,,,,, Multiplr: 1.00
MS Integration Params: big.p

Method : C:\msdchem\2\met...V2O_04-11-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Tue Apr 11 14:22:12 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	91	0.00	4.03
2	Dichlorodifluoromethane	0.204	0.171	16.2	76	0.00	1.23
3 P	Chloromethane	0.220	0.198	10.0	84	0.00	1.39
		Amount	Calc.	%Drift			
4	1,3-butadiene	40.000	39.794	0.5	92	0.00	1.45
		AvgRF	CCRF	%Dev			
5 C	Vinyl Chloride	0.219	0.222	-1.4	90	0.00	1.43
6	Bromomethane	0.167	0.170	-1.8	95	0.00	1.67
		Amount	Calc.	%Drift			
7	Chloroethane	40.000	17.172	57.1#	74	0.00	1.75
		AvgRF	CCRF	%Dev			
8	Trichlorofluoromethane	0.388	0.425	-9.5	94	-0.01	1.84
9	Ethyl Ether	0.172	0.186	-8.1	97	0.00	2.06
		Amount	Calc.	%Drift			
10	Ethanol	800.000	1145.373	-43.2#	131	0.00	2.17
		AvgRF	CCRF	%Dev			
11	1,2-Dichlorotrifluoroetha	0.256	0.268	-4.7	98	0.00	2.18
12 C	1,1-Dichloroethene	0.329	0.323	1.8	91	0.00	2.18
13	Freon 113	0.219	0.242	-10.5	101	0.00	2.21
14	Carbon Disulfide	0.640	0.626	2.2	92	0.00	2.20
15	Iodomethane	0.342	0.234	31.6#	59	0.00	2.28
16	Acrolein	0.063	0.075	-19.0	104	0.00	2.39
17	Allyl chloride	0.255	0.232	9.0	83	0.00	2.48
		Amount	Calc.	%Drift			
18	Methylene Chloride	40.000	40.230	-0.6	96	0.00	2.54
		AvgRF	CCRF	%Dev			
19	Acetone	0.126	0.152	-20.6#	118	0.00	2.57
20	Methyl acetate	0.289	0.326	-12.8	104	0.00	2.64
21	trans-1,2-Dichloroethene	0.315	0.320	-1.6	92	0.00	2.64
22	Hexane	0.166	0.182	-9.6	101	0.00	2.68
23	Methyl Tert Butyl Ether	0.604	0.633	-4.8	93	0.00	2.70
		Amount	Calc.	%Drift			
24	Tert Butyl Alcohol	400.000	513.872	-28.5#	120	0.00	2.75

Continuing Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2949-CC2924
Lab FileID: 2O75998.D

			AvgRF	CCRF	%Dev			
25		Acetonitrile	0.047	0.055	-17.0	111	0.00	2.84
26		Di-isopropyl ether	0.641	0.681	-6.2	96	0.00	2.92
27		Chloroprene	0.301	0.319	-6.0	99	0.00	2.98
28	P	1,1-Dichloroethane	0.409	0.422	-3.2	95	0.00	2.99
29		Acrylonitrile	0.122	0.136	-11.5	104	0.00	3.01
30		ETBE	0.581	0.622	-7.1	94	0.00	3.12
31		Vinyl acetate	0.467	0.509	-9.0	98	0.00	3.13
32		cis-1,2-Dichloroethene	0.254	0.267	-5.1	95	0.00	3.29
33		2,2-Dichloropropane	0.275	0.291	-5.8	95	0.00	3.36
34		Bromochloromethane	0.137	0.139	-1.5	94	0.00	3.41
35		Cyclohexane	0.338	0.360	-6.5	98	0.00	3.42
36	C	Chloroform	0.443	0.475	-7.2	98	0.00	3.45
37		Ethyl acetate	0.367	0.411	-12.0	103	0.00	3.51
38		Tetrahydrofuran	0.141	0.157	-11.3	102	0.00	3.54
39	S	Dibromofluoromethane	0.277	0.272	1.8	89	0.00	3.56
40		Carbon Tetrachloride	0.277	0.297	-7.2	94	0.00	3.54
41		1,1,1-Trichloroethane	0.359	0.379	-5.6	99	0.00	3.57
42		2-Butanone	0.209	0.252	-20.6#	111	0.00	3.62
43		1,1-Dichloropropene	0.310	0.329	-6.1	96	0.00	3.64

			Amount	Calc.	%Drift			
44		tert-Butyl formate	200.000	196.623	1.7	91	0.00	3.70

			AvgRF	CCRF	%Dev			
45		Propionitrile	0.062	0.077	-24.2#	114	0.00	3.79
46		Methacrylonitrile	0.210	0.233	-11.0	102	0.00	3.81
47		Benzene	0.917	0.969	-5.7	97	0.00	3.79
48		TAME	0.544	0.577	-6.1	93	0.00	3.84

			Amount	Calc.	%Drift			
49		Isobutyl alcohol	800.000	1124.755	-40.6#	127	0.00	3.89

			AvgRF	CCRF	%Dev			
50	S	1,2-Dichloroethane-d4	0.295	0.337	-14.2	102	0.00	3.86
51		1,2-Dichloroethane	0.327	0.370	-13.1	104	0.00	3.90

			Amount	Calc.	%Drift			
52		Tert Amyl Alcohol	400.000	509.466	-27.4#	120	0.00	3.95

			AvgRF	CCRF	%Dev			
53		Trichloroethene	0.264	0.273	-3.4	95	0.00	4.12
54		Methylcyclohexane	0.346	0.380	-9.8	98	0.00	4.13
55		Dibromomethane	0.166	0.177	-6.6	96	0.00	4.38
56	C	1,2-Dichloropropane	0.215	0.233	-8.4	98	0.00	4.44
57		Bromodichloromethane	0.295	0.320	-8.5	97	0.00	4.47
58		Methyl methacrylate	0.241	0.267	-10.8	101	0.00	4.56

			Amount	Calc.	%Drift			
59		1,4-Dioxane	800.000	1230.596	-53.8#	143	0.00	4.59

			AvgRF	CCRF	%Dev			
60		2-Chloroethyl vinyl ether	0.187	0.200	-7.0	95	0.00	4.82

			Amount	Calc.	%Drift			
61		cis-1,3-Dichloropropene	40.000	41.472	-3.7	96	0.00	4.86

			AvgRF	CCRF	%Dev			

Continuing Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2949-CC2924
Lab FileID: 2O75998.D

62	I	Chlorobenzene-d5	1.000	1.000	0.0	99	0.00	6.04
63	S	Toluene-d8	1.364	1.285	5.8	94	0.00	4.99
64	C	Toluene	1.370	1.339	2.3	99	0.00	5.02
			Amount	Calc.	%Drift			
65		2-Nitropropane	200.000	222.142	-11.1	114	0.00	5.17
			AvgRF	CCRF	%Dev			
66		4-Methyl-2-pentanone	0.490	0.530	-8.2	107	0.00	5.25
			Amount	Calc.	%Drift			
67		trans-1,3-Dichloropropene	40.000	39.611	1.0	98	0.00	5.28
			AvgRF	CCRF	%Dev			
68		Tetrachloroethene	0.388	0.350	9.8	90	0.00	5.28
			Amount	Calc.	%Drift			
69		Ethyl methacrylate	40.000	40.912	-2.3	102	0.00	5.38
			AvgRF	CCRF	%Dev			
70		1,1,2-Trichloroethane	0.276	0.279	-1.1	101	0.00	5.39
			Amount	Calc.	%Drift			
71		Dibromochloromethane	40.000	38.712	3.2	95	0.00	5.51
			AvgRF	CCRF	%Dev			
72		1,3-Dichloropropane	0.506	0.517	-2.2	101	0.00	5.58
73		1,2-Dibromoethane	0.346	0.359	-3.8	99	0.00	5.68
			Amount	Calc.	%Drift			
74		3,3-dimethyl-1-butanol	2000.000	2674.280	-33.7#	135	0.00	5.80
			AvgRF	CCRF	%Dev			
75		2-hexanone	0.486	0.603	-24.1#	121	0.00	5.82
76		1-Chlorohexane	0.431	0.423	1.9	101	0.00	6.02
77	C	Ethylbenzene	1.478	1.478	0.0	101	-0.01	6.06
78	P	Chlorobenzene	0.926	0.897	3.1	97	0.00	6.05
79		1,1,1,2-Tetrachloroethane	0.290	0.298	-2.8	97	0.00	6.09
80		m,p-Xylene	1.150	1.162	-1.0	100	0.00	6.17
81		o-Xylene	1.161	1.171	-0.9	99	-0.01	6.48
82		Styrene	0.912	0.929	-1.9	98	0.00	6.52
			Amount	Calc.	%Drift			
83	P	Bromoform	40.000	37.948	5.1	94	0.00	6.54
			AvgRF	CCRF	%Dev			
84		Isopropylbenzene	1.400	1.419	-1.4	99	0.00	6.72
85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	99	0.00	7.80
86	S	4-Bromofluorobenzene	0.763	0.740	3.0	98	-0.01	6.93
87		cis-1,4-Dichloro-2-butene	0.226	0.211	6.6	91	0.00	6.98
88		n-Propylbenzene	3.100	3.111	-0.4	102	0.00	7.04
89		Bromobenzene	0.688	0.658	4.4	97	0.00	7.02
90	P	1,1,2,2-Tetrachloroethane	0.944	0.992	-5.1	106	0.00	7.09
91		1,3,5-Trimethylbenzene	2.188	2.141	2.1	97	-0.01	7.19
92		2-Chlorotoluene	2.090	2.060	1.4	102	-0.01	7.16
			Amount	Calc.	%Drift			
93		trans-1,4-Dichloro-2-Bute	40.000	39.493	1.3	102	0.00	7.23

Continuing Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2949-CC2924
Lab FileID: 2O75998.D

		AvgRF	CCRF	%Dev			
94	1,2,3-Trichloropropane	0.311	0.310	0.3	103	0.00	7.20

		Amount	Calc.	%Drift			
95	Cyclohexanone	200.000	264.622	-32.3#	143	-0.01	7.23

		AvgRF	CCRF	%Dev			
96	4-Chlorotoluene	1.924	1.945	-1.1	102	-0.01	7.29
97	tert-Butylbenzene	1.182	1.189	-0.6	100	-0.01	7.44
98	a-Methyl styrene		----------NA----------				
99	1,2,4-Trimethylbenzene	2.162	2.182	-0.9	100	0.00	7.49

		Amount	Calc.	%Drift			
100	Pentachloroethane	40.000	38.827	2.9	97	0.00	7.46

		AvgRF	CCRF	%Dev			
101	sec-Butylbenzene	2.620	2.605	0.6	100	0.00	7.58
102	4-Isopropyltoluene	2.286	2.240	2.0	97	-0.01	7.68
103	1,3-Dichlorobenzene	1.359	1.303	4.1	97	0.00	7.74
104	1,2,3-Trimethylbenzene	2.263	2.234	1.3	98	-0.01	7.82
105	1,4-Dichlorobenzene	1.377	1.321	4.1	98	-0.01	7.81

		Amount	Calc.	%Drift			
106	n-Butylbenzene	40.000	40.443	-1.1	103	-0.01	8.00
107	Benzyl Chloride	40.000	36.640	8.4	90	0.00	7.99

		AvgRF	CCRF	%Dev			
108	1,2-Dichlorobenzene	1.283	1.246	2.9	99	0.00	8.12

		Amount	Calc.	%Drift			
109	1,2-Dibromo-3-Chloropropa	40.000	42.645	-6.6	110	-0.01	8.70
110	Hexachlorobutadiene	40.000	38.778	3.1	101	-0.01	9.15

		AvgRF	CCRF	%Dev			
111	1,2,4-Trichlorobenzene	0.779	0.818	-5.0	101	-0.01	9.17
112	Naphthalene	2.755	2.700	2.0	94	-0.01	9.39
113	1,2,3-Trichlorobenzene	0.739	0.709	4.1	93	-0.01	9.52

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2O75430.D V2O_04-11-2023.M Wed May 03 11:37:15 2023

Continuing Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2949-ECC2924
Lab FileID: 2O76023.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\ce...023\V2O2949\2O76023.d Vial: 27
Acq On : 3 May 2023 11:08 pm Operator: davidb2
Sample : ECC2924-5 Inst : MSVOA12
Misc : MS53920,V2O2949,,,,, Multiplr: 1.00
MS Integration Params: big.p

Method : C:\msdchem\1\met...V2O_04-11-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Tue Apr 11 14:22:12 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 50% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	91	0.00	4.03
2	Dichlorodifluoromethane	0.204	0.161	21.1	71	0.00	1.23
3 P	Chloromethane	0.220	0.184	16.4	77	0.00	1.39
	----------	True	Calc.	% Drift	----------		
4	1,3-butadiene	40.000	44.099	-10.2	101	0.00	1.45
	----------	AvgRF	CCRF	% Dev	----------		
5 C	Vinyl Chloride	0.219	0.212	3.2	86	0.00	1.43
6	Bromomethane	0.167	0.073	56.3#	40#	0.00	1.67
	----------	True	Calc.	% Drift	----------		
7	Chloroethane	40.000	15.651	60.9#	68	0.00	1.75
	----------	AvgRF	CCRF	% Dev	----------		
8	Trichlorofluoromethane	0.388	0.401	-3.4	88	-0.01	1.84
9	Ethyl Ether	0.172	0.189	-9.9	97	0.00	2.07
	----------	True	Calc.	% Drift	----------		
10	Ethanol	800.000	1201.108	-50.1#	136	0.00	2.17
	----------	AvgRF	CCRF	% Dev	----------		
11	1,2-Dichlorotrifluoroetha	0.256	0.260	-1.6	94	0.00	2.18
12 C	1,1-Dichloroethene	0.329	0.315	4.3	88	0.00	2.18
13	Freon 113	0.219	0.229	-4.6	95	0.00	2.21
14	Carbon Disulfide	0.640	0.576	10.0	84	0.00	2.20
15	Iodomethane	0.342	0.192	43.9	48#	0.00	2.28
16	Acrolein	0.063	0.062	1.6	85	0.00	2.39
17	Allyl chloride	0.255	0.210	17.6	74	0.00	2.48
	----------	True	Calc.	% Drift	----------		
18	Methylene Chloride	40.000	39.607	1.0	93	0.00	2.54
	----------	AvgRF	CCRF	% Dev	----------		
19	Acetone	0.126	0.156	-23.8	120	0.00	2.57
20	Methyl acetate	0.289	0.347	-20.1	109	0.00	2.64
21	trans-1,2-Dichloroethene	0.315	0.306	2.9	87	0.00	2.64
22	Hexane	0.166	0.165	0.6	91	0.00	2.68
23	Methyl Tert Butyl Ether	0.604	0.648	-7.3	95	0.00	2.70
	----------	True	Calc.	% Drift	----------		
24	Tert Butyl Alcohol	400.000	529.889	-32.5	123	0.00	2.75

Continuing Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2949-ECC2924
Lab FileID: 2O76023.D

			AvgRF	CCRF	% Dev			
25		Acetonitrile	0.047	0.058	-23.4	115	0.00	2.84
26		Di-isopropyl ether	0.641	0.684	-6.7	95	0.00	2.92
27		Chloroprene	0.301	0.306	-1.7	94	0.00	2.98
28	P	1,1-Dichloroethane	0.409	0.418	-2.2	93	0.00	2.99
29		Acrylonitrile	0.122	0.136	-11.5	104	0.00	3.01
30		ETBE	0.581	0.641	-10.3	96	0.00	3.12
31		Vinyl acetate	0.467	0.441	5.6	84	0.00	3.13
32		cis-1,2-Dichloroethene	0.254	0.262	-3.1	93	0.00	3.29
33		2,2-Dichloropropane	0.275	0.174	36.7	56	0.00	3.36
34		Bromochloromethane	0.137	0.132	3.6	89	0.00	3.41
35		Cyclohexane	0.338	0.346	-2.4	93	0.00	3.42
36	C	Chloroform	0.443	0.459	-3.6	94	0.00	3.45
37		Ethyl acetate	0.367	0.413	-12.5	102	0.00	3.51
38		Tetrahydrofuran	0.141	0.163	-15.6	105	0.00	3.54
39	S	Dibromofluoromethane	0.277	0.276	0.4	89	0.00	3.55
40		Carbon Tetrachloride	0.277	0.281	-1.4	88	0.00	3.54
41		1,1,1-Trichloroethane	0.359	0.368	-2.5	95	0.00	3.57
42		2-Butanone	0.209	0.253	-21.1	111	0.00	3.62
43		1,1-Dichloropropene	0.310	0.315	-1.6	91	0.00	3.64

			True	Calc.	% Drift			
44		tert-Butyl formate	200.000	178.382	10.8	80	0.00	3.70

			AvgRF	CCRF	% Dev			
45		Propionitrile	0.062	0.078	-25.8	114	0.00	3.79
46		Methacrylonitrile	0.210	0.235	-11.9	102	0.00	3.81
47		Benzene	0.917	0.942	-2.7	93	0.00	3.79
48		TAME	0.544	0.597	-9.7	96	0.00	3.84

			True	Calc.	% Drift			
49		Isobutyl alcohol	800.000	1493.331	-86.7#	175	0.00	3.89

			AvgRF	CCRF	% Dev			
50	S	1,2-Dichloroethane-d4	0.295	0.336	-13.9	101	0.00	3.86
51		1,2-Dichloroethane	0.327	0.377	-15.3	105	0.00	3.90

			True	Calc.	% Drift			
52		Tert Amyl Alcohol	400.000	524.828	-31.2	123	0.00	3.95

			AvgRF	CCRF	% Dev			
53		Trichloroethene	0.264	0.270	-2.3	94	0.00	4.12
54		Methylcyclohexane	0.346	0.360	-4.0	92	0.00	4.13
55		Dibromomethane	0.166	0.179	-7.8	96	0.00	4.38
56	C	1,2-Dichloropropane	0.215	0.230	-7.0	96	0.00	4.44
57		Bromodichloromethane	0.295	0.313	-6.1	94	0.00	4.47
58		Methyl methacrylate	0.241	0.278	-15.4	105	0.00	4.56

			True	Calc.	% Drift			
59		1,4-Dioxane	800.000	1253.473	-56.7#	144	0.00	4.60

			AvgRF	CCRF	% Dev			
60		2-Chloroethyl vinyl ether	0.187	0.194	-3.7	92	0.00	4.82

			True	Calc.	% Drift			
61		cis-1,3-Dichloropropene	40.000	38.292	4.3	87	0.00	4.86

			AvgRF	CCRF	% Dev			

Continuing Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2949-ECC2924
Lab FileID: 2O76023.D

62	I	Chlorobenzene-d5	1.000	1.000	0.0	98	0.00	6.04
63	S	Toluene-d8	1.364	1.277	6.4	93	0.00	4.99
64	C	Toluene	1.370	1.301	5.0	95	0.00	5.02
			True	Calc.	% Drift			
65		2-Nitropropane	200.000	210.275	-5.1	106	0.00	5.17
			AvgRF	CCRF	% Dev			
66		4-Methyl-2-pentanone	0.490	0.544	-11.0	109	0.00	5.26
			True	Calc.	% Drift			
67		trans-1,3-Dichloropropene	40.000	36.356	9.1	89	0.00	5.28
			AvgRF	CCRF	% Dev			
68		Tetrachloroethene	0.388	0.467	-20.4	119	0.00	5.27
			True	Calc.	% Drift			
69		Ethyl methacrylate	40.000	42.581	-6.5	106	0.00	5.38
			AvgRF	CCRF	% Dev			
70		1,1,2-Trichloroethane	0.276	0.283	-2.5	101	0.00	5.39
			True	Calc.	% Drift			
71		Dibromochloromethane	40.000	38.373	4.1	93	0.00	5.52
			AvgRF	CCRF	% Dev			
72		1,3-Dichloropropane	0.506	0.519	-2.6	100	0.00	5.58
73		1,2-Dibromoethane	0.346	0.363	-4.9	99	0.00	5.68
			True	Calc.	% Drift			
74		3,3-dimethyl-1-butanol	2000.000	2746.482	-37.3	138	0.00	5.80
			AvgRF	CCRF	% Dev			
75		2-hexanone	0.486	0.614	-26.3	122	0.00	5.82
76		1-Chlorohexane	0.431	0.404	6.3	95	0.00	6.02
77	C	Ethylbenzene	1.478	1.439	2.6	97	0.00	6.07
78	P	Chlorobenzene	0.926	0.881	4.9	94	0.00	6.05
79		1,1,1,2-Tetrachloroethane	0.290	0.287	1.0	93	0.00	6.09
80		m,p-Xylene	1.150	1.120	2.6	96	0.00	6.17
81		o-Xylene	1.161	1.149	1.0	97	-0.01	6.48
82		Styrene	0.912	0.914	-0.2	95	0.00	6.52
			True	Calc.	% Drift			
83	P	Bromoform	40.000	36.666	8.3	90	0.00	6.54
			AvgRF	CCRF	% Dev			
84		Isopropylbenzene	1.400	1.367	2.4	94	0.00	6.72
85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	99	0.00	7.80
86	S	4-Bromofluorobenzene	0.763	0.746	2.2	99	-0.01	6.93
87		cis-1,4-Dichloro-2-butene	0.226	0.142	37.2	61	0.00	6.98
88		n-Propylbenzene	3.100	2.971	4.2	97	0.00	7.04
89		Bromobenzene	0.688	0.643	6.5	94	0.00	7.02
90	P	1,1,2,2-Tetrachloroethane	0.944	0.982	-4.0	104	0.00	7.09
91		1,3,5-Trimethylbenzene	2.188	2.088	4.6	94	-0.01	7.19
92		2-Chlorotoluene	2.090	1.982	5.2	98	-0.01	7.16
			True	Calc.	% Drift			
93		trans-1,4-Dichloro-2-Bute	40.000	27.895	30.3	70	0.00	7.23

Continuing Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2949-ECC2924
Lab FileID: 2O76023.D

		AvgRF	CCRF	% Dev			
94	1,2,3-Trichloropropane	0.311	0.314	-1.0	104	0.00	7.20

		True	Calc.	% Drift			
95	Cyclohexanone	200.000	260.132	-30.1	141	0.00	7.23

		AvgRF	CCRF	% Dev			
96	4-Chlorotoluene	1.924	1.875	2.5	98	-0.01	7.29
97	tert-Butylbenzene	1.182	1.147	3.0	97	-0.01	7.44
98	a-Methyl styrene		----------NA----------				
99	1,2,4-Trimethylbenzene	2.162	2.105	2.6	96	0.00	7.49

		True	Calc.	% Drift			
100	Pentachloroethane	40.000	18.359	54.1#	43	0.00	7.46

		AvgRF	CCRF	% Dev			
101	sec-Butylbenzene	2.620	2.489	5.0	96	0.00	7.58
102	4-Isopropyltoluene	2.286	2.115	7.5	92	0.00	7.69
103	1,3-Dichlorobenzene	1.359	1.259	7.4	93	0.00	7.74
104	1,2,3-Trimethylbenzene	2.263	2.219	1.9	97	-0.01	7.82
105	1,4-Dichlorobenzene	1.377	1.275	7.4	94	-0.01	7.80

		True	Calc.	% Drift			
106	n-Butylbenzene	40.000	35.818	10.5	91	-0.01	8.00
107	Benzyl Chloride	40.000	18.866	52.8#	43	0.00	7.99

		AvgRF	CCRF	% Dev			
108	1,2-Dichlorobenzene	1.283	1.222	4.8	96	0.00	8.12

		True	Calc.	% Drift			
109	1,2-Dibromo-3-Chloropropa	40.000	41.458	-3.6	106	-0.01	8.69
110	Hexachlorobutadiene	40.000	34.381	14.0	89	-0.01	9.15

		AvgRF	CCRF	% Dev			
111	1,2,4-Trichlorobenzene	0.779	0.791	-1.5	97	-0.01	9.17
112	Naphthalene	2.755	2.974	-7.9	103	-0.01	9.39
113	1,2,3-Trichlorobenzene	0.739	0.773	-4.6	101	-0.01	9.52

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2O75430.D V2O_04-11-2023.M Wed May 03 23:24:06 2023

Continuing Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2954-CC2924
Lab FileID: 2O76100.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\2\data\2023-05-05\2O76100.D Vial: 2
Acq On : 5 May 2023 11:41 am Operator: davidb2
Sample : CC2924-5 Inst : MSVOA12
Misc : MS53846,V2O2954,,,,, Multiplr: 1.00
MS Integration Params: big.p

Method : C:\msdchem\2\met...V2O_04-11-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Tue Apr 11 14:22:12 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	97	0.00	4.03
2	Dichlorodifluoromethane	0.204	0.147	27.9#	70	0.00	1.23
3 P	Chloromethane	0.220	0.173	21.4#	77	0.00	1.39
		Amount	Calc.	%Drift			
4	1,3-butadiene	40.000	39.834	0.4	98	0.00	1.45
		AvgRF	CCRF	%Dev			
5 C	Vinyl Chloride	0.219	0.200	8.7	86	0.00	1.43
6	Bromomethane	0.167	0.121	27.5#	72	0.00	1.67
		Amount	Calc.	%Drift			
7	Chloroethane	40.000	15.045	62.4#	70	0.00	1.75
		AvgRF	CCRF	%Dev			
8	Trichlorofluoromethane	0.388	0.378	2.6	88	-0.01	1.84
9	Ethyl Ether	0.172	0.172	0.0	95	0.00	2.06
		Amount	Calc.	%Drift			
10	Ethanol	800.000	1076.221	-34.5#	131	0.00	2.17
		AvgRF	CCRF	%Dev			
11	1,2-Dichlorotrifluoroetha	0.256	0.267	-4.3	104	0.00	2.18
12 C	1,1-Dichloroethene	0.329	0.297	9.7	89	0.00	2.18
13	Freon 113	0.219	0.221	-0.9	98	0.00	2.21
14	Carbon Disulfide	0.640	0.548	14.4	86	0.00	2.20
15	Iodomethane	0.342	0.152	55.6#	41#	0.00	2.27
16	Acrolein	0.063	0.068	-7.9	101	0.00	2.39
17	Allyl chloride	0.255	0.209	18.0	79	0.00	2.48
		Amount	Calc.	%Drift			
18	Methylene Chloride	40.000	37.233	6.9	94	0.00	2.54
		AvgRF	CCRF	%Dev			
19	Acetone	0.126	0.141	-11.9	116	0.00	2.57
20	Methyl acetate	0.289	0.298	-3.1	101	0.00	2.64
21	trans-1,2-Dichloroethene	0.315	0.298	5.4	91	0.00	2.64
22	Hexane	0.166	0.170	-2.4	100	0.00	2.68
23	Methyl Tert Butyl Ether	0.604	0.577	4.5	90	0.00	2.70
		Amount	Calc.	%Drift			
24	Tert Butyl Alcohol	400.000	449.339	-12.3	110	0.00	2.75

Continuing Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2954-CC2924
Lab FileID: 2O76100.D

			AvgRF	CCRF	%Dev			
25		Acetonitrile	0.047	0.051	-8.5	109	0.00	2.84
26		Di-isopropyl ether	0.641	0.617	3.7	92	0.00	2.92
27		Chloroprene	0.301	0.304	-1.0	100	0.00	2.98
28	P	1,1-Dichloroethane	0.409	0.396	3.2	94	0.00	2.99
29		Acrylonitrile	0.122	0.125	-2.5	102	0.00	3.01
30		ETBE	0.581	0.576	0.9	93	0.00	3.12
31		Vinyl acetate	0.467	0.473	-1.3	97	0.00	3.12
32		cis-1,2-Dichloroethene	0.254	0.246	3.1	93	0.00	3.29
33		2,2-Dichloropropane	0.275	0.256	6.9	89	0.00	3.36
34		Bromochloromethane	0.137	0.126	8.0	91	0.00	3.41
35		Cyclohexane	0.338	0.323	4.4	93	0.00	3.42
36	C	Chloroform	0.443	0.439	0.9	96	0.00	3.45
37		Ethyl acetate	0.367	0.378	-3.0	100	0.00	3.51
38		Tetrahydrofuran	0.141	0.141	0.0	97	0.00	3.54
39	S	Dibromofluoromethane	0.277	0.268	3.2	93	0.00	3.55
40		Carbon Tetrachloride	0.277	0.274	1.1	92	0.00	3.54
41		1,1,1-Trichloroethane	0.359	0.347	3.3	96	0.00	3.57
42		2-Butanone	0.209	0.230	-10.0	107	0.00	3.62
43		1,1-Dichloropropene	0.310	0.307	1.0	95	0.00	3.64

			Amount	Calc.	%Drift			
44		tert-Butyl formate	200.000	169.553	15.2	81	0.00	3.70

			AvgRF	CCRF	%Dev			
45		Propionitrile	0.062	0.071	-14.5	112	0.00	3.79
46		Methacrylonitrile	0.210	0.218	-3.8	102	0.00	3.81
47		Benzene	0.917	0.910	0.8	96	0.00	3.79
48		TAME	0.544	0.535	1.7	92	0.00	3.84

			Amount	Calc.	%Drift			
49		Isobutyl alcohol	800.000	1060.619	-32.6#	126	0.00	3.88

			AvgRF	CCRF	%Dev			
50	S	1,2-Dichloroethane-d4	0.295	0.333	-12.9	107	0.00	3.86
51		1,2-Dichloroethane	0.327	0.349	-6.7	104	0.00	3.90

			Amount	Calc.	%Drift			
52		Tert Amyl Alcohol	400.000	463.120	-15.8	114	0.00	3.95

			AvgRF	CCRF	%Dev			
53		Trichloroethene	0.264	0.259	1.9	96	0.00	4.12
54		Methylcyclohexane	0.346	0.346	0.0	95	0.00	4.12
55		Dibromomethane	0.166	0.164	1.2	94	0.00	4.38
56	C	1,2-Dichloropropane	0.215	0.216	-0.5	96	0.00	4.43
57		Bromodichloromethane	0.295	0.290	1.7	94	0.00	4.47
58		Methyl methacrylate	0.241	0.245	-1.7	99	0.00	4.56

			Amount	Calc.	%Drift			
59		1,4-Dioxane	800.000	1146.463	-43.3#	140	0.00	4.59

			AvgRF	CCRF	%Dev			
60		2-Chloroethyl vinyl ether	0.187	0.176	5.9	89	0.00	4.82

			Amount	Calc.	%Drift			
61		cis-1,3-Dichloropropene	40.000	37.833	5.4	92	0.00	4.86

			AvgRF	CCRF	%Dev			

Continuing Calibration Summary

Job Number: FC5659 **Sample:** V2O2954-CC2924
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 2O76100.D
Project: CCF West NAM; KSC, FL

62	I	Chlorobenzene-d5	1.000	1.000	0.0	97	0.00	6.04
63	S	Toluene-d8	1.364	1.325	2.9	95	0.00	4.98
64	C	Toluene	1.370	1.339	2.3	97	0.00	5.02
			Amount	Calc.	%Drift			
65		2-Nitropropane	200.000	205.363	-2.7	103	0.00	5.17
			AvgRF	CCRF	%Dev			
66		4-Methyl-2-pentanone	0.490	0.532	-8.6	106	0.00	5.25
			Amount	Calc.	%Drift			
67		trans-1,3-Dichloropropene	40.000	39.141	2.1	96	0.00	5.28
			AvgRF	CCRF	%Dev			
68		Tetrachloroethene	0.388	0.358	7.7	91	0.00	5.27
			Amount	Calc.	%Drift			
69		Ethyl methacrylate	40.000	42.050	-5.1	103	0.00	5.38
			AvgRF	CCRF	%Dev			
70		1,1,2-Trichloroethane	0.276	0.279	-1.1	99	0.00	5.39
			Amount	Calc.	%Drift			
71		Dibromochloromethane	40.000	37.663	5.8	91	0.00	5.51
			AvgRF	CCRF	%Dev			
72		1,3-Dichloropropane	0.506	0.516	-2.0	99	0.00	5.58
73		1,2-Dibromoethane	0.346	0.360	-4.0	98	0.00	5.68
			Amount	Calc.	%Drift			
74		3,3-dimethyl-1-butanol	2000.000	2547.623	-27.4#	126	0.00	5.80
			AvgRF	CCRF	%Dev			
75		2-hexanone	0.486	0.594	-22.2#	117	0.00	5.82
76		1-Chlorohexane	0.431	0.431	0.0	101	0.00	6.02
77	C	Ethylbenzene	1.478	1.491	-0.9	100	-0.01	6.06
78	P	Chlorobenzene	0.926	0.912	1.5	97	0.00	6.05
79		1,1,1,2-Tetrachloroethane	0.290	0.290	0.0	93	0.00	6.09
80		m,p-Xylene	1.150	1.173	-2.0	99	-0.01	6.17
81		o-Xylene	1.161	1.174	-1.1	98	-0.01	6.48
82		Styrene	0.912	0.938	-2.9	97	-0.01	6.52
			Amount	Calc.	%Drift			
83	P	Bromoform	40.000	35.352	11.6	86	0.00	6.54
			AvgRF	CCRF	%Dev			
84		Isopropylbenzene	1.400	1.421	-1.5	97	0.00	6.72
85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	94	-0.01	7.79
86	S	4-Bromofluorobenzene	0.763	0.743	2.6	94	-0.01	6.93
87		cis-1,4-Dichloro-2-butene	0.226	0.187	17.3	76	-0.01	6.98
88		n-Propylbenzene	3.100	3.212	-3.6	100	0.00	7.04
89		Bromobenzene	0.688	0.670	2.6	93	0.00	7.02
90	P	1,1,2,2-Tetrachloroethane	0.944	1.021	-8.2	103	0.00	7.09
91		1,3,5-Trimethylbenzene	2.188	2.271	-3.8	98	-0.01	7.19
92		2-Chlorotoluene	2.090	2.124	-1.6	100	-0.01	7.16
			Amount	Calc.	%Drift			
93		trans-1,4-Dichloro-2-Bute	40.000	35.822	10.4	87	0.00	7.23

Continuing Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2954-CC2924
Lab FileID: 2O76100.D

		AvgRF	CCRF	%Dev			
94	1,2,3-Trichloropropane	0.311	0.326	-4.8	102	0.00	7.20

		Amount	Calc.	%Drift			
95	Cyclohexanone	200.000	265.910	-33.0#	137	-0.01	7.23

		AvgRF	CCRF	%Dev			
96	4-Chlorotoluene	1.924	2.010	-4.5	100	-0.01	7.29
97	tert-Butylbenzene	1.182	1.229	-4.0	98	-0.01	7.44
98	a-Methyl styrene		----------NA----------				
99	1,2,4-Trimethylbenzene	2.162	2.257	-4.4	98	0.00	7.49

		Amount	Calc.	%Drift			
100	Pentachloroethane	40.000	39.610	1.0	94	0.00	7.46

		AvgRF	CCRF	%Dev			
101	sec-Butylbenzene	2.620	2.729	-4.2	100	0.00	7.58
102	4-Isopropyltoluene	2.286	2.322	-1.6	96	-0.01	7.68
103	1,3-Dichlorobenzene	1.359	1.337	1.6	94	-0.01	7.74
104	1,2,3-Trimethylbenzene	2.263	2.276	-0.6	95	-0.01	7.82
105	1,4-Dichlorobenzene	1.377	1.352	1.8	95	-0.01	7.80

		Amount	Calc.	%Drift			
106	n-Butylbenzene	40.000	41.740	-4.4	101	-0.01	8.00
107	Benzyl Chloride	40.000	34.254	14.4	79	0.00	7.99

		AvgRF	CCRF	%Dev			
108	1,2-Dichlorobenzene	1.283	1.295	-0.9	97	-0.01	8.12

		Amount	Calc.	%Drift			
109	1,2-Dibromo-3-Chloropropa	40.000	42.296	-5.7	103	-0.01	8.70
110	Hexachlorobutadiene	40.000	39.590	1.0	98	-0.01	9.15

		AvgRF	CCRF	%Dev			
111	1,2,4-Trichlorobenzene	0.779	0.837	-7.4	98	-0.01	9.17
112	Naphthalene	2.755	3.056	-10.9	100	-0.01	9.39
113	1,2,3-Trichlorobenzene	0.739	0.805	-8.9	100	-0.01	9.52

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2O75430.D V2O_04-11-2023.M Fri May 05 11:56:04 2023

Continuing Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2954-ECC2924
Lab FileID: 2O76126.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\ce...\V2O2954-55\2O76126.d Vial: 28
Acq On : 5 May 2023 11:08 pm Operator: davidb2
Sample : ECC2924-5 Inst : MSVOA12
Misc : MS53846,V2O2954,,,,, Multiplr: 1.00
MS Integration Params: big.p

Method : C:\msdchem\1\met...V2O_04-11-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Tue Apr 11 14:22:12 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 50% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	96	0.00	4.03
2	Dichlorodifluoromethane	0.204	0.146	28.4	69	0.00	1.22
3 P	Chloromethane	0.220	0.164	25.5	73	0.00	1.39
	----------	True	Calc.	% Drift	----------		
4	1,3-butadiene	40.000	41.867	-4.7	102	0.00	1.45
	----------	AvgRF	CCRF	% Dev	----------		
5 C	Vinyl Chloride	0.219	0.193	11.9	83	0.00	1.43
6	Bromomethane	0.167	0.099	40.7	58	0.00	1.67
	----------	True	Calc.	% Drift	----------		
7	Chloroethane	40.000	13.495	66.3#	64	0.00	1.75
	----------	AvgRF	CCRF	% Dev	----------		
8	Trichlorofluoromethane	0.388	0.357	8.0	83	-0.01	1.84
9	Ethyl Ether	0.172	0.175	-1.7	96	0.00	2.06
	----------	True	Calc.	% Drift	----------		
10	Ethanol	800.000	1109.727	-38.7	134	0.01	2.18
	----------	AvgRF	CCRF	% Dev	----------		
11	1,2-Dichlorotrifluoroetha	0.256	0.258	-0.8	100	0.00	2.18
12 C	1,1-Dichloroethene	0.329	0.288	12.5	86	0.00	2.18
13	Freon 113	0.219	0.209	4.6	92	0.00	2.21
14	Carbon Disulfide	0.640	0.512	20.0	79	0.00	2.20
15	Iodomethane	0.342	0.156	54.4#	41#	0.00	2.27
16	Acrolein	0.063	0.058	7.9	86	0.00	2.39
17	Allyl chloride	0.255	0.192	24.7	72	0.00	2.47
	----------	True	Calc.	% Drift	----------		
18	Methylene Chloride	40.000	37.680	5.8	95	0.00	2.54
	----------	AvgRF	CCRF	% Dev	----------		
19	Acetone	0.126	0.148	-17.5	121	0.00	2.57
20	Methyl acetate	0.289	0.321	-11.1	107	0.00	2.64
21	trans-1,2-Dichloroethene	0.315	0.289	8.3	87	0.00	2.63
22	Hexane	0.166	0.149	10.2	87	0.00	2.68
23	Methyl Tert Butyl Ether	0.604	0.593	1.8	92	0.00	2.70
	----------	True	Calc.	% Drift	----------		
24	Tert Butyl Alcohol	400.000	481.816	-20.5	118	0.00	2.75

Continuing Calibration Summary

Job Number: FC5659 **Sample:** V2O2954-ECC2924
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 2O76126.D
Project: CCF West NAM; KSC, FL

			AvgRF	CCRF	% Dev			
25		Acetonitrile	0.047	0.053	-12.8	112	0.00	2.84
26		Di-isopropyl ether	0.641	0.638	0.5	95	0.00	2.92
27		Chloroprene	0.301	0.294	2.3	96	0.00	2.98
28	P	1,1-Dichloroethane	0.409	0.390	4.6	92	0.00	2.99
29		Acrylonitrile	0.122	0.130	-6.6	105	0.00	3.01
30		ETBE	0.581	0.591	-1.7	94	0.00	3.12
31		Vinyl acetate	0.467	0.439	6.0	89	0.00	3.12
32		cis-1,2-Dichloroethene	0.254	0.255	-0.4	96	0.00	3.29
33		2,2-Dichloropropane	0.275	0.136	50.5#	47#	0.00	3.36
34		Bromochloromethane	0.137	0.121	11.7	86	0.00	3.41
35		Cyclohexane	0.338	0.319	5.6	91	0.00	3.42
36	C	Chloroform	0.443	0.426	3.8	92	0.00	3.45
37		Ethyl acetate	0.367	0.387	-5.4	102	0.00	3.51
38		Tetrahydrofuran	0.141	0.149	-5.7	102	0.00	3.54
39	S	Dibromofluoromethane	0.277	0.268	3.2	92	0.00	3.55
40		Carbon Tetrachloride	0.277	0.260	6.1	87	0.00	3.54
41		1,1,1-Trichloroethane	0.359	0.347	3.3	95	0.00	3.57
42		2-Butanone	0.209	0.238	-13.9	110	0.00	3.62
43		1,1-Dichloropropene	0.310	0.301	2.9	92	0.00	3.64

			True	Calc.	% Drift			
44		tert-Butyl formate	200.000	167.402	16.3	80	0.00	3.70

			AvgRF	CCRF	% Dev			
45		Propionitrile	0.062	0.073	-17.7	114	0.00	3.79
46		Methacrylonitrile	0.210	0.223	-6.2	103	0.00	3.81
47		Benzene	0.917	0.900	1.9	95	0.00	3.79
48		TAME	0.544	0.546	-0.4	93	0.00	3.84

			True	Calc.	% Drift			
49		Isobutyl alcohol	800.000	1422.803	-77.9#	176	0.00	3.89

			AvgRF	CCRF	% Dev			
50	S	1,2-Dichloroethane-d4	0.295	0.340	-15.3	108	0.00	3.86
51		1,2-Dichloroethane	0.327	0.356	-8.9	105	0.00	3.90

			True	Calc.	% Drift			
52		Tert Amyl Alcohol	400.000	479.540	-19.9	118	0.00	3.95

			AvgRF	CCRF	% Dev			
53		Trichloroethene	0.264	0.254	3.8	93	0.00	4.12
54		Methylcyclohexane	0.346	0.322	6.9	88	0.00	4.12
55		Dibromomethane	0.166	0.164	1.2	94	0.00	4.38
56	C	1,2-Dichloropropane	0.215	0.210	2.3	93	0.00	4.44
57		Bromodichloromethane	0.295	0.287	2.7	92	0.00	4.47
58		Methyl methacrylate	0.241	0.253	-5.0	101	0.00	4.56

			True	Calc.	% Drift			
59		1,4-Dioxane	800.000	1139.671	-42.5	139	0.00	4.60

			AvgRF	CCRF	% Dev			
60		2-Chloroethyl vinyl ether	0.187	0.179	4.3	90	0.00	4.82

			True	Calc.	% Drift			
61		cis-1,3-Dichloropropene	40.000	34.572	13.6	83	0.00	4.87

			AvgRF	CCRF	% Dev			

Continuing Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2954-ECC2924
Lab FileID: 2O76126.D

62	I	Chlorobenzene-d5	1.000	1.000	0.0	98	0.00	6.04
63	S	Toluene-d8	1.364	1.319	3.3	96	0.00	4.98
64	C	Toluene	1.370	1.311	4.3	96	0.00	5.02
			True	Calc.	% Drift			
65		2-Nitropropane	200.000	200.217	-0.1	100	0.00	5.17
			AvgRF	CCRF	% Dev			
66		4-Methyl-2-pentanone	0.490	0.534	-9.0	107	0.00	5.25
			True	Calc.	% Drift			
67		trans-1,3-Dichloropropene	40.000	35.065	12.3	86	0.00	5.28
			AvgRF	CCRF	% Dev			
68		Tetrachloroethene	0.388	0.429	-10.6	109	0.00	5.28
			True	Calc.	% Drift			
69		Ethyl methacrylate	40.000	42.543	-6.4	105	0.00	5.38
			AvgRF	CCRF	% Dev			
70		1,1,2-Trichloroethane	0.276	0.279	-1.1	100	0.00	5.39
			True	Calc.	% Drift			
71		Dibromochloromethane	40.000	36.825	7.9	89	0.00	5.52
			AvgRF	CCRF	% Dev			
72		1,3-Dichloropropane	0.506	0.519	-2.6	100	0.00	5.58
73		1,2-Dibromoethane	0.346	0.354	-2.3	97	0.00	5.68
			True	Calc.	% Drift			
74		3,3-dimethyl-1-butanol	2000.000	2601.323	-30.1	130	0.00	5.80
			AvgRF	CCRF	% Dev			
75		2-hexanone	0.486	0.600	-23.5	119	0.00	5.82
76		1-Chlorohexane	0.431	0.396	8.1	93	0.00	6.02
77	C	Ethylbenzene	1.478	1.436	2.8	97	-0.01	6.06
78	P	Chlorobenzene	0.926	0.877	5.3	94	0.00	6.05
79		1,1,1,2-Tetrachloroethane	0.290	0.283	2.4	91	0.00	6.09
80		m,p-Xylene	1.150	1.135	1.3	97	0.00	6.17
81		o-Xylene	1.161	1.143	1.6	96	-0.01	6.48
82		Styrene	0.912	0.903	1.0	94	0.00	6.52
			True	Calc.	% Drift			
83	P	Bromoform	40.000	34.253	14.4	83	0.00	6.54
			AvgRF	CCRF	% Dev			
84		Isopropylbenzene	1.400	1.351	3.5	93	0.00	6.72
85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	94	0.00	7.80
86	S	4-Bromofluorobenzene	0.763	0.740	3.0	93	0.00	6.94
87		cis-1,4-Dichloro-2-butene	0.226	0.134	40.7	54	-0.01	6.98
88		n-Propylbenzene	3.100	3.107	-0.2	96	0.00	7.04
89		Bromobenzene	0.688	0.665	3.3	92	0.00	7.02
90	P	1,1,2,2-Tetrachloroethane	0.944	1.011	-7.1	102	0.00	7.09
91		1,3,5-Trimethylbenzene	2.188	2.190	-0.1	94	-0.01	7.19
92		2-Chlorotoluene	2.090	2.121	-1.5	99	-0.01	7.16
			True	Calc.	% Drift			
93		trans-1,4-Dichloro-2-Bute	40.000	25.288	36.8	60	0.00	7.23

Continuing Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2954-ECC2924
Lab FileID: 2O76126.D

		AvgRF	CCRF	% Dev			
94	1,2,3-Trichloropropane	0.311	0.329	-5.8	103	0.00	7.20

		True	Calc.	% Drift			
95	Cyclohexanone	200.000	267.208	-33.6	137	0.00	7.23

		AvgRF	CCRF	% Dev			
96	4-Chlorotoluene	1.924	1.964	-2.1	97	-0.01	7.29
97	tert-Butylbenzene	1.182	1.212	-2.5	97	-0.01	7.44
98	a-Methyl styrene		----------NA----------				
99	1,2,4-Trimethylbenzene	2.162	2.200	-1.8	95	0.00	7.49

		True	Calc.	% Drift			
100	Pentachloroethane	40.000	24.053	39.9	55	0.00	7.46

		AvgRF	CCRF	% Dev			
101	sec-Butylbenzene	2.620	2.592	1.1	94	0.00	7.58
102	4-Isopropyltoluene	2.286	2.202	3.7	90	0.00	7.69
103	1,3-Dichlorobenzene	1.359	1.303	4.1	91	0.00	7.74
104	1,2,3-Trimethylbenzene	2.263	2.234	1.3	93	-0.01	7.82
105	1,4-Dichlorobenzene	1.377	1.325	3.8	93	-0.01	7.81

		True	Calc.	% Drift			
106	n-Butylbenzene	40.000	36.738	8.2	88	-0.01	8.00
107	Benzyl Chloride	40.000	14.656	63.4#	31	0.00	7.99

		AvgRF	CCRF	% Dev			
108	1,2-Dichlorobenzene	1.283	1.271	0.9	95	0.00	8.12

		True	Calc.	% Drift			
109	1,2-Dibromo-3-Chloropropa	40.000	42.536	-6.3	104	-0.01	8.70
110	Hexachlorobutadiene	40.000	35.150	12.1	86	-0.01	9.15

		AvgRF	CCRF	% Dev			
111	1,2,4-Trichlorobenzene	0.779	0.812	-4.2	94	-0.01	9.17
112	Naphthalene	2.755	3.101	-12.6	101	-0.01	9.39
113	1,2,3-Trichlorobenzene	0.739	0.814	-10.1	101	-0.01	9.52

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2O75430.D V2O_04-11-2023.M Mon May 08 00:11:49 2023

Initial Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V5E1761-ICC1761
Lab FileID: 5E39338.D

Response Factor Report MSVOA20

Method : C:\msdchem\1\met...pIX05-01-2023_.M (RTE Integrator)
Title : SW-846 Method 5030B/8260B & EPA 624
Last Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

Calibration Files
1 =5E39334.D 2 =5E39335.D 3 =5E39336.D 4 =5E39337.D
5 =5E39338.D 6 =5E39339.D 7 =5E39340.D

Compound	1	2	3	4	5	6	7	Avg	%RSD
1) I Fluorobenzene	----------ISTD----------								
2) Dichlorodifluorom	0.109	0.183	0.184	0.172	0.166	0.167	0.175	0.165	15.60
3)P Chloromethane	0.324	0.336	0.327	0.302	0.310	0.294	0.279	0.310	6.48
4)C Vinyl Chloride	0.183	0.291	0.287	0.273	0.281	0.269	0.285	0.267	14.11
5) 1,3-Butadiene	0.271	0.410	0.321	0.292	0.265	0.228		0.298	21.14
6) Bromomethane	0.322	0.181	0.153	0.128	0.120	0.114	0.124	0.163	45.15
7) Chloroethane	0.109	0.155	0.135	0.114	0.121	0.113	0.121	0.124	12.81
8) Trichlorofluorome	0.210	0.328	0.346	0.328	0.327	0.320	0.286	0.306	15.09
9) Ethyl Ether	0.173	0.252	0.228	0.268	0.251	0.253	0.252	0.239	13.15
10) Ethanol	0.003	0.010	0.008	0.007	0.008	0.007	0.008	0.007	30.99
11) 1,2-Dichlorotrifl	0.154	0.303	0.250	0.303	0.254	0.269	0.257	0.256	19.51
12)C 1,1-Dichloroethen	0.204	0.429	0.364	0.429	0.362	0.376	0.363	0.361	20.89
13) Freon 113	0.105	0.249	0.220	0.268	0.212	0.233	0.227	0.216	24.38

2) Dichlorodifluorom
---- Linear regr., Force(0,0) ---- Coefficient = 0.9986
Response Ratio = 0.00000 + 0.17128 *A

3)P Chloromethane
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9997
Response Ratio = 0.00000 + 0.32491 *A + -0.02261 *A^2

4)C Vinyl Chloride
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9990
Response Ratio = 0.00000 + 0.27283 *A + 0.00406 *A^2

5) 1,3-Butadiene
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9951
Response Ratio = 0.00000 + 0.34052 *A + -0.08288 *A^2

6) Bromomethane
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9941
Response Ratio = 0.00000 + 0.13836 *A + -0.01035 *A^2

7) Chloroethane
---- Linear regr., Force(0,0) ---- Coefficient = 0.9962
Response Ratio = 0.00000 + 0.11945 *A

8) Trichlorofluorome
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9993
Response Ratio = 0.00000 + 0.34742 *A + -0.02785 *A^2

10) Ethanol
---- Linear regr., Force(0,0) ---- Coefficient = 0.9955
Response Ratio = 0.00000 + 0.00758 *A

11) 1,2-Dichlorotrifl
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9968
Response Ratio = 0.00000 + 0.27888 *A + -0.01050 *A^2

12)C 1,1-Dichloroethen
---- Linear regr., Force(0,0) ---- Coefficient = 0.9957
Response Ratio = 0.00000 + 0.37390 *A

13) Freon 113
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9953
Response Ratio = 0.00000 + 0.23651 *A + -0.00450 *A^2

Initial Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V5E1761-ICC1761
Lab FileID: 5E39338.D

14) Carbon Disulfide 0.617 0.775 0.643 0.743 0.646 0.667 0.650 0.677 8.65
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9980
Response Ratio = 0.00000 + 0.70252 *A + -0.02689 *A^2

15) Iodomethane 0.066 0.088 0.108 0.197 0.203 0.222 0.235 0.160 43.94
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9939
Response Ratio = 0.00000 + 0.15371 *A + 0.04372 *A^2

16) Acrolein 0.091 0.078 0.068 0.080 0.091 0.080 0.083 0.081 10.07
---- Linear regr., Force(0,0) ---- Coefficient = 0.9959
Response Ratio = 0.00000 + 0.08234 *A

17) Allyl chloride 0.320 0.507 0.359 0.339 0.321 0.292 0.316 0.350 20.55
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9913
Response Ratio = 0.00000 + 0.35198 *A + -0.02484 *A^2

18) Methylene Chlorid 0.638 0.480 0.402 0.444 0.391 0.396 0.383 0.448 20.29
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9984
Response Ratio = 0.00000 + 0.43671 *A + -0.02843 *A^2

19) Acetone 0.136 0.114 0.135 0.122 0.142 0.143 0.142 0.134 8.60
20) Methyl acetate 0.239 0.328 0.318 0.380 0.357 0.362 0.361 0.335 14.10
21) trans-1,2-Dichlor 0.234 0.410 0.368 0.418 0.373 0.377 0.368 0.364 16.71
---- Linear regr., Force(0,0) ---- Coefficient = 0.9977
Response Ratio = 0.00000 + 0.37676 *A

22) Hexane 0.201 0.305 0.253 0.296 0.237 0.252 0.234 0.254 14.24
23) Methyl Tert Butyl 0.517 0.837 0.718 0.836 0.775 0.785 0.768 0.748 14.67
24) Acetonitrile 0.065 0.077 0.057 0.057 0.060 0.055 0.059 0.061 12.07
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9969
Response Ratio = 0.00000 + 0.05980 *A + -0.00012 *A^2

25) Di-isopropyl ethe 0.622 1.048 0.915 1.057 0.956 0.964 0.939 0.929 15.66
---- Linear regr., Force(0,0) ---- Coefficient = 0.9979
Response Ratio = 0.00000 + 0.96019 *A

26) Chloroprene 0.278 0.563 0.409 0.419 0.391 0.359 0.398 0.402 21.17
---- Linear regr., Force(0,0) ---- Coefficient = 0.9923
Response Ratio = 0.00000 + 0.39147 *A

27)P 1,1-Dichloroethan 0.326 0.545 0.481 0.554 0.500 0.497 0.484 0.484 15.57
---- Linear regr., Force(0,0) ---- Coefficient = 0.9976
Response Ratio = 0.00000 + 0.49779 *A

28) Acrylonitrile 0.209 0.154 0.192 0.165 0.176 0.165 0.177 0.177 10.40
29) ETBE 0.612 0.995 0.863 1.003 0.910 0.909 0.887 0.883 14.78
30) Tert Butyl Alcoho 0.059 0.085 0.074 0.088 0.083 0.082 0.082 0.079 12.14
31) Vinyl acetate 0.826 0.691 0.809 0.688 0.703 0.639 0.664 0.717 10.02
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9980
Response Ratio = 0.00000 + 0.72377 *A + -0.00746 *A^2

32) cis-1,2-Dichloroe 0.169 0.301 0.261 0.301 0.273 0.271 0.271 0.264 16.93
---- Linear regr., Force(0,0) ---- Coefficient = 0.9981
Response Ratio = 0.00000 + 0.27426 *A

33) 2,2-Dichloropropa 0.203 0.360 0.298 0.327 0.272 0.266 0.242 0.281 18.62
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9968
Response Ratio = 0.00000 + 0.32214 *A + -0.04046 *A^2

34) Bromochloromethan 0.103 0.147 0.128 0.153 0.128 0.135 0.131 0.132 12.04

Initial Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V5E1761-ICC1761
Lab FileID: 5E39338.D

```
35)  Cyclohexane       0.252 0.554 0.469 0.572 0.458 0.496 0.471 0.468  22.38
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9955
              Response Ratio = 0.00000 + 0.51665 *A + -0.02158 *A^2

36)C Chloroform        0.321 0.522 0.454 0.515 0.454 0.464 0.453 0.455  14.53
37)  Ethyl acetate     0.625 0.461 0.543 0.468 0.487 0.447 0.457 0.498  12.91
38)  Tetrahydrofuran   0.280 0.194 0.167 0.188 0.173 0.168 0.169 0.191  21.19
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9988
              Response Ratio = 0.00000 + 0.17204 *A

39)S Dibromofluorometh 0.295 0.296 0.302 0.297 0.306 0.305 0.304 0.301   1.52
40)  Carbon Tetrachlor 0.166 0.389 0.324 0.381 0.317 0.336 0.324 0.320  23.03
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9953
              Response Ratio = 0.00000 + 0.33265 *A

41)  1,1,1-Trichloroet 0.198 0.428 0.363 0.427 0.368 0.380 0.365 0.361  21.37
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9961
              Response Ratio = 0.00000 + 0.37632 *A

42)  2-Butanone        0.191 0.187 0.236 0.217 0.247 0.250 0.246 0.225  11.89
43)  1,1-Dichloroprope 0.181 0.343 0.298 0.354 0.301 0.312 0.300 0.299  18.91
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9962
              Response Ratio = 0.00000 + 0.30936 *A

44)  tert-Butyl format 0.148 0.182 0.119 0.146 0.151 0.146 0.140 0.148  12.57
45)  Propionitrile     0.060 0.108 0.083 0.083 0.084 0.077 0.080 0.082  17.17
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9966
              Response Ratio = 0.00000 + 0.08536 *A + -0.00033 *A^2

46)  Methacrylonitrile 0.240 0.352 0.260 0.264 0.267 0.242 0.253 0.268  14.25
47)  Benzene           0.618 1.044 0.923 1.034 0.916 0.925 0.910 0.910  15.46
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9975
              Response Ratio = 0.00000 + 0.92957 *A

48)  TAME              0.546 0.836 0.720 0.796 0.720 0.735 0.722 0.725  12.53
49)S 1,2-Dichloroethan 0.323 0.325 0.327 0.309 0.311 0.306 0.310 0.316   2.74
50)  1,2-Dichloroethan 0.259 0.407 0.368 0.417 0.369 0.372 0.362 0.365  14.03
51)  tert Amyl alcohol 0.044 0.075 0.062 0.072 0.067 0.065 0.066 0.064  15.36
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9980
              Response Ratio = 0.00000 + 0.06634 *A

52)  Trichloroethene   0.173 0.305 0.250 0.288 0.257 0.260 0.250 0.255  16.25
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9968
              Response Ratio = 0.00000 + 0.25850 *A

53)  Methylcyclohexane 0.230 0.491 0.403 0.477 0.390 0.420 0.395 0.401  21.30
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9959
              Response Ratio = 0.00000 + 0.44120 *A + -0.02216 *A^2

54)  Dibromomethane    0.108 0.195 0.168 0.199 0.180 0.182 0.178 0.173  17.56
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9981
              Response Ratio = 0.00000 + 0.18116 *A

55)C 1,2-Dichloropropa 0.201 0.297 0.273 0.317 0.285 0.290 0.287 0.279  13.22
56)  Bromodichlorometh 0.253 0.393 0.340 0.391 0.357 0.366 0.363 0.352  13.53
57)  Methyl methacryla 0.345 0.492 0.328 0.343 0.353 0.327 0.349 0.362  15.96
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9951
              Response Ratio = 0.00000 + 0.35437 *A + -0.00678 *A^2

58)  1,4-Dioxane       0.003 0.007 0.006 0.007 0.007 0.007 0.007 0.006  21.17
```

Initial Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V5E1761-ICC1761
Lab FileID: 5E39338.D

```
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9992
              Response Ratio = 0.00000 + 0.00662 *A

59)  2-Chloroethyl vin 0.173 0.223 0.148 0.206 0.185 0.195 0.175 0.187  13.18
60)  cis-1,3-Dichlorop 0.224 0.394 0.359 0.428 0.380 0.398 0.384 0.367  18.03
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9981
              Response Ratio = 0.00000 + 0.39012 *A


61) I   Chlorobenzene-d5      ----------------ISTD--------------------
62)S Toluene-d8         1.219 1.239 1.245 1.258 1.275 1.268 1.266 1.253   1.57
63)C Toluene            0.840 1.340 1.119 1.306 1.151 1.168 1.130 1.151  14.11
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9982
              Response Ratio = 0.00000 + 1.23708 *A + -0.05303 *A^2

64)  Isobutyl alcohol  0.023 0.047 0.034 0.035 0.036 0.032 0.034 0.034  20.48
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9954
              Response Ratio = 0.00000 + 0.03590 *A + -0.00006 *A^2

65)  2-Nitropropane    0.120 0.144 0.125 0.149 0.135 0.136 0.130 0.134   7.54
66)  4-Methyl-2-pentan 0.538 0.478 0.562 0.496 0.559 0.547 0.534 0.531   5.98
67)  trans-1,3-Dichlor 0.229 0.413 0.370 0.463 0.412 0.417 0.398 0.386  19.33
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9970
              Response Ratio = 0.00000 + 0.41062 *A

68)  Tetrachloroethene 0.203 0.402 0.338 0.404 0.353 0.357 0.350 0.344  19.61
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9968
              Response Ratio = 0.00000 + 0.35782 *A

69)  Ethyl methacrylat 0.314 0.560 0.416 0.434 0.440 0.405 0.426 0.428  16.91
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9967
              Response Ratio = 0.00000 + 0.44129 *A + -0.01206 *A^2

70)  1,1,2-Trichloroet 0.171 0.274 0.246 0.277 0.250 0.254 0.243 0.245  14.41
71)  Dibromochlorometh 0.239 0.383 0.335 0.393 0.362 0.366 0.361 0.348  14.83
72)  1,3-Dichloropropa 0.342 0.530 0.458 0.521 0.472 0.480 0.467 0.467  13.17
73)  1,2-Dibromoethane 0.225 0.363 0.323 0.379 0.351 0.345 0.342 0.333  15.25
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9984
              Response Ratio = 0.00000 + 0.34741 *A

74)  3,3-Dimethyl-1-bu 0.080 0.094 0.065 0.084 0.086 0.085 0.082 0.082  10.97
75)  2-hexanone        0.321 0.341 0.416 0.371 0.415 0.412 0.399 0.382  10.17
76)  1-Chlorohexane    0.214 0.449 0.362 0.447 0.375 0.393 0.371 0.373  21.03
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9948
              Response Ratio = 0.00000 + 0.38615 *A

77)C Ethylbenzene      0.972 1.510 1.283 1.465 1.284 1.298 1.250 1.295  13.45
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9982
              Response Ratio = 0.00000 + 1.39764 *A + -0.07430 *A^2

78)P Chlorobenzene     0.529 0.922 0.790 0.887 0.786 0.797 0.771 0.783  16.06
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9984
              Response Ratio = 0.00000 + 0.84813 *A + -0.03889 *A^2

79)  1,1,1,2-Tetrachlo 0.200 0.354 0.304 0.342 0.312 0.310 0.305 0.304  16.33
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9978
              Response Ratio = 0.00000 + 0.31177 *A

80)  m,p-Xylene        0.685 1.174 1.012 1.148 1.014 1.024 0.992 1.007  15.80
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9969
```

Job Number: FC5659 **Sample:** V5E1761-ICC1761
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 5E39338.D
Project: CCF West NAM; KSC, FL

```
              Response Ratio = 0.00000 + 1.02300 *A

81)  o-Xylene          0.680 1.236 1.057 1.181 1.064 1.074 1.048 1.049  16.94
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9975
              Response Ratio = 0.00000 + 1.07371 *A

82)  Styrene           0.547 0.913 0.781 0.927 0.837 0.854 0.823 0.812  15.68
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9978
              Response Ratio = 0.00000 + 0.84309 *A

83)P Bromoform         0.189 0.290 0.255 0.308 0.284 0.287 0.282 0.271  14.59
84)  Isopropylbenzene  0.851 1.539 1.301 1.500 1.312 1.336 1.279 1.302  17.17
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9963
              Response Ratio = 0.00000 + 1.32642 *A


85) I   1,4-Dichlorobenzene-d ----------------ISTD---------------------
86)S 4-Bromofluorobenz 0.867 0.869 0.870 0.883 0.887 0.888 0.891 0.879   1.17
87)  cis-1,4-Dichloro-       0.159 0.124 0.161 0.134 0.160 0.165 0.150  11.39
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9950
              Response Ratio = 0.00000 + 0.13655 *A + 0.01434 *A^2

88)  n-Propylbenzene   1.684 3.077 2.547 2.983 2.609 2.649 2.523 2.582  17.48
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9959
              Response Ratio = 0.00000 + 2.62642 *A

89)  Bromobenzene      0.401 0.668 0.571 0.653 0.587 0.584 0.567 0.576  15.07
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9971
              Response Ratio = 0.00000 + 0.58509 *A

90)P 1,1,2,2-Tetrachlo 0.680 0.932 0.791 0.912 0.840 0.826 0.792 0.825  10.19
91)  1,3,5-Trimethylbe 1.216 2.100 1.836 2.136 1.886 1.879 1.829 1.840  16.43
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9968
              Response Ratio = 0.00000 + 1.88580 *A

92)  2-Chlorotoluene   1.272 2.041 1.727 1.929 1.704 1.707 1.652 1.719  14.10
93)  trans-1,4-Dichlor       0.190 0.175 0.227 0.187 0.211 0.194 0.197   9.37
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9939
              Response Ratio = 0.00000 + 0.20441 *A + -0.00317 *A^2

94)  1,2,3-Trichloropr 0.159 0.285 0.234 0.275 0.245 0.248 0.238 0.241  16.88
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9968
              Response Ratio = 0.00000 + 0.24604 *A

95)  Cyclohexanone     0.116 0.051 0.062 0.047 0.048 0.044 0.047 0.059  43.34
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9944
              Response Ratio = 0.00000 + 0.05215 *A + -0.00071 *A^2

96)  4-Chlorotoluene   1.184 1.895 1.572 1.807 1.604 1.602 1.560 1.604  14.06
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9983
              Response Ratio = 0.00000 + 1.72579 *A + -0.08498 *A^2

97)  a-Methyl styrene                                              0.000  -1.00
98)  tert-Butylbenzene 0.690 1.221 1.020 1.185 1.027 1.043 0.999 1.026  16.76
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9958
              Response Ratio = 0.00000 + 1.03803 *A

99)  1,2,4-Trimethylbe 1.221 2.146 1.824 2.110 1.887 1.898 1.823 1.844  16.49
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9969
              Response Ratio = 0.00000 + 1.88706 *A
```

Initial Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V5E1761-ICC1761
Lab FileID: 5E39338.D

```
100)  Pentachloroethane 0.274 0.453 0.332 0.332 0.314 0.282 0.293 0.326  18.65
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9945
               Response Ratio = 0.00000 + 0.34188 *A + -0.02913 *A^2

101)  sec-Butylbenzene  1.672 2.816 2.383 2.737 2.360 2.406 2.286 2.380  15.62
             ---- Linear regr., Force(0,0) ----  Coefficient =  0.9955
               Response Ratio = 0.00000 + 2.38821 *A

102)  4-Isopropyltoluen 1.351 2.408 2.072 2.401 2.096 2.121 2.043 2.070  17.02
             ---- Linear regr., Force(0,0) ----  Coefficient =  0.9964
               Response Ratio = 0.00000 + 2.11452 *A

103)  1,3-Dichlorobenze 0.817 1.307 1.126 1.297 1.141 1.158 1.119 1.138  14.26
104)  1,2,3-Trimethylbe 1.332 2.216 1.928 2.200 1.938 1.985 1.910 1.930  15.18
             ---- Linear regr., Force(0,0) ----  Coefficient =  0.9972
               Response Ratio = 0.00000 + 1.96895 *A

105)  1,4-Dichlorobenze 0.915 1.403 1.186 1.318 1.162 1.171 1.139 1.185  12.94
106)  n-Butylbenzene    0.639 1.212 1.009 1.216 1.052 1.087 1.019 1.033  18.75
             ---- Linear regr., Force(0,0) ----  Coefficient =  0.9956
               Response Ratio = 0.00000 + 1.06464 *A

107)  Benzyl Chloride   0.106 0.195 0.173 0.245 0.198 0.219 0.200 0.191  22.86
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9940
               Response Ratio = 0.00000 + 0.21396 *A + -0.00438 *A^2

108)  1,2-Dichlorobenze 0.725 1.278 1.094 1.243 1.130 1.131 1.090 1.099  16.39
             ---- Linear regr., Force(0,0) ----  Coefficient =  0.9974
               Response Ratio = 0.00000 + 1.12565 *A

109)  1,2-Dibromo-3-Chl 0.129 0.194 0.175 0.211 0.190 0.197 0.195 0.185  14.34
110)  Hexachlorobutadie 0.318 0.382 0.312 0.362 0.318 0.331 0.318 0.335   8.01
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9981
               Response Ratio = 0.00000 + 0.34509 *A + -0.01308 *A^2

111)  1,2,4-Trichlorobe 0.643 0.970 0.861 1.000 0.914 0.928 0.896 0.887  13.21
112)  Naphthalene       2.328 2.960 2.534 3.045 2.799 2.829 2.752 2.750   8.97
113)  1,2,3-Trichlorobe 0.680 0.968 0.830 0.945 0.867 0.878 0.850 0.860  10.91
 ----------------------------------------------------------------------------
 (#) = Out of Range

           appIX05-01-2023_.M        Tue May 02 08:28:03 2023
```

Initial Calibration Verification

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V5E1761-ICV1761
Lab FileID: 5E39342.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\05-01-2023\5E39342.D Vial: 10
Acq On : 1 May 2023 7:33 pm Operator: joannel
Sample : ICV1761-5 Inst : MSVOA20
Misc : MS53796,V5E1761,,,,, Multiplr: 1.00
MS Integration Params: ult...ll.p

Method : C:\msdchem\1\met...pIX05-01-2023_.M (RTE Integrator)
Title : SW-846 Method 5030B/8260B & EPA 624
Last Update : Tue May 02 08:25:38 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Fluorobenzene	1.000	1.000	0.0	102	0.00	8.47
			Amount	Calc.	%Drift			
2		Dichlorodifluoromethane	40.000	60.756	-51.9#	160	0.00	2.81
3	P	Chloromethane	40.000	47.188	-18.0	118	0.00	3.17
4	C	Vinyl Chloride	40.000	46.585	-16.5	117	0.00	3.26
5		1,3-Butadiene	40.000	43.877	-9.7	113	0.00	3.29
6		Bromomethane	40.000	46.314	-15.8	127	0.00	3.76
7		Chloroethane	40.000	43.727	-9.3	110	0.00	3.95
8		Trichlorofluoromethane	40.000	47.901	-19.8	120	0.00	4.14
			AvgRF	CCRF	%Dev			
9		Ethyl Ether	0.239	0.282	-18.0	115	0.00	4.59
			Amount	Calc.	%Drift			
10		Ethanol	800.000	784.940	1.9	97	0.00	4.80
11		1,2-Dichlorotrifluoroetha	40.000	47.847	-19.6	129	0.00	4.84
12	C	1,1-Dichloroethene	40.000	43.573	-8.9	115	0.00	4.86
13		Freon 113	40.000	48.818	-22.0#	136	0.00	4.90
14		Carbon Disulfide	40.000	44.063	-10.2	118	0.00	4.92
15		Iodomethane	40.000	42.032	-5.1	101	0.00	5.06
16		Acrolein	200.000	222.890	-11.4	103	0.00	5.29
17		Allyl chloride	40.000	41.778	-4.4	110	0.00	5.46
18		Methylene Chloride	40.000	40.289	-0.7	109	0.00	5.59
			AvgRF	CCRF	%Dev			
19		Acetone	0.134	0.135	-0.7	97	0.00	5.65
20		Methyl acetate	0.335	0.338	-0.9	97	0.00	5.79
			Amount	Calc.	%Drift			
21		trans-1,2-Dichloroethene	40.000	43.222	-8.1	111	0.00	5.79
			AvgRF	CCRF	%Dev			
22		Hexane	0.254	0.286	-12.6	123	0.00	5.87
23		Methyl Tert Butyl Ether	0.748	0.833	-11.4	110	0.00	5.90
			Amount	Calc.	%Drift			
24		Acetonitrile	400.000	407.765	-1.9	102	0.00	6.22
25		Di-isopropyl ether	40.000	41.234	-3.1	106	0.00	6.33
26		Chloroprene	40.000	39.295	1.8	101	0.00	6.49
27	P	1,1-Dichloroethane	40.000	41.182	-3.0	105	0.00	6.52

Initial Calibration Verification

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V5E1761-ICV1761
Lab FileID: 5E39342.D

			AvgRF	CCRF	%Dev			
28		Acrylonitrile	0.177	0.167	5.6	97	0.00	6.58
29		ETBE	0.883	0.983	-11.3	110	0.00	6.75
30		Tert Butyl Alcohol	0.079	0.084	-6.3	103	0.00	5.99
			Amount	Calc.	%Drift			
31		Vinyl acetate	200.000	193.903	3.0	98	0.00	6.77
32		cis-1,2-Dichloroethene	40.000	41.642	-4.1	107	0.00	7.13
33		2,2-Dichloropropane	40.000	34.502	13.7	95	0.00	7.26
			AvgRF	CCRF	%Dev			
34		Bromochloromethane	0.132	0.137	-3.8	109	0.00	7.35
			Amount	Calc.	%Drift			
35		Cyclohexane	40.000	44.922	-12.3	125	0.00	7.37
			AvgRF	CCRF	%Dev			
36	C	Chloroform	0.455	0.489	-7.5	110	0.00	7.41
37		Ethyl acetate	0.498	0.446	10.4	94	0.00	7.51
			Amount	Calc.	%Drift			
38		Tetrahydrofuran	40.000	39.255	1.9	100	0.00	7.60
			AvgRF	CCRF	%Dev			
39	S	Dibromofluoromethane	0.301	0.301	0.0	101	0.00	7.61
			Amount	Calc.	%Drift			
40		Carbon Tetrachloride	40.000	43.745	-9.4	117	0.00	7.59
41		1,1,1-Trichloroethane	40.000	43.379	-8.4	113	0.00	7.66
			AvgRF	CCRF	%Dev			
42		2-Butanone	0.225	0.246	-9.3	102	0.00	7.73
			Amount	Calc.	%Drift			
43		1,1-Dichloropropene	40.000	45.220	-13.0	119	0.00	7.79
			AvgRF	CCRF	%Dev			
44		tert-Butyl formate	0.148	0.164	-10.8	111	0.00	7.88
			Amount	Calc.	%Drift			
45		Propionitrile	400.000	392.377	1.9	99	0.00	8.06
			AvgRF	CCRF	%Dev			
46		Methacrylonitrile	0.268	0.264	1.5	101	0.00	8.08
			Amount	Calc.	%Drift			
47		Benzene	40.000	42.826	-7.1	111	0.00	8.05
			AvgRF	CCRF	%Dev			
48		TAME	0.725	0.764	-5.4	108	0.00	8.12
49	S	1,2-Dichloroethane-d4	0.316	0.302	4.4	99	0.00	8.18
50		1,2-Dichloroethane	0.365	0.385	-5.5	107	0.00	8.26
			Amount	Calc.	%Drift			
51		tert Amyl alcohol	400.000	393.023	1.7	100	0.00	8.29
52		Trichloroethene	40.000	42.345	-5.9	109	0.00	8.65
53		Methylcyclohexane	40.000	44.343	-10.9	123	0.00	8.65
54		Dibromomethane	40.000	41.918	-4.8	108	0.00	9.09
			AvgRF	CCRF	%Dev			

Initial Calibration Verification

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V5E1761-ICV1761
Lab FileID: 5E39342.D

55	C	1,2-Dichloropropane	0.279	0.312	-11.8	112	0.00	9.18
56		Bromodichloromethane	0.352	0.357	-1.4	102	0.00	9.23
			Amount	Calc.	%Drift			
57		Methyl methacrylate	40.000	38.832	2.9	98	0.00	9.33
58		1,4-Dioxane	800.000	747.562	6.6	96	0.00	9.42
			AvgRF	CCRF	%Dev			
59		2-Chloroethyl vinyl ether	0.187	0.191	-2.1	106	0.00	9.76
			Amount	Calc.	%Drift			
60		cis-1,3-Dichloropropene	40.000	40.401	-1.0	106	0.00	9.85
			AvgRF	CCRF	%Dev			
61	I	Chlorobenzene-d5	1.000	1.000	0.0	103	0.00	11.60
62	S	Toluene-d8	1.253	1.267	-1.1	102	0.00	10.04
			Amount	Calc.	%Drift			
63	C	Toluene	40.000	41.212	-3.0	110	0.00	10.09
64		Isobutyl alcohol	800.000	789.091	1.4	99	0.00	8.18
			AvgRF	CCRF	%Dev			
65		2-Nitropropane	0.134	0.131	2.2	100	0.00	10.32
66		4-Methyl-2-pentanone	0.531	0.567	-6.8	104	0.00	10.43
			Amount	Calc.	%Drift			
67		trans-1,3-Dichloropropene	40.000	36.557	8.6	94	0.00	10.49
68		Tetrachloroethene	40.000	46.607	-16.5	121	0.00	10.49
69		Ethyl methacrylate	40.000	42.819	-7.0	108	0.00	10.59
			AvgRF	CCRF	%Dev			
70		1,1,2-Trichloroethane	0.245	0.253	-3.3	104	0.00	10.66
71		Dibromochloromethane	0.348	0.373	-7.2	106	0.00	10.85
72		1,3-Dichloropropane	0.467	0.514	-10.1	112	0.00	10.94
			Amount	Calc.	%Drift			
73		1,2-Dibromoethane	40.000	39.731	0.7	101	0.00	11.12
			AvgRF	CCRF	%Dev			
74		3,3-Dimethyl-1-butanol	0.082	0.083	-1.2	98	0.00	11.19
75		2-hexanone	0.382	0.419	-9.7	104	0.00	11.26
			Amount	Calc.	%Drift			
76		1-Chlorohexane	40.000	43.405	-8.5	115	0.00	11.55
77	C	Ethylbenzene	40.000	40.149	-0.4	108	0.00	11.62
78	P	Chlorobenzene	40.000	39.709	0.7	106	0.00	11.62
79		1,1,1,2-Tetrachloroethane	40.000	40.152	-0.4	103	0.00	11.67
80		m,p-Xylene	80.000	83.368	-4.2	108	0.00	11.76
81		o-Xylene	40.000	40.258	-0.6	104	0.00	12.19
82		Styrene	40.000	41.151	-2.9	107	0.00	12.25
			AvgRF	CCRF	%Dev			
83	P	Bromoform	0.271	0.275	-1.5	100	0.00	12.31
			Amount	Calc.	%Drift			
84		Isopropylbenzene	40.000	41.687	-4.2	108	0.00	12.50
			AvgRF	CCRF	%Dev			

Initial Calibration Verification

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V5E1761-ICV1761
Lab FileID: 5E39342.D

85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	102	0.00	13.96
86	S	4-Bromofluorobenzene	0.879	0.884	-0.6	102	0.00	12.82
			Amount	Calc.	%Drift			
87		cis-1,4-Dichloro-2-butene	40.000	40.012	-0.0	113	0.00	12.86
88		n-Propylbenzene	40.000	41.629	-4.1	107	0.00	12.92
89		Bromobenzene	40.000	42.715	-6.8	109	0.00	12.95
			AvgRF	CCRF	%Dev			
90	P	1,1,2,2-Tetrachloroethane	0.825	0.819	0.7	100	0.00	12.99
			Amount	Calc.	%Drift			
91		1,3,5-Trimethylbenzene	40.000	42.413	-6.0	108	0.00	13.10
			AvgRF	CCRF	%Dev			
92		2-Chlorotoluene	1.719	1.760	-2.4	106	0.00	13.11
			Amount	Calc.	%Drift			
93		trans-1,4-Dichloro-2-Bute	40.000	32.668	18.3	90	0.00	13.17
94		1,2,3-Trichloropropane	40.000	42.036	-5.1	108	0.00	13.15
95		Cyclohexanone	200.000	732.437	-266.2#	326	0.00	13.22
96		4-Chlorotoluene	40.000	39.634	0.9	105	0.00	13.28
			AvgRF	CCRF	%Dev			
97		a-Methyl styrene	----------	NA	----------			
			Amount	Calc.	%Drift			
98		tert-Butylbenzene	40.000	42.059	-5.1	109	0.00	13.44
99		1,2,4-Trimethylbenzene	40.000	41.650	-4.1	106	0.00	13.51
100		Pentachloroethane	40.000	33.963	15.1	89	0.00	13.50
101		sec-Butylbenzene	40.000	39.870	0.3	103	0.00	13.63
102		4-Isopropyltoluene	40.000	40.730	-1.8	105	0.00	13.76
			AvgRF	CCRF	%Dev			
103		1,3-Dichlorobenzene	1.138	1.150	-1.1	103	0.00	13.90
			Amount	Calc.	%Drift			
104		1,2,3-Trimethylbenzene	40.000	39.848	0.4	103	0.00	13.97
			AvgRF	CCRF	%Dev			
105		1,4-Dichlorobenzene	1.185	1.185	0.0	104	0.00	13.97
			Amount	Calc.	%Drift			
106		n-Butylbenzene	40.000	42.701	-6.8	110	0.00	14.18
107		Benzyl Chloride	40.000	30.351	24.1#	83	0.00	14.21
108		1,2-Dichlorobenzene	40.000	40.344	-0.9	103	0.00	14.40
			AvgRF	CCRF	%Dev			
109		1,2-Dibromo-3-Chloropropa	0.185	0.197	-6.5	106	0.00	15.13
			Amount	Calc.	%Drift			
110		Hexachlorobutadiene	40.000	42.214	-5.5	113	0.00	15.66
			AvgRF	CCRF	%Dev			
111		1,2,4-Trichlorobenzene	0.887	0.924	-4.2	103	0.00	15.72
112		Naphthalene	2.750	2.757	-0.3	101	0.00	16.02
113		1,2,3-Trichlorobenzene	0.860	0.883	-2.7	104	0.00	16.19

Initial Calibration Verification

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V5E1761-ICV1761
Lab FileID: 5E39342.D

```
(#) = Out of Range                SPCC's out = 0  CCC's out = 0
 5E39338.D  appIX05-01-2023_.M        Tue May 02 08:27:52 2023
```

Continuing Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V5E1766-CC1761
Lab FileID: 5E39457.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\05-04-2023\5E39457.D Vial: 2
Acq On : 4 May 2023 11:32 am Operator: joannel
Sample : CC1761-5 Inst : MSVOA20
Misc : MS53926,V5E1766,,,,, Multiplr: 1.00
MS Integration Params: ult...ll.p

Method : C:\msdchem\1\met...pIX05-01-2023_.M (RTE Integrator)
Title : SW-846 Method 5030B/8260B & EPA 624
Last Update : Tue May 02 08:25:38 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF / Amount	CCRF / Calc.	%Dev / %Drift	Area%	Dev(min)	R.T.
1	I	Fluorobenzene	1.000	1.000	0.0	67	0.00	8.47
		Amount / Calc. / %Drift						
2		Dichlorodifluoromethane	40.000	35.264	11.8	61	0.00	2.81
3	P	Chloromethane	40.000	36.598	8.5	61	-0.01	3.15
4	C	Vinyl Chloride	40.000	38.371	4.1	63	0.00	3.27
5		1,3-Butadiene	40.000	55.131	-37.8#	87	0.00	3.29
6		Bromomethane	40.000	39.064	2.3	71	0.00	3.77
7		Chloroethane	40.000	37.125	7.2	61	0.00	3.95
8		Trichlorofluoromethane	40.000	42.678	-6.7	71	0.01	4.15
		AvgRF / CCRF / %Dev						
9		Ethyl Ether	0.239	0.226	5.4	60	0.00	4.59
		Amount / Calc. / %Drift						
10		Ethanol	800.000	542.817	32.1#	44	0.00	4.80
11		1,2-Dichlorotrifluoroetha	40.000	33.390	16.5	60	0.00	4.83
12	C	1,1-Dichloroethene	40.000	36.996	7.5	64	0.00	4.86
13		Freon 113	40.000	35.406	11.5	65	0.00	4.90
14		Carbon Disulfide	40.000	32.467	18.8	58	0.00	4.92
15		Iodomethane	40.000	40.821	-2.1	64	0.00	5.06
16		Acrolein	200.000	161.606	19.2	49	0.00	5.29
17		Allyl chloride	40.000	34.411	14.0	60	0.00	5.46
18		Methylene Chloride	40.000	36.182	9.5	64	0.00	5.60
		AvgRF / CCRF / %Dev						
19		Acetone	0.134	0.107	20.1#	51	0.00	5.65
20		Methyl acetate	0.335	0.278	17.0	52	0.00	5.79
		Amount / Calc. / %Drift						
21		trans-1,2-Dichloroethene	40.000	36.807	8.0	62	0.00	5.79
		AvgRF / CCRF / %Dev						
22		Hexane	0.254	0.232	8.7	65	0.00	5.87
23		Methyl Tert Butyl Ether	0.748	0.694	7.2	60	0.00	5.90
		Amount / Calc. / %Drift						
24		Acetonitrile	400.000	291.660	27.1#	48	0.00	6.21
25		Di-isopropyl ether	40.000	36.777	8.1	62	0.00	6.33
26		Chloroprene	40.000	38.936	2.7	65	0.00	6.49
27	P	1,1-Dichloroethane	40.000	36.051	9.9	60	0.00	6.52

Continuing Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V5E1766-CC1761
Lab FileID: 5E39457.D

			AvgRF	CCRF	%Dev			
28		Acrylonitrile	0.177	0.137	22.6#	52	0.00	6.57
29		ETBE	0.883	0.837	5.2	62	0.00	6.75
30		Tert Butyl Alcohol	0.079	0.056	29.1#	45#	-0.01	5.98
			Amount	Calc.	%Drift			
31		Vinyl acetate	200.000	175.410	12.3	58	0.00	6.77
32		cis-1,2-Dichloroethene	40.000	33.347	16.6	56	0.00	7.13
33		2,2-Dichloropropane	40.000	42.590	-6.5	75	0.00	7.26
			AvgRF	CCRF	%Dev			
34		Bromochloromethane	0.132	0.115	12.9	60	0.00	7.35
			Amount	Calc.	%Drift			
35		Cyclohexane	40.000	35.173	12.1	64	0.00	7.37
			AvgRF	CCRF	%Dev			
36	C	Chloroform	0.455	0.422	7.3	62	0.00	7.41
37		Ethyl acetate	0.498	0.369	25.9#	51	0.00	7.51
			Amount	Calc.	%Drift			
38		Tetrahydrofuran	40.000	29.138	27.2#	49	0.00	7.60
			AvgRF	CCRF	%Dev			
39	S	Dibromofluoromethane	0.301	0.307	-2.0	67	0.00	7.61
			Amount	Calc.	%Drift			
40		Carbon Tetrachloride	40.000	40.031	-0.1	70	0.00	7.59
41		1,1,1-Trichloroethane	40.000	40.308	-0.8	69	0.00	7.66
			AvgRF	CCRF	%Dev			
42		2-Butanone	0.225	0.182	19.1	49#	0.00	7.73
			Amount	Calc.	%Drift			
43		1,1-Dichloropropene	40.000	35.944	10.1	62	0.00	7.79
			AvgRF	CCRF	%Dev			
44		tert-Butyl formate	0.148	0.118	20.3#	52	0.00	7.88
			Amount	Calc.	%Drift			
45		Propionitrile	400.000	274.727	31.3#	46	0.00	8.06
			AvgRF	CCRF	%Dev			
46		Methacrylonitrile	0.268	0.205	23.5#	51	0.00	8.08
			Amount	Calc.	%Drift			
47		Benzene	40.000	33.332	16.7	57	0.00	8.05
			AvgRF	CCRF	%Dev			
48		TAME	0.725	0.635	12.4	59	0.00	8.12
49	S	1,2-Dichloroethane-d4	0.316	0.366	-15.8	78	0.00	8.18
50		1,2-Dichloroethane	0.365	0.380	-4.1	69	0.00	8.26
			Amount	Calc.	%Drift			
51		tert Amyl alcohol	400.000	245.563	38.6#	41	0.00	8.29
52		Trichloroethene	40.000	36.863	7.8	62	0.00	8.65
53		Methylcyclohexane	40.000	33.605	16.0	61	0.00	8.65
54		Dibromomethane	40.000	36.136	9.7	61	0.00	9.09
			AvgRF	CCRF	%Dev			

Continuing Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V5E1766-CC1761
Lab FileID: 5E39457.D

55	C	1,2-Dichloropropane	0.279	0.244	12.5	57	0.00	9.18
56		Bromodichloromethane	0.352	0.333	5.4	62	0.00	9.23
			Amount	Calc.	%Drift			
57		Methyl methacrylate	40.000	33.283	16.8	55	0.00	9.33
58		1,4-Dioxane	800.000	515.633	35.5#	43	0.00	9.41
			AvgRF	CCRF	%Dev			
59		2-Chloroethyl vinyl ether	0.187	0.109	41.7#	39#	0.00	9.76
			Amount	Calc.	%Drift			
60		cis-1,3-Dichloropropene	40.000	33.194	17.0	57	0.00	9.85
			AvgRF	CCRF	%Dev			
61	I	Chlorobenzene-d5	1.000	1.000	0.0	59	0.00	11.60
62	S	Toluene-d8	1.253	1.346	-7.4	62	0.00	10.04
			Amount	Calc.	%Drift			
63	C	Toluene	40.000	37.357	6.6	57	0.00	10.09
64		Isobutyl alcohol	800.000	533.713	33.3#	39	0.00	8.18
			AvgRF	CCRF	%Dev			
65		2-Nitropropane	0.134	0.135	-0.7	59	0.00	10.32
66		4-Methyl-2-pentanone	0.531	0.495	6.8	52	0.00	10.43
			Amount	Calc.	%Drift			
67		trans-1,3-Dichloropropene	40.000	37.446	6.4	55	0.00	10.49
68		Tetrachloroethene	40.000	39.412	1.5	59	0.00	10.49
69		Ethyl methacrylate	40.000	34.562	13.6	50	0.00	10.59
			AvgRF	CCRF	%Dev			
70		1,1,2-Trichloroethane	0.245	0.244	0.4	57	0.00	10.66
71		Dibromochloromethane	0.348	0.377	-8.3	61	0.00	10.85
72		1,3-Dichloropropane	0.467	0.470	-0.6	58	0.00	10.94
			Amount	Calc.	%Drift			
73		1,2-Dibromoethane	40.000	39.402	1.5	57	0.00	11.12
			AvgRF	CCRF	%Dev			
74		3,3-Dimethyl-1-butanol	0.082	0.053	35.4#	36#	0.00	11.19
75		2-hexanone	0.382	0.356	6.8	50	0.00	11.26
			Amount	Calc.	%Drift			
76		1-Chlorohexane	40.000	39.998	0.0	60	0.00	11.55
77	C	Ethylbenzene	40.000	39.308	1.7	60	0.00	11.62
78	P	Chlorobenzene	40.000	39.420	1.4	60	0.00	11.62
79		1,1,1,2-Tetrachloroethane	40.000	41.921	-4.8	62	0.00	11.67
80		m,p-Xylene	80.000	82.610	-3.3	61	0.00	11.76
81		o-Xylene	40.000	40.701	-1.8	60	0.00	12.19
82		Styrene	40.000	39.724	0.7	59	0.00	12.25
			AvgRF	CCRF	%Dev			
83	P	Bromoform	0.271	0.270	0.4	56	0.00	12.31
			Amount	Calc.	%Drift			
84		Isopropylbenzene	40.000	41.892	-4.7	62	0.00	12.50
			AvgRF	CCRF	%Dev			

Continuing Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V5E1766-CC1761
Lab FileID: 5E39457.D

85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	58	0.00	13.96
86	S	4-Bromofluorobenzene	0.879	0.835	5.0	55	0.00	12.82
			Amount	Calc.	%Drift			
87		cis-1,4-Dichloro-2-butene	40.000	19.990	50.0#	31	0.00	12.86
88		n-Propylbenzene	40.000	41.314	-3.3	61	0.00	12.92
89		Bromobenzene	40.000	41.212	-3.0	60	0.00	12.94
			AvgRF	CCRF	%Dev			
90	P	1,1,2,2-Tetrachloroethane	0.825	0.754	8.6	52	0.00	12.99
			Amount	Calc.	%Drift			
91		1,3,5-Trimethylbenzene	40.000	42.721	-6.8	62	0.00	13.10
			AvgRF	CCRF	%Dev			
92		2-Chlorotoluene	1.719	1.802	-4.8	62	0.00	13.11
			Amount	Calc.	%Drift			
93		trans-1,4-Dichloro-2-Bute	40.000	23.112	42.2#	36	0.00	13.17
94		1,2,3-Trichloropropane	40.000	39.378	1.6	58	0.00	13.16
95		Cyclohexanone	200.000	151.447	24.3#	46	0.00	13.22
96		4-Chlorotoluene	40.000	41.154	-2.9	62	0.00	13.28
			AvgRF	CCRF	%Dev			
97		a-Methyl styrene	----------NA----------					
			Amount	Calc.	%Drift			
98		tert-Butylbenzene	40.000	44.789	-12.0	66	0.00	13.44
99		1,2,4-Trimethylbenzene	40.000	42.914	-7.3	62	0.00	13.51
100		Pentachloroethane	40.000	42.868	-7.2	63	0.00	13.50
101		sec-Butylbenzene	40.000	42.640	-6.6	63	0.00	13.63
102		4-Isopropyltoluene	40.000	42.756	-6.9	63	0.00	13.75
			AvgRF	CCRF	%Dev			
103		1,3-Dichlorobenzene	1.138	1.226	-7.7	63	0.00	13.90
			Amount	Calc.	%Drift			
104		1,2,3-Trimethylbenzene	40.000	42.994	-7.5	64	0.00	13.97
			AvgRF	CCRF	%Dev			
105		1,4-Dichlorobenzene	1.185	1.267	-6.9	63	0.00	13.97
			Amount	Calc.	%Drift			
106		n-Butylbenzene	40.000	41.324	-3.3	61	0.00	14.18
107		Benzyl Chloride	40.000	32.516	18.7	50	0.00	14.21
108		1,2-Dichlorobenzene	40.000	42.780	-7.0	62	0.00	14.40
			AvgRF	CCRF	%Dev			
109		1,2-Dibromo-3-Chloropropa	0.185	0.176	4.9	54	0.00	15.13
			Amount	Calc.	%Drift			
110		Hexachlorobutadiene	40.000	42.167	-5.4	65	0.00	15.66
			AvgRF	CCRF	%Dev			
111		1,2,4-Trichlorobenzene	0.887	0.944	-6.4	60	0.00	15.72
112		Naphthalene	2.750	2.596	5.6	54	0.00	16.02
113		1,2,3-Trichlorobenzene	0.860	0.875	-1.7	59	0.00	16.19

Continuing Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V5E1766-CC1761
Lab FileID: 5E39457.D

```
(#) = Out of Range                SPCC's out = 0  CCC's out = 0
 5E39338.D  appIX05-01-2023_.M        Thu May 04 12:53:32 2023
```

Continuing Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V5E1766-ECC1761
Lab FileID: 5E39484.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\ce...023\V5E1766\5E39484.d Vial: 29
Acq On : 4 May 2023 11:02 pm Operator: joannel
Sample : ECC1761-5 Inst : MSVOA20
Misc : MS53934,V5E1766,,,,, Multiplr: 1.00
MS Integration Params: ult...ll.p

Method : C:\msdchem\1\met...pIX05-01-2023_.M (RTE Integrator)
Title : SW-846 Method 5030B/8260B & EPA 624
Last Update : Tue May 02 08:25:38 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 50% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Fluorobenzene	1.000	1.000	0.0	70	0.00	8.47
			True	Calc.	% Drift			
2		Dichlorodifluoromethane	40.000	26.523	33.7	48	0.00	2.81
3	P	Chloromethane	40.000	26.718	33.2	47	0.00	3.16
4	C	Vinyl Chloride	40.000	27.466	31.3#	47	0.00	3.26
5		1,3-Butadiene	40.000	34.403	14.0	65	0.00	3.29
6		Bromomethane	40.000	23.316	41.7	46	0.00	3.77
7		Chloroethane	40.000	31.866	20.3	55	0.00	3.95
8		Trichlorofluoromethane	40.000	35.570	11.1	63	0.00	4.15
			AvgRF	CCRF	% Dev			
9		Ethyl Ether	0.239	0.177	25.9	49#	0.00	4.59
			True	Calc.	% Drift			
10		Ethanol	800.000	429.608	46.3	37	-0.01	4.79
11		1,2-Dichlorotrifluoroetha	40.000	22.742	43.1	43	0.00	4.84
12	C	1,1-Dichloroethene	40.000	26.957	32.6#	49	0.00	4.86
13		Freon 113	40.000	23.833	40.4	46	0.00	4.90
14		Carbon Disulfide	40.000	19.220	52.0#	36	0.00	4.92
15		Iodomethane	40.000	33.740	15.6	53	0.00	5.06
16		Acrolein	200.000	91.620	54.2#	29	0.00	5.29
17		Allyl chloride	40.000	18.725	53.2#	35	0.00	5.46
18		Methylene Chloride	40.000	19.971	50.1#	38	0.00	5.60
			AvgRF	CCRF	% Dev			
19		Acetone	0.134	0.078	41.8	39#	0.00	5.65
20		Methyl acetate	0.335	0.168	49.9	33#	0.00	5.79
			True	Calc.	% Drift			
21		trans-1,2-Dichloroethene	40.000	22.051	44.9	39	0.00	5.79
			AvgRF	CCRF	% Dev			
22		Hexane	0.254	0.121	52.4#	36#	0.00	5.87
23		Methyl Tert Butyl Ether	0.748	0.456	39.0	41#	0.00	5.90
			True	Calc.	% Drift			
24		Acetonitrile	400.000	177.157	55.7#	31	0.00	6.22
25		Di-isopropyl ether	40.000	20.513	48.7	36	0.00	6.33
26		Chloroprene	40.000	25.593	36.0	45	0.00	6.49
27	P	1,1-Dichloroethane	40.000	21.842	45.4	38	0.00	6.52

Continuing Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V5E1766-ECC1761
Lab FileID: 5E39484.D

			AvgRF	CCRF	% Dev			
28		Acrylonitrile	0.177	0.091	48.6	36#	0.00	6.58
29		ETBE	0.883	0.684	22.5	53	0.00	6.75
30		Tert Butyl Alcohol	0.079	0.041	48.1	35#	0.00	5.99
			True	Calc.	% Drift			
31		Vinyl acetate	200.000	141.012	29.5	50	0.00	6.77
32		cis-1,2-Dichloroethene	40.000	32.189	19.5	57	0.00	7.13
33		2,2-Dichloropropane	40.000	19.225	51.9#	38	0.00	7.26
			AvgRF	CCRF	% Dev			
34		Bromochloromethane	0.132	0.112	15.2	61	0.00	7.36
			True	Calc.	% Drift			
35		Cyclohexane	40.000	32.422	18.9	63	0.00	7.37
			AvgRF	CCRF	% Dev			
36	C	Chloroform	0.455	0.381	16.3	59	0.00	7.41
37		Ethyl acetate	0.498	0.395	20.7	57	0.00	7.51
			True	Calc.	% Drift			
38		Tetrahydrofuran	40.000	31.747	20.6	56	0.00	7.60
			AvgRF	CCRF	% Dev			
39	S	Dibromofluoromethane	0.301	0.309	-2.7	71	0.00	7.61
			True	Calc.	% Drift			
40		Carbon Tetrachloride	40.000	36.151	9.6	67	0.00	7.59
41		1,1,1-Trichloroethane	40.000	35.687	10.8	64	0.00	7.66
			AvgRF	CCRF	% Dev			
42		2-Butanone	0.225	0.200	11.1	57	0.00	7.73
			True	Calc.	% Drift			
43		1,1-Dichloropropene	40.000	31.965	20.1	58	0.00	7.79
			AvgRF	CCRF	% Dev			
44		tert-Butyl formate	0.148	0.119	19.6	55	0.00	7.88
			True	Calc.	% Drift			
45		Propionitrile	400.000	292.352	26.9	51	0.00	8.06
			AvgRF	CCRF	% Dev			
46		Methacrylonitrile	0.268	0.208	22.4	55	0.00	8.08
			True	Calc.	% Drift			
47		Benzene	40.000	30.181	24.5	54	0.00	8.05
			AvgRF	CCRF	% Dev			
48		TAME	0.725	0.581	19.9	57	0.00	8.12
49	S	1,2-Dichloroethane-d4	0.316	0.378	-19.6	85	0.00	8.18
50		1,2-Dichloroethane	0.365	0.341	6.6	65	0.00	8.26
			True	Calc.	% Drift			
51		tert Amyl alcohol	400.000	266.741	33.3	47	0.00	8.29
52		Trichloroethene	40.000	32.346	19.1	57	0.00	8.65
53		Methylcyclohexane	40.000	29.866	25.3	58	0.00	8.65
54		Dibromomethane	40.000	33.349	16.6	59	0.00	9.09
			AvgRF	CCRF	% Dev			

Continuing Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V5E1766-ECC1761
Lab FileID: 5E39484.D

55	C	1,2-Dichloropropane	0.279	0.227	18.6	56	0.00	9.18
56		Bromodichloromethane	0.352	0.300	14.8	59	0.00	9.23
			True	Calc.	% Drift			
57		Methyl methacrylate	40.000	32.461	18.8	57	0.00	9.34
58		1,4-Dioxane	800.000	551.360	31.1	49	0.00	9.42
			AvgRF	CCRF	% Dev			
59		2-Chloroethyl vinyl ether	0.187	0.097	48.1	37#	0.00	9.76
			True	Calc.	% Drift			
60		cis-1,3-Dichloropropene	40.000	29.342	26.6	53	0.00	9.85
			AvgRF	CCRF	% Dev			
61	I	Chlorobenzene-d5	1.000	1.000	0.0	62	0.00	11.60
62	S	Toluene-d8	1.253	1.339	-6.9	65	0.00	10.04
			True	Calc.	% Drift			
63	C	Toluene	40.000	33.700	15.7	55	0.00	10.09
64		Isobutyl alcohol	800.000	604.489	24.4	46	0.00	8.18
			AvgRF	CCRF	% Dev			
65		2-Nitropropane	0.134	0.131	2.2	60	0.00	10.32
66		4-Methyl-2-pentanone	0.531	0.520	2.1	58	0.00	10.43
			True	Calc.	% Drift			
67		trans-1,3-Dichloropropene	40.000	33.477	16.3	52	0.00	10.49
68		Tetrachloroethene	40.000	40.418	-1.0	64	0.00	10.49
69		Ethyl methacrylate	40.000	34.169	14.6	52	0.00	10.59
			AvgRF	CCRF	% Dev			
70		1,1,2-Trichloroethane	0.245	0.228	6.9	57	0.00	10.66
71		Dibromochloromethane	0.348	0.349	-0.3	60	0.00	10.85
72		1,3-Dichloropropane	0.467	0.432	7.5	57	0.00	10.94
			True	Calc.	% Drift			
73		1,2-Dibromoethane	40.000	37.003	7.5	57	0.00	11.12
			AvgRF	CCRF	% Dev			
74		3,3-Dimethyl-1-butanol	0.082	0.063	23.2	45#	0.00	11.19
75		2-hexanone	0.382	0.381	0.3	57	0.00	11.26
			True	Calc.	% Drift			
76		1-Chlorohexane	40.000	35.465	11.3	57	0.00	11.55
77	C	Ethylbenzene	40.000	34.450	13.9	56	0.00	11.62
78	P	Chlorobenzene	40.000	35.072	12.3	57	0.00	11.62
79		1,1,1,2-Tetrachloroethane	40.000	37.979	5.1	59	0.00	11.67
80		m,p-Xylene	80.000	72.610	9.2	57	0.00	11.76
81		o-Xylene	40.000	36.761	8.1	58	0.00	12.19
82		Styrene	40.000	35.514	11.2	56	0.00	12.25
			AvgRF	CCRF	% Dev			
83	P	Bromoform	0.271	0.260	4.1	57	0.00	12.31
			True	Calc.	% Drift			
84		Isopropylbenzene	40.000	37.500	6.3	59	0.00	12.50
			AvgRF	CCRF	% Dev			

Continuing Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V5E1766-ECC1761
Lab FileID: 5E39484.D

85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	60	0.00	13.96
86	S	4-Bromofluorobenzene	0.879	0.879	0.0	60	0.00	12.82
			True	Calc.	% Drift			
87		cis-1,4-Dichloro-2-butene	40.000	25.273	36.8	41	0.00	12.86
88		n-Propylbenzene	40.000	37.330	6.7	57	0.00	12.92
89		Bromobenzene	40.000	37.768	5.6	57	0.00	12.95
			AvgRF	CCRF	% Dev			
90	P	1,1,2,2-Tetrachloroethane	0.825	0.721	12.6	52	0.00	12.99
			True	Calc.	% Drift			
91		1,3,5-Trimethylbenzene	40.000	38.377	4.1	58	0.00	13.10
			AvgRF	CCRF	% Dev			
92		2-Chlorotoluene	1.719	1.622	5.6	57	0.00	13.12
			True	Calc.	% Drift			
93		trans-1,4-Dichloro-2-Bute	40.000	23.379	41.6	38	0.00	13.17
94		1,2,3-Trichloropropane	40.000	37.552	6.1	57	0.00	13.16
95		Cyclohexanone	200.000	178.213	10.9	56	0.00	13.23
96		4-Chlorotoluene	40.000	36.261	9.3	57	0.00	13.28
			AvgRF	CCRF	% Dev			
97		a-Methyl styrene		----------NA----------				
			True	Calc.	% Drift			
98		tert-Butylbenzene	40.000	39.601	1.0	60	0.00	13.44
99		1,2,4-Trimethylbenzene	40.000	38.852	2.9	59	0.00	13.51
100		Pentachloroethane	40.000	30.540	23.7	48	0.00	13.50
101		sec-Butylbenzene	40.000	37.931	5.2	58	0.00	13.63
102		4-Isopropyltoluene	40.000	38.305	4.2	58	0.00	13.76
			AvgRF	CCRF	% Dev			
103		1,3-Dichlorobenzene	1.138	1.106	2.8	58	0.00	13.90
			True	Calc.	% Drift			
104		1,2,3-Trimethylbenzene	40.000	38.676	3.3	59	0.00	13.97
			AvgRF	CCRF	% Dev			
105		1,4-Dichlorobenzene	1.185	1.136	4.1	59	0.00	13.97
			True	Calc.	% Drift			
106		n-Butylbenzene	40.000	34.926	12.7	53	0.00	14.18
107		Benzyl Chloride	40.000	17.042	57.4#	28	0.00	14.21
108		1,2-Dichlorobenzene	40.000	38.947	2.6	59	0.00	14.40
			AvgRF	CCRF	% Dev			
109		1,2-Dibromo-3-Chloropropa	0.185	0.175	5.4	55	0.00	15.13
			True	Calc.	% Drift			
110		Hexachlorobutadiene	40.000	37.575	6.1	60	0.00	15.66
			AvgRF	CCRF	% Dev			
111		1,2,4-Trichlorobenzene	0.887	0.870	1.9	57	0.00	15.72
112		Naphthalene	2.750	2.528	8.1	55	0.00	16.02
113		1,2,3-Trichlorobenzene	0.860	0.834	3.0	58	0.00	16.19

Continuing Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V5E1766-ECC1761
Lab FileID: 5E39484.D

(#) = Out of Range SPCC's out = 0 CCC's out = 2
5E39338.D appIX05-01-2023_.M Fri May 05 00:17:34 2023

Initial Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2910-ICC2910
Lab FileID: I756326.D

Response Factor Report MSVOA16

Method : C:\msdchem\1\met...\VI-2023-05-02.m (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

Calibration Files
1 =I756322.D 2 =I756323.D 3 =I756330.D 4 =I756325.D
5 =I756326.D 6 =I756327.D 7 =I756328.D

Compound	1	2	3	4	5	6	7	Avg	%RSD
1) I Fluorobenzene	----------ISTD----------								
2) Dichlorodifluorom	0.189	0.129	0.145	0.164	0.148	0.160	0.143	0.154	12.45
3)P Chloromethane	0.364	0.212	0.256	0.231	0.218	0.221	0.198	0.243	23.15
---- Linear regr., Force(0,0) ---- Coefficient = 0.9954									
Response Ratio = 0.00000 + 0.21441 *A									
4)C Vinyl Chloride	0.290	0.192	0.224	0.226	0.214	0.225	0.202	0.225	13.92
5) 1,3-Butadiene	0.329	0.227	0.227	0.244	0.216	0.231	0.200	0.239	17.56
---- Linear regr., Force(0,0) ---- Coefficient = 0.9943									
Response Ratio = 0.00000 + 0.21770 *A									
6) Bromomethane	0.238	0.110	0.129	0.107	0.104	0.105	0.091	0.126	39.97
---- Linear regr., Force(0,0) ---- Coefficient = 0.9914									
Response Ratio = 0.00000 + 0.09706 *A									
7) Chloroethane	0.236	0.139	0.151	0.134	0.129	0.130	0.112	0.147	27.68
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9976									
Response Ratio = 0.00000 + 0.14831 *A + -0.01749 *A^2									
8) Trichlorofluorome	0.458	0.298	0.325	0.352	0.349	0.380	0.326	0.355	14.68
9) Ethyl Ether	0.247	0.193	0.199	0.189	0.193	0.202	0.186	0.201	10.39
10) 1,2-Dichlorotrifl	0.264	0.199	0.220	0.214	0.221	0.230	0.206	0.222	9.51
11)C 1,1-Dichloroethen	0.335	0.253	0.292	0.288	0.294	0.308	0.274	0.292	8.81
12) Ethanol	0.014	0.008	0.009	0.008	0.009	0.009	0.008	0.009	25.82
---- Linear regr., Force(0,0) ---- Coefficient = 0.9974									
Response Ratio = 0.00000 + 0.00836 *A									
13) Freon 113	0.192	0.157	0.183	0.180	0.182	0.190	0.170	0.179	6.80
14) Carbon Disulfide	0.693	0.482	0.548	0.521	0.530	0.562	0.502	0.548	12.62
15) Iodomethane	0.116	0.104	0.115	0.165	0.173	0.175		0.141	23.19
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9939									
Response Ratio = 0.00000 + 0.13640 *A + 0.03081 *A^2									
16) Acrolein	0.080	0.060	0.075	0.072	0.073	0.077	0.071	0.073	8.52
17) Allyl chloride	0.373	0.231	0.276	0.267	0.260	0.272	0.245	0.275	16.78
---- Linear regr., Force(0,0) ---- Coefficient = 0.9971									
Response Ratio = 0.00000 + 0.25861 *A									
18) Methylene Chlorid	0.501	0.302	0.309	0.300	0.297	0.305	0.275	0.327	23.74
---- Linear regr., Force(0,0) ---- Coefficient = 0.9977									
Response Ratio = 0.00000 + 0.29197 *A									
19) Acetone	0.214	0.134	0.158	0.156	0.150	0.151	0.146	0.158	16.20
---- Linear regr., Force(0,0) ---- Coefficient = 0.9989									
Response Ratio = 0.00000 + 0.14935 *A									

Initial Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2910-ICC2910
Lab FileID: I756326.D

20)	Methyl acetate	0.326	0.279	0.311	0.324	0.332	0.357	0.331	0.323	7.39
21)	trans-1,2-Dichlor	0.349	0.247	0.282	0.272	0.284	0.295	0.265	0.285	11.27
22)	Hexane	0.178	0.130	0.152	0.152	0.151	0.158	0.135	0.151	10.35
23)	Methyl Tert Butyl	0.668	0.526	0.597	0.562	0.593	0.623	0.572	0.592	7.69
24)	Tert butyl alcoho	0.101	0.082	0.096	0.090	0.092	0.092	0.087	0.091	6.66
25)	Acetonitrile	0.073	0.048	0.056	0.055	0.053	0.054	0.051	0.056	14.72
26)	Di-isopropyl ethe	0.743	0.614	0.683	0.667	0.705	0.736	0.673	0.689	6.43
27)	Chloroprene	0.302	0.228	0.274	0.291	0.286	0.313	0.283	0.282	9.62
28)P	1,1-Dichloroethan	0.460	0.358	0.393	0.384	0.388	0.403	0.363	0.393	8.62
29)	Acrylonitrile	0.116	0.123	0.150	0.154	0.156	0.161	0.156	0.145	12.50
30)	ETBE	0.675	0.553	0.638	0.623	0.642	0.675	0.615	0.632	6.58
31)	Vinyl acetate	0.017	0.332	0.447	0.478	0.502	0.539	0.516	0.404	45.48

---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9977
Response Ratio = 0.00000 + 0.45233 *A + 0.00812 *A^2

32)	cis-1,2-Dichloroe	0.193	0.184	0.205	0.201	0.207	0.215	0.197	0.200	5.07
33)	2,2-Dichloropropa	0.284	0.219	0.277	0.271	0.268	0.275	0.241	0.262	9.00
34)	Bromochloromethan	0.113	0.088	0.105	0.099	0.101	0.101	0.093	0.100	8.12
35)	Cyclohexane	0.300	0.246	0.305	0.307	0.313	0.336	0.298	0.301	9.06
36)C	Chloroform	0.452	0.350	0.381	0.375	0.377	0.388	0.355	0.383	8.80
37)	Ethyl acetate	0.492	0.347	0.413	0.418	0.422	0.439	0.415	0.421	10.14
38)	Tetrahydrofuran	0.255	0.163	0.187	0.179	0.176	0.181	0.165	0.187	16.83

---- Linear regr., Force(0,0) ---- Coefficient = 0.9977
Response Ratio = 0.00000 + 0.17392 *A

39)S	Dibromofluorometh	0.280	0.275	0.282	0.281	0.287	0.287	0.289	0.283	1.73
40)	Carbon Tetrachlor	0.312	0.246	0.278	0.273	0.275	0.287	0.257	0.275	7.76
41)	1,1,1-Trichloroet	0.325	0.272	0.308	0.303	0.309	0.322	0.290	0.304	6.07
42)	2-Butanone	0.203	0.188	0.232	0.252	0.249	0.254	0.244	0.232	11.23
43)	1,1-Dichloroprope	0.244	0.215	0.252	0.248	0.253	0.265	0.236	0.245	6.52
44)	tert-Butyl Format	0.230	0.165	0.196	0.192	0.201	0.210	0.200	0.199	9.86
45)	Propionitrile	0.082	0.065	0.075	0.077	0.074	0.074	0.071	0.074	6.90
46)	Methacrylonitrile	0.286	0.208	0.236	0.227	0.219	0.223	0.208	0.230	11.67
47)	Benzene	0.886	0.693	0.788	0.769	0.776	0.802	0.718	0.776	8.04
48)	TAME	0.691	0.536	0.592	0.561	0.551	0.584	0.532	0.578	9.40
49)S	1,2-Dichloroethan	0.310	0.309	0.309	0.308	0.307	0.310	0.312	0.309	0.54
50)	Isobutyl alcohol	0.026	0.018	0.020	0.021	0.021	0.021	0.019	0.021	12.01
51)	1,2-Dichloroethan	0.381	0.287	0.307	0.285	0.295	0.308	0.280	0.306	11.28
52)	Tert Amyl Alcohol	0.088	0.073	0.081	0.077	0.078	0.078	0.072	0.078	6.52
53)	Trichloroethene	0.265	0.191	0.212	0.200	0.207	0.217	0.196	0.213	11.74
54)	Methylcyclohexane	0.264	0.209	0.258	0.249	0.255	0.277	0.248	0.251	8.44
55)	Dibromomethane	0.160	0.126	0.146	0.132	0.139	0.147	0.135	0.141	8.19
56)C	1,2-Dichloropropa	0.234	0.188	0.213	0.205	0.207	0.217	0.199	0.209	6.94
57)	Bromodichlorometh	0.328	0.259	0.289	0.278	0.278	0.299	0.276	0.287	7.71
58)	Methyl methacryla	0.069	0.158	0.212	0.230	0.242	0.262	0.256	0.204	33.84

---- Linear regr., Force(0,0) ---- Coefficient = 0.9975
Response Ratio = 0.00000 + 0.24834 *A

59)	1,4-Dioxane	0.003	0.001	0.006	0.006	0.006	0.007	0.006	0.005	47.04

---- Linear regr., Force(0,0) ---- Coefficient = 0.9970
Response Ratio = 0.00000 + 0.00635 *A

60)	2-Chloroethyl vin	0.130	0.118	0.151	0.158	0.166	0.173	0.164	0.152	13.40
61)	cis-1,3-Dichlorop	0.327	0.272	0.312	0.308	0.315	0.334	0.309	0.311	6.35
62)	I Chlorobenzene-d5	----------	----------	----------	ISTD	----------	----------	----------	----------	
63)S	Toluene-d8	1.374	1.363	1.406	1.406	1.391	1.385	1.379	1.386	1.17
64)C	Toluene	1.335	1.003	1.126	1.092	1.096	1.141	1.023	1.117	9.75
65)	2-Nitropropane	0.172	0.135	0.154	0.151	0.154	0.161	0.146	0.153	7.48
66)	4-Methyl-2-pentan	0.748	0.551	0.663	0.650	0.627	0.615	0.572	0.632	10.28

Initial Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2910-ICC2910
Lab FileID: I756326.D

67)	trans-1,3-Dichlor	0.358	0.324	0.406	0.405	0.415	0.446	0.404	0.394	10.16
68)	Tetrachloroethene	0.320	0.260	0.297	0.285	0.283	0.301	0.266	0.288	7.21
69)	Ethyl methacrylat	0.281	0.246	0.347	0.381	0.378	0.399	0.380	0.345	16.88
	---- Linear regr., Force(0,0) ---- Coefficient = 0.9975									
	Response Ratio = 0.00000 + 0.38070 *A									
70)	1,1,2-Trichloroet	0.287	0.225	0.253	0.240	0.239	0.247	0.225	0.245	8.67
71)	Dibromochlorometh	0.353	0.276	0.325	0.305	0.313	0.332	0.305	0.316	7.68
72)	1,3-Dichloropropa	0.423	0.371	0.433	0.428	0.429	0.455	0.421	0.423	6.06
73)	1,2-Dibromoethane	0.274	0.263	0.307	0.292	0.297	0.317	0.292	0.292	6.35
74)	3,3-dimethyl-1-bu	0.147	0.106	0.132	0.127	0.126	0.123	0.113	0.125	10.64
75)	2-hexanone	0.484	0.428	0.540	0.541	0.513	0.505	0.432	0.492	9.48
76)	1-Chlorohexane	0.280	0.252	0.320	0.308	0.317	0.346	0.308	0.304	9.96
77)C	Ethylbenzene	1.431	1.082	1.275	1.220	1.235	1.286	1.156	1.241	8.85
78)P	Chlorobenzene	0.866	0.672	0.774	0.726	0.740	0.765	0.685	0.747	8.69
79)	1,1,1,2-Tetrachlo	0.302	0.264	0.292	0.274	0.283	0.299	0.269	0.283	5.28
80)	m,p-Xylene	0.897	0.760	0.922	0.920	0.942	1.003	0.890	0.905	8.16
81)	o-Xylene	0.951	0.757	0.951	0.947	0.962	1.031	0.938	0.934	8.97
82)	Styrene	0.549	0.534	0.664	0.688	0.723	0.772	0.708	0.663	13.45
83)P	Bromoform	0.238	0.198	0.239	0.234	0.238	0.255	0.232	0.233	7.36
84)	Isopropylbenzene	1.064	0.892	1.104	1.102	1.116	1.197	1.074	1.078	8.60
85) I	1,4-Dichlorobenzene-d ----------ISTD----------									
86)S	4-Bromofluorobenz	0.780	0.796	0.775	0.751	0.775	0.776	0.796	0.778	1.96
87)	cis-1,4-Dichloro-	0.148	0.191	0.213	0.216	0.218	0.229	0.223	0.205	13.66
88)	n-Propylbenzene	2.863	2.411	2.573	2.489	2.571	2.712	2.462	2.583	6.09
89)	Bromobenzene	0.727	0.557	0.597	0.560	0.566	0.590	0.542	0.591	10.63
90)P	1,1,2,2-Tetrachlo	1.189	0.962	0.969	0.899	0.908	0.927	0.831	0.955	11.82
91)	1,3,5-Trimethylbe	1.751	1.535	1.759	1.704	1.757	1.866	1.705	1.725	5.77
92)	2-Chlorotoluene	2.236	1.734	1.819	1.743	1.788	1.818	1.659	1.828	10.31
93)	trans-1,4-Dichlor	0.117	0.181	0.269	0.222	0.232	0.251	0.242	0.216	23.81
	---- Linear regr., Force(0,0) ---- Coefficient = 0.9983									
	Response Ratio = 0.00000 + 0.24269 *A									
94)	1,2,3-Trichloropr	0.292	0.277	0.289	0.274	0.272	0.278	0.251	0.276	4.84
95)	Cyclohexanone	0.080	0.068	0.074	0.065	0.068	0.067	0.065	0.070	8.11
96)	4-Chlorotoluene	1.708	1.326	1.569	1.527	1.585	1.655	1.522	1.556	7.82
97)	tert-Butylbenzene	1.147	0.758	0.940	0.907	0.954	1.014	0.930	0.950	12.32
98)	1,2,4-Trimethylbe	1.703	1.460	1.720	1.723	1.746	1.847	1.708	1.701	6.89
99)	Pentachloroethane	0.401	0.297	0.328	0.325	0.315	0.323	0.302	0.327	10.57
100)	sec-Butylbenzene	2.133	1.793	1.999	1.960	2.024	2.144	1.940	1.999	6.03
101)	4-Isopropyltoluen	1.612	1.416	1.683	1.681	1.730	1.833	1.678	1.662	7.67
102)	1,3-Dichlorobenze	1.198	0.963	1.043	0.990	1.016	1.066	0.977	1.036	7.75
103)	1,2,3-Trimethylbe	2.145	1.738	1.919	1.859	1.870	1.945	1.770	1.892	7.09
104)	1,4-Dichlorobenze	1.496	1.119	1.143	1.066	1.074	1.103	0.997	1.143	14.25
105)	n-Butylbenzene	0.823	0.733	0.884	0.886	0.901	0.970	0.869	0.867	8.45
106)	Benzyl Chloride	0.161	0.209	0.301	0.293	0.304	0.309	0.274	0.264	21.63
	---- Linear regr., Force(0,0) ---- Coefficient = 0.9957									
	Response Ratio = 0.00000 + 0.28990 *A									
107)	1,2-Dichlorobenze	1.065	0.948	1.021	0.976	0.997	1.025	0.936	0.995	4.60
108)	1,2-Dibromo-3-Chl	0.215	0.211	0.244	0.233	0.232	0.241	0.227	0.229	5.39
109)	Hexachlorobutadie	0.267	0.189	0.208	0.213	0.212	0.220	0.199	0.215	11.66
110)	1,2,4-Trichlorobe	0.471	0.475	0.558	0.549	0.545	0.584	0.550	0.533	8.06
111)	Naphthalene	2.025	1.664	2.024	2.032	2.073	2.250	2.152	2.031	8.96
112)	1,2,3-Trichlorobe	0.642	0.517	0.577	0.529	0.540	0.570	0.535	0.559	7.60

(#) = Out of Range

VI-2023-05-02.m Tue May 02 13:48:56 2023

Initial Calibration Verification

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2910-ICV2910
Lab FileID: I756331.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\2023-05-02\I756331.D Vial: 11
Acq On : 2 May 2023 1:02 pm Operator: jeniferw
Sample : ICV2910-5 Inst : MSVOA16
Misc : MS53904,VI2910,,,,, Multiplr: 1.00
MS Integration Params: tiny.p

Method : C:\msdchem\1\met...\VI-2023-05-02.m (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Tue May 02 13:32:44 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	103	0.00	7.85
2	Dichlorodifluoromethane	0.154	0.235	-52.6#	163	0.00	2.35
		Amount	Calc.	%Drift			
3 P	Chloromethane	40.000	48.939	-22.3#	124	0.00	2.65
		AvgRF	CCRF	%Dev			
4 C	Vinyl Chloride	0.225	0.252	-12.0	121	0.00	2.76
		Amount	Calc.	%Drift			
5	1,3-Butadiene	40.000	43.394	-8.5	112	0.00	2.79
6	Bromomethane	40.000	44.465	-11.2	106	0.00	3.23
7	Chloroethane	40.000	41.534	-3.8	111	0.00	3.39
		AvgRF	CCRF	%Dev			
8	Trichlorofluoromethane	0.355	0.393	-10.7	116	0.00	3.58
9	Ethyl Ether	0.201	0.212	-5.5	113	0.00	4.01
10	1,2-Dichlorotrifluoroetha	0.222	0.261	-17.6	122	0.00	4.23
11 C	1,1-Dichloroethene	0.292	0.316	-8.2	111	0.00	4.26
		Amount	Calc.	%Drift			
12	Ethanol	800.000	834.407	-4.3	103	-0.01	4.23
		AvgRF	CCRF	%Dev			
13	Freon 113	0.179	0.219	-22.3#	124	0.00	4.31
14	Carbon Disulfide	0.548	0.597	-8.9	116	0.00	4.32
		Amount	Calc.	%Drift			
15	Iodomethane	40.000	41.272	-3.2	99	0.00	4.45
		AvgRF	CCRF	%Dev			
16	Acrolein	0.073	0.077	-5.5	109	0.00	4.68
		Amount	Calc.	%Drift			
17	Allyl chloride	40.000	44.287	-10.7	113	0.00	4.84
18	Methylene Chloride	40.000	43.302	-8.3	110	0.00	4.97
19	Acetone	200.000	202.407	-1.2	104	0.00	5.03
		AvgRF	CCRF	%Dev			
20	Methyl acetate	0.323	0.328	-1.5	101	0.00	5.17
21	trans-1,2-Dichloroethene	0.285	0.299	-4.9	108	0.00	5.17
22	Hexane	0.151	0.171	-13.2	116	0.00	5.27

Initial Calibration Verification

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2910-ICV2910
Lab FileID: I756331.D

23		Methyl Tert Butyl Ether	0.592	0.643	-8.6	112	0.00	5.29
24		Tert butyl alcohol	0.091	0.095	-4.4	106	0.00	5.40
25		Acetonitrile	0.056	0.056	0.0	108	0.00	5.56
26		Di-isopropyl ether	0.689	0.727	-5.5	106	0.00	5.73
27		Chloroprene	0.282	0.282	0.0	101	0.00	5.86
28	P	1,1-Dichloroethane	0.393	0.395	-0.5	105	0.00	5.88
29		Acrylonitrile	0.145	0.156	-7.6	103	0.00	5.92
30		ETBE	0.632	0.697	-10.3	112	0.00	6.13
		----------	Amount	Calc.	%Drift			
31		Vinyl acetate	200.000	220.757	-10.4	110	0.00	6.13
		----------	AvgRF	CCRF	%Dev			
32		cis-1,2-Dichloroethene	0.200	0.214	-7.0	106	0.00	6.49
33		2,2-Dichloropropane	0.262	0.295	-12.6	113	0.00	6.61
34		Bromochloromethane	0.100	0.103	-3.0	105	0.00	6.73
35		Cyclohexane	0.301	0.346	-15.0	114	0.00	6.75
36	C	Chloroform	0.383	0.398	-3.9	109	0.00	6.79
37		Ethyl acetate	0.421	0.429	-1.9	105	0.00	6.88
		----------	Amount	Calc.	%Drift			
38		Tetrahydrofuran	40.000	40.727	-1.8	104	0.00	6.98
		----------	AvgRF	CCRF	%Dev			
39	S	Dibromofluoromethane	0.283	0.285	-0.7	102	0.00	6.98
40		Carbon Tetrachloride	0.275	0.293	-6.5	110	0.00	6.97
41		1,1,1-Trichloroethane	0.304	0.328	-7.9	109	0.00	7.03
42		2-Butanone	0.232	0.249	-7.3	103	0.00	7.10
43		1,1-Dichloropropene	0.245	0.280	-14.3	114	0.00	7.16
44		tert-Butyl Formate	0.199	0.222	-11.6	114	0.00	7.25
45		Propionitrile	0.074	0.075	-1.4	104	0.00	7.41
46		Methacrylonitrile	0.230	0.230	0.0	108	0.00	7.43
47		Benzene	0.776	0.816	-5.2	108	0.00	7.43
48		TAME	0.578	0.611	-5.7	114	0.00	7.52
49	S	1,2-Dichloroethane-d4	0.309	0.305	1.3	102	0.00	7.55
50		Isobutyl alcohol	0.021	0.022	-4.8	106	0.00	7.59
51		1,2-Dichloroethane	0.306	0.304	0.7	106	0.00	7.63
52		Tert Amyl Alcohol	0.078	0.080	-2.6	106	0.00	7.70
53		Trichloroethene	0.213	0.216	-1.4	107	0.00	8.04
54		Methylcyclohexane	0.251	0.281	-12.0	113	0.00	8.05
55		Dibromomethane	0.141	0.147	-4.3	109	0.00	8.48
56	C	1,2-Dichloropropane	0.209	0.227	-8.6	113	0.00	8.56
57		Bromodichloromethane	0.287	0.288	-0.3	107	0.00	8.62
		----------	Amount	Calc.	%Drift			
58		Methyl methacrylate	40.000	39.087	2.3	103	0.00	8.74
59		1,4-Dioxane	800.000	775.951	3.0	99	0.00	8.82
		----------	AvgRF	CCRF	%Dev			
60		2-Chloroethyl vinyl ether	0.152	0.165	-8.6	102	0.00	9.15
61		cis-1,3-Dichloropropene	0.311	0.328	-5.5	107	0.00	9.25
62	I	Chlorobenzene-d5	1.000	1.000	0.0	101	0.00	11.01
63	S	Toluene-d8	1.386	1.413	-1.9	103	0.00	9.44
64	C	Toluene	1.117	1.165	-4.3	108	0.00	9.50
65		2-Nitropropane	0.153	0.158	-3.3	104	0.00	9.69
66		4-Methyl-2-pentanone	0.632	0.639	-1.1	103	0.00	9.83
67		trans-1,3-Dichloropropene	0.394	0.402	-2.0	98	0.00	9.90
68		Tetrachloroethene	0.288	0.308	-6.9	110	0.00	9.91

Initial Calibration Verification

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2910-ICV2910
Lab FileID: I756331.D

			Amount	Calc.	%Drift			
69		Ethyl methacrylate	40.000	44.517	-11.3	114	0.00	10.01
			AvgRF	CCRF	%Dev			
70		1,1,2-Trichloroethane	0.245	0.250	-2.0	106	0.00	10.05
71		Dibromochloromethane	0.316	0.334	-5.7	108	0.00	10.26
72		1,3-Dichloropropane	0.423	0.482	-13.9	114	0.00	10.33
73		1,2-Dibromoethane	0.292	0.315	-7.9	107	0.00	10.51
74		3,3-dimethyl-1-butanol	0.125	0.125	0.0	101	0.00	10.62
75		2-hexanone	0.492	0.518	-5.3	102	0.00	10.65
76		1-Chlorohexane	0.304	0.349	-14.8	112	0.00	10.96
77	C	Ethylbenzene	1.241	1.295	-4.4	106	0.00	11.02
78	P	Chlorobenzene	0.747	0.757	-1.3	104	0.00	11.02
79		1,1,1,2-Tetrachloroethane	0.283	0.289	-2.1	103	0.00	11.07
80		m,p-Xylene	0.905	0.990	-9.4	106	0.00	11.16
81		o-Xylene	0.934	1.007	-7.8	106	0.00	11.60
82		Styrene	0.663	0.762	-14.9	107	0.00	11.65
83	P	Bromoform	0.233	0.245	-5.2	104	0.00	11.71
84		Isopropylbenzene	1.078	1.166	-8.2	106	0.00	11.91
85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	104	0.00	13.37
86	S	4-Bromofluorobenzene	0.778	0.772	0.8	103	0.00	12.22
87		cis-1,4-Dichloro-2-butene	0.205	0.239	-16.6	114	0.00	12.26
88		n-Propylbenzene	2.583	2.634	-2.0	106	0.00	12.33
89		Bromobenzene	0.591	0.592	-0.2	109	0.00	12.35
90	P	1,1,2,2-Tetrachloroethane	0.955	0.926	3.0	106	0.00	12.39
91		1,3,5-Trimethylbenzene	1.725	1.836	-6.4	108	0.00	12.52
92		2-Chlorotoluene	1.828	1.765	3.4	103	0.00	12.52
			Amount	Calc.	%Drift			
93		trans-1,4-Dichloro-2-Bute	40.000	41.544	-3.9	113	0.00	12.57
			AvgRF	CCRF	%Dev			
94		1,2,3-Trichloropropane	0.276	0.295	-6.9	113	0.00	12.55
95		Cyclohexanone	0.070	0.232	-231.4#	357#	0.00	12.60
96		4-Chlorotoluene	1.556	1.618	-4.0	106	0.00	12.68
97		tert-Butylbenzene	0.950	0.979	-3.1	107	0.00	12.85
98		1,2,4-Trimethylbenzene	1.701	1.816	-6.8	108	0.00	12.93
99		Pentachloroethane	0.327	0.327	0.0	108	0.00	12.90
100		sec-Butylbenzene	1.999	2.016	-0.9	103	0.00	13.04
101		4-Isopropyltoluene	1.662	1.770	-6.5	106	0.00	13.17
102		1,3-Dichlorobenzene	1.036	1.018	1.7	104	0.00	13.30
103		1,2,3-Trimethylbenzene	1.892	1.826	3.5	101	0.00	13.38
104		1,4-Dichlorobenzene	1.143	1.094	4.3	106	0.00	13.39
105		n-Butylbenzene	0.867	0.983	-13.4	113	0.00	13.61
			Amount	Calc.	%Drift			
106		Benzyl Chloride	40.000	41.209	-3.0	102	0.00	13.63
			AvgRF	CCRF	%Dev			
107		1,2-Dichlorobenzene	0.995	0.999	-0.4	104	0.00	13.83
108		1,2-Dibromo-3-Chloropropa	0.229	0.247	-7.9	111	0.00	14.58
109		Hexachlorobutadiene	0.215	0.227	-5.6	111	0.00	15.15
110		1,2,4-Trichlorobenzene	0.533	0.566	-6.2	108	0.00	15.19
111		Naphthalene	2.031	2.126	-4.7	107	0.00	15.46
112		1,2,3-Trichlorobenzene	0.559	0.549	1.8	106	0.00	15.63

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Initial Calibration Verification

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2910-ICV2910
Lab FileID: I756331.D

I756326.D VI-2023-05-02.m Tue May 02 13:49:14 2023

Continuing Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2913-CC2910
Lab FileID: I756403.D

Evaluate Continuing Calibration Report

Data File : C:\Users\Organics\De...anila Files\I756403.d Vial: 30
Acq On : 3 May 2023 9:26 pm Operator: jeniferw
Sample : CC2910-5 Inst : MSVOA16
Misc : MS53924,VI2913,,,,, Multiplr: 1.00
MS Integration Params: tiny.p

Method : C:\msdchem\1\met...\VI-2023-05-02.m (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Tue May 02 13:32:44 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	95	0.00	7.85
2	Dichlorodifluoromethane	0.154	0.116	24.7#	74	0.00	2.36
		Amount	Calc.	%Drift			
3 P	Chloromethane	40.000	33.850	15.4	79	0.00	2.65
		AvgRF	CCRF	%Dev			
4 C	Vinyl Chloride	0.225	0.177	21.3#	78	0.00	2.77
		Amount	Calc.	%Drift			
5	1,3-Butadiene	40.000	35.925	10.2	86	0.00	2.79
6	Bromomethane	40.000	32.614	18.5	72	0.00	3.23
7	Chloroethane	40.000	32.682	18.3	82	0.00	3.39
		AvgRF	CCRF	%Dev			
8	Trichlorofluoromethane	0.355	0.298	16.1	81	0.00	3.58
9	Ethyl Ether	0.201	0.175	12.9	86	0.00	4.02
10	1,2-Dichlorotrifluoroetha	0.222	0.202	9.0	87	0.00	4.24
11 C	1,1-Dichloroethene	0.292	0.257	12.0	83	0.00	4.26
		Amount	Calc.	%Drift			
12	Ethanol	800.000	863.420	-7.9	99	-0.01	4.23
		AvgRF	CCRF	%Dev			
13	Freon 113	0.179	0.152	15.1	79	0.00	4.31
14	Carbon Disulfide	0.548	0.461	15.9	82	0.00	4.32
		Amount	Calc.	%Drift			
15	Iodomethane	40.000	26.535	33.7#	56	0.00	4.46
		AvgRF	CCRF	%Dev			
16	Acrolein	0.073	0.056	23.3#	73	0.00	4.68
		Amount	Calc.	%Drift			
17	Allyl chloride	40.000	33.373	16.6	79	0.00	4.85
18	Methylene Chloride	40.000	38.336	4.2	89	0.00	4.98
19	Acetone	200.000	196.887	1.6	93	0.00	5.04
		AvgRF	CCRF	%Dev			
20	Methyl acetate	0.323	0.317	1.9	90	0.00	5.17
21	trans-1,2-Dichloroethene	0.285	0.251	11.9	84	0.00	5.18
22	Hexane	0.151	0.117	22.5#	74	0.00	5.27

Continuing Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2913-CC2910
Lab FileID: I756403.D

23		Methyl Tert Butyl Ether	0.592	0.541	8.6	86	0.00	5.31
24		Tert butyl alcohol	0.091	0.088	3.3	91	0.00	5.41
25		Acetonitrile	0.056	0.052	7.1	91	0.00	5.57
26		Di-isopropyl ether	0.689	0.637	7.5	86	0.00	5.73
27		Chloroprene	0.282	0.255	9.6	84	0.00	5.87
28	P	1,1-Dichloroethane	0.393	0.359	8.7	88	0.00	5.88
29		Acrylonitrile	0.145	0.144	0.7	87	0.00	5.93
30		ETBE	0.632	0.586	7.3	86	0.00	6.14
		----------	Amount	Calc.	%Drift	----------		
31		Vinyl acetate	200.000	175.249	12.4	79	0.00	6.14
		----------	AvgRF	CCRF	%Dev	----------		
32		cis-1,2-Dichloroethene	0.200	0.189	5.5	86	0.00	6.51
33		2,2-Dichloropropane	0.262	0.122	53.4#	43#	0.00	6.62
34		Bromochloromethane	0.100	0.093	7.0	88	0.00	6.73
35		Cyclohexane	0.301	0.257	14.6	78	0.00	6.75
36	C	Chloroform	0.383	0.346	9.7	87	0.00	6.79
37		Ethyl acetate	0.421	0.382	9.3	86	0.00	6.89
		----------	Amount	Calc.	%Drift	----------		
38		Tetrahydrofuran	40.000	37.527	6.2	88	0.00	6.99
		----------	AvgRF	CCRF	%Dev	----------		
39	S	Dibromofluoromethane	0.283	0.288	-1.8	95	0.00	6.99
40		Carbon Tetrachloride	0.275	0.243	11.6	84	0.00	6.98
41		1,1,1-Trichloroethane	0.304	0.277	8.9	85	0.00	7.04
42		2-Butanone	0.232	0.236	-1.7	90	0.00	7.10
43		1,1-Dichloropropene	0.245	0.222	9.4	83	0.00	7.17
44		tert-Butyl Formate	0.199	0.179	10.1	85	0.00	7.26
45		Propionitrile	0.074	0.070	5.4	90	0.00	7.41
46		Methacrylonitrile	0.230	0.198	13.9	86	0.00	7.44
47		Benzene	0.776	0.712	8.2	87	0.00	7.43
48		TAME	0.578	0.511	11.6	88	0.00	7.53
49	S	1,2-Dichloroethane-d4	0.309	0.311	-0.6	96	0.00	7.56
50		Isobutyl alcohol	0.021	0.020	4.8	89	0.00	7.60
51		1,2-Dichloroethane	0.306	0.276	9.8	89	0.00	7.63
52		Tert Amyl Alcohol	0.078	0.071	9.0	87	0.00	7.70
53		Trichloroethene	0.213	0.187	12.2	85	0.00	8.04
54		Methylcyclohexane	0.251	0.213	15.1	79	0.00	8.05
55		Dibromomethane	0.141	0.129	8.5	88	0.00	8.48
56	C	1,2-Dichloropropane	0.209	0.191	8.6	87	0.00	8.57
57		Bromodichloromethane	0.287	0.259	9.8	88	0.00	8.63
		----------	Amount	Calc.	%Drift	----------		
58		Methyl methacrylate	40.000	35.665	10.8	87	0.00	8.74
59		1,4-Dioxane	800.000	765.657	4.3	90	0.00	8.82
		----------	AvgRF	CCRF	%Dev	----------		
60		2-Chloroethyl vinyl ether	0.152	0.151	0.7	86	0.00	9.16
61		cis-1,3-Dichloropropene	0.311	0.267	14.1	80	0.00	9.26
62	I	Chlorobenzene-d5	1.000	1.000	0.0	96	0.00	11.01
63	S	Toluene-d8	1.386	1.385	0.1	95	0.00	9.44
64	C	Toluene	1.117	0.992	11.2	87	0.00	9.50
65		2-Nitropropane	0.153	0.137	10.5	85	0.00	9.70
66		4-Methyl-2-pentanone	0.632	0.577	8.7	88	0.00	9.83
67		trans-1,3-Dichloropropene	0.394	0.342	13.2	79	0.00	9.90
68		Tetrachloroethene	0.288	0.314	-9.0	106	0.00	9.91

Continuing Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2913-CC2910
Lab FileID: I756403.D

			Amount	Calc.	%Drift			
69		Ethyl methacrylate	40.000	36.509	8.7	88	0.00	10.01
			AvgRF	CCRF	%Dev			
70		1,1,2-Trichloroethane	0.245	0.222	9.4	89	0.00	10.06
71		Dibromochloromethane	0.316	0.289	8.5	88	0.00	10.26
72		1,3-Dichloropropane	0.423	0.394	6.9	88	0.00	10.34
73		1,2-Dibromoethane	0.292	0.271	7.2	87	0.00	10.52
74		3,3-dimethyl-1-butanol	0.125	0.118	5.6	90	0.00	10.62
75		2-hexanone	0.492	0.472	4.1	88	0.00	10.66
76		1-Chlorohexane	0.304	0.267	12.2	81	0.00	10.97
77	C	Ethylbenzene	1.241	1.097	11.6	85	0.00	11.03
78	P	Chlorobenzene	0.747	0.667	10.7	86	0.00	11.02
79		1,1,1,2-Tetrachloroethane	0.283	0.260	8.1	88	0.00	11.07
80		m,p-Xylene	0.905	0.834	7.8	85	0.00	11.16
81		o-Xylene	0.934	0.863	7.6	86	0.00	11.60
82		Styrene	0.663	0.648	2.3	86	0.00	11.66
83	P	Bromoform	0.233	0.216	7.3	87	0.00	11.71
84		Isopropylbenzene	1.078	0.986	8.5	85	0.00	11.91
85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	96	0.00	13.37
86	S	4-Bromofluorobenzene	0.778	0.776	0.3	97	0.00	12.22
87		cis-1,4-Dichloro-2-butene	0.205	0.132	35.6#	58	0.00	12.26
88		n-Propylbenzene	2.583	2.243	13.2	84	0.00	12.33
89		Bromobenzene	0.591	0.518	12.4	88	0.00	12.35
90	P	1,1,2,2-Tetrachloroethane	0.955	0.818	14.3	87	0.00	12.39
91		1,3,5-Trimethylbenzene	1.725	1.564	9.3	86	0.00	12.52
92		2-Chlorotoluene	1.828	1.607	12.1	87	0.00	12.52
			Amount	Calc.	%Drift			
93		trans-1,4-Dichloro-2-Bute	40.000	25.017	37.5#	63	0.00	12.57
			AvgRF	CCRF	%Dev			
94		1,2,3-Trichloropropane	0.276	0.250	9.4	88	0.00	12.55
95		Cyclohexanone	0.070	0.063	10.0	90	0.00	12.61
96		4-Chlorotoluene	1.556	1.424	8.5	87	0.00	12.69
97		tert-Butylbenzene	0.950	0.831	12.5	84	0.00	12.85
98		1,2,4-Trimethylbenzene	1.701	1.576	7.3	87	0.00	12.93
99		Pentachloroethane	0.327	0.193	41.0#	59	0.00	12.91
100		sec-Butylbenzene	1.999	1.750	12.5	83	0.00	13.04
101		4-Isopropyltoluene	1.662	1.505	9.4	84	0.00	13.18
102		1,3-Dichlorobenzene	1.036	0.930	10.2	88	0.00	13.30
103		1,2,3-Trimethylbenzene	1.892	1.697	10.3	88	0.00	13.38
104		1,4-Dichlorobenzene	1.143	0.973	14.9	87	0.00	13.39
105		n-Butylbenzene	0.867	0.706	18.6	76	0.00	13.61
			Amount	Calc.	%Drift			
106		Benzyl Chloride	40.000	16.529	58.7#	38	0.00	13.63
			AvgRF	CCRF	%Dev			
107		1,2-Dichlorobenzene	0.995	0.917	7.8	89	0.00	13.83
108		1,2-Dibromo-3-Chloropropa	0.229	0.213	7.0	89	0.00	14.58
109		Hexachlorobutadiene	0.215	0.180	16.3	82	0.00	15.15
110		1,2,4-Trichlorobenzene	0.533	0.518	2.8	92	0.00	15.19
111		Naphthalene	2.031	1.958	3.6	91	0.00	15.47
112		1,2,3-Trichlorobenzene	0.559	0.512	8.4	91	0.00	15.63

(#) = Out of Range SPCC's out = 0 CCC's out = 1

Continuing Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2913-CC2910
Lab FileID: I756403.D

I756326.D VI-2023-05-02.m Thu May 04 09:48:45 2023

Continuing Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2913-ECC2910
Lab FileID: I756429.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\2023-05-03\I756429.D Vial: 56
Acq On : 4 May 2023 8:09 am Operator: jeniferw
Sample : ECC2910-5 Inst : MSVOA16
Misc : MS53924,VI2913,,,,, Multiplr: 1.00
MS Integration Params: tiny.p

Method : C:\msdchem\1\met...\VI-2023-05-02.m (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Tue May 02 13:32:44 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 50% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	90	0.00	7.85
2	Dichlorodifluoromethane	0.154	0.108	29.9	66	0.00	2.35
		Amount	Calc.	%Drift			
3 P	Chloromethane	40.000	34.403	14.0	76	0.00	2.65
		AvgRF	CCRF	%Dev			
4 C	Vinyl Chloride	0.225	0.167	25.8#	71	0.00	2.76
		Amount	Calc.	%Drift			
5	1,3-Butadiene	40.000	35.683	10.8	81	0.00	2.79
6	Bromomethane	40.000	22.843	42.9	48	0.00	3.23
7	Chloroethane	40.000	30.911	22.7	74	0.00	3.39
		AvgRF	CCRF	%Dev			
8	Trichlorofluoromethane	0.355	0.280	21.1	73	0.01	3.59
9	Ethyl Ether	0.201	0.169	15.9	79	0.00	4.02
10	1,2-Dichlorotrifluoroetha	0.222	0.183	17.6	75	0.00	4.24
11 C	1,1-Dichloroethene	0.292	0.247	15.4	76	0.00	4.26
		Amount	Calc.	%Drift			
12	Ethanol	800.000	748.998	6.4	82	-0.01	4.23
		AvgRF	CCRF	%Dev			
13	Freon 113	0.179	0.175	2.2	87	0.00	4.31
14	Carbon Disulfide	0.548	0.437	20.3	74	0.01	4.32
		Amount	Calc.	%Drift			
15	Iodomethane	40.000	26.504	33.7	53	0.00	4.46
		AvgRF	CCRF	%Dev			
16	Acrolein	0.073	0.046	37.0	57	0.00	4.68
		Amount	Calc.	%Drift			
17	Allyl chloride	40.000	29.489	26.3	66	0.00	4.85
18	Methylene Chloride	40.000	37.535	6.2	83	0.00	4.98
19	Acetone	200.000	195.235	2.4	88	0.00	5.03
		AvgRF	CCRF	%Dev			
20	Methyl acetate	0.323	0.317	1.9	86	0.00	5.17
21	trans-1,2-Dichloroethene	0.285	0.248	13.0	79	0.00	5.18
22	Hexane	0.151	0.104	31.1	62	0.01	5.28

Continuing Calibration Summary

Job Number: FC5659 **Sample:** VI2913-ECC2910
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** I756429.D
Project: CCF West NAM; KSC, FL

23		Methyl Tert Butyl Ether	0.592	0.533	10.0	81	0.00	5.31
24		Tert butyl alcohol	0.091	0.085	6.6	84	0.00	5.40
25		Acetonitrile	0.056	0.050	10.7	84	0.00	5.57
26		Di-isopropyl ether	0.689	0.620	10.0	79	0.00	5.73
27		Chloroprene	0.282	0.249	11.7	79	0.00	5.87
28	P	1,1-Dichloroethane	0.393	0.350	10.9	81	0.00	5.88
29		Acrylonitrile	0.145	0.142	2.1	82	0.00	5.93
30		ETBE	0.632	0.577	8.7	81	0.00	6.14
		----------	Amount	Calc.	%Drift	----------		
31		Vinyl acetate	200.000	157.596	21.2	68	0.00	6.14
		----------	AvgRF	CCRF	%Dev	----------		
32		cis-1,2-Dichloroethene	0.200	0.187	6.5	81	0.00	6.51
33		2,2-Dichloropropane	0.262	0.050	80.9#	17#	0.00	6.62
34		Bromochloromethane	0.100	0.091	9.0	82	0.00	6.73
35		Cyclohexane	0.301	0.244	18.9	70	0.00	6.76
36	C	Chloroform	0.383	0.348	9.1	83	0.00	6.79
37		Ethyl acetate	0.421	0.376	10.7	81	0.00	6.89
		----------	Amount	Calc.	%Drift	----------		
38		Tetrahydrofuran	40.000	35.983	10.0	80	0.00	6.98
		----------	AvgRF	CCRF	%Dev	----------		
39	S	Dibromofluoromethane	0.283	0.288	-1.8	91	0.00	6.99
40		Carbon Tetrachloride	0.275	0.237	13.8	78	0.00	6.98
41		1,1,1-Trichloroethane	0.304	0.272	10.5	80	0.00	7.04
42		2-Butanone	0.232	0.229	1.3	83	0.00	7.10
43		1,1-Dichloropropene	0.245	0.219	10.6	78	0.00	7.17
44		tert-Butyl Formate	0.199	0.166	16.6	75	0.00	7.26
45		Propionitrile	0.074	0.067	9.5	81	0.00	7.41
46		Methacrylonitrile	0.230	0.195	15.2	81	0.00	7.44
47		Benzene	0.776	0.699	9.9	81	0.00	7.43
48		TAME	0.578	0.524	9.3	86	0.00	7.52
49	S	1,2-Dichloroethane-d4	0.309	0.305	1.3	90	0.00	7.56
50		Isobutyl alcohol	0.021	0.019	9.5	80	0.00	7.59
51		1,2-Dichloroethane	0.306	0.272	11.1	83	0.00	7.63
52		Tert Amyl Alcohol	0.078	0.069	11.5	80	0.00	7.70
53		Trichloroethene	0.213	0.183	14.1	80	0.00	8.05
54		Methylcyclohexane	0.251	0.191	23.9	68	0.00	8.05
55		Dibromomethane	0.141	0.130	7.8	84	0.00	8.48
56	C	1,2-Dichloropropane	0.209	0.192	8.1	84	0.00	8.57
57		Bromodichloromethane	0.287	0.258	10.1	84	0.00	8.63
		----------	Amount	Calc.	%Drift	----------		
58		Methyl methacrylate	40.000	34.388	14.0	80	0.00	8.74
59		1,4-Dioxane	800.000	744.557	6.9	83	0.00	8.82
		----------	AvgRF	CCRF	%Dev	----------		
60		2-Chloroethyl vinyl ether	0.152	0.137	9.9	74	0.00	9.16
61		cis-1,3-Dichloropropene	0.311	0.232	25.4	66	0.00	9.26
62	I	Chlorobenzene-d5	1.000	1.000	0.0	90	0.00	11.01
63	S	Toluene-d8	1.386	1.413	-1.9	91	0.00	9.45
64	C	Toluene	1.117	0.996	10.8	82	0.00	9.50
65		2-Nitropropane	0.153	0.137	10.5	80	0.00	9.70
66		4-Methyl-2-pentanone	0.632	0.571	9.7	82	0.00	9.83
67		trans-1,3-Dichloropropene	0.394	0.303	23.1	66	0.00	9.90
68		Tetrachloroethene	0.288	0.365	-26.7	116	0.00	9.91

Continuing Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2913-ECC2910
Lab FileID: I756429.D

			Amount	Calc.	%Drift			
69		Ethyl methacrylate	40.000	35.802	10.5	81	0.00	10.01
			AvgRF	CCRF	%Dev			
70		1,1,2-Trichloroethane	0.245	0.224	8.6	84	0.00	10.06
71		Dibromochloromethane	0.316	0.283	10.4	81	0.00	10.26
72		1,3-Dichloropropane	0.423	0.397	6.1	83	0.00	10.34
73		1,2-Dibromoethane	0.292	0.276	5.5	83	0.00	10.52
74		3,3-dimethyl-1-butanol	0.125	0.114	8.8	82	0.00	10.62
75		2-hexanone	0.492	0.461	6.3	80	0.00	10.66
76		1-Chlorohexane	0.304	0.252	17.1	71	0.00	10.96
77	C	Ethylbenzene	1.241	1.080	13.0	79	0.00	11.03
78	P	Chlorobenzene	0.747	0.664	11.1	81	0.00	11.02
79		1,1,1,2-Tetrachloroethane	0.283	0.260	8.1	82	0.00	11.07
80		m,p-Xylene	0.905	0.818	9.6	78	0.00	11.16
81		o-Xylene	0.934	0.862	7.7	80	0.00	11.60
82		Styrene	0.663	0.651	1.8	81	0.00	11.66
83	P	Bromoform	0.233	0.204	12.4	77	0.00	11.71
84		Isopropylbenzene	1.078	0.957	11.2	77	0.00	11.91
85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	89	0.00	13.37
86	S	4-Bromofluorobenzene	0.778	0.772	0.8	89	0.00	12.22
87		cis-1,4-Dichloro-2-butene	0.205	0.067	67.3#	28#	0.00	12.26
88		n-Propylbenzene	2.583	2.179	15.6	75	0.00	12.33
89		Bromobenzene	0.591	0.515	12.9	81	0.00	12.35
90	P	1,1,2,2-Tetrachloroethane	0.955	0.812	15.0	80	0.00	12.39
91		1,3,5-Trimethylbenzene	1.725	1.536	11.0	78	0.00	12.52
92		2-Chlorotoluene	1.828	1.549	15.3	77	0.00	12.52
			Amount	Calc.	%Drift			
93		trans-1,4-Dichloro-2-Bute	40.000	14.211	64.5#	33	0.00	12.58
			AvgRF	CCRF	%Dev			
94		1,2,3-Trichloropropane	0.276	0.251	9.1	82	0.00	12.55
95		Cyclohexanone	0.070	0.062	11.4	81	0.00	12.61
96		4-Chlorotoluene	1.556	1.385	11.0	78	0.00	12.69
97		tert-Butylbenzene	0.950	0.814	14.3	76	0.00	12.85
98		1,2,4-Trimethylbenzene	1.701	1.533	9.9	78	0.00	12.93
99		Pentachloroethane	0.327	0.112	65.7#	32#	0.00	12.90
100		sec-Butylbenzene	1.999	1.660	17.0	73	0.00	13.04
101		4-Isopropyltoluene	1.662	1.436	13.6	74	0.00	13.18
102		1,3-Dichlorobenzene	1.036	0.900	13.1	79	0.00	13.30
103		1,2,3-Trimethylbenzene	1.892	1.668	11.8	79	0.00	13.38
104		1,4-Dichlorobenzene	1.143	0.944	17.4	78	0.00	13.39
105		n-Butylbenzene	0.867	0.630	27.3	62	0.00	13.61
			Amount	Calc.	%Drift			
106		Benzyl Chloride	40.000	4.963	87.6#	11	0.01	13.64
			AvgRF	CCRF	%Dev			
107		1,2-Dichlorobenzene	0.995	0.882	11.4	79	0.00	13.83
108		1,2-Dibromo-3-Chloropropa	0.229	0.204	10.9	78	0.00	14.58
109		Hexachlorobutadiene	0.215	0.171	20.5	72	0.00	15.15
110		1,2,4-Trichlorobenzene	0.533	0.483	9.4	79	0.00	15.19
111		Naphthalene	2.031	1.908	6.1	82	0.00	15.47
112		1,2,3-Trichlorobenzene	0.559	0.500	10.6	82	0.00	15.63

(#) = Out of Range SPCC's out = 0 CCC's out = 1

Continuing Calibration Summary

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2913-ECC2910
Lab FileID: I756429.D

I756326.D VI-2023-05-02.m Thu May 04 09:44:47 2023

Run Sequence Report

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Run ID: V2O2924	**Method:** SW846 8260D	**Instrument ID:** GCMS2O

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
V2O2924-BFB	2O75425.D	04/11/23 09:39	n/a	BFB Tune
V2O2924-IC2924	2O75426.D	04/11/23 10:06	n/a	Initial cal 1
V2O2924-IC2924	2O75427.D	04/11/23 10:38	n/a	Initial cal 2
V2O2924-IC2924	2O75428.D	04/11/23 11:05	n/a	Initial cal 3
V2O2924-IC2924	2O75429.D	04/11/23 11:31	n/a	Initial cal 4
V2O2924-ICC2924	2O75430.D	04/11/23 11:56	n/a	Initial cal 5
V2O2924-IC2924	2O75431.D	04/11/23 12:22	n/a	Initial cal 6
V2O2924-IC2924	2O75432.D	04/11/23 12:48	n/a	Initial cal 7
V2O2924-ICV2924	2O75434.D	04/11/23 13:39	n/a	Initial cal verification 5
V2O2924-ICV2924	2O75435.D	04/11/23 14:04	n/a	Initial cal verification 4

Run Sequence Report

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Run ID: V2O2949 **Method:** SW846 8260D **Instrument ID:** GCMS2O

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
V2O2949-BFB	2O75997.D	05/03/23 10:54	n/a	BFB Tune
V2O2949-CC2924	2O75998.D	05/03/23 11:21	n/a	Continuing cal 5
V2O2949-BS	2O75999.D	05/03/23 11:51	n/a	Blank Spike
V2O2949-MB	2O76001.D	05/03/23 12:50	n/a	Method Blank
FC5659-1	2O76002.D	05/03/23 13:16	n/a	CCF-TB-20230427-01
ZZZZZZ	2O76003.D	05/03/23 13:42	n/a	(unrelated sample)
ZZZZZZ	2O76004.D	05/03/23 14:08	n/a	(unrelated sample)
FC5659-2	2O76005.D	05/03/23 14:34	n/a	CCF-IW0004IS-032.0-20230427
FC5659-3	2O76006.D	05/03/23 15:00	n/a	CCF-IW0087-040.0-20230427
FC5659-5	2O76008.D	05/03/23 16:38	n/a	CCF-IW0059-040.0-20230427
ZZZZZZ	2O76009.D	05/03/23 17:04	n/a	(unrelated sample)
ZZZZZZ	2O76010.D	05/03/23 17:30	n/a	(unrelated sample)
ZZZZZZ	2O76011.D	05/03/23 17:56	n/a	(unrelated sample)
ZZZZZZ	2O76012.D	05/03/23 18:22	n/a	(unrelated sample)
ZZZZZZ	2O76013.D	05/03/23 18:48	n/a	(unrelated sample)
ZZZZZZ	2O76014.D	05/03/23 19:14	n/a	(unrelated sample)
ZZZZZZ	2O76015.D	05/03/23 19:40	n/a	(unrelated sample)
ZZZZZZ	2O76016.D	05/03/23 20:06	n/a	(unrelated sample)
ZZZZZZ	2O76017.D	05/03/23 20:32	n/a	(unrelated sample)
ZZZZZZ	2O76018.D	05/03/23 20:58	n/a	(unrelated sample)
FC5679-12	2O76019.D	05/03/23 21:24	n/a	(used for QC only; not part of job FC5659)
ZZZZZZ	2O76020.D	05/03/23 21:50	n/a	(unrelated sample)
FC5679-12MS	2O76021.D	05/03/23 22:16	n/a	Matrix Spike
FC5679-12MSD	2O76022.D	05/03/23 22:42	n/a	Matrix Spike Duplicate
V2O2949-ECC2924	2O76023.D	05/03/23 23:08	n/a	Ending cal 5

Run Sequence Report

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Run ID: V2O2954	**Method:** SW846 8260D	**Instrument ID:** GCMS2O

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
V2O2954-BFB	2O76099.D	05/05/23 11:14	n/a	BFB Tune
V2O2954-CC2924	2O76100.D	05/05/23 11:41	n/a	Continuing cal 5
V2O2954-BS	2O76101.D	05/05/23 12:10	n/a	Blank Spike
V2O2954-MB	2O76103.D	05/05/23 13:06	n/a	Method Blank
OP96704-LB	2O76104.D	05/05/23 13:32	OP96704	Leachate Blank
FC5689-2L	2O76105.D	05/05/23 13:58	OP96704	(used for QC only; not part of job FC5659)
ZZZZZZ	2O76117.D	05/05/23 19:13	OP96704	(unrelated sample)
ZZZZZZ	2O76118.D	05/05/23 19:39	OP96704	(unrelated sample)
ZZZZZZ	2O76119.D	05/05/23 20:06	OP96704	(unrelated sample)
FC5689-2LMS	2O76122.D	05/05/23 21:24	n/a	Matrix Spike
FC5689-2LMSD	2O76123.D	05/05/23 21:50	n/a	Matrix Spike Duplicate
V2O2954-ECC2924	2O76126.D	05/05/23 23:08	n/a	Ending cal 5

Run Sequence Report

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Run ID: V2O2955 **Method:** SW846 8260D **Instrument ID:** GCMS2O

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
V2O2955-BS	2O76101.D	05/05/23 12:10	n/a	Blank Spike
V2O2955-MB	2O76103.D	05/05/23 13:06	n/a	Method Blank
FC5532-9	2O76106.D	05/05/23 14:25	n/a	(used for QC only; not part of job FC5659)
ZZZZZZ	2O76107.D	05/05/23 14:51	n/a	(unrelated sample)
ZZZZZZ	2O76108.D	05/05/23 15:17	n/a	(unrelated sample)
ZZZZZZ	2O76109.D	05/05/23 15:43	n/a	(unrelated sample)
ZZZZZZ	2O76110.D	05/05/23 16:10	n/a	(unrelated sample)
ZZZZZZ	2O76111.D	05/05/23 16:36	n/a	(unrelated sample)
ZZZZZZ	2O76112.D	05/05/23 17:02	n/a	(unrelated sample)
ZZZZZZ	2O76113.D	05/05/23 17:28	n/a	(unrelated sample)
ZZZZZZ	2O76114.D	05/05/23 17:54	n/a	(unrelated sample)
ZZZZZZ	2O76115.D	05/05/23 18:21	n/a	(unrelated sample)
FC5659-17	2O76116.D	05/05/23 18:47	n/a	CCF-IW0003S-008.0-20230428
ZZZZZZ	2O76120.D	05/05/23 20:32	n/a	(unrelated sample)
ZZZZZZ	2O76121.D	05/05/23 20:58	n/a	(unrelated sample)
FC5532-9MS	2O76124.D	05/05/23 22:16	n/a	Matrix Spike
FC5532-9MSD	2O76125.D	05/05/23 22:42	n/a	Matrix Spike Duplicate

Run Sequence Report

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Run ID: V5E1761	**Method:** SW846 8260D	**Instrument ID:** GCMS5E

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
V5E1761-BFB	5E39333.D	05/01/23 15:38	n/a	BFB Tune
V5E1761-IC1761	5E39334.D	05/01/23 16:03	n/a	Initial cal 1
V5E1761-IC1761	5E39335.D	05/01/23 16:29	n/a	Initial cal 2
V5E1761-IC1761	5E39336.D	05/01/23 16:55	n/a	Initial cal 3
V5E1761-IC1761	5E39337.D	05/01/23 17:20	n/a	Initial cal 4
V5E1761-ICC1761	5E39338.D	05/01/23 17:46	n/a	Initial cal 5
V5E1761-IC1761	5E39339.D	05/01/23 18:13	n/a	Initial cal 6
V5E1761-IC1761	5E39340.D	05/01/23 18:40	n/a	Initial cal 7
V5E1761-ICV1761	5E39342.D	05/01/23 19:33	n/a	Initial cal verification 5

Run Sequence Report

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Run ID: V5E1766 **Method:** SW846 8260D **Instrument ID:** GCMS5E

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
V5E1766-BFB	5E39457.D	05/04/23 11:32	n/a	BFB Tune
V5E1766-CC1761	5E39457.D	05/04/23 11:32	n/a	Continuing cal 5
V5E1766-BS	5E39458.D	05/04/23 12:12	n/a	Blank Spike
V5E1766-MB	5E39461.D	05/04/23 13:23	n/a	Method Blank
ZZZZZZ	5E39462.D	05/04/23 13:59	n/a	(unrelated sample)
FC5617-5	5E39463.D	05/04/23 14:23	n/a	(used for QC only; not part of job FC5659)
ZZZZZZ	5E39464.D	05/04/23 14:47	n/a	(unrelated sample)
ZZZZZZ	5E39465.D	05/04/23 15:12	n/a	(unrelated sample)
FC5659-4	5E39466.D	05/04/23 15:36	n/a	CCF-IW0081-020.0-20230427
FC5659-6	5E39467.D	05/04/23 16:01	n/a	CCF-IW0084-030.0-20230427
FC5659-7	5E39468.D	05/04/23 16:25	n/a	CCF-IW0089-050.0-20230427
FC5659-8	5E39469.D	05/04/23 16:50	n/a	CCF-IW0063-045.0-20230427
FC5659-9	5E39470.D	05/04/23 17:15	n/a	CCF-IW0080IS-020.0-20230427
FC5659-10	5E39471.D	05/04/23 17:39	n/a	CCF-IW0080S-010.0-20230427
FC5659-11	5E39472.D	05/04/23 18:04	n/a	CCF-IW0064-045.0-20230427
FC5659-12	5E39473.D	05/04/23 18:29	n/a	CCF-IW0011IS-030.0-20230428
FC5659-13	5E39474.D	05/04/23 18:54	n/a	CCF-IW0011ID-052.0-20230428
FC5659-14	5E39475.D	05/04/23 19:19	n/a	CCF-IW0086-040.0-20230428
FC5659-15	5E39476.D	05/04/23 19:44	n/a	CCF-IW0062-020.0-20230428
FC5659-16	5E39477.D	05/04/23 20:09	n/a	CCF-IW0088-040.0-20230428
ZZZZZZ	5E39478.D	05/04/23 20:34	n/a	(unrelated sample)
ZZZZZZ	5E39479.D	05/04/23 20:59	n/a	(unrelated sample)
ZZZZZZ	5E39480.D	05/04/23 21:23	n/a	(unrelated sample)
ZZZZZZ	5E39481.D	05/04/23 21:48	n/a	(unrelated sample)
FC5617-5MS	5E39482.D	05/04/23 22:12	n/a	Matrix Spike
FC5617-5MSD	5E39483.D	05/04/23 22:37	n/a	Matrix Spike Duplicate
V5E1766-ECC1761	5E39484.D	05/04/23 23:02	n/a	Ending cal 5

Run Sequence Report

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Run ID: VI2910 **Method:** SW846 8260D **Instrument ID:** GCMSI

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
VI2910-BFB	I756321.D	05/02/23 08:34	n/a	BFB Tune
VI2910-IC2910	I756322.D	05/02/23 09:04	n/a	Initial cal 1
VI2910-IC2910	I756323.D	05/02/23 09:29	n/a	Initial cal 2
VI2910-IC2910	I756325.D	05/02/23 10:18	n/a	Initial cal 4
VI2910-ICC2910	I756326.D	05/02/23 10:42	n/a	Initial cal 5
VI2910-IC2910	I756327.D	05/02/23 11:07	n/a	Initial cal 6
VI2910-IC2910	I756328.D	05/02/23 11:32	n/a	Initial cal 7
VI2910-IC2910	I756330.D	05/02/23 12:21	n/a	Initial cal 3
VI2910-ICV2910	I756331.D	05/02/23 13:02	n/a	Initial cal verification 5
VI2910-CC2910	I756331A.D	05/02/23 13:02	n/a	Continuing cal 5
VI2910-BS	I756332.D	05/02/23 13:26	n/a	Blank Spike
VI2910-MB	I756333.D	05/02/23 13:51	n/a	Method Blank
ZZZZZZ	I756334.D	05/02/23 14:19	n/a	(unrelated sample)
ZZZZZZ	I756335.D	05/02/23 14:44	n/a	(unrelated sample)
FC5532-2	I756336.D	05/02/23 15:09	n/a	(used for QC only; not part of job FC5659)
ZZZZZZ	I756337.D	05/02/23 15:34	n/a	(unrelated sample)
ZZZZZZ	I756338.D	05/02/23 15:59	n/a	(unrelated sample)
ZZZZZZ	I756339.D	05/02/23 16:25	n/a	(unrelated sample)
ZZZZZZ	I756340.D	05/02/23 16:50	n/a	(unrelated sample)
ZZZZZZ	I756341.D	05/02/23 17:15	n/a	(unrelated sample)
ZZZZZZ	I756342.D	05/02/23 17:40	n/a	(unrelated sample)
ZZZZZZ	I756343.D	05/02/23 18:05	n/a	(unrelated sample)
FC5532-2MS	I756344.D	05/02/23 18:30	n/a	Matrix Spike
FC5532-2MSD	I756345.D	05/02/23 18:55	n/a	Matrix Spike Duplicate
VI2910-ECC2910	I756346.D	05/02/23 19:20	n/a	Ending cal 5

Run Sequence Report

Job Number: FC5659
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Run ID: VI2913 **Method:** SW846 8260D **Instrument ID:** GCMSI

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
VI2913-BFB	I756402.D	05/03/23 21:01	n/a	BFB Tune
VI2913-CC2910	I756403.D	05/03/23 21:26	n/a	Continuing cal 5
VI2913-BS	I756404.D	05/03/23 21:51	n/a	Blank Spike
FC5678-7MS	I756405.D	05/03/23 22:16	n/a	Matrix Spike
FC5678-7MSD	I756406.D	05/03/23 22:41	n/a	Matrix Spike Duplicate
VI2913-MB	I756408.D	05/03/23 23:30	n/a	Method Blank
FC5678-7	I756409.D	05/03/23 23:55	n/a	(used for QC only; not part of job FC5659)
ZZZZZZ	I756410.D	05/04/23 00:20	n/a	(unrelated sample)
ZZZZZZ	I756411.D	05/04/23 00:44	n/a	(unrelated sample)
ZZZZZZ	I756412.D	05/04/23 01:09	n/a	(unrelated sample)
ZZZZZZ	I756413.D	05/04/23 01:34	n/a	(unrelated sample)
ZZZZZZ	I756414.D	05/04/23 01:59	n/a	(unrelated sample)
FC5659-6	I756415.D	05/04/23 02:23	n/a	CCF-IW0084-030.0-20230427
FC5659-7	I756416.D	05/04/23 02:48	n/a	CCF-IW0089-050.0-20230427
FC5659-8	I756417.D	05/04/23 03:13	n/a	CCF-IW0063-045.0-20230427
FC5659-9	I756418.D	05/04/23 03:37	n/a	CCF-IW0080IS-020.0-20230427
FC5659-10	I756419.D	05/04/23 04:02	n/a	CCF-IW0080S-010.0-20230427
FC5659-11	I756420.D	05/04/23 04:27	n/a	CCF-IW0064-045.0-20230427
FC5659-12	I756421.D	05/04/23 04:51	n/a	CCF-IW0011IS-030.0-20230428
FC5659-13	I756422.D	05/04/23 05:16	n/a	CCF-IW0011ID-052.0-20230428
FC5659-14	I756423.D	05/04/23 05:41	n/a	CCF-IW0086-040.0-20230428
FC5659-15	I756424.D	05/04/23 06:05	n/a	CCF-IW0062-020.0-20230428
FC5659-16	I756425.D	05/04/23 06:30	n/a	CCF-IW0088-040.0-20230428
FC5659-17	I756426.D	05/04/23 06:55	n/a	CCF-IW0003S-008.0-20230428
ZZZZZZ	I756427.D	05/04/23 07:20	n/a	(unrelated sample)
ZZZZZZ	I756428.D	05/04/23 07:44	n/a	(unrelated sample)
VI2913-ECC2910	I756429.D	05/04/23 08:09	n/a	Ending cal 5

MS Volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76002.d
Acq On : 3 May 2023 1:16 pm
Operator : davidb2
Sample : FC5659-1
Misc : MS53920,V2O2949,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 03 21:01:24 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

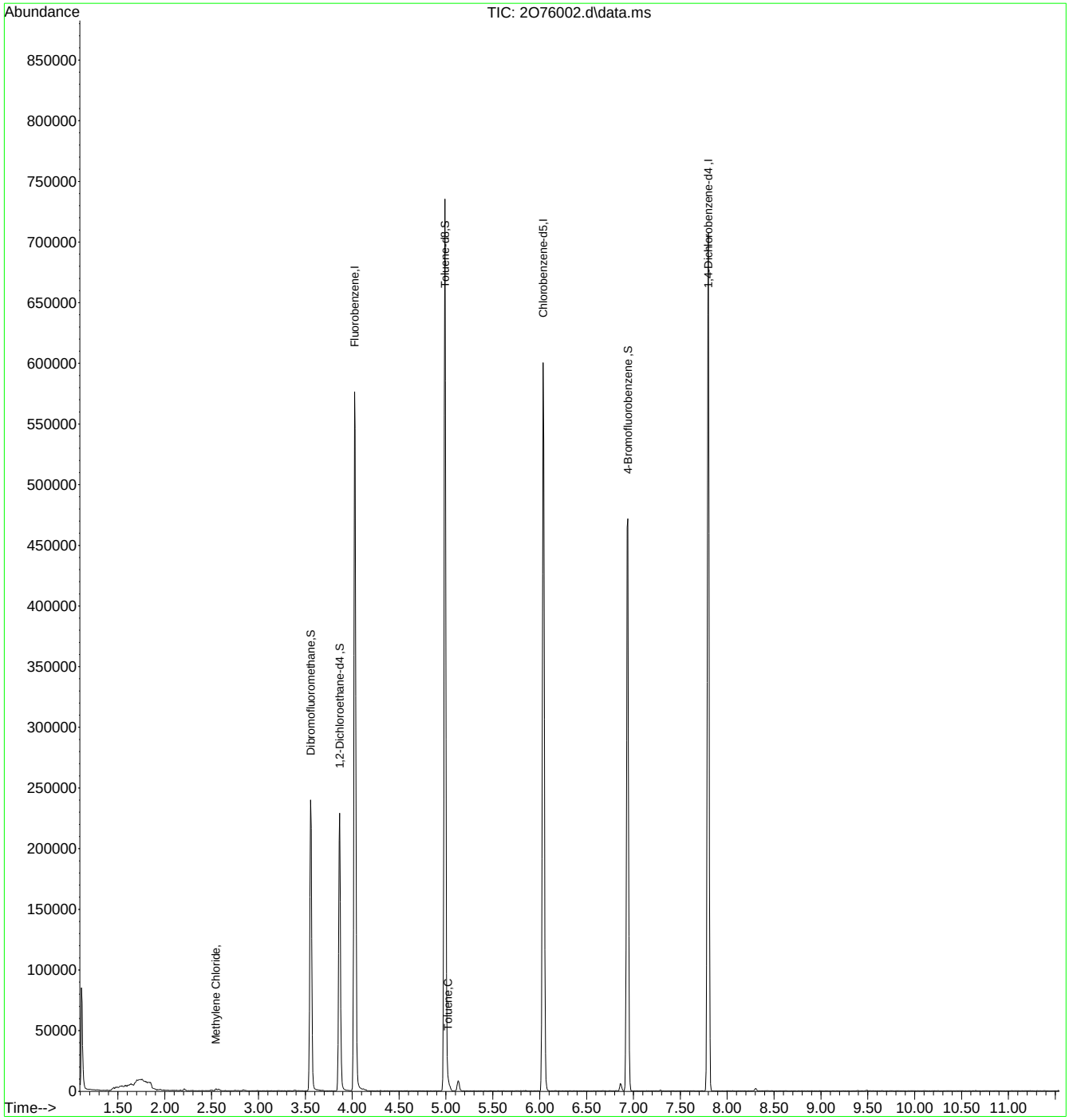
Compound		R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards							
1) Fluorobenzene		4.025	96	390502	50.00	ug/L	0.00
62) Chlorobenzene-d5		6.037	117	290147	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4		7.799	152	152845	50.00	ug/L	0.00
System Monitoring Compounds							
39) Dibromofluoromethane		3.556	113	100789	46.57	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	93.14%		
50) 1,2-Dichloroethane-d4		3.867	65	118577	51.54	ug/L	0.00
Spiked Amount	50.000	Range 79 - 125		Recovery =	103.08%		
63) Toluene-d8		4.989	98	375743	47.49	ug/L	0.00
Spiked Amount	50.000	Range 85 - 112		Recovery =	94.98%		
86) 4-Bromofluorobenzene		6.939	174	114445	49.07	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	98.14%		
Target Compounds							Qvalue
18) Methylene Chloride		2.544	49	640	0.27	ug/L #	82
64) Toluene		5.019	91	2129	0.27	ug/L	99

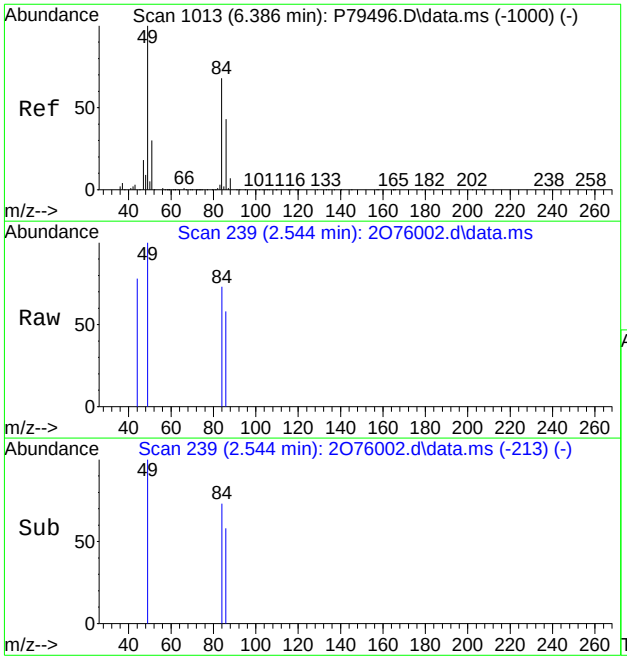
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76002.d
Acq On : 3 May 2023 1:16 pm
Operator : davidb2
Sample : FC5659-1
Misc : MS53920,V2O2949,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 03 21:01:24 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

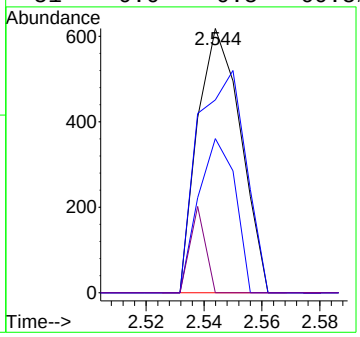


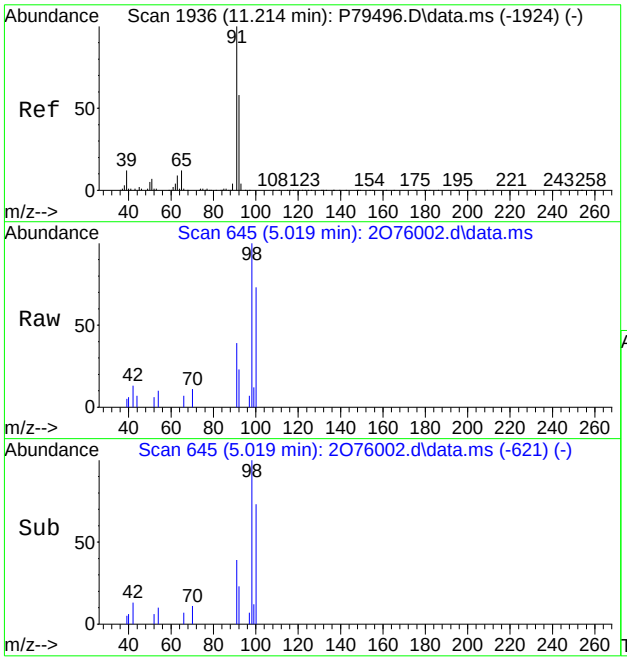


#18
Methylene Chloride
Concen: 0.27 ug/L
RT: 2.544 min Scan# 239
Delta R.T. 0.006 min
Lab File: 2O76002.d
Acq: 3 May 2023 1:16 pm

Tgt Ion: 49 Resp: 640

Ion	Ratio	Lower	Upper
49	100		
84	72.9	53.6	113.6
86	58.3	23.1	83.1
51	0.0	0.5	60.5#

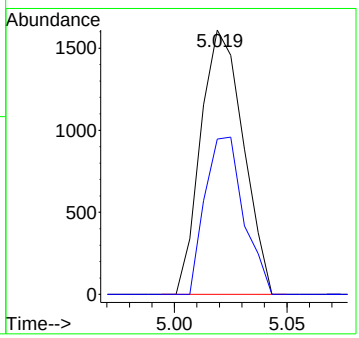




#64
Toluene
Concen: 0.27 ug/L
RT: 5.019 min Scan# 645
Delta R.T. -0.006 min
Lab File: 2O76002.d
Acq: 3 May 2023 1:16 pm

Tgt Ion: 91 Resp: 2129

Ion	Ratio	Lower	Upper
91	100		
92	58.8	28.1	88.1



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76005.d
Acq On : 3 May 2023 2:34 pm
Operator : davidb2
Sample : FC5659-2
Misc : MS53920,V2O2949,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 03 21:02:50 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

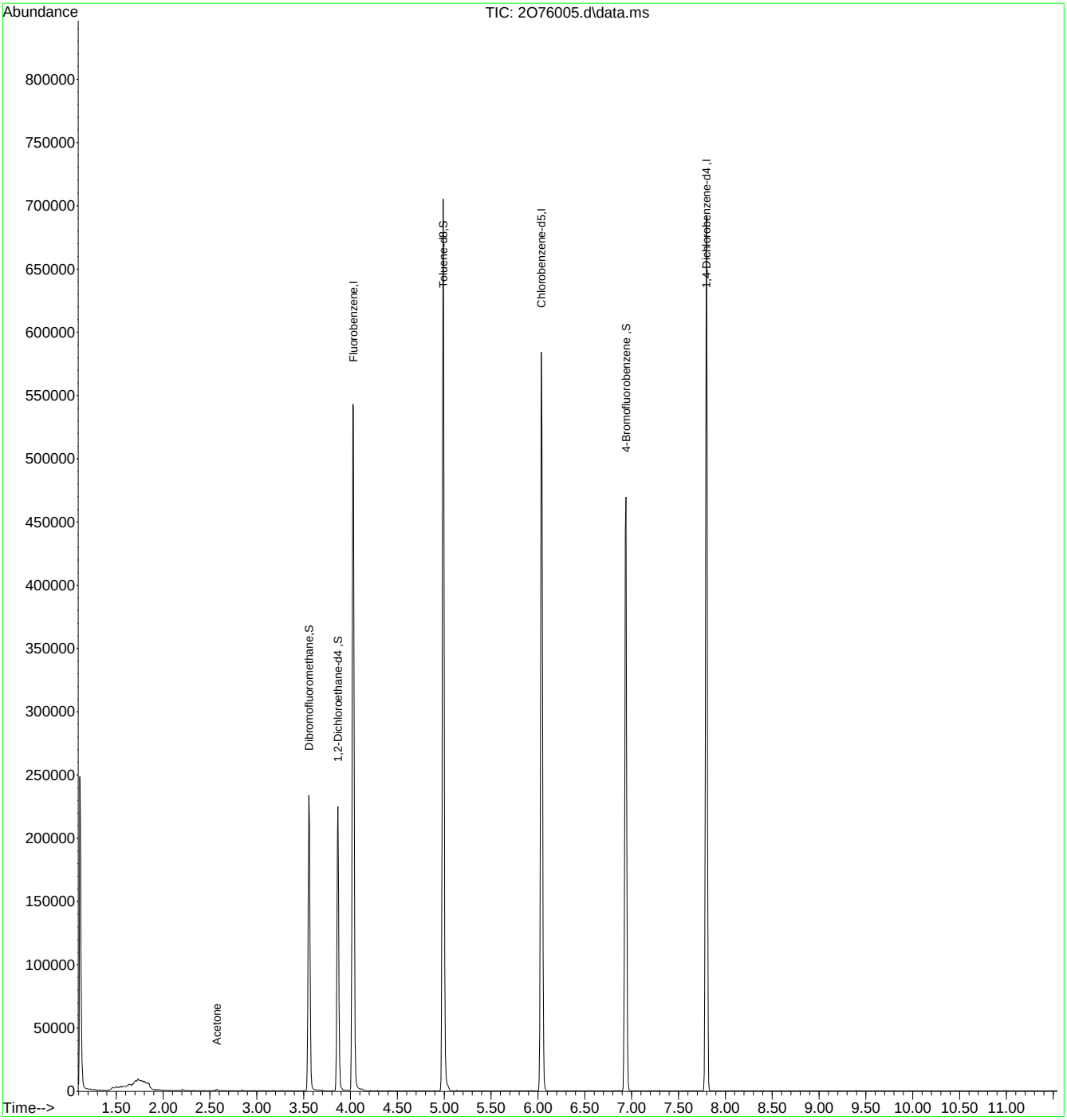
Compound		R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards							
1) Fluorobenzene		4.031	96	376324	50.00	ug/L	0.00
62) Chlorobenzene-d5		6.037	117	279051	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4		7.799	152	147165	50.00	ug/L	0.00
System Monitoring Compounds							
39) Dibromofluoromethane		3.556	113	99924	47.91	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	95.82%		
50) 1,2-Dichloroethane-d4		3.867	65	116487	52.54	ug/L	0.00
Spiked Amount	50.000	Range 79 - 125		Recovery =	105.08%		
63) Toluene-d8		4.988	98	366192	48.12	ug/L	0.00
Spiked Amount	50.000	Range 85 - 112		Recovery =	96.24%		
86) 4-Bromofluorobenzene		6.939	174	109915	48.95	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	97.90%		
Target Compounds							Qvalue
19) Acetone		2.574	43	1245	1.32	ug/L	92

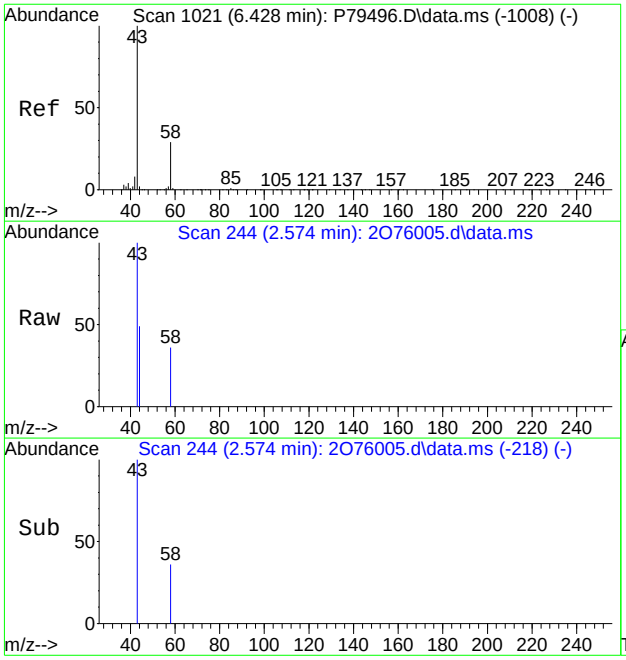
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76005.d
Acq On : 3 May 2023 2:34 pm
Operator : davidb2
Sample : FC5659-2
Misc : MS53920,V2O2949,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 03 21:02:50 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

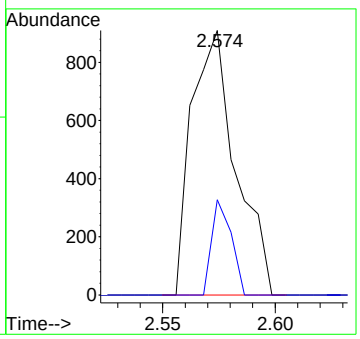




#19
Acetone
Concen: 1.32 ug/L
RT: 2.574 min Scan# 244
Delta R.T. 0.006 min
Lab File: 2O76005.d
Acq: 3 May 2023 2:34 pm

Tgt Ion: 43 Resp: 1245

Ion	Ratio	Lower	Upper
43	100		
58	35.9	1.6	61.6



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76006.d
Acq On : 3 May 2023 3:00 pm
Operator : davidb2
Sample : FC5659-3
Misc : MS53920,V2O2949,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 03 21:03:11 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

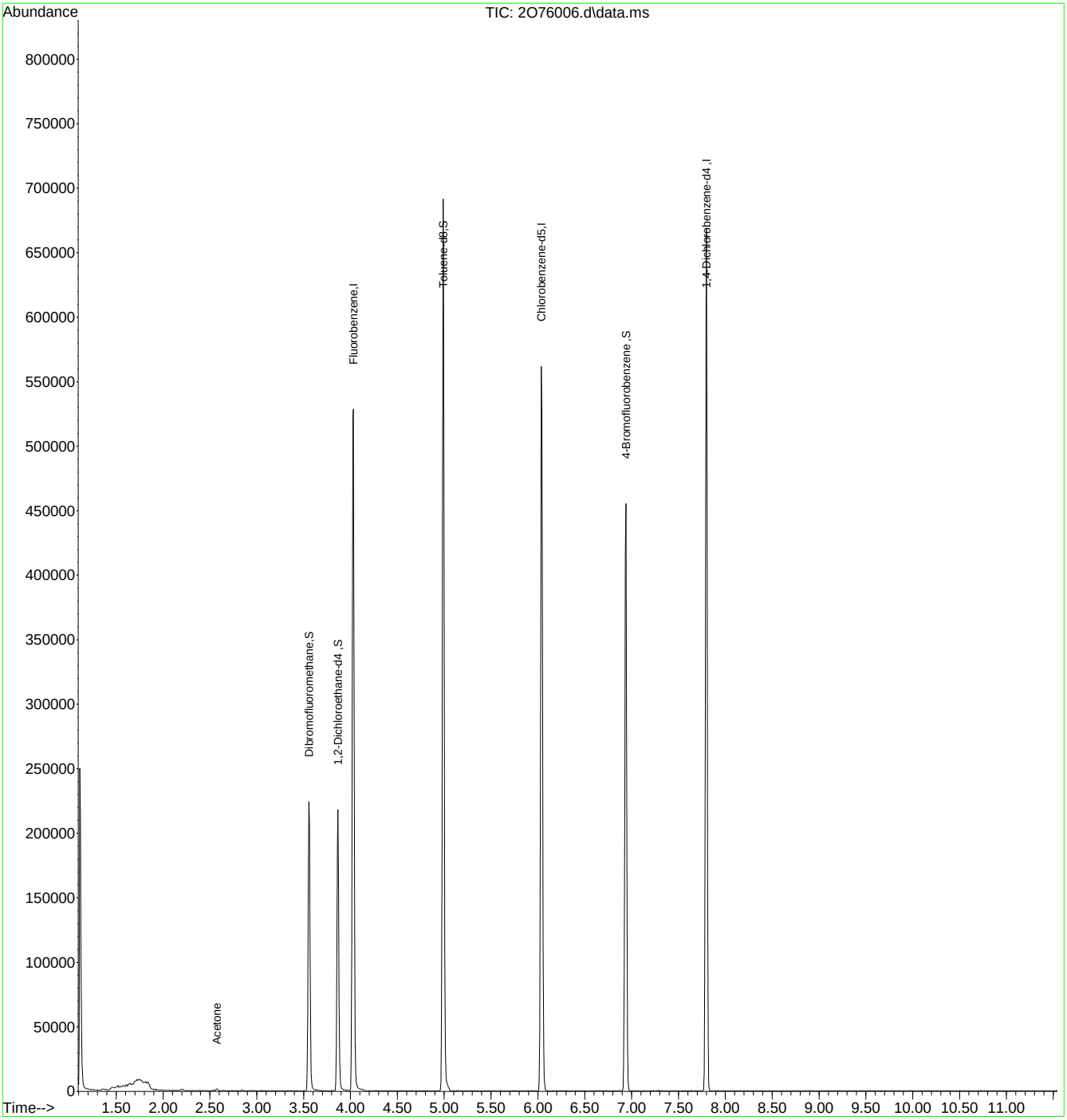
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	4.031	96	364491	50.00	ug/L	0.00
62) Chlorobenzene-d5	6.037	117	271589	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.799	152	141327	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	3.556	113	96671	47.85	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 95.70%			
50) 1,2-Dichloroethane-d4	3.867	65	113338	52.78	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 105.56%			
63) Toluene-d8	4.988	98	352712	47.62	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 95.24%			
86) 4-Bromofluorobenzene	6.939	174	105574	48.96	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 97.92%			
Target Compounds						Qvalue
19) Acetone	2.574	43	1436	1.57	ug/L	56

(#) = qualifier out of range (m) = manual integration (+) = signals summed

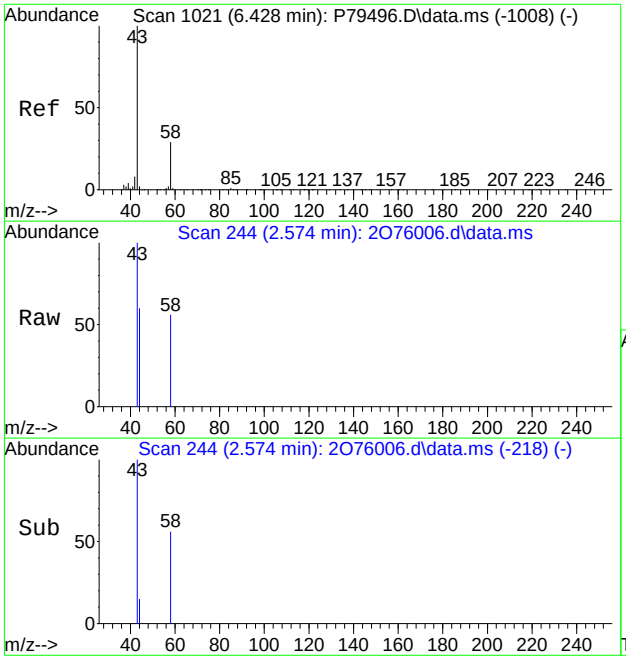
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76006.d
Acq On : 3 May 2023 3:00 pm
Operator : davidb2
Sample : FC5659-3
Misc : MS53920,V2O2949,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 03 21:03:11 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration



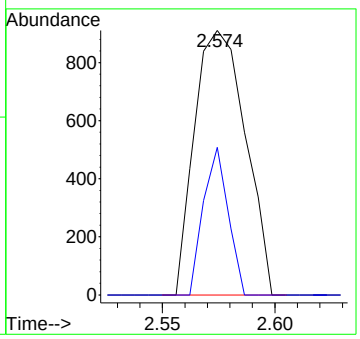
V2O_04-11-2023.M Wed May 03 22:18:40 2023 Page: 2



#19
Acetone
Concen: 1.57 ug/L
RT: 2.574 min Scan# 244
Delta R.T. 0.006 min
Lab File: 2O76006.d
Acq: 3 May 2023 3:00 pm

Tgt Ion: 43 Resp: 1436

Ion	Ratio	Lower	Upper
43	100		
58	55.8	1.6	61.6



Quantitation Report (QT Reviewed)

Data Path : C:\Documents and Settings\Organics\Desktop\
Data File : 5E39466.d
Acq On : 4 May 2023 3:36 pm
Operator : joannel
Sample : FC5659-4
Misc : MS53934,V5E1766,,,,,
ALS Vial : 11 Sample Multiplier: 1

Quant Time: May 05 00:00:06 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

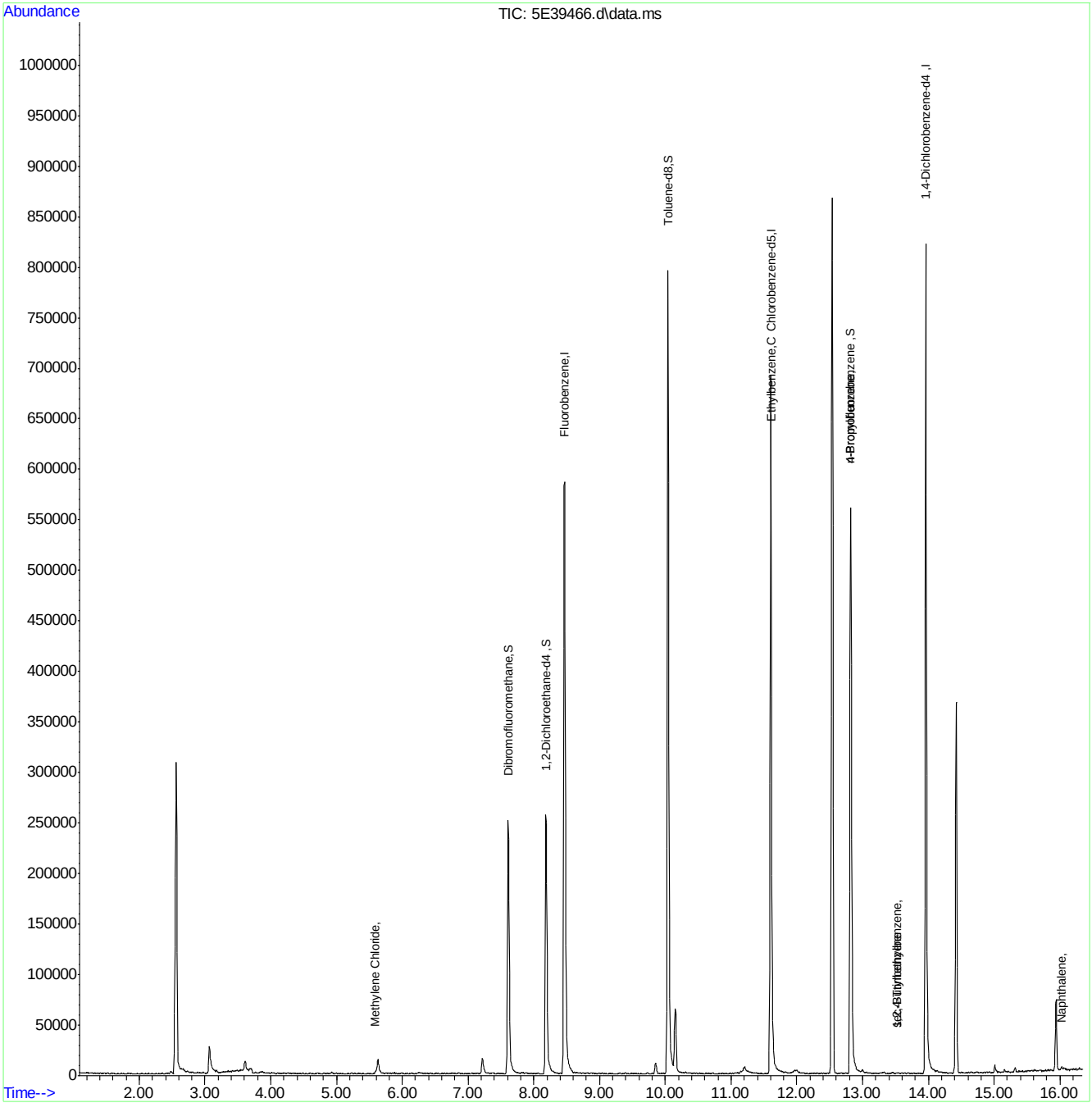
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.470	96	502344	50.00	ug/L	0.00
61) Chlorobenzene-d5	11.603	117	380879	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.962	152	219746	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.610	113	149831	49.57	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.14%			
49) 1,2-Dichloroethane-d4	8.183	65	183392	57.80	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 115.60%			
62) Toluene-d8	10.043	98	500360	52.43	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 104.86%			
86) 4-Bromofluorobenzene	12.816	95	189210	48.97	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 97.94%			
Target Compounds						Qvalue
18) Methylene Chloride	5.592	49	1635	0.37	ug/L	89
77) Ethylbenzene	11.609	91	1056	0.10	ug/L #	1
88) n-Propylbenzene	12.816	91	693	0.06	ug/L	53
99) 1,2,4-Trimethylbenzene	13.524	105	743	0.09	ug/L	86
101) sec-Butylbenzene	13.524	105	743	0.07	ug/L	62
112) Naphthalene	16.023	128	4590	0.38	ug/L	91

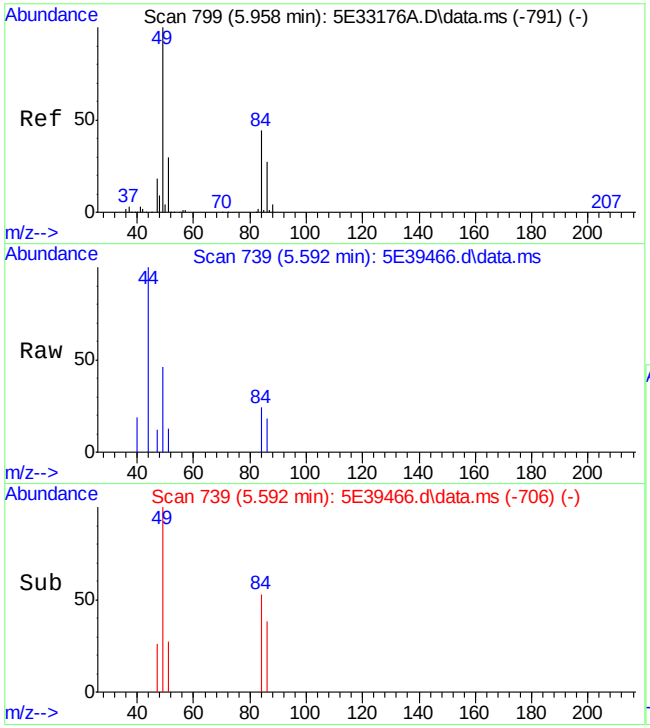
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\Documents and Settings\Organics\Desktop\
Data File : 5E39466.d
Acq On : 4 May 2023 3:36 pm
Operator : joannel
Sample : FC5659-4
Misc : MS53934,V5E1766,,,,,
ALS Vial : 11 Sample Multiplier: 1

Quant Time: May 05 00:00:06 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

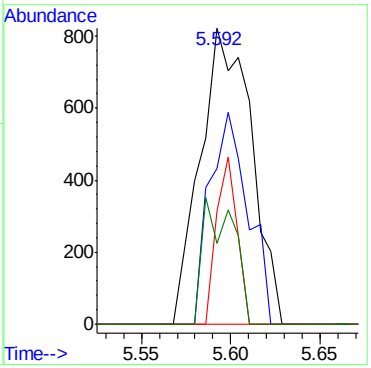


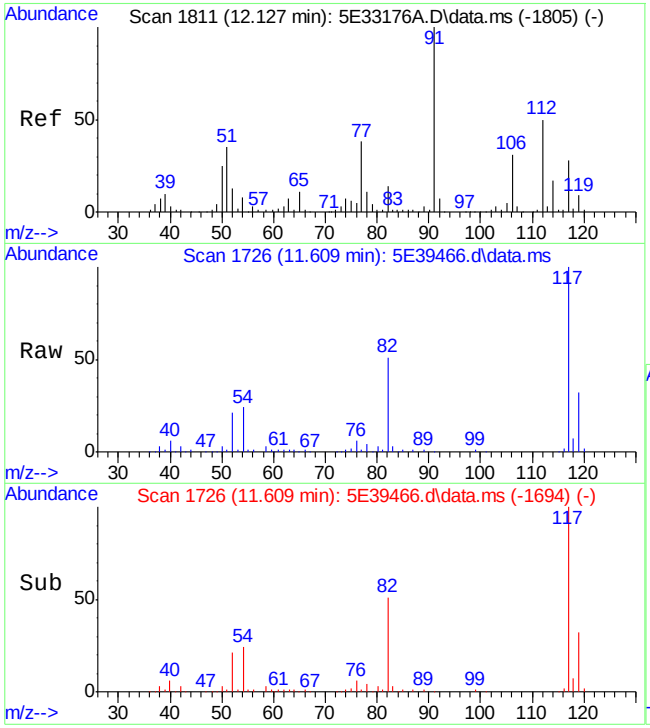


#18
Methylene Chloride
Concen: 0.37 ug/L
RT: 5.592 min Scan# 739
Delta R.T. 0.000 min
Lab File: 5E39466.d
Acq: 4 May 2023 3:36 pm

Tgt Ion: 49 Resp: 1635

Ion	Ratio	Lower	Upper
49	100		
84	52.8	35.4	95.4
86	38.4	11.3	71.3
51	27.4	1.4	61.4

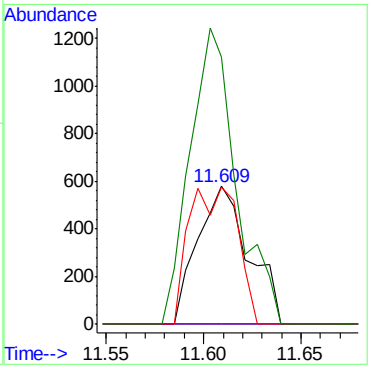


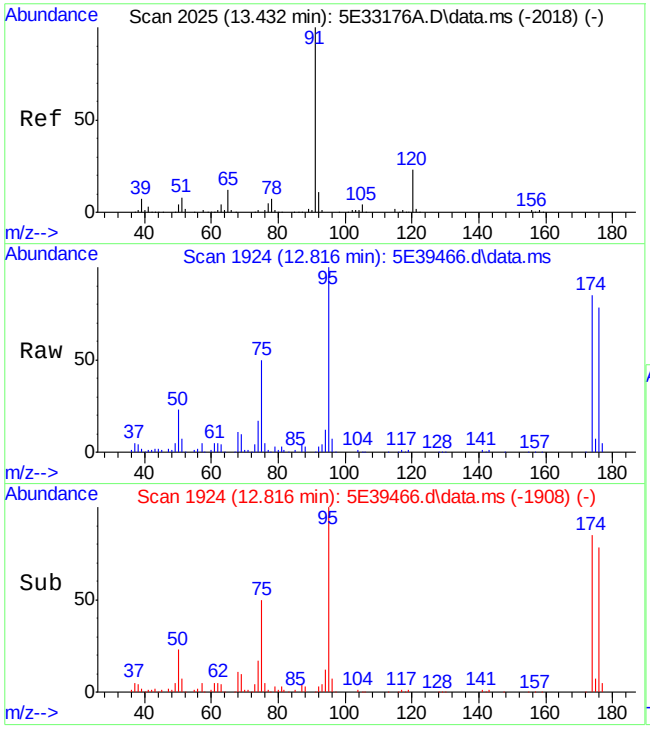


#77
Ethylbenzene
Concen: 0.10 ug/L
RT: 11.609 min Scan# 1726
Delta R.T. -0.006 min
Lab File: 5E39466.d
Acq: 4 May 2023 3:36 pm

Tgt Ion: 91 Resp: 1056

Ion	Ratio	Lower	Upper
91	100		
106	0.0	0.9	60.9#
65	99.0	0.0	39.9#
51	193.4	0.0	51.6#

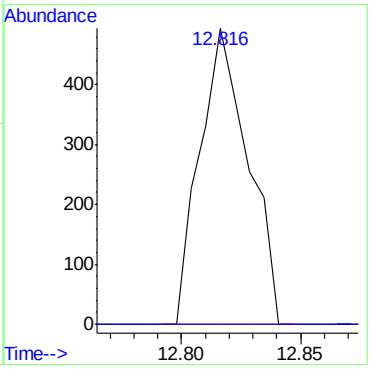


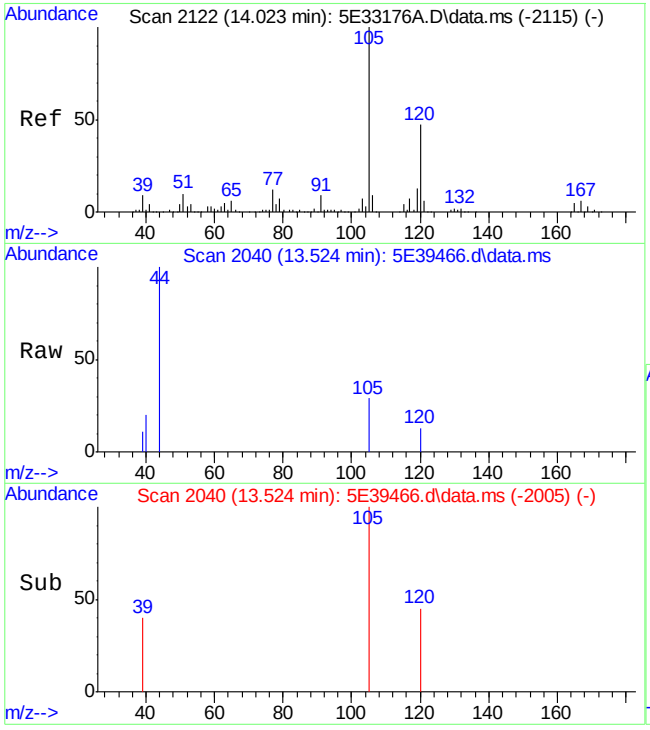


#88
n-Propylbenzene
Concen: 0.06 ug/L
RT: 12.816 min Scan# 1924
Delta R.T. -0.104 min
Lab File: 5E39466.d
Acq: 4 May 2023 3:36 pm

Tgt Ion: 91 Resp: 693

Ion	Ratio	Lower	Upper
91	100		
120	0.0	0.0	52.4

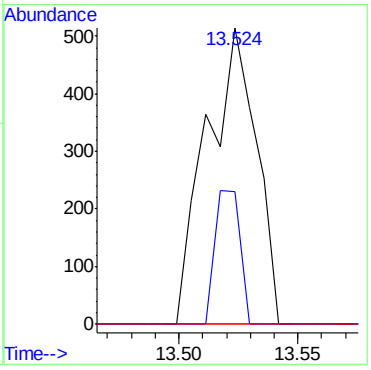


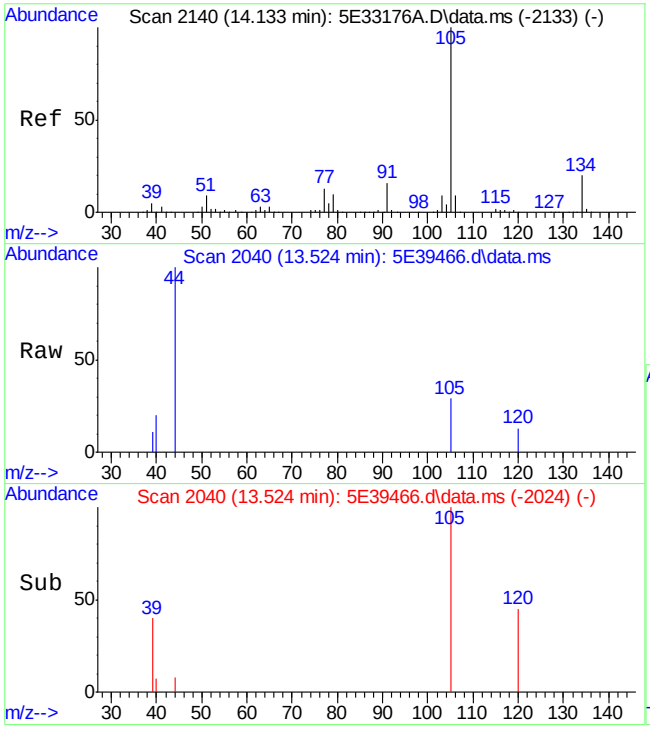


#99
1,2,4-Trimethylbenzene
Concen: 0.09 ug/L
RT: 13.524 min Scan# 2040
Delta R.T. 0.013 min
Lab File: 5E39466.d
Acq: 4 May 2023 3:36 pm

Tgt Ion:105 Resp: 743

Ion	Ratio	Lower	Upper
105	100		
120	44.7	15.6	75.6
119	0.0	0.0	50.0

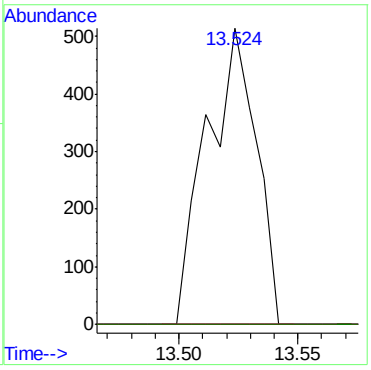


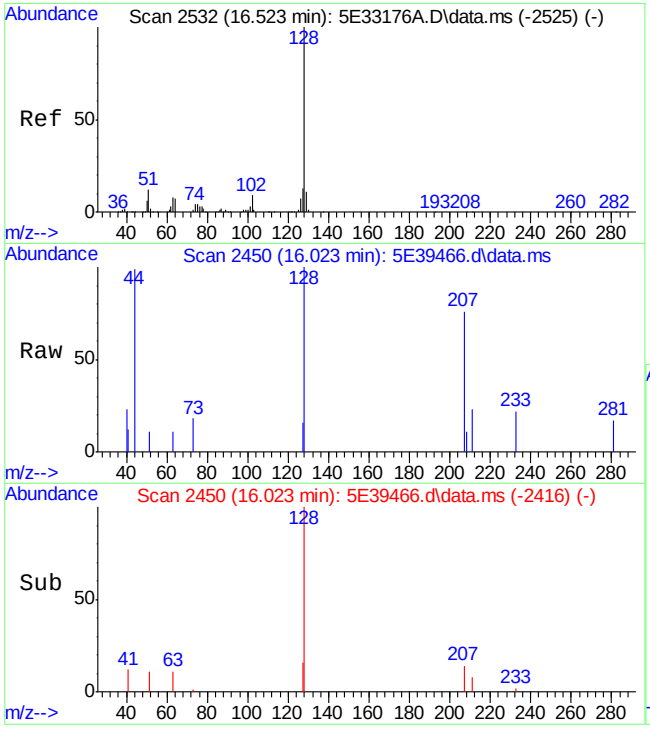


#101
sec-Butylbenzene
Concen: 0.07 ug/L
RT: 13.524 min Scan# 2040
Delta R.T. -0.103 min
Lab File: 5E39466.d
Acq: 4 May 2023 3:36 pm

Tgt Ion:105 Resp: 743

Ion	Ratio	Lower	Upper
105	100		
134	0.0	0.0	50.0
91	0.0	0.0	45.7
77	0.0	0.0	42.4

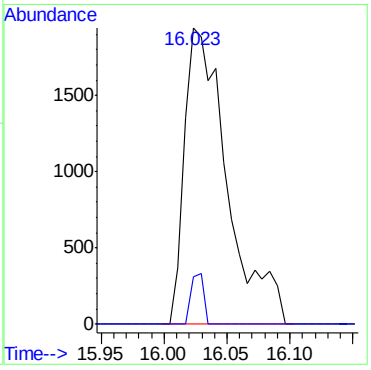




#112
Naphthalene
Concen: 0.38 ug/L
RT: 16.023 min Scan# 2450
Delta R.T. 0.006 min
Lab File: 5E39466.d
Acq: 4 May 2023 3:36 pm

Tgt Ion:128 Resp: 4590

Ion	Ratio	Lower	Upper
128	100		
127	16.0	0.0	42.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76008.d
Acq On : 3 May 2023 4:38 pm
Operator : davidb2
Sample : FC5659-5
Misc : MS53920,V2O2949,,,,,
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 03 21:03:50 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

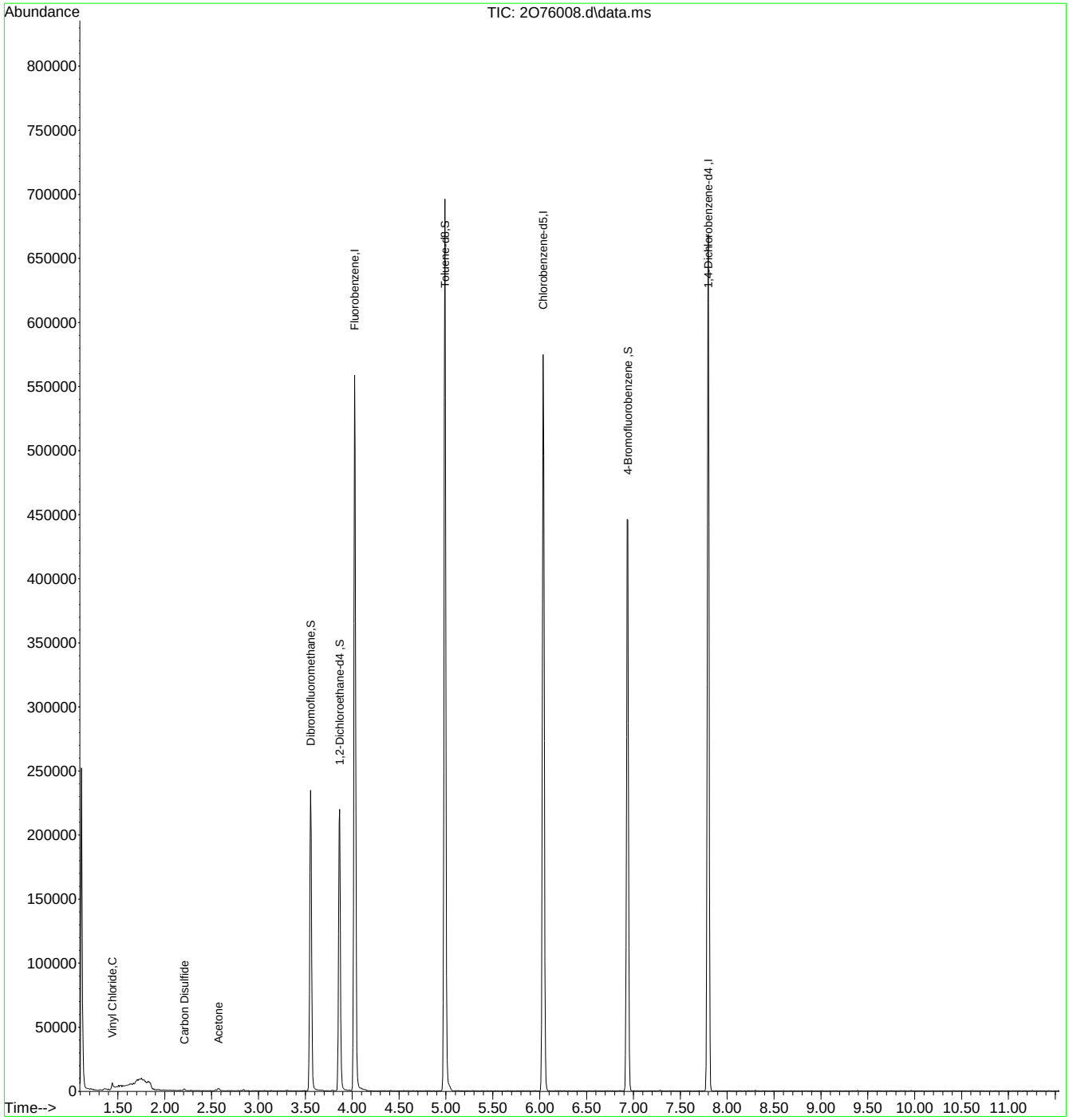
Compound		R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards							
1) Fluorobenzene		4.025	96	369730	50.00	ug/L	0.00
62) Chlorobenzene-d5		6.037	117	272648	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4		7.799	152	146597	50.00	ug/L	0.00
System Monitoring Compounds							
39) Dibromofluoromethane		3.556	113	98355	47.99	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	95.98%		
50) 1,2-Dichloroethane-d4		3.867	65	114886	52.74	ug/L	0.00
Spiked Amount	50.000	Range 79 - 125		Recovery =	105.48%		
63) Toluene-d8		4.988	98	357001	48.02	ug/L	0.00
Spiked Amount	50.000	Range 85 - 112		Recovery =	96.04%		
86) 4-Bromofluorobenzene		6.939	174	108115	48.33	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	96.66%		
Target Compounds							Qvalue
5) Vinyl Chloride		1.440	62	2825	1.75	ug/L	91
14) Carbon Disulfide		2.208	76	1342	0.28	ug/L	60
19) Acetone		2.574	43	2240	2.41	ug/L	93

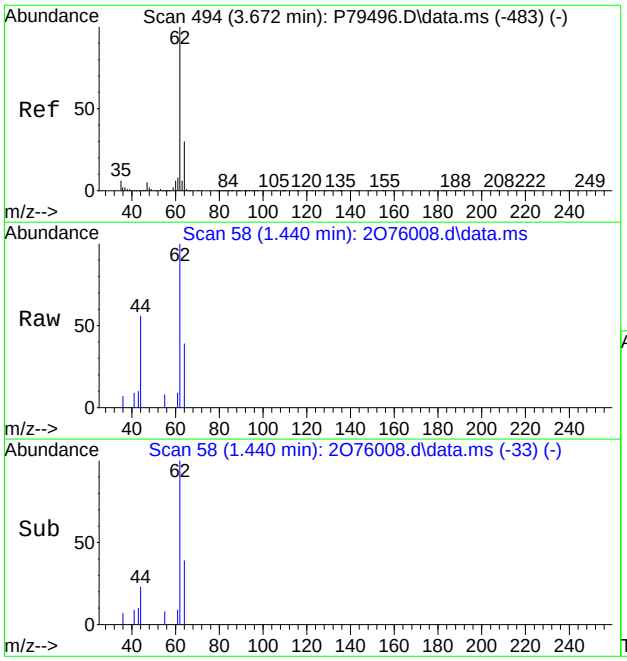
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76008.d
Acq On : 3 May 2023 4:38 pm
Operator : davidb2
Sample : FC5659-5
Misc : MS53920,V2O2949,,,,,
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 03 21:03:50 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

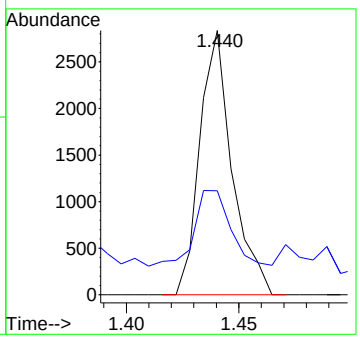


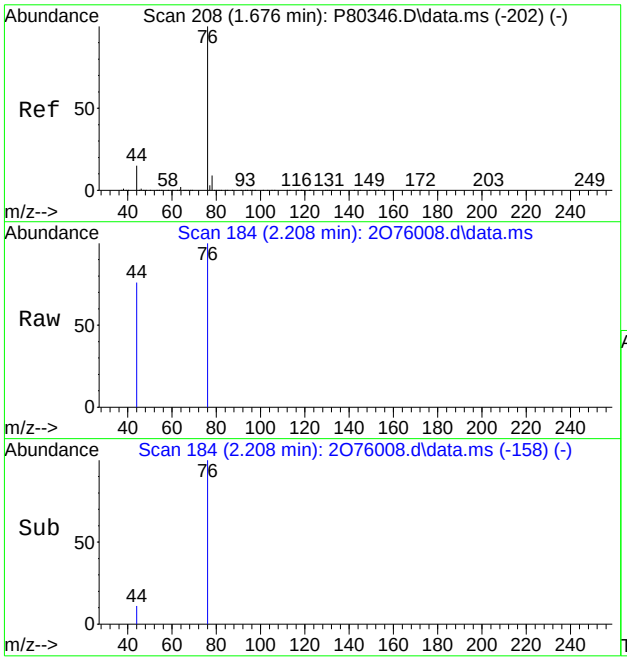


#5
Vinyl Chloride
Concen: 1.75 ug/L
RT: 1.440 min Scan# 58
Delta R.T. 0.000 min
Lab File: 2O76008.d
Acq: 3 May 2023 4:38 pm

Tgt Ion: 62 Resp: 2825

Ion	Ratio	Lower	Upper
62	100		
64	26.7	1.4	61.4

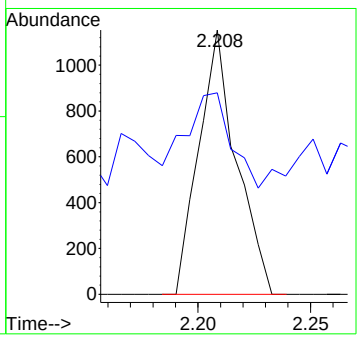


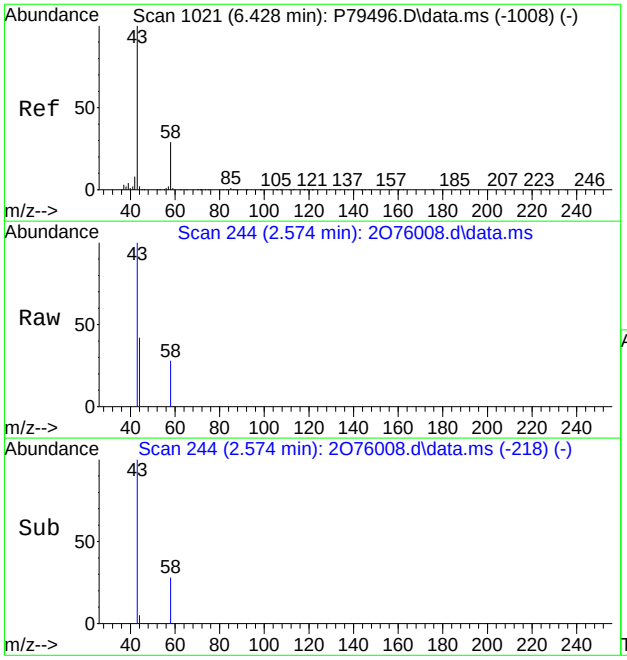


#14
Carbon Disulfide
Concen: 0.28 ug/L
RT: 2.208 min Scan# 184
Delta R.T. 0.006 min
Lab File: 2O76008.d
Acq: 3 May 2023 4:38 pm

Tgt Ion: 76 Resp: 1342

Ion	Ratio	Lower	Upper
76	100		
44	31.5	0.0	44.8

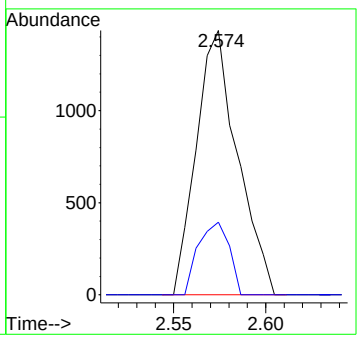




#19
Acetone
Concen: 2.41 ug/L
RT: 2.574 min Scan# 244
Delta R.T. 0.006 min
Lab File: 2O76008.d
Acq: 3 May 2023 4:38 pm

Tgt Ion: 43 Resp: 2240

Ion	Ratio	Lower	Upper
43	100		
58	27.5	1.6	61.6



Quantitation Report (QT Reviewed)

Data Path : C:\Documents and Settings\Organics\Desktop\
Data File : 5E39467.d
Acq On : 4 May 2023 4:01 pm
Operator : joannel
Sample : FC5659-6
Misc : MS53934,V5E1766,,,,,
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 05 00:01:11 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

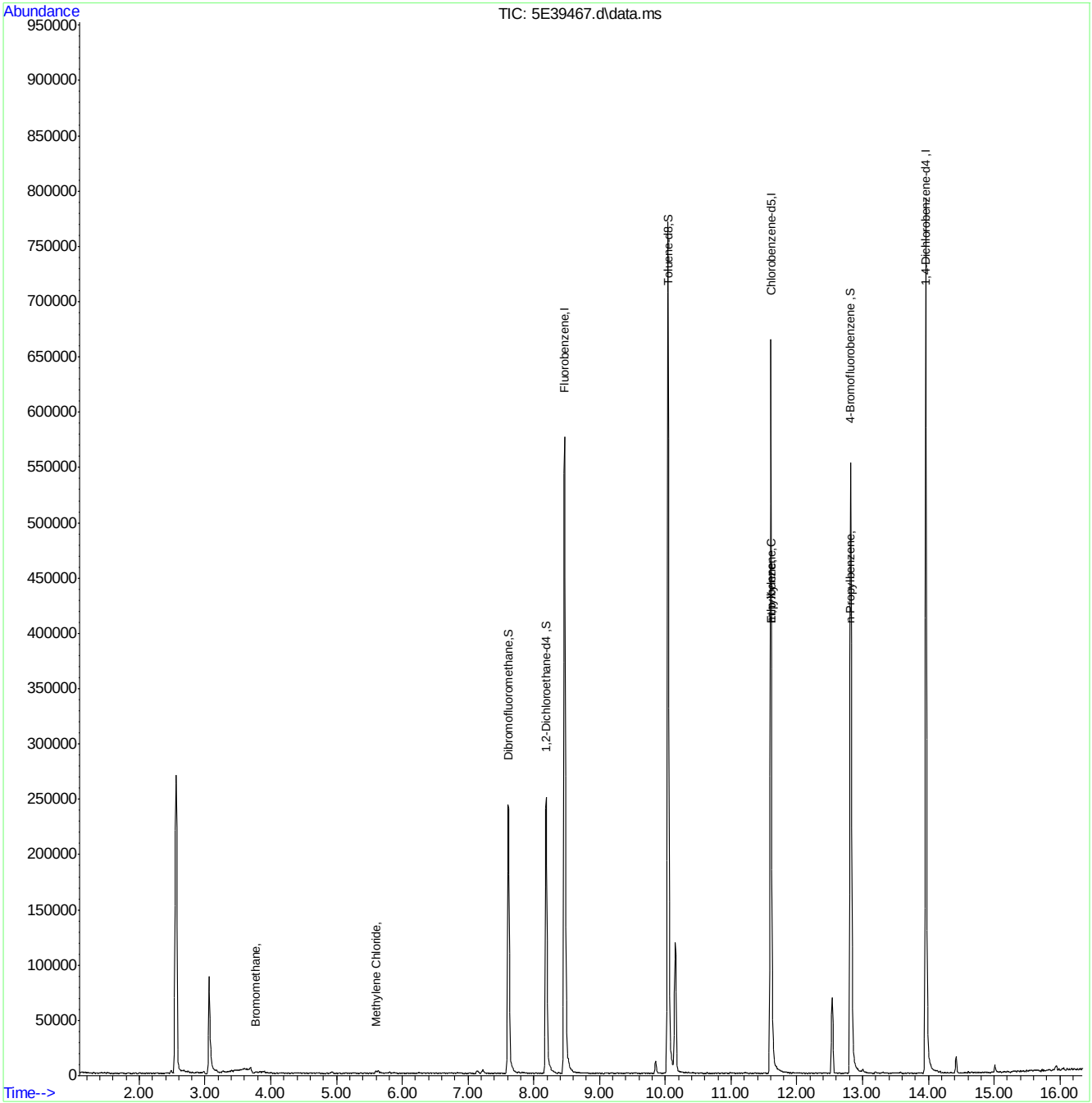
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.469	96	477698	50.00	ug/L	0.00
61) Chlorobenzene-d5	11.603	117	363781	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.962	152	210869	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.610	113	143192	49.82	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.64%			
49) 1,2-Dichloroethane-d4	8.189	65	175308	58.11	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 116.22%			
62) Toluene-d8	10.042	98	470850	51.66	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 103.32%			
86) 4-Bromofluorobenzene	12.816	95	181437	48.93	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 97.86%			
Target Compounds						Qvalue
6) Bromomethane	3.775	94	625	0.47	ug/L	83
18) Methylene Chloride	5.604	49	1260	0.30	ug/L	85
77) Ethylbenzene	11.615	91	722	0.07	ug/L #	1
80) m,p-Xylene	11.615	91	722	0.10	ug/L #	36
88) n-Propylbenzene	12.810	91	533	0.05	ug/L	53

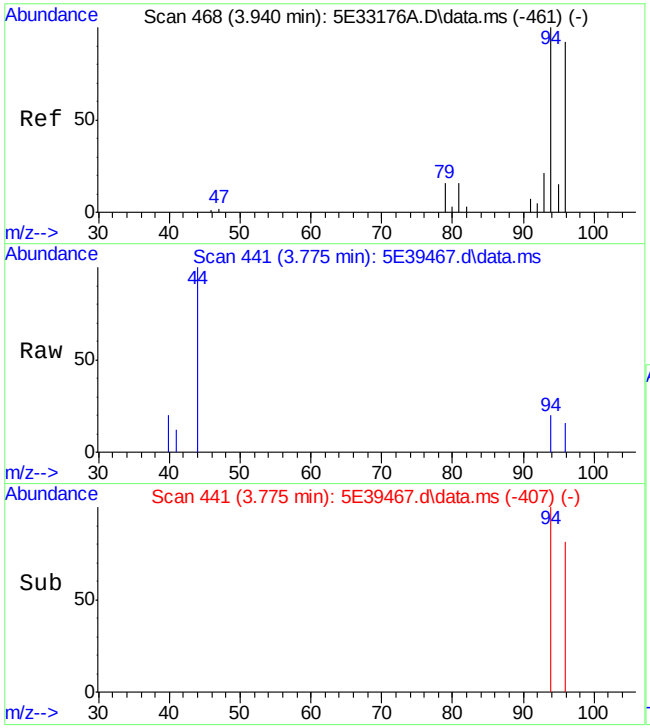
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\Documents and Settings\Organics\Desktop\
Data File : 5E39467.d
Acq On : 4 May 2023 4:01 pm
Operator : joannel
Sample : FC5659-6
Misc : MS53934,V5E1766,,,,,
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 05 00:01:11 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

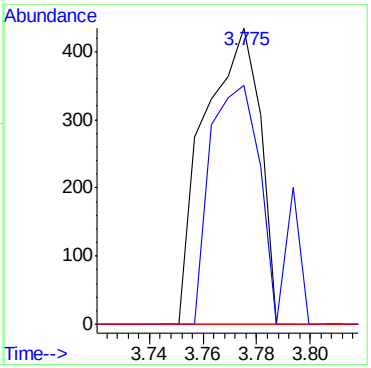


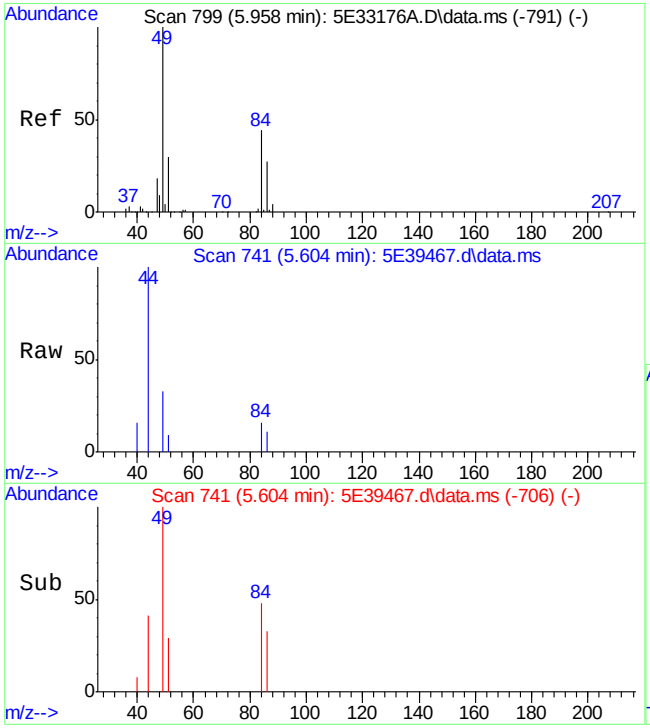


#6
Bromomethane
Concen: 0.47 ug/L
RT: 3.775 min Scan# 441
Delta R.T. 0.006 min
Lab File: 5E39467.d
Acq: 4 May 2023 4:01 pm

Tgt Ion: 94 Resp: 625

Ion	Ratio	Lower	Upper
94	100		
96	80.6	60.9	120.9
93	0.0	0.0	50.7

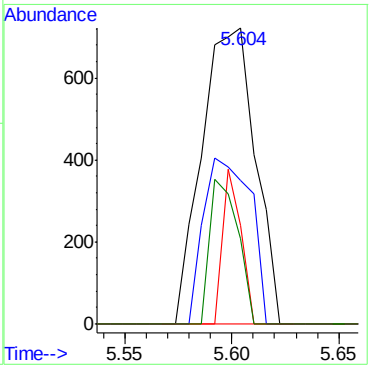


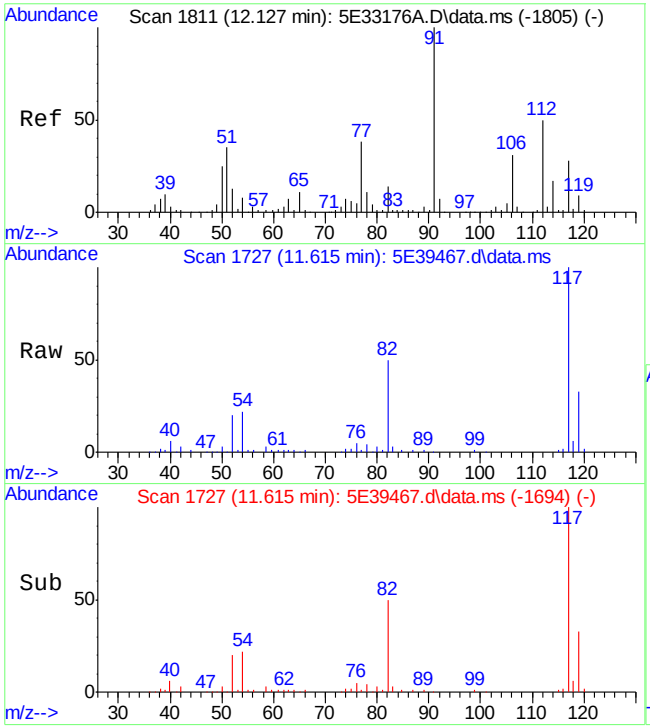


#18
Methylene Chloride
Concen: 0.30 ug/L
RT: 5.604 min Scan# 741
Delta R.T. 0.012 min
Lab File: 5E39467.d
Acq: 4 May 2023 4:01 pm

Tgt Ion: 49 Resp: 1260

Ion	Ratio	Lower	Upper
49	100		
84	48.3	35.4	95.4
86	33.2	11.3	71.3
51	28.8	1.4	61.4

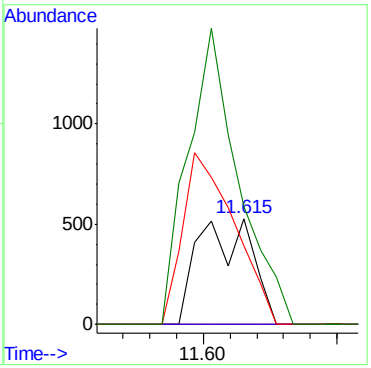


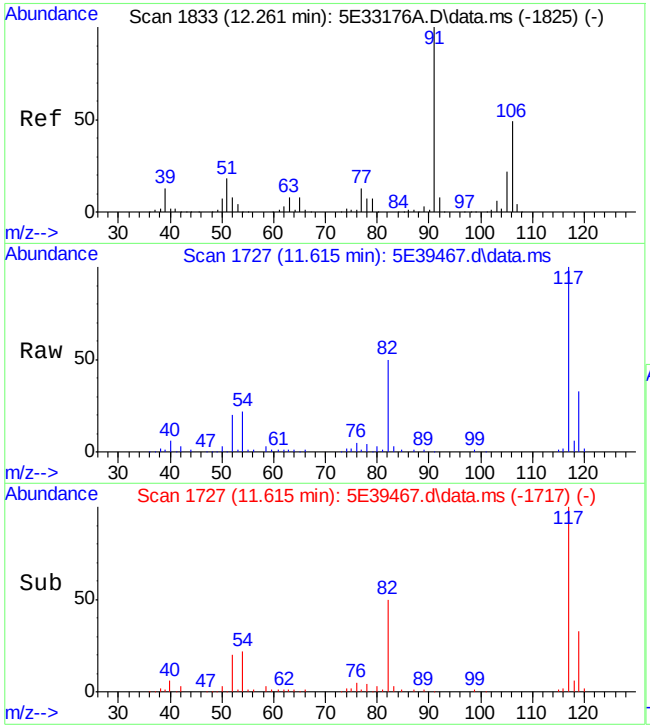


#77
Ethylbenzene
Concen: 0.07 ug/L
RT: 11.615 min Scan# 1727
Delta R.T. 0.000 min
Lab File: 5E39467.d
Acq: 4 May 2023 4:01 pm

Tgt Ion: 91 Resp: 722

Ion	Ratio	Lower	Upper
91	100		
106	0.0	0.9	60.9#
65	75.0	0.0	39.9#
51	111.2	0.0	51.6#

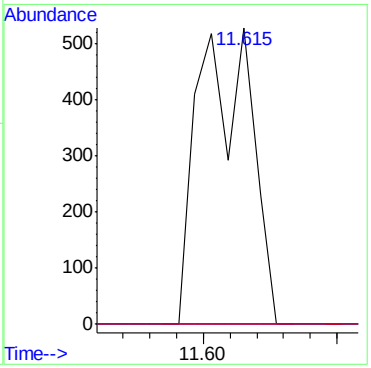


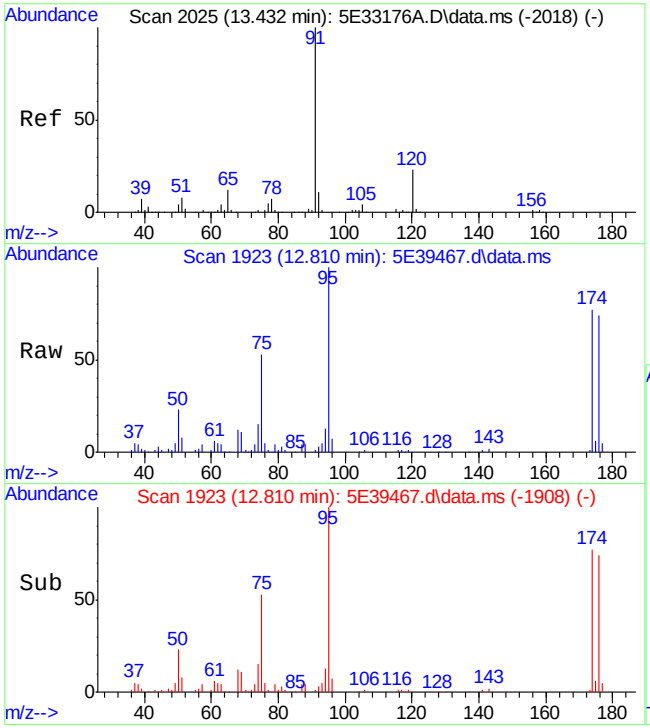


#80
m,p-Xylene
Concen: 0.10 ug/L
RT: 11.615 min Scan# 1727
Delta R.T. -0.140 min
Lab File: 5E39467.d
Acq: 4 May 2023 4:01 pm

Tgt Ion: 91 Resp: 722

Ion	Ratio	Lower	Upper
91	100		
106	0.0	19.5	79.5#
105	0.0	0.0	52.5

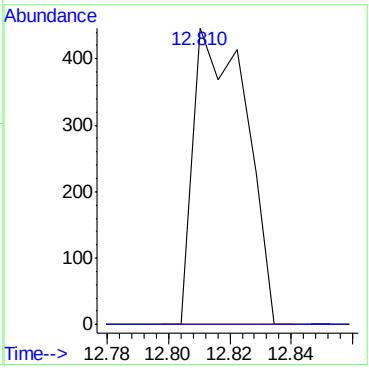




#88
n-Propylbenzene
Concen: 0.05 ug/L
RT: 12.810 min Scan# 1923
Delta R.T. -0.110 min
Lab File: 5E39467.d
Acq: 4 May 2023 4:01 pm

Tgt Ion: 91 Resp: 533

Ion	Ratio	Lower	Upper
91	100		
120	0.0	0.0	52.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\johnm\May 2023\05-04-2023\vi2913\
Data File : I756415.d
Acq On : 4 May 2023 2:23 am
Operator : jeniferw
Sample : FC5659-6 Inst : MSVOA16
Misc : MS53924,VI2913,,,,,
ALS Vial : 42 Sample Multiplier: 1

Quant Method : C:\msdchem\2\methods\VI-2023-05-02.m
Quant Results File: VI-2023-05-02.RES
Quant Time: May 04 07:16:57 2023
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

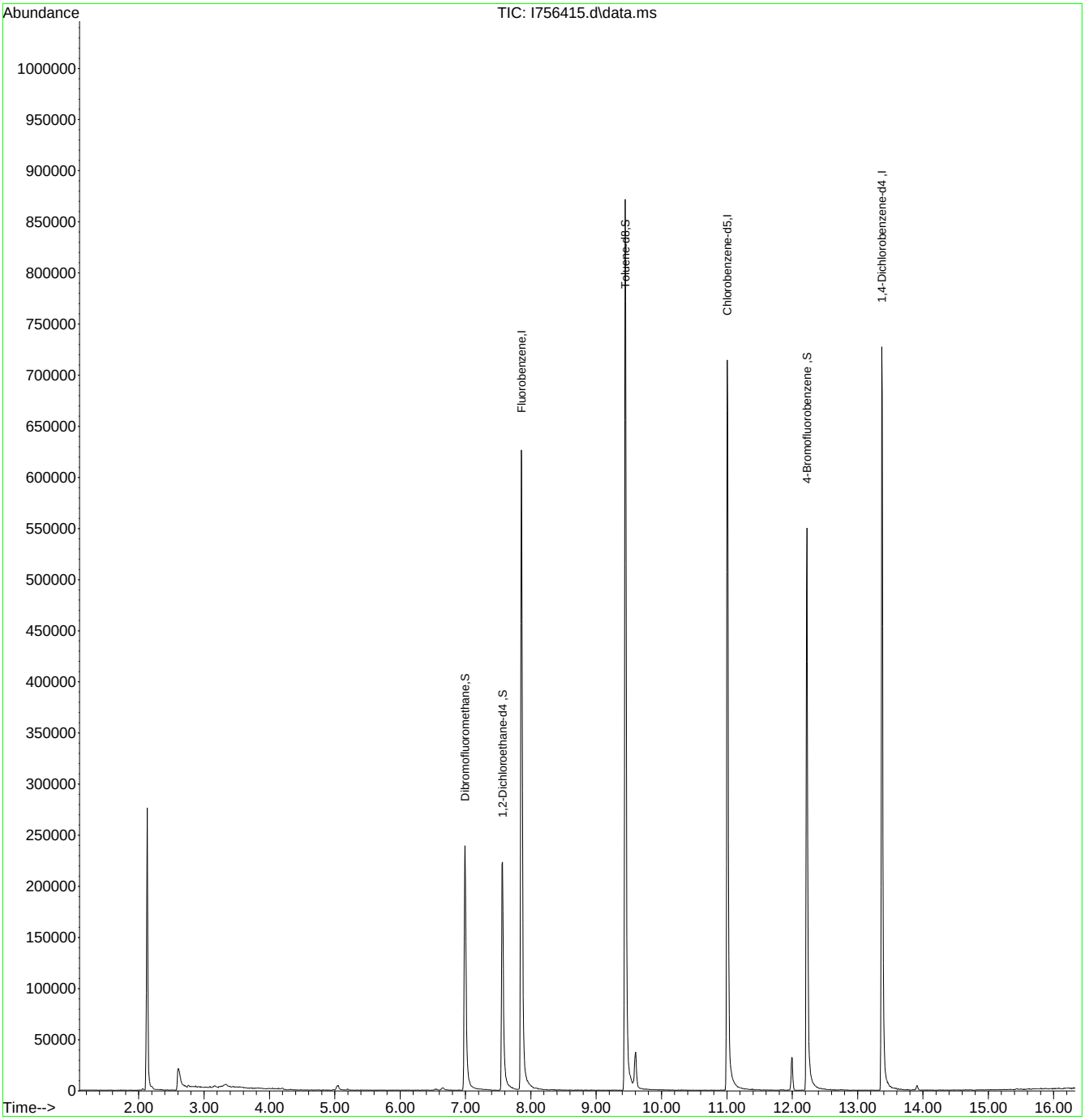
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.860	96	552476	50.00	ug/L	0.00
62) Chlorobenzene-d5	11.005	117	402504	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.371	152	195359	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	6.994	113	156117	49.94	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.88%			
49) 1,2-Dichloroethane-d4	7.567	65	170021	49.74	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 99.48%			
63) Toluene-d8	9.445	98	546226	48.95	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 97.90%			
86) 4-Bromofluorobenzene	12.225	174	153432	50.45	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.90%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\johnm\May 2023\05-04-2023\vi2913\
Data File : I756415.d
Acq On : 4 May 2023 2:23 am
Operator : jeniferw
Sample : FC5659-6 Inst : MSVOA16
Misc : MS53924,VI2913,,,,,
ALS Vial : 42 Sample Multiplier: 1

Quant Method : C:\msdchem\2\methods\VI-2023-05-02.m
Quant Results File: VI-2023-05-02.RES
Quant Time: May 04 07:16:57 2023
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-05-2023\V5E1766\
Data File : 5E39468.d
Acq On : 4 May 2023 4:25 pm
Operator : joannel
Sample : FC5659-7
Misc : MS53934,V5E1766,,,,,
ALS Vial : 13 Sample Multiplier: 1

Quant Time: May 05 00:01:35 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

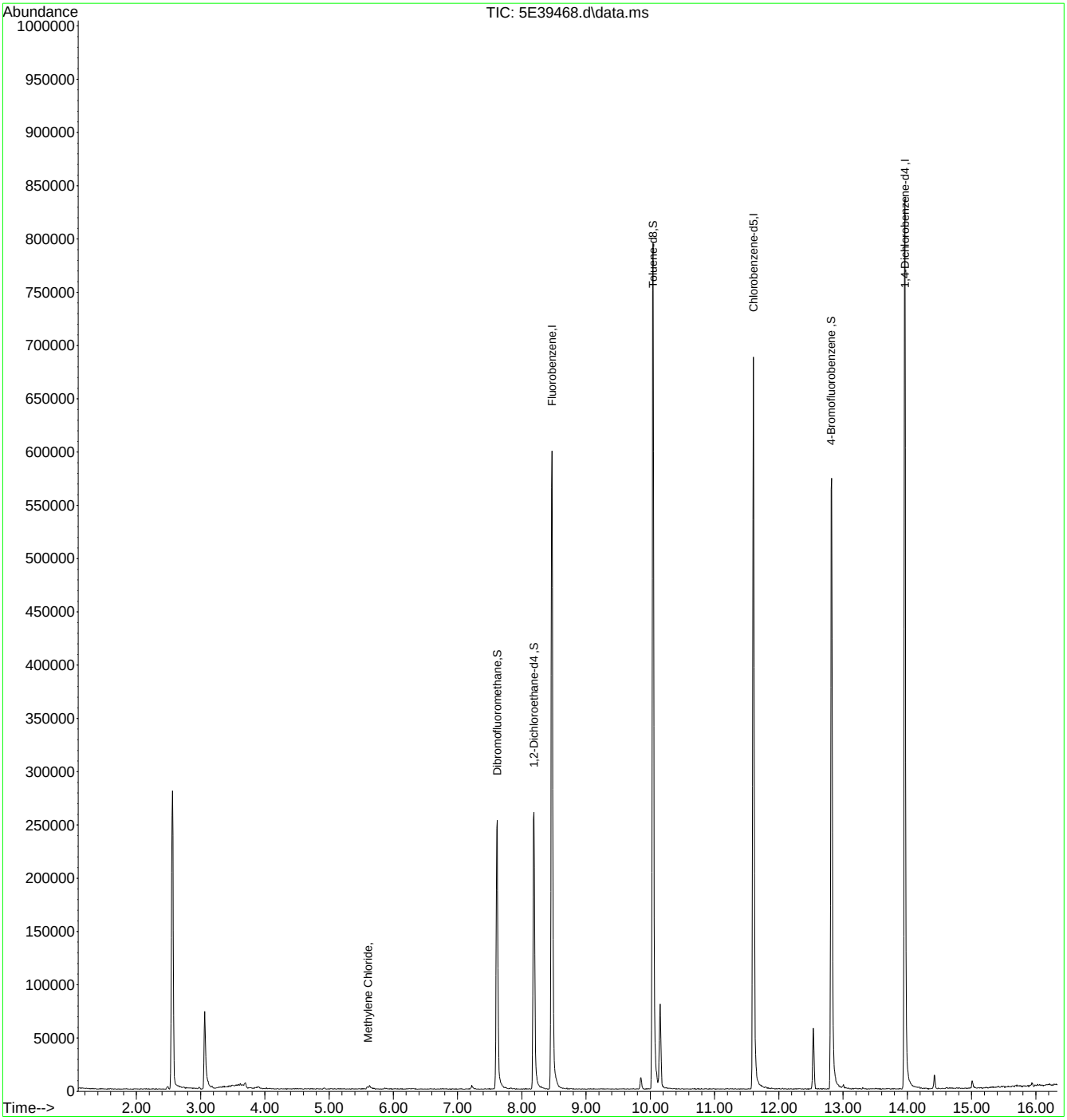
Compound		R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards							
1) Fluorobenzene		8.469	96	499540	50.00	ug/L	0.00
61) Chlorobenzene-d5		11.603	117	382116	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4		13.962	152	215733	50.00	ug/L	0.00
System Monitoring Compounds							
39) Dibromofluoromethane		7.616	113	149105	49.61	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	99.22%		
49) 1,2-Dichloroethane-d4		8.189	65	186229	59.03	ug/L	0.00
Spiked Amount	50.000	Range 79 - 125		Recovery =	118.06%		
62) Toluene-d8		10.042	98	499350	52.16	ug/L	0.00
Spiked Amount	50.000	Range 85 - 112		Recovery =	104.32%		
86) 4-Bromofluorobenzene		12.816	95	191137	50.39	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	100.78%		
Target Compounds							Qvalue
18) Methylene Chloride		5.604	49	1490	0.34	ug/L	86

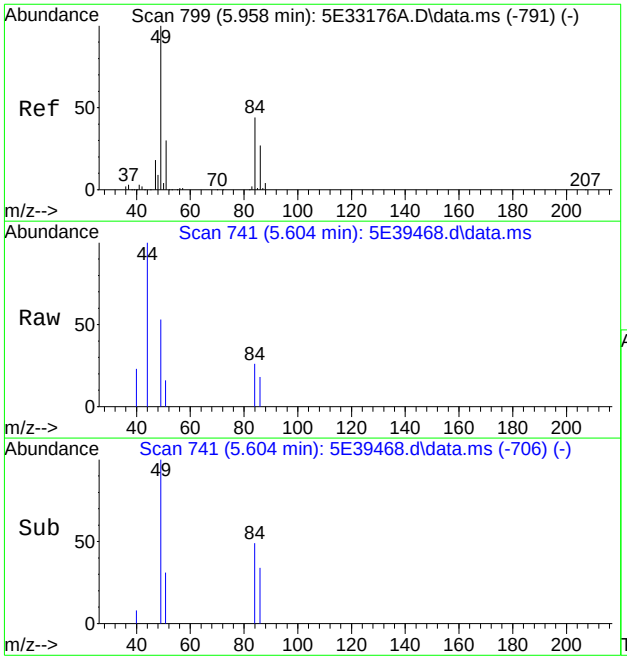
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-05-2023\V5E1766\
Data File : 5E39468.d
Acq On : 4 May 2023 4:25 pm
Operator : joannel
Sample : FC5659-7
Misc : MS53934,V5E1766,,,,,
ALS Vial : 13 Sample Multiplier: 1

Quant Time: May 05 00:01:35 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

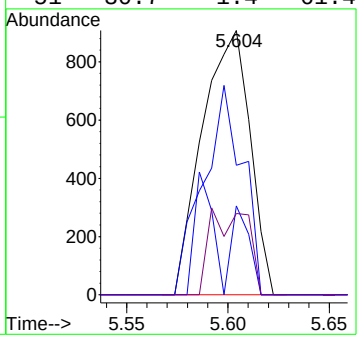




#18
Methylene Chloride
Concen: 0.34 ug/L
RT: 5.604 min Scan# 741
Delta R.T. 0.012 min
Lab File: 5E39468.d
Acq: 4 May 2023 4:25 pm

Tgt Ion: 49 Resp: 1490

Ion	Ratio	Lower	Upper
49	100		
84	49.0	35.4	95.4
86	33.6	11.3	71.3
51	30.7	1.4	61.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\johnm\May 2023\05-04-2023\vi2913\
Data File : I756416.d
Acq On : 4 May 2023 2:48 am
Operator : jeniferw
Sample : FC5659-7 Inst : MSVOA16
Misc : MS53924,VI2913,,,,,
ALS Vial : 43 Sample Multiplier: 1

Quant Method : C:\msdchem\2\methods\VI-2023-05-02.m
Quant Results File: VI-2023-05-02.RES
Quant Time: May 04 07:17:17 2023
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

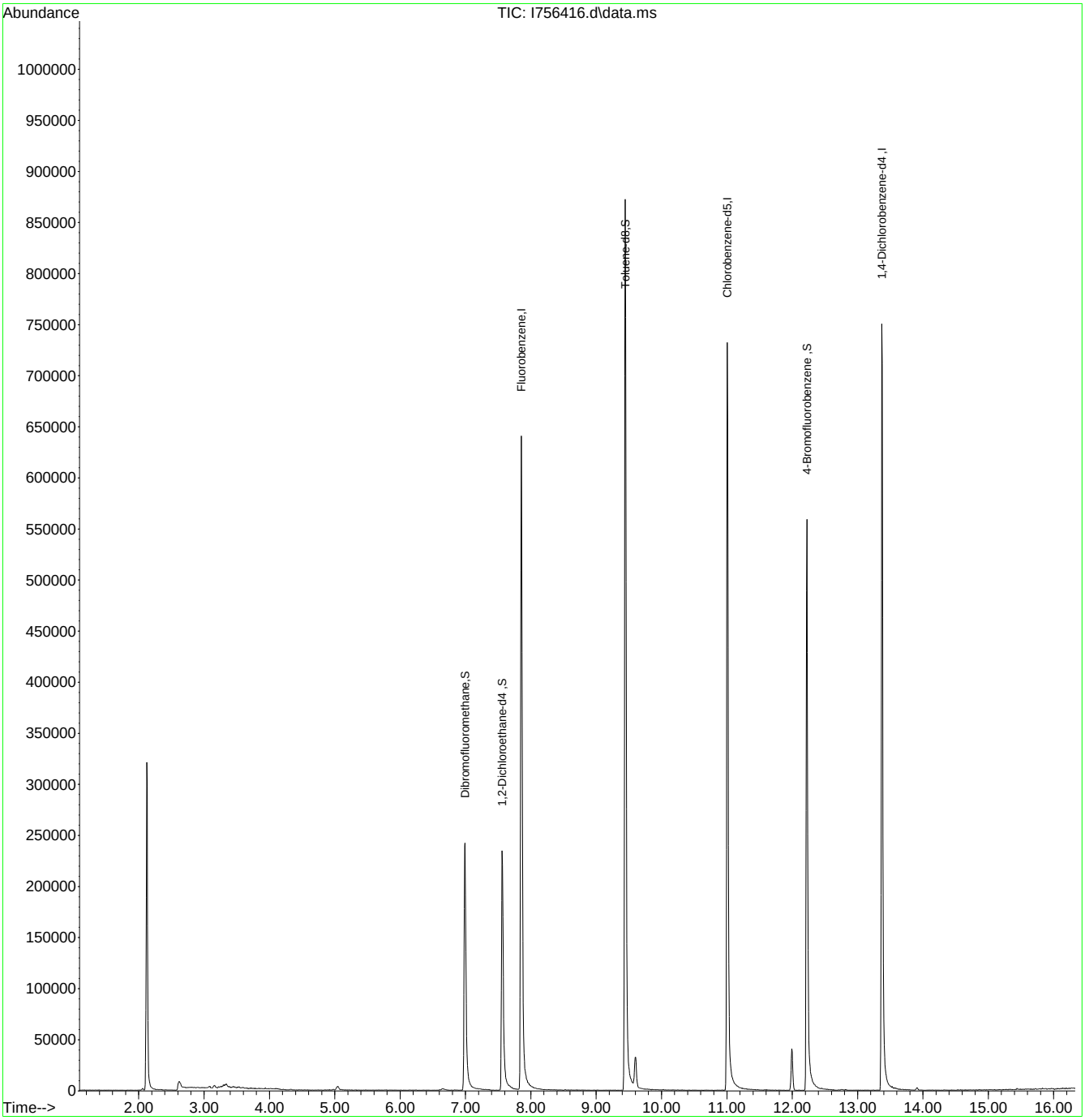
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.854	96	552691	50.00	ug/L	0.00
62) Chlorobenzene-d5	11.005	117	406329	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.371	152	199975	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	6.994	113	156428	50.02	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.04%			
49) 1,2-Dichloroethane-d4	7.561	65	175498	51.32	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 102.64%			
63) Toluene-d8	9.445	98	552887	49.08	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 98.16%			
86) 4-Bromofluorobenzene	12.225	174	157998	50.75	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.50%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\johnm\May 2023\05-04-2023\vi2913\
Data File : I756416.d
Acq On : 4 May 2023 2:48 am
Operator : jeniferw
Sample : FC5659-7 Inst : MSVOA16
Misc : MS53924,VI2913,,,,,
ALS Vial : 43 Sample Multiplier: 1

Quant Method : C:\msdchem\2\methods\VI-2023-05-02.m
Quant Results File: VI-2023-05-02.RES
Quant Time: May 04 07:17:17 2023
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-05-2023\V5E1766\
Data File : 5E39469.d
Acq On : 4 May 2023 4:50 pm
Operator : joannel
Sample : FC5659-8
Misc : MS53934,V5E1766,,,,,
ALS Vial : 14 Sample Multiplier: 1

Quant Time: May 05 00:02:15 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

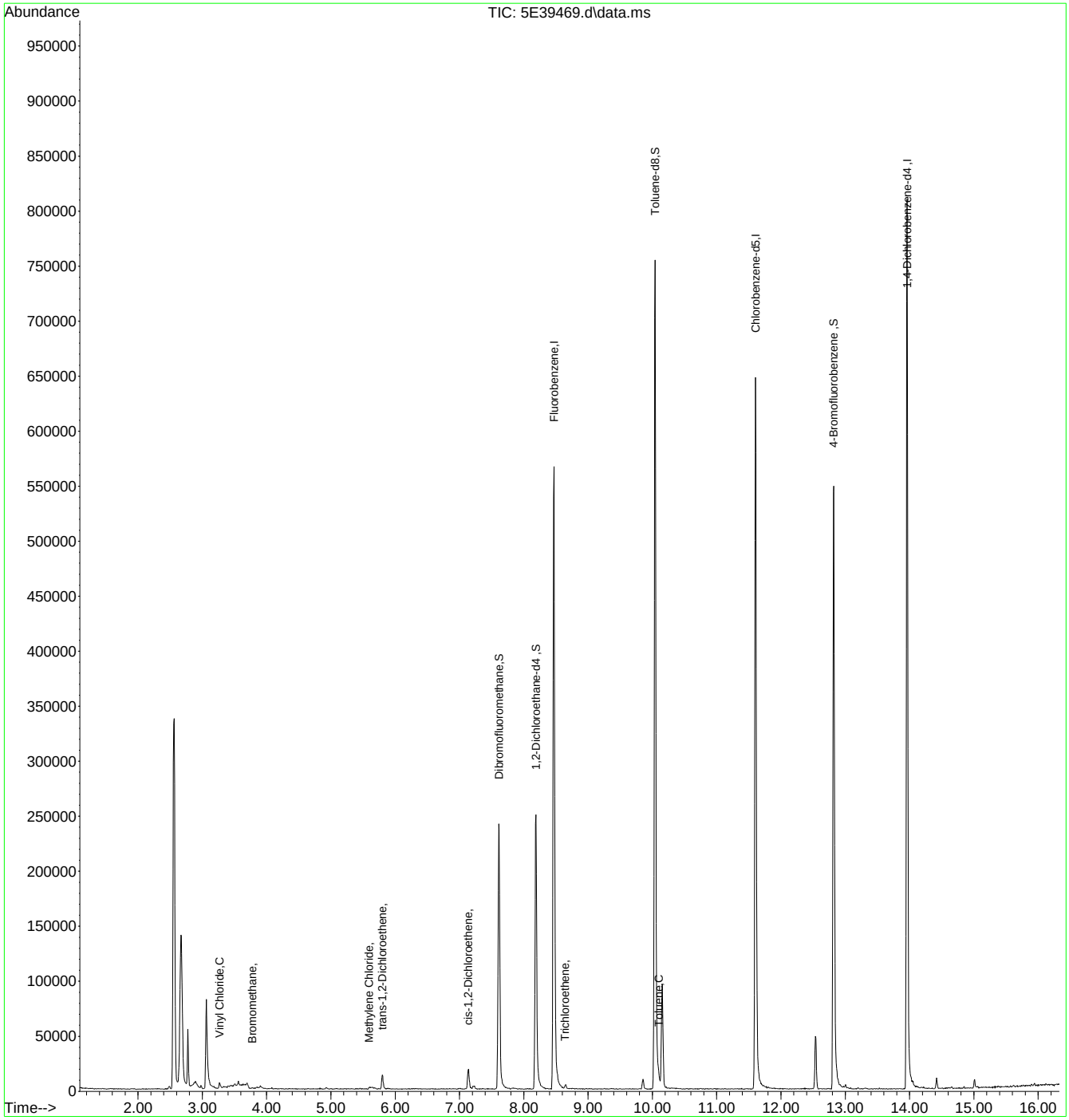
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.469	96	473233	50.00	ug/L	0.00
61) Chlorobenzene-d5	11.603	117	357961	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.962	152	211638	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.610	113	143659	50.45	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.90%			
49) 1,2-Dichloroethane-d4	8.189	65	177494	59.39	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 118.78%			
62) Toluene-d8	10.042	98	459149	51.19	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 102.38%			
86) 4-Bromofluorobenzene	12.816	95	180347	48.46	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 96.92%			
Target Compounds						Qvalue
4) Vinyl Chloride	3.263	62	4422	1.71	ug/L	97
6) Bromomethane	3.775	94	544	0.42	ug/L	71
18) Methylene Chloride	5.592	49	1262	0.31	ug/L #	73
21) trans-1,2-Dichloroethene	5.799	61	7890	2.21	ug/L	94
32) cis-1,2-Dichloroethene	7.134	96	8323	3.21	ug/L	96
52) Trichloroethene	8.640	95	1117	0.46	ug/L #	66
63) Toluene	10.097	91	2817	0.32	ug/L	81

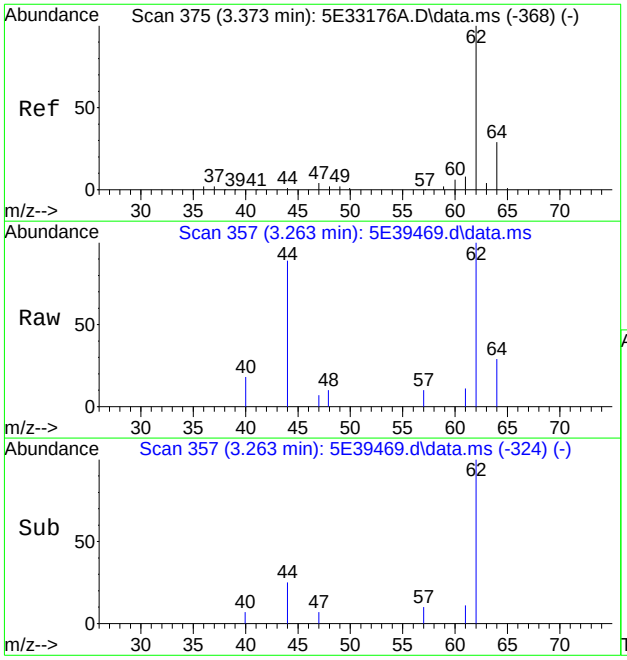
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-05-2023\V5E1766\
Data File : 5E39469.d
Acq On : 4 May 2023 4:50 pm
Operator : joannel
Sample : FC5659-8
Misc : MS53934,V5E1766,,,,,
ALS Vial : 14 Sample Multiplier: 1

Quant Time: May 05 00:02:15 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

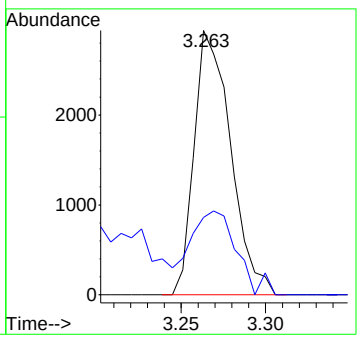


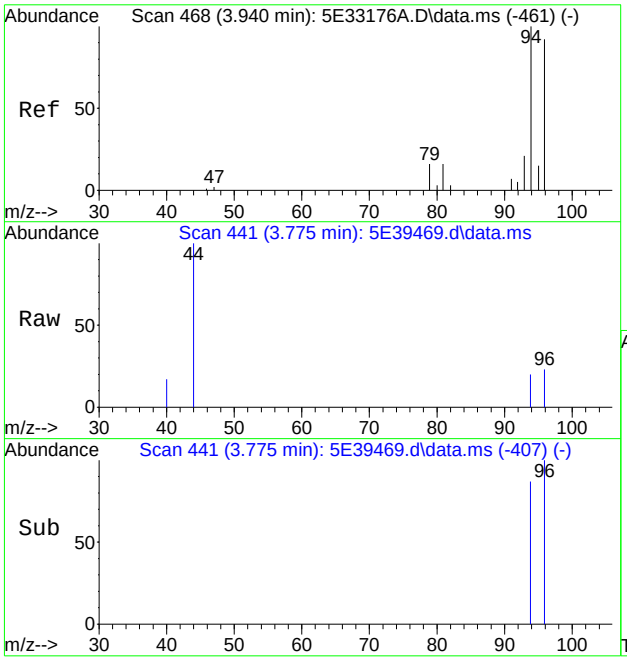


#4
Vinyl Chloride
Concen: 1.71 ug/L
RT: 3.263 min Scan# 357
Delta R.T. 0.000 min
Lab File: 5E39469.d
Acq: 4 May 2023 4:50 pm

Tgt Ion: 62 Resp: 4422

Ion	Ratio	Lower	Upper
62	100		
64	29.3	1.2	61.2

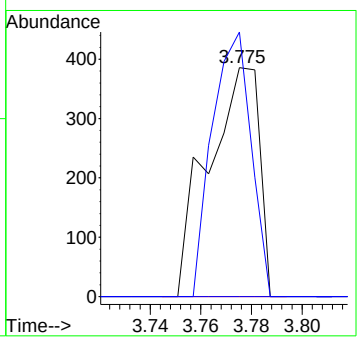


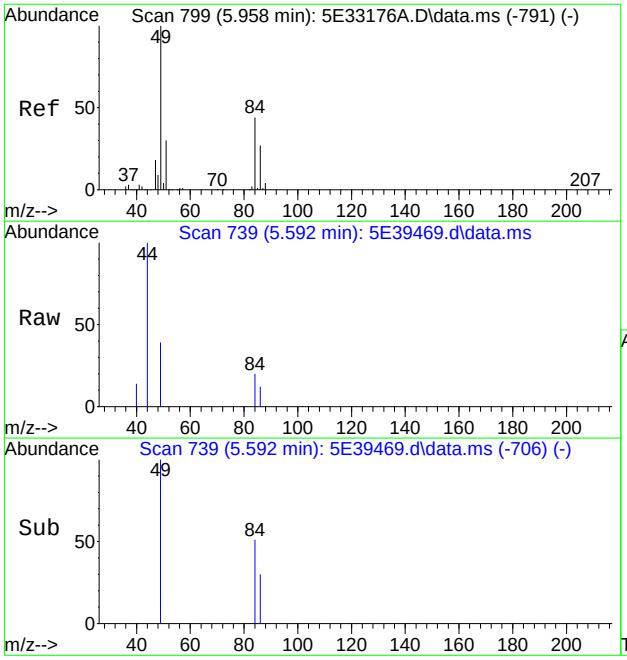


#6
Bromomethane
Concen: 0.42 ug/L
RT: 3.775 min Scan# 441
Delta R.T. 0.006 min
Lab File: 5E39469.d
Acq: 4 May 2023 4:50 pm

Tgt Ion: 94 Resp: 544

Ion	Ratio	Lower	Upper
94	100		
96	115.5	60.9	120.9
93	0.0	0.0	50.7

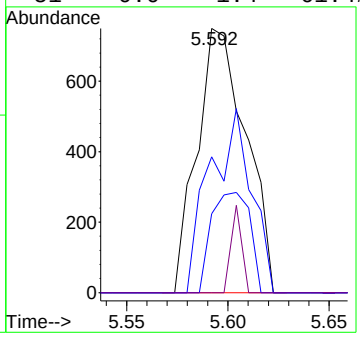


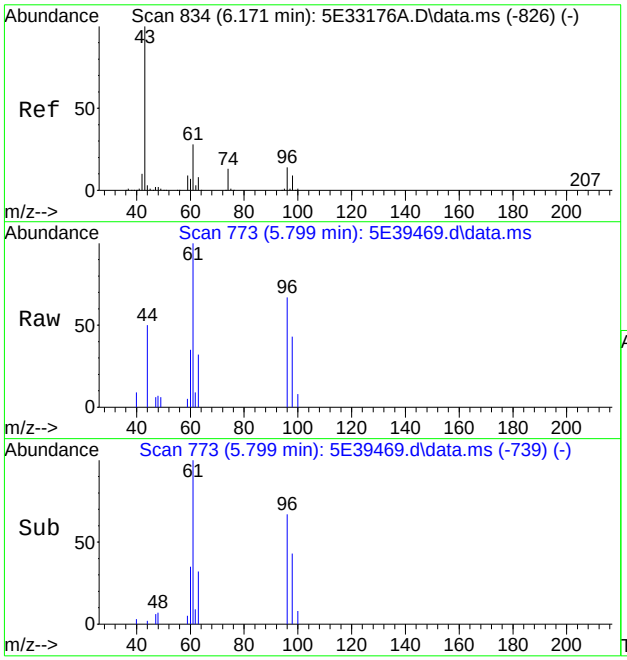


#18
Methylene Chloride
Concen: 0.31 ug/L
RT: 5.592 min Scan# 739
Delta R.T. -0.000 min
Lab File: 5E39469.d
Acq: 4 May 2023 4:50 pm

Tgt Ion: 49 Resp: 1262

Ion	Ratio	Lower	Upper
49	100		
84	51.3	35.4	95.4
86	29.9	11.3	71.3
51	0.0	1.4	61.4#

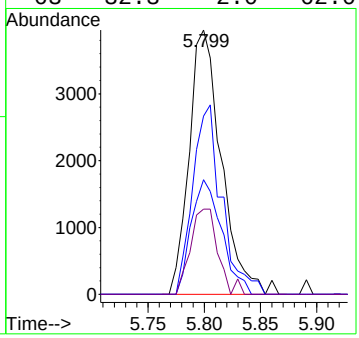


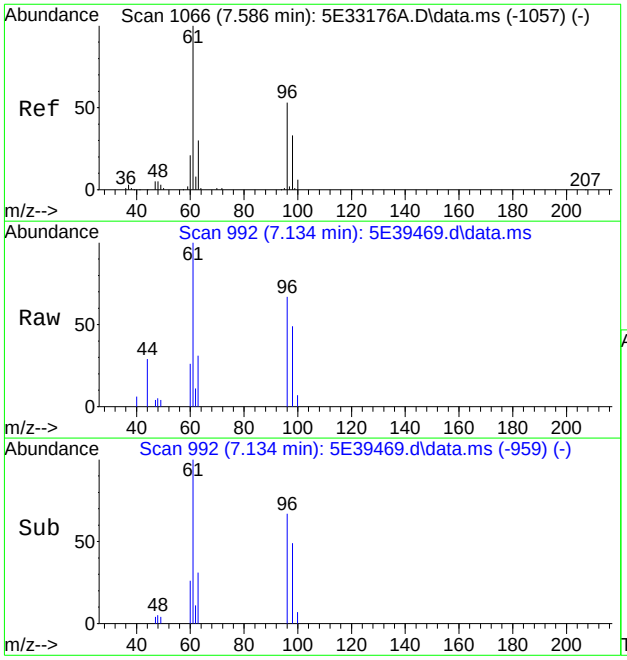


#21
trans-1,2-Dichloroethene
Concen: 2.21 ug/L
RT: 5.799 min Scan# 773
Delta R.T. 0.006 min
Lab File: 5E39469.d
Acq: 4 May 2023 4:50 pm

Tgt Ion: 61 Resp: 7890

Ion	Ratio	Lower	Upper
61	100		
96	67.4	30.9	90.9
98	43.4	8.8	68.8
63	32.3	2.0	62.0

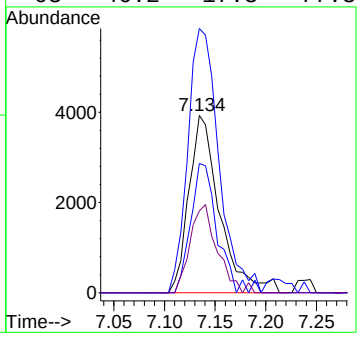


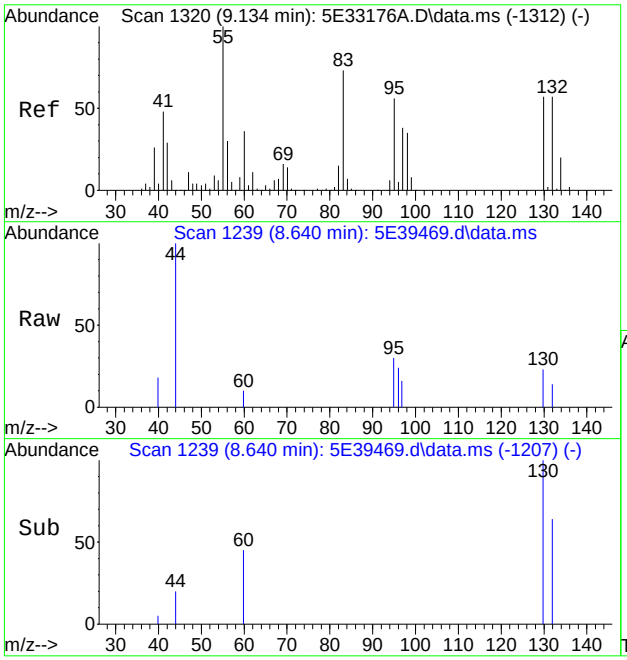


#32
cis-1,2-Dichloroethene
Concen: 3.21 ug/L
RT: 7.134 min Scan# 992
Delta R.T. 0.000 min
Lab File: 5E39469.d
Acq: 4 May 2023 4:50 pm

Tgt Ion: 96 Resp: 8323

Ion	Ratio	Lower	Upper
96	100		
61	149.0	121.2	181.2
98	72.8	33.9	93.9
63	46.2	17.3	77.3

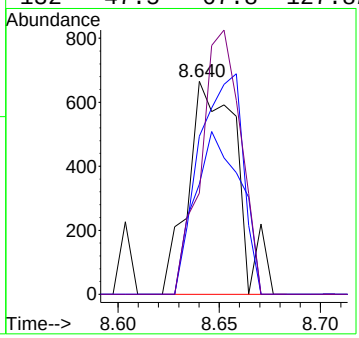


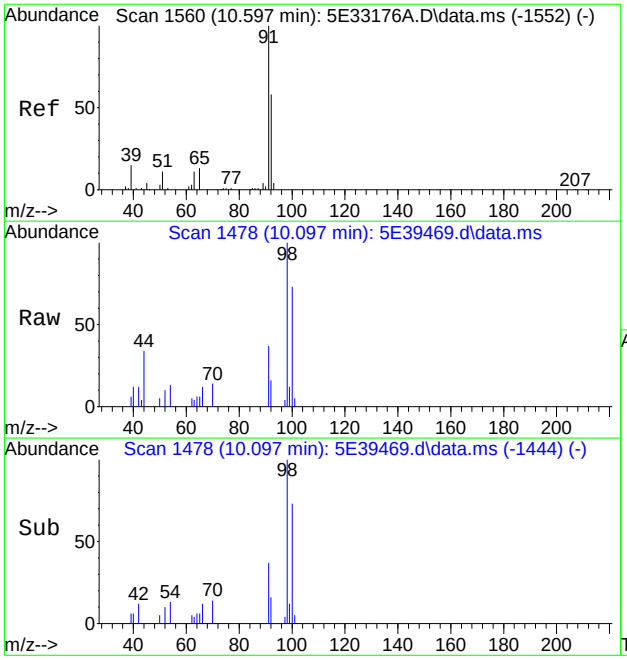


#52
Trichloroethene
Concen: 0.46 ug/L
RT: 8.640 min Scan# 1239
Delta R.T. -0.006 min
Lab File: 5E39469.d
Acq: 4 May 2023 4:50 pm

Tgt Ion: 95 Resp: 1117

Ion	Ratio	Lower	Upper
95	100		
130	74.3	72.6	132.6
97	51.7	38.0	98.0
132	47.5	67.8	127.8#

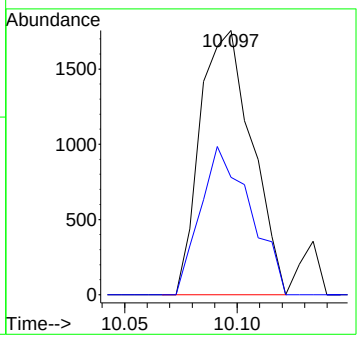




#63
Toluene
Concen: 0.32 ug/L
RT: 10.097 min Scan# 1478
Delta R.T. 0.006 min
Lab File: 5E39469.d
Acq: 4 May 2023 4:50 pm

Tgt Ion: 91 Resp: 2817

Ion	Ratio	Lower	Upper
91	100		
92	44.5	28.5	88.5



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\johnm\May 2023\05-04-2023\vi2913\
Data File : I756417.d
Acq On : 4 May 2023 3:13 am
Operator : jeniferw
Sample : FC5659-8 Inst : MSVOA16
Misc : MS53924,VI2913,,,,,
ALS Vial : 44 Sample Multiplier: 1

Quant Method : C:\msdchem\2\methods\VI-2023-05-02.m
Quant Results File: VI-2023-05-02.RES
Quant Time: May 04 07:18:04 2023
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

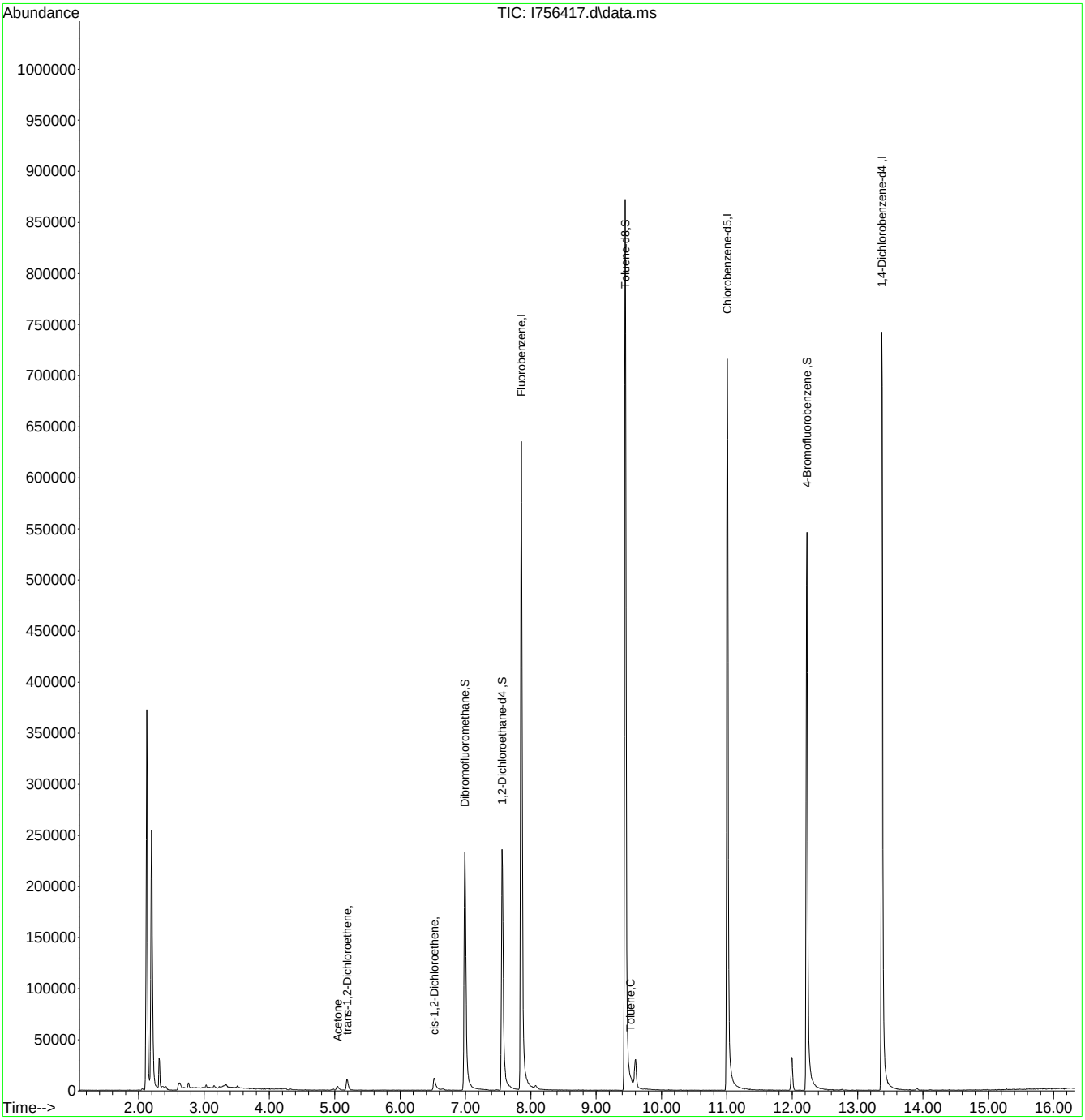
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.854	96	545953	50.00	ug/L	0.00
62) Chlorobenzene-d5	11.006	117	400179	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.371	152	199957	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	6.988	113	157322	50.93	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.86%			
49) 1,2-Dichloroethane-d4	7.561	65	177264	52.47	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 104.94%			
63) Toluene-d8	9.445	98	543594	49.00	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 98.00%			
86) 4-Bromofluorobenzene	12.225	174	153638	49.35	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 98.70%			
Target Compounds						Qvalue
19) Acetone	5.043	43	4611	2.83	ug/L	93
21) trans-1,2-Dichloroethene	5.190	61	8006	2.57	ug/L	86
32) cis-1,2-Dichloroethene	6.525	96	8628	3.94	ug/L	96
64) Toluene	9.524	91	3404	0.38	ug/L	91

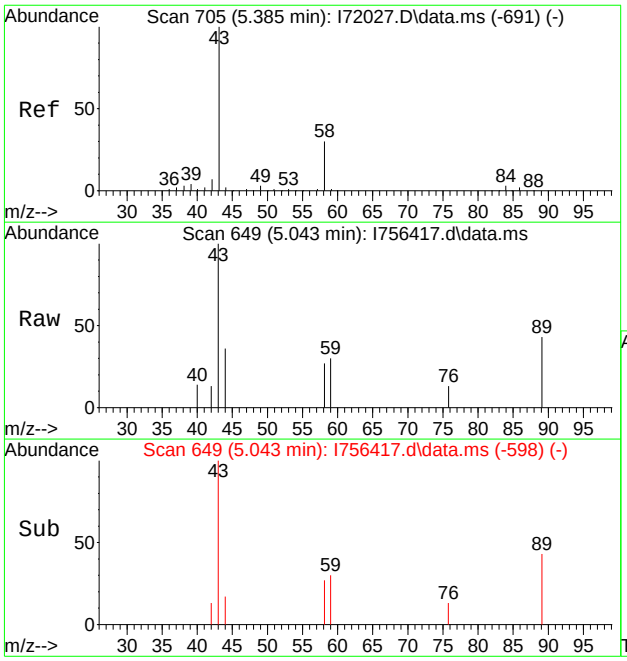
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\johnm\May 2023\05-04-2023\vi2913\
Data File : I756417.d
Acq On : 4 May 2023 3:13 am
Operator : jeniferw
Sample : FC5659-8 Inst : MSVOA16
Misc : MS53924,VI2913,,,,,
ALS Vial : 44 Sample Multiplier: 1

Quant Method : C:\msdchem\2\methods\VI-2023-05-02.m
Quant Results File: VI-2023-05-02.RES
Quant Time: May 04 07:18:04 2023
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

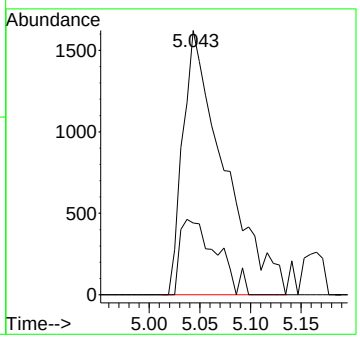


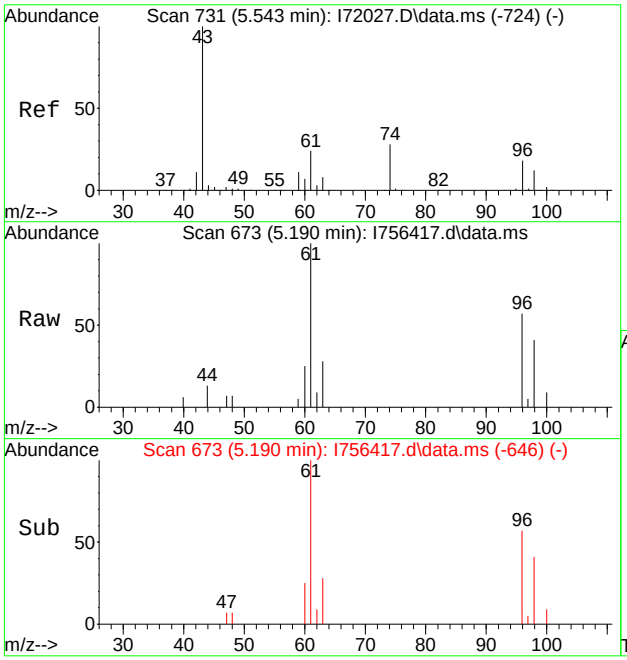


#19
Acetone
Concen: 2.83 ug/L
RT: 5.043 min Scan# 649
Delta R.T. 0.012 min
Lab File: I756417.d
Acq: 4 May 2023 3:13 am

Tgt Ion: 43 Resp: 4611

Ion	Ratio	Lower	Upper
43	100		
58	27.1	1.0	61.0

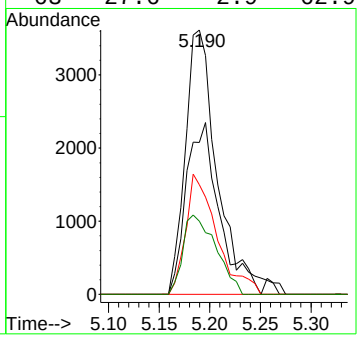


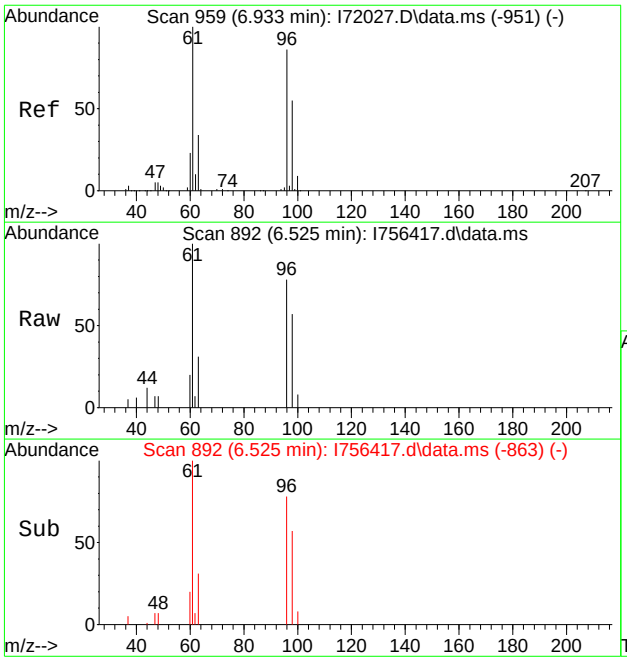


#21
trans-1,2-Dichloroethene
Concen: 2.57 ug/L
RT: 5.190 min Scan# 673
Delta R.T. 0.013 min
Lab File: I756417.d
Acq: 4 May 2023 3:13 am

Tgt Ion: 61 Resp: 8006

Ion	Ratio	Lower	Upper
61	100		
96	57.5	44.5	104.5
98	41.5	15.5	75.5
63	27.6	2.9	62.9

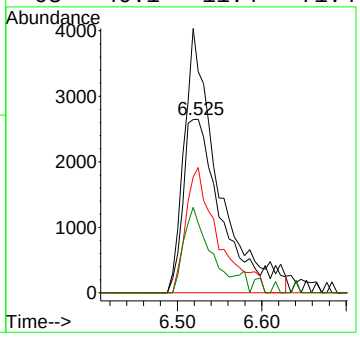


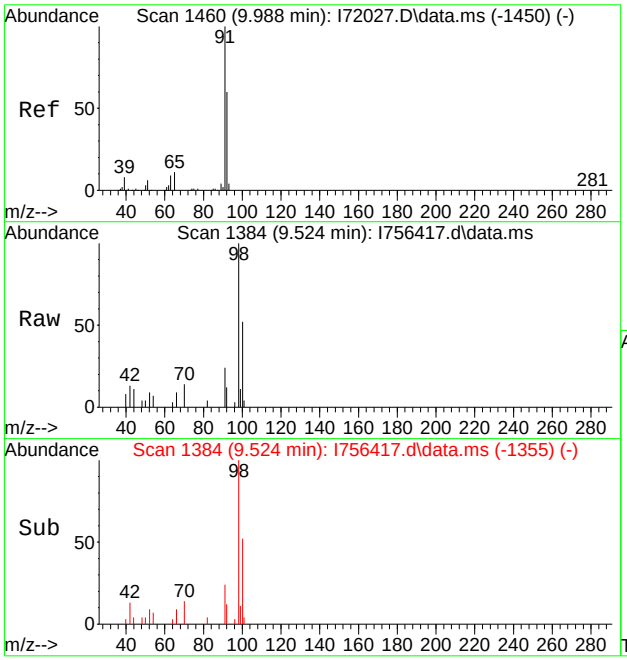


#32
cis-1,2-Dichloroethene
Concen: 3.94 ug/L
RT: 6.525 min Scan# 892
Delta R.T. 0.025 min
Lab File: I756417.d
Acq: 4 May 2023 3:13 am

Tgt Ion: 96 Resp: 8628

Ion	Ratio	Lower	Upper
96	100		
61	127.5	100.0	160.0
98	72.3	35.1	95.1
63	40.1	11.4	71.4

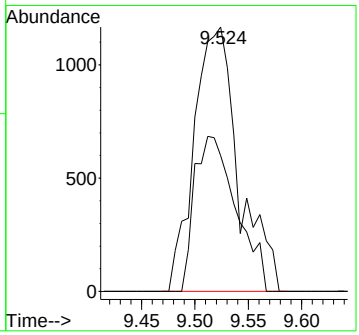




#64
Toluene
Concen: 0.38 ug/L
RT: 9.524 min Scan# 1384
Delta R.T. 0.024 min
Lab File: I756417.d
Acq: 4 May 2023 3:13 am

Tgt Ion: 91 Resp: 3404

Ion	Ratio	Lower	Upper
91	100		
92	51.3	27.6	87.6



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-05-2023\V5E1766\
Data File : 5E39470.d
Acq On : 4 May 2023 5:15 pm
Operator : joannel
Sample : FC5659-9
Misc : MS53934,V5E1766,,,,,
ALS Vial : 15 Sample Multiplier: 1

Quant Time: May 05 00:03:47 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

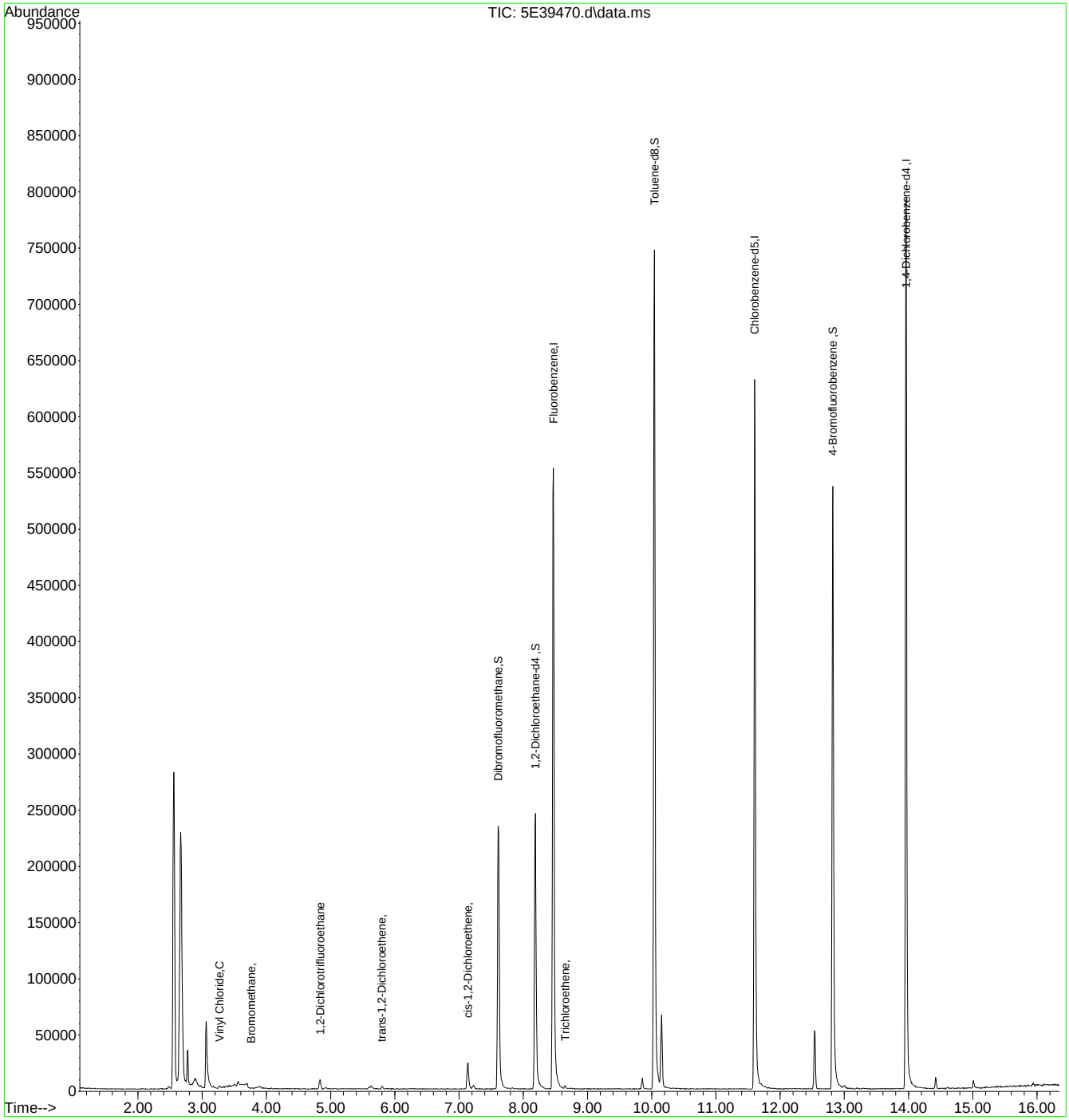
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.469	96	460019	50.00	ug/L	0.00
61) Chlorobenzene-d5	11.603	117	351157	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.962	152	203952	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.610	113	139489	50.39	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.78%			
49) 1,2-Dichloroethane-d4	8.189	65	171883	59.16	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 118.32%			
62) Toluene-d8	10.042	98	456300	51.86	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 103.72%			
86) 4-Bromofluorobenzene	12.816	95	175468	48.93	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 97.86%			
Target Compounds						Qvalue
4) Vinyl Chloride	3.269	62	1609	0.64	ug/L	76
6) Bromomethane	3.763	94	615	0.48	ug/L	84
11) 1,2-Dichlorotrifluoroe...	4.836	67	5184	2.02	ug/L	89
21) trans-1,2-Dichloroethene	5.793	61	1677	0.48	ug/L	94
32) cis-1,2-Dichloroethene	7.134	96	10430	4.13	ug/L	100
52) Trichloroethene	8.652	95	730	0.31	ug/L #	75

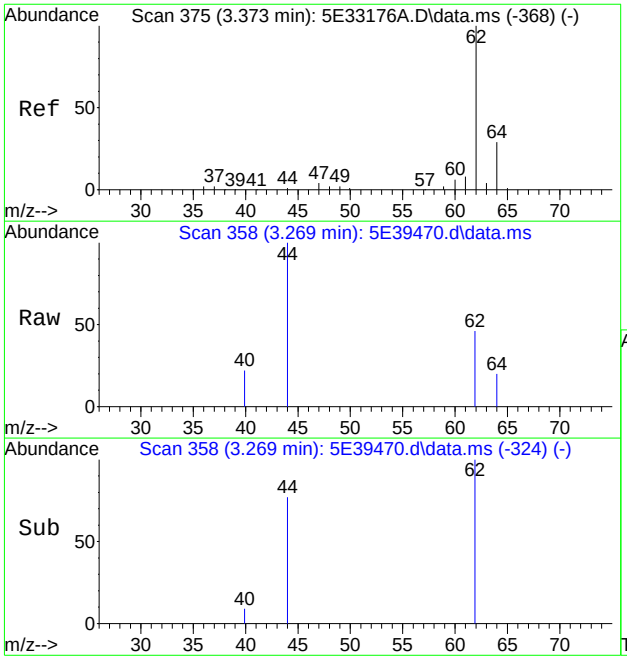
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-05-2023\V5E1766\
Data File : 5E39470.d
Acq On : 4 May 2023 5:15 pm
Operator : joannel
Sample : FC5659-9
Misc : MS53934,V5E1766,,,,,
ALS Vial : 15 Sample Multiplier: 1

Quant Time: May 05 00:03:47 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

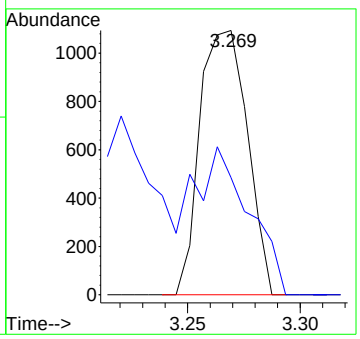


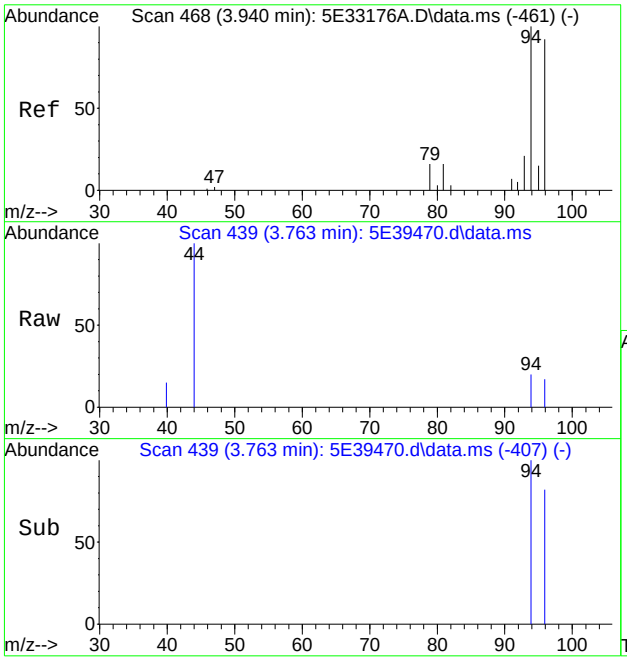


#4
Vinyl Chloride
Concen: 0.64 ug/L
RT: 3.269 min Scan# 358
Delta R.T. 0.006 min
Lab File: 5E39470.d
Acq: 4 May 2023 5:15 pm

Tgt Ion: 62 Resp: 1609

Ion	Ratio	Lower	Upper
62	100		
64	44.3	1.2	61.2

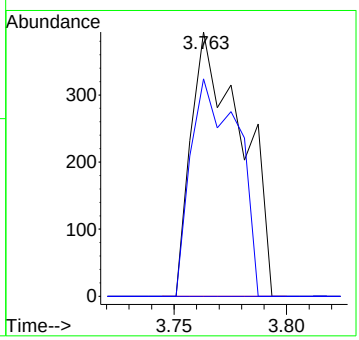


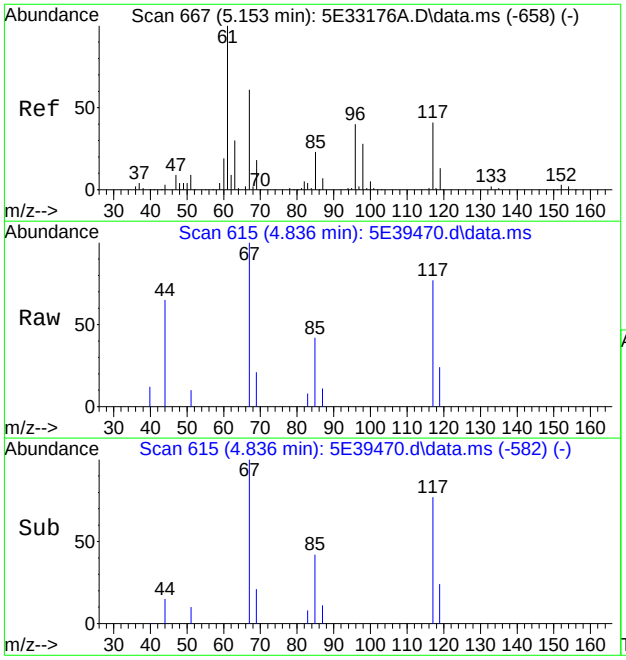


#6
Bromomethane
Concen: 0.48 ug/L
RT: 3.763 min Scan# 439
Delta R.T. -0.006 min
Lab File: 5E39470.d
Acq: 4 May 2023 5:15 pm

Tgt Ion: 94 Resp: 615

Ion	Ratio	Lower	Upper
94	100		
96	82.2	60.9	120.9
93	0.0	0.0	50.7

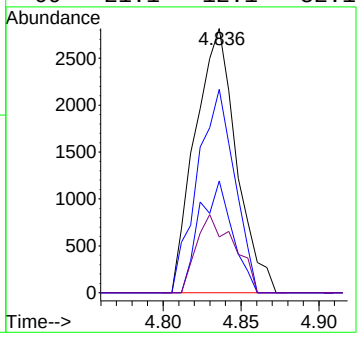


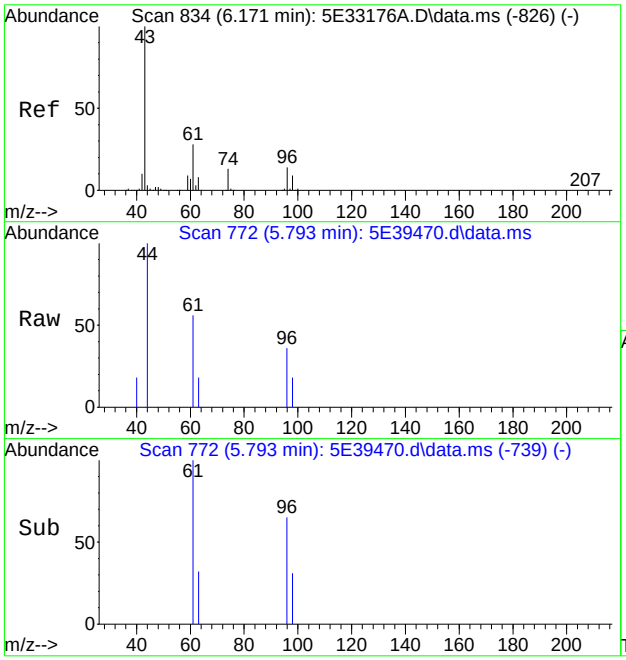


#11
1,2-Dichlorotrifluoroethane
Concen: 2.02 ug/L
RT: 4.836 min Scan# 615
Delta R.T. -0.000 min
Lab File: 5E39470.d
Acq: 4 May 2023 5:15 pm

Tgt Ion: 67 Resp: 5184

Ion	Ratio	Lower	Upper
67	100		
117	77.0	49.1	89.1
85	42.2	18.9	58.9
69	21.1	12.1	52.1

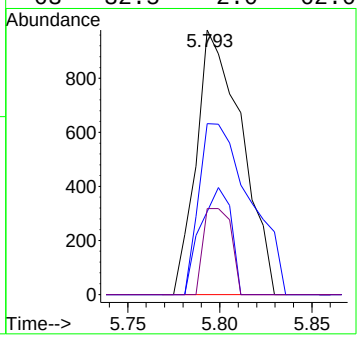


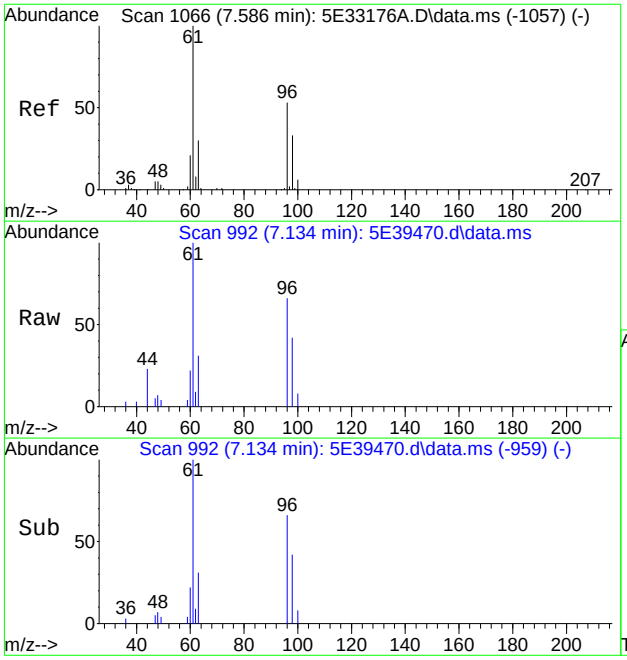


#21
trans-1,2-Dichloroethene
Concen: 0.48 ug/L
RT: 5.793 min Scan# 772
Delta R.T. 0.000 min
Lab File: 5E39470.d
Acq: 4 May 2023 5:15 pm

Tgt Ion: 61 Resp: 1677

Ion	Ratio	Lower	Upper
61	100		
96	64.6	30.9	90.9
98	31.3	8.8	68.8
63	32.5	2.0	62.0

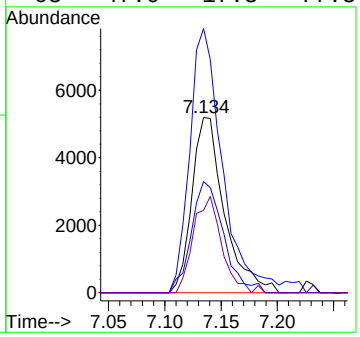


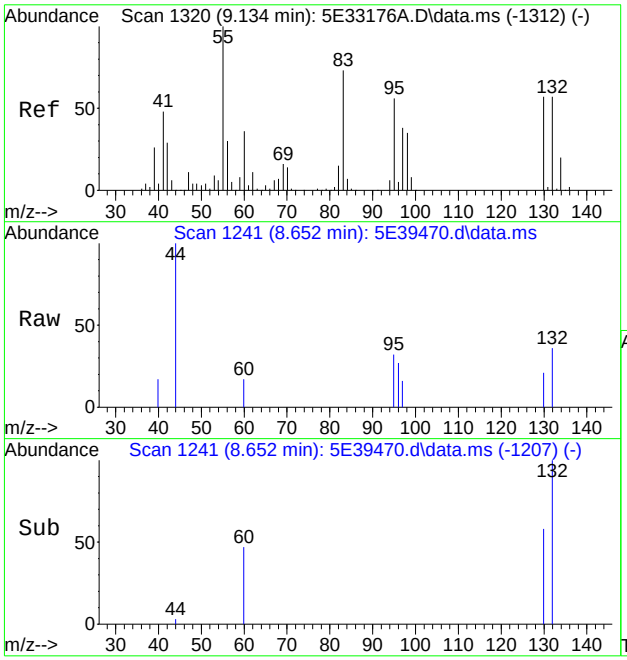


#32
cis-1,2-Dichloroethene
Concen: 4.13 ug/L
RT: 7.134 min Scan# 992
Delta R.T. 0.000 min
Lab File: 5E39470.d
Acq: 4 May 2023 5:15 pm

Tgt Ion: 96 Resp: 10430

Ion	Ratio	Lower	Upper
96	100		
61	151.0	121.2	181.2
98	63.6	33.9	93.9
63	47.0	17.3	77.3

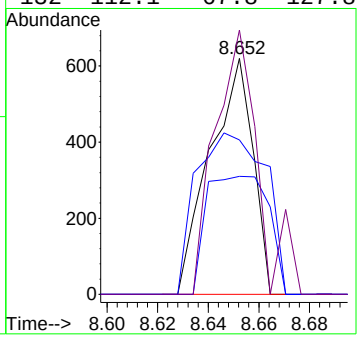




#52
Trichloroethene
Concen: 0.31 ug/L
RT: 8.652 min Scan# 1241
Delta R.T. 0.006 min
Lab File: 5E39470.d
Acq: 4 May 2023 5:15 pm

Tgt Ion: 95 Resp: 730

Ion	Ratio	Lower	Upper
95	100		
130	65.5	72.6	132.6#
97	50.0	38.0	98.0
132	112.1	67.8	127.8



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\johnm\May 2023\05-04-2023\vi2913\
Data File : I756418.d
Acq On : 4 May 2023 3:37 am
Operator : jeniferw
Sample : FC5659-9 Inst : MSVOA16
Misc : MS53924,VI2913,,,,,
ALS Vial : 45 Sample Multiplier: 1

Quant Method : C:\msdchem\2\methods\VI-2023-05-02.m
Quant Results File: VI-2023-05-02.RES
Quant Time: May 04 07:18:32 2023
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

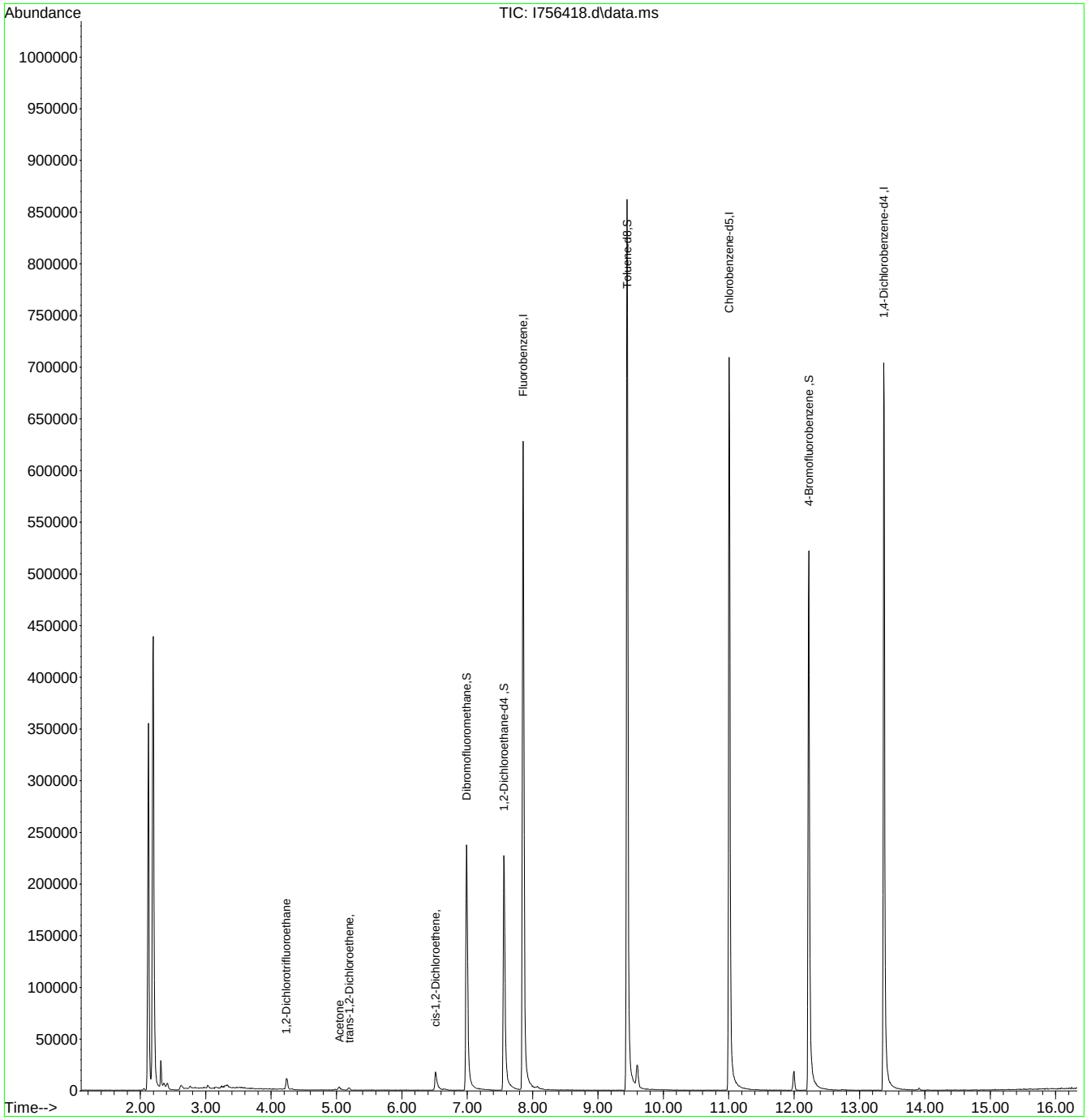
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.854	96	548519	50.00	ug/L	0.00
62) Chlorobenzene-d5	11.006	117	392544	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.371	152	190651	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	6.988	113	153856	49.57	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.14%			
49) 1,2-Dichloroethane-d4	7.561	65	169520	49.95	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 99.90%			
63) Toluene-d8	9.445	98	545932	50.16	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 100.32%			
86) 4-Bromofluorobenzene	12.225	174	150994	50.87	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.74%			
Target Compounds						Qvalue
10) 1,2-Dichlorotrifluoroe...	4.233	67	6678	2.74	ug/L	87
19) Acetone	5.043	43	3601	2.20	ug/L	93
21) trans-1,2-Dichloroethene	5.196	61	1843	0.59	ug/L	85
32) cis-1,2-Dichloroethene	6.513	96	10785	4.91	ug/L	93

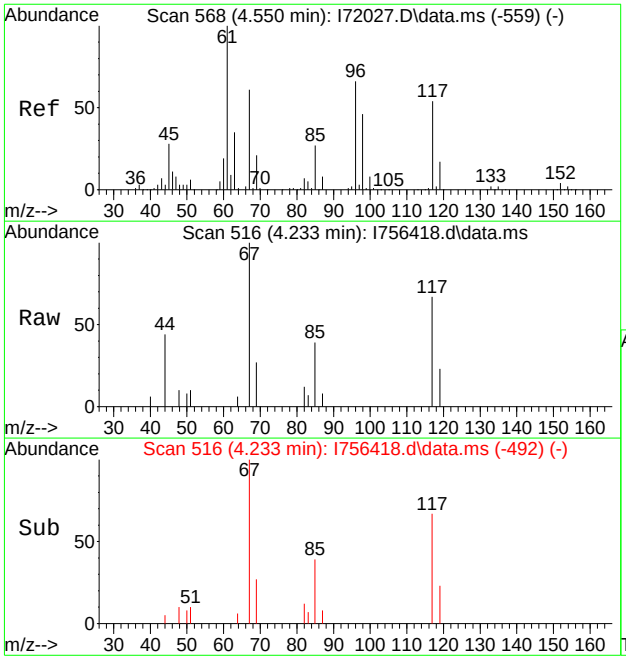
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\johnm\May 2023\05-04-2023\vi2913\
Data File : I756418.d
Acq On : 4 May 2023 3:37 am
Operator : jeniferw
Sample : FC5659-9 Inst : MSVOA16
Misc : MS53924,VI2913,,,,,
ALS Vial : 45 Sample Multiplier: 1

Quant Method : C:\msdchem\2\methods\VI-2023-05-02.m
Quant Results File: VI-2023-05-02.RES
Quant Time: May 04 07:18:32 2023
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

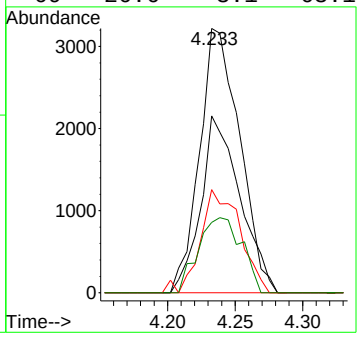


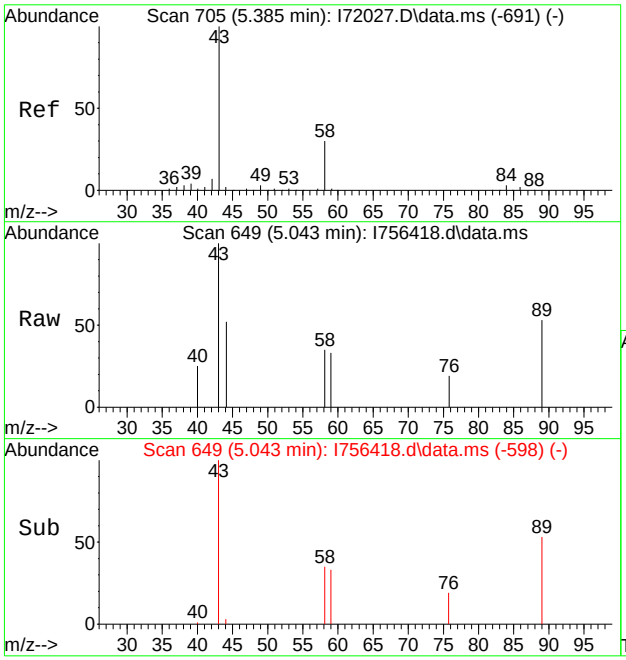


#10
1,2-Dichlorotrifluoroethane
Concen: 2.74 ug/L
RT: 4.233 min Scan# 516
Delta R.T. -0.005 min
Lab File: I756418.d
Acq: 4 May 2023 3:37 am

Tgt Ion: 67 Resp: 6678

Ion	Ratio	Lower	Upper
67	100		
117	66.8	51.9	111.9
85	39.0	13.5	73.5
69	26.6	3.1	63.1

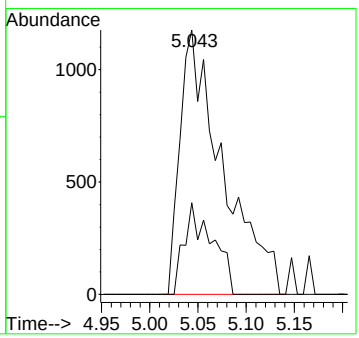


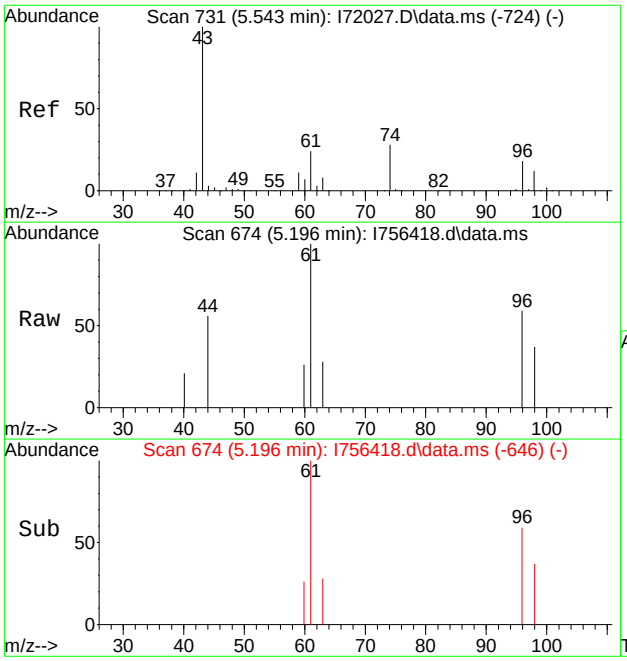


#19
Acetone
Concen: 2.20 ug/L
RT: 5.043 min Scan# 649
Delta R.T. 0.012 min
Lab File: I756418.d
Acq: 4 May 2023 3:37 am

Tgt Ion: 43 Resp: 3601

Ion	Ratio	Lower	Upper
43	100		
58	34.7	1.0	61.0

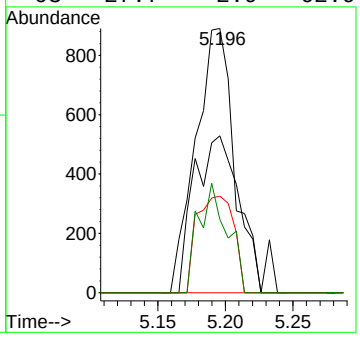


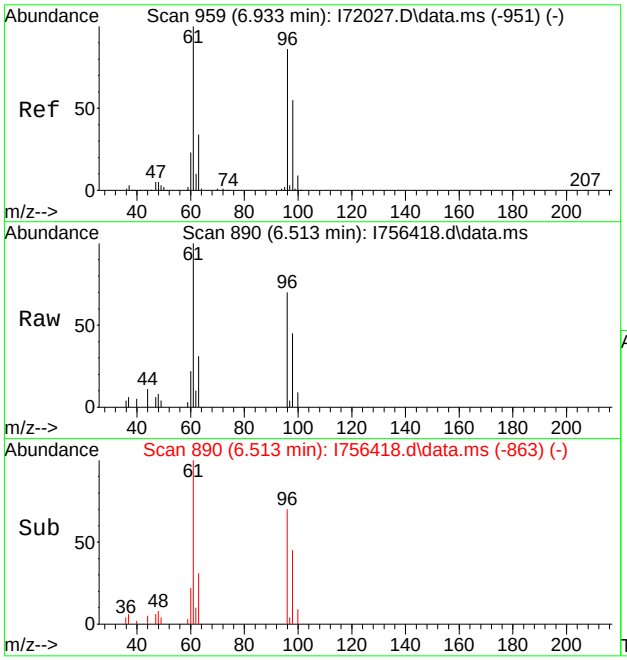


#21
trans-1,2-Dichloroethene
Concen: 0.59 ug/L
RT: 5.196 min Scan# 674
Delta R.T. 0.019 min
Lab File: I756418.d
Acq: 4 May 2023 3:37 am

Tgt Ion: 61 Resp: 1843

Ion	Ratio	Lower	Upper
61	100		
96	59.4	44.5	104.5
98	36.6	15.5	75.5
63	27.7	2.9	62.9

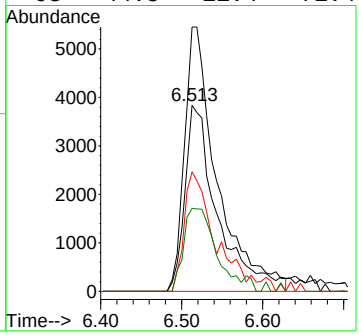




#32
cis-1,2-Dichloroethene
Concen: 4.91 ug/L
RT: 6.513 min Scan# 890
Delta R.T. 0.013 min
Lab File: I756418.d
Acq: 4 May 2023 3:37 am

Tgt Ion: 96 Resp: 10785

Ion	Ratio	Lower	Upper
96	100		
61	142.0	100.0	160.0
98	64.3	35.1	95.1
63	44.5	11.4	71.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-05-2023\V5E1766\
Data File : 5E39471.d
Acq On : 4 May 2023 5:39 pm
Operator : joannel
Sample : FC5659-10
Misc : MS53934,V5E1766,,,,,
ALS Vial : 16 Sample Multiplier: 1

Quant Time: May 05 00:04:08 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

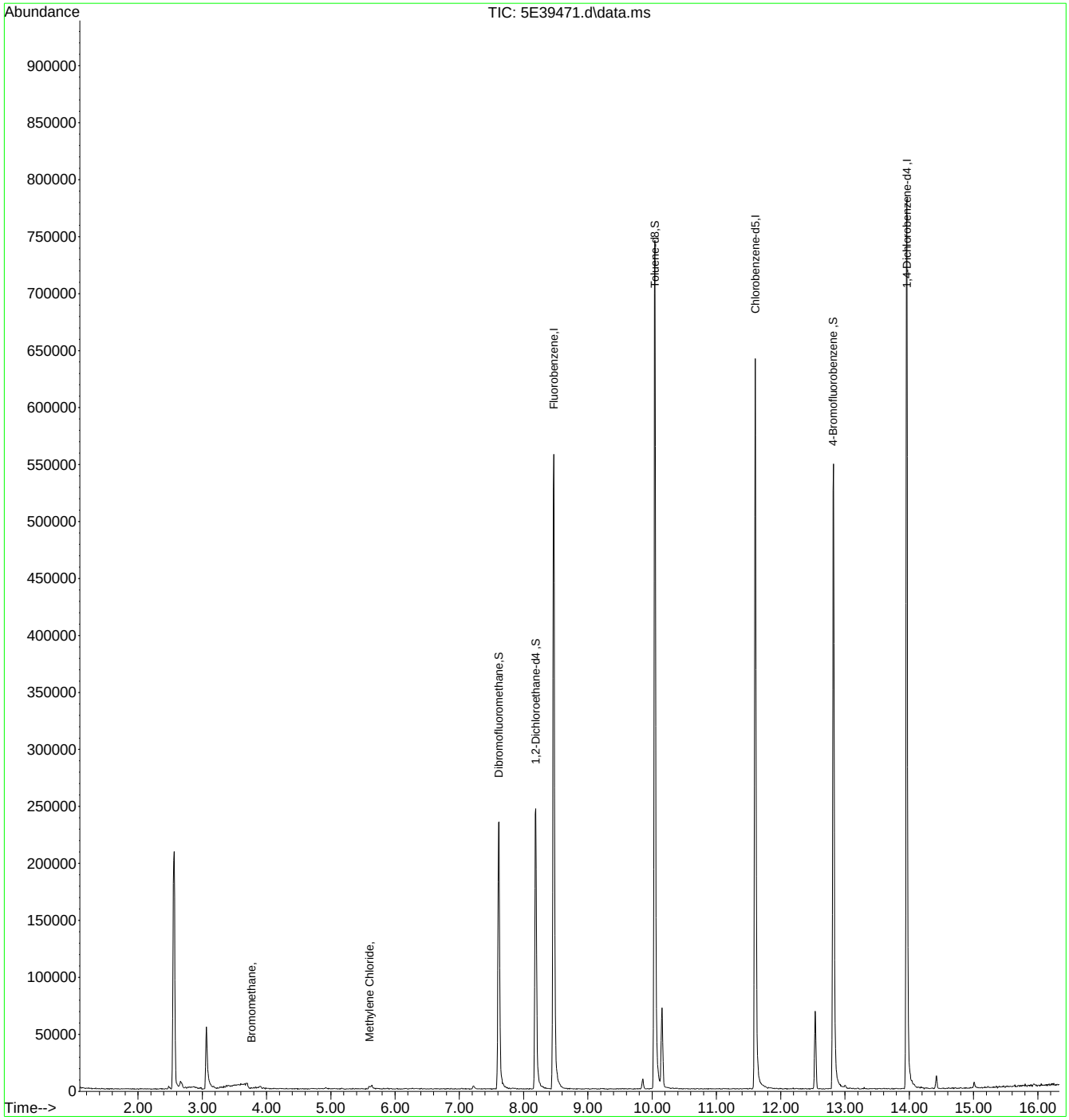
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.469	96	465101	50.00	ug/L	0.00
61) Chlorobenzene-d5	11.603	117	355860	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.962	152	207785	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.610	113	140709	50.28	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.56%			
49) 1,2-Dichloroethane-d4	8.189	65	177108	60.29	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 120.58%			
62) Toluene-d8	10.042	98	462486	51.87	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 103.74%			
86) 4-Bromofluorobenzene	12.816	95	178560	48.87	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 97.74%			
Target Compounds						Qvalue
6) Bromomethane	3.763	94	585	0.45	ug/L	90
18) Methylene Chloride	5.598	49	1255	0.31	ug/L	85

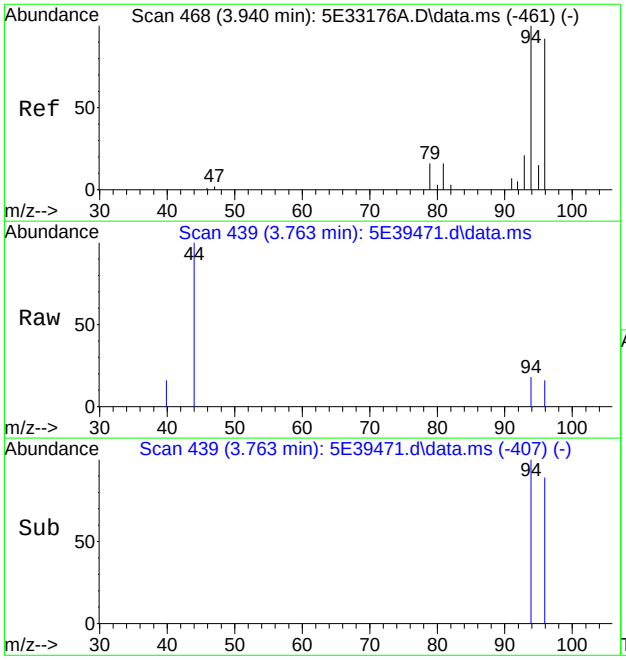
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-05-2023\V5E1766\
Data File : 5E39471.d
Acq On : 4 May 2023 5:39 pm
Operator : joannel
Sample : FC5659-10
Misc : MS53934,V5E1766,,,,,
ALS Vial : 16 Sample Multiplier: 1

Quant Time: May 05 00:04:08 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

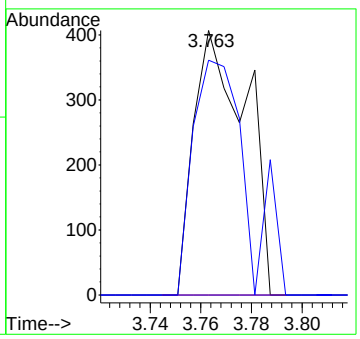


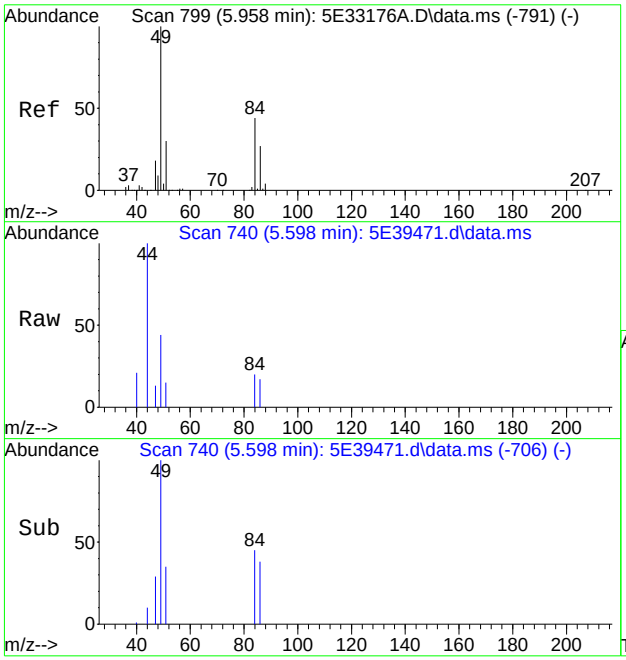


#6
Bromomethane
Concen: 0.45 ug/L
RT: 3.763 min Scan# 439
Delta R.T. -0.006 min
Lab File: 5E39471.d
Acq: 4 May 2023 5:39 pm

Tgt Ion: 94 Resp: 585

Ion	Ratio	Lower	Upper
94	100		
96	88.7	60.9	120.9
93	0.0	0.0	50.7

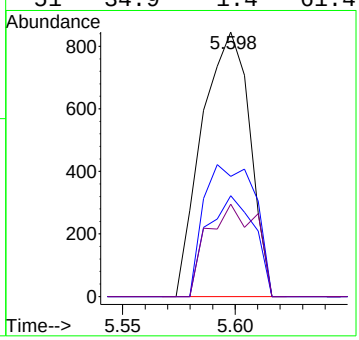




#18
Methylene Chloride
Concen: 0.31 ug/L
RT: 5.598 min Scan# 740
Delta R.T. 0.006 min
Lab File: 5E39471.d
Acq: 4 May 2023 5:39 pm

Tgt Ion: 49 Resp: 1255

Ion	Ratio	Lower	Upper
49	100		
84	45.4	35.4	95.4
86	38.1	11.3	71.3
51	34.9	1.4	61.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\johnm\May 2023\05-04-2023\vi2913\
Data File : I756419.d
Acq On : 4 May 2023 4:02 am
Operator : jeniferw
Sample : FC5659-10 Inst : MSVOA16
Misc : MS53924,VI2913,,,,,
ALS Vial : 46 Sample Multiplier: 1

Quant Method : C:\msdchem\2\methods\VI-2023-05-02.m
Quant Results File: VI-2023-05-02.RES
Quant Time: May 04 07:18:51 2023
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

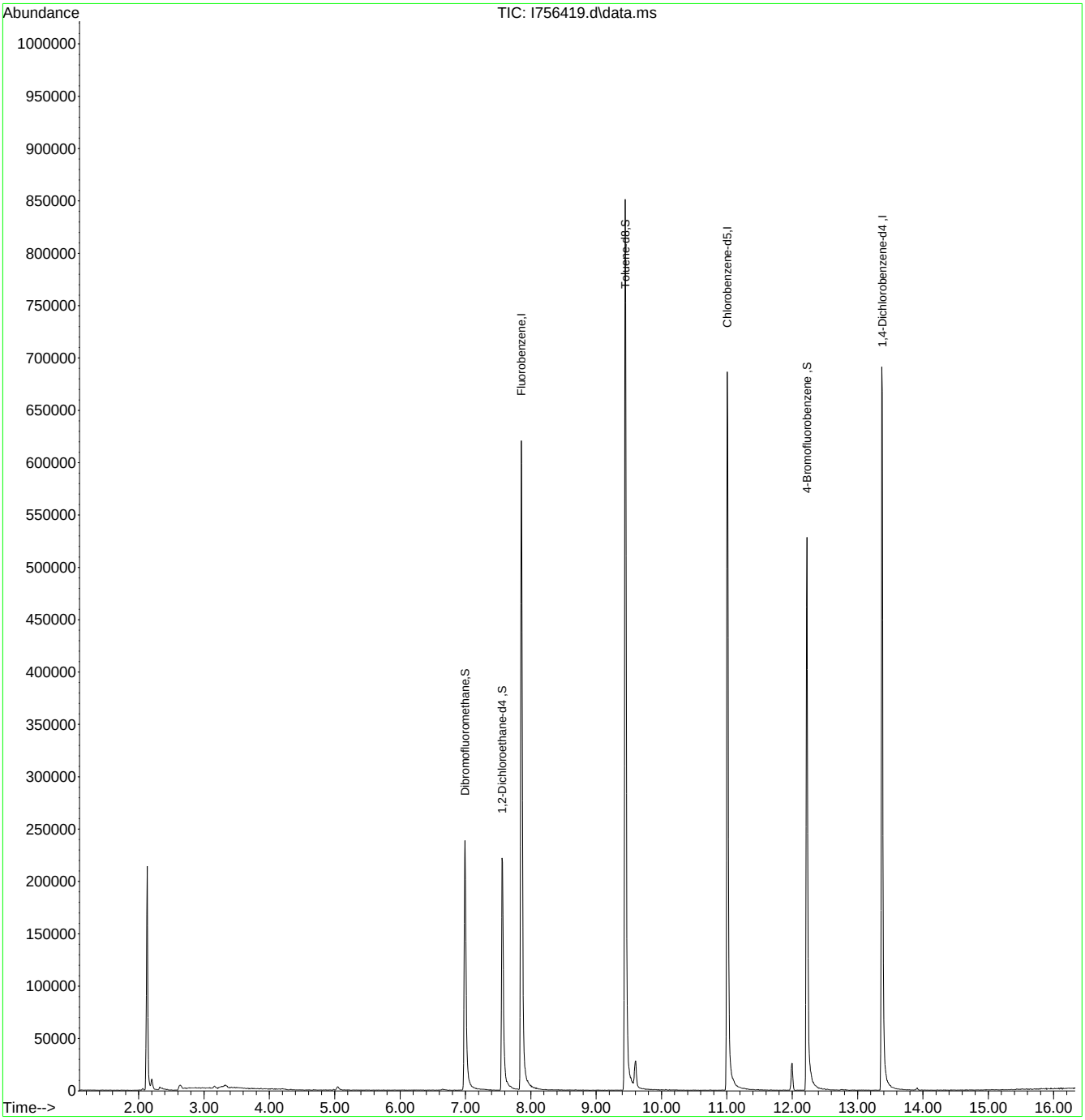
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.854	96	541801	50.00	ug/L	0.00
62) Chlorobenzene-d5	11.006	117	392419	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.377	152	189116	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	6.994	113	156246	50.97	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.94%			
49) 1,2-Dichloroethane-d4	7.561	65	167612	50.00	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 100.00%			
63) Toluene-d8	9.445	98	539180	49.56	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 99.12%			
86) 4-Bromofluorobenzene	12.225	174	150929	51.26	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 102.52%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\johnm\May 2023\05-04-2023\vi2913\
Data File : I756419.d
Acq On : 4 May 2023 4:02 am
Operator : jeniferw
Sample : FC5659-10 Inst : MSVOA16
Misc : MS53924,VI2913,,,,,
ALS Vial : 46 Sample Multiplier: 1

Quant Method : C:\msdchem\2\methods\VI-2023-05-02.m
Quant Results File: VI-2023-05-02.RES
Quant Time: May 04 07:18:51 2023
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-05-2023\V5E1766\
Data File : 5E39472.d
Acq On : 4 May 2023 6:04 pm
Operator : joannel
Sample : FC5659-11
Misc : MS53934,V5E1766,,,,,
ALS Vial : 17 Sample Multiplier: 1

Quant Time: May 05 00:05:30 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

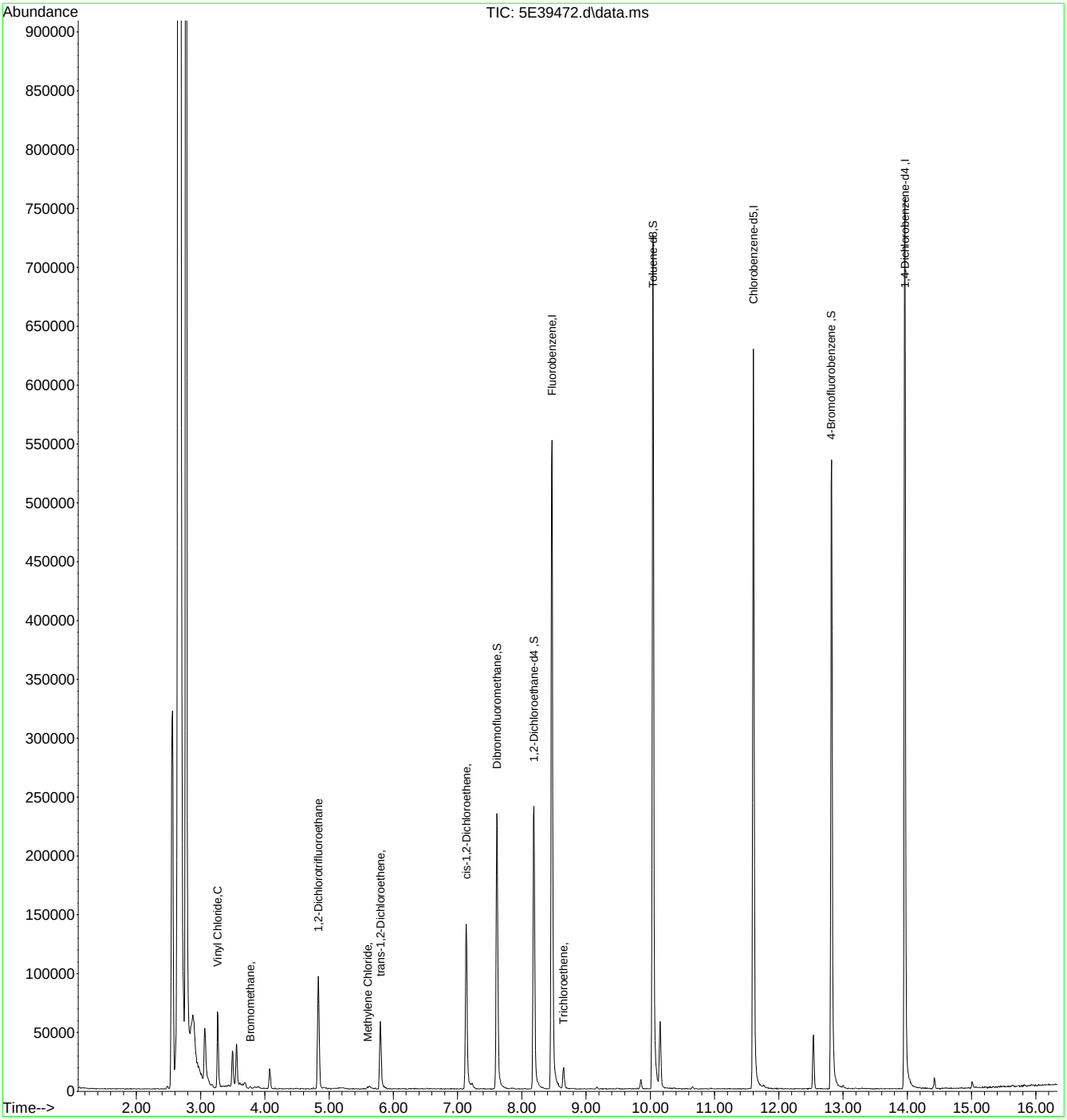
Compound		R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards							
1) Fluorobenzene		8.470	96	452235	50.00	ug/L	0.00
61) Chlorobenzene-d5		11.603	117	346849	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4		13.962	152	202053	50.00	ug/L	0.00
System Monitoring Compounds							
39) Dibromofluoromethane		7.610	113	138589	50.93	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	101.86%		
49) 1,2-Dichloroethane-d4		8.189	65	172023	60.23	ug/L	0.00
Spiked Amount	50.000	Range 79 - 125		Recovery =	120.46%		
62) Toluene-d8		10.042	98	450231	51.81	ug/L	0.00
Spiked Amount	50.000	Range 85 - 112		Recovery =	103.62%		
86) 4-Bromofluorobenzene		12.816	95	174634	49.15	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	98.30%		
Target Compounds							Qvalue
4) Vinyl Chloride		3.263	62	56333	22.68	ug/L	100
6) Bromomethane		3.775	94	1266	1.01	ug/L #	65
11) 1,2-Dichlorotrifluoroe...		4.830	67	48949	19.70	ug/L	91
18) Methylene Chloride		5.598	49	1274	0.32	ug/L	91
21) trans-1,2-Dichloroethene		5.799	61	36761	10.79	ug/L	97
32) cis-1,2-Dichloroethene		7.134	96	59802	24.11	ug/L	97
52) Trichloroethene		8.646	95	6221	2.66	ug/L	75

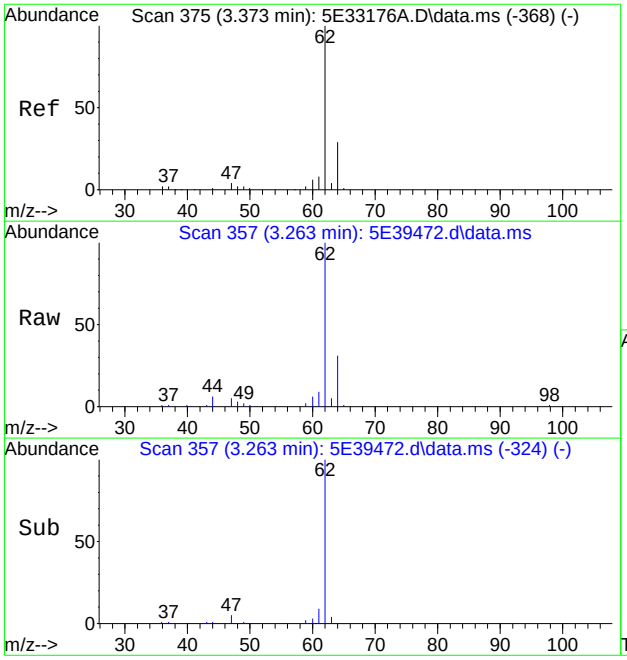
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-05-2023\V5E1766\
Data File : 5E39472.d
Acq On : 4 May 2023 6:04 pm
Operator : joannel
Sample : FC5659-11
Misc : MS53934,V5E1766,,,,,
ALS Vial : 17 Sample Multiplier: 1

Quant Time: May 05 00:05:30 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

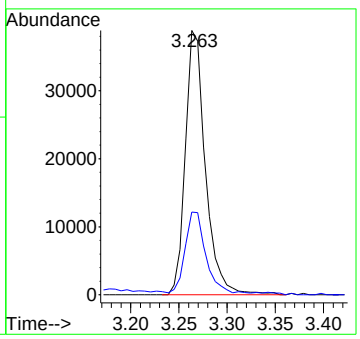


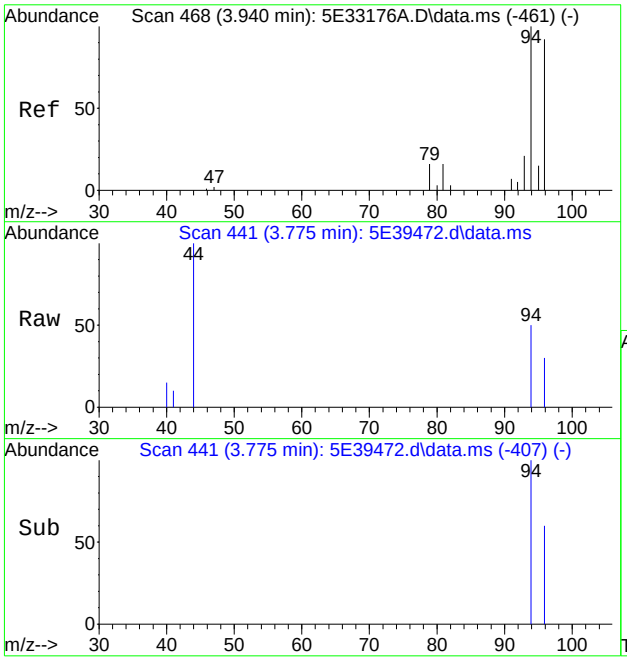


#4
Vinyl Chloride
Concen: 22.68 ug/L
RT: 3.263 min Scan# 357
Delta R.T. 0.000 min
Lab File: 5E39472.d
Acq: 4 May 2023 6:04 pm

Tgt Ion: 62 Resp: 56333

Ion	Ratio	Lower	Upper
62	100		
64	31.3	1.2	61.2

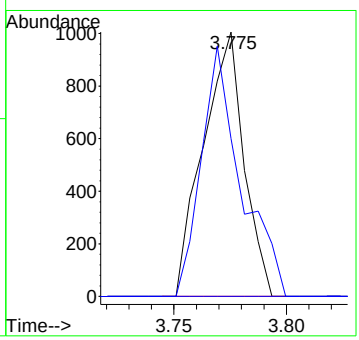


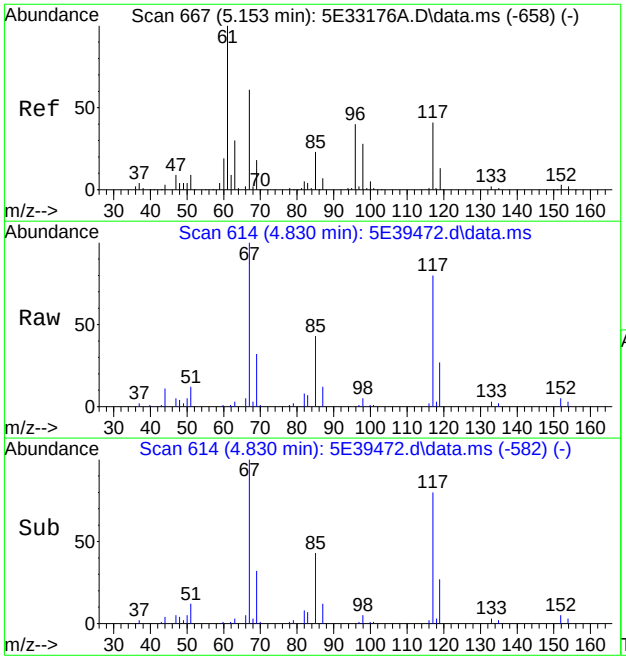


#6
Bromomethane
Concen: 1.01 ug/L
RT: 3.775 min Scan# 441
Delta R.T. 0.006 min
Lab File: 5E39472.d
Acq: 4 May 2023 6:04 pm

Tgt Ion: 94 Resp: 1266

Ion	Ratio	Lower	Upper
94	100		
96	59.6	60.9	120.9#
93	0.0	0.0	50.7

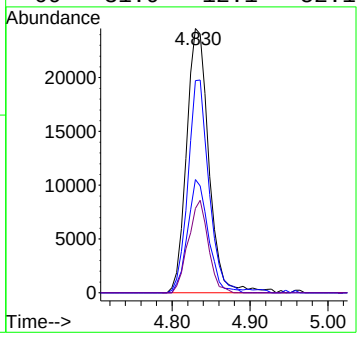


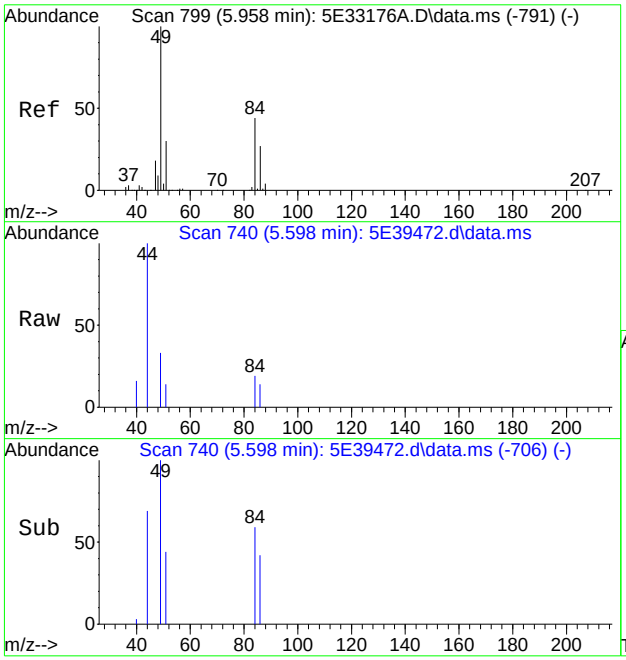


#11
1,2-Dichlorotrifluoroethane
Concen: 19.70 ug/L
RT: 4.830 min Scan# 614
Delta R.T. -0.006 min
Lab File: 5E39472.d
Acq: 4 May 2023 6:04 pm

Tgt Ion: 67 Resp: 48949

Ion	Ratio	Lower	Upper
67	100		
117	80.2	49.1	89.1
85	42.8	18.9	58.9
69	31.9	12.1	52.1

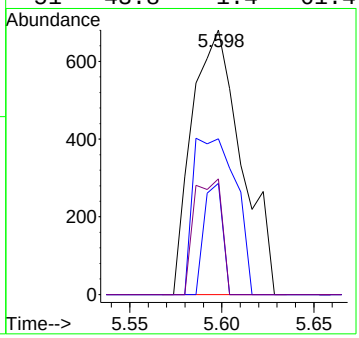


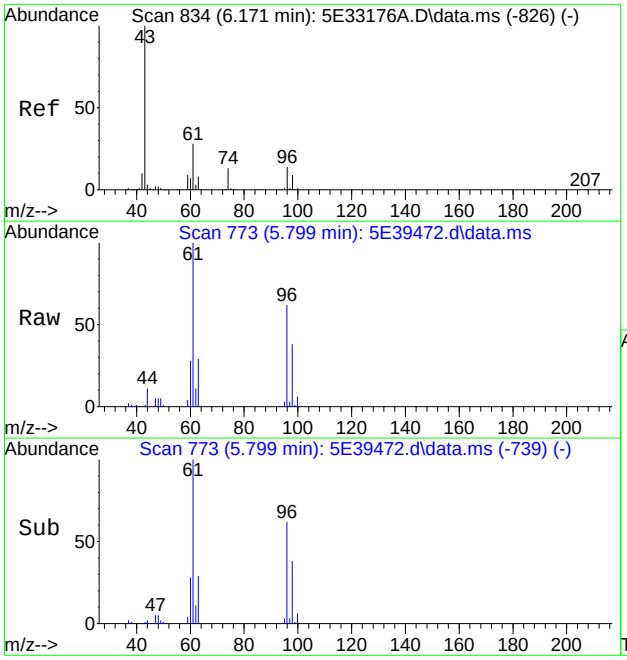


#18
Methylene Chloride
Concen: 0.32 ug/L
RT: 5.598 min Scan# 740
Delta R.T. 0.006 min
Lab File: 5E39472.d
Acq: 4 May 2023 6:04 pm

Tgt Ion: 49 Resp: 1274

Ion	Ratio	Lower	Upper
49	100		
84	58.9	35.4	95.4
86	42.0	11.3	71.3
51	43.8	1.4	61.4

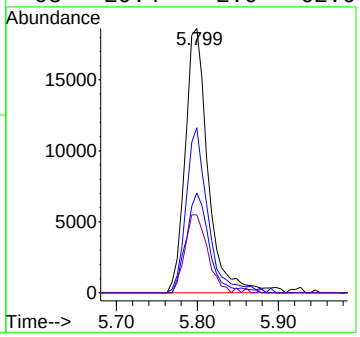


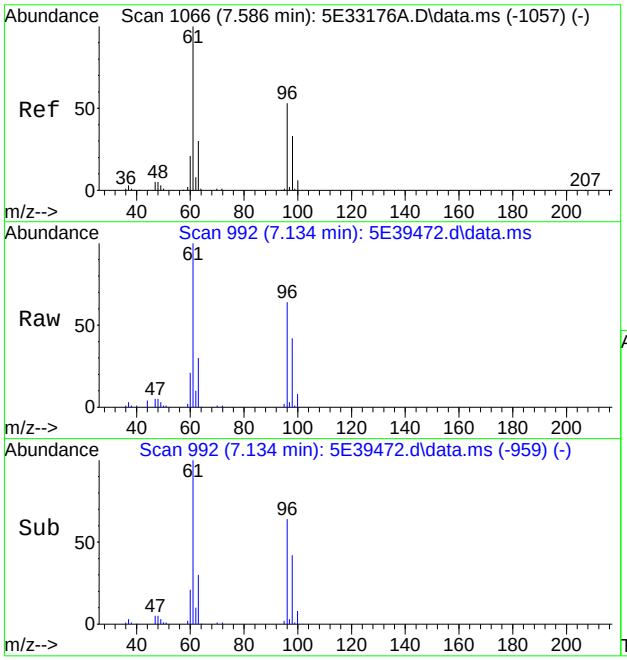


#21
trans-1,2-Dichloroethene
Concen: 10.79 ug/L
RT: 5.799 min Scan# 773
Delta R.T. 0.006 min
Lab File: 5E39472.d
Acq: 4 May 2023 6:04 pm

Tgt Ion: 61 Resp: 36761

Ion	Ratio	Lower	Upper
61	100		
96	62.4	30.9	90.9
98	37.7	8.8	68.8
63	29.4	2.0	62.0

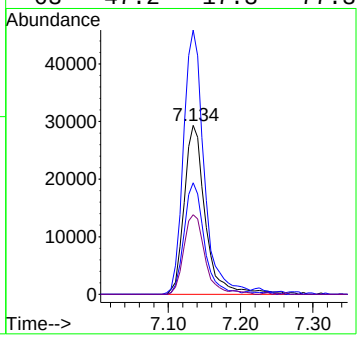


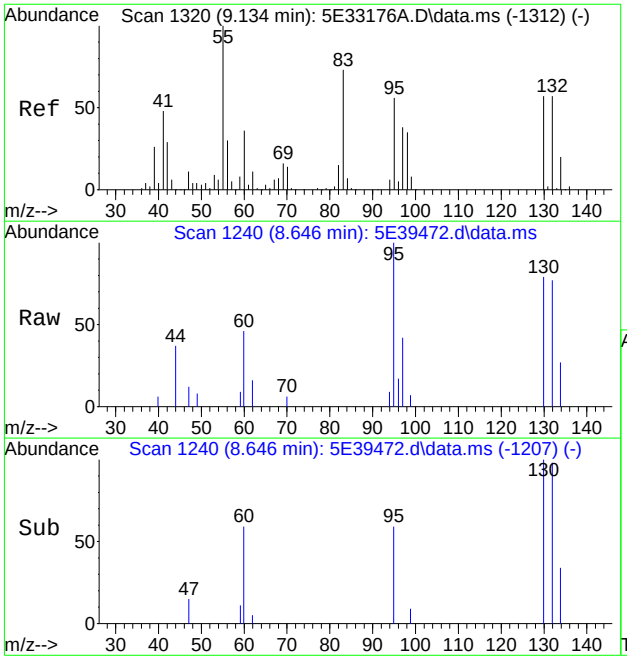


#32
cis-1,2-Dichloroethene
Concen: 24.11 ug/L
RT: 7.134 min Scan# 992
Delta R.T. 0.000 min
Lab File: 5E39472.d
Acq: 4 May 2023 6:04 pm

Tgt Ion: 96 Resp: 59802

Ion	Ratio	Lower	Upper
96	100		
61	156.4	121.2	181.2
98	66.1	33.9	93.9
63	47.2	17.3	77.3

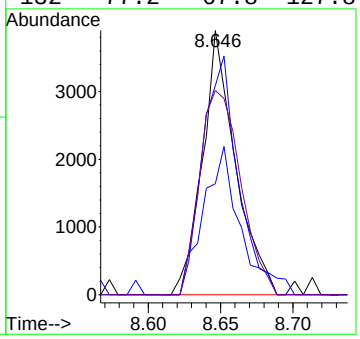




#52
Trichloroethene
Concen: 2.66 ug/L
RT: 8.646 min Scan# 1240
Delta R.T. 0.000 min
Lab File: 5E39472.d
Acq: 4 May 2023 6:04 pm

Tgt Ion: 95 Resp: 6221

Ion	Ratio	Lower	Upper
95	100		
130	79.0	72.6	132.6
97	42.0	38.0	98.0
132	77.2	67.8	127.8



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\johnm\May 2023\05-04-2023\vi2913\
Data File : I756420.d
Acq On : 4 May 2023 4:27 am
Operator : jeniferw
Sample : FC5659-11 Inst : MSVOA16
Misc : MS53924,VI2913,,,,,
ALS Vial : 47 Sample Multiplier: 1

Quant Method : C:\msdchem\2\methods\VI-2023-05-02.m
Quant Results File: VI-2023-05-02.RES
Quant Time: May 04 07:19:24 2023
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

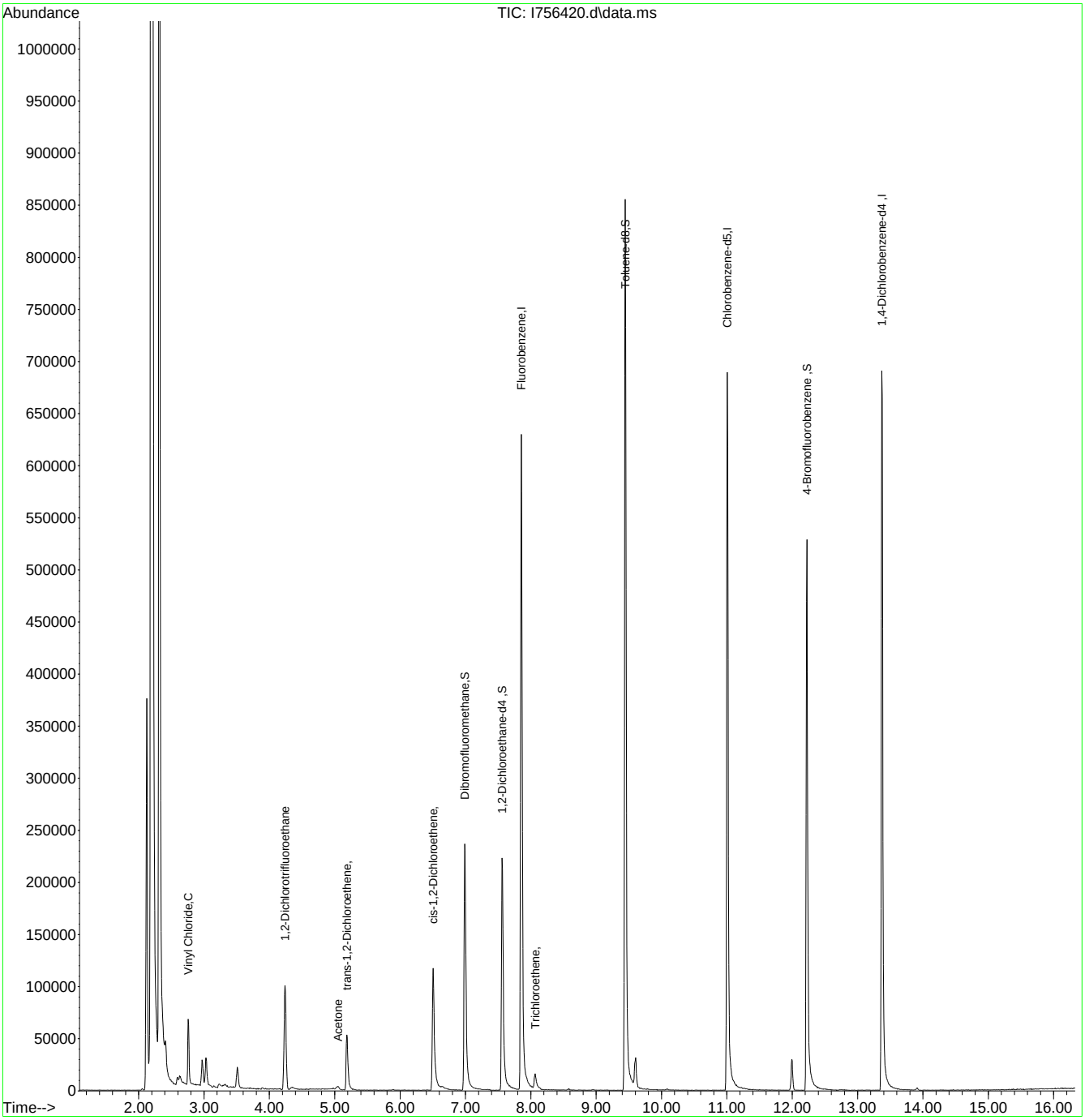
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.854	96	548673	50.00	ug/L	0.00
62) Chlorobenzene-d5	11.006	117	391772	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.371	152	189961	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	6.988	113	154950	49.91	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.82%			
49) 1,2-Dichloroethane-d4	7.561	65	168842	49.73	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 99.46%			
63) Toluene-d8	9.445	98	542135	49.91	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 99.82%			
86) 4-Bromofluorobenzene	12.225	174	150302	50.82	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.64%			
Target Compounds						Qvalue
4) Vinyl Chloride	2.757	62	52205	21.17	ug/L	100
10) 1,2-Dichlorotrifluoroe...	4.239	67	59385	24.39	ug/L	89
19) Acetone	5.049	43	3407	2.08	ug/L	95
21) trans-1,2-Dichloroethene	5.184	61	34666	11.09	ug/L	92
32) cis-1,2-Dichloroethene	6.506	96	61297	27.88	ug/L	96
53) Trichloroethene	8.067	95	6786	2.91	ug/L	82

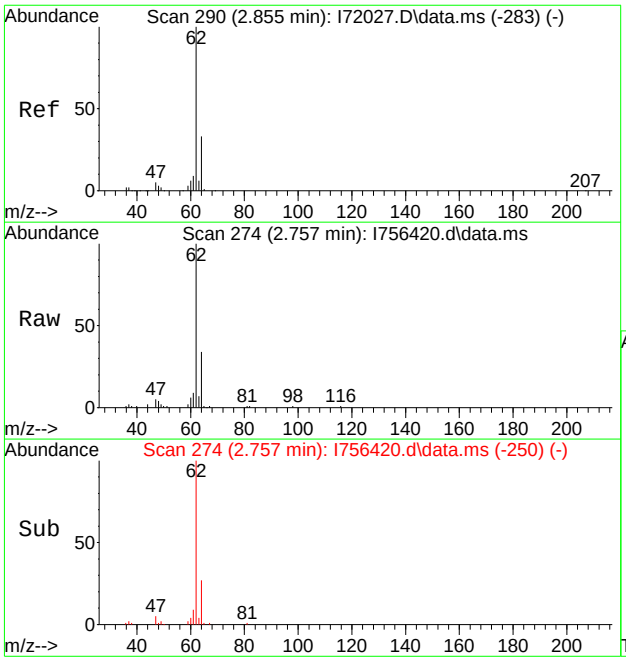
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\johnm\May 2023\05-04-2023\vi2913\
Data File : I756420.d
Acq On : 4 May 2023 4:27 am
Operator : jeniferw
Sample : FC5659-11 Inst : MSVOA16
Misc : MS53924,VI2913,,,,,
ALS Vial : 47 Sample Multiplier: 1

Quant Method : C:\msdchem\2\methods\VI-2023-05-02.m
Quant Results File: VI-2023-05-02.RES
Quant Time: May 04 07:19:24 2023
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

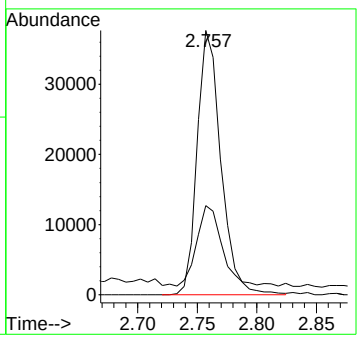


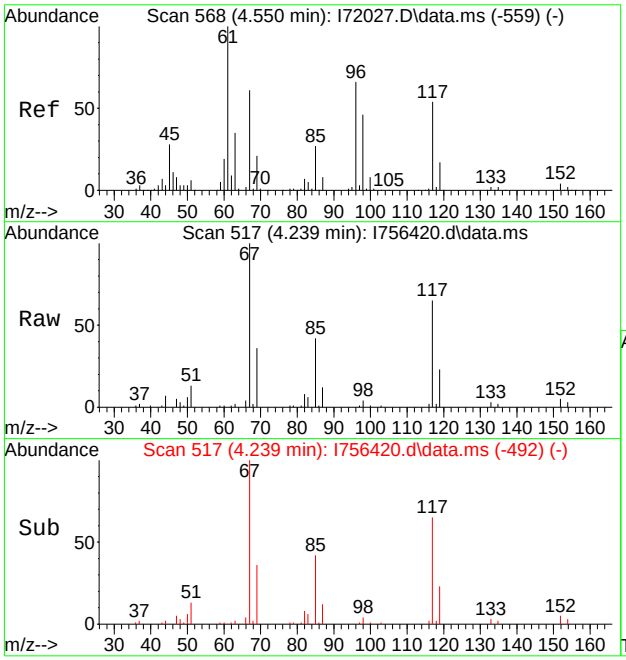


#4
Vinyl Chloride
Concen: 21.17 ug/L
RT: 2.757 min Scan# 274
Delta R.T. -0.006 min
Lab File: I756420.d
Acq: 4 May 2023 4:27 am

Tgt Ion: 62 Resp: 52205

Ion	Ratio	Lower	Upper
62	100		
64	30.2	0.2	60.2

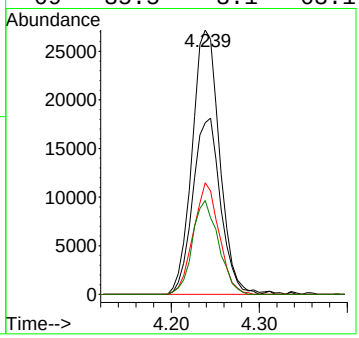


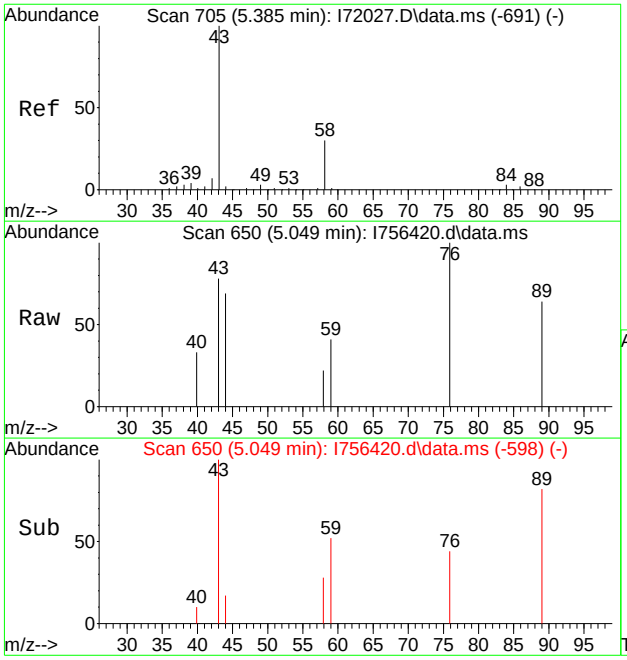


#10
1,2-Dichlorotrifluoroethane
Concen: 24.39 ug/L
RT: 4.239 min Scan# 517
Delta R.T. 0.001 min
Lab File: I756420.d
Acq: 4 May 2023 4:27 am

Tgt Ion: 67 Resp: 59385

Ion	Ratio	Lower	Upper
67	100		
117	64.8	51.9	111.9
85	42.2	13.5	73.5
69	35.5	3.1	63.1

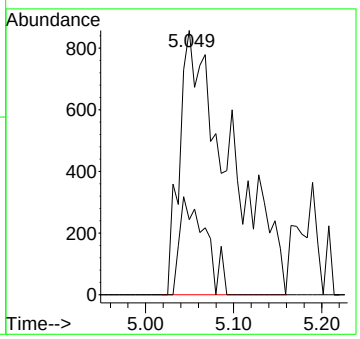


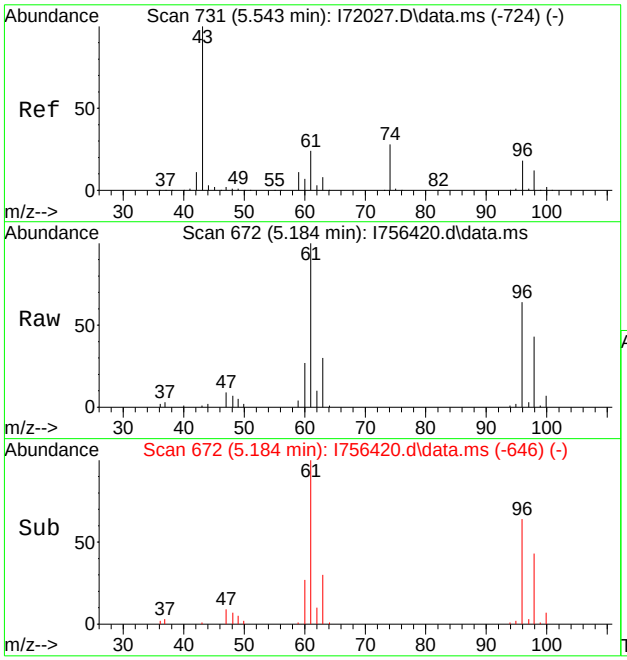


#19
Acetone
Concen: 2.08 ug/L
RT: 5.049 min Scan# 650
Delta R.T. 0.018 min
Lab File: I756420.d
Acq: 4 May 2023 4:27 am

Tgt Ion: 43 Resp: 3407

Ion	Ratio	Lower	Upper
43	100		
58	28.4	1.0	61.0

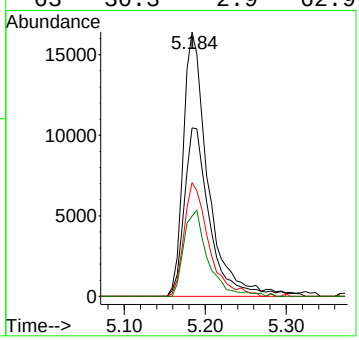


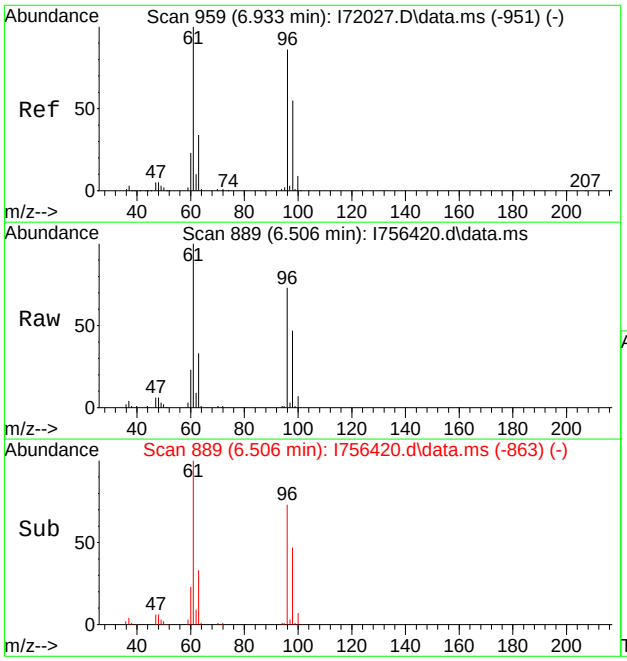


#21
trans-1,2-Dichloroethene
Concen: 11.09 ug/L
RT: 5.184 min Scan# 672
Delta R.T. 0.007 min
Lab File: I756420.d
Acq: 4 May 2023 4:27 am

Tgt Ion: 61 Resp: 34666

Ion	Ratio	Lower	Upper
61	100		
96	63.7	44.5	104.5
98	43.0	15.5	75.5
63	30.3	2.9	62.9

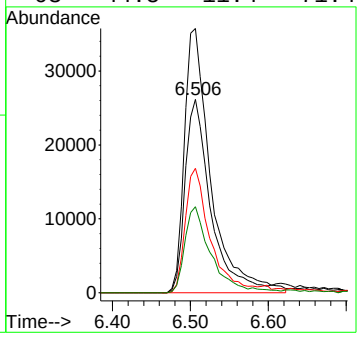


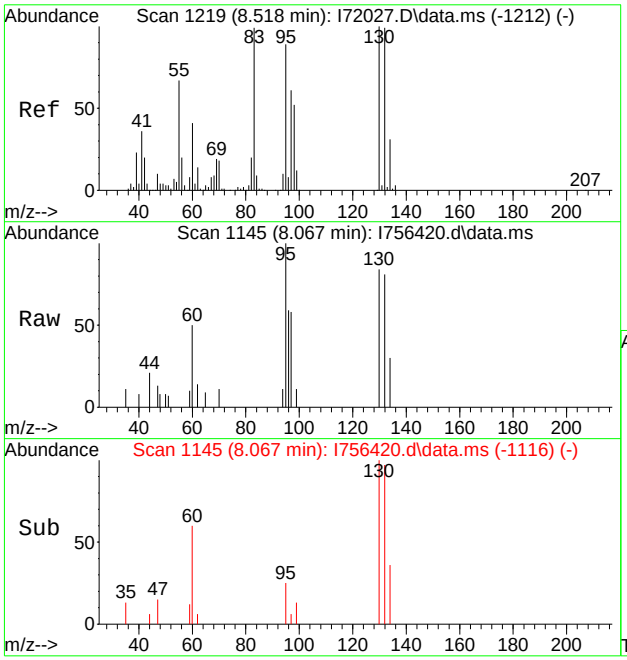


#32
cis-1,2-Dichloroethene
Concen: 27.88 ug/L
RT: 6.506 min Scan# 889
Delta R.T. 0.006 min
Lab File: I756420.d
Acq: 4 May 2023 4:27 am

Tgt Ion: 96 Resp: 61297

Ion	Ratio	Lower	Upper
96	100		
61	136.7	100.0	160.0
98	64.4	35.1	95.1
63	44.5	11.4	71.4

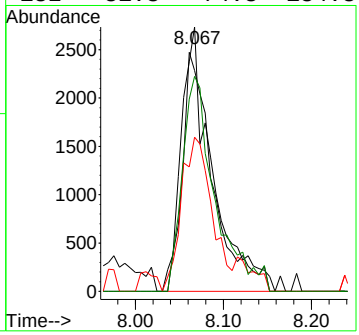




#53
Trichloroethene
Concen: 2.91 ug/L
RT: 8.067 min Scan# 1145
Delta R.T. 0.024 min
Lab File: I756420.d
Acq: 4 May 2023 4:27 am

Tgt Ion: 95 Resp: 6786

Ion	Ratio	Lower	Upper
95	100		
130	83.6	73.6	133.6
97	58.3	35.5	95.5
132	81.3	74.3	134.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-05-2023\V5E1766\
Data File : 5E39473.d
Acq On : 4 May 2023 6:29 pm
Operator : joannel
Sample : FC5659-12
Misc : MS53934,V5E1766,,,,,
ALS Vial : 18 Sample Multiplier: 1

Quant Time: May 05 00:06:29 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

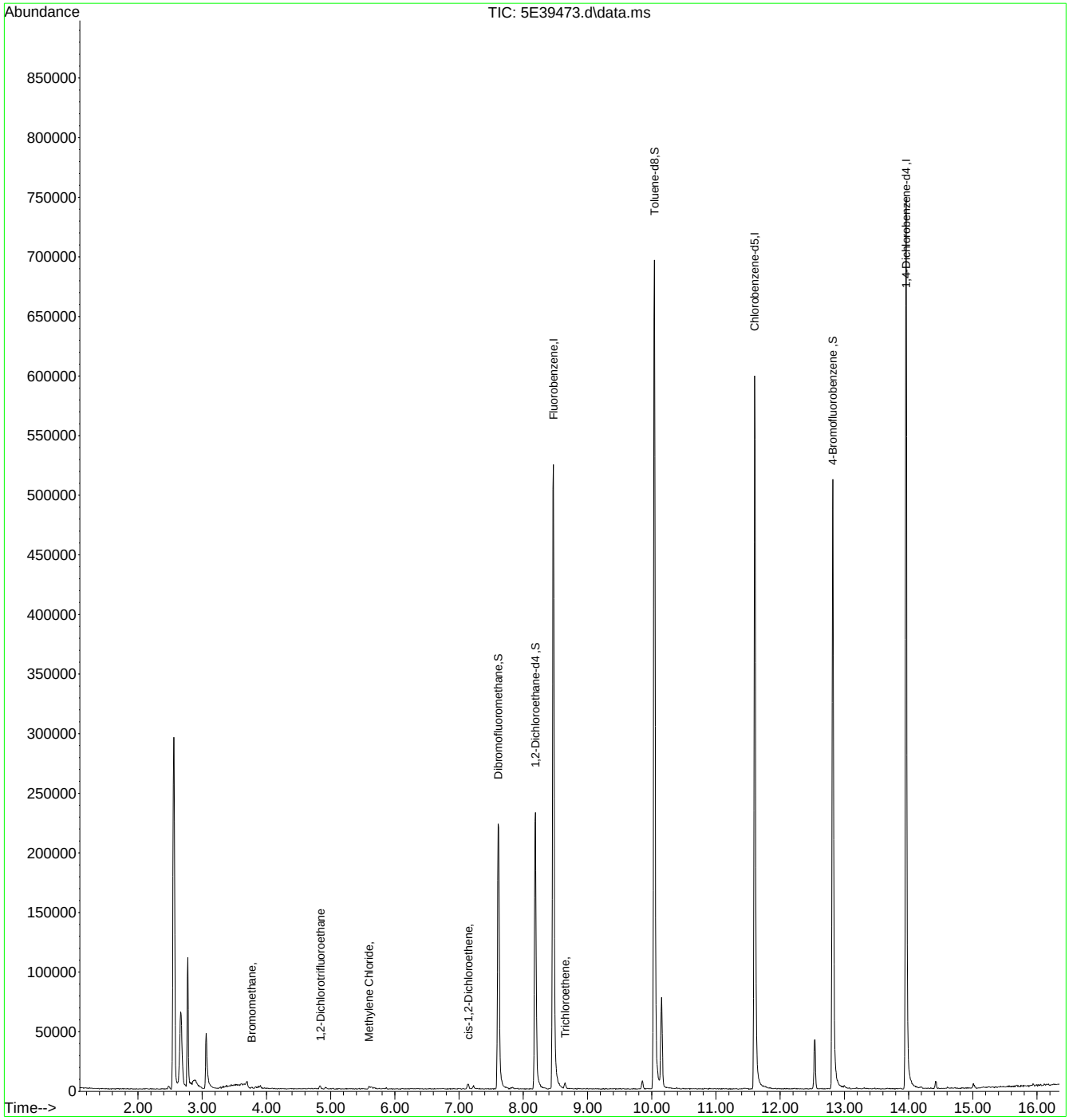
Compound		R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards							
1) Fluorobenzene		8.469	96	432328	50.00	ug/L	0.00
61) Chlorobenzene-d5		11.603	117	334220	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4		13.962	152	195218	50.00	ug/L	0.00
System Monitoring Compounds							
39) Dibromofluoromethane		7.610	113	133016	51.13	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	102.26%		
49) 1,2-Dichloroethane-d4		8.189	65	163901	60.03	ug/L	0.00
Spiked Amount	50.000	Range 79 - 125		Recovery =	120.06%		
62) Toluene-d8		10.042	98	426697	50.95	ug/L	0.00
Spiked Amount	50.000	Range 85 - 112		Recovery =	101.90%		
86) 4-Bromofluorobenzene		12.816	95	167080	48.67	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	97.34%		
Target Compounds							Qvalue
6) Bromomethane		3.769	94	813	0.68	ug/L	85
11) 1,2-Dichlorotrifluoroe...		4.842	67	1473	0.61	ug/L #	80
18) Methylene Chloride		5.598	49	1495	0.40	ug/L	95
32) cis-1,2-Dichloroethene		7.146	96	1816	0.77	ug/L	93
52) Trichloroethene		8.652	95	1752	0.78	ug/L	85

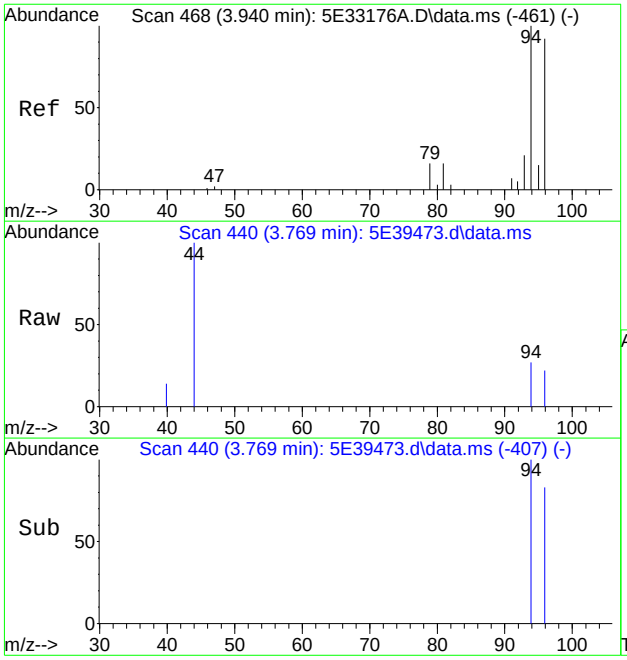
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-05-2023\V5E1766\
Data File : 5E39473.d
Acq On : 4 May 2023 6:29 pm
Operator : joannel
Sample : FC5659-12
Misc : MS53934,V5E1766,,,,,
ALS Vial : 18 Sample Multiplier: 1

Quant Time: May 05 00:06:29 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

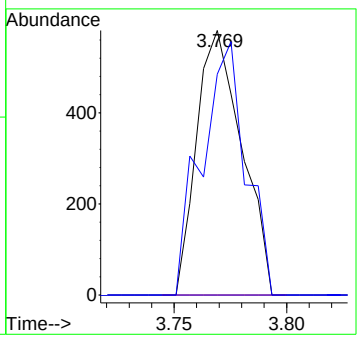


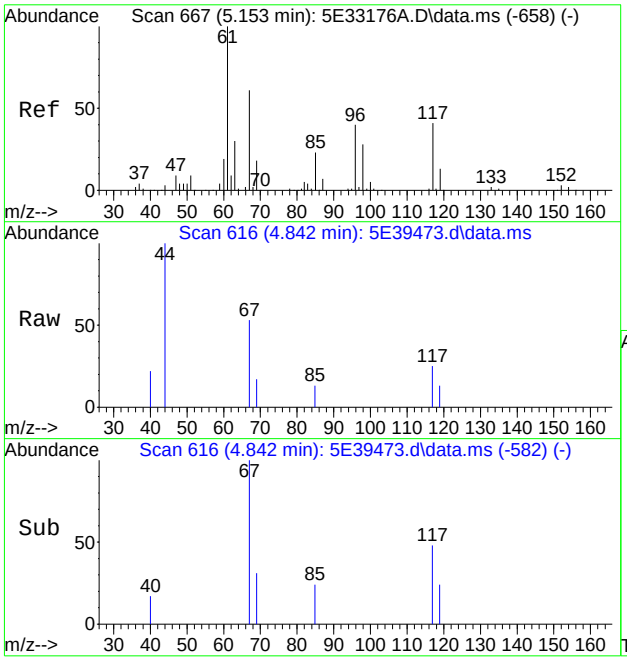


#6
Bromomethane
Concen: 0.68 ug/L
RT: 3.769 min Scan# 440
Delta R.T. 0.000 min
Lab File: 5E39473.d
Acq: 4 May 2023 6:29 pm

Tgt Ion: 94 Resp: 813

Ion	Ratio	Lower	Upper
94	100		
96	83.5	60.9	120.9
93	0.0	0.0	50.7

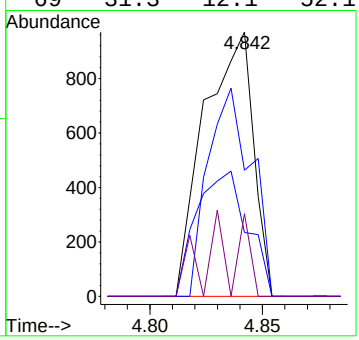


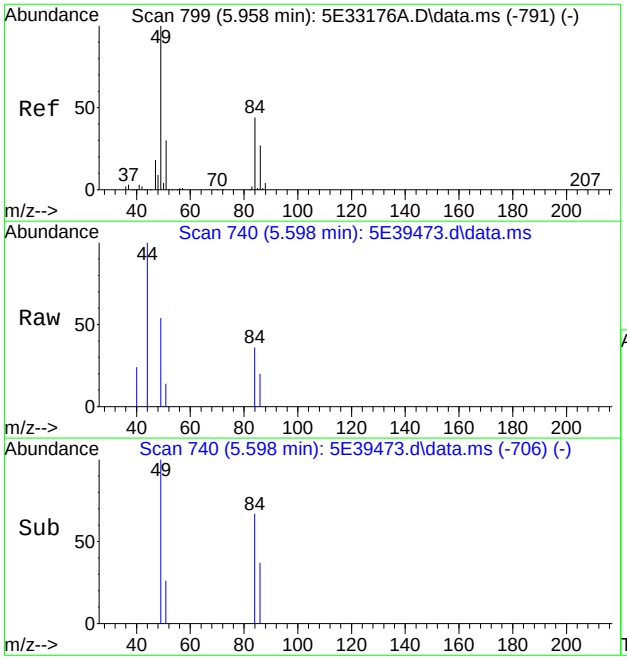


#11
1,2-Dichlorotrifluoroethane
Concen: 0.61 ug/L
RT: 4.842 min Scan# 616
Delta R.T. 0.006 min
Lab File: 5E39473.d
Acq: 4 May 2023 6:29 pm

Tgt Ion: 67 Resp: 1473

Ion	Ratio	Lower	Upper
67	100		
117	47.7	49.1	89.1#
85	24.2	18.9	58.9
69	31.3	12.1	52.1

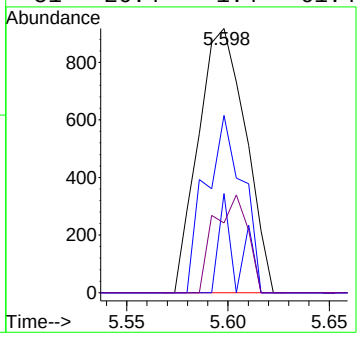


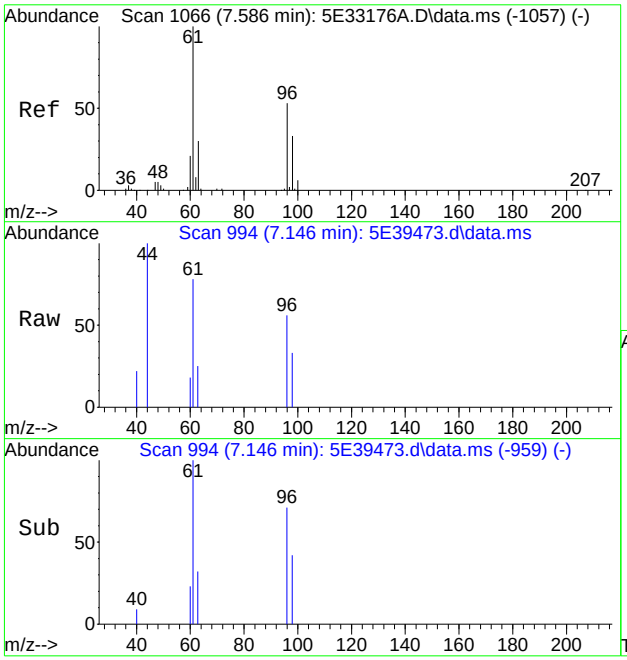


#18
Methylene Chloride
Concen: 0.40 ug/L
RT: 5.598 min Scan# 740
Delta R.T. 0.006 min
Lab File: 5E39473.d
Acq: 4 May 2023 6:29 pm

Tgt Ion: 49 Resp: 1495

Ion	Ratio	Lower	Upper
49	100		
84	67.1	35.4	95.4
86	37.5	11.3	71.3
51	26.4	1.4	61.4

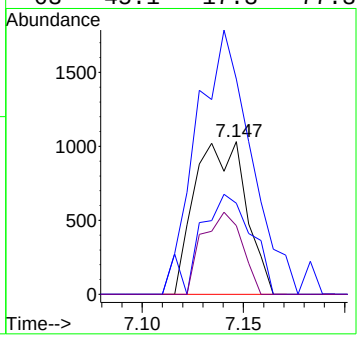


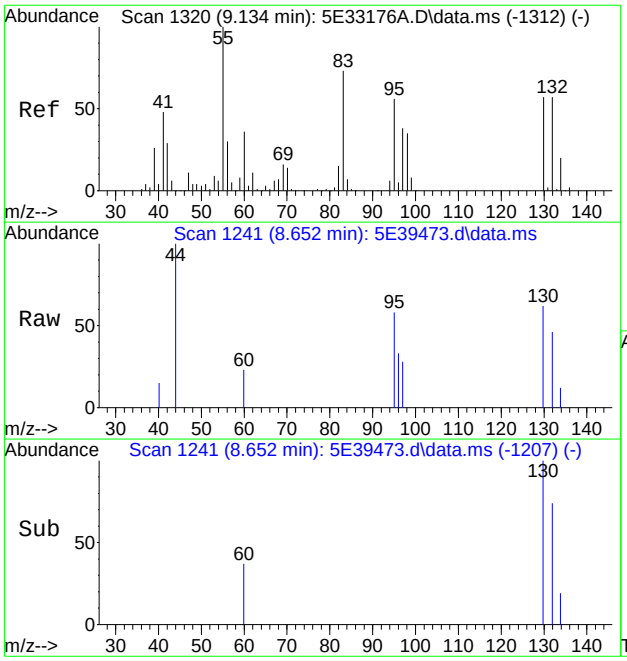


#32
cis-1,2-Dichloroethene
Concen: 0.77 ug/L
RT: 7.146 min Scan# 994
Delta R.T. 0.012 min
Lab File: 5E39473.d
Acq: 4 May 2023 6:29 pm

Tgt Ion: 96 Resp: 1816

Ion	Ratio	Lower	Upper
96	100		
61	140.9	121.2	181.2
98	59.6	33.9	93.9
63	45.1	17.3	77.3

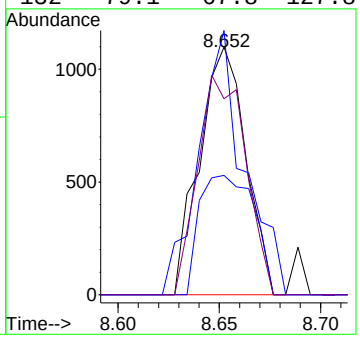




#52
Trichloroethene
Concen: 0.78 ug/L
RT: 8.652 min Scan# 1241
Delta R.T. 0.006 min
Lab File: 5E39473.d
Acq: 4 May 2023 6:29 pm

Tgt Ion: 95 Resp: 1752

Ion	Ratio	Lower	Upper
95	100		
130	106.7	72.6	132.6
97	48.3	38.0	98.0
132	79.1	67.8	127.8



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\johnm\May 2023\05-04-2023\vi2913\
Data File : I756421.d
Acq On : 4 May 2023 4:51 am
Operator : jeniferw
Sample : FC5659-12 Inst : MSVOA16
Misc : MS53924,VI2913,,,,,
ALS Vial : 48 Sample Multiplier: 1

Quant Method : C:\msdchem\2\methods\VI-2023-05-02.m
Quant Results File: VI-2023-05-02.RES
Quant Time: May 04 07:19:59 2023
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

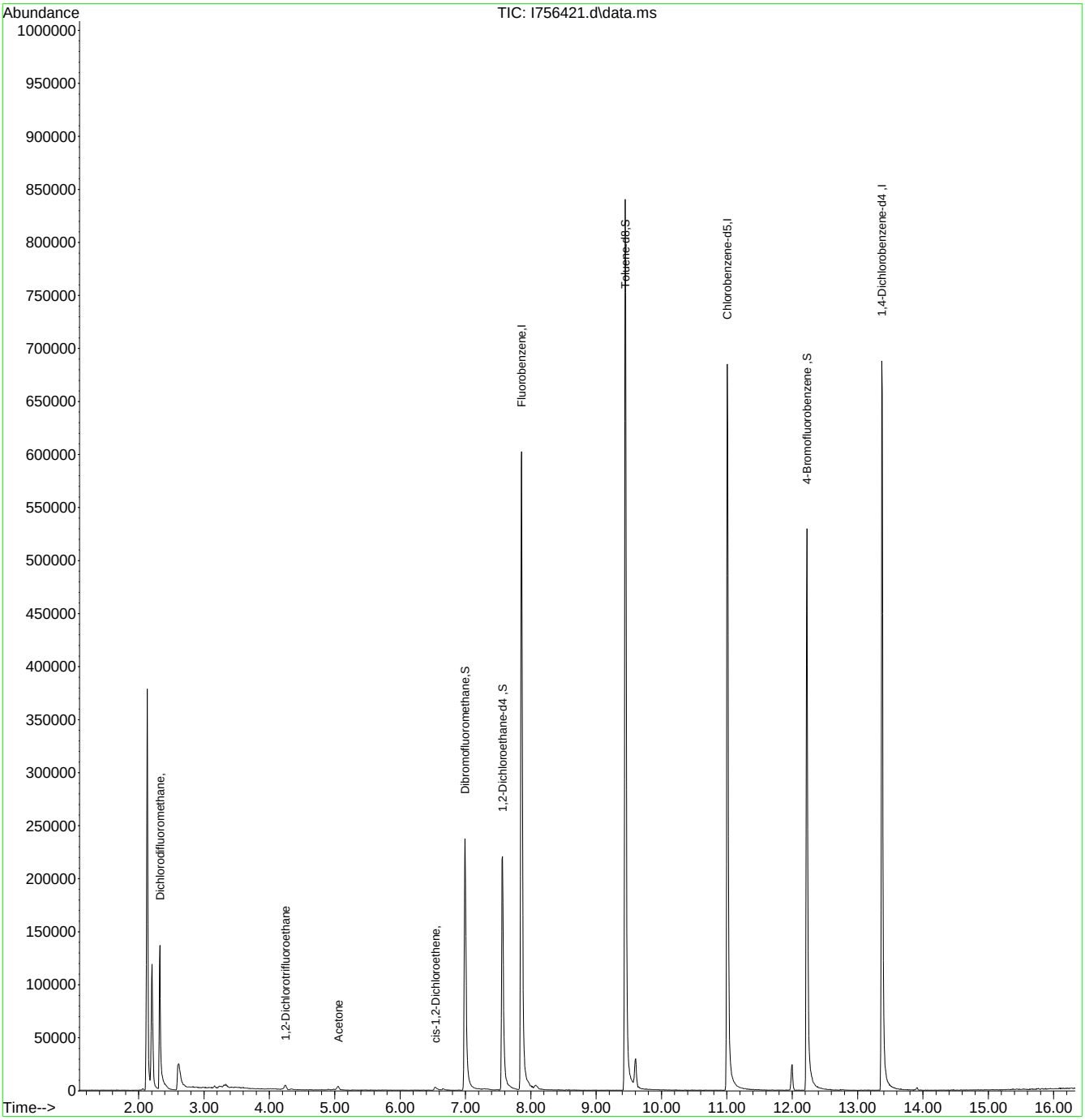
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.860	96	534793	50.00	ug/L	0.00
62) Chlorobenzene-d5	11.006	117	386059	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.371	152	188222	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	6.994	113	152605	50.43	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.86%			
49) 1,2-Dichloroethane-d4	7.567	65	165926	50.14	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 100.28%			
63) Toluene-d8	9.445	98	533249	49.82	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 99.64%			
86) 4-Bromofluorobenzene	12.225	174	147268	50.25	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.50%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.324	85	11162	6.77	ug/L	99
10) 1,2-Dichlorotrifluoroe...	4.245	67	2164	0.91	ug/L	93
19) Acetone	5.056	43	3550	2.22	ug/L	92
32) cis-1,2-Dichloroethene	6.543	96	2118	0.99	ug/L	96

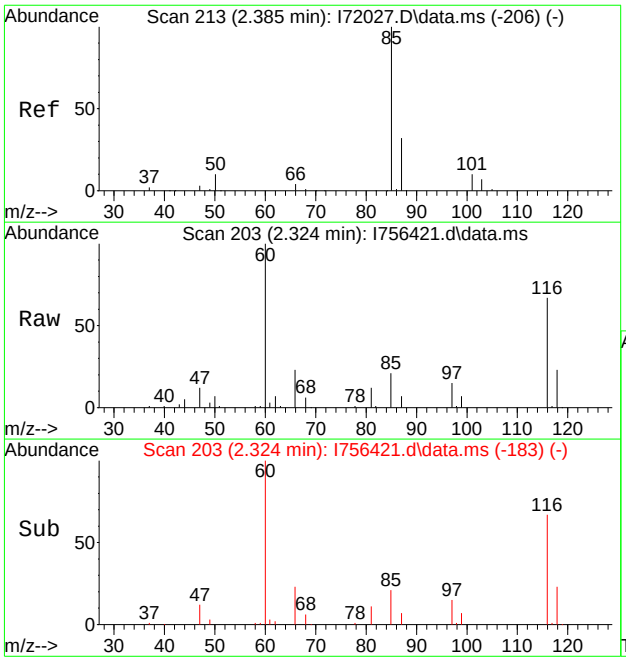
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\johnm\May 2023\05-04-2023\vi2913\
Data File : I756421.d
Acq On : 4 May 2023 4:51 am
Operator : jeniferw
Sample : FC5659-12 Inst : MSVOA16
Misc : MS53924,VI2913,,,,,
ALS Vial : 48 Sample Multiplier: 1

Quant Method : C:\msdchem\2\methods\VI-2023-05-02.m
Quant Results File: VI-2023-05-02.RES
Quant Time: May 04 07:19:59 2023
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

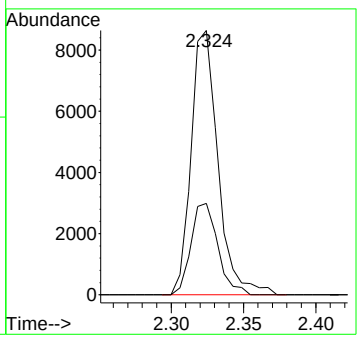


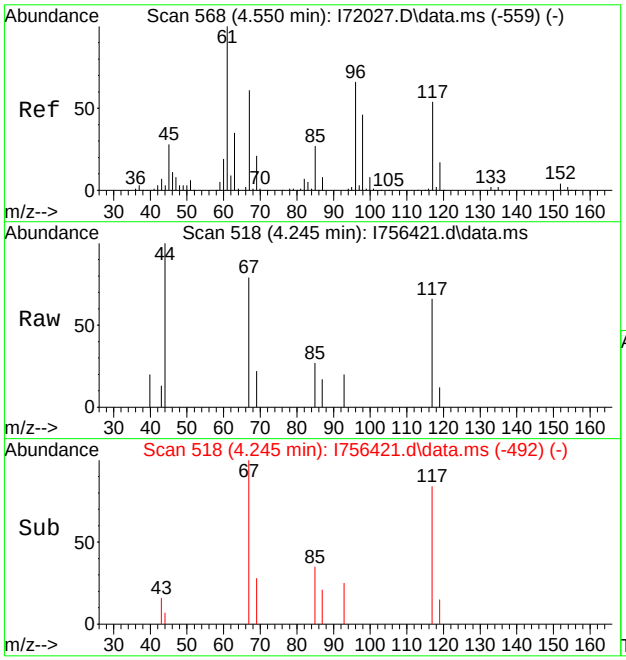


#2
Dichlorodifluoromethane
Concen: 6.77 ug/L
RT: 2.324 min Scan# 203
Delta R.T. -0.031 min
Lab File: I756421.d
Acq: 4 May 2023 4:51 am

Tgt Ion: 85 Resp: 11162

Ion	Ratio	Lower	Upper
85	100		
87	34.5	3.8	63.8

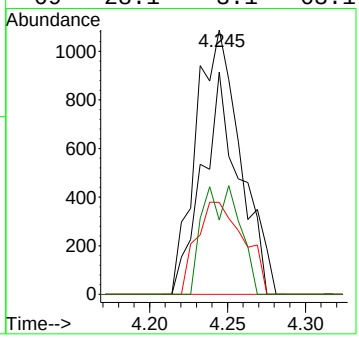


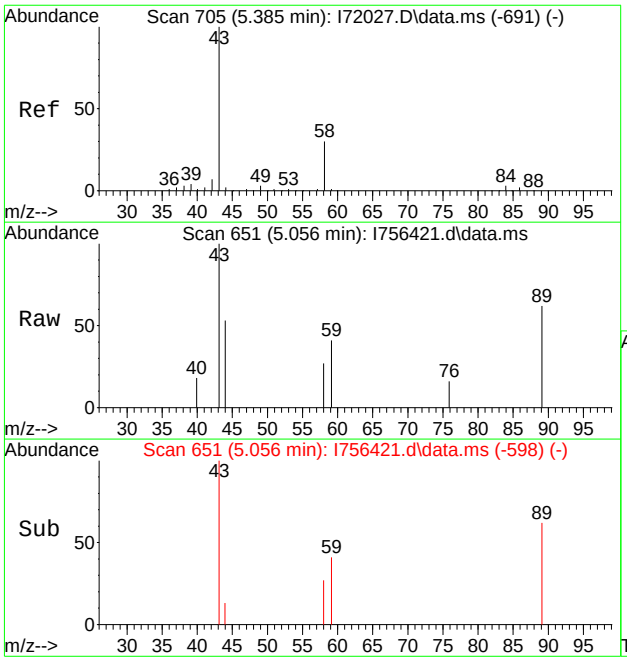


#10
1,2-Dichlorotrifluoroethane
Concen: 0.91 ug/L
RT: 4.245 min Scan# 518
Delta R.T. 0.007 min
Lab File: I756421.d
Acq: 4 May 2023 4:51 am

Tgt Ion: 67 Resp: 2164

Ion	Ratio	Lower	Upper
67	100		
117	84.0	51.9	111.9
85	34.7	13.5	73.5
69	28.1	3.1	63.1

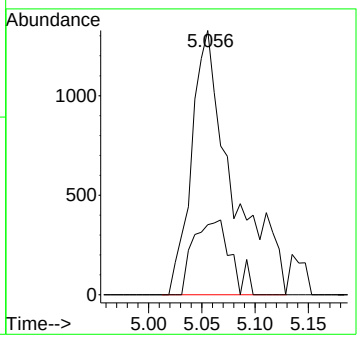


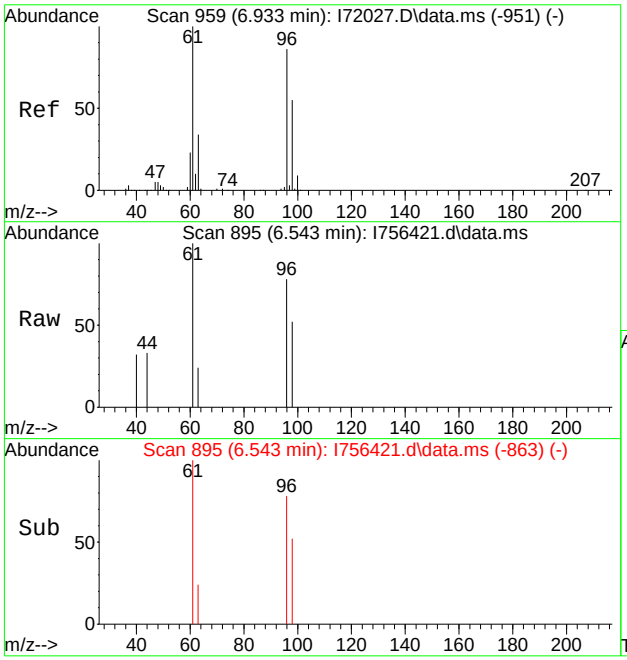


#19
Acetone
Concen: 2.22 ug/L
RT: 5.056 min Scan# 651
Delta R.T. 0.025 min
Lab File: I756421.d
Acq: 4 May 2023 4:51 am

Tgt Ion: 43 Resp: 3550

Ion	Ratio	Lower	Upper
43	100		
58	26.5	1.0	61.0

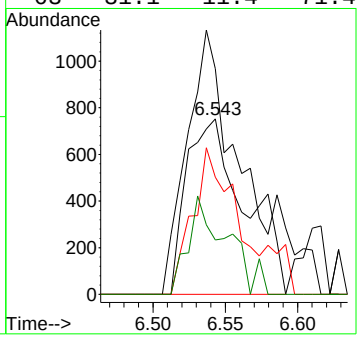




#32
cis-1,2-Dichloroethene
Concen: 0.99 ug/L
RT: 6.543 min Scan# 895
Delta R.T. 0.043 min
Lab File: I756421.d
Acq: 4 May 2023 4:51 am

Tgt Ion: 96 Resp: 2118

Ion	Ratio	Lower	Upper
96	100		
61	128.7	100.0	160.0
98	66.9	35.1	95.1
63	31.1	11.4	71.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-05-2023\V5E1766\
Data File : 5E39474.d
Acq On : 4 May 2023 6:54 pm
Operator : joannel
Sample : FC5659-13
Misc : MS53934,V5E1766,,,,,
ALS Vial : 19 Sample Multiplier: 1

Quant Time: May 05 00:07:04 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

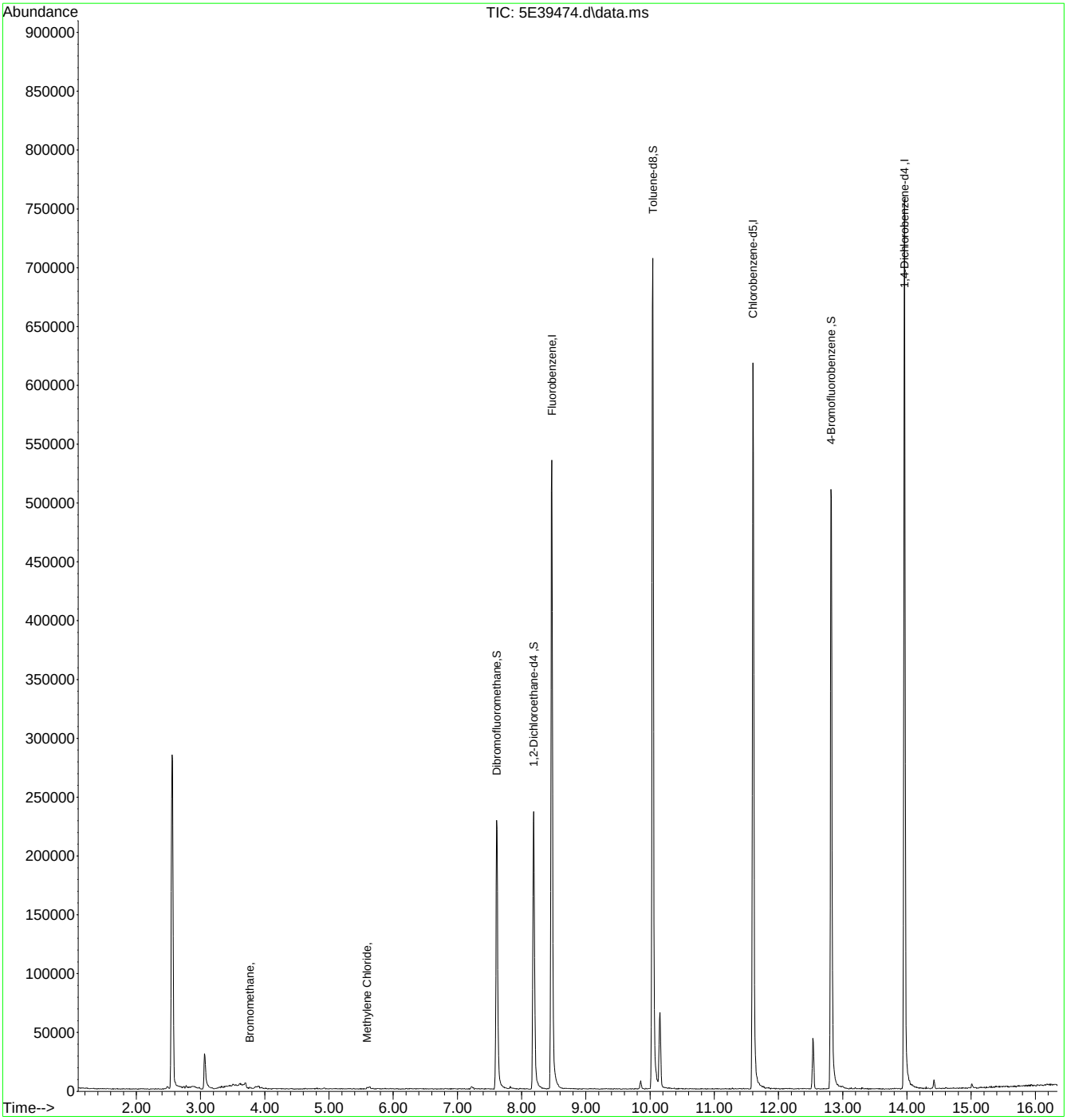
Compound		R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards							
1) Fluorobenzene		8.470	96	436789	50.00	ug/L	0.00
61) Chlorobenzene-d5		11.603	117	337822	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4		13.962	152	197339	50.00	ug/L	0.00
System Monitoring Compounds							
39) Dibromofluoromethane		7.610	113	134897	51.33	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	102.66%		
49) 1,2-Dichloroethane-d4		8.189	65	169424	61.42	ug/L	0.00
Spiked Amount	50.000	Range 79 - 125		Recovery =	122.84%		
62) Toluene-d8		10.042	98	436853	51.61	ug/L	0.00
Spiked Amount	50.000	Range 85 - 112		Recovery =	103.22%		
86) 4-Bromofluorobenzene		12.816	95	169470	48.84	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	97.68%		
Target Compounds							Qvalue
6) Bromomethane		3.763	94	706	0.58	ug/L	# 57
18) Methylene Chloride		5.592	49	1377	0.36	ug/L	# 55

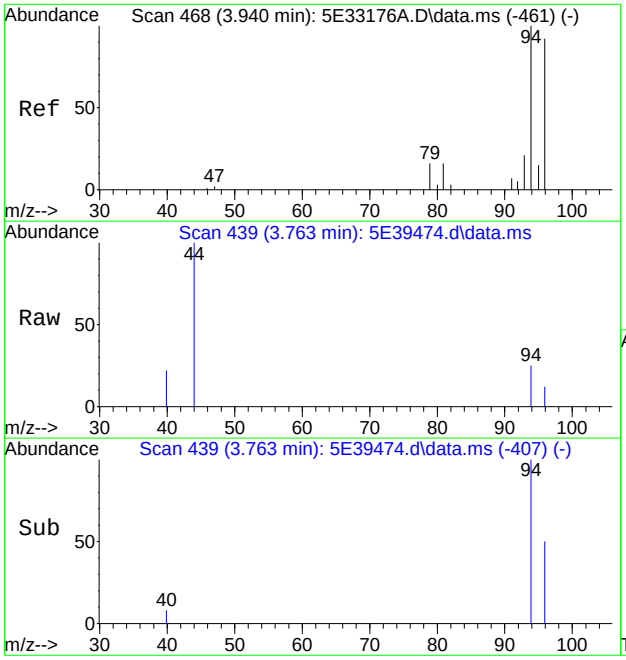
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-05-2023\V5E1766\
Data File : 5E39474.d
Acq On : 4 May 2023 6:54 pm
Operator : joannel
Sample : FC5659-13
Misc : MS53934,V5E1766,,,,,
ALS Vial : 19 Sample Multiplier: 1

Quant Time: May 05 00:07:04 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

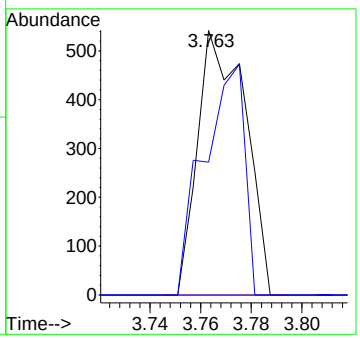


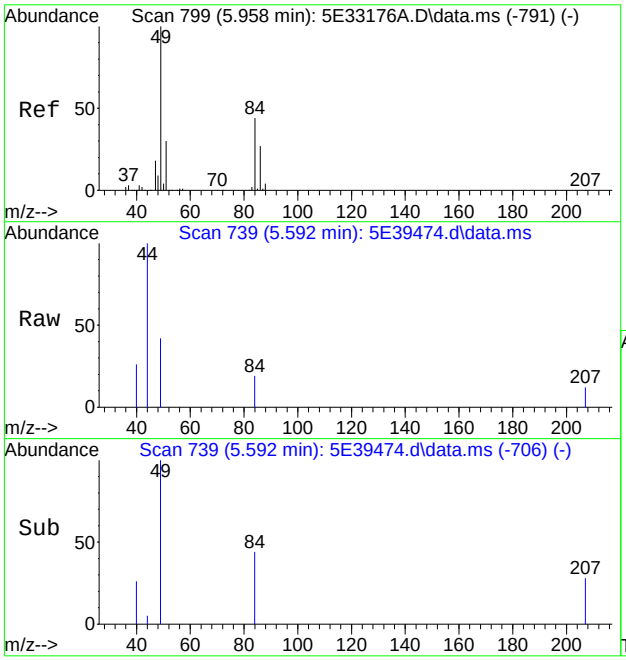


#6
Bromomethane
Concen: 0.58 ug/L
RT: 3.763 min Scan# 439
Delta R.T. -0.006 min
Lab File: 5E39474.d
Acq: 4 May 2023 6:54 pm

Tgt Ion: 94 Resp: 706

Ion	Ratio	Lower	Upper
94	100		
96	50.2	60.9	120.9#
93	0.0	0.0	50.7

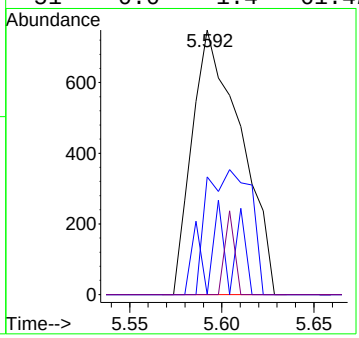




#18
Methylene Chloride
Concen: 0.36 ug/L
RT: 5.592 min Scan# 739
Delta R.T. 0.000 min
Lab File: 5E39474.d
Acq: 4 May 2023 6:54 pm

Tgt Ion: 49 Resp: 1377

Ion	Ratio	Lower	Upper
49	100		
84	44.5	35.4	95.4
86	0.0	11.3	71.3#
51	0.0	1.4	61.4#



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\johnm\May 2023\05-04-2023\vi2913\
Data File : I756422.d
Acq On : 4 May 2023 5:16 am
Operator : jeniferw
Sample : FC5659-13 Inst : MSVOA16
Misc : MS53924,VI2913,,,,,
ALS Vial : 49 Sample Multiplier: 1

Quant Method : C:\msdchem\2\methods\VI-2023-05-02.m
Quant Results File: VI-2023-05-02.RES
Quant Time: May 04 07:20:26 2023
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.854	96	542173	50.00	ug/L	0.00
62) Chlorobenzene-d5	11.006	117	393951	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.377	152	184810	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	6.994	113	154244	50.28	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.56%			
49) 1,2-Dichloroethane-d4	7.561	65	167384	49.89	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 99.78%			
63) Toluene-d8	9.445	98	540016	49.44	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 98.88%			
86) 4-Bromofluorobenzene	12.225	174	149742	52.04	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 104.08%			

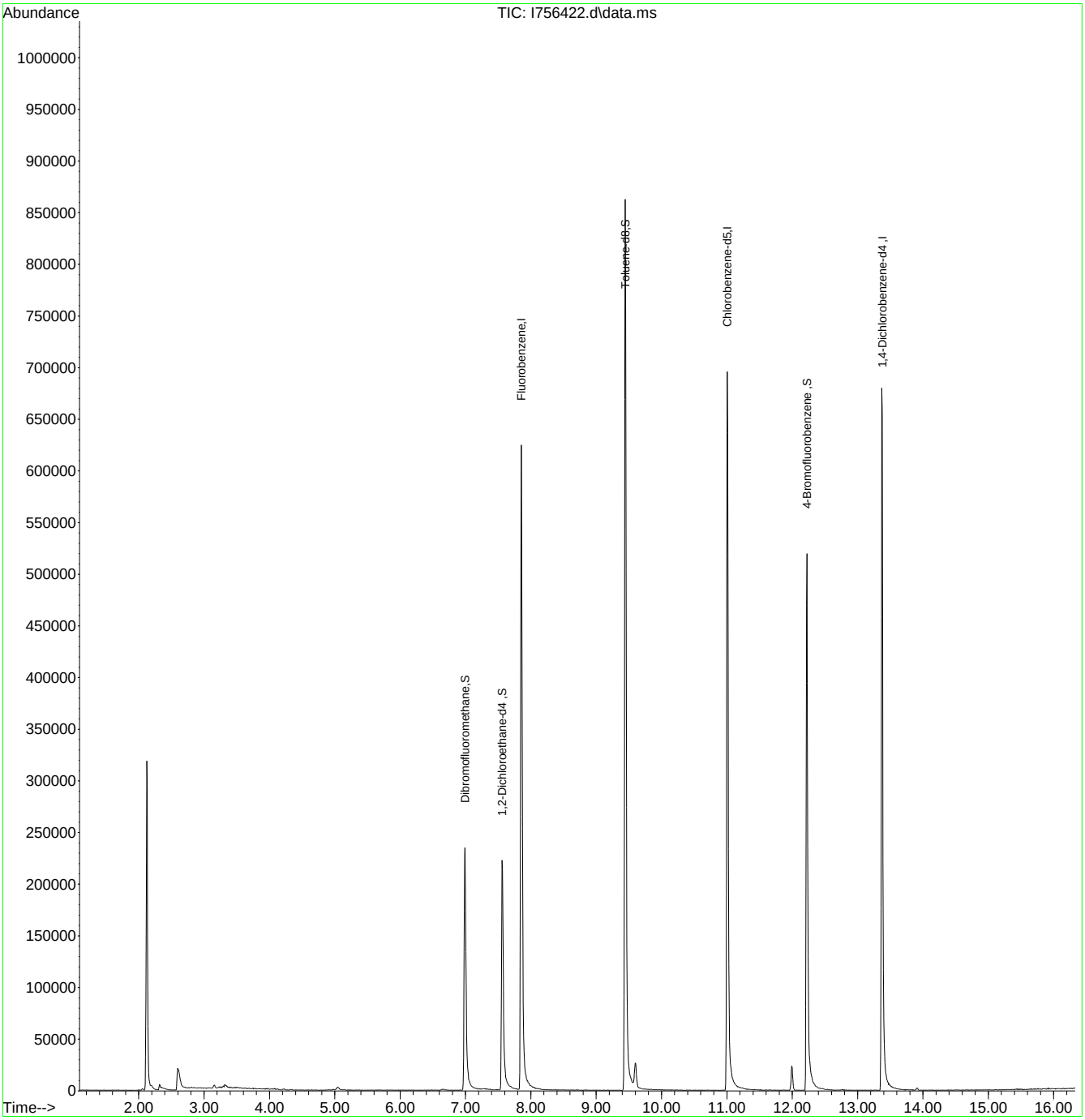
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\johnm\May 2023\05-04-2023\vi2913\
Data File : I756422.d
Acq On : 4 May 2023 5:16 am
Operator : jeniferw
Sample : FC5659-13 Inst : MSVOA16
Misc : MS53924,VI2913,,,,,
ALS Vial : 49 Sample Multiplier: 1

Quant Method : C:\msdchem\2\methods\VI-2023-05-02.m
Quant Results File: VI-2023-05-02.RES
Quant Time: May 04 07:20:26 2023
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-05-2023\V5E1766\
Data File : 5E39475.d
Acq On : 4 May 2023 7:19 pm
Operator : joannel
Sample : FC5659-14
Misc : MS53934,V5E1766,,,,,
ALS Vial : 20 Sample Multiplier: 1

Quant Time: May 05 00:07:35 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

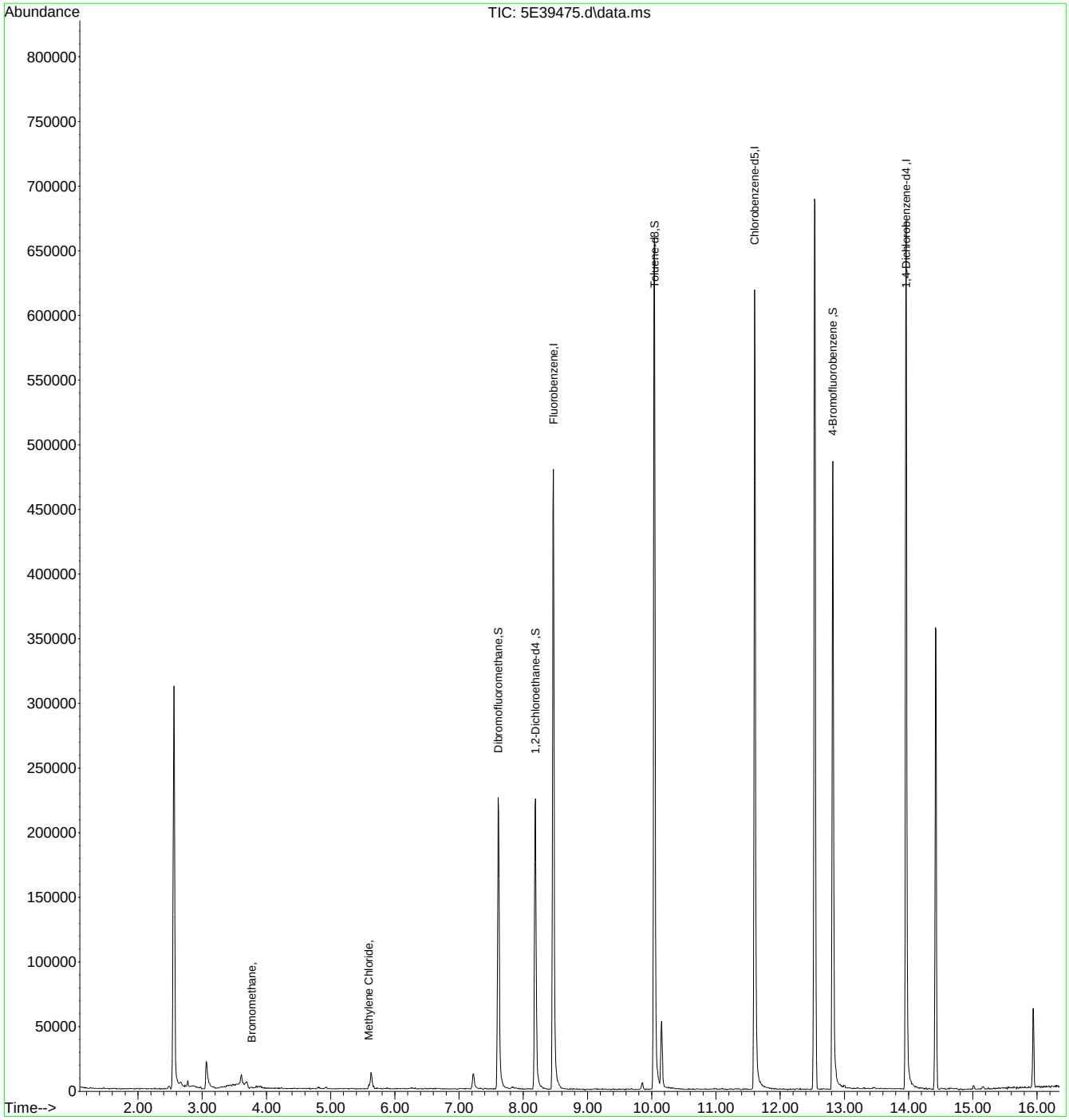
Compound		R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards							
1) Fluorobenzene		8.469	96	391090	50.00	ug/L	0.00
61) Chlorobenzene-d5		11.603	117	335804	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4		13.962	152	173280	50.00	ug/L	0.00
System Monitoring Compounds							
39) Dibromofluoromethane		7.610	113	131518	55.89	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	111.78%		
49) 1,2-Dichloroethane-d4		8.189	65	165065	66.83	ug/L	0.00
Spiked Amount	50.000	Range 79 - 125		Recovery =	133.66%#		
62) Toluene-d8		10.042	98	407470	48.43	ug/L	0.00
Spiked Amount	50.000	Range 85 - 112		Recovery =	96.86%		
86) 4-Bromofluorobenzene		12.816	95	152903	50.18	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	100.36%		
Target Compounds							Qvalue
6) Bromomethane		3.769	94	579	0.54	ug/L	66
18) Methylene Chloride		5.592	49	1694	0.50	ug/L	77

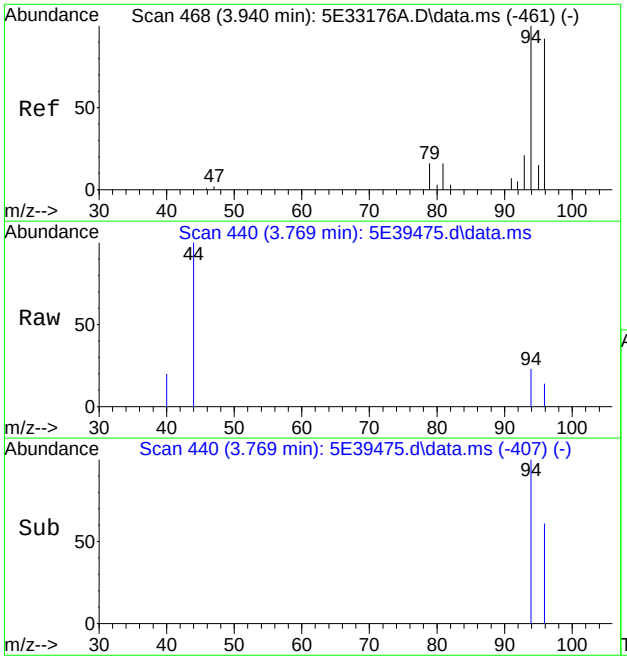
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-05-2023\V5E1766\
Data File : 5E39475.d
Acq On : 4 May 2023 7:19 pm
Operator : joannel
Sample : FC5659-14
Misc : MS53934,V5E1766,,,,,
ALS Vial : 20 Sample Multiplier: 1

Quant Time: May 05 00:07:35 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

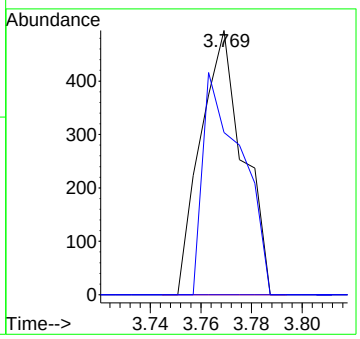


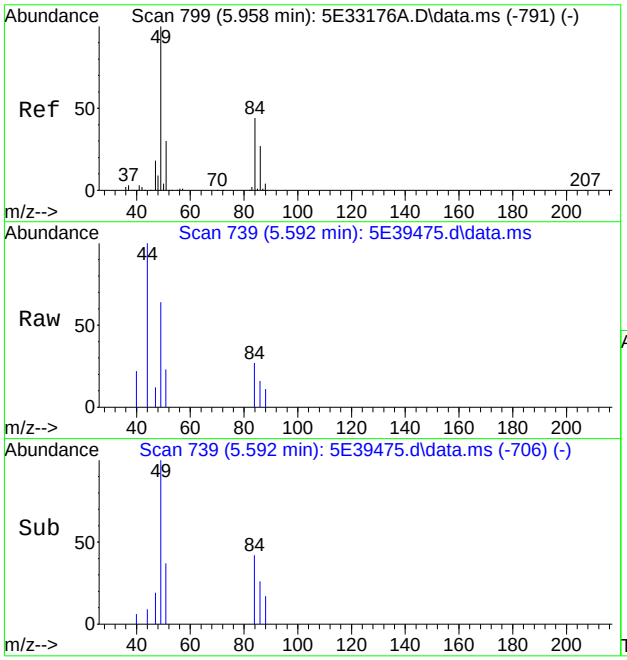


#6
Bromomethane
Concen: 0.54 ug/L
RT: 3.769 min Scan# 440
Delta R.T. 0.000 min
Lab File: 5E39475.d
Acq: 4 May 2023 7:19 pm

Tgt Ion: 94 Resp: 579

Ion	Ratio	Lower	Upper
94	100		
96	61.4	60.9	120.9
93	0.0	0.0	50.7

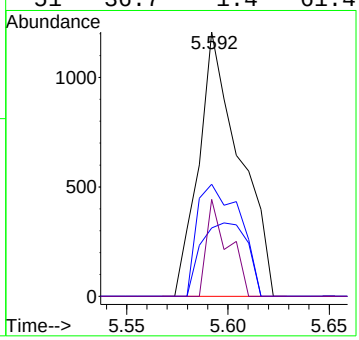




#18
Methylene Chloride
Concen: 0.50 ug/L
RT: 5.592 min Scan# 739
Delta R.T. -0.000 min
Lab File: 5E39475.d
Acq: 4 May 2023 7:19 pm

Tgt Ion: 49 Resp: 1694

Ion	Ratio	Lower	Upper
49	100		
84	42.4	35.4	95.4
86	25.9	11.3	71.3
51	36.7	1.4	61.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\johnm\May 2023\05-04-2023\vi2913\
Data File : I756423.d
Acq On : 4 May 2023 5:41 am
Operator : jeniferw
Sample : FC5659-14 Inst : MSVOA16
Misc : MS53924,VI2913,,,,,
ALS Vial : 50 Sample Multiplier: 1

Quant Method : C:\msdchem\2\methods\VI-2023-05-02.m
Quant Results File: VI-2023-05-02.RES
Quant Time: May 04 07:20:46 2023
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

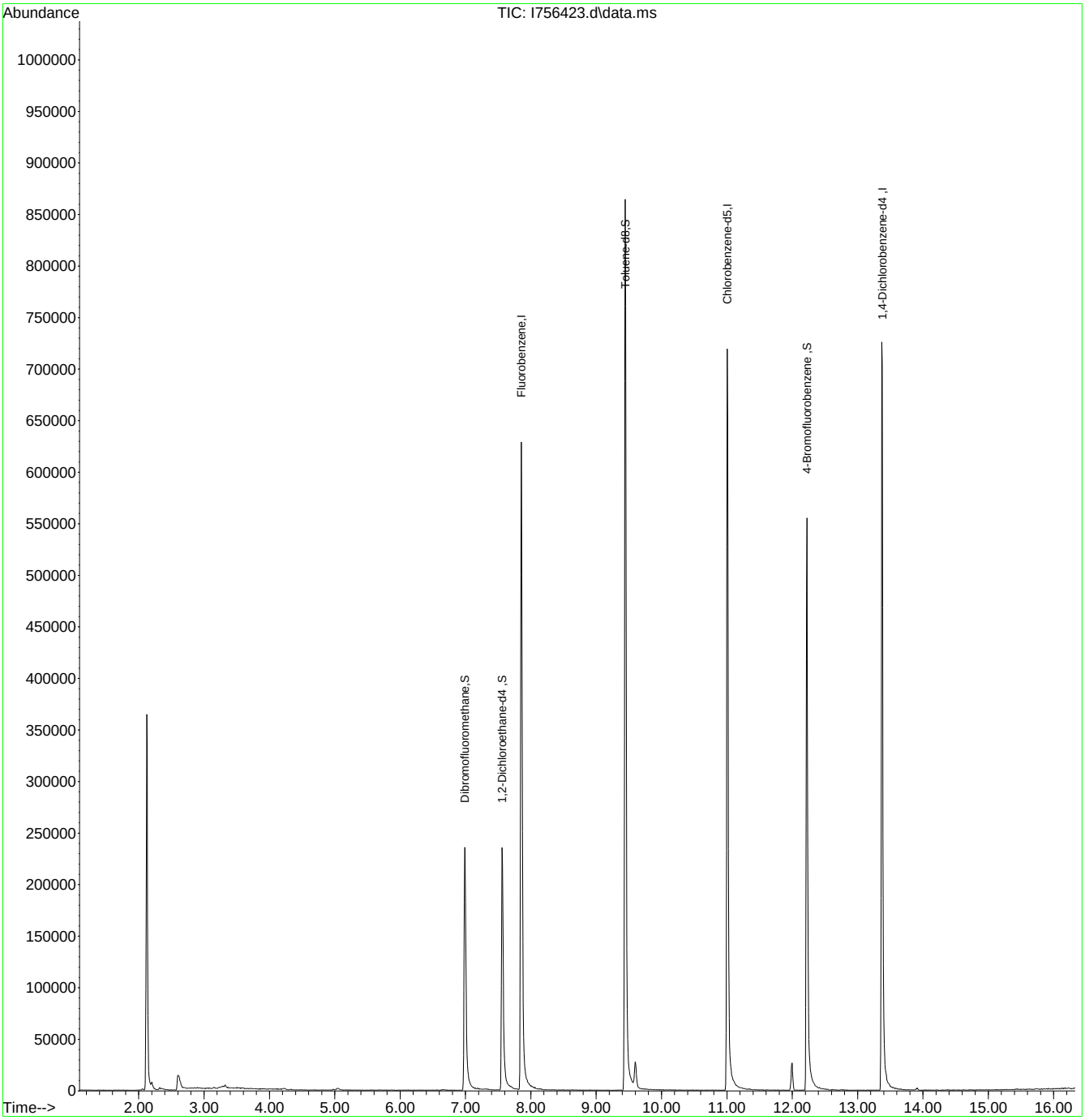
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.854	96	547422	50.00	ug/L	0.00
62) Chlorobenzene-d5	11.005	117	399516	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.377	152	198363	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	6.988	113	157121	50.73	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.46%			
49) 1,2-Dichloroethane-d4	7.561	65	175637	51.85	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 103.70%			
63) Toluene-d8	9.445	98	547370	49.42	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 98.84%			
86) 4-Bromofluorobenzene	12.225	174	156384	50.64	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.28%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\johnm\May 2023\05-04-2023\vi2913\
Data File : I756423.d
Acq On : 4 May 2023 5:41 am
Operator : jeniferw
Sample : FC5659-14 Inst : MSVOA16
Misc : MS53924,VI2913,,,,,
ALS Vial : 50 Sample Multiplier: 1

Quant Method : C:\msdchem\2\methods\VI-2023-05-02.m
Quant Results File: VI-2023-05-02.RES
Quant Time: May 04 07:20:46 2023
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-05-2023\V5E1766\
Data File : 5E39476.d
Acq On : 4 May 2023 7:44 pm
Operator : joannel
Sample : FC5659-15
Misc : MS53934,V5E1766,,,,,
ALS Vial : 21 Sample Multiplier: 1

Quant Time: May 05 00:08:07 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

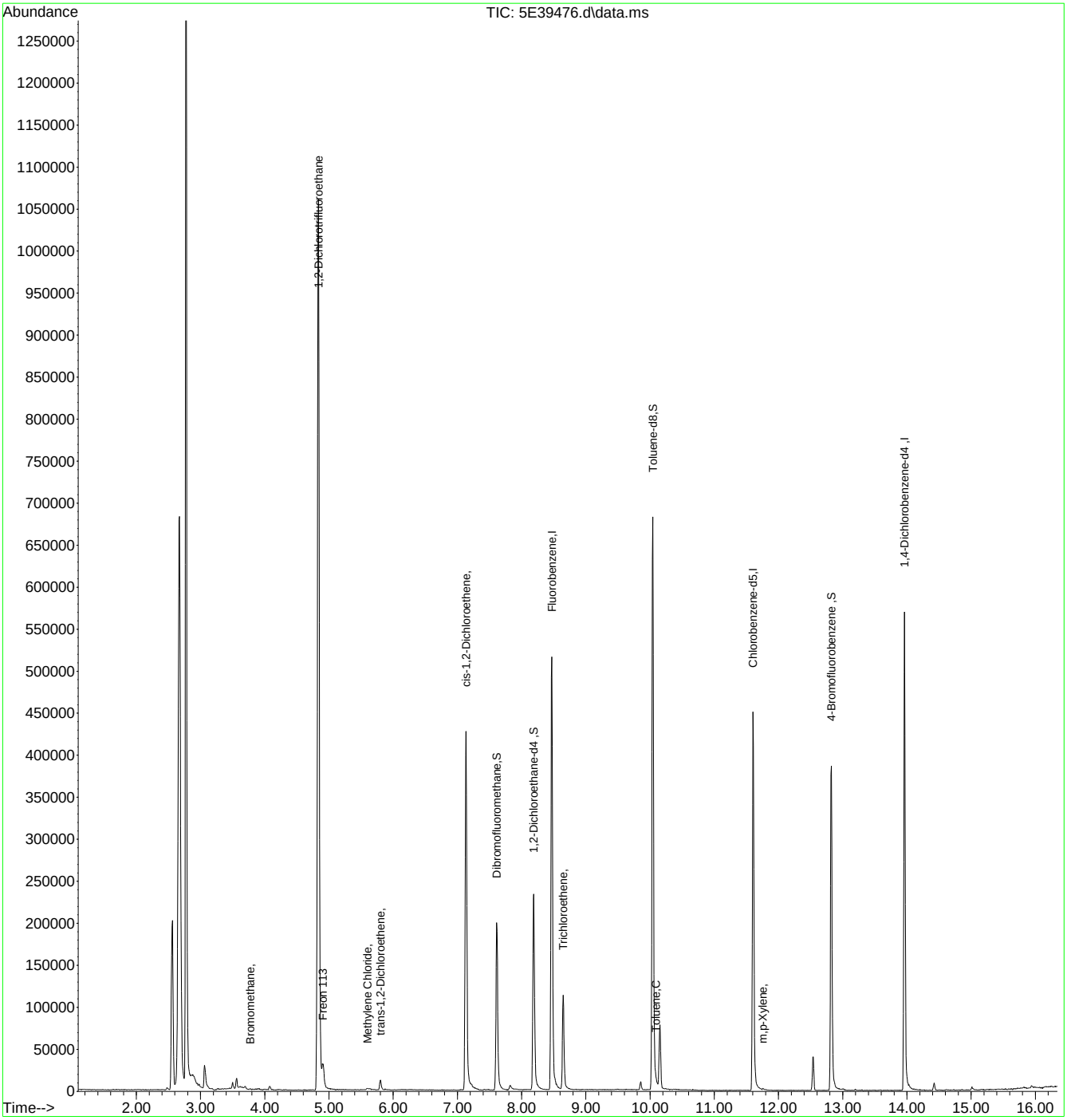
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.470	96	429543	50.00	ug/L	0.00
61) Chlorobenzene-d5	11.603	117	245903	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.962	152	144300	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.610	113	116494	45.07	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 90.14%			
49) 1,2-Dichloroethane-d4	8.183	65	165815	61.12	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 122.24%			
62) Toluene-d8	10.042	98	417975	67.84	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 135.68%#			
86) 4-Bromofluorobenzene	12.822	95	123399	48.63	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 97.26%			
Target Compounds						Qvalue
6) Bromomethane	3.775	94	700	0.59	ug/L	71
11) 1,2-Dichlorotrifluoroe...	4.836	67	540220	287.92	ug/L	93
13) Freon 113	4.903	101	8389	4.14	ug/L	85
18) Methylene Chloride	5.598	49	1438	0.38	ug/L	90
21) trans-1,2-Dichloroethene	5.799	61	8002	2.47	ug/L	94
32) cis-1,2-Dichloroethene	7.134	96	171695	72.87	ug/L	97
52) Trichloroethene	8.646	95	35112	15.81	ug/L	96
63) Toluene	10.091	91	1187	0.20	ug/L	86
80) m,p-Xylene	11.755	91	1154	0.23	ug/L	81

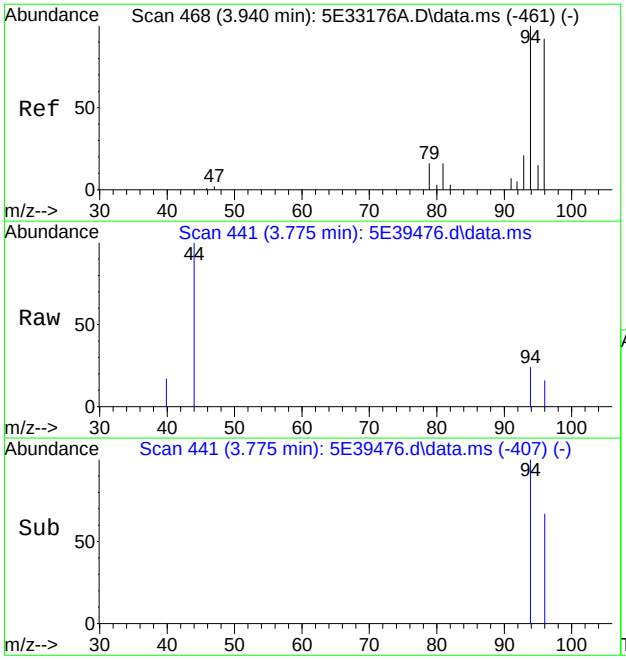
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-05-2023\V5E1766\
Data File : 5E39476.d
Acq On : 4 May 2023 7:44 pm
Operator : joannel
Sample : FC5659-15
Misc : MS53934,V5E1766,,,,,
ALS Vial : 21 Sample Multiplier: 1

Quant Time: May 05 00:08:07 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

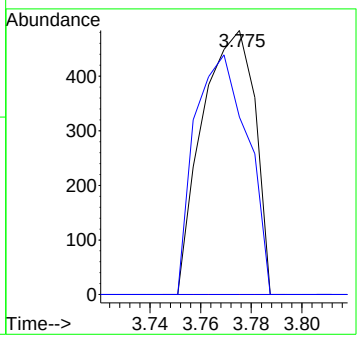


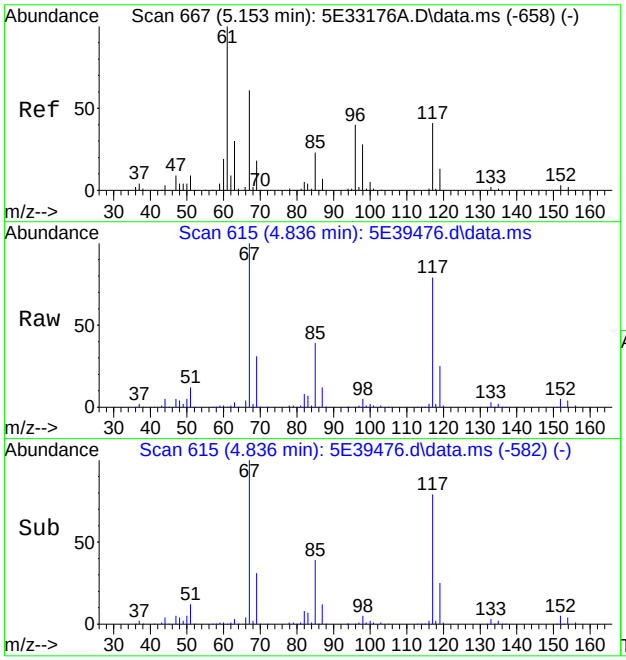


#6
Bromomethane
Concen: 0.59 ug/L
RT: 3.775 min Scan# 441
Delta R.T. 0.006 min
Lab File: 5E39476.d
Acq: 4 May 2023 7:44 pm

Tgt Ion: 94 Resp: 700

Ion	Ratio	Lower	Upper
94	100		
96	67.1	60.9	120.9
93	0.0	0.0	50.7

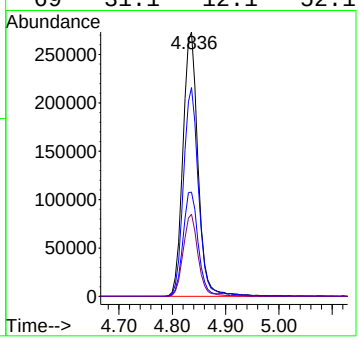


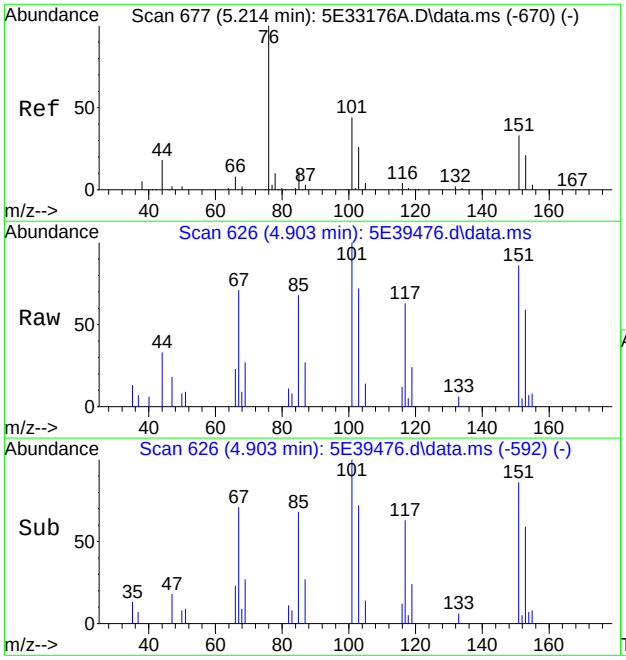


#11
1,2-Dichlorotrifluoroethane
Concen: 287.92 ug/L
RT: 4.836 min Scan# 615
Delta R.T. 0.000 min
Lab File: 5E39476.d
Acq: 4 May 2023 7:44 pm

Tgt Ion: 67 Resp: 540220

Ion	Ratio	Lower	Upper
67	100		
117	79.0	49.1	89.1
85	39.5	18.9	58.9
69	31.1	12.1	52.1

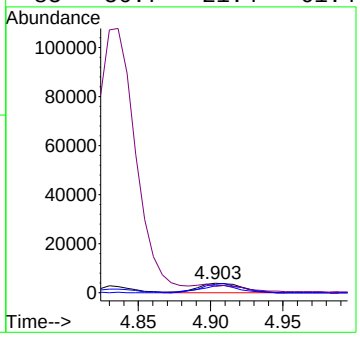


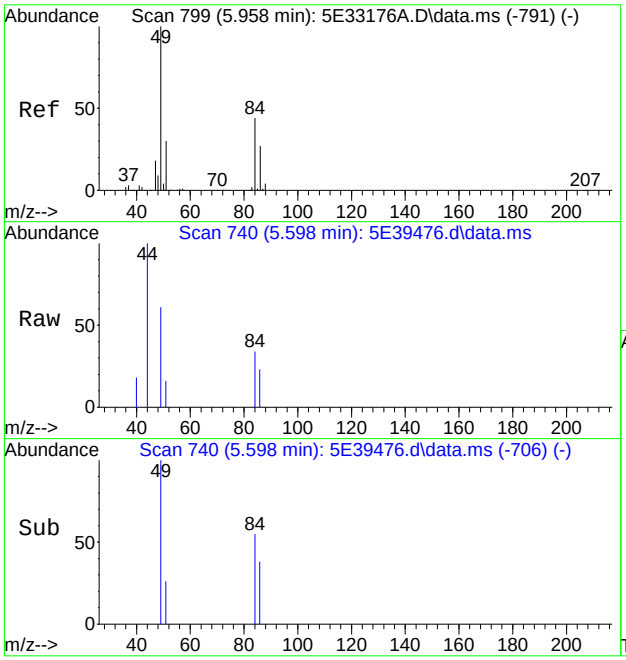


#13
Freon 113
Concen: 4.14 ug/L
RT: 4.903 min Scan# 626
Delta R.T. 0.006 min
Lab File: 5E39476.d
Acq: 4 May 2023 7:44 pm

Tgt Ion:101 Resp: 8389

Ion	Ratio	Lower	Upper
101	100		
151	86.4	55.5	95.5
103	72.2	43.7	83.7
85	56.7	21.4	61.4

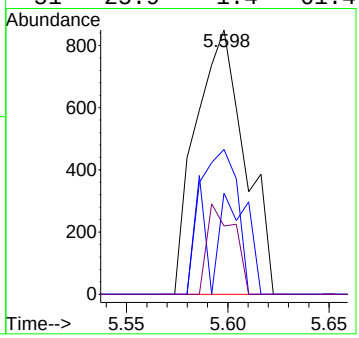


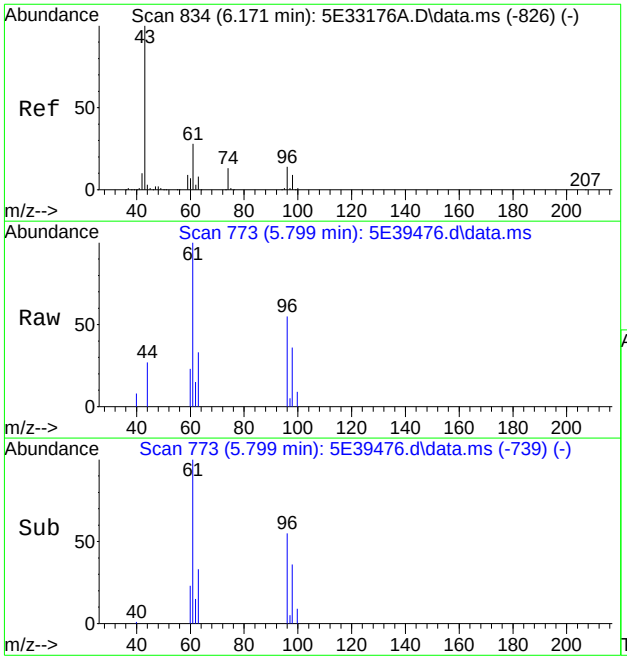


#18
Methylene Chloride
Concen: 0.38 ug/L
RT: 5.598 min Scan# 740
Delta R.T. 0.006 min
Lab File: 5E39476.d
Acq: 4 May 2023 7:44 pm

Tgt Ion: 49 Resp: 1438

Ion	Ratio	Lower	Upper
49	100		
84	54.8	35.4	95.4
86	38.2	11.3	71.3
51	25.9	1.4	61.4

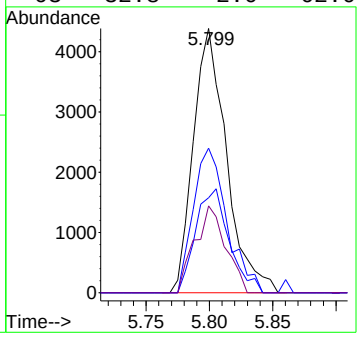


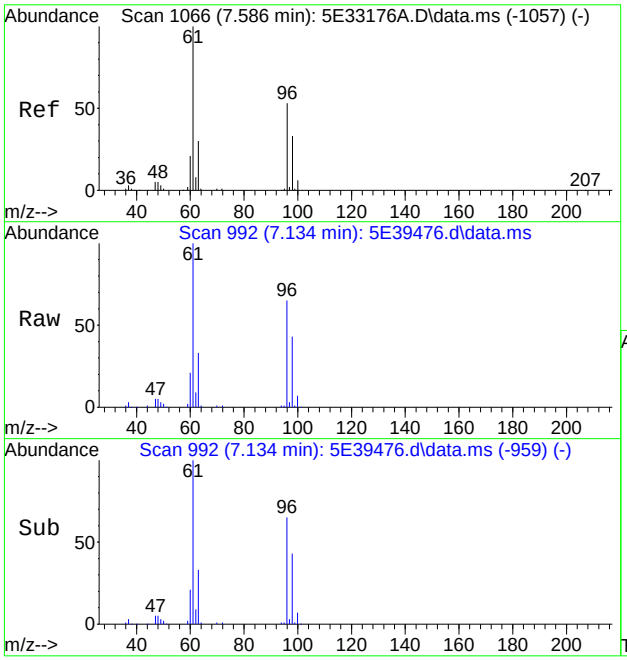


#21
trans-1,2-Dichloroethene
Concen: 2.47 ug/L
RT: 5.799 min Scan# 773
Delta R.T. 0.006 min
Lab File: 5E39476.d
Acq: 4 May 2023 7:44 pm

Tgt Ion: 61 Resp: 8002

Ion	Ratio	Lower	Upper
61	100		
96	54.7	30.9	90.9
98	35.9	8.8	68.8
63	32.8	2.0	62.0

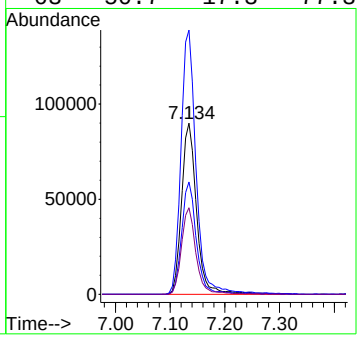


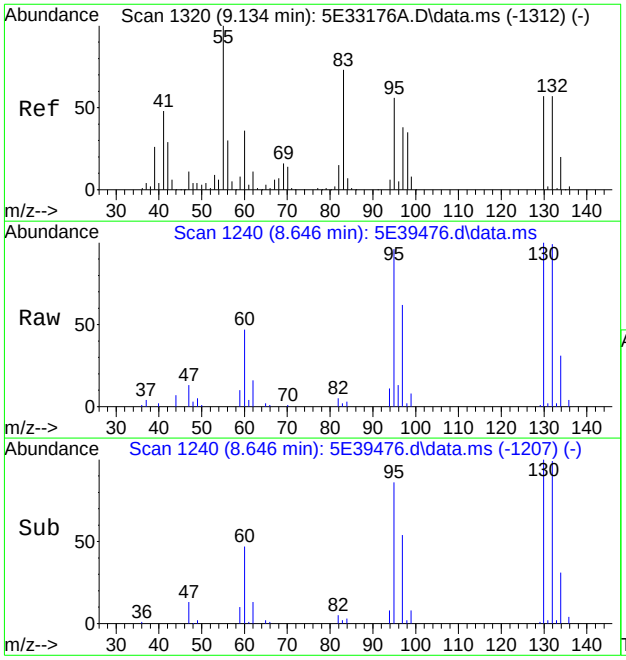


#32
cis-1,2-Dichloroethene
Concen: 72.87 ug/L
RT: 7.134 min Scan# 992
Delta R.T. 0.000 min
Lab File: 5E39476.d
Acq: 4 May 2023 7:44 pm

Tgt Ion: 96 Resp: 171695

Ion	Ratio	Lower	Upper
96	100		
61	154.5	121.2	181.2
98	65.7	33.9	93.9
63	50.7	17.3	77.3

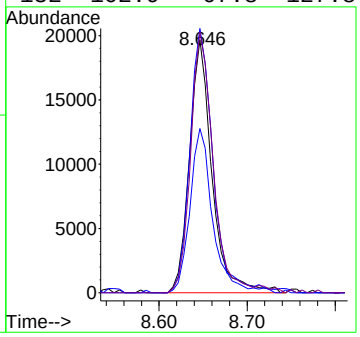


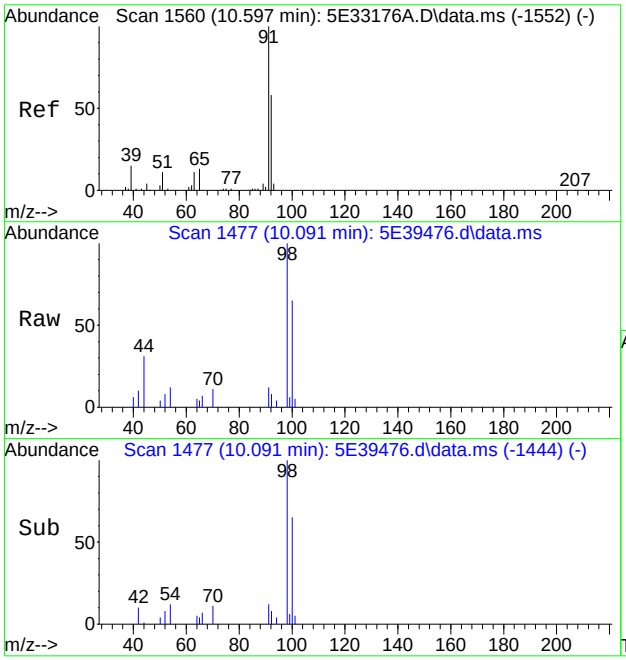


#52
Trichloroethene
Concen: 15.81 ug/L
RT: 8.646 min Scan# 1240
Delta R.T. 0.000 min
Lab File: 5E39476.d
Acq: 4 May 2023 7:44 pm

Tgt Ion: 95 Resp: 35112

Ion	Ratio	Lower	Upper
95	100		
130	104.4	72.6	132.6
97	64.9	38.0	98.0
132	102.9	67.8	127.8

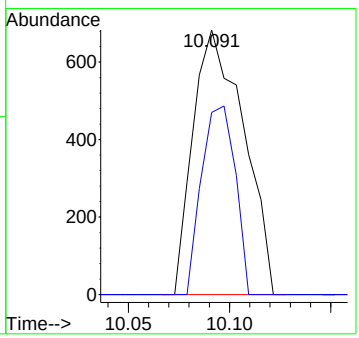


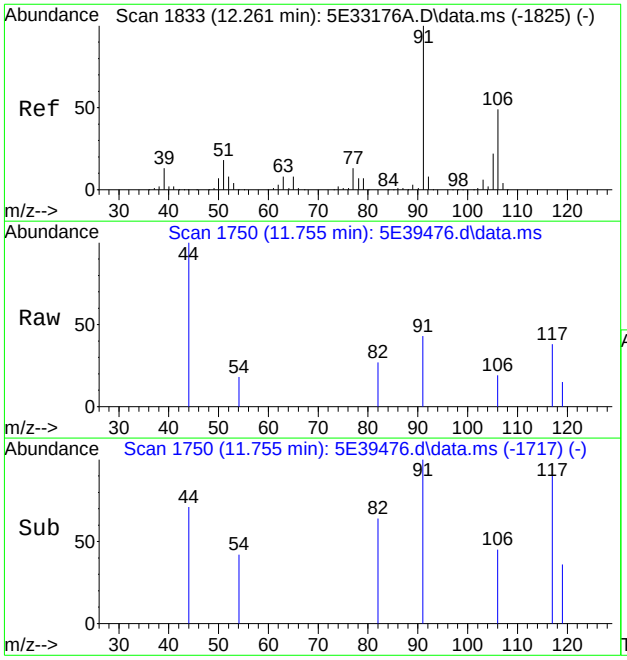


#63
Toluene
Concen: 0.20 ug/L
RT: 10.091 min Scan# 1477
Delta R.T. 0.000 min
Lab File: 5E39476.d
Acq: 4 May 2023 7:44 pm

Tgt Ion: 91 Resp: 1187

Ion	Ratio	Lower	Upper
91	100		
92	68.8	28.5	88.5

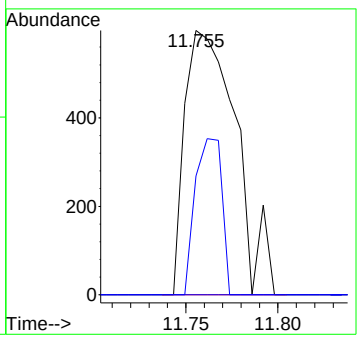




#80
m,p-Xylene
Concen: 0.23 ug/L
RT: 11.755 min Scan# 1750
Delta R.T. 0.000 min
Lab File: 5E39476.d
Acq: 4 May 2023 7:44 pm

Tgt Ion: 91 Resp: 1154

Ion	Ratio	Lower	Upper
91	100		
106	45.0	19.5	79.5
105	0.0	0.0	52.5



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-03\
Data File : I756424.D
Acq On : 4 May 2023 6:05 am
Operator : jeniferw
Sample : FC5659-15
Misc : MS53924,VI2913,,,,,
ALS Vial : 51 Sample Multiplier: 1

Quant Time: May 04 08:38:36 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

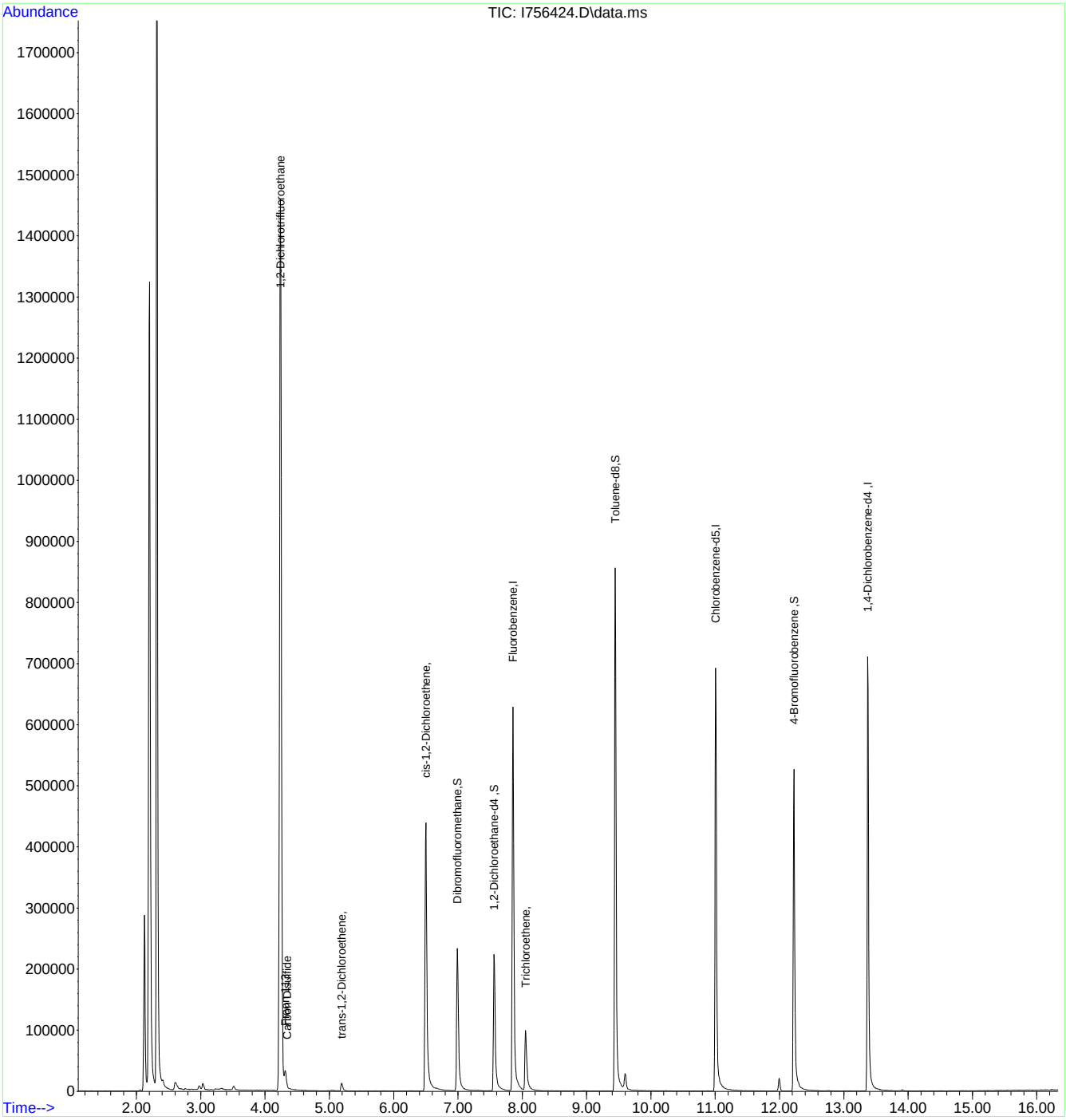
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.854	96	547589	50.00	ug/L	0.00
62) Chlorobenzene-d5	11.006	117	389477	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.371	152	189606	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	6.988	113	152894	49.35	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 98.70%			
49) 1,2-Dichloroethane-d4	7.561	65	167305	49.38	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 98.76%			
63) Toluene-d8	9.445	98	537926	49.82	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 99.64%			
86) 4-Bromofluorobenzene	12.225	174	149462	50.63	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.26%			
Target Compounds						Qvalue
10) 1,2-Dichlorotrifluoroe...	4.239	67	832582	342.59	ug/L	90
13) Freon 113	4.312	101	12128	6.18	ug/L #	88
14) Carbon Disulfide	4.342	76	1949	0.32	ug/L	91
21) trans-1,2-Dichloroethene	5.190	61	9399	3.01	ug/L	85
32) cis-1,2-Dichloroethene	6.500	96	205890	93.85	ug/L	97
53) Trichloroethene	8.055	95	39143	16.81	ug/L	97

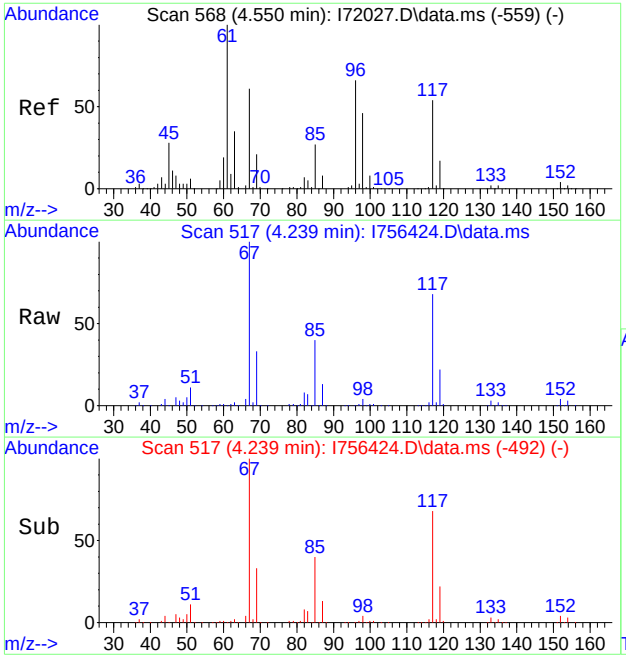
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-03\
Data File : I756424.D
Acq On : 4 May 2023 6:05 am
Operator : jeniferw
Sample : FC5659-15
Misc : MS53924,VI2913,,,,,
ALS Vial : 51 Sample Multiplier: 1

Quant Time: May 04 08:38:36 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

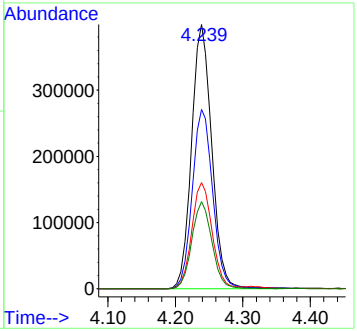


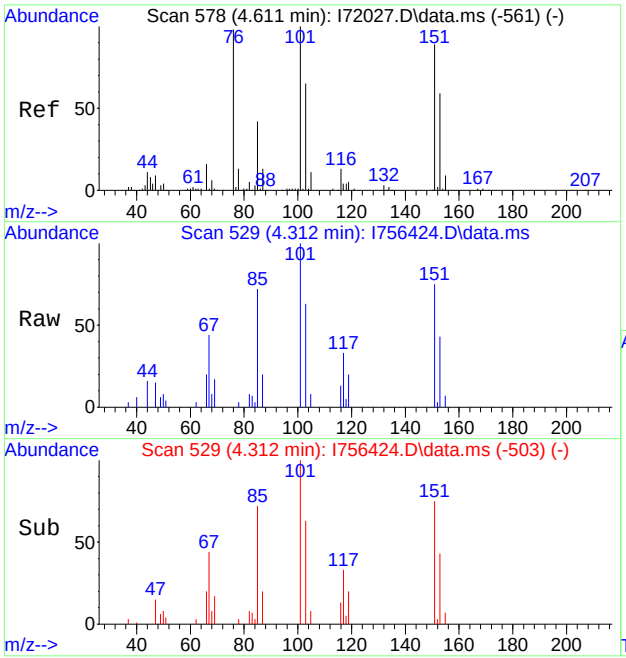


#10
1,2-Dichlorotrifluoroethane
Concen: 342.59 ug/L
RT: 4.239 min Scan# 517
Delta R.T. 0.001 min
Lab File: I756424.D
Acq: 4 May 2023 6:05 am

Tgt Ion: 67 Resp: 832582

Ion	Ratio	Lower	Upper
67	100		
117	67.9	51.9	111.9
85	40.2	13.5	73.5
69	33.0	3.1	63.1

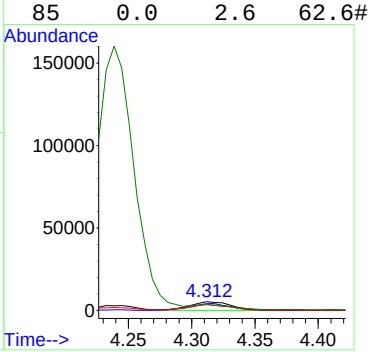


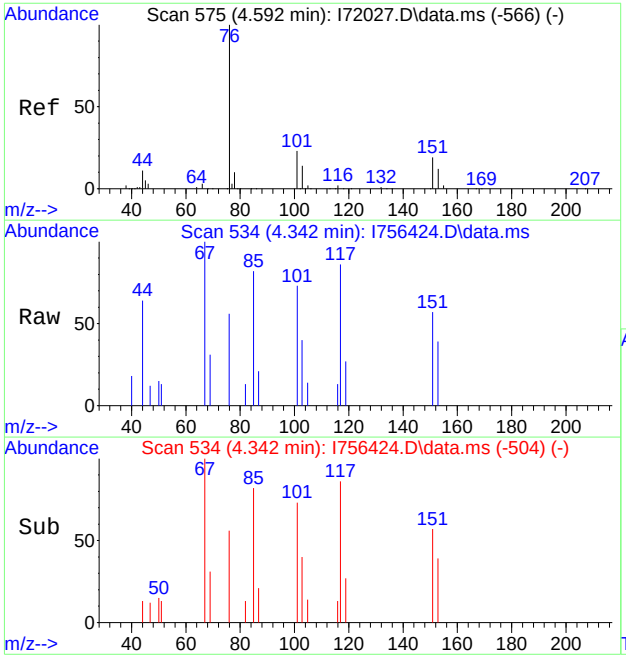


#13
Freon 113
Concen: 6.18 ug/L
RT: 4.312 min Scan# 529
Delta R.T. 0.006 min
Lab File: I756424.D
Acq: 4 May 2023 6:05 am

Tgt Ion:101 Resp: 12128

Ion	Ratio	Lower	Upper
101	100		
151	76.2	45.2	105.2
103	62.6	34.0	94.0
85	0.0	2.6	62.6#

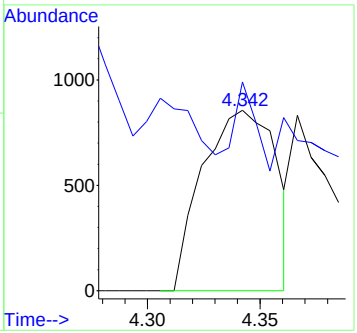


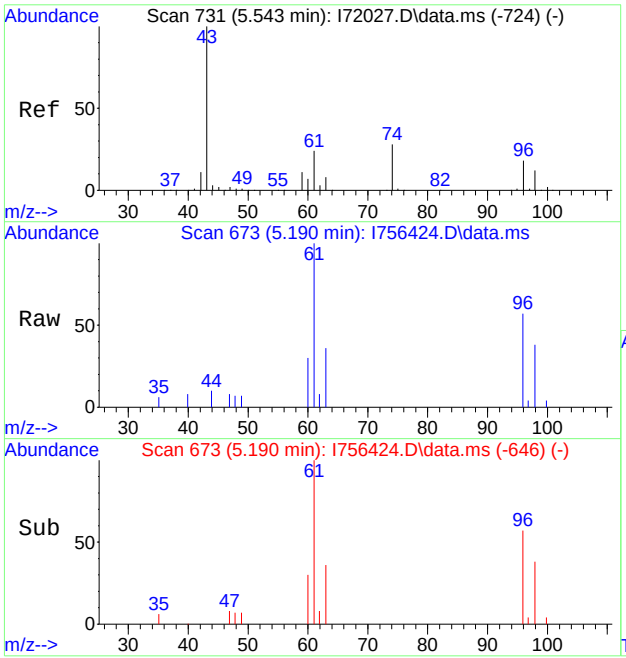


#14
Carbon Disulfide
Concen: 0.32 ug/L
RT: 4.342 min Scan# 534
Delta R.T. 0.030 min
Lab File: I756424.D
Acq: 4 May 2023 6:05 am

Tgt Ion: 76 Resp: 1949

Ion	Ratio	Lower	Upper
76	100		
44	19.7	0.0	46.1

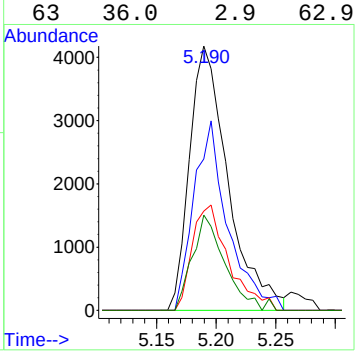


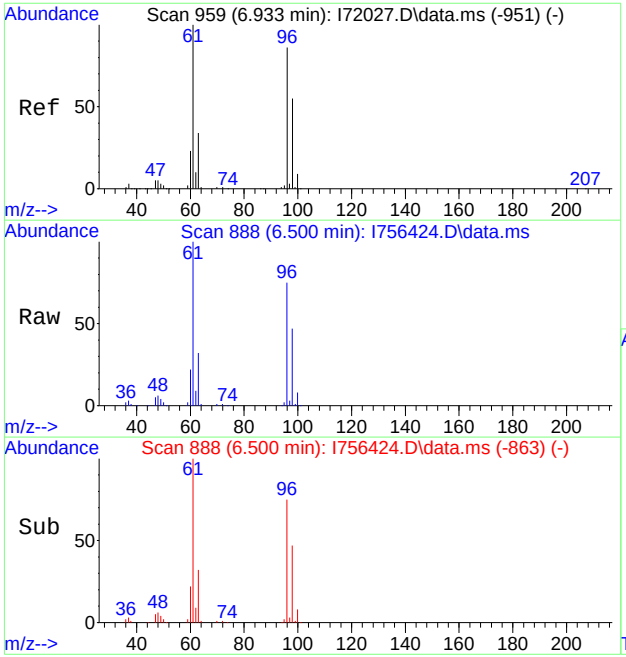


#21
trans-1,2-Dichloroethene
Concen: 3.01 ug/L
RT: 5.190 min Scan# 673
Delta R.T. 0.013 min
Lab File: I756424.D
Acq: 4 May 2023 6:05 am

Tgt Ion: 61 Resp: 9399

Ion	Ratio	Lower	Upper
61	100		
96	57.2	44.5	104.5
98	37.5	15.5	75.5
63	36.0	2.9	62.9

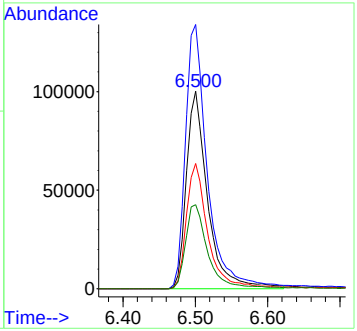


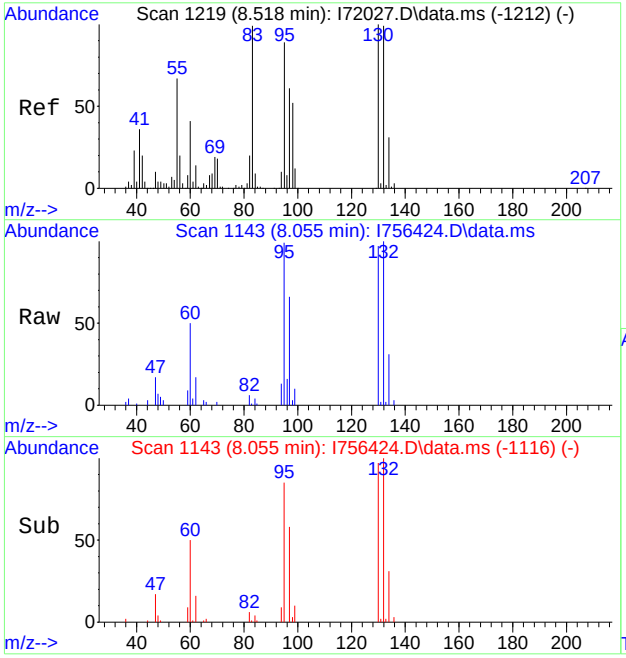


#32
cis-1,2-Dichloroethene
Concen: 93.85 ug/L
RT: 6.500 min Scan# 888
Delta R.T. 0.000 min
Lab File: I756424.D
Acq: 4 May 2023 6:05 am

Tgt Ion: 96 Resp: 205890

Ion	Ratio	Lower	Upper
96	100		
61	133.8	100.0	160.0
98	63.4	35.1	95.1
63	42.6	11.4	71.4

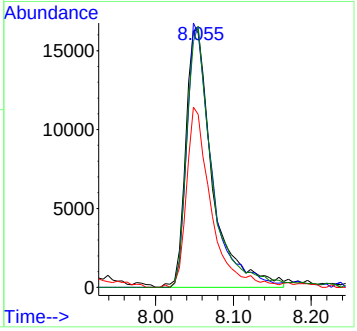




#53
Trichloroethene
Concen: 16.81 ug/L
RT: 8.055 min Scan# 1143
Delta R.T. 0.012 min
Lab File: I756424.D
Acq: 4 May 2023 6:05 am

Tgt Ion: 95 Resp: 39143

Ion	Ratio	Lower	Upper
95	100		
130	98.5	73.6	133.6
97	67.1	35.5	95.5
132	101.3	74.3	134.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-05-2023\V5E1766\
Data File : 5E39477.d
Acq On : 4 May 2023 8:09 pm
Operator : joannel
Sample : FC5659-16
Misc : MS53934,V5E1766,,,,,
ALS Vial : 22 Sample Multiplier: 1

Quant Time: May 05 00:09:55 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

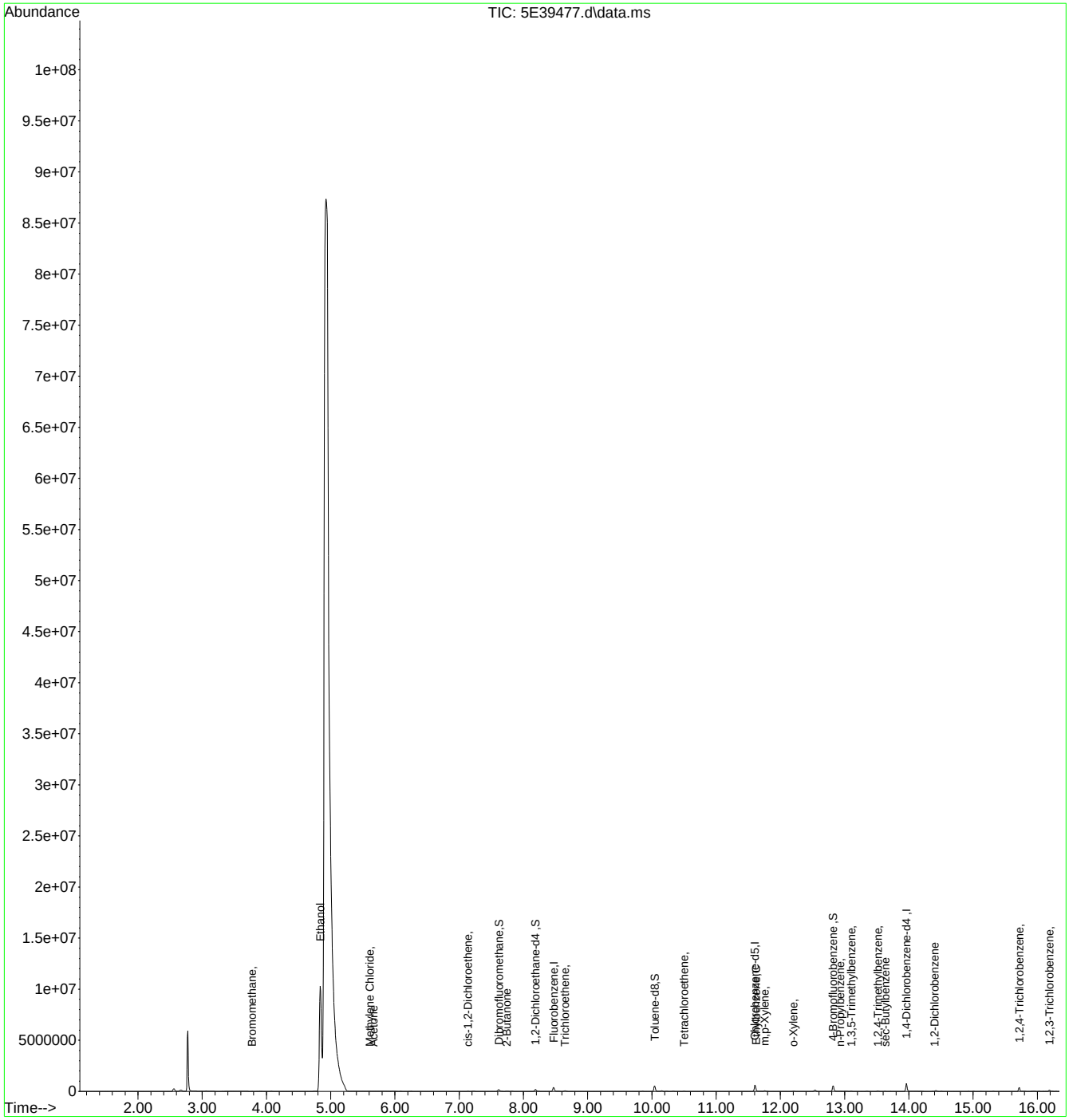
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.470	96	321179	50.00	ug/L	0.00
61) Chlorobenzene-d5	11.603	117	335959	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.962	152	196335	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.616	113	98555	51.00	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery =	102.00%		
49) 1,2-Dichloroethane-d4	8.183	65	137597	67.83	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery =	135.66%#		
62) Toluene-d8	10.042	98	325569	38.68	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery =	77.36%#		
86) 4-Bromofluorobenzene	12.816	95	170686	49.44	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery =	98.88%		
Target Compounds						Qvalue
6) Bromomethane	3.775	94	1005	1.13	ug/L	75
10) Ethanol	4.836	45	6615	135.85	ug/L	98
11) 1,2-Dichlorotrifluoroe...	4.836	67	7163399	Below Cal		95
13) Freon 113	4.897	101	63784569	Below Cal		84
18) Methylene Chloride	5.604	49	1701	0.61	ug/L	87
19) Acetone	5.665	43	7887	9.20	ug/L	88
32) cis-1,2-Dichloroethene	7.134	96	2250	1.28	ug/L	83
42) 2-Butanone	7.738	43	36004	24.95	ug/L	97
52) Trichloroethene	8.646	95	14427	8.69	ug/L	93
68) Tetrachloroethene	10.500	166	2747	1.14	ug/L #	80
77) Ethylbenzene	11.621	91	12408	1.32	ug/L	93
80) m,p-Xylene	11.755	91	38910	5.66	ug/L	98
81) o-Xylene	12.200	91	9491	1.32	ug/L	85
88) n-Propylbenzene	12.932	91	3890	0.38	ug/L	96
91) 1,3,5-Trimethylbenzene	13.103	105	6637	0.90	ug/L	88
99) 1,2,4-Trimethylbenzene	13.517	105	15793	2.13	ug/L	95
101) sec-Butylbenzene	13.633	105	2092	0.22	ug/L	72
108) 1,2-Dichlorobenzene	14.401	146	1664	0.38	ug/L	82
111) 1,2,4-Trichlorobenzene	15.718	180	103711	29.76	ug/L	98
113) 1,2,3-Trichlorobenzene	16.188	180	35167	10.42	ug/L	99

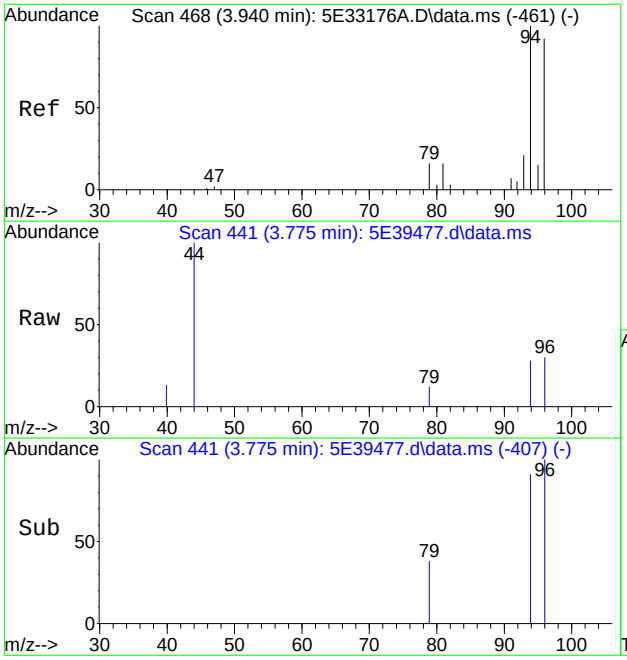
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-05-2023\V5E1766\
Data File : 5E39477.d
Acq On : 4 May 2023 8:09 pm
Operator : joannel
Sample : FC5659-16
Misc : MS53934,V5E1766,,,,,
ALS Vial : 22 Sample Multiplier: 1

Quant Time: May 05 00:09:55 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

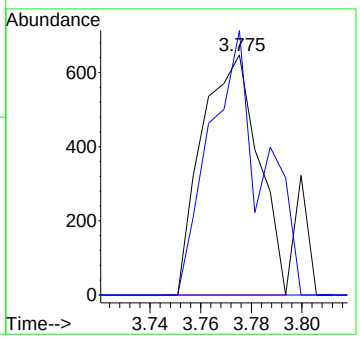


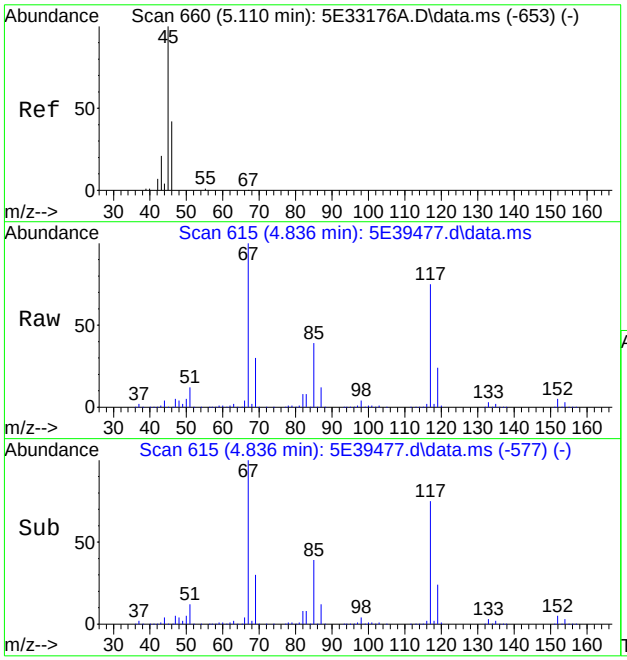


#6
Bromomethane
Concen: 1.13 ug/L
RT: 3.775 min Scan# 441
Delta R.T. 0.006 min
Lab File: 5E39477.d
Acq: 4 May 2023 8:09 pm

Tgt Ion: 94 Resp: 1005

Ion	Ratio	Lower	Upper
94	100		
96	110.2	60.9	120.9
93	0.0	0.0	50.7

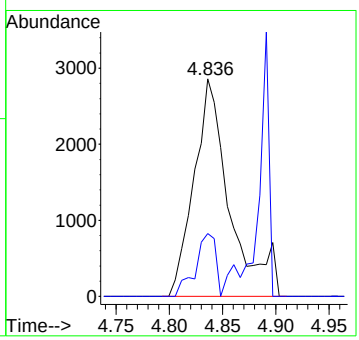


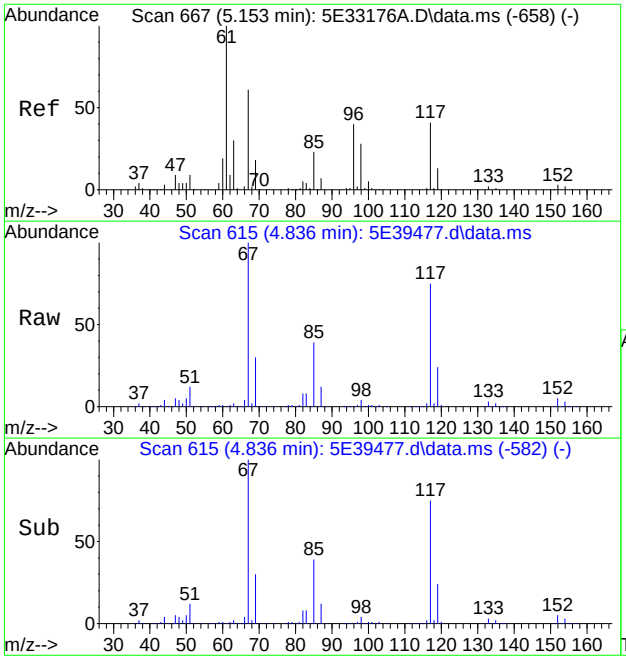


#10
Ethanol
Concen: 135.85 ug/L
RT: 4.836 min Scan# 615
Delta R.T. 0.031 min
Lab File: 5E39477.d
Acq: 4 May 2023 8:09 pm

Tgt Ion: 45 Resp: 6615

Ion	Ratio	Lower	Upper
45	100		
46	28.9	10.2	50.2

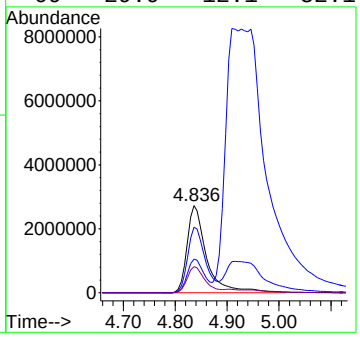


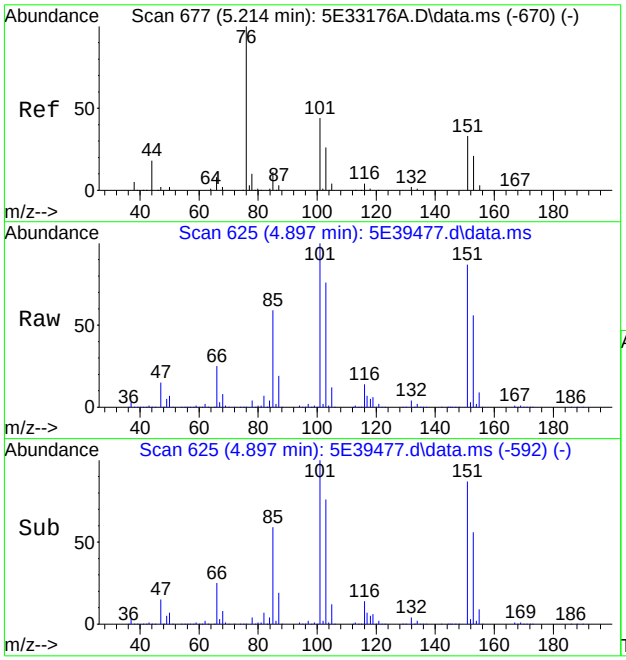


#11
1,2-Dichlorotrifluoroethane
Concen: Below Cal
RT: 4.836 min Scan# 615
Delta R.T. 0.000 min
Lab File: 5E39477.d
Acq: 4 May 2023 8:09 pm

Tgt Ion: 67 Resp: 7163399

Ion	Ratio	Lower	Upper
67	100		
117	75.2	49.1	89.1
85	38.6	18.9	58.9
69	29.9	12.1	52.1

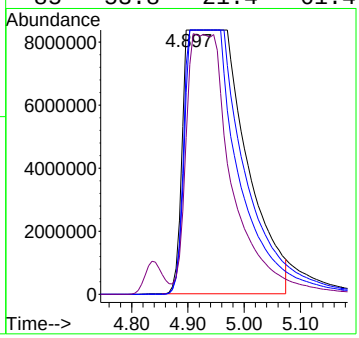


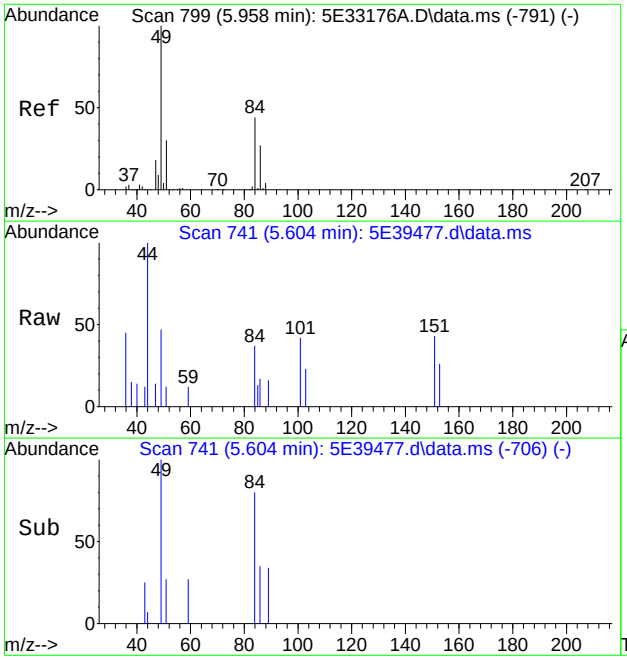


#13
Freon 113
Concen: Below Cal
RT: 4.897 min Scan# 625
Delta R.T. 0.000 min
Lab File: 5E39477.d
Acq: 4 May 2023 8:09 pm

Tgt Ion:101 Resp:63784569

Ion	Ratio	Lower	Upper
101	100		
151	86.9	55.5	95.5
103	76.4	43.7	83.7
85	53.8	21.4	61.4

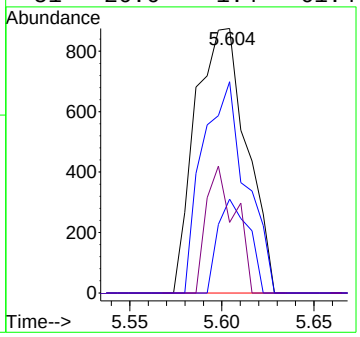


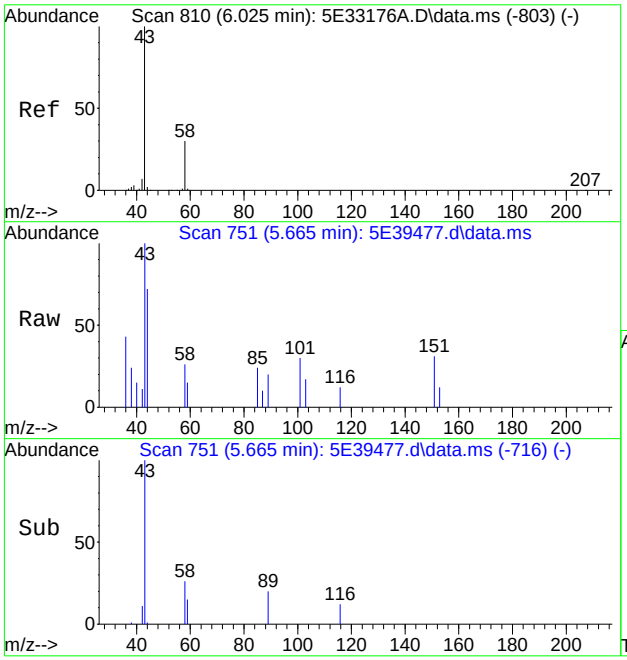


#18
Methylene Chloride
Concen: 0.61 ug/L
RT: 5.604 min Scan# 741
Delta R.T. 0.012 min
Lab File: 5E39477.d
Acq: 4 May 2023 8:09 pm

Tgt Ion: 49 Resp: 1701

Ion	Ratio	Lower	Upper
49	100		
84	79.8	35.4	95.4
86	35.4	11.3	71.3
51	26.6	1.4	61.4

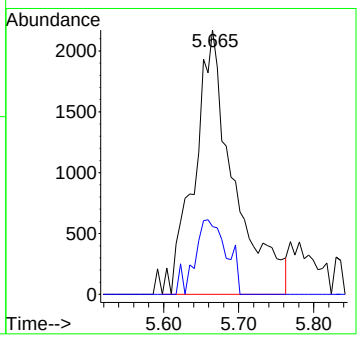


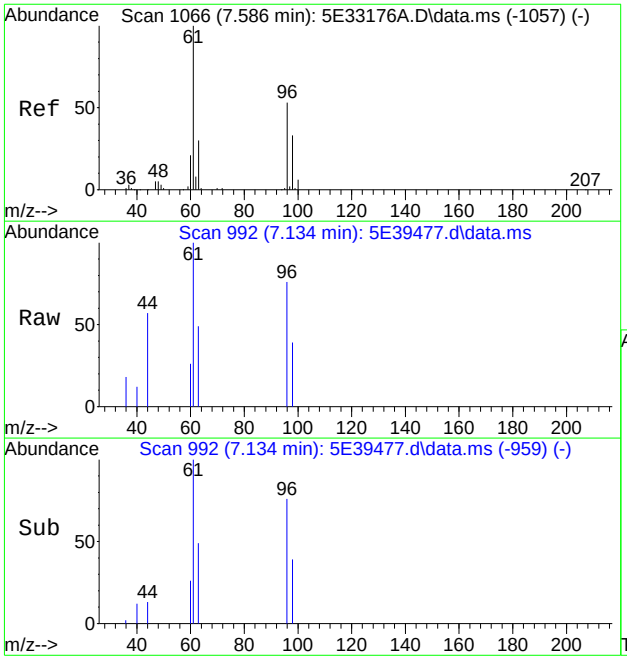


#19
Acetone
Concen: 9.20 ug/L
RT: 5.665 min Scan# 751
Delta R.T. 0.012 min
Lab File: 5E39477.d
Acq: 4 May 2023 8:09 pm

Tgt Ion: 43 Resp: 7887

Ion	Ratio	Lower	Upper
43	100		
58	25.7	2.5	62.5

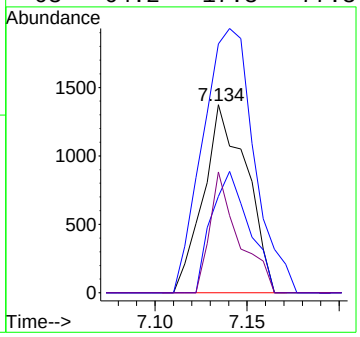


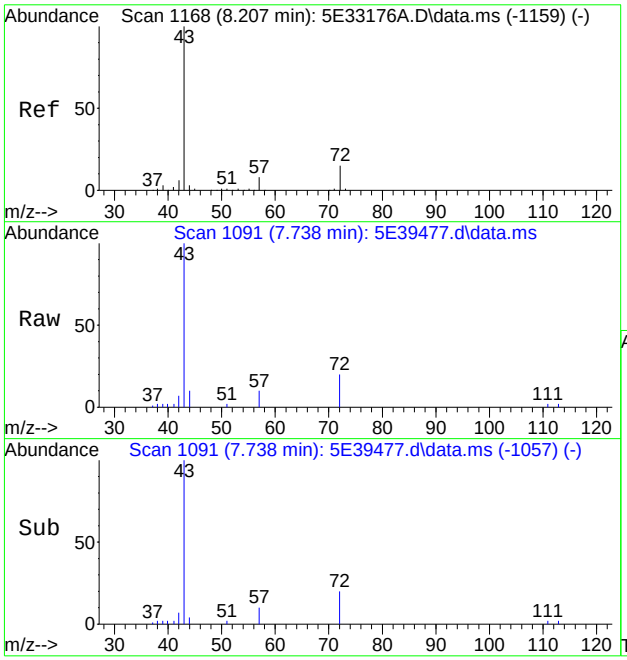


#32
cis-1,2-Dichloroethene
Concen: 1.28 ug/L
RT: 7.134 min Scan# 992
Delta R.T. 0.000 min
Lab File: 5E39477.d
Acq: 4 May 2023 8:09 pm

Tgt Ion: 96 Resp: 2250

Ion	Ratio	Lower	Upper
96	100		
61	132.2	121.2	181.2
98	51.3	33.9	93.9
63	64.2	17.3	77.3

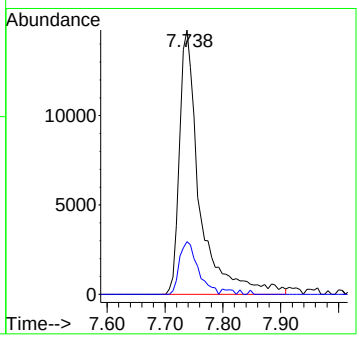


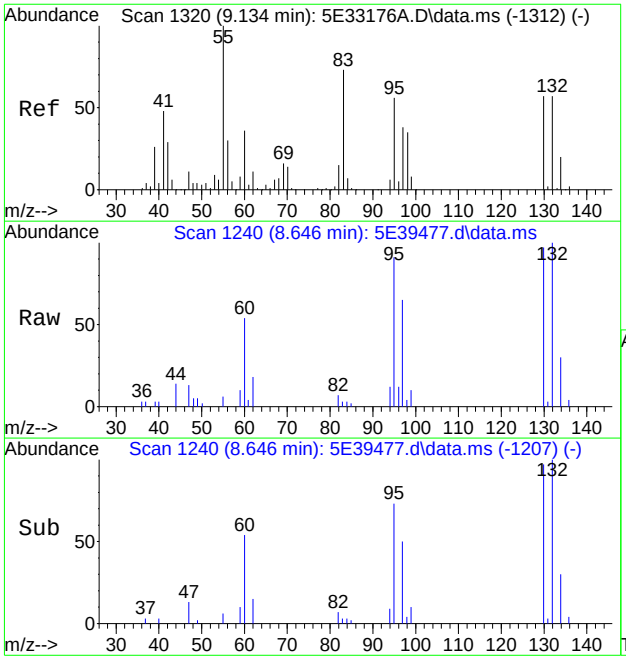


#42
2-Butanone
Concen: 24.95 ug/L
RT: 7.738 min Scan# 1091
Delta R.T. 0.006 min
Lab File: 5E39477.d
Acq: 4 May 2023 8:09 pm

Tgt Ion: 43 Resp: 36004

Ion	Ratio	Lower	Upper
43	100		
72	19.9	0.0	51.2

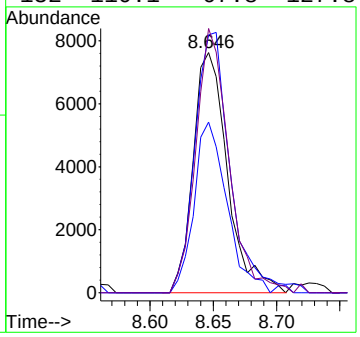


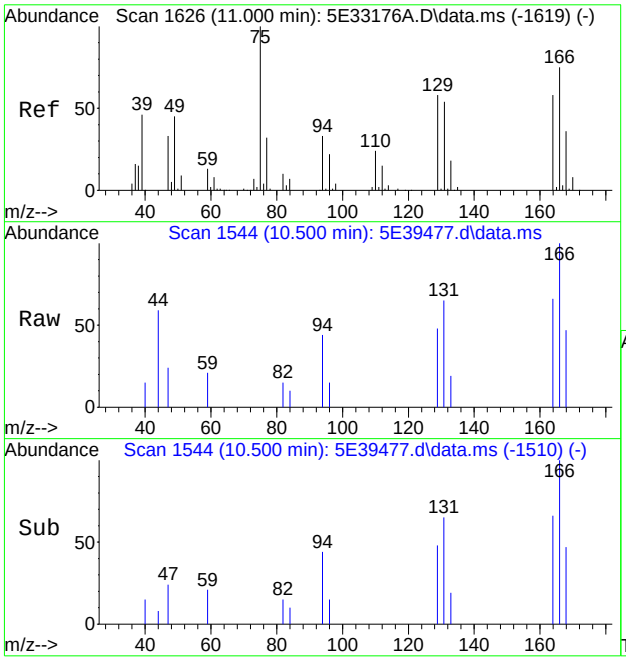


#52
Trichloroethene
Concen: 8.69 ug/L
RT: 8.646 min Scan# 1240
Delta R.T. 0.000 min
Lab File: 5E39477.d
Acq: 4 May 2023 8:09 pm

Tgt Ion: 95 Resp: 14427

Ion	Ratio	Lower	Upper
95	100		
130	107.3	72.6	132.6
97	71.1	38.0	98.0
132	110.1	67.8	127.8

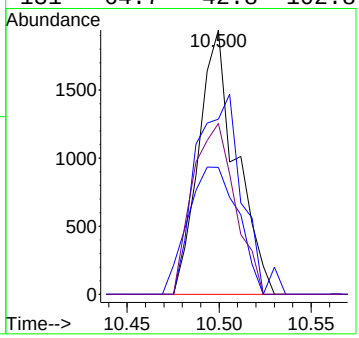


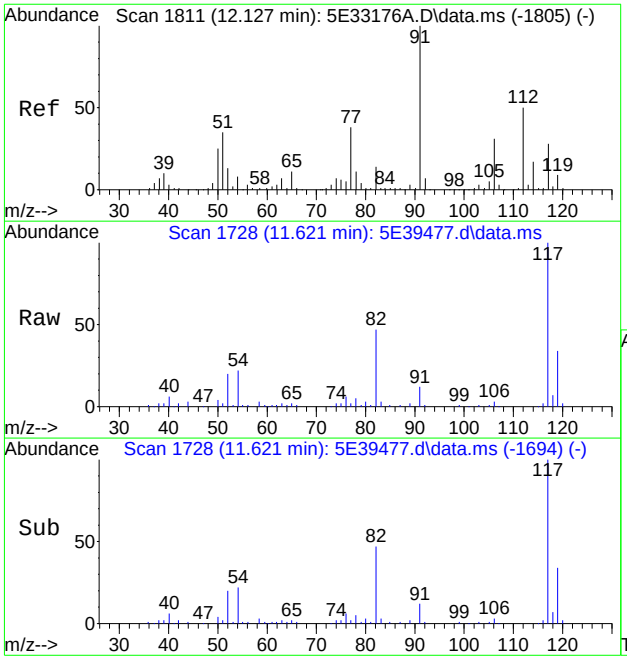


#68
Tetrachloroethene
Concen: 1.14 ug/L
RT: 10.500 min Scan# 1544
Delta R.T. 0.007 min
Lab File: 5E39477.d
Acq: 4 May 2023 8:09 pm

Tgt Ion:166 Resp: 2747

Ion	Ratio	Lower	Upper
166	100		
164	66.3	50.2	110.2
129	48.1	48.9	108.9#
131	64.7	42.8	102.8

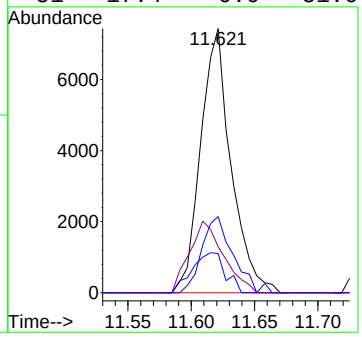


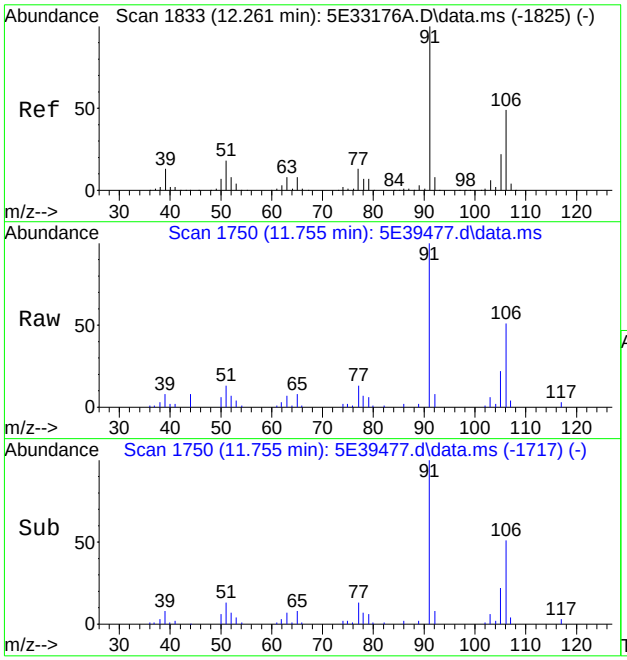


#77
Ethylbenzene
Concen: 1.32 ug/L
RT: 11.621 min Scan# 1728
Delta R.T. 0.006 min
Lab File: 5E39477.d
Acq: 4 May 2023 8:09 pm

Tgt Ion: 91 Resp: 12408

Ion	Ratio	Lower	Upper
91	100		
106	28.8	0.9	60.9
65	14.8	0.0	39.9
51	17.4	0.0	51.6

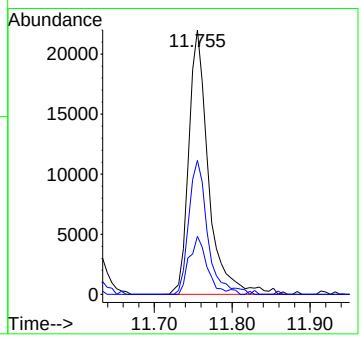


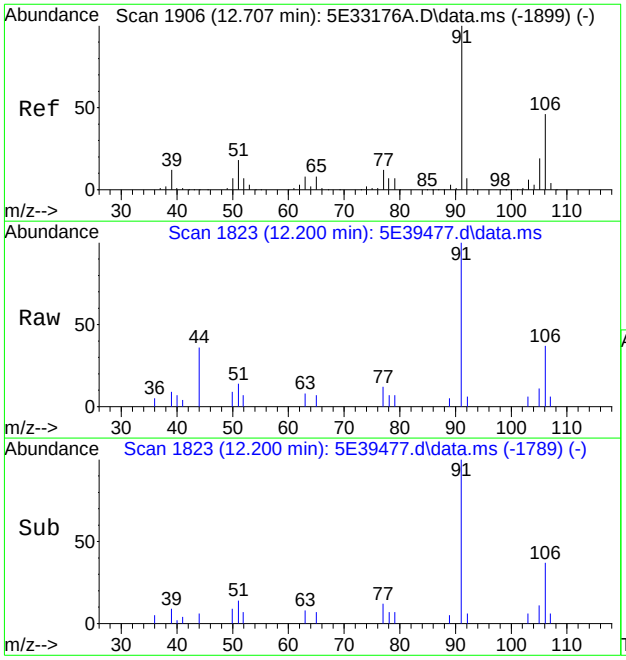


#80
m,p-Xylene
Concen: 5.66 ug/L
RT: 11.755 min Scan# 1750
Delta R.T. 0.000 min
Lab File: 5E39477.d
Acq: 4 May 2023 8:09 pm

Tgt Ion: 91 Resp: 38910

Ion	Ratio	Lower	Upper
91	100		
106	50.7	19.5	79.5
105	21.9	0.0	52.5

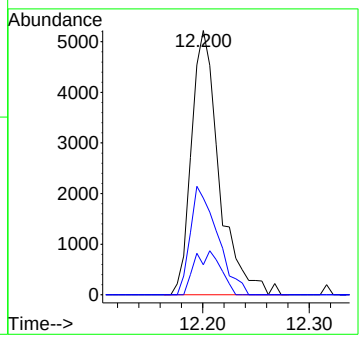


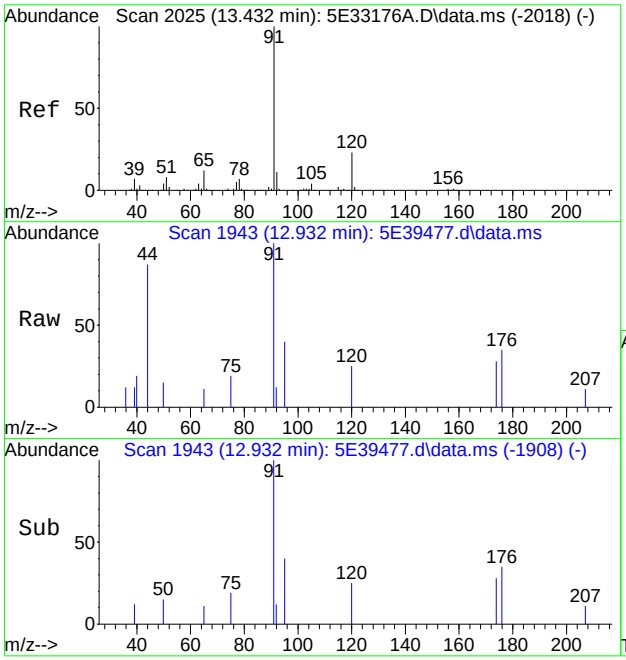


#81
o-Xylene
Concen: 1.32 ug/L
RT: 12.200 min Scan# 1823
Delta R.T. 0.006 min
Lab File: 5E39477.d
Acq: 4 May 2023 8:09 pm

Tgt Ion: 91 Resp: 9491

Ion	Ratio	Lower	Upper
91	100		
106	36.5	16.4	76.4
105	11.4	0.0	48.3

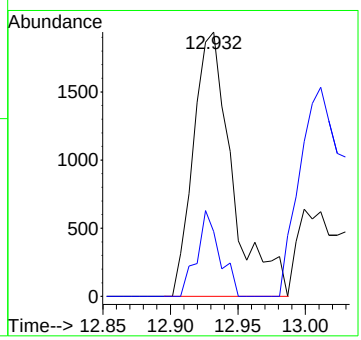


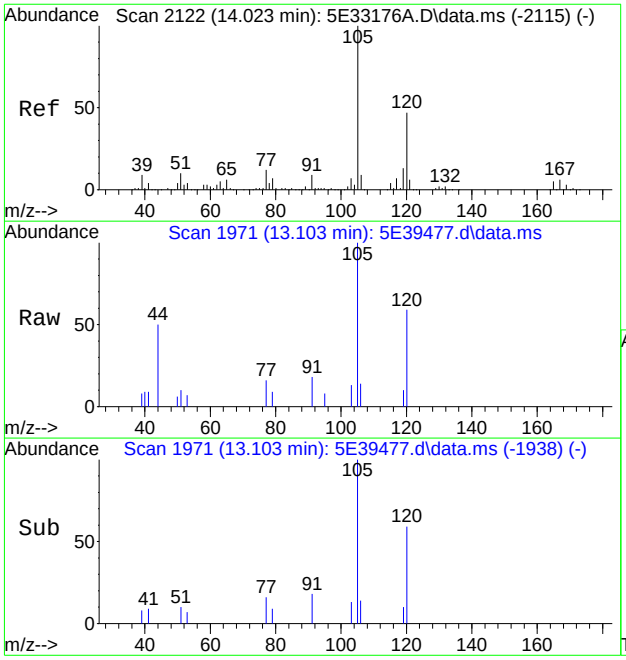


#88
n-Propylbenzene
Concen: 0.38 ug/L
RT: 12.932 min Scan# 1943
Delta R.T. 0.012 min
Lab File: 5E39477.d
Acq: 4 May 2023 8:09 pm

Tgt Ion: 91 Resp: 3890

Ion	Ratio	Lower	Upper
91	100		
120	24.5	0.0	52.4

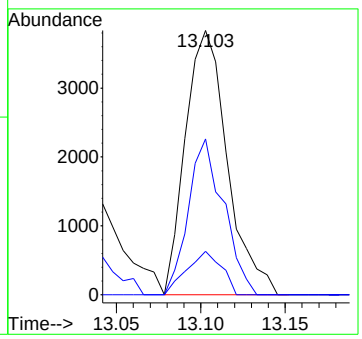


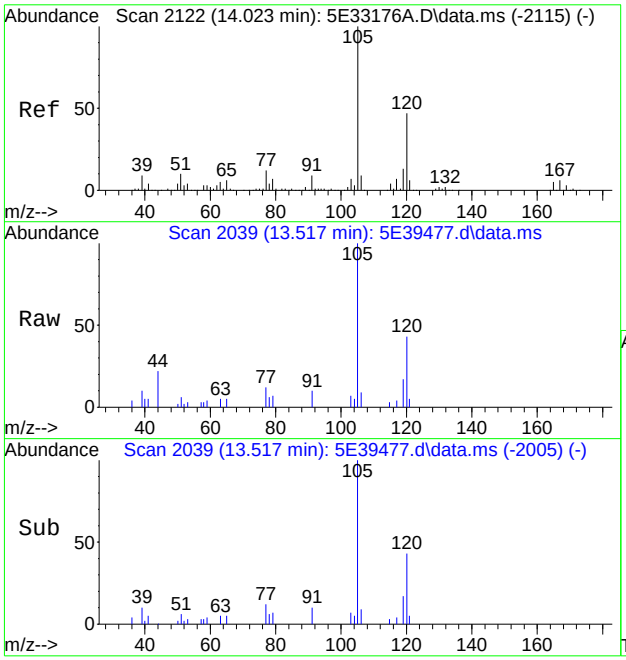


#91
1,3,5-Trimethylbenzene
Concen: 0.90 ug/L
RT: 13.103 min Scan# 1971
Delta R.T. -0.000 min
Lab File: 5E39477.d
Acq: 4 May 2023 8:09 pm

Tgt Ion:105 Resp: 6637

Ion	Ratio	Lower	Upper
105	100		
120	58.9	20.3	80.3
77	16.4	0.0	42.2

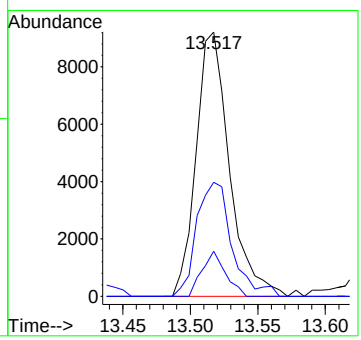


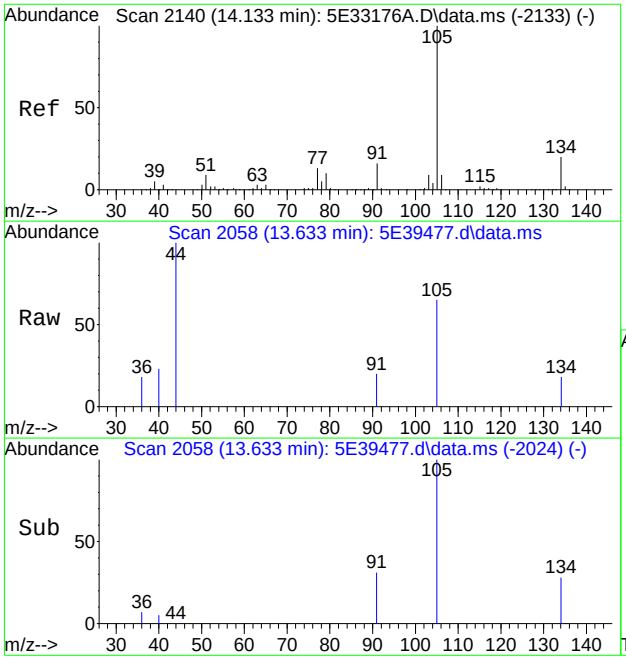


#99
1,2,4-Trimethylbenzene
Concen: 2.13 ug/L
RT: 13.517 min Scan# 2039
Delta R.T. 0.006 min
Lab File: 5E39477.d
Acq: 4 May 2023 8:09 pm

Tgt Ion:105 Resp: 15793

Ion	Ratio	Lower	Upper
105	100		
120	43.1	15.6	75.6
119	17.1	0.0	50.0

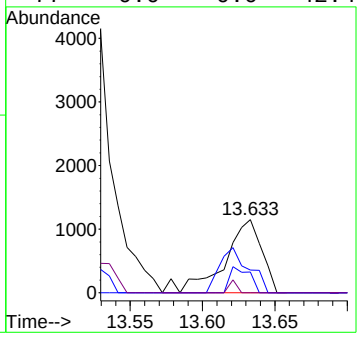


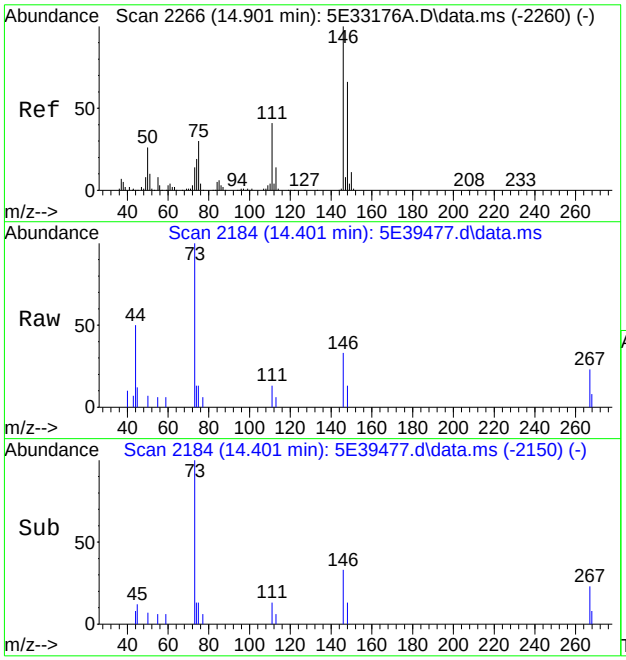


#101
sec-Butylbenzene
Concen: 0.22 ug/L
RT: 13.633 min Scan# 2058
Delta R.T. 0.006 min
Lab File: 5E39477.d
Acq: 4 May 2023 8:09 pm

Tgt Ion:105 Resp: 2092

Ion	Ratio	Lower	Upper
105	100		
134	28.3	0.0	50.0
91	31.2	0.0	45.7
77	0.0	0.0	42.4

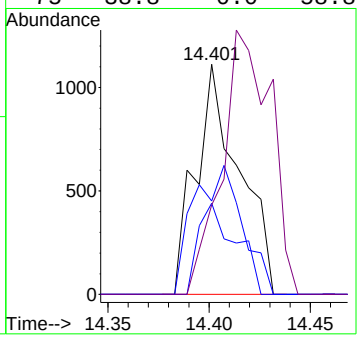


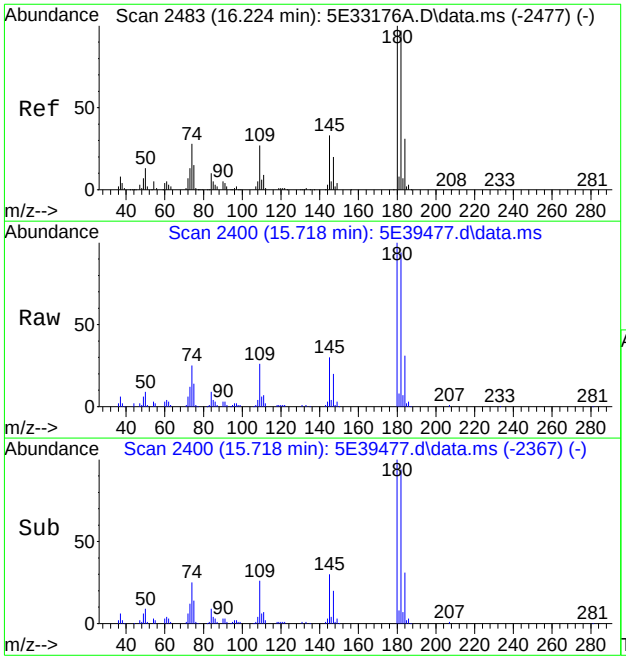


#108
1,2-Dichlorobenzene
Concen: 0.38 ug/L
RT: 14.401 min Scan# 2184
Delta R.T. 0.006 min
Lab File: 5E39477.d
Acq: 4 May 2023 8:09 pm

Tgt Ion:146 Resp: 1664

Ion	Ratio	Lower	Upper
146	100		
111	39.6	11.5	71.5
148	40.6	31.7	91.7
75	38.8	0.0	58.8

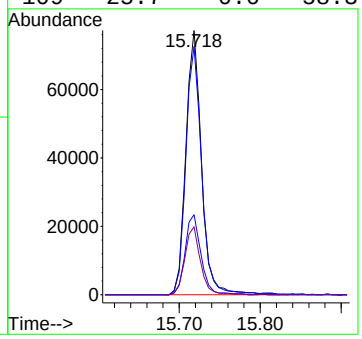


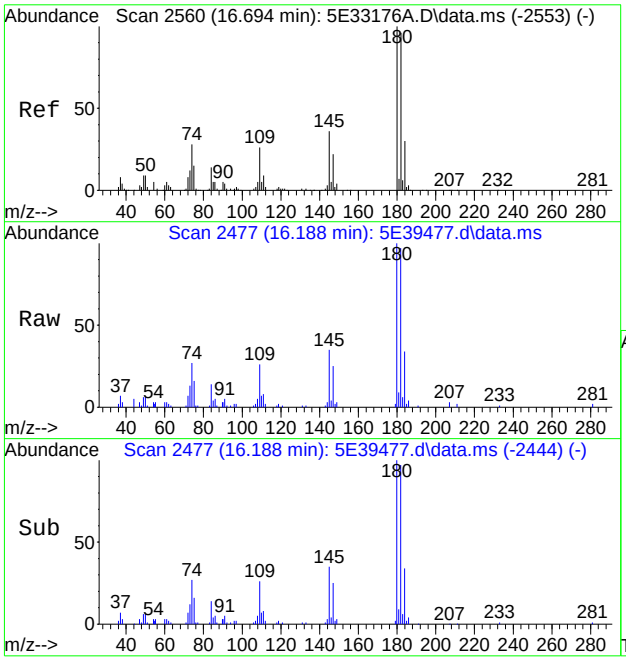


#111
1,2,4-Trichlorobenzene
Concen: 29.76 ug/L
RT: 15.718 min Scan# 2400
Delta R.T. 0.000 min
Lab File: 5E39477.d
Acq: 4 May 2023 8:09 pm

Tgt Ion:180 Resp: 103711

Ion	Ratio	Lower	Upper
180	100		
182	93.9	64.3	124.3
145	30.3	1.7	61.7
109	25.7	0.0	58.3

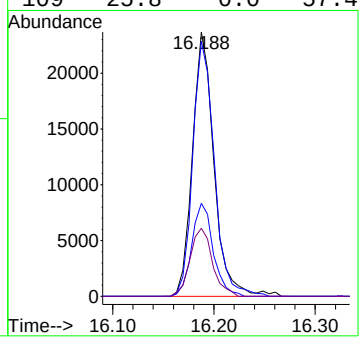




#113
1,2,3-Trichlorobenzene
Concen: 10.42 ug/L
RT: 16.188 min Scan# 2477
Delta R.T. 0.000 min
Lab File: 5E39477.d
Acq: 4 May 2023 8:09 pm

Tgt Ion:180 Resp: 35167

Ion	Ratio	Lower	Upper
180	100		
182	96.5	66.5	126.5
145	35.2	4.3	64.3
109	25.8	0.0	57.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-03\
Data File : I756425.D
Acq On : 4 May 2023 6:30 am
Operator : jeniferw
Sample : FC5659-16
Misc : MS53924,VI2913,,,,,
ALS Vial : 52 Sample Multiplier: 1

Quant Time: May 04 08:53:49 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

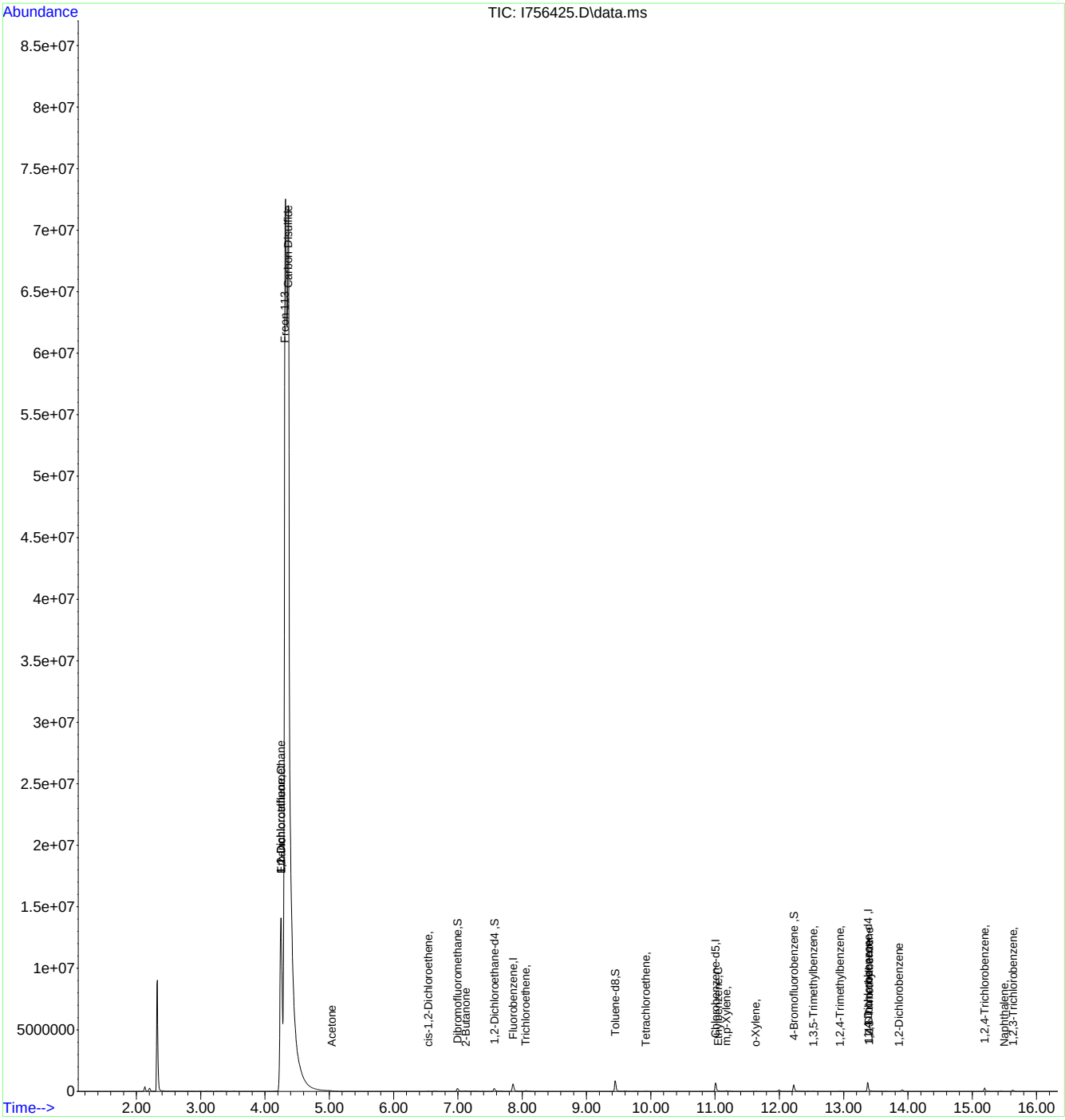
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.860	96	548266	50.00	ug/L	0.00
62) Chlorobenzene-d5	11.006	117	391060	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.377	152	192879	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	6.994	113	157286	50.70	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.40%			
49) 1,2-Dichloroethane-d4	7.567	65	168571	49.69	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 99.38%			
63) Toluene-d8	9.445	98	541412	49.94	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 99.88%			
86) 4-Bromofluorobenzene	12.225	174	154852	51.57	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 103.14%			
Target Compounds						Qvalue
10) 1,2-Dichlorotrifluoroe...	4.245	67	10227774	4203.34	ug/L	90
11) 1,1-Dichloroethene	4.245	61	17665	5.52	ug/L #	1
12) Ethanol	4.251	45	9539	104.09	ug/L	84
13) Freon 113	4.306	101	55456740	28241.01	ug/L #	63
14) Carbon Disulfide	4.360	76	15638	2.60	ug/L #	1
19) Acetone	5.037	43	17151	10.47	ug/L	93
32) cis-1,2-Dichloroethene	6.537	96	3472	1.58	ug/L	95
42) 2-Butanone	7.122	43	75202	29.57	ug/L	92
53) Trichloroethene	8.055	95	23692	10.16	ug/L	94
68) Tetrachloroethene	9.920	166	3119	1.39	ug/L	95
77) Ethylbenzene	11.048	91	13661	1.41	ug/L	85
80) m,p-Xylene	11.176	91	36392	5.14	ug/L	93
81) o-Xylene	11.627	91	7873	1.08	ug/L	89
91) 1,3,5-Trimethylbenzene	12.530	105	4526	0.68	ug/L	97
98) 1,2,4-Trimethylbenzene	12.938	105	10071	1.53	ug/L	88
103) 1,2,3-Trimethylbenzene	13.395	105	5230	0.72	ug/L #	79
104) 1,4-Dichlorobenzene	13.389	146	953	0.22	ug/L #	38
107) 1,2-Dichlorobenzene	13.859	146	1425	0.37	ug/L	90
110) 1,2,4-Trichlorobenzene	15.194	180	75896	36.90	ug/L	99
111) Naphthalene	15.499	128	2157	0.28	ug/L	94
112) 1,2,3-Trichlorobenzene	15.633	180	26199	12.16	ug/L	96

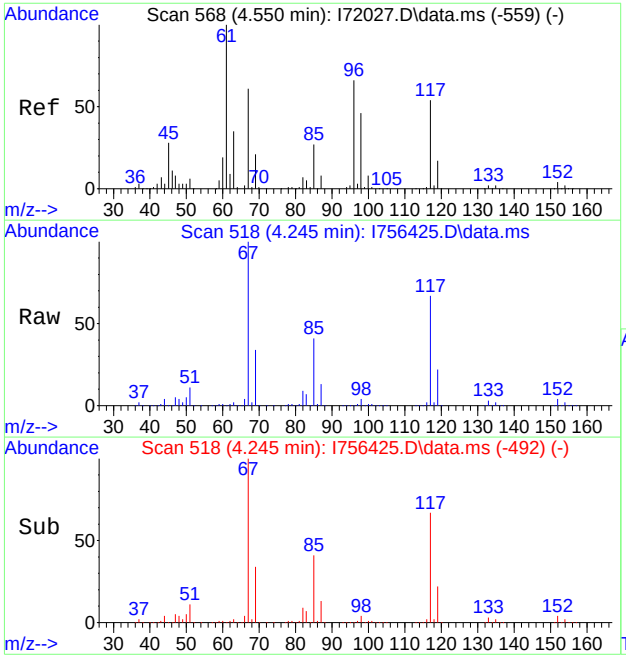
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-03\
Data File : I756425.D
Acq On : 4 May 2023 6:30 am
Operator : jeniferw
Sample : FC5659-16
Misc : MS53924,VI2913,,,,,
ALS Vial : 52 Sample Multiplier: 1

Quant Time: May 04 08:53:49 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

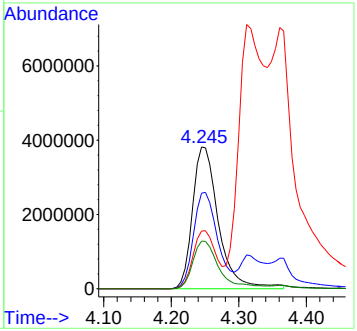


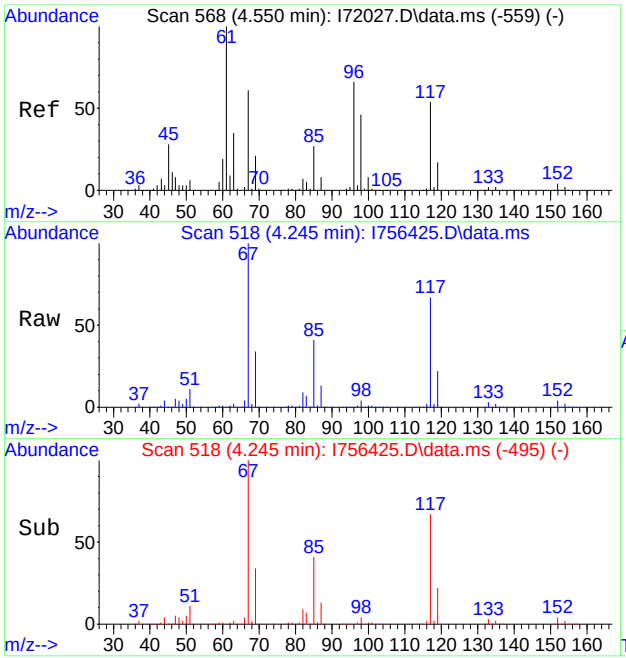


#10
1,2-Dichlorotrifluoroethane
Concen: 4203.34 ug/L
RT: 4.245 min Scan# 518
Delta R.T. 0.007 min
Lab File: I756425.D
Acq: 4 May 2023 6:30 am

Tgt Ion: 67 Resp:10227774

Ion	Ratio	Lower	Upper
67	100		
117	67.4	51.9	111.9
85	40.6	13.5	73.5
69	33.5	3.1	63.1

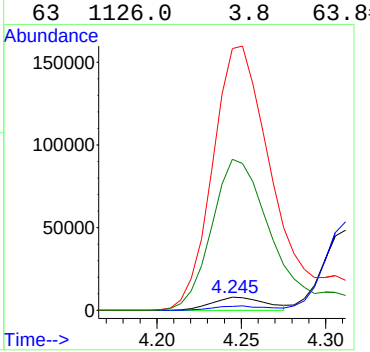


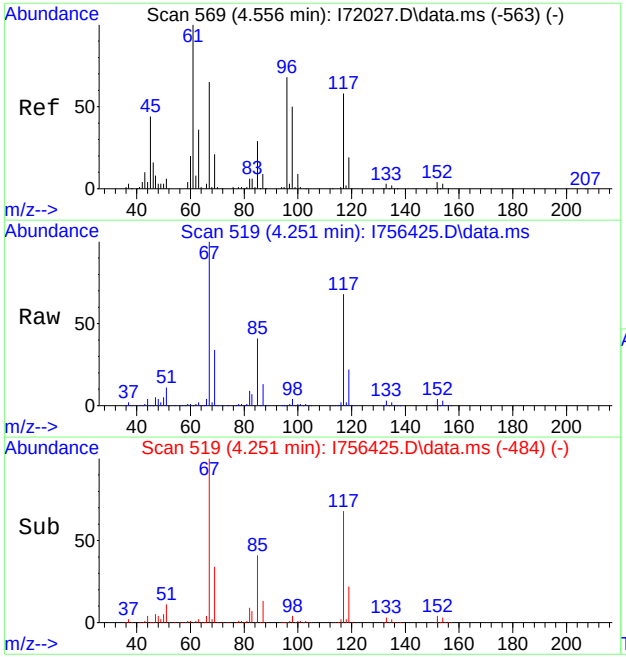


#11
1,1-Dichloroethene
Concen: 5.52 ug/L
RT: 4.245 min Scan# 518
Delta R.T. -0.012 min
Lab File: I756425.D
Acq: 4 May 2023 6:30 am

Tgt Ion: 61 Resp: 17665

Ion	Ratio	Lower	Upper
61	100		
96	29.2	27.8	87.8
98	1951.5	9.1	69.1#
63	1126.0	3.8	63.8#

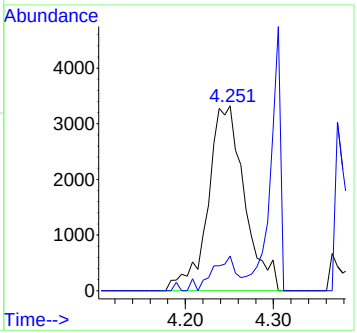


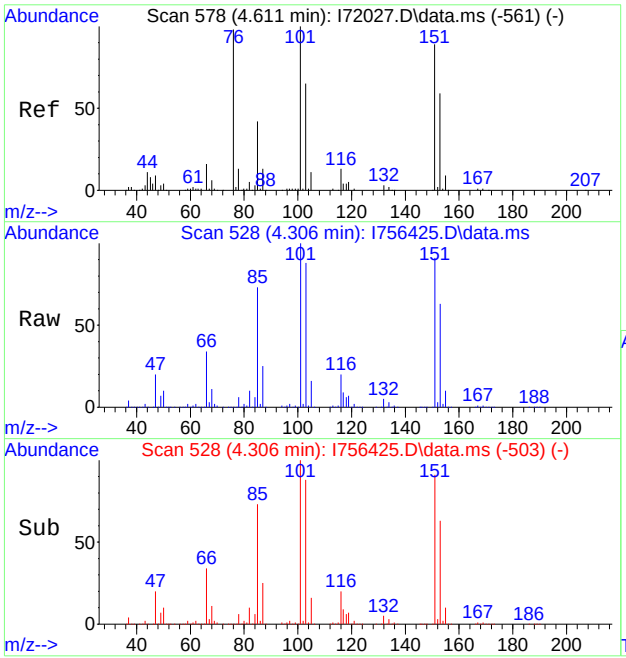


#12
Ethanol
Concen: 104.09 ug/L
RT: 4.251 min Scan# 519
Delta R.T. 0.013 min
Lab File: I756425.D
Acq: 4 May 2023 6:30 am

Tgt Ion: 45 Resp: 9539

Ion	Ratio	Lower	Upper
45	100		
46	18.7	0.0	56.9

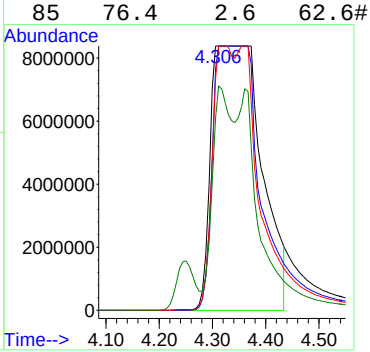


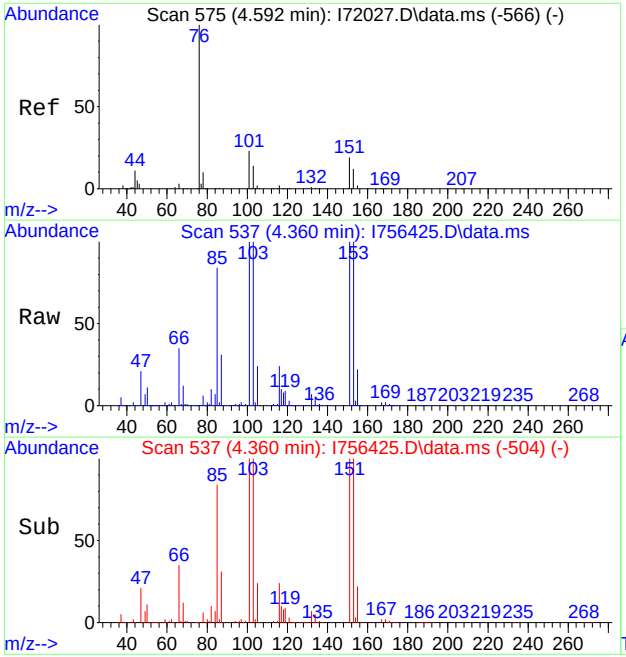


#13
Freon 113
Concen: 28241.01 ug/L
RT: 4.306 min Scan# 528
Delta R.T. -0.000 min
Lab File: I756425.D
Acq: 4 May 2023 6:30 am

Tgt Ion:101 Resp:55456740

Ion	Ratio	Lower	Upper
101	100		
151	93.9	45.2	105.2
103	90.7	34.0	94.0
85	76.4	2.6	62.6#

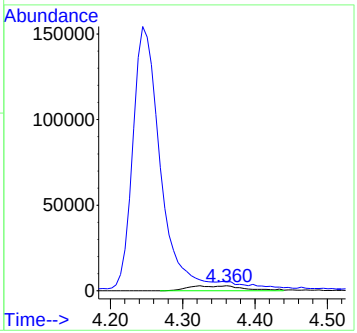


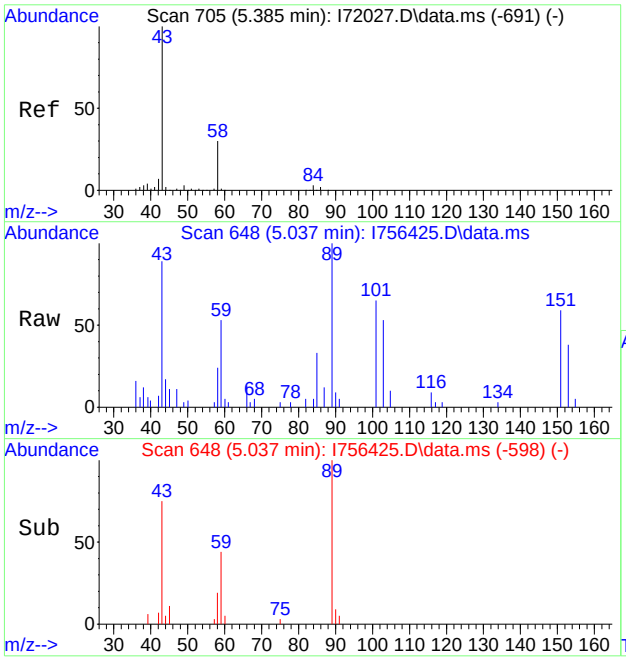


#14
Carbon Disulfide
Concen: 2.60 ug/L
RT: 4.360 min Scan# 537
Delta R.T. 0.048 min
Lab File: I756425.D
Acq: 4 May 2023 6:30 am

Tgt Ion: 76 Resp: 15638

Ion	Ratio	Lower	Upper
76	100		
44	116.3	0.0	46.1#

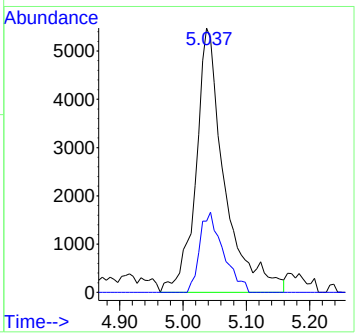


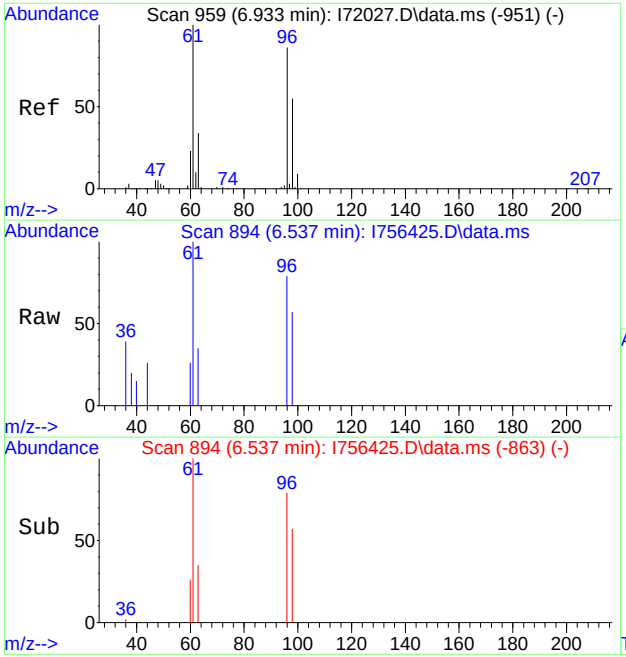


#19
Acetone
Concen: 10.47 ug/L
RT: 5.037 min Scan# 648
Delta R.T. 0.006 min
Lab File: I756425.D
Acq: 4 May 2023 6:30 am

Tgt Ion: 43 Resp: 17151

Ion	Ratio	Lower	Upper
43	100		
58	27.0	1.0	61.0

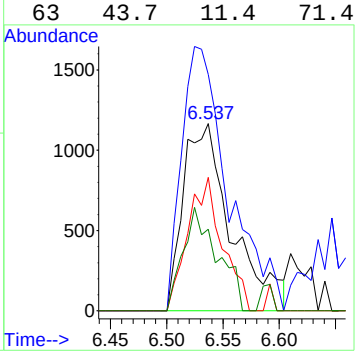


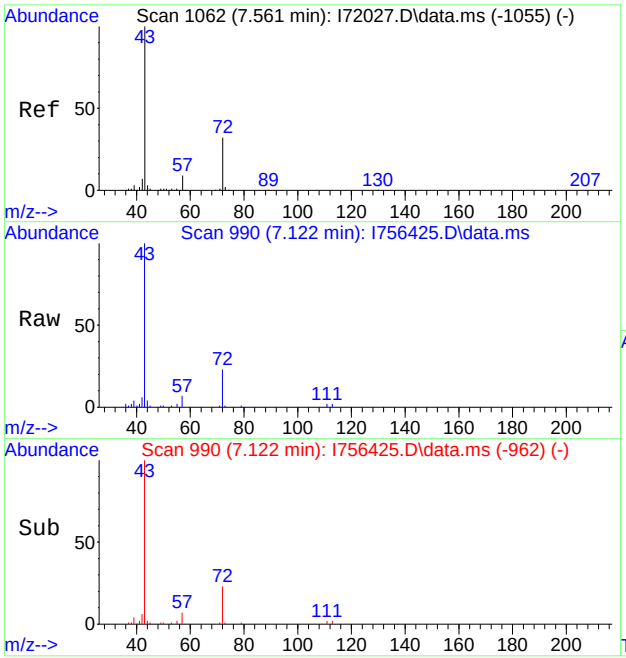


#32
cis-1,2-Dichloroethene
Concen: 1.58 ug/L
RT: 6.537 min Scan# 894
Delta R.T. 0.037 min
Lab File: I756425.D
Acq: 4 May 2023 6:30 am

Tgt Ion: 96 Resp: 3472

Ion	Ratio	Lower	Upper
96	100		
61	126.2	100.0	160.0
98	71.4	35.1	95.1
63	43.7	11.4	71.4

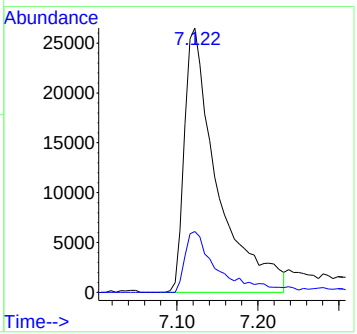


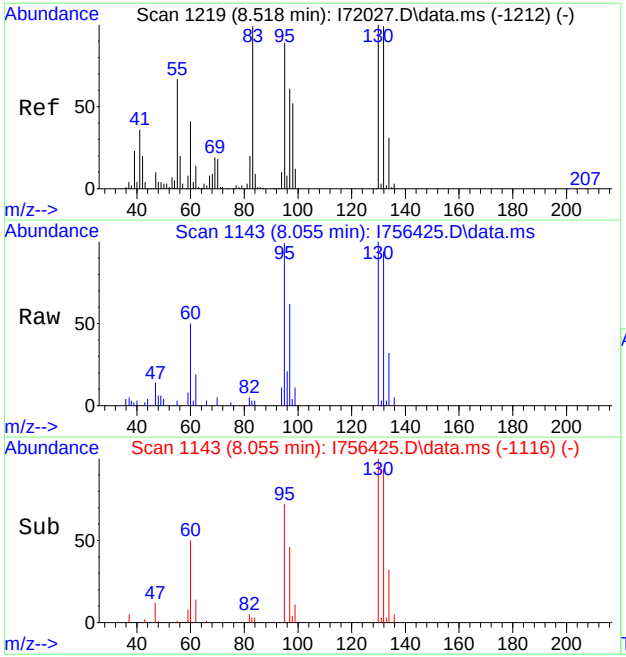


#42
2-Butanone
Concen: 29.57 ug/L
RT: 7.122 min Scan# 990
Delta R.T. 0.018 min
Lab File: I756425.D
Acq: 4 May 2023 6:30 am

Tgt Ion: 43 Resp: 75202

Ion	Ratio	Lower	Upper
43	100		
72	23.0	0.0	57.0

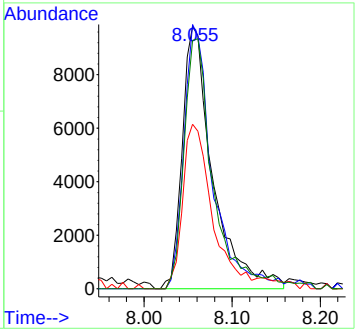


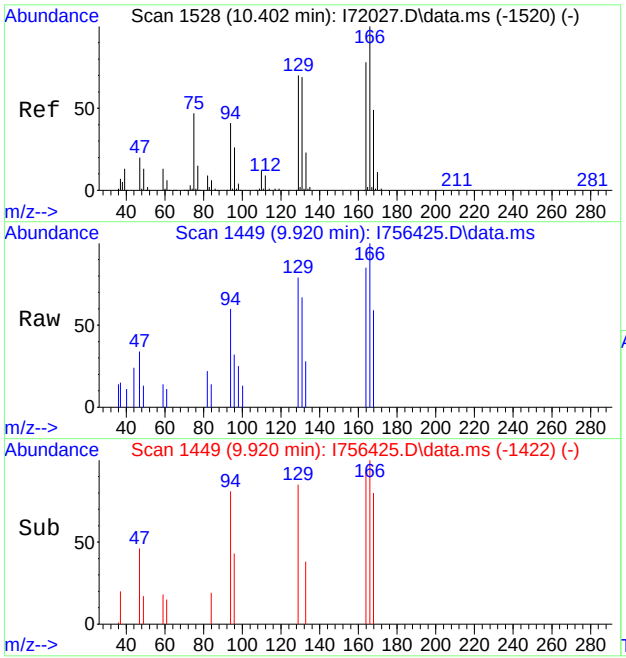


#53
Trichloroethene
Concen: 10.16 ug/L
RT: 8.055 min Scan# 1143
Delta R.T. 0.012 min
Lab File: I756425.D
Acq: 4 May 2023 6:30 am

Tgt Ion: 95 Resp: 23692

Ion	Ratio	Lower	Upper
95	100		
130	100.8	73.6	133.6
97	62.7	35.5	95.5
132	94.6	74.3	134.3

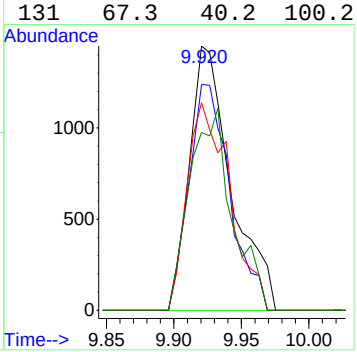


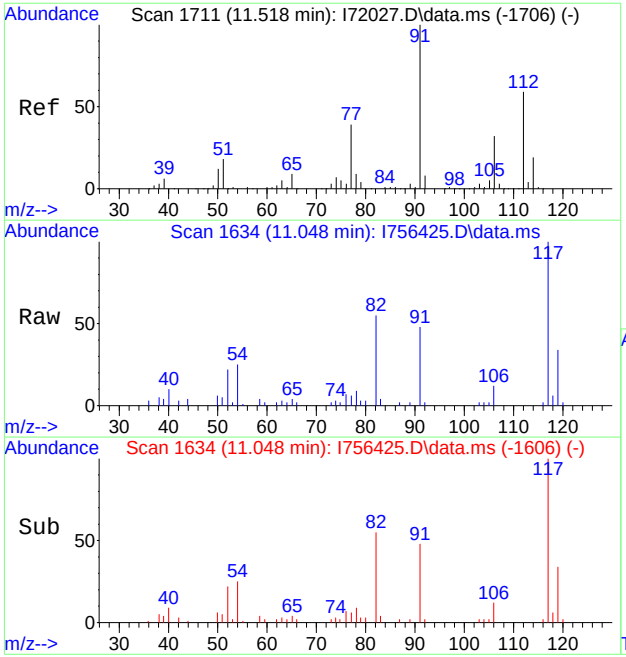


#68
Tetrachloroethene
Concen: 1.39 ug/L
RT: 9.920 min Scan# 1449
Delta R.T. 0.012 min
Lab File: I756425.D
Acq: 4 May 2023 6:30 am

Tgt Ion:166 Resp: 3119

Ion	Ratio	Lower	Upper
166	100		
164	85.4	47.8	107.8
129	78.6	46.1	106.1
131	67.3	40.2	100.2

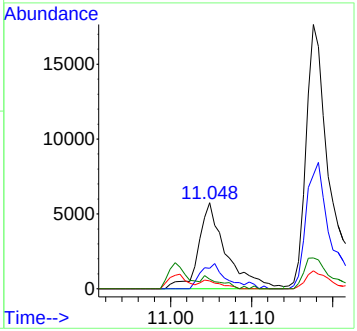


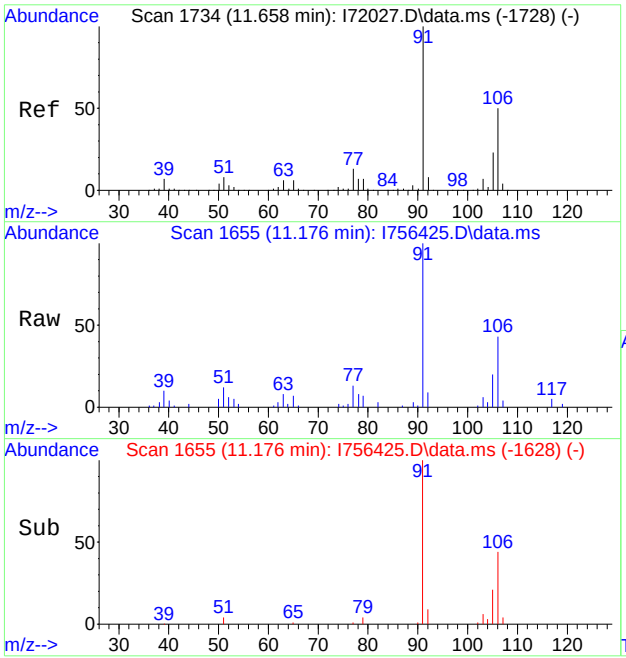


#77
Ethylbenzene
Concen: 1.41 ug/L
RT: 11.048 min Scan# 1634
Delta R.T. 0.018 min
Lab File: I756425.D
Acq: 4 May 2023 6:30 am

Tgt Ion: 91 Resp: 13661

Ion	Ratio	Lower	Upper
91	100		
106	23.9	2.3	62.3
65	9.2	0.0	38.7
51	11.0	0.0	50.1

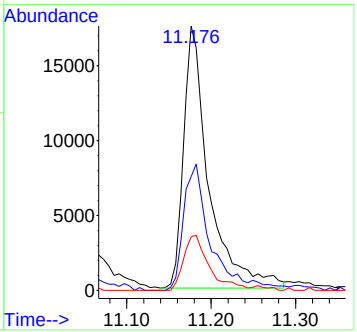


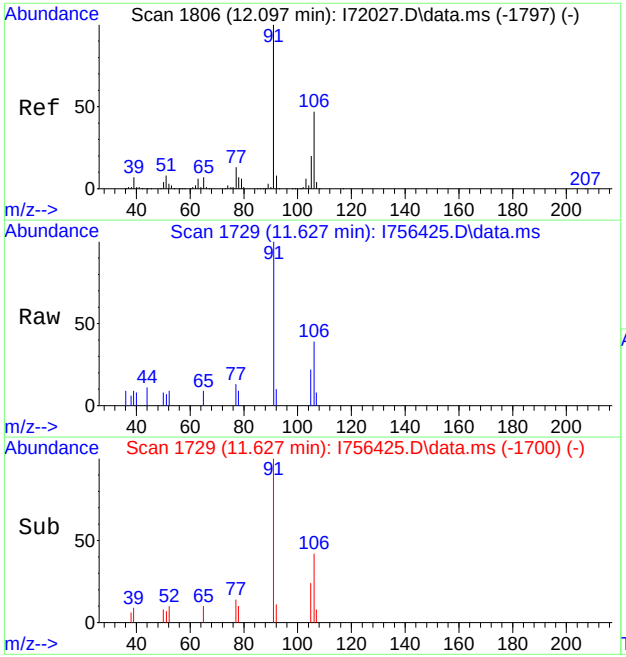


#80
m,p-Xylene
Concen: 5.14 ug/L
RT: 11.176 min Scan# 1655
Delta R.T. 0.012 min
Lab File: I756425.D
Acq: 4 May 2023 6:30 am

Tgt Ion: 91 Resp: 36392

Ion	Ratio	Lower	Upper
91	100		
106	43.4	19.3	79.3
105	20.5	0.0	52.8

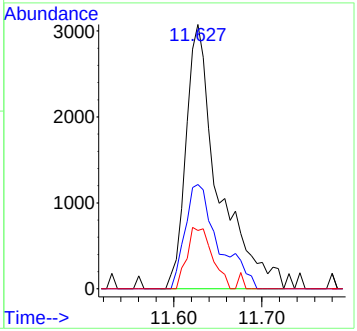


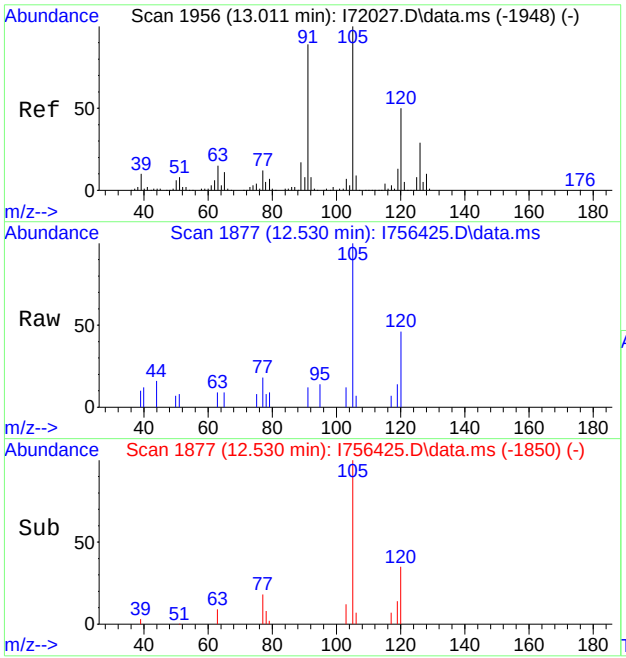


#81
o-Xylene
Concen: 1.08 ug/L
RT: 11.627 min Scan# 1729
Delta R.T. 0.024 min
Lab File: I756425.D
Acq: 4 May 2023 6:30 am

Tgt Ion: 91 Resp: 7873

Ion	Ratio	Lower	Upper
91	100		
106	39.5	17.7	77.7
105	22.1	0.0	48.8

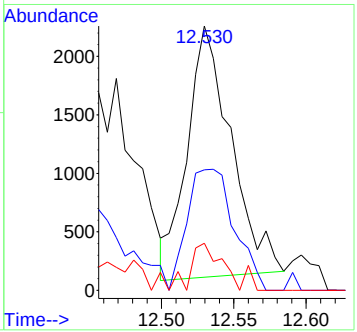


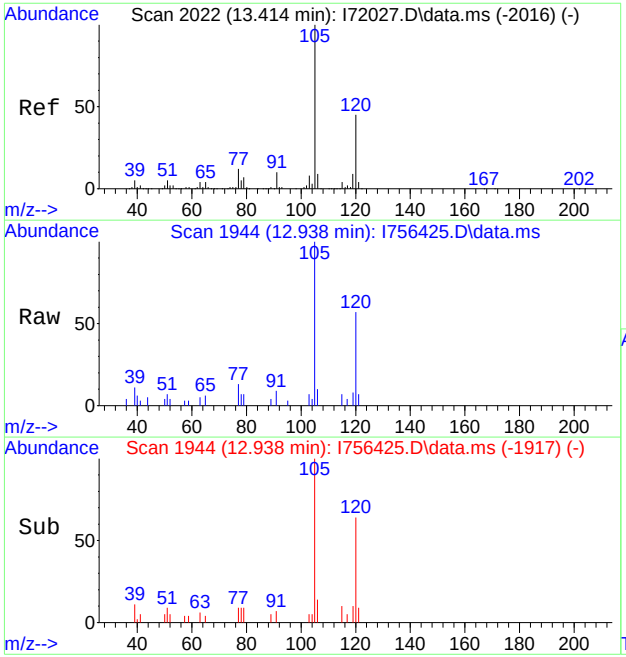


#91
1,3,5-Trimethylbenzene
Concen: 0.68 ug/L
RT: 12.530 min Scan# 1877
Delta R.T. 0.013 min
Lab File: I756425.D
Acq: 4 May 2023 6:30 am

Tgt Ion:105 Resp: 4526

Ion	Ratio	Lower	Upper
105	100		
120	49.1	19.2	79.2
77	19.2	0.0	43.3

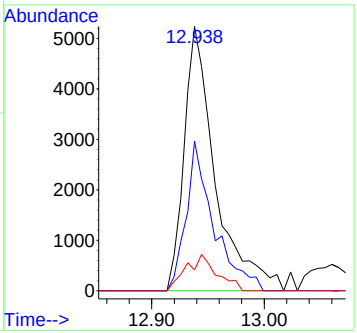


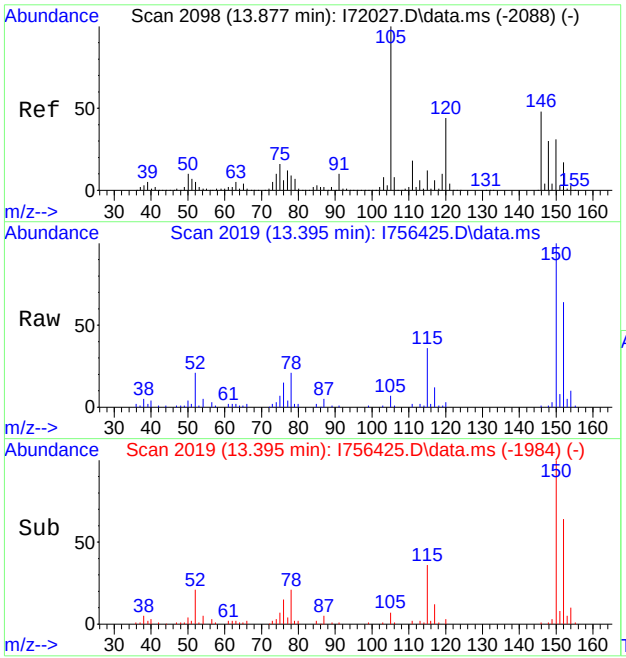


#98
1,2,4-Trimethylbenzene
Concen: 1.53 ug/L
RT: 12.938 min Scan# 1944
Delta R.T. 0.012 min
Lab File: I756425.D
Acq: 4 May 2023 6:30 am

Tgt Ion:105 Resp: 10071

Ion	Ratio	Lower	Upper
105	100		
120	56.6	18.4	78.4
119	7.9	0.0	43.4

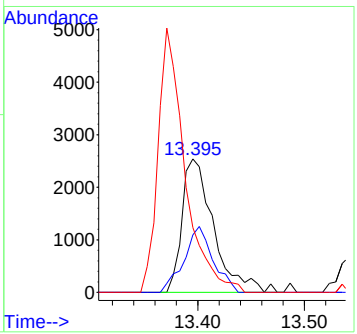


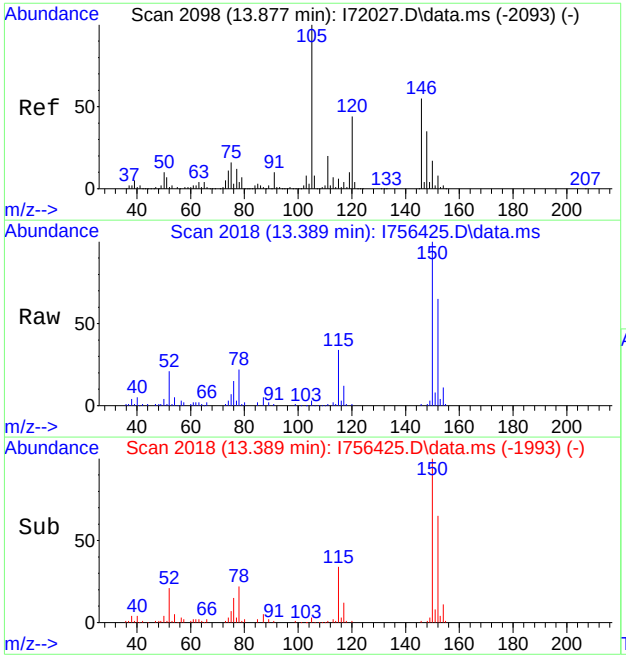


#103
1,2,3-Trimethylbenzene
Concen: 0.72 ug/L
RT: 13.395 min Scan# 2019
Delta R.T. 0.012 min
Lab File: I756425.D
Acq: 4 May 2023 6:30 am

Tgt Ion:105 Resp: 5230

Ion	Ratio	Lower	Upper
105	100		
120	43.1	13.9	73.9
77	48.5	0.0	43.0#

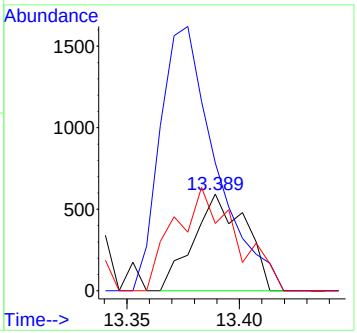


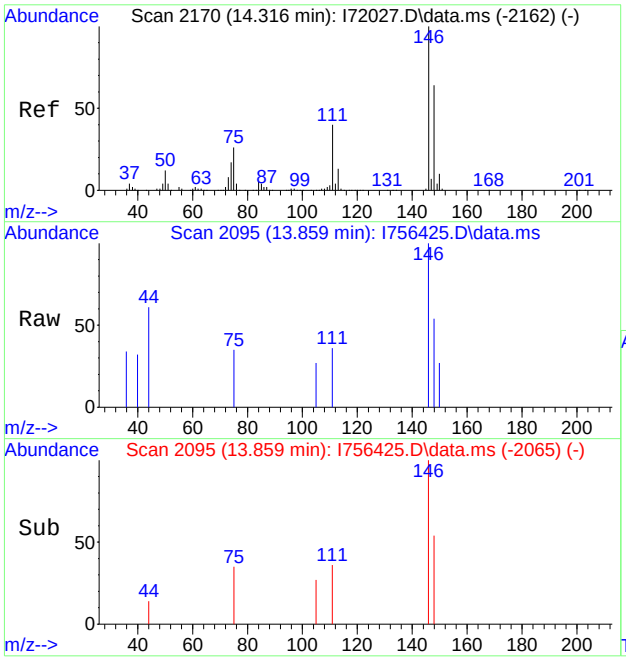


#104
1,4-Dichlorobenzene
Concen: 0.22 ug/L
RT: 13.389 min Scan# 2018
Delta R.T. 0.000 min
Lab File: I756425.D
Acq: 4 May 2023 6:30 am

Tgt Ion:146 Resp: 953

Ion	Ratio	Lower	Upper
146	100		
111	132.0	8.0	68.0#
148	69.4	34.1	94.1

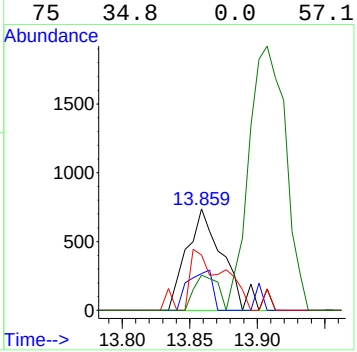


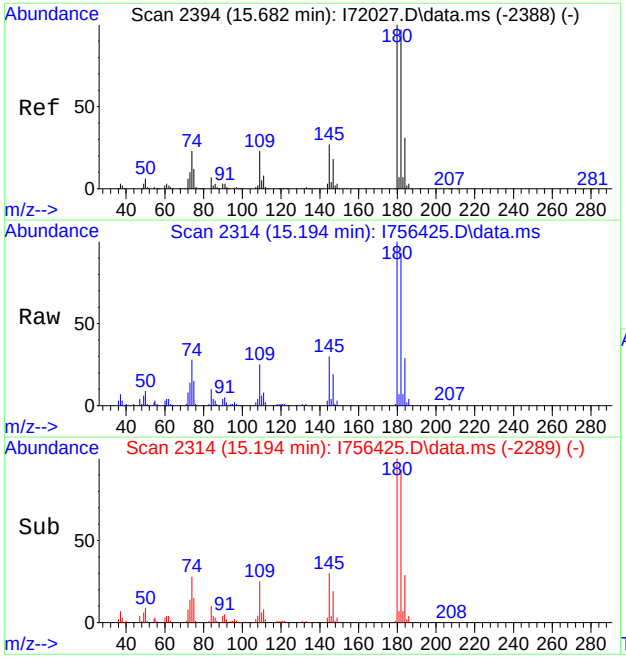


#107
1,2-Dichlorobenzene
Concen: 0.37 ug/L
RT: 13.859 min Scan# 2095
Delta R.T. 0.031 min
Lab File: I756425.D
Acq: 4 May 2023 6:30 am

Tgt Ion:146 Resp: 1425

Ion	Ratio	Lower	Upper
146	100		
111	36.2	8.7	68.7
148	54.5	33.5	93.5
75	34.8	0.0	57.1

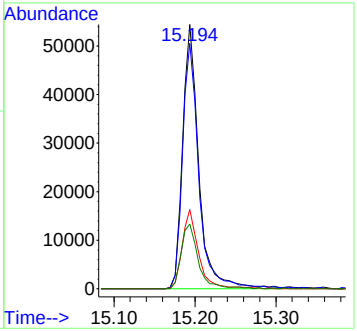


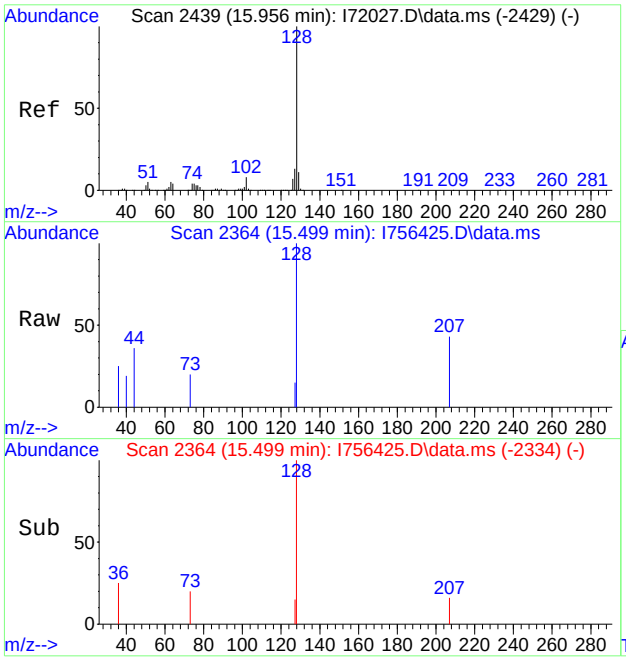


#110
1,2,4-Trichlorobenzene
Concen: 36.90 ug/L
RT: 15.194 min Scan# 2314
Delta R.T. -0.000 min
Lab File: I756425.D
Acq: 4 May 2023 6:30 am

Tgt Ion:180 Resp: 75896

Ion	Ratio	Lower	Upper
180	100		
182	92.9	64.1	124.1
145	30.0	0.0	59.5
109	24.5	0.0	53.2

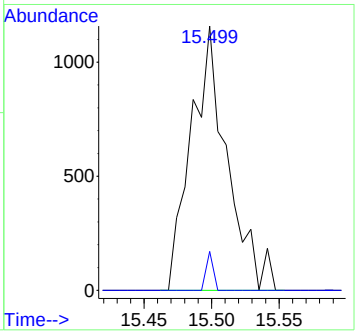


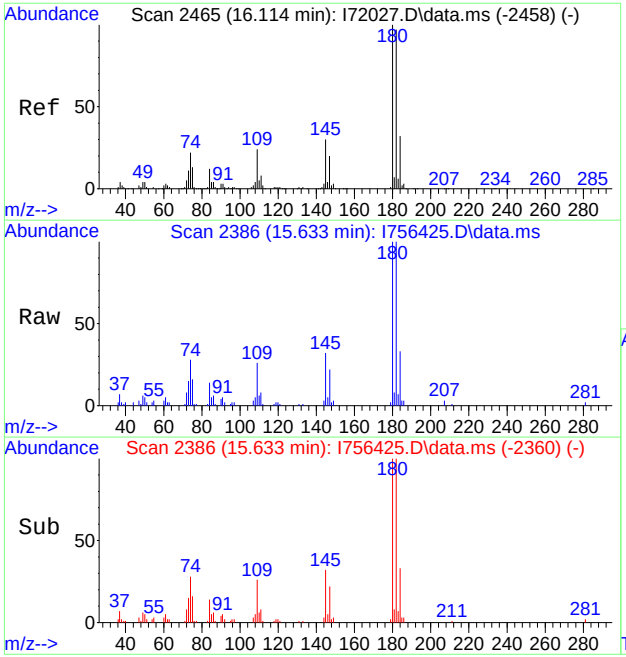


#111
Naphthalene
Concen: 0.28 ug/L
RT: 15.499 min Scan# 2364
Delta R.T. 0.031 min
Lab File: I756425.D
Acq: 4 May 2023 6:30 am

Tgt Ion:128 Resp: 2157

Ion	Ratio	Lower	Upper
128	100		
127	14.8	0.0	42.4

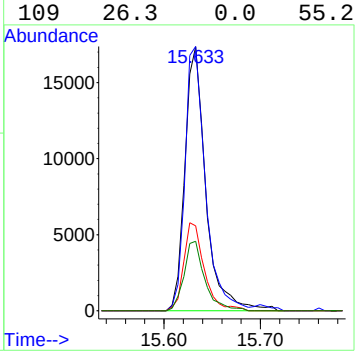




#112
1,2,3-Trichlorobenzene
Concen: 12.16 ug/L
RT: 15.633 min Scan# 2386
Delta R.T. 0.006 min
Lab File: I756425.D
Acq: 4 May 2023 6:30 am

Tgt Ion:180 Resp: 26199

Ion	Ratio	Lower	Upper
180	100		
182	100.2	65.9	125.9
145	32.2	0.7	60.7
109	26.3	0.0	55.2



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-08-2023\V2O2954-55\
Data File : 2O76116.d
Acq On : 5 May 2023 6:47 pm
Operator : davidb2
Sample : FC5659-17 10x
Misc : MS53948,V2O2955,,,,,10
ALS Vial : 18 Sample Multiplier: 1

Quant Time: May 08 00:48:21 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

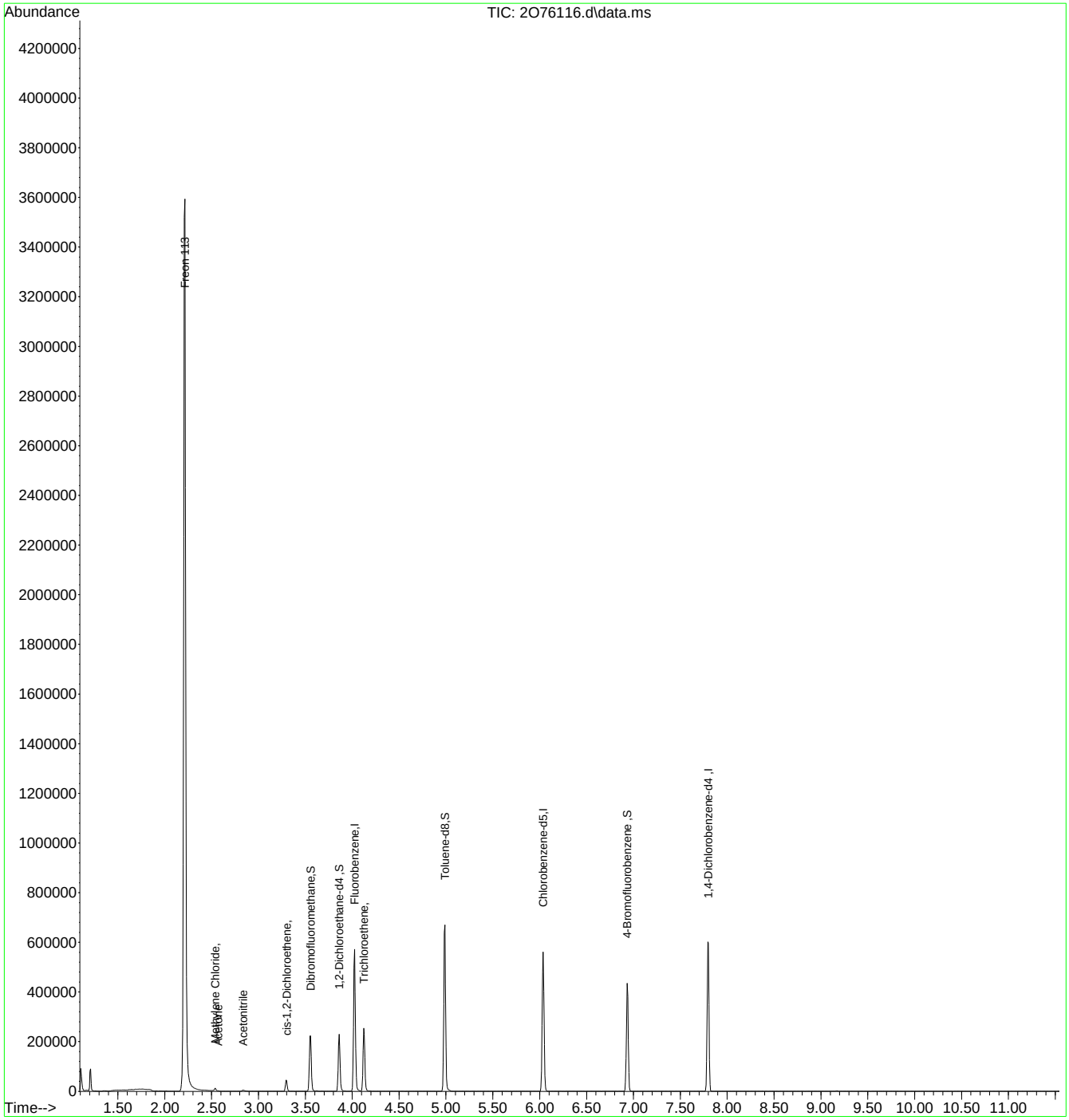
Compound		R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards							
1) Fluorobenzene		4.025	96	375488	50.00	ug/L	0.00
62) Chlorobenzene-d5		6.037	117	261988	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4		7.799	152	133366	50.00	ug/L	0.00
System Monitoring Compounds							
39) Dibromofluoromethane		3.556	113	99069	47.60	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	95.20%		
50) 1,2-Dichloroethane-d4		3.861	65	118034	53.36	ug/L	0.00
Spiked Amount	50.000	Range 79 - 125		Recovery =	106.72%		
63) Toluene-d8		4.988	98	359692	50.35	ug/L	0.00
Spiked Amount	50.000	Range 85 - 112		Recovery =	100.70%		
86) 4-Bromofluorobenzene		6.933	174	98142	48.23	ug/L	-0.01
Spiked Amount	50.000	Range 83 - 118		Recovery =	96.46%		
Target Compounds							Qvalue
13) Freon 113		2.215	101	1172400	712.01	ug/L	96
18) Methylene Chloride		2.538	49	5212	2.25	ug/L	94
19) Acetone		2.568	43	2231	2.36	ug/L	97
25) Acetonitrile		2.836	41	4679	13.16	ug/L	91
32) cis-1,2-Dichloroethene		3.300	96	15286	8.01	ug/L	97
53) Trichloroethene		4.123	95	62891	31.68	ug/L	94

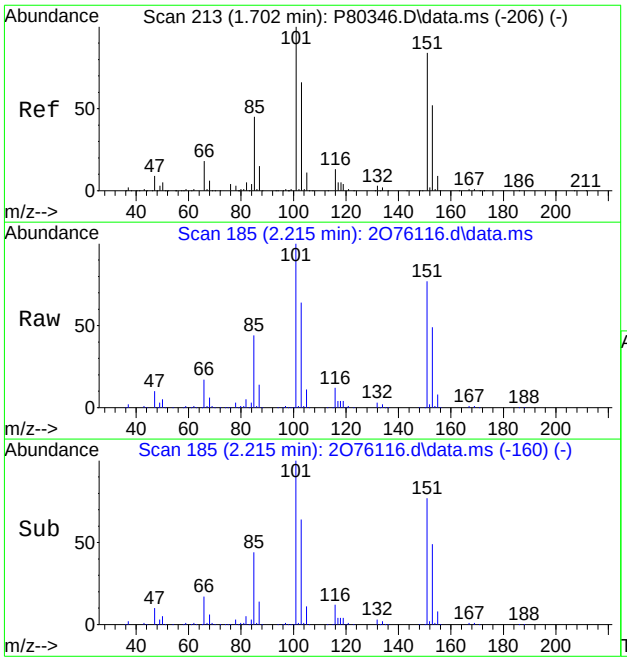
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-08-2023\V2O2954-55\
Data File : 2O76116.d
Acq On : 5 May 2023 6:47 pm
Operator : davidb2
Sample : FC5659-17 10x
Misc : MS53948,V2O2955,,,,,10
ALS Vial : 18 Sample Multiplier: 1

Quant Time: May 08 00:48:21 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

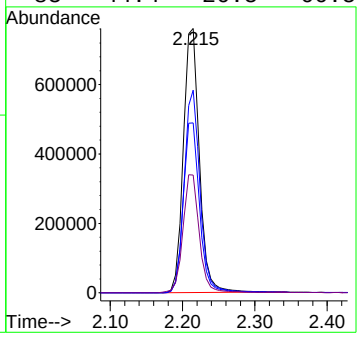


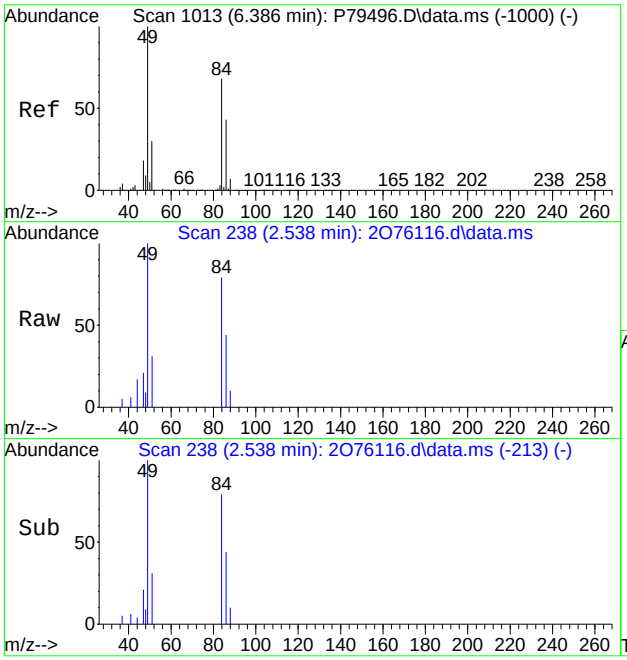


#13
Freon 113
Concen: 712.01 ug/L
RT: 2.215 min Scan# 185
Delta R.T. -0.000 min
Lab File: 2O76116.d
Acq: 5 May 2023 6:47 pm

Tgt Ion:101 Resp: 1172400

Ion	Ratio	Lower	Upper
101	100		
151	76.6	60.3	100.3
103	64.3	48.1	88.1
85	44.4	26.5	66.5

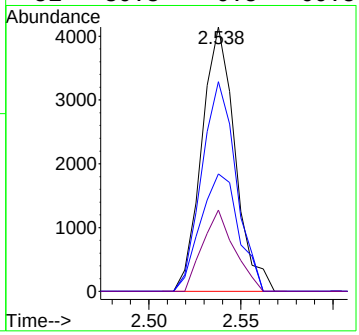


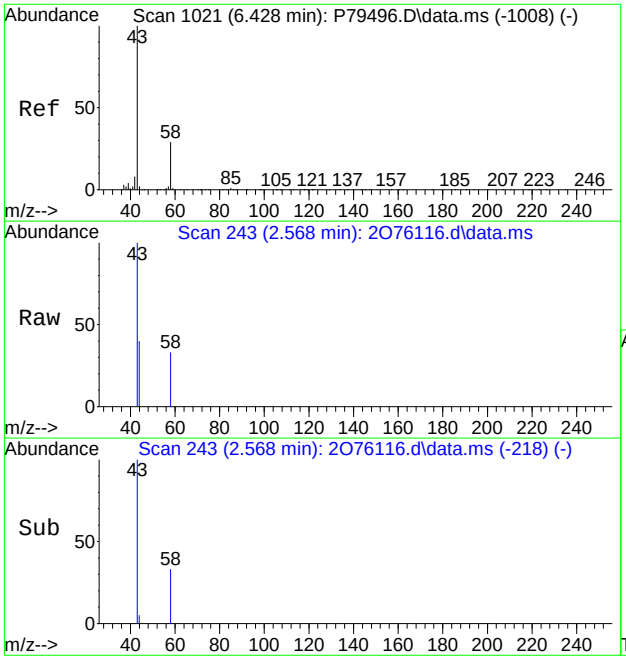


#18
Methylene Chloride
Concen: 2.25 ug/L
RT: 2.538 min Scan# 238
Delta R.T. -0.000 min
Lab File: 2O76116.d
Acq: 5 May 2023 6:47 pm

Tgt Ion: 49 Resp: 5212

Ion	Ratio	Lower	Upper
49	100		
84	79.3	53.6	113.6
86	44.4	23.1	83.1
51	30.8	0.5	60.5

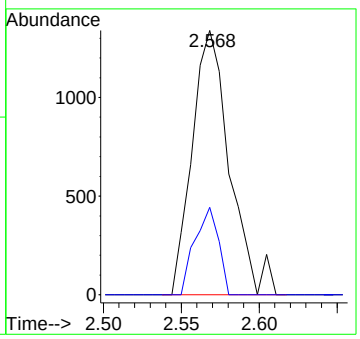


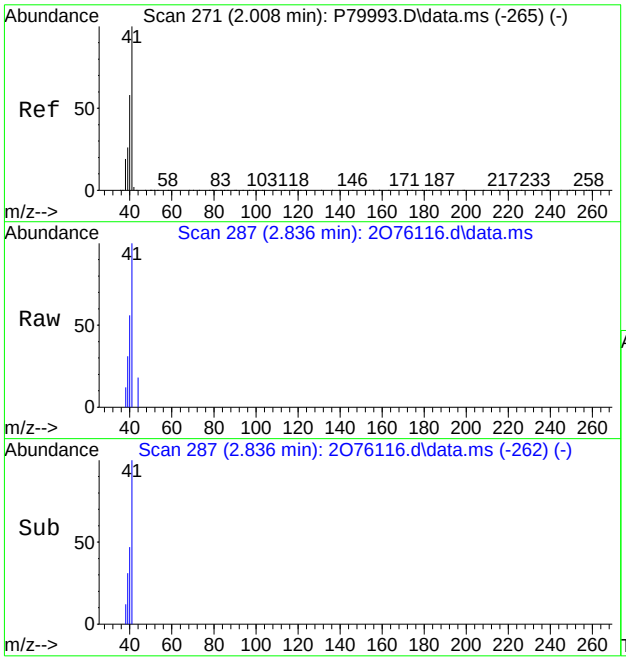


#19
Acetone
Concen: 2.36 ug/L
RT: 2.568 min Scan# 243
Delta R.T. 0.000 min
Lab File: 2O76116.d
Acq: 5 May 2023 6:47 pm

Tgt Ion: 43 Resp: 2231

Ion	Ratio	Lower	Upper
43	100		
58	33.1	1.6	61.6

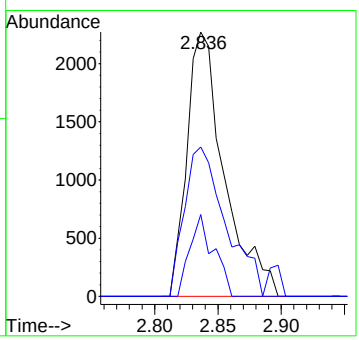


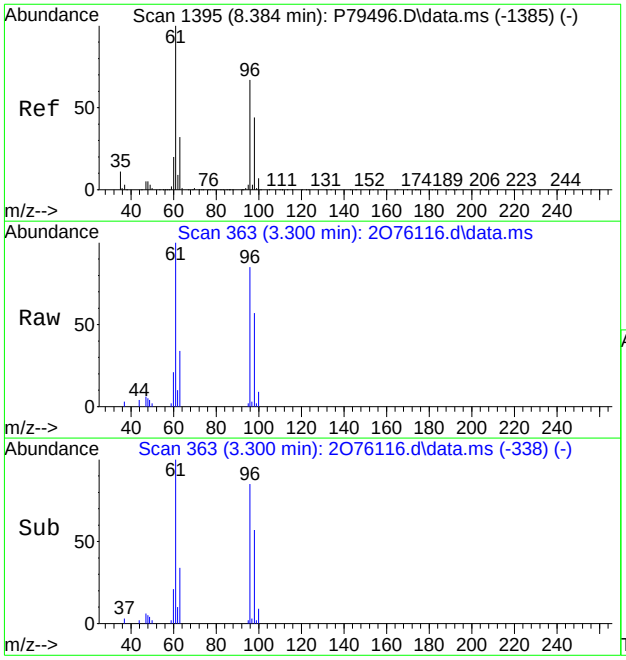


#25
Acetonitrile
Concen: 13.16 ug/L
RT: 2.836 min Scan# 287
Delta R.T. 0.000 min
Lab File: 2O76116.d
Acq: 5 May 2023 6:47 pm

Tgt Ion: 41 Resp: 4679

Ion	Ratio	Lower	Upper
41	100		
40	56.5	34.3	74.3
39	31.0	0.0	39.8

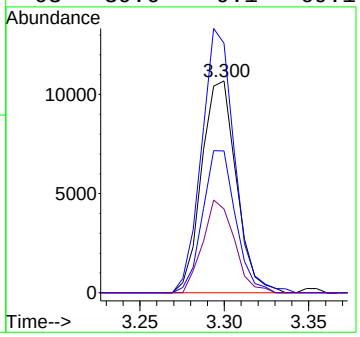


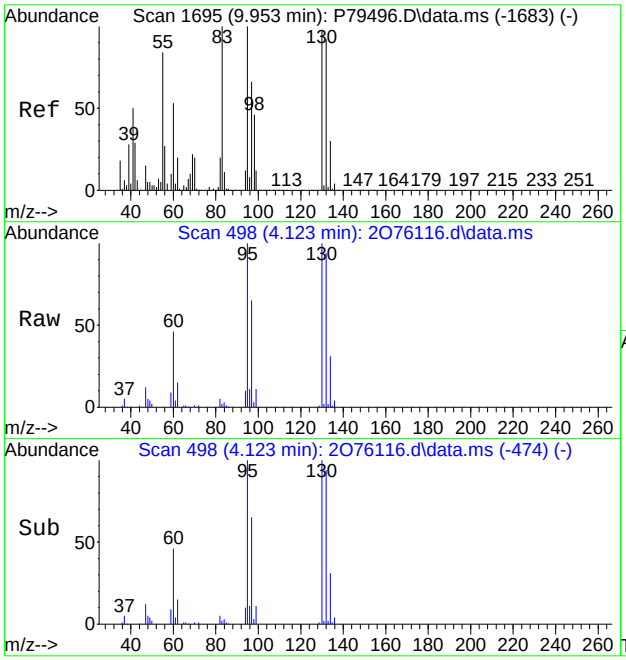


#32
cis-1,2-Dichloroethene
Concen: 8.01 ug/L
RT: 3.300 min Scan# 363
Delta R.T. -0.000 min
Lab File: 2O76116.d
Acq: 5 May 2023 6:47 pm

Tgt Ion: 96 Resp: 15286

Ion	Ratio	Lower	Upper
96	100		
61	117.7	90.1	150.1
98	66.8	33.4	93.4
63	39.6	9.1	69.1

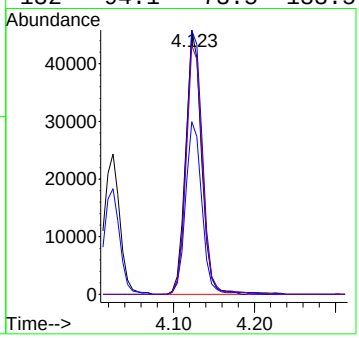




#53
Trichloroethene
Concen: 31.68 ug/L
RT: 4.123 min Scan# 498
Delta R.T. -0.006 min
Lab File: 2O76116.d
Acq: 5 May 2023 6:47 pm

Tgt Ion: 95 Resp: 62891

Ion	Ratio	Lower	Upper
95	100		
130	99.9	75.0	135.0
97	65.3	36.1	96.1
132	94.1	73.5	133.5



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-03\
Data File : I756426.D
Acq On : 4 May 2023 6:55 am
Operator : jeniferw
Sample : FC5659-17
Misc : MS53924,VI2913,,,,,10
ALS Vial : 53 Sample Multiplier: 1

Quant Time: May 04 08:55:46 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

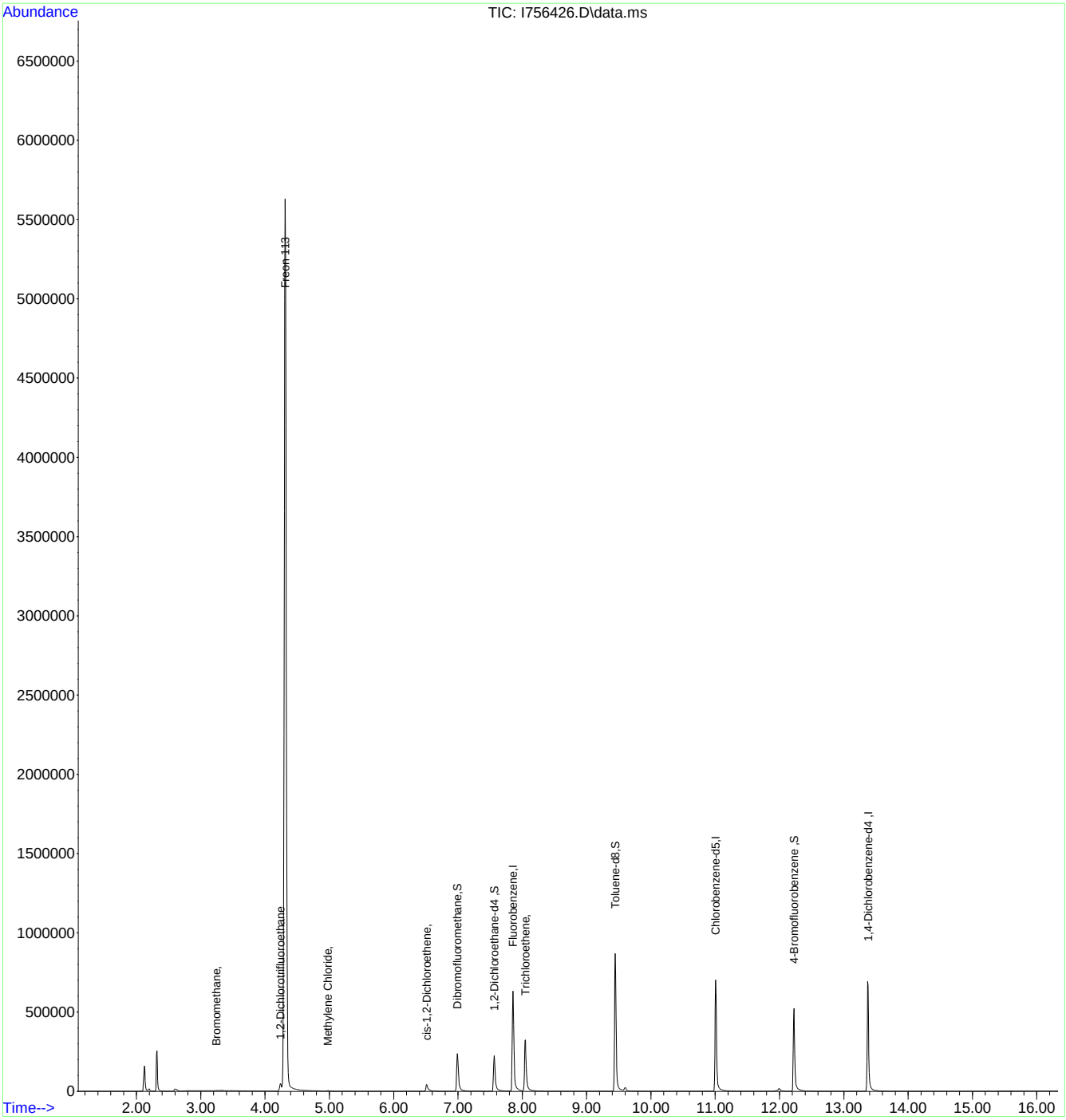
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.854	96	553086	50.00	ug/L	0.00
62) Chlorobenzene-d5	11.006	117	393569	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.377	152	187775	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	6.988	113	154927	49.51	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.02%			
49) 1,2-Dichloroethane-d4	7.561	65	167177	48.85	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 97.70%			
63) Toluene-d8	9.445	98	544309	49.88	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 99.76%			
86) 4-Bromofluorobenzene	12.225	174	150244	51.39	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 102.78%			
Target Compounds						Qvalue
6) Bromomethane	3.239	94	1219	1.14	ug/L	91
10) 1,2-Dichlorotrifluoroe...	4.239	67	27251	11.10	ug/L	85
13) Freon 113	4.312	101	2677387	1351.56	ug/L	94
18) Methylene Chloride	4.976	49	1986	0.61	ug/L	85
32) cis-1,2-Dichloroethene	6.513	96	24053	10.85	ug/L	96
53) Trichloroethene	8.049	95	116014	49.31	ug/L	95

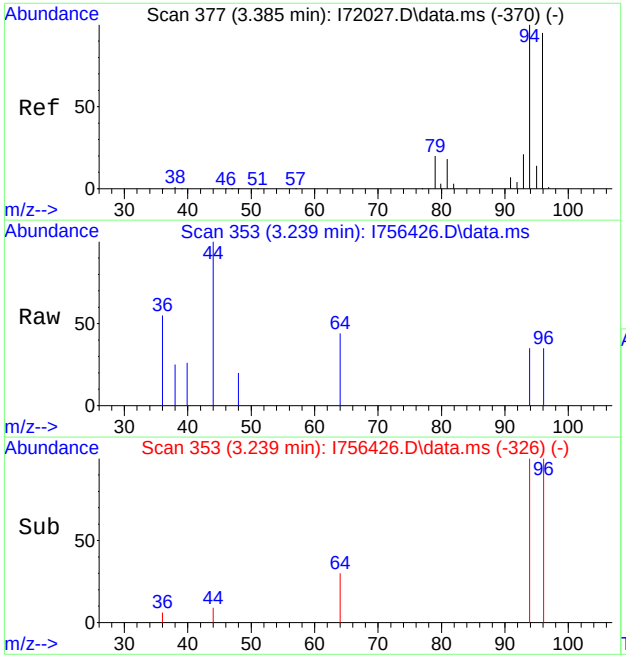
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-03\
Data File : I756426.D
Acq On : 4 May 2023 6:55 am
Operator : jeniferw
Sample : FC5659-17
Misc : MS53924,VI2913,,,,,10
ALS Vial : 53 Sample Multiplier: 1

Quant Time: May 04 08:55:46 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

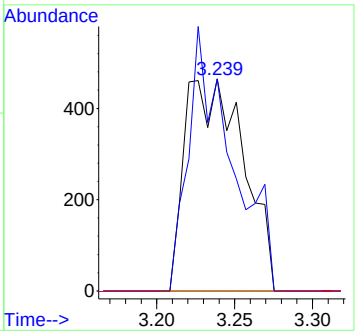


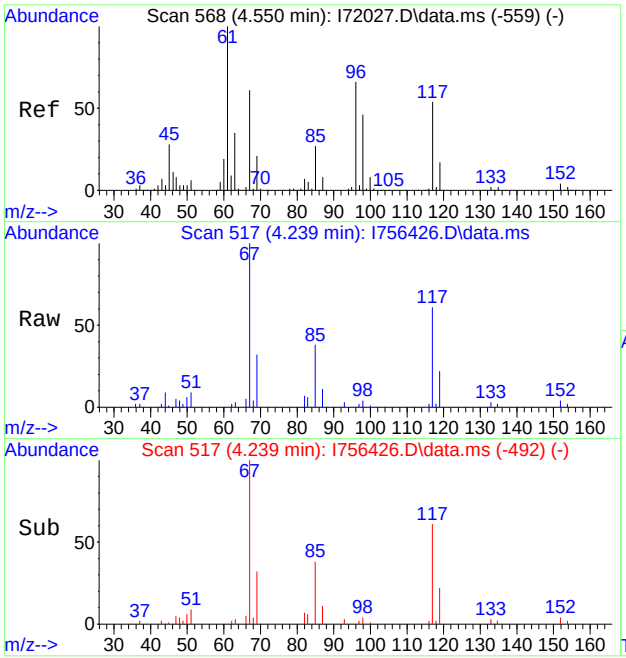


#6
Bromomethane
Concen: 1.14 ug/L
RT: 3.239 min Scan# 353
Delta R.T. 0.013 min
Lab File: I756426.D
Acq: 4 May 2023 6:55 am

Tgt Ion: 94 Resp: 1219

Ion	Ratio	Lower	Upper
94	100		
96	100.0	67.9	127.9
93	0.0	0.0	50.6

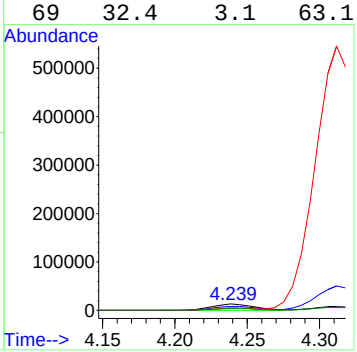


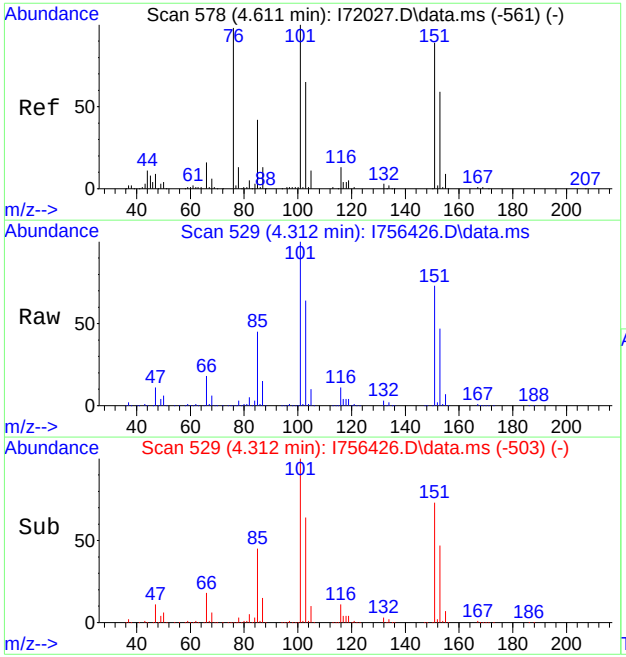


#10
1,2-Dichlorotrifluoroethane
Concen: 11.10 ug/L
RT: 4.239 min Scan# 517
Delta R.T. 0.001 min
Lab File: I756426.D
Acq: 4 May 2023 6:55 am

Tgt Ion: 67 Resp: 27251

Ion	Ratio	Lower	Upper
67	100		
117	60.7	51.9	111.9
85	38.1	13.5	73.5
69	32.4	3.1	63.1

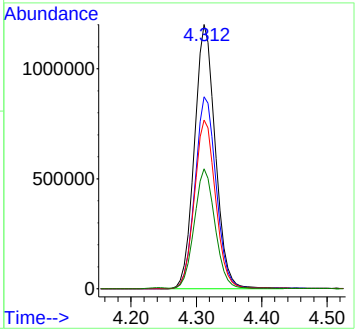


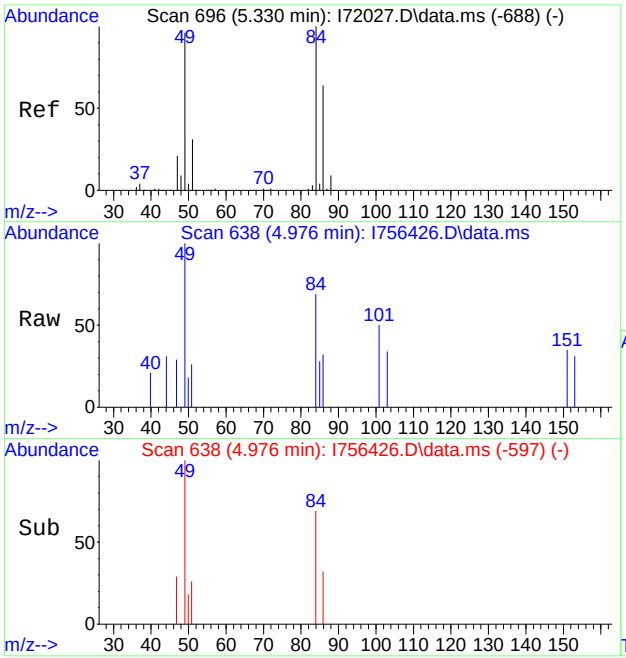


#13
Freon 113
Concen: 1351.56 ug/L
RT: 4.312 min Scan# 529
Delta R.T. 0.006 min
Lab File: I756426.D
Acq: 4 May 2023 6:55 am

Tgt Ion:101 Resp: 2677387

Ion	Ratio	Lower	Upper
101	100		
151	72.6	45.2	105.2
103	63.9	34.0	94.0
85	45.2	2.6	62.6

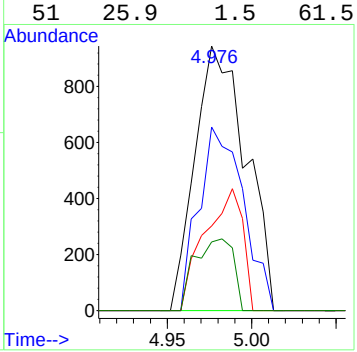


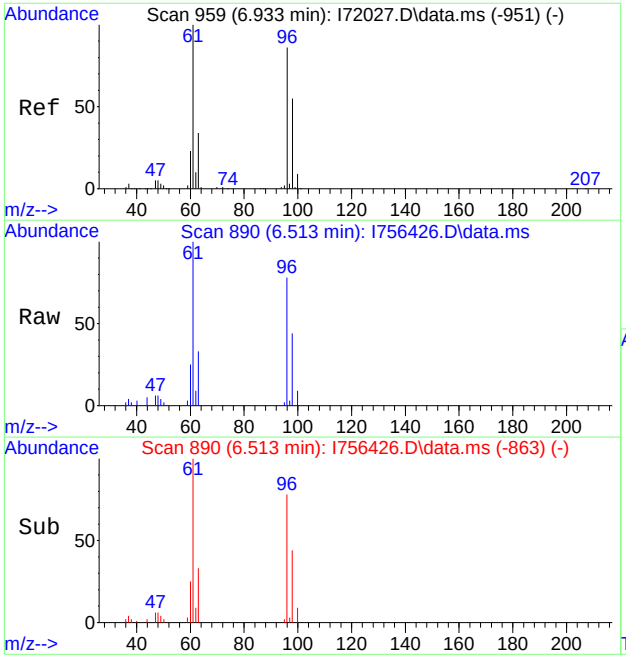


#18
Methylene Chloride
Concen: 0.61 ug/L
RT: 4.976 min Scan# 638
Delta R.T. 0.000 min
Lab File: I756426.D
Acq: 4 May 2023 6:55 am

Tgt Ion: 49 Resp: 1986

Ion	Ratio	Lower	Upper
49	100		
84	69.3	46.9	106.9
86	32.0	20.7	80.7
51	25.9	1.5	61.5

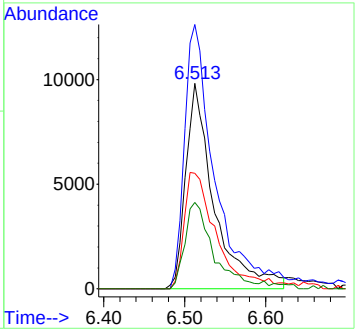


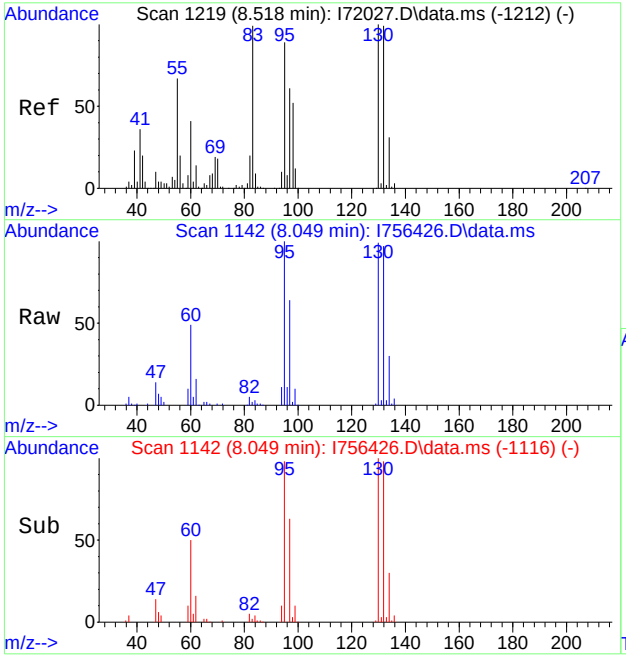


#32
cis-1,2-Dichloroethene
Concen: 10.85 ug/L
RT: 6.513 min Scan# 890
Delta R.T. 0.013 min
Lab File: I756426.D
Acq: 4 May 2023 6:55 am

Tgt Ion: 96 Resp: 24053

Ion	Ratio	Lower	Upper
96	100		
61	128.7	100.0	160.0
98	56.3	35.1	95.1
63	42.0	11.4	71.4

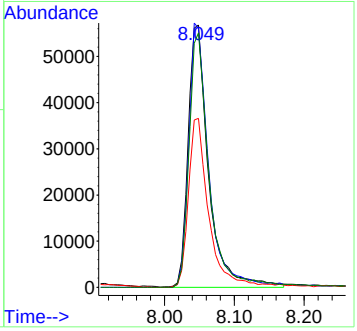




#53
Trichloroethene
Concen: 49.31 ug/L
RT: 8.049 min Scan# 1142
Delta R.T. 0.006 min
Lab File: I756426.D
Acq: 4 May 2023 6:55 am

Tgt Ion: 95 Resp: 116014

Ion	Ratio	Lower	Upper
95	100		
130	98.7	73.6	133.6
97	64.5	35.5	95.5
132	97.0	74.3	134.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76001.d
Acq On : 3 May 2023 12:50 pm
Operator : davidb2
Sample : MB
Misc : MS53846,V2O2949,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 03 21:00:50 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

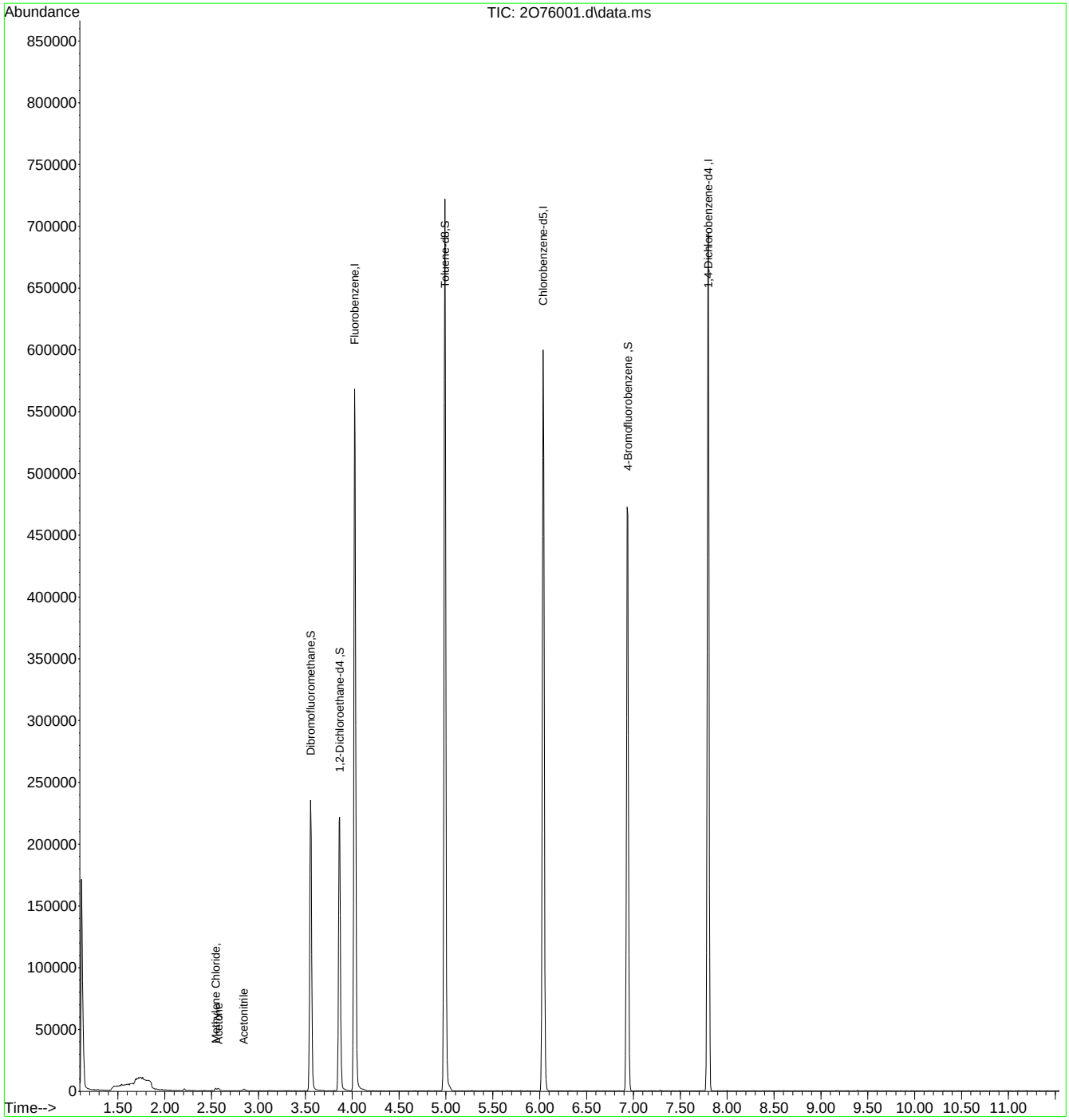
Compound		R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards							
1) Fluorobenzene		4.025	96	382779	50.00	ug/L	0.00
62) Chlorobenzene-d5		6.037	117	285743	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4		7.799	152	151740	50.00	ug/L	0.00
System Monitoring Compounds							
39) Dibromofluoromethane		3.556	113	100152	47.21	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	94.42%		
50) 1,2-Dichloroethane-d4		3.867	65	118203	52.42	ug/L	0.00
Spiked Amount	50.000	Range 79 - 125		Recovery =	104.84%		
63) Toluene-d8		4.989	98	373521	47.93	ug/L	0.00
Spiked Amount	50.000	Range 85 - 112		Recovery =	95.86%		
86) 4-Bromofluorobenzene		6.939	174	113848	49.17	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	98.34%		
Target Compounds							Qvalue
18) Methylene Chloride		2.544	49	934	0.40	ug/L	93
19) Acetone		2.574	43	2301	2.39	ug/L	90
25) Acetonitrile		2.843	41	1151	3.17	ug/L #	60

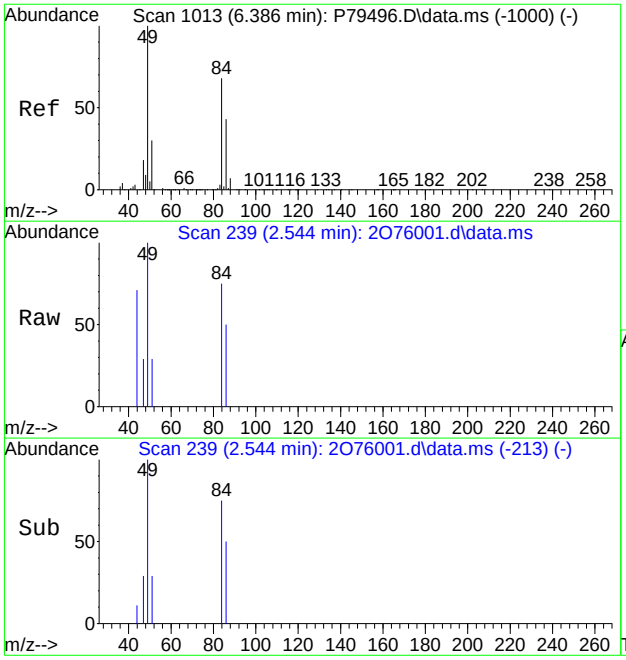
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76001.d
Acq On : 3 May 2023 12:50 pm
Operator : davidb2
Sample : MB
Misc : MS53846,V2O2949,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 03 21:00:50 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

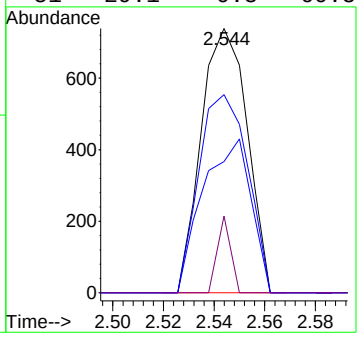


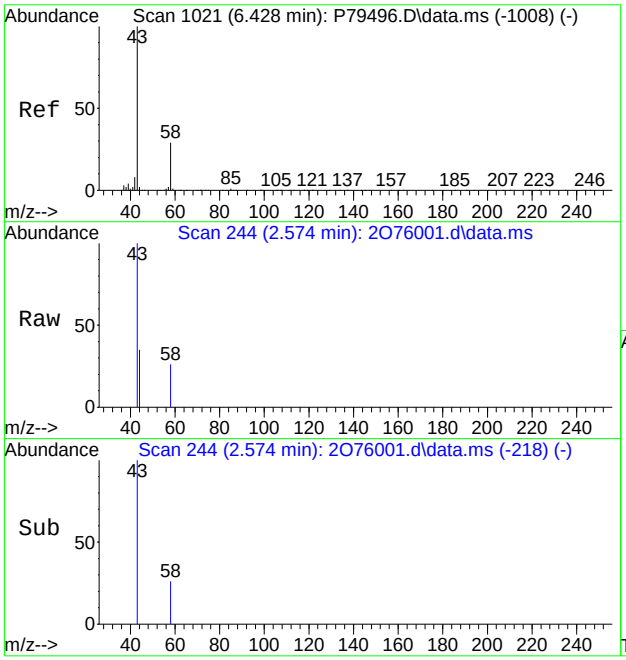


#18
Methylene Chloride
Concen: 0.40 ug/L
RT: 2.544 min Scan# 239
Delta R.T. 0.006 min
Lab File: 2O76001.d
Acq: 3 May 2023 12:50 pm

Tgt Ion: 49 Resp: 934

Ion	Ratio	Lower	Upper
49	100		
84	75.0	53.6	113.6
86	49.7	23.1	83.1
51	29.1	0.5	60.5

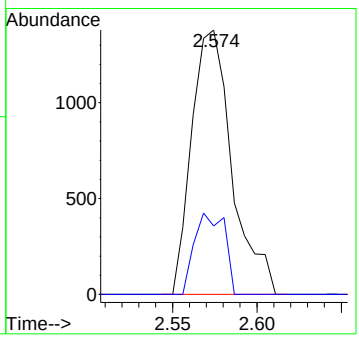


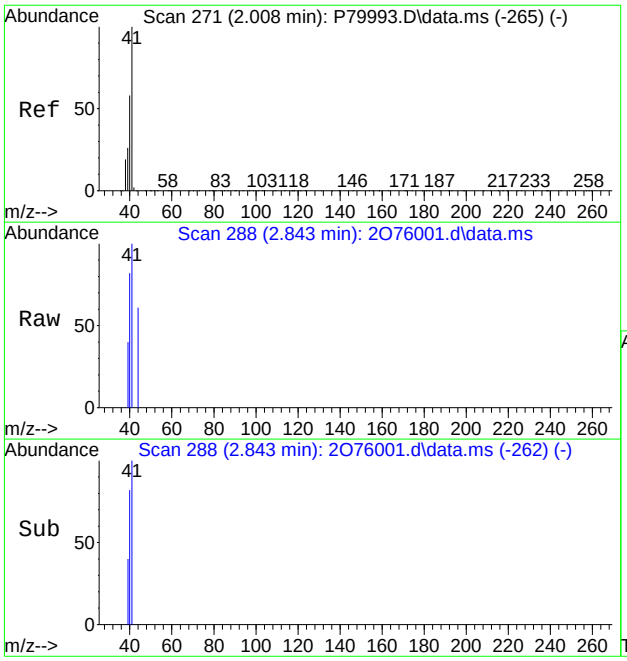


#19
Acetone
Concen: 2.39 ug/L
RT: 2.574 min Scan# 244
Delta R.T. 0.006 min
Lab File: 2O76001.d
Acq: 3 May 2023 12:50 pm

Tgt Ion: 43 Resp: 2301

Ion	Ratio	Lower	Upper
43	100		
58	25.9	1.6	61.6

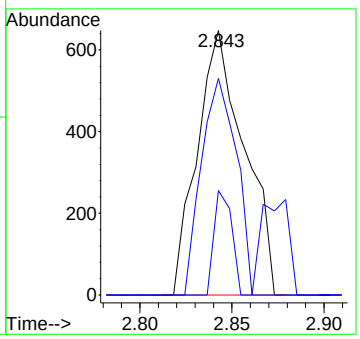




#25
Acetonitrile
Concen: 3.17 ug/L
RT: 2.843 min Scan# 288
Delta R.T. 0.007 min
Lab File: 2O76001.d
Acq: 3 May 2023 12:50 pm

Tgt Ion: 41 Resp: 1151

Ion	Ratio	Lower	Upper
41	100		
40	81.8	34.3	74.3#
39	39.5	0.0	39.8



7.2.1

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\johnm\May 2023\05-04-2023\vi2913\
Data File : I756408.d
Acq On : 3 May 2023 11:30 pm
Operator : jeniferw
Sample : MB Inst : MSVOA16
Misc : MS53924,VI2913,,,,,
ALS Vial : 35 Sample Multiplier: 1

Quant Method : C:\msdchem\2\methods\VI-2023-05-02.m
Quant Results File: VI-2023-05-02.RES
Quant Time: May 04 07:11:26 2023
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

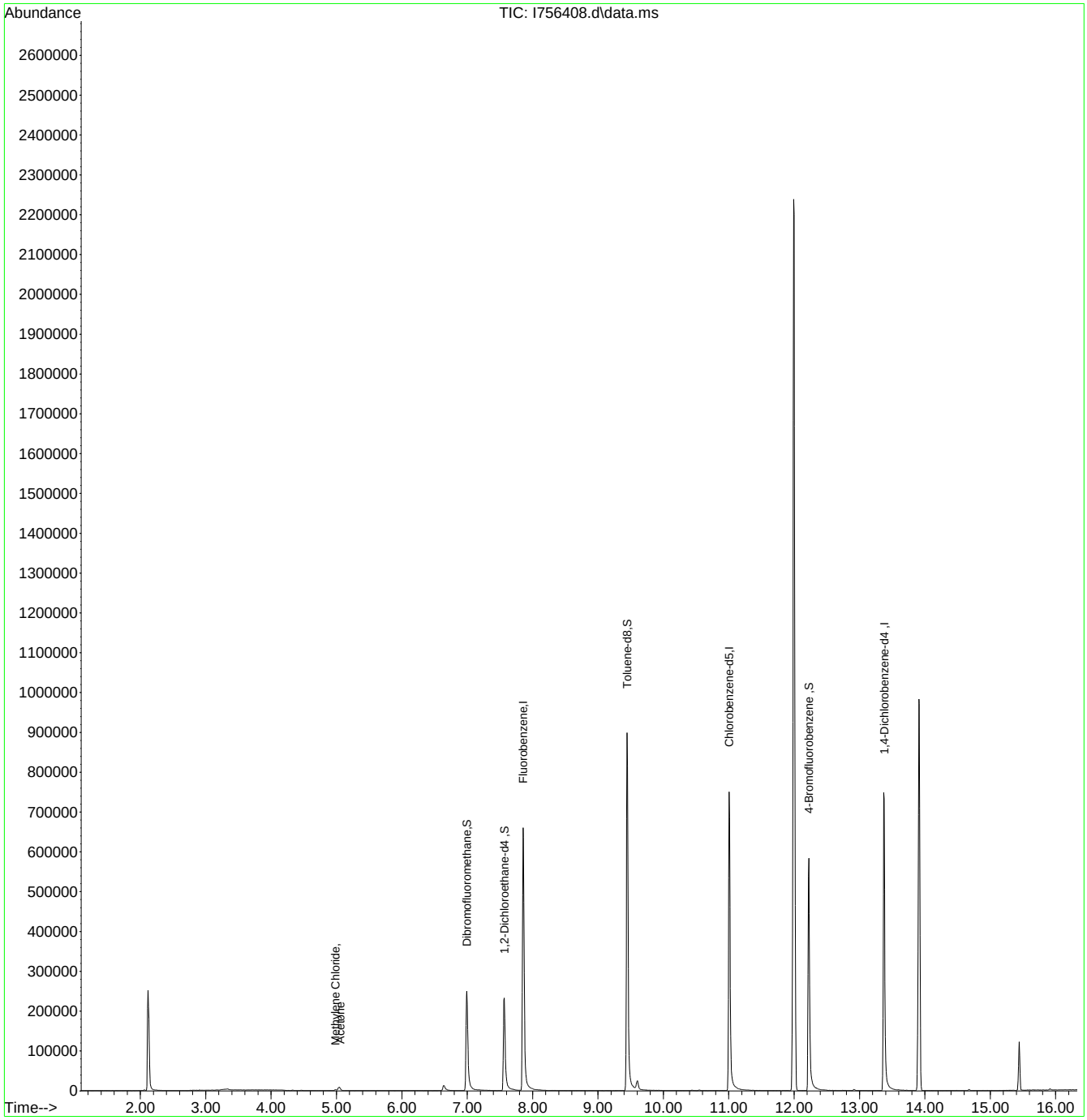
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.854	96	578494	50.00	ug/L	0.00
62) Chlorobenzene-d5	11.006	117	422743	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.377	152	204837	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	6.994	113	161992	49.49	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 98.98%			
49) 1,2-Dichloroethane-d4	7.567	65	177712	49.65	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 99.30%			
63) Toluene-d8	9.445	98	572287	48.83	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 97.66%			
86) 4-Bromofluorobenzene	12.225	174	165924	52.03	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 104.06%			
Target Compounds						Qvalue
18) Methylene Chloride	4.982	49	1581	0.47	ug/L	# 74
19) Acetone	5.055	43	2811	1.63	ug/L	95

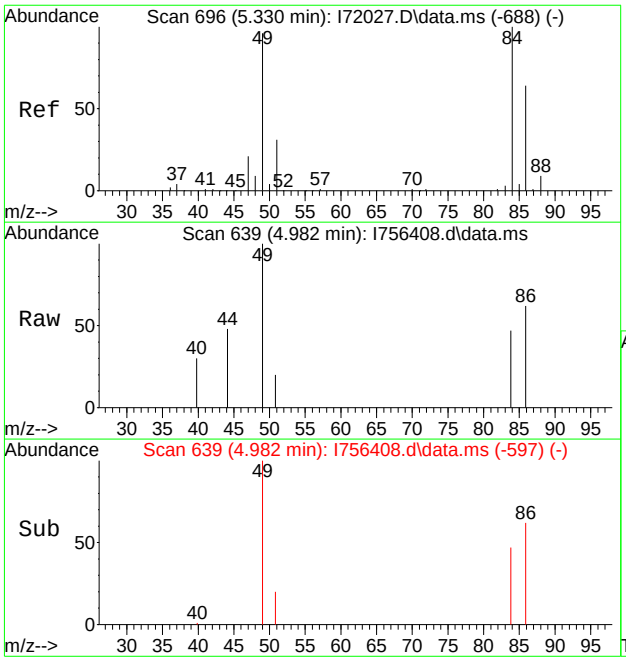
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\johnm\May 2023\05-04-2023\vi2913\
Data File : I756408.d
Acq On : 3 May 2023 11:30 pm
Operator : jeniferw
Sample : MB Inst : MSVOA16
Misc : MS53924,VI2913,,,,,
ALS Vial : 35 Sample Multiplier: 1

Quant Method : C:\msdchem\2\methods\VI-2023-05-02.m
Quant Results File: VI-2023-05-02.RES
Quant Time: May 04 07:11:26 2023
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

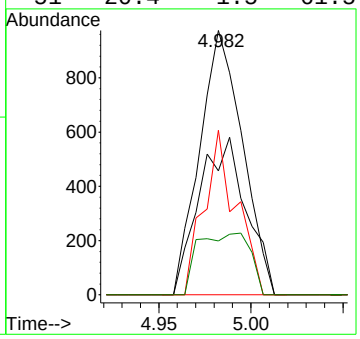


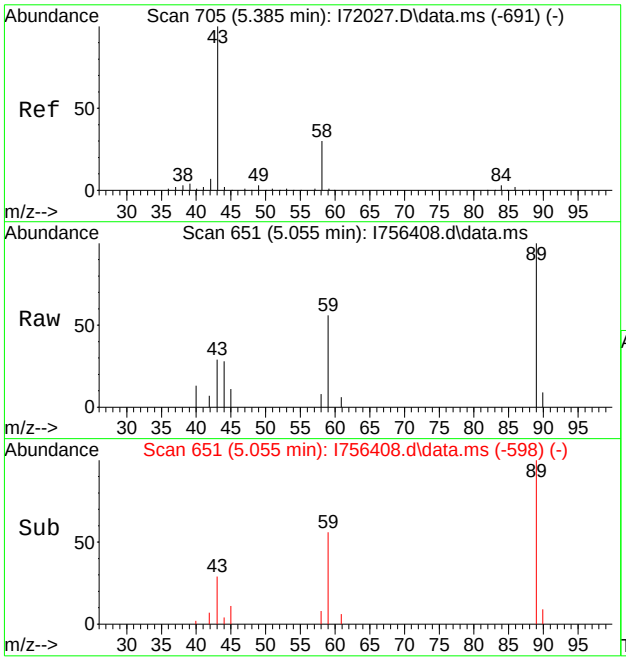


#18
Methylene Chloride
Concen: 0.47 ug/L
RT: 4.982 min Scan# 639
Delta R.T. 0.006 min
Lab File: I756408.d
Acq: 3 May 2023 11:30 pm

Tgt Ion: 49 Resp: 1581

Ion	Ratio	Lower	Upper
49	100		
84	46.9	46.9	106.9#
86	62.3	20.7	80.7
51	20.4	1.5	61.5

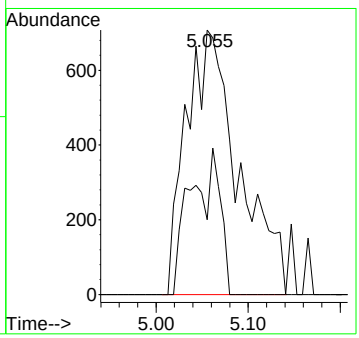




#19
Acetone
Concen: 1.63 ug/L
RT: 5.055 min Scan# 651
Delta R.T. 0.024 min
Lab File: I756408.d
Acq: 3 May 2023 11:30 pm

Tgt Ion: 43 Resp: 2811

Ion	Ratio	Lower	Upper
43	100		
58	28.2	1.0	61.0



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-05-2023\V5E1766\
Data File : 5E39461.d
Acq On : 4 May 2023 1:23 pm
Operator : joannel
Sample : MB
Misc : MS53926,V5E1766,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 04 23:42:05 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

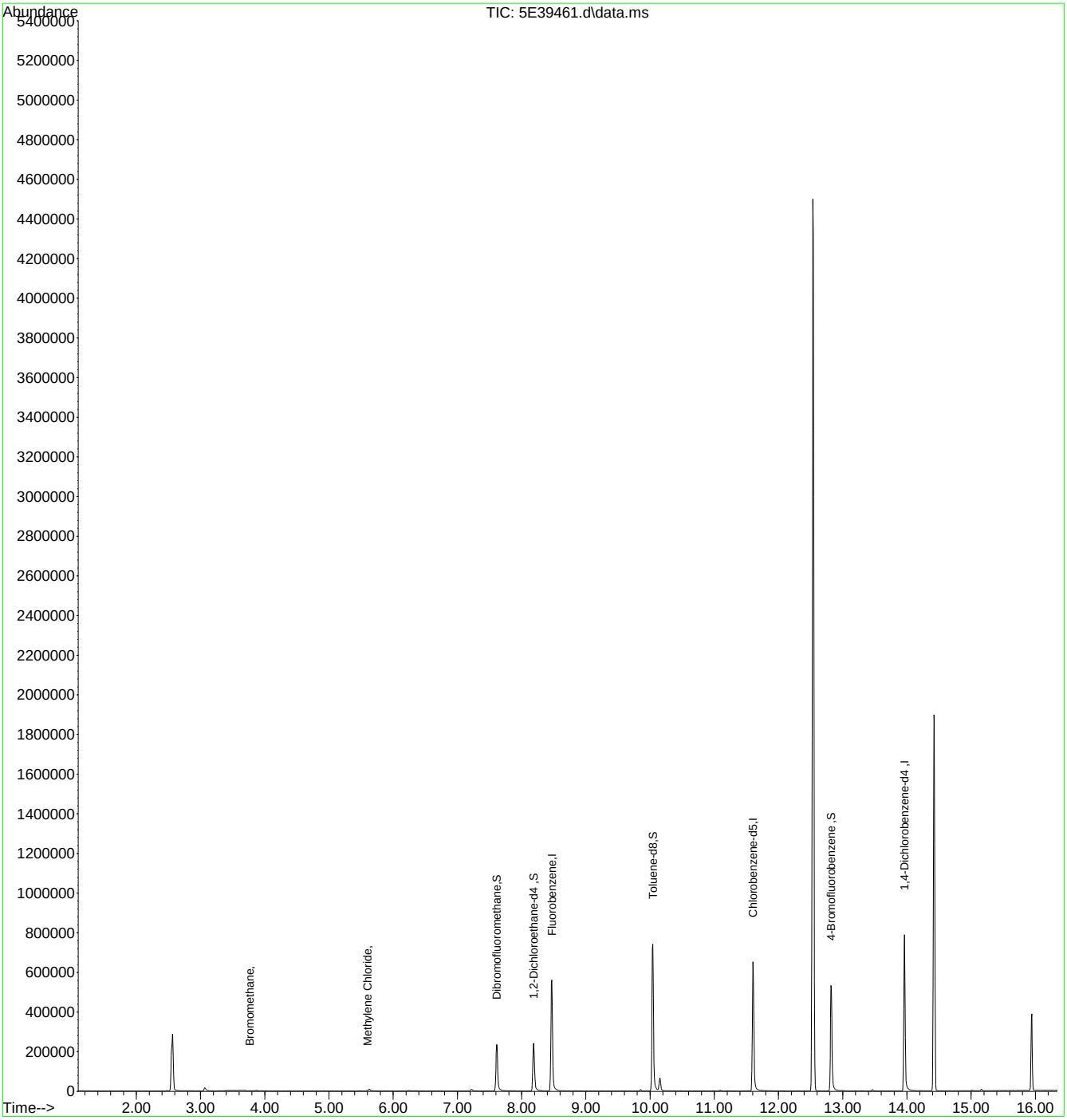
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.470	96	467499	50.00	ug/L	0.00
61) Chlorobenzene-d5	11.603	117	360756	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.962	152	205704	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.610	113	141616	50.34	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.68%			
49) 1,2-Dichloroethane-d4	8.189	65	176842	59.89	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 119.78%			
62) Toluene-d8	10.042	98	465920	51.55	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 103.10%			
86) 4-Bromofluorobenzene	12.816	95	174264	48.18	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 96.36%			
Target Compounds						Qvalue
6) Bromomethane	3.763	94	893	0.69	ug/L	70
18) Methylene Chloride	5.598	49	2321	0.57	ug/L	95

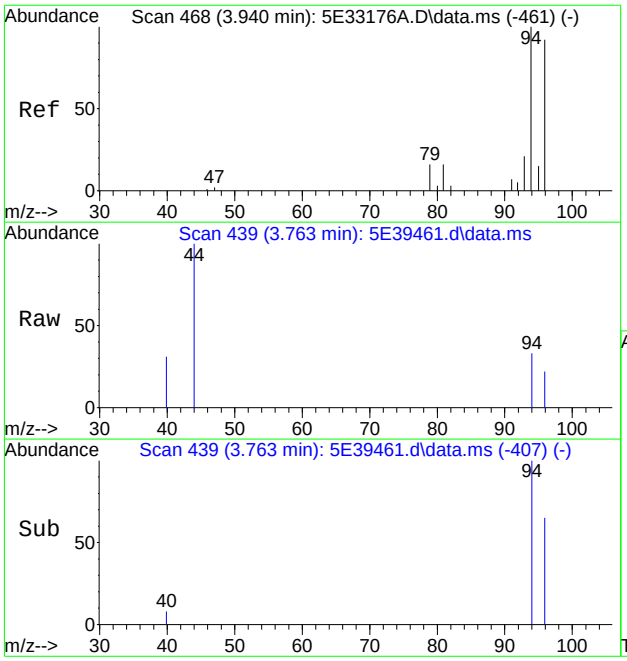
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-05-2023\V5E1766\
Data File : 5E39461.d
Acq On : 4 May 2023 1:23 pm
Operator : joannel
Sample : MB
Misc : MS53926,V5E1766,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 04 23:42:05 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

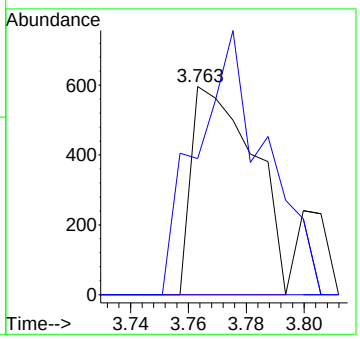


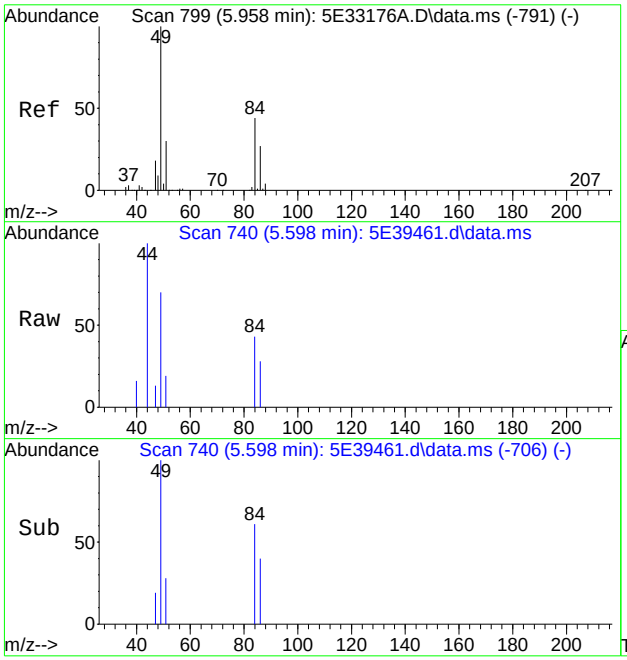


#6
Bromomethane
Concen: 0.69 ug/L
RT: 3.763 min Scan# 439
Delta R.T. -0.006 min
Lab File: 5E39461.d
Acq: 4 May 2023 1:23 pm

Tgt Ion: 94 Resp: 893

Ion	Ratio	Lower	Upper
94	100		
96	65.4	60.9	120.9
93	0.0	0.0	50.7

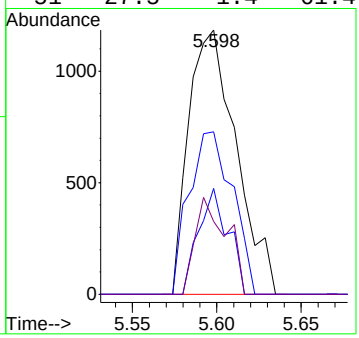




#18
Methylene Chloride
Concen: 0.57 ug/L
RT: 5.598 min Scan# 740
Delta R.T. 0.006 min
Lab File: 5E39461.d
Acq: 4 May 2023 1:23 pm

Tgt Ion: 49 Resp: 2321

Ion	Ratio	Lower	Upper
49	100		
84	61.4	35.4	95.4
86	40.1	11.3	71.3
51	27.5	1.4	61.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-08-2023\V2O2954-55\
Data File : 2O76103.d
Acq On : 5 May 2023 1:06 pm
Operator : davidb2
Sample : MB
Misc : MS53948,V2O2955,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 08 00:16:57 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

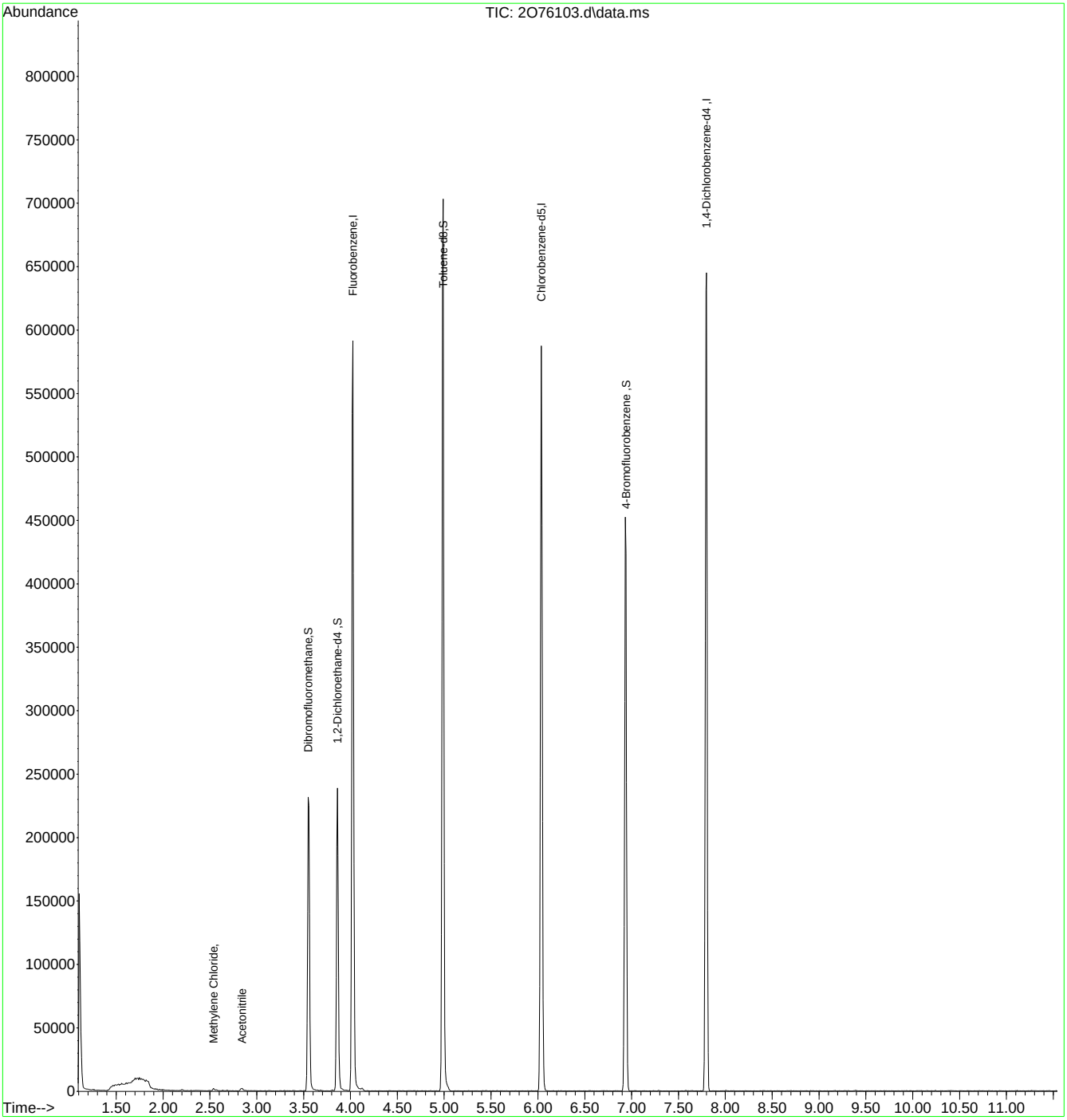
Compound		R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards							
1) Fluorobenzene		4.025	96	398360	50.00	ug/L	0.00
62) Chlorobenzene-d5		6.037	117	276142	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4		7.799	152	142627	50.00	ug/L	0.00
System Monitoring Compounds							
39) Dibromofluoromethane		3.550	113	101176	45.82	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	91.64%		
50) 1,2-Dichloroethane-d4		3.861	65	121974	51.97	ug/L	0.00
Spiked Amount	50.000	Range 79 - 125		Recovery =	103.94%		
63) Toluene-d8		4.988	98	373591	49.61	ug/L	0.00
Spiked Amount	50.000	Range 85 - 112		Recovery =	99.22%		
86) 4-Bromofluorobenzene		6.939	174	104805	48.16	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	96.32%		
Target Compounds							Qvalue
18) Methylene Chloride		2.538	49	823	0.34	ug/L	86
25) Acetonitrile		2.843	41	1701	4.51	ug/L	96

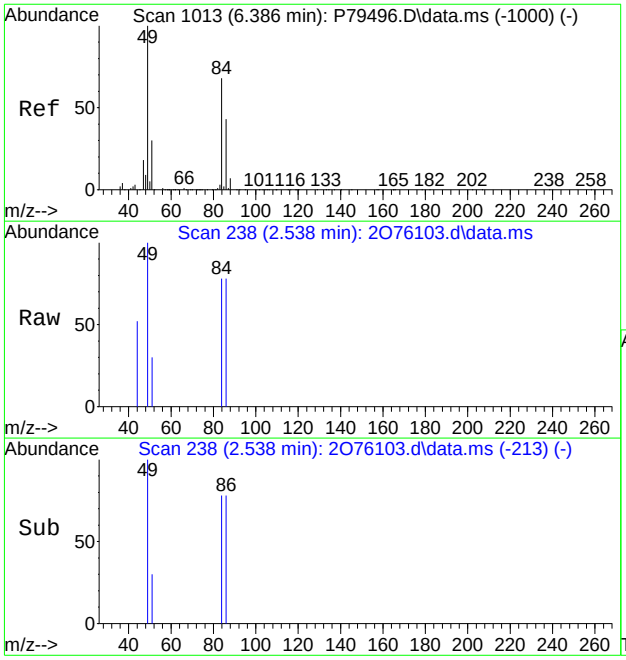
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-08-2023\V2O2954-55\
Data File : 2O76103.d
Acq On : 5 May 2023 1:06 pm
Operator : davidb2
Sample : MB
Misc : MS53948,V2O2955,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 08 00:16:57 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

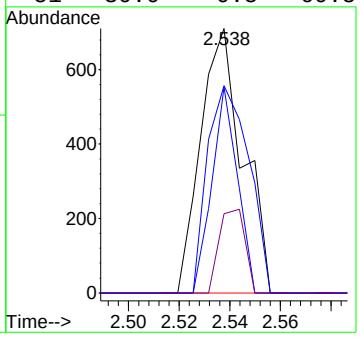


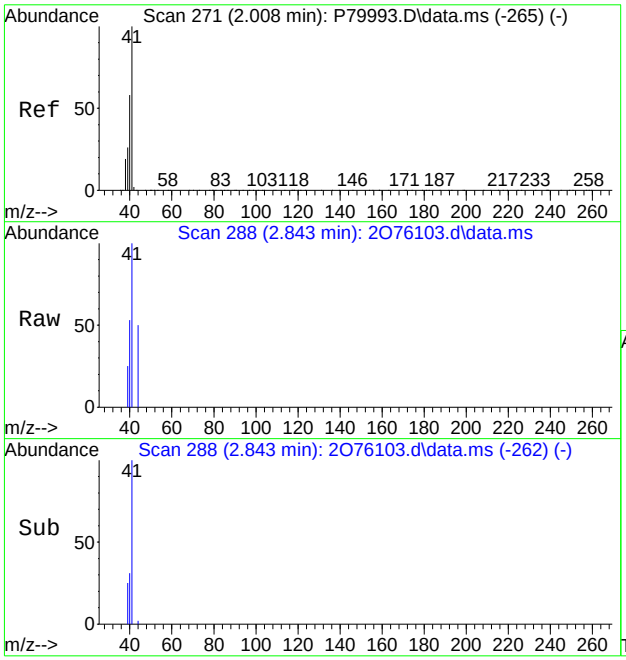


#18
Methylene Chloride
Concen: 0.34 ug/L
RT: 2.538 min Scan# 238
Delta R.T. -0.000 min
Lab File: 2O76103.d
Acq: 5 May 2023 1:06 pm

Tgt Ion: 49 Resp: 823

Ion	Ratio	Lower	Upper
49	100		
84	78.3	53.6	113.6
86	77.8	23.1	83.1
51	30.0	0.5	60.5

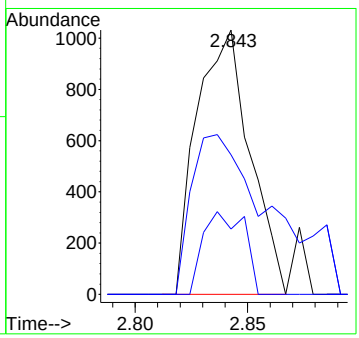




#25
Acetonitrile
Concen: 4.51 ug/L
RT: 2.843 min Scan# 288
Delta R.T. 0.007 min
Lab File: 2O76103.d
Acq: 5 May 2023 1:06 pm

Tgt Ion: 41 Resp: 1701

Ion	Ratio	Lower	Upper
41	100		
40	52.8	34.3	74.3
39	24.7	0.0	39.8



Manual Integrations APPROVED (compounds with "m" flag)
Neil Christiana 05/04/23 11:30

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-05-03\
Data File : 2O75999.D
Acq On : 3 May 2023 11:51 am
Operator : davidb2
Sample : BS Inst : MSVOA12
Misc : MS53846,V2O2949,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 03 12:04:00 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	4.025	96	416617	50.00	ug/L	0.00
62) Chlorobenzene-d5	6.037	117	322604	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.799	152	168750	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	3.556	113	113225	49.03	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 98.06%			
50) 1,2-Dichloroethane-d4	3.861	65	126215	51.42	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 102.84%			
63) Toluene-d8	4.989	98	419275	47.66	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 95.32%			
86) 4-Bromofluorobenzene	6.933	174	127322	49.45	ug/L	-0.01
Spiked Amount 50.000	Range 83 - 118		Recovery = 98.90%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.227	85	45619	26.88	ug/L	97
3) Chloromethane	1.379	50	41800	22.78	ug/L	98
4) 1,3-butadiene	1.447	39	46937	25.51	ug/L	100
5) Vinyl Chloride	1.434	62	44893	24.64	ug/L	98
6) Bromomethane	1.666	94	34222	24.52	ug/L	99
7) Chloroethane	1.751	64	20022	17.99	ug/L	96
8) Trichlorofluoromethane	1.849	101	86999	26.88	ug/L	98
9) Ethyl Ether	2.062	59	40174	27.99	ug/L	99
10) Ethanol	2.166	45	26629	711.24	ug/L	95
11) 1,2-Dichlorotrifluoroe...	2.184	67	59735	27.96	ug/L	98
12) 1,1-Dichloroethene	2.184	61	65266	23.78	ug/L	95
13) Freon 113	2.209	101	54506	29.83	ug/L	96
14) Carbon Disulfide	2.203	76	131037	24.58	ug/L	96
15) Iodomethane	2.276	142	48479	17.00	ug/L	99
16) Acrolein	2.392	56	84321	161.44	ug/L	100
17) Allyl chloride	2.477	41	51977	24.46	ug/L	94
18) Methylene Chloride	2.538	49	63841	25.30	ug/L	97
19) Acetone	2.562	43	162847	155.40	ug/L	100
20) Methyl acetate	2.635	43	315257	130.83	ug/L	98
21) trans-1,2-Dichloroethene	2.635	61	63916	24.36	ug/L	98
22) Hexane	2.684	56	38485	27.77	ug/L	97
23) Methyl Tert Butyl Ether	2.696	73	132468	26.31	ug/L	88
24) Tert Butyl Alcohol	2.745	59	129803	321.75	ug/L	94
25) Acetonitrile	2.837	41	117758	298.40	ug/L	98
26) Di-isopropyl ether	2.916	45	137415	25.73	ug/L	98
27) Chloroprene	2.977	53	57549	22.92	ug/L	99
28) 1,1-Dichloroethane	2.989	63	83459	24.50	ug/L	99
29) Acrylonitrile	3.013	52	134204	132.23	ug/L	100
30) ETBE	3.123	59	130744	26.99	ug/L	97
31) Vinyl acetate	3.129	43	529326	135.91	ug/L	100
32) cis-1,2-Dichloroethene	3.294	96	53903	25.47	ug/L	97
33) 2,2-Dichloropropane	3.361	77	58245	25.45	ug/L	100
34) Bromochloromethane	3.410	128	26963	23.63	ug/L	95
35) Cyclohexane	3.422	56	72941	25.91	ug/L	98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-05-03\
Data File : 2O75999.D
Acq On : 3 May 2023 11:51 am
Operator : davidb2
Sample : BS Inst : MSVOA12
Misc : MS53846,V2O2949,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 03 12:04:00 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	3.446	83	95466	25.87	ug/L		99
37) Ethyl acetate	3.507	43	406737	132.92	ug/L		99
38) Tetrahydrofuran	3.544	42	30305	25.75	ug/L		100
40) Carbon Tetrachloride	3.538	117	60412m	26.14	ug/L		
41) 1,1,1-Trichloroethane	3.574	97	75181	25.11	ug/L		97
42) 2-Butanone	3.617	43	259556	149.33	ug/L		97
43) 1,1-Dichloropropene	3.641	75	67144	25.98	ug/L		95
44) tert-Butyl formate	3.702	59	92884	131.92	ug/L		90
45) Propionitrile	3.794	54	152394	295.44	ug/L		84
46) Methacrylonitrile	3.806	41	471275	269.92	ug/L		98
47) Benzene	3.788	78	194865	25.50	ug/L		90
48) TAME	3.842	73	116514	25.69	ug/L		94
49) Isobutyl alcohol	3.885	43	118430m	730.43	ug/L		
51) 1,2-Dichloroethane	3.897	62	72726	26.71	ug/L		99
52) Tert Amyl Alcohol	3.946	59	99856	312.83	ug/L		90
53) Trichloroethene	4.123	95	54460	24.72	ug/L		93
54) Methylcyclohexane	4.129	83	75248	26.10	ug/L		98
55) Dibromomethane	4.379	93	36116	26.07	ug/L		97
56) 1,2-Dichloropropane	4.440	63	48441	27.03	ug/L		97
57) Bromodichloromethane	4.470	83	62363	25.41	ug/L		97
58) Methyl methacrylate	4.556	41	50098	24.99	ug/L		98
59) 1,4-Dioxane	4.598	88	29052	746.04	ug/L		91
60) 2-Chloroethyl vinyl ether	4.818	63	199198	127.98	ug/L		98
61) cis-1,3-Dichloropropene	4.867	75	69967	24.88	ug/L		97
64) Toluene	5.019	91	210171	23.78	ug/L		99
65) 2-Nitropropane	5.165	41	73954	131.97	ug/L		99
66) 4-Methyl-2-pentanone	5.257	43	418708	132.55	ug/L		99
67) trans-1,3-Dichloropropene	5.281	75	64993	22.42	ug/L		96
68) Tetrachloroethene	5.275	166	55424	22.12	ug/L		97
69) Ethyl methacrylate	5.379	69	68581	26.62	ug/L		95
70) 1,1,2-Trichloroethane	5.391	83	43401	24.33	ug/L		97
71) Dibromochloromethane	5.519	129	49375	23.78	ug/L		98
72) 1,3-Dichloropropane	5.580	76	86349	26.42	ug/L		97
73) 1,2-Dibromoethane	5.684	107	55690	24.95	ug/L		96
74) 3,3-dimethyl-1-butanol	5.799	57	734990	1683.58	ug/L		99
75) 2-hexanone	5.824	43	470803	150.02	ug/L		94
76) 1-Chlorohexane	6.031	91	64008m	23.00	ug/L		
77) Ethylbenzene	6.068	91	229132	24.03	ug/L		99
78) Chlorobenzene	6.049	112	138922	23.25	ug/L		96
79) 1,1,1,2-Tetrachloroethane	6.092	131	45042	24.07	ug/L		99
80) m,p-Xylene	6.171	91	357126	48.12	ug/L		97
81) o-Xylene	6.482	91	177719	23.72	ug/L		94
82) Styrene	6.525	104	142612	24.22	ug/L		99
83) Bromoform	6.543	173	29343	22.23	ug/L		97
84) Isopropylbenzene	6.720	105	213159	23.60	ug/L		98
87) cis-1,4-Dichloro-2-butene	6.982	53	19992	26.16	ug/L	#	86
88) n-Propylbenzene	7.037	91	254922	24.37	ug/L		99
89) Bromobenzene	7.019	156	57134	24.61	ug/L		94
90) 1,1,2,2-Tetrachloroethane	7.086	83	82448	25.88	ug/L		98
91) 1,3,5-Trimethylbenzene	7.189	105	180503	24.44	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-05-03\
Data File : 2O75999.D
Acq On : 3 May 2023 11:51 am
Operator : davidb2
Sample : BS Inst : MSVOA12
Misc : MS53846,V2O2949,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 03 12:04:00 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

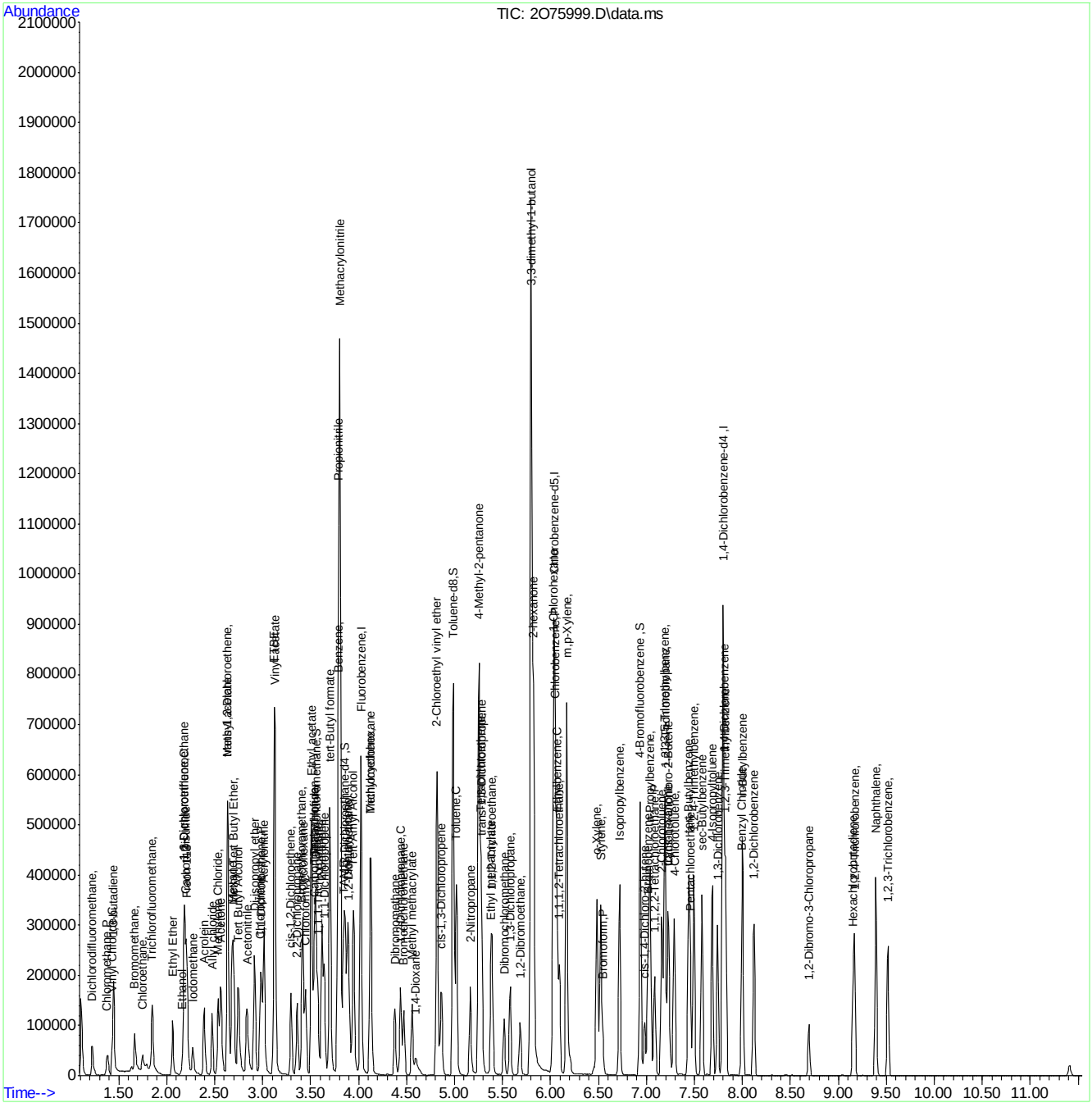
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	7.159	91	171792	24.35	ug/L		96
93)	trans-1,4-Dichloro-2-B...	7.226	53	18276	27.00	ug/L	#	82
94)	1,2,3-Trichloropropane	7.195	110	27915	26.63	ug/L		97
95)	Cyclohexanone	7.226	55	91173	627.15	ug/L		96
96)	4-Chlorotoluene	7.293	91	162026	24.96	ug/L		100
97)	tert-Butylbenzene	7.439	91	98065	24.58	ug/L		96
99)	1,2,4-Trimethylbenzene	7.494	105	181397	24.86	ug/L		99
100)	Pentachloroethane	7.458	167	25968	25.86	ug/L	#	71
101)	sec-Butylbenzene	7.580	105	205983	23.30	ug/L		99
102)	4-Isopropyltoluene	7.689	119	179296	23.24	ug/L		99
103)	1,3-Dichlorobenzene	7.744	146	107099	23.34	ug/L		99
104)	1,2,3-Trimethylbenzene	7.823	105	182779	23.93	ug/L		97
105)	1,4-Dichlorobenzene	7.811	146	109945	23.66	ug/L		99
106)	n-Butylbenzene	8.000	92	98357	25.35	ug/L		86
107)	Benzyl Chloride	7.994	126	18548	21.39	ug/L	#	24
108)	1,2-Dichlorobenzene	8.122	146	103695	23.96	ug/L		98
109)	1,2-Dibromo-3-Chloropr...	8.695	75	17970	27.04	ug/L		90
110)	Hexachlorobutadiene	9.152	225	22658	24.13	ug/L		96
111)	1,2,4-Trichlorobenzene	9.171	180	67153	25.55	ug/L		99
112)	Naphthalene	9.390	128	234072	25.18	ug/L		99
113)	1,2,3-Trichlorobenzene	9.518	180	62927	25.21	ug/L		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-05-03\
Data File : 2O75999.D
Acq On : 3 May 2023 11:51 am
Operator : davidb2
Sample : BS Inst : MSVOA12
Misc : MS53846,V2O2949,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 03 12:04:00 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration



Manual Integration Approval Summary

Sample Number: V2O2949-BS
Lab FileID: 2O75999.D
Injection Time: 05/03/23 11:51

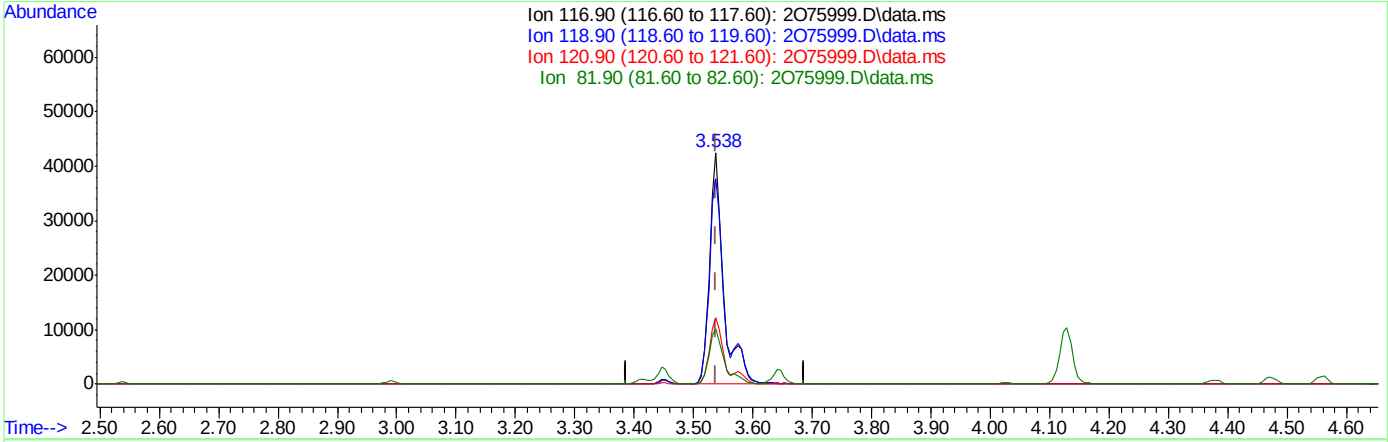
Method: SW846 8260D
Analyst approved: 05/03/23 12:08 David Butler
Supervisor approved: 05/04/23 11:30 Neil Christiana

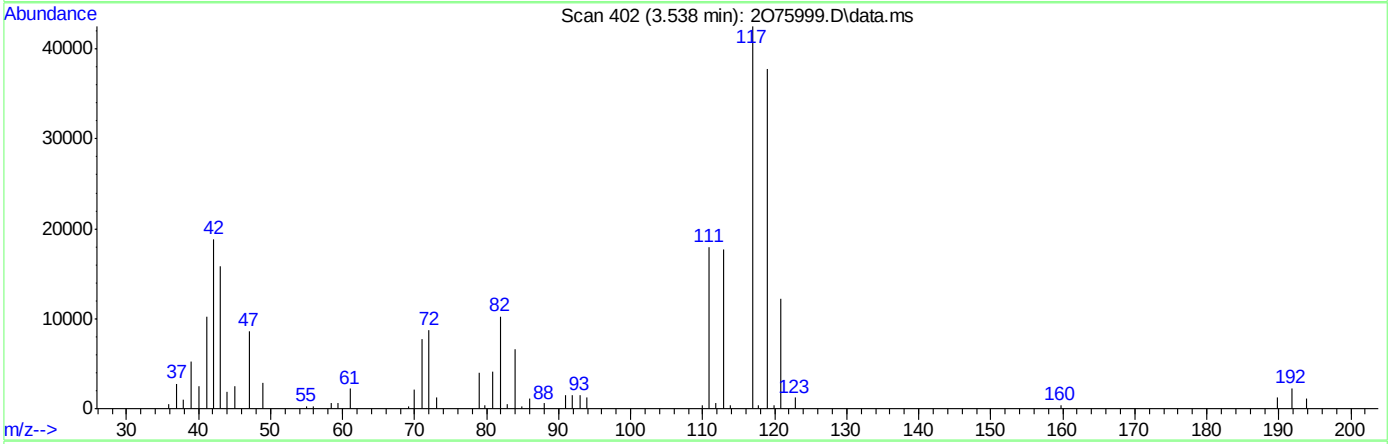
Parameter	CAS	Sig#	R.T. (min.)	Reason
Carbon Tetrachloride	56-23-5		3.54	Poor instrument integration
Isobutyl Alcohol	78-83-1		3.89	Poor instrument integration
1-Chlorohexane	544-10-5		6.03	Poor instrument integration

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-05-03\
Data File : 2O75999.D
Acq On : 3 May 2023 11:51 am
Operator : davidb2
Sample : BS Inst : MSVOA12
Misc : MS53846,V2O2949,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 03 12:03:21 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration





TIC: 2O75999.D\data.ms

(40) Carbon Tetrachloride ( )

3.538min (-0.000) 30.58ug/L

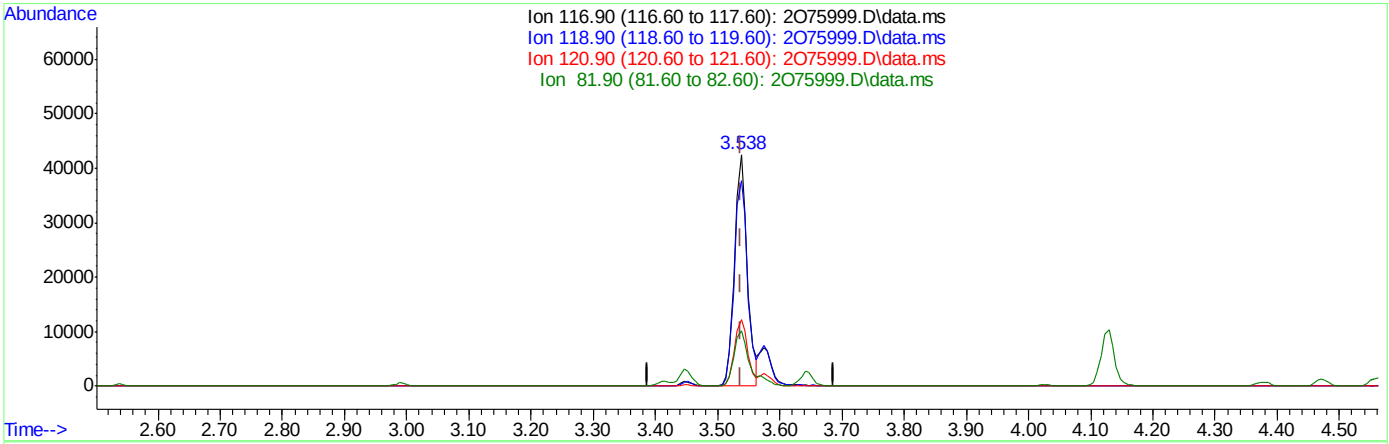
response 70658

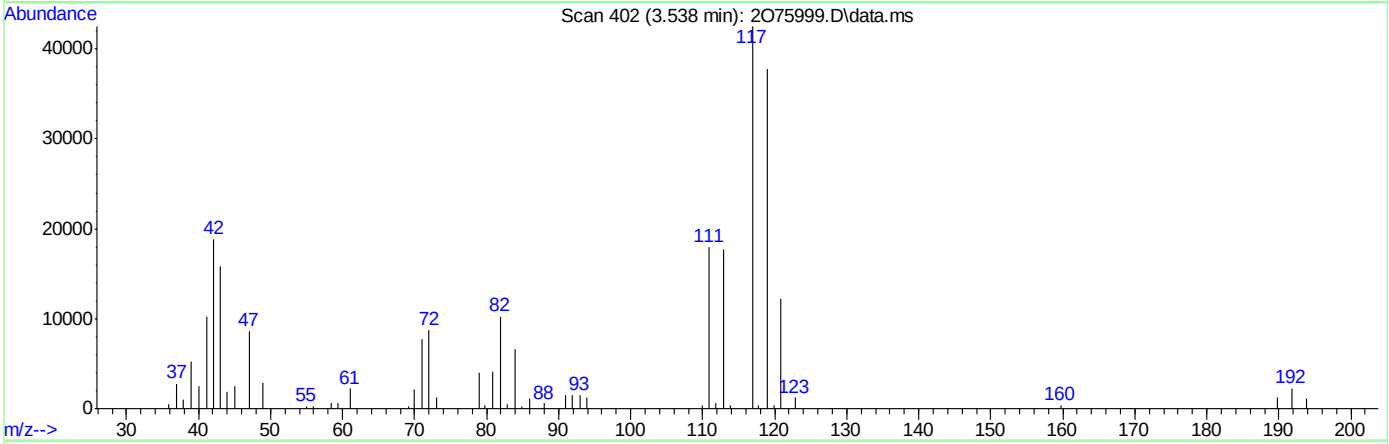
Ion	Exp%	Act%
116.90	100	100
118.90	97.60	88.90
120.90	31.00	28.62
81.90	24.80	24.08

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-05-03\
Data File : 2O75999.D
Acq On : 3 May 2023 11:51 am
Operator : davidb2
Sample : BS Inst : MSVOA12
Misc : MS53846,V2O2949,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 03 12:03:21 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration





TIC: 2O75999.D\data.ms

(40) Carbon Tetrachloride ( )

3.538min (-0.000) 26.14ug/L m

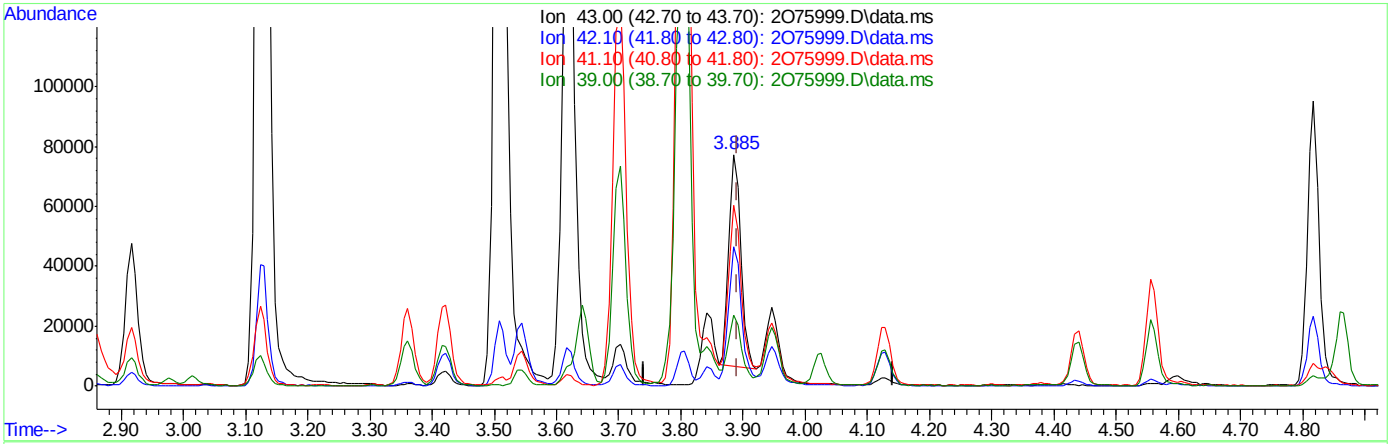
response 60412

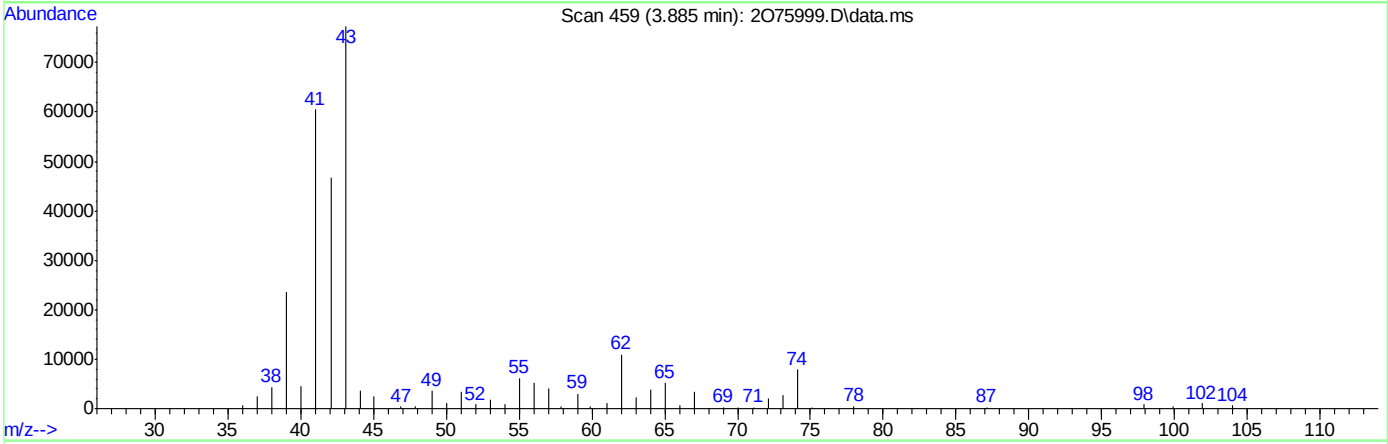
Ion	Exp%	Act%
116.90	100	100
118.90	97.60	88.90
120.90	31.00	28.62
81.90	24.80	24.08

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-05-03\
Data File : 2O75999.D
Acq On : 3 May 2023 11:51 am
Operator : davidb2
Sample : BS Inst : MSVOA12
Misc : MS53846,V2O2949,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 03 12:03:21 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration





TIC: 2O75999.D\data.ms

(49) Isobutyl alcohol

3.885min (-0.006) 590.66ug/L

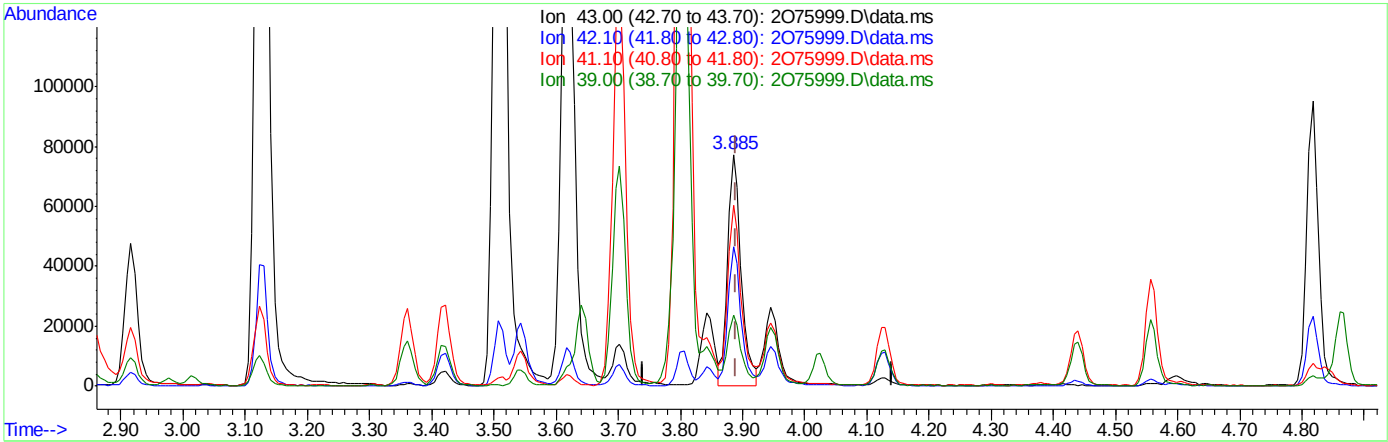
response 94076

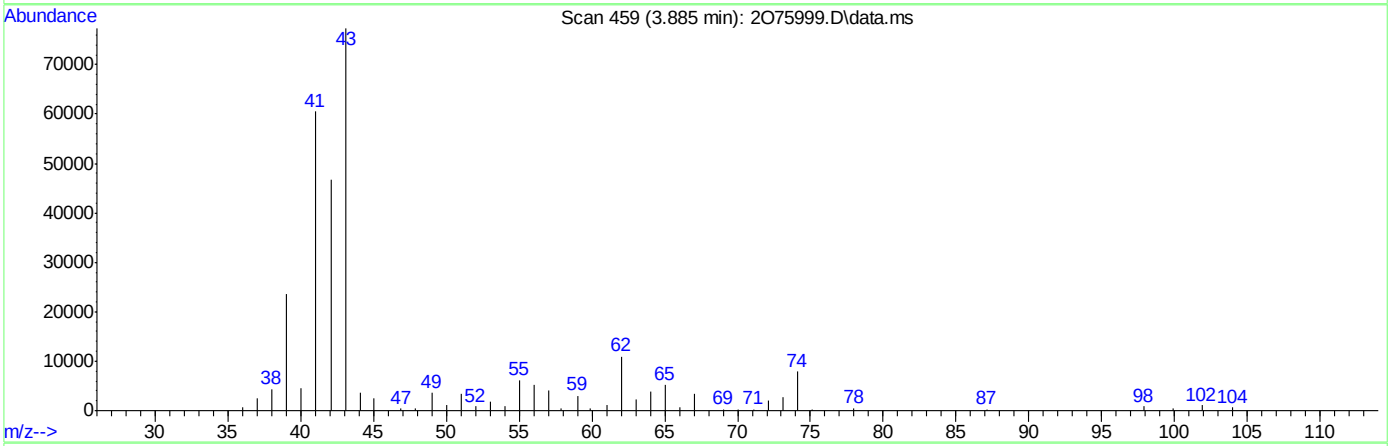
Ion	Exp%	Act%
43.00	100	100
42.10	60.00	62.20
41.10	73.50	75.66
39.00	30.20	29.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-05-03\
Data File : 2O75999.D
Acq On : 3 May 2023 11:51 am
Operator : davidb2
Sample : BS Inst : MSVOA12
Misc : MS53846,V2O2949,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 03 12:03:21 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration





TIC: 2O75999.D\data.ms

(49) Isobutyl alcohol

3.885min (-0.006) 730.43ug/L m

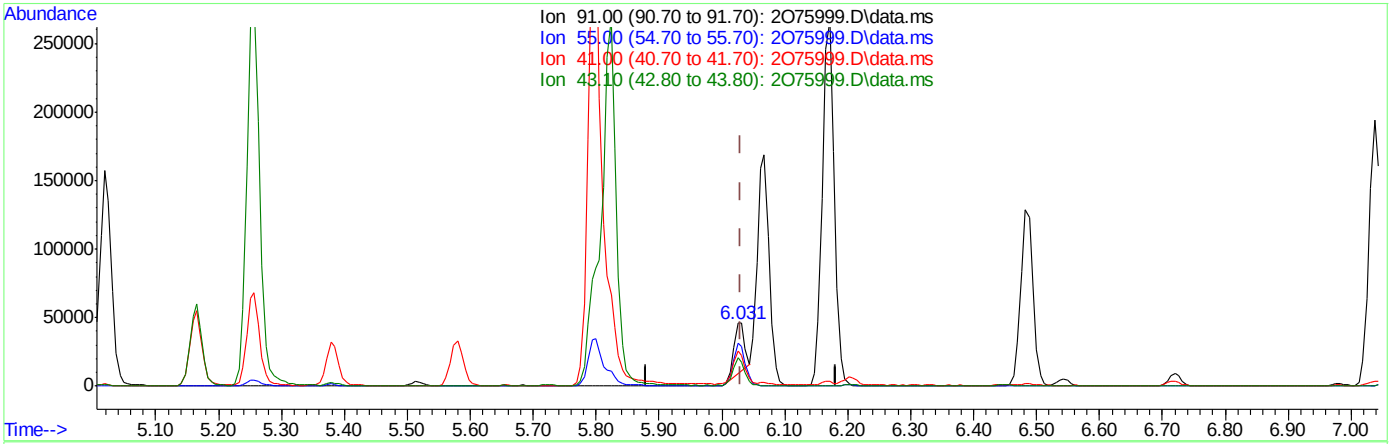
response 118430

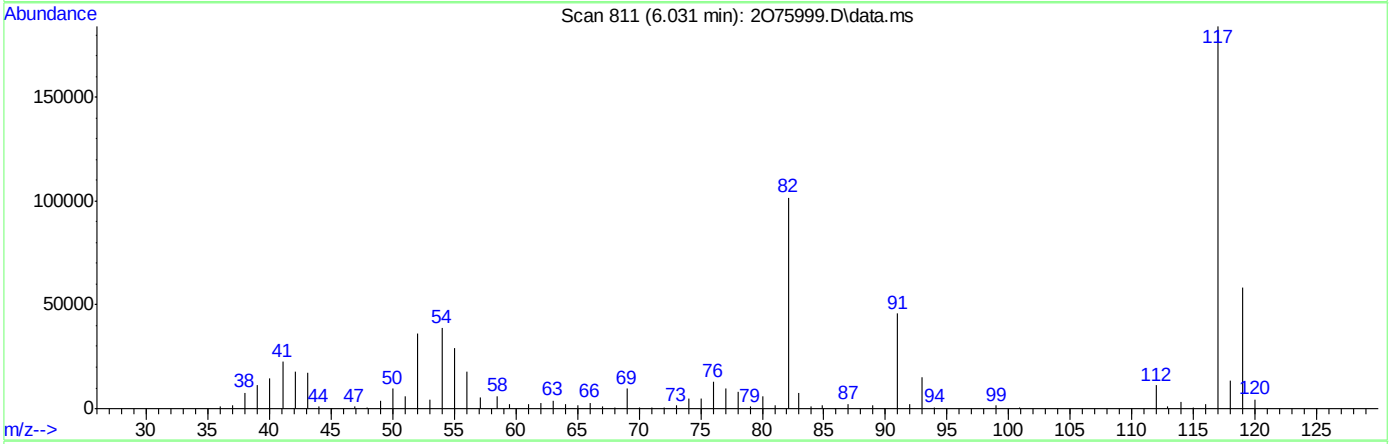
Ion	Exp%	Act%
43.00	100	100
42.10	60.00	60.42
41.10	73.50	78.24
39.00	30.20	30.59

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-05-03\
Data File : 2O75999.D
Acq On : 3 May 2023 11:51 am
Operator : davidb2
Sample : BS Inst : MSVOA12
Misc : MS53846,V2O2949,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 03 12:03:21 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration





TIC: 2O75999.D\data.ms

(76) 1-Chlorohexane

6.031min (+0.000) 15.68ug/L

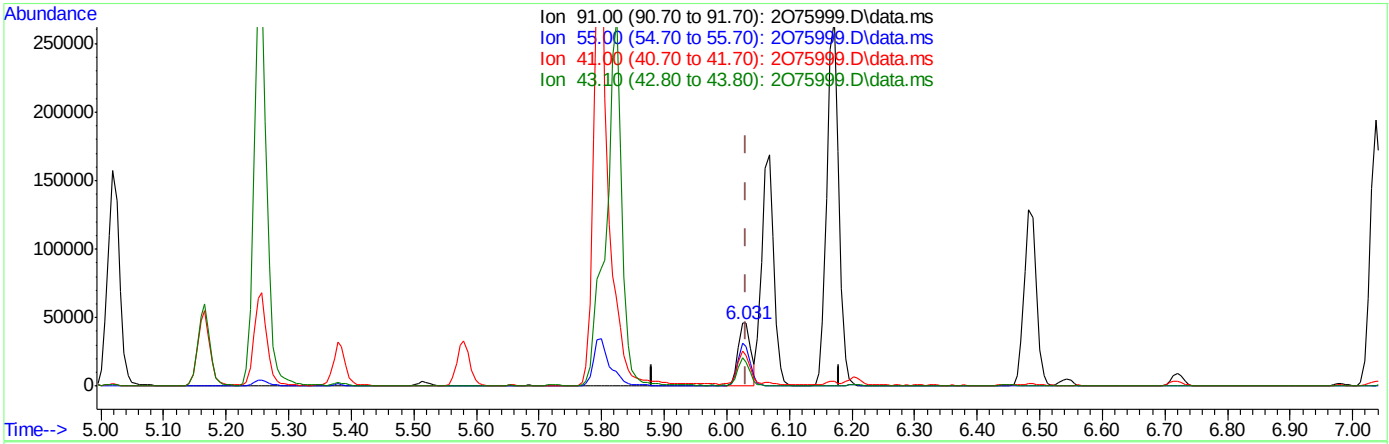
response 43636

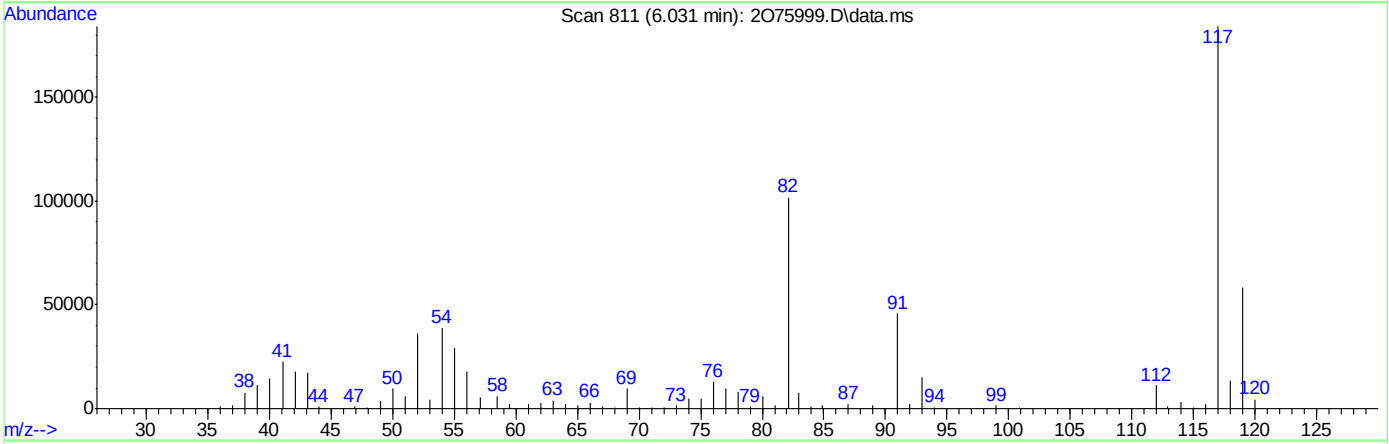
Ion	Exp%	Act%
91.00	100	100
55.00	66.30	62.19
41.00	53.70	45.10
43.10	42.30	35.35

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-05-03\
Data File : 2O75999.D
Acq On : 3 May 2023 11:51 am
Operator : davidb2
Sample : BS Inst : MSVOA12
Misc : MS53846,V2O2949,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 03 12:03:21 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration





TIC: 2O75999.D\data.ms

(76) 1-Chlorohexane

6.031min (+0.000) 23.00ug/L m

response 64008

Ion	Exp%	Act%
91.00	100	100
55.00	66.30	63.74
41.00	53.70	49.21
43.10	42.30	38.16

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\johnm\May 2023\05-04-2023\vi2913\
Data File : I756404.d
Acq On : 3 May 2023 9:51 pm
Operator : jeniferw
Sample : BS Inst : MSVOA16
Misc : MS53924,VI2913,,,,,
ALS Vial : 31 Sample Multiplier: 1

Quant Method : C:\msdchem\2\methods\VI-2023-05-02.m
Quant Results File: VI-2023-05-02.RES
Quant Time: May 04 07:08:17 2023
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.854	96	596474	50.00	ug/L	0.00
62) Chlorobenzene-d5	11.005	117	433829	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.371	152	232214	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	6.988	113	171080	50.69	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.38%			
49) 1,2-Dichloroethane-d4	7.561	65	184556	50.01	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 100.02%			
63) Toluene-d8	9.445	98	602474	50.09	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 100.18%			
86) 4-Bromofluorobenzene	12.225	174	176939	48.94	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 97.88%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.361	85	58392	31.77	ug/L	97
3) Chloromethane	2.653	50	70092	27.40	ug/L	100
4) Vinyl Chloride	2.769	62	69625	25.97	ug/L	99
5) 1,3-Butadiene	2.788	39	70450	27.13	ug/L	100
6) Bromomethane	3.233	94	32745	28.28	ug/L	97
7) Chloroethane	3.391	64	39140	23.41	ug/L	96
8) Trichlorofluoromethane	3.592	101	107605	25.38	ug/L	99
9) Ethyl Ether	4.019	59	61068	25.44	ug/L	91
10) 1,2-Dichlorotrifluoroe...	4.238	67	71695	27.08	ug/L	89
11) 1,1-Dichloroethene	4.269	61	87837	25.22	ug/L	99
12) Ethanol	4.226	45	55766	559.33	ug/L	68
13) Freon 113	4.312	101	60473	28.31	ug/L	98
14) Carbon Disulfide	4.324	76	167974	25.68	ug/L	97
15) Iodomethane	4.458	142	40217	22.44	ug/L	99
16) Acrolein	4.683	56	99534	114.80	ug/L	100
17) Allyl chloride	4.848	41	75549	24.49	ug/L	91
18) Methylene Chloride	4.976	49	91875	26.38	ug/L	91
19) Acetone	5.031	43	213659	119.92	ug/L	100
20) Methyl acetate	5.177	43	463666	120.38	ug/L	95
21) trans-1,2-Dichloroethene	5.183	61	84469	24.86	ug/L	92
22) Hexane	5.269	56	43743	24.32	ug/L #	74
23) Methyl Tert Butyl Ether	5.299	73	180994	25.65	ug/L	79
24) Tert butyl alcohol	5.403	59	286049	262.13	ug/L	93
25) Acetonitrile	5.574	41	172244	258.54	ug/L	99
26) Di-isopropyl ether	5.732	45	202400	24.63	ug/L	93
27) Chloroprene	5.866	53	75336	22.36	ug/L	95
28) 1,1-Dichloroethane	5.884	63	112279	23.97	ug/L	96
29) Acrylonitrile	5.927	53	230912	133.41	ug/L	96
30) ETBE	6.141	59	195234	25.91	ug/L	97
31) Vinyl acetate	6.147	43	714484	126.65	ug/L	95
32) cis-1,2-Dichloroethene	6.506	96	65453	27.39	ug/L	98
33) 2,2-Dichloropropane	6.622	77	44190	14.13	ug/L	92
34) Bromochloromethane	6.732	128	30052	25.18	ug/L	87
35) Cyclohexane	6.756	56	95643	26.66	ug/L	95
36) Chloroform	6.793	83	114272	25.04	ug/L	97
37) Ethyl acetate	6.890	43	627276	124.90	ug/L	97
38) Tetrahydrofuran	6.988	42	52318	25.22	ug/L	93
40) Carbon Tetrachloride	6.976	117	85361	25.99	ug/L	98
41) 1,1,1-Trichloroethane	7.037	97	94335	26.01	ug/L	96
42) 2-Butanone	7.104	43	354121	128.00	ug/L	91
43) 1,1-Dichloropropene	7.171	75	77102	26.41	ug/L	97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\johnm\May 2023\05-04-2023\vi2913\
Data File : I756404.d
Acq On : 3 May 2023 9:51 pm
Operator : jeniferw
Sample : BS Inst : MSVOA16
Misc : MS53924,VI2913,,,,,
ALS Vial : 31 Sample Multiplier: 1

Quant Method : C:\msdchem\2\methods\VI-2023-05-02.m
Quant Results File: VI-2023-05-02.RES
Quant Time: May 04 07:08:17 2023
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
44) tert-Butyl Formate	7.256	59	313734	132.14	ug/L		92
45) Propionitrile	7.415	54	224247	253.50	ug/L		94
46) Methacrylonitrile	7.439	41	660600	241.16	ug/L		95
47) Benzene	7.433	78	231106	24.97	ug/L	#	58
48) TAME	7.530	73	173323	25.13	ug/L		98
50) Isobutyl alcohol	7.591	42	133547	532.58	ug/L		89
51) 1,2-Dichloroethane	7.640	62	89673	24.55	ug/L		98
52) Tert Amyl Alcohol	7.701	59	239135	256.58	ug/L		91
53) Trichloroethene	8.049	95	61518	24.25	ug/L		95
54) Methylcyclohexane	8.049	83	74545	24.88	ug/L		93
55) Dibromomethane	8.488	93	41994	25.03	ug/L		97
56) 1,2-Dichloropropane	8.567	63	63347	25.42	ug/L		96
57) Bromodichloromethane	8.628	83	80714	23.60	ug/L		98
58) Methyl methacrylate	8.750	41	67503	22.79	ug/L		92
59) 1,4-Dioxane	8.823	88	35126	464.02	ug/L		77
60) 2-Chloroethyl vinyl ether	9.158	63	237781	131.49	ug/L		92
61) cis-1,3-Dichloropropene	9.256	75	86290	23.26	ug/L		98
64) Toluene	9.500	91	241281	24.91	ug/L		99
65) 2-Nitropropane	9.701	41	157105	117.98	ug/L		98
66) 4-Methyl-2-pentanone	9.829	43	662994	120.87	ug/L		95
67) trans-1,3-Dichloropropene	9.902	75	72319	21.15	ug/L		92
68) Tetrachloroethene	9.908	166	76765	30.77	ug/L		98
69) Ethyl methacrylate	10.018	69	84652	25.63	ug/L		93
70) 1,1,2-Trichloroethane	10.060	83	51365	24.13	ug/L		95
71) Dibromochloromethane	10.262	129	68686	25.08	ug/L		96
72) 1,3-Dichloropropane	10.341	76	96664	26.35	ug/L		98
73) 1,2-Dibromoethane	10.518	107	62097	24.53	ug/L		98
74) 3,3-dimethyl-1-butanol	10.615	57	1439399	1330.83	ug/L		97
75) 2-hexanone	10.658	43	545665	127.81	ug/L		97
76) 1-Chlorohexane	10.969	91	64303	24.35	ug/L		88
77) Ethylbenzene	11.030	91	262105	24.35	ug/L		97
78) Chlorobenzene	11.024	112	157020	24.23	ug/L		97
79) 1,1,1,2-Tetrachloroethane	11.079	131	60117	24.47	ug/L		97
80) m,p-Xylene	11.170	91	395312	50.35	ug/L		99
81) o-Xylene	11.609	91	198809	24.53	ug/L		99
82) Styrene	11.658	104	149104	25.93	ug/L		96
83) Bromoform	11.713	173	49470	24.42	ug/L		93
84) Isopropylbenzene	11.914	105	233010	24.91	ug/L		99
87) cis-1,4-Dichloro-2-butene	12.261	53	19763	20.73	ug/L		84
88) n-Propylbenzene	12.334	91	276923	23.09	ug/L		96
89) Bromobenzene	12.353	156	66210	24.11	ug/L		96
90) 1,1,2,2-Tetrachloroethane	12.389	83	100966	22.76	ug/L		99
91) 1,3,5-Trimethylbenzene	12.517	105	197715	24.68	ug/L		99
92) 2-Chlorotoluene	12.517	91	194426	22.90	ug/L		97
93) trans-1,4-Dichloro-2-B...	12.578	53	19583	17.37	ug/L		87
94) 1,2,3-Trichloropropane	12.548	110	32224	25.11	ug/L		97
95) Cyclohexanone	12.609	55	69782	215.66	ug/L		95
96) 4-Chlorotoluene	12.688	91	170712	23.62	ug/L		97
97) tert-Butylbenzene	12.853	91	104404	23.66	ug/L		96
98) 1,2,4-Trimethylbenzene	12.926	105	194460	24.62	ug/L		97
99) Pentachloroethane	12.907	167	24581	16.17	ug/L		96
100) sec-Butylbenzene	13.042	105	212088	22.85	ug/L		98
101) 4-Isopropyltoluene	13.176	119	182778	23.68	ug/L		98
102) 1,3-Dichlorobenzene	13.304	146	111254	23.12	ug/L		98
103) 1,2,3-Trimethylbenzene	13.389	105	203329	23.14	ug/L		99
104) 1,4-Dichlorobenzene	13.389	146	120187	22.65	ug/L		96
105) n-Butylbenzene	13.621	92	93099	23.13	ug/L		96

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\johnm\May 2023\05-04-2023\vi2913\
Data File : I756404.d
Acq On : 3 May 2023 9:51 pm
Operator : jeniferw
Sample : BS Inst : MSVOA16
Misc : MS53924,VI2913,,,,,
ALS Vial : 31 Sample Multiplier: 1

Quant Method : C:\msdchem\2\methods\VI-2023-05-02.m
Quant Results File: VI-2023-05-02.RES
Quant Time: May 04 07:08:17 2023
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

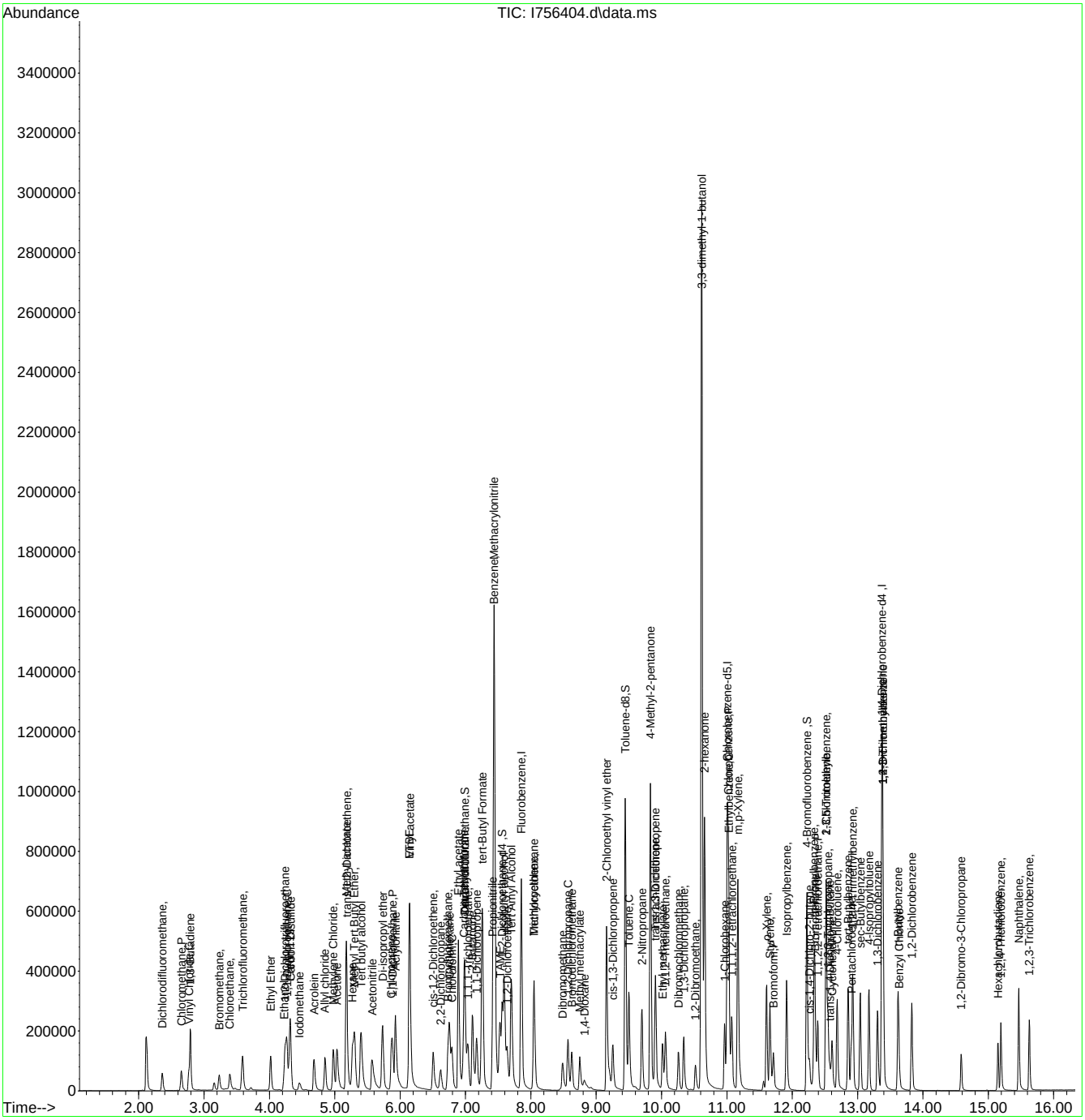
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
106) Benzyl Chloride	13.633	126	14252	10.59	ug/L	#	79
107) 1,2-Dichlorobenzene	13.828	146	109864	23.77	ug/L		96
108) 1,2-Dibromo-3-Chloropr...	14.584	75	27773	26.11	ug/L		90
109) Hexachlorobutadiene	15.151	225	24174	24.17	ug/L		94
110) 1,2,4-Trichlorobenzene	15.194	180	61235	24.73	ug/L		98
111) Naphthalene	15.468	128	228094	24.18	ug/L		99
112) 1,2,3-Trichlorobenzene	15.626	180	60117	23.17	ug/L		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\johnm\May 2023\05-04-2023\vi2913\
Data File : I756404.d
Acq On : 3 May 2023 9:51 pm
Operator : jeniferw
Sample : BS Inst : MSVOA16
Misc : MS53924,VI2913,,,,,
ALS Vial : 31 Sample Multiplier: 1

Quant Method : C:\msdchem\2\methods\VI-2023-05-02.m
Quant Results File: VI-2023-05-02.RES
Quant Time: May 04 07:08:17 2023
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-04-2023\
Data File : 5E39458.D
Acq On : 4 May 2023 12:12 pm
Operator : joannel
Sample : BS
Misc : MS53926,V5E1766,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 04 12:28:55 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.470	96	432411	50.00	ug/L	0.00
61) Chlorobenzene-d5	11.603	117	332100	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.962	152	201872	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.610	113	131987	50.73	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.46%			
49) 1,2-Dichloroethane-d4	8.183	65	164091	60.09	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 120.18%			
62) Toluene-d8	10.042	98	445413	53.53	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 107.06%			
86) 4-Bromofluorobenzene	12.816	95	171258	48.25	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 96.50%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.812	85	41621	28.10	ug/L	100
3) Chloromethane	3.154	50	78315	29.05	ug/L	98
4) Vinyl Chloride	3.269	62	59938	25.21	ug/L	97
5) 1,3-Butadiene	3.294	39	84630	34.55	ug/L	95
6) Bromomethane	3.769	94	30080	26.16	ug/L	97
7) Chloroethane	3.952	64	27104	26.24	ug/L	94
8) Trichlorofluoromethane	4.159	101	74063	25.71	ug/L	100
9) Ethyl Ether	4.586	59	47795	23.08	ug/L	96
10) Ethanol	4.781	45	21542	328.60	ug/L	88
11) 1,2-Dichlorotrifluoroe...	4.836	67	53146	22.41	ug/L	96
12) 1,1-Dichloroethene	4.867	61	74702	23.10	ug/L	98
13) Freon 113	4.903	101	49253	24.30	ug/L	95
14) Carbon Disulfide	4.928	76	129607	21.69	ug/L	97
15) Iodomethane	5.068	142	36711	24.27	ug/L	97
16) Acrolein	5.293	56	63104	88.61	ug/L	92
17) Allyl chloride	5.464	41	68986	23.44	ug/L	99
18) Methylene Chloride	5.598	49	80426	21.92	ug/L	93
19) Acetone	5.647	43	113486	98.28	ug/L	98
20) Methyl acetate	5.787	43	247523	85.44	ug/L	95
21) trans-1,2-Dichloroethene	5.799	61	72698	22.31	ug/L	98
22) Hexane	5.879	56	51709	23.53	ug/L	97
23) Methyl Tert Butyl Ether	5.903	73	147341	22.78	ug/L	94
24) Acetonitrile	6.214	41	97724	190.44	ug/L	95
25) Di-isopropyl ether	6.330	45	185363	22.32	ug/L	96
26) Chloroprene	6.494	53	76800	22.68	ug/L	97
27) 1,1-Dichloroethane	6.525	63	87970	20.43	ug/L	99
28) Acrylonitrile	6.580	53	151076	98.65	ug/L	99
29) ETBE	6.750	59	175744	23.02	ug/L	99
30) Tert Butyl Alcohol	5.982	59	90849	132.89	ug/L	98
31) Vinyl acetate	6.769	43	735086	120.43	ug/L	99
32) cis-1,2-Dichloroethene	7.134	96	47440	20.00	ug/L	95
33) 2,2-Dichloropropane	7.256	77	59879	22.80	ug/L	98
34) Bromochloromethane	7.360	128	23435	20.50	ug/L	93
35) Cyclohexane	7.372	56	95676	21.81	ug/L	97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-04-2023\
Data File : 5E39458.D
Acq On : 4 May 2023 12:12 pm
Operator : joannel
Sample : BS
Misc : MS53926,V5E1766,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 04 12:28:55 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	7.415	83	88060	22.39	ug/L		99
37) Ethyl acetate	7.506	43	420584	97.56	ug/L		98
38) Tetrahydrofuran	7.604	42	23680	15.92	ug/L		98
40) Carbon Tetrachloride	7.592	117	68261	23.73	ug/L		99
41) 1,1,1-Trichloroethane	7.659	97	78847	24.23	ug/L		98
42) 2-Butanone	7.732	43	185082	95.27	ug/L		95
43) 1,1-Dichloropropene	7.787	75	60948	22.78	ug/L		96
44) tert-Butyl formate	7.878	59	98649	77.21	ug/L		97
45) Propionitrile	8.055	54	120198	164.94	ug/L		99
46) Methacrylonitrile	8.079	41	452862	195.08	ug/L		98
47) Benzene	8.049	78	166763	20.74	ug/L		89
48) TAME	8.122	73	129811	20.70	ug/L		95
50) 1,2-Dichloroethane	8.256	62	78512	24.89	ug/L		95
51) tert Amyl alcohol	8.287	59	73566	128.23	ug/L		97
52) Trichloroethene	8.646	95	51670	23.11	ug/L		96
53) Methylcyclohexane	8.646	83	75442	20.18	ug/L		97
54) Dibromomethane	9.085	93	33607	21.45	ug/L		96
55) 1,2-Dichloropropane	9.177	63	53302	22.11	ug/L		99
56) Bromodichloromethane	9.225	83	63979	21.03	ug/L		99
57) Methyl methacrylate	9.335	41	57900	19.03	ug/L		93
58) 1,4-Dioxane	9.421	88	14734	257.42	ug/L		90
59) 2-Chloroethyl vinyl ether	9.756	63	37726	23.39	ug/L		95
60) cis-1,3-Dichloropropene	9.853	75	53033	15.72	ug/L		97
63) Toluene	10.091	91	182242	22.62	ug/L		96
64) Isobutyl alcohol	8.177	43	73730	312.53	ug/L		97
65) 2-Nitropropane	10.323	41	92768	104.04	ug/L		97
66) 4-Methyl-2-pentanone	10.433	43	388709	110.31	ug/L		98
67) trans-1,3-Dichloropropene	10.494	75	36343	13.33	ug/L	#	74
68) Tetrachloroethene	10.494	166	58284	24.52	ug/L		94
69) Ethyl methacrylate	10.591	69	65647	22.68	ug/L		96
70) 1,1,2-Trichloroethane	10.658	83	37875	23.27	ug/L		98
71) Dibromochloromethane	10.853	129	57438	24.84	ug/L		99
72) 1,3-Dichloropropane	10.945	76	74463	24.00	ug/L		96
73) 1,2-Dibromoethane	11.121	107	52092	22.57	ug/L		98
74) 3,3-Dimethyl-1-butanol	11.195	57	417646	764.40	ug/L		95
75) 2-hexanone	11.256	43	278375	109.62	ug/L		98
76) 1-Chlorohexane	11.548	91	61116	23.83	ug/L		95
77) Ethylbenzene	11.615	91	207620	22.92	ug/L		97
78) Chlorobenzene	11.621	112	126850	23.00	ug/L		94
79) 1,1,1,2-Tetrachloroethane	11.670	131	50017	24.15	ug/L		93
80) m,p-Xylene	11.755	91	333201	49.04	ug/L		99
81) o-Xylene	12.194	91	173799	24.37	ug/L		98
82) Styrene	12.249	104	130482	23.30	ug/L		98
83) Bromoform	12.310	173	38358	21.32	ug/L		97
84) Isopropylbenzene	12.499	105	219707	24.94	ug/L		99
87) cis-1,4-Dichloro-2-butene	12.865	53	2172	3.91	ug/L	#	65
88) n-Propylbenzene	12.920	91	256512	24.19	ug/L		95
89) Bromobenzene	12.950	156	61049	25.84	ug/L		91
90) 1,1,2,2-Tetrachloroethane	12.987	83	69879	20.99	ug/L		98
91) 1,3,5-Trimethylbenzene	13.103	105	196996	25.87	ug/L		100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-04-2023\
Data File : 5E39458.D
Acq On : 4 May 2023 12:12 pm
Operator : joannel
Sample : BS
Misc : MS53926,V5E1766,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 04 12:28:55 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

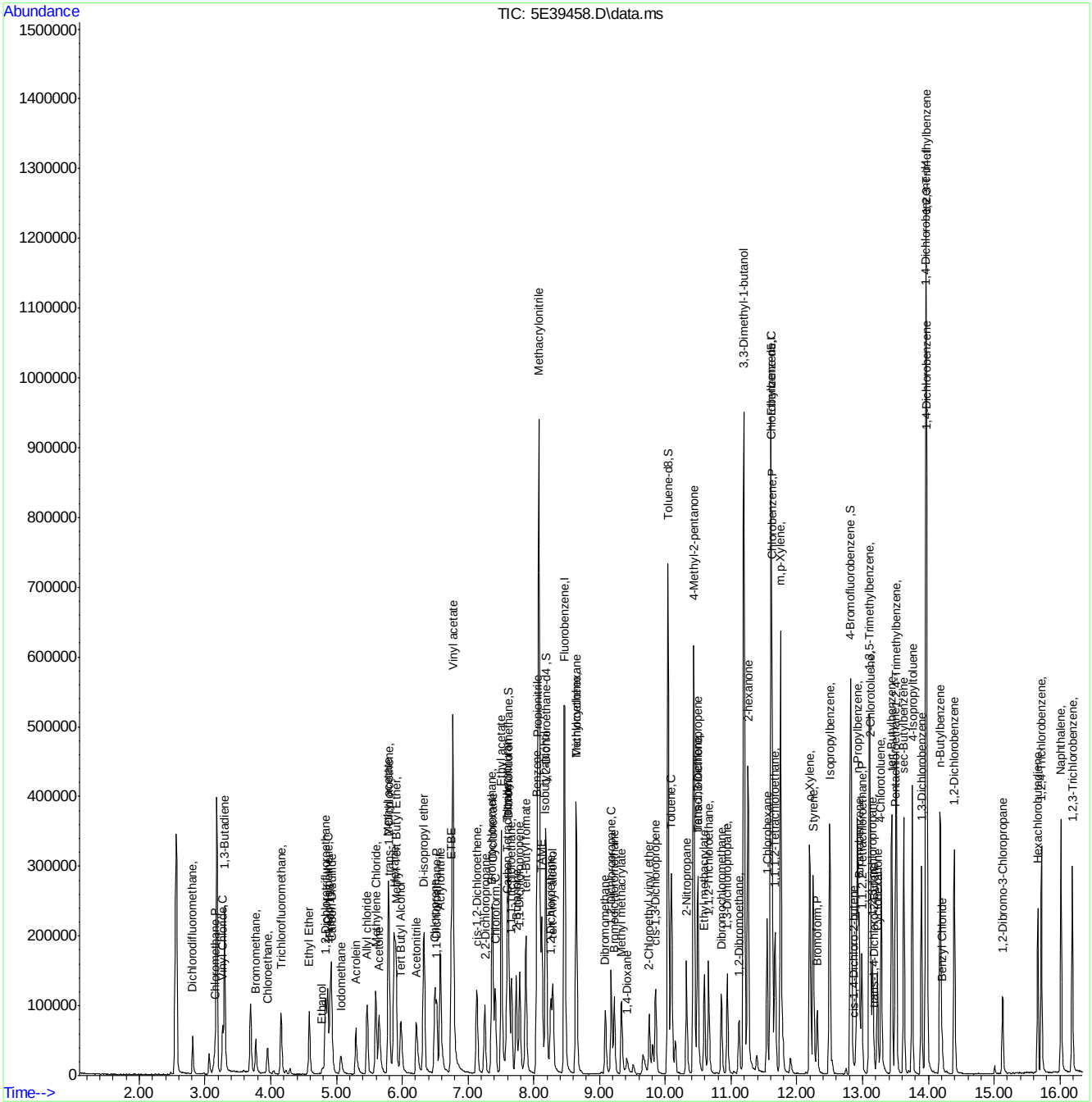
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	13.115	91	172324	24.83	ug/L		97
93)	trans-1,4-Dichloro-2-B...	13.176	53	3302	4.01	ug/L	#	5
94)	1,2,3-Trichloropropane	13.152	110	24170	24.33	ug/L		94
95)	Cyclohexanone	13.225	55	66310	348.03	ug/L		95
96)	4-Chlorotoluene	13.280	91	161192	23.69	ug/L		98
98)	tert-Butylbenzene	13.444	91	109041	26.02	ug/L		97
99)	1,2,4-Trimethylbenzene	13.511	105	193713	25.43	ug/L		96
100)	Pentachloroethane	13.499	167	32815	24.82	ug/L		96
101)	sec-Butylbenzene	13.627	105	231913	24.05	ug/L		98
102)	4-Isopropyltoluene	13.755	119	211801	24.81	ug/L		99
103)	1,3-Dichlorobenzene	13.895	146	114041	24.82	ug/L		99
104)	1,2,3-Trimethylbenzene	13.968	105	194239	24.43	ug/L		98
105)	1,4-Dichlorobenzene	13.975	146	121897	25.48	ug/L		97
106)	n-Butylbenzene	14.176	92	104207	24.24	ug/L		98
107)	Benzyl Chloride	14.206	126	7261	8.43	ug/L	#	86
108)	1,2-Dichlorobenzene	14.395	146	113324	24.94	ug/L		97
109)	1,2-Dibromo-3-Chloropr...	15.127	75	15619	20.96	ug/L		95
110)	Hexachlorobutadiene	15.663	225	34369	25.15	ug/L		99
111)	1,2,4-Trichlorobenzene	15.718	180	87622	24.45	ug/L		97
112)	Naphthalene	16.017	128	244214	22.00	ug/L		99
113)	1,2,3-Trichlorobenzene	16.188	180	82388	23.74	ug/L		99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-04-2023\
Data File : 5E39458.D
Acq On : 4 May 2023 12:12 pm
Operator : joannel
Sample : BS
Misc : MS53926,V5E1766,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 04 12:28:55 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration



Manual Integrations APPROVED (compounds with "m" flag)
Karen Watson
05/08/23 10:24

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-08-2023\V2O2954-55\
Data File : 2O76101.d
Acq On : 5 May 2023 12:10 pm
Operator : davidb2
Sample : BS
Misc : MS53948,V2O2955,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 07 23:47:15 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

Compound		R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards							
1) Fluorobenzene		4.025	96	431132	50.00	ug/L	0.00
62) Chlorobenzene-d5		6.037	117	310315	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4		7.793	152	163538	50.00	ug/L	-0.01
System Monitoring Compounds							
39) Dibromofluoromethane		3.550	113	114419	47.88	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	95.76%		
50) 1,2-Dichloroethane-d4		3.861	65	143481	56.49	ug/L	0.00
Spiked Amount	50.000	Range 79 - 125		Recovery =	112.98%		
63) Toluene-d8		4.982	98	415777	49.13	ug/L	0.00
Spiked Amount	50.000	Range 85 - 112		Recovery =	98.26%		
86) 4-Bromofluorobenzene		6.933	174	121182	48.56	ug/L	-0.01
Spiked Amount	50.000	Range 83 - 118		Recovery =	97.12%		
Target Compounds							Qvalue
2) Dichlorodifluoromethane		1.227	85	45441	25.87	ug/L	98
3) Chloromethane		1.385	50	41994	22.11	ug/L	97
4) 1,3-butadiene		1.446	39	52228	27.43	ug/L	98
5) Vinyl Chloride		1.434	62	47846	25.37	ug/L	100
6) Bromomethane		1.666	94	29212	20.23	ug/L	99
7) Chloroethane		1.745	64	14457	11.55	ug/L	96
8) Trichlorofluoromethane		1.849	101	88467	26.42	ug/L	100
9) Ethyl Ether		2.062	59	40887	27.52	ug/L	98
10) Ethanol		2.166	45	26964	695.83	ug/L	94
11) 1,2-Dichlorotrifluoroe...		2.184	67	61271	27.71	ug/L	97
12) 1,1-Dichloroethene		2.184	61	66850	23.54	ug/L	98
13) Freon 113		2.208	101	55011	29.10	ug/L	97
14) Carbon Disulfide		2.202	76	126173	22.87	ug/L	97
15) Iodomethane		2.269	142	36019	12.20	ug/L	99
16) Acrolein		2.391	56	78744	145.68	ug/L	99
17) Allyl chloride		2.477	41	48935	22.25	ug/L	92
18) Methylene Chloride		2.538	49	65981	25.26	ug/L	95
19) Acetone		2.568	43	159742	147.30	ug/L	97
20) Methyl acetate		2.635	43	309509	124.12	ug/L	97
21) trans-1,2-Dichloroethene		2.635	61	65222	24.02	ug/L	97
22) Hexane		2.684	56	39716	27.69	ug/L	95
23) Methyl Tert Butyl Ether		2.696	73	131340	25.21	ug/L	93
24) Tert Butyl Alcohol		2.751	59	125157	301.11	ug/L	92
25) Acetonitrile		2.836	41	117270	287.16	ug/L	99
26) Di-isopropyl ether		2.916	45	136431	24.69	ug/L	99
27) Chloroprene		2.977	53	59121	22.75	ug/L	97
28) 1,1-Dichloroethane		2.989	63	82465	23.39	ug/L	99
29) Acrylonitrile		3.013	52	130256	124.02	ug/L	99
30) ETBE		3.123	59	127845	25.50	ug/L	99
31) Vinyl acetate		3.123	43	521544	129.40	ug/L	99
32) cis-1,2-Dichloroethene		3.294	96	52221	23.84	ug/L	97
33) 2,2-Dichloropropane		3.361	77	58117	24.54	ug/L	98
34) Bromochloromethane		3.409	128	26569	22.50	ug/L	96
35) Cyclohexane		3.416	56	73902	25.37	ug/L	96
36) Chloroform		3.446	83	95188	24.93	ug/L	98
37) Ethyl acetate		3.507	43	401612	126.83	ug/L	99
38) Tetrahydrofuran		3.544	42	28420	23.34	ug/L	97
40) Carbon Tetrachloride		3.537	117	58509	24.47	ug/L	96
41) 1,1,1-Trichloroethane		3.574	97	75661	24.42	ug/L	99
42) 2-Butanone		3.617	43	248680	138.25	ug/L	95
43) 1,1-Dichloropropene		3.641	75	67788	25.35	ug/L	98
44) tert-Butyl formate		3.702	59	88625	122.42	ug/L	88

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-08-2023\V2O2954-55\
Data File : 2O76101.d
Acq On : 5 May 2023 12:10 pm
Operator : davidb2
Sample : BS
Misc : MS53948,V2O2955,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 07 23:47:15 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45)	Propionitrile	3.787	54	152499	285.69	ug/L		90
46)	Methacrylonitrile	3.800	41	473792	262.23	ug/L		98
47)	Benzene	3.787	78	198283	25.07	ug/L		87
48)	TAME	3.842	73	115932	24.70	ug/L		93
49)	Isobutyl alcohol	3.885	43	156862m	913.73	ug/L		
51)	1,2-Dichloroethane	3.897	62	75743	26.88	ug/L		99
52)	Tert Amyl Alcohol	3.946	59	95267	289.93	ug/L		89
53)	Trichloroethene	4.123	95	55938	24.54	ug/L		93
54)	Methylcyclohexane	4.123	83	77775	26.07	ug/L		98
55)	Dibromomethane	4.379	93	35636	24.85	ug/L		96
56)	1,2-Dichloropropane	4.434	63	48263	26.02	ug/L		99
57)	Bromodichloromethane	4.470	83	60004	23.62	ug/L		98
58)	Methyl methacrylate	4.556	41	50414	24.30	ug/L		97
59)	1,4-Dioxane	4.598	88	29057	722.25	ug/L		96
60)	2-Chloroethyl vinyl ether	4.818	63	191044	118.61	ug/L		99
61)	cis-1,3-Dichloropropene	4.860	75	67174	23.13	ug/L		95
64)	Toluene	5.019	91	211443	24.87	ug/L		99
65)	2-Nitropropane	5.165	41	65850	123.14	ug/L		99
66)	4-Methyl-2-pentanone	5.251	43	413748	136.16	ug/L		99
67)	trans-1,3-Dichloropropene	5.281	75	63280	22.69	ug/L		95
68)	Tetrachloroethene	5.275	166	54484	22.61	ug/L		97
69)	Ethyl methacrylate	5.379	69	67128	27.08	ug/L		98
70)	1,1,2-Trichloroethane	5.391	83	42775	24.93	ug/L		97
71)	Dibromochloromethane	5.513	129	46813	23.46	ug/L		99
72)	1,3-Dichloropropane	5.580	76	85654	27.25	ug/L		98
73)	1,2-Dibromoethane	5.683	107	54118	25.20	ug/L		97
74)	3,3-dimethyl-1-butanol	5.793	57	686435	1637.67	ug/L		98
75)	2-hexanone	5.818	43	458158	151.77	ug/L		98
76)	1-Chlorohexane	6.025	91	68782m	25.69	ug/L		
77)	Ethylbenzene	6.061	91	229328	25.00	ug/L		97
78)	Chlorobenzene	6.049	112	139640	24.30	ug/L		96
79)	1,1,1,2-Tetrachloroethane	6.092	131	42889	23.83	ug/L		98
80)	m,p-Xylene	6.165	91	362157	50.74	ug/L		96
81)	o-Xylene	6.482	91	177883	24.68	ug/L		95
82)	Styrene	6.519	104	140118	24.74	ug/L		97
83)	Bromoform	6.543	173	26674	21.08	ug/L		96
84)	Isopropylbenzene	6.720	105	215241	24.77	ug/L		98
87)	cis-1,4-Dichloro-2-butene	6.976	53	16453	22.21	ug/L	#	72
88)	n-Propylbenzene	7.037	91	260171	25.66	ug/L		99
89)	Bromobenzene	7.019	156	57869	25.72	ug/L		98
90)	1,1,2,2-Tetrachloroethane	7.086	83	81644	26.45	ug/L		99
91)	1,3,5-Trimethylbenzene	7.189	105	184996	25.85	ug/L		98
92)	2-Chlorotoluene	7.159	91	171355	25.07	ug/L		97
93)	trans-1,4-Dichloro-2-B...	7.226	53	16120	24.69	ug/L	#	75
94)	1,2,3-Trichloropropane	7.195	110	27471	27.04	ug/L		98
95)	Cyclohexanone	7.226	55	104972	745.08	ug/L		97
96)	4-Chlorotoluene	7.287	91	161169	25.62	ug/L		96
97)	tert-Butylbenzene	7.439	91	99345	25.69	ug/L		94
99)	1,2,4-Trimethylbenzene	7.494	105	182722	25.84	ug/L		98
100)	Pentachloroethane	7.457	167	24068	24.81	ug/L	#	56
101)	sec-Butylbenzene	7.573	105	209521	24.45	ug/L		98
102)	4-Isopropyltoluene	7.683	119	180480	24.14	ug/L		97
103)	1,3-Dichlorobenzene	7.738	146	105684	23.77	ug/L		96
104)	1,2,3-Trimethylbenzene	7.823	105	182862	24.71	ug/L		99
105)	1,4-Dichlorobenzene	7.805	146	109201	24.25	ug/L		97
106)	n-Butylbenzene	8.000	92	100152	26.61	ug/L		97
107)	Benzyl Chloride	7.994	126	16475	19.77	ug/L	#	1
108)	1,2-Dichlorobenzene	8.116	146	102128	24.35	ug/L		97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-08-2023\V2O2954-55\
Data File : 2O76101.d
Acq On : 5 May 2023 12:10 pm
Operator : davidb2
Sample : BS
Misc : MS53948,V2O2955,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 07 23:47:15 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

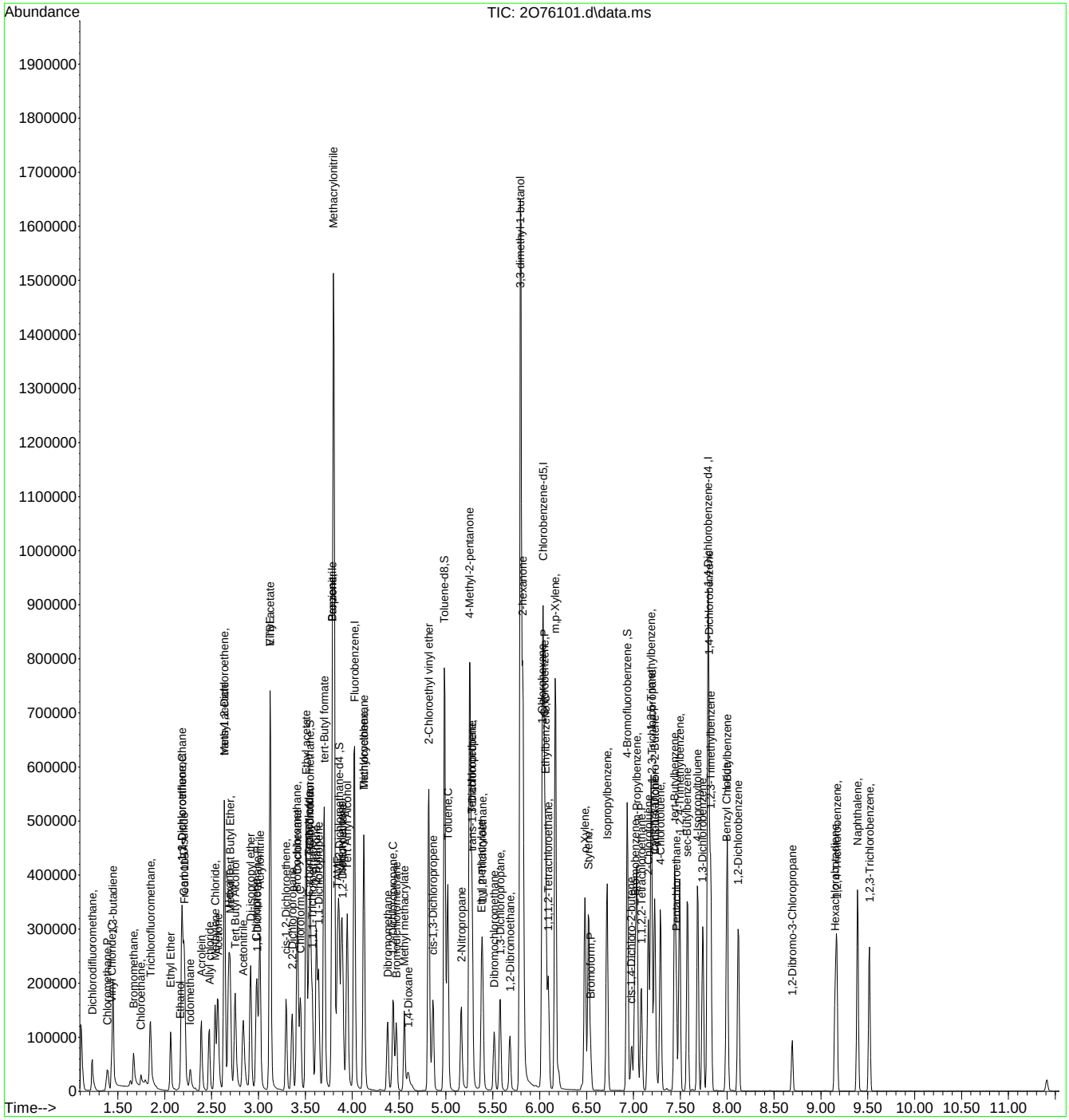
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
109) 1,2-Dibromo-3-Chloropr...	8.695	75	16592	25.83	ug/L	88
110) Hexachlorobutadiene	9.152	225	23213	25.48	ug/L	96
111) 1,2,4-Trichlorobenzene	9.171	180	67380	26.46	ug/L	97
112) Naphthalene	9.390	128	230122	25.54	ug/L	99
113) 1,2,3-Trichlorobenzene	9.518	180	64558	26.69	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-08-2023\V2O2954-55\
Data File : 2O76101.d
Acq On : 5 May 2023 12:10 pm
Operator : davidb2
Sample : BS
Misc : MS53948,V2O2955,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 07 23:47:15 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration



Manual Integration Approval Summary

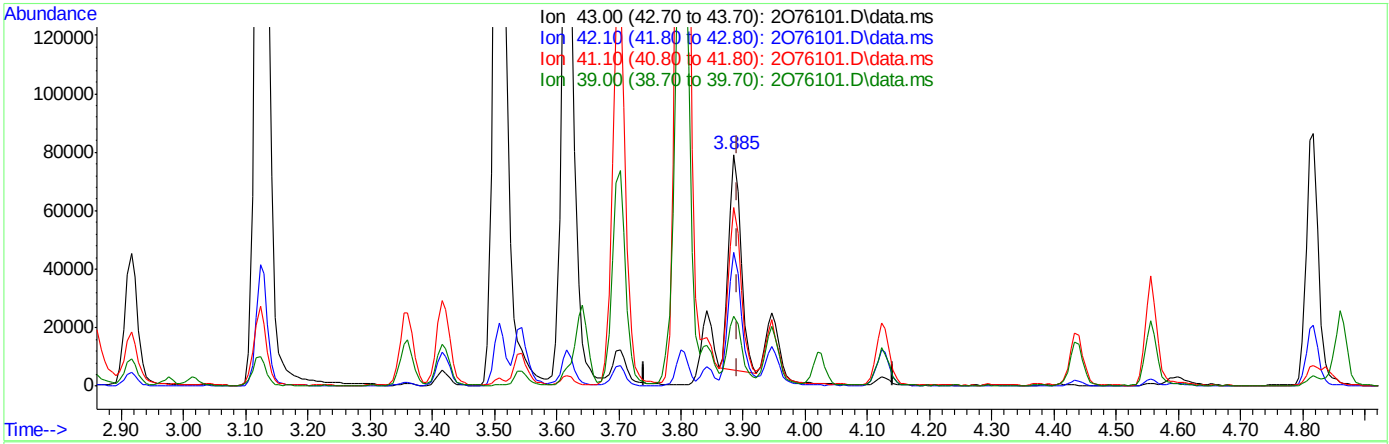
Sample Number: V2O2955-BS
Lab FileID: 2O76101.D
Injection Time: 05/05/23 12:10
Method: SW846 8260D
Analyst approved: 05/08/23 00:16 Celine Celis
Supervisor approved: 05/08/23 10:24 Karen Watson

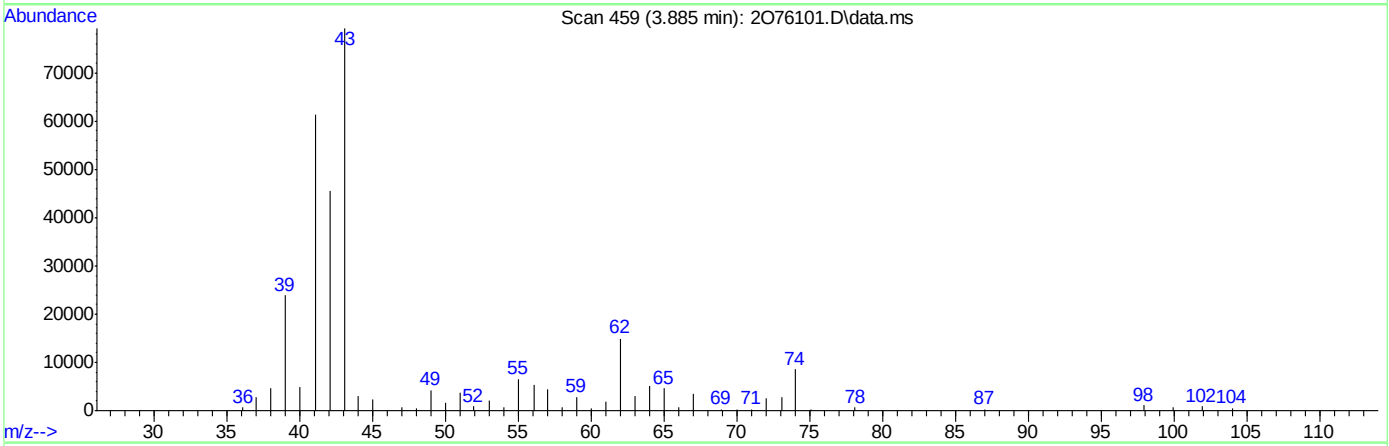
Parameter	CAS	Sig#	R.T. (min.)	Reason
Isobutyl Alcohol	78-83-1		3.88	Poor instrument integration
1-Chlorohexane	544-10-5		6.02	Poor instrument integration

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-05-05\
Data File : 2O76101.D
Acq On : 5 May 2023 12:10 pm
Operator : davidb2
Sample : BS Inst : MSVOA12
Misc : MS53846,V2O2954,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 05 12:21:59 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration





TIC: 2O76101.D\data.ms

(49) Isobutyl alcohol

3.885min (-0.006) 602.72ug/L

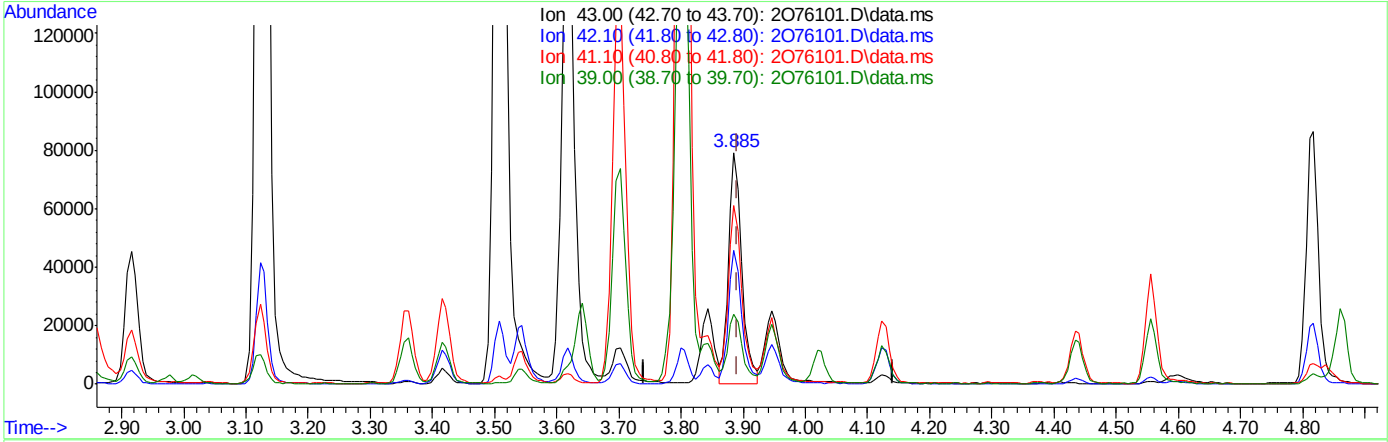
response 99497

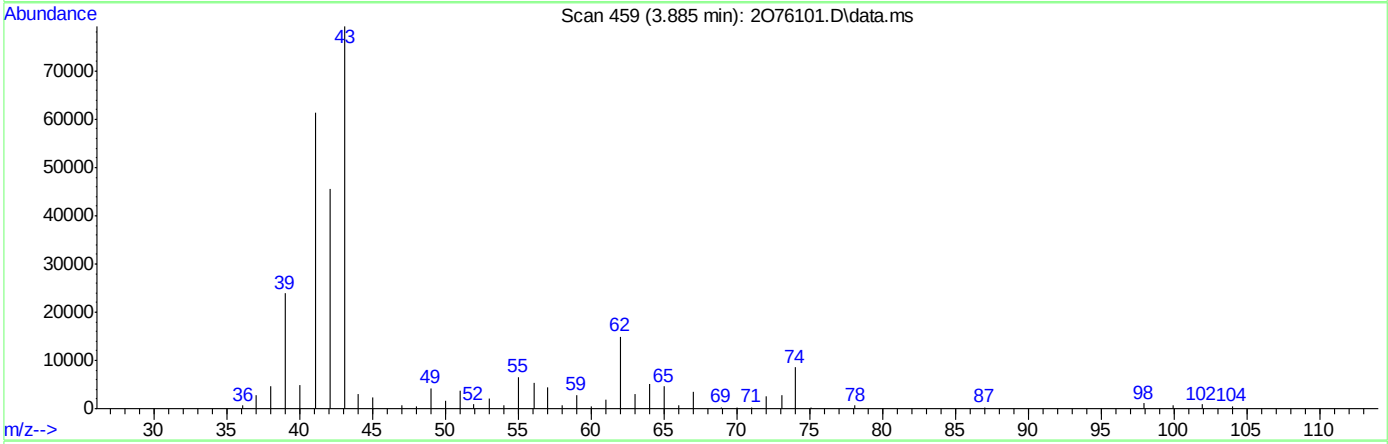
Ion	Exp%	Act%
43.00	100	100
42.10	60.00	58.15
41.10	73.50	75.01
39.00	30.20	27.93

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-05-05\
Data File : 2O76101.D
Acq On : 5 May 2023 12:10 pm
Operator : davidb2
Sample : BS Inst : MSVOA12
Misc : MS53846,V2O2954,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 05 12:21:59 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration





TIC: 2O76101.D\data.ms

(49) Isobutyl alcohol

3.885min (-0.006) 714.06ug/L m

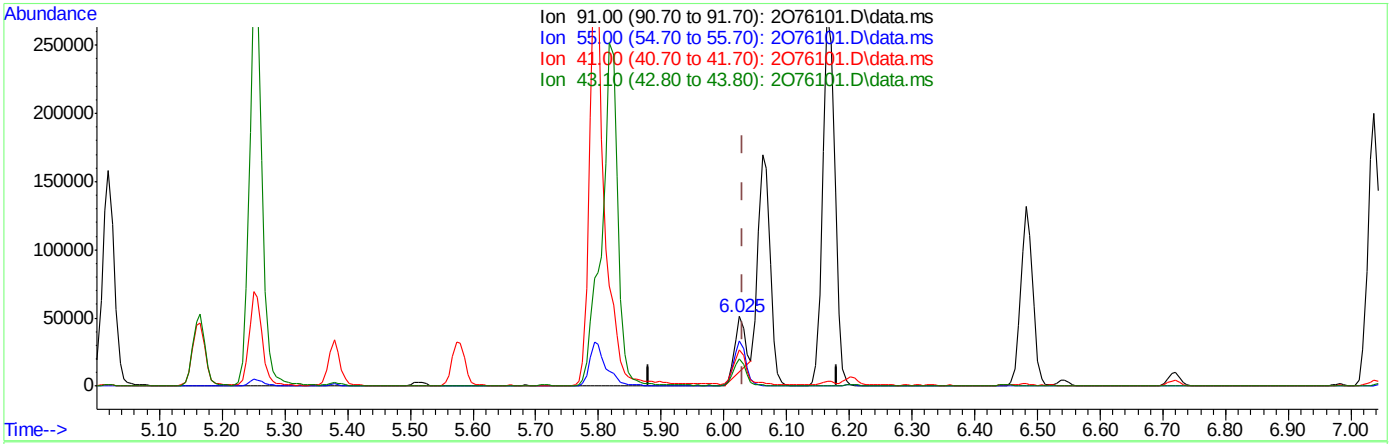
response 119561

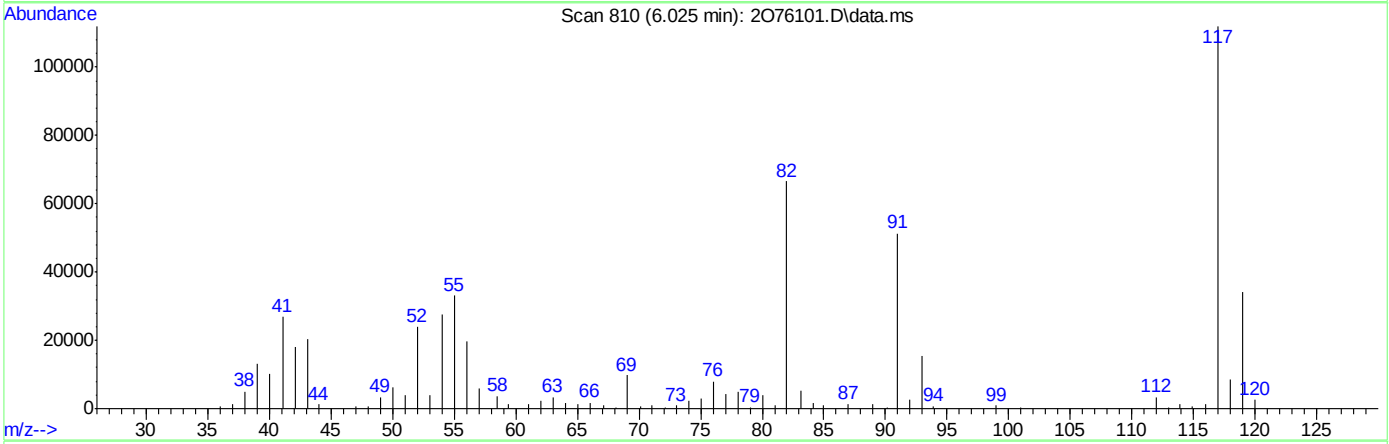
Ion	Exp%	Act%
43.00	100	100
42.10	60.00	57.63
41.10	73.50	77.34
39.00	30.20	30.10

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-05-05\
Data File : 2O76101.D
Acq On : 5 May 2023 12:10 pm
Operator : davidb2
Sample : BS Inst : MSVOA12
Misc : MS53846,V2O2954,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 05 12:21:59 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration





TIC: 2O76101.D\data.ms

(76) 1-Chlorohexane

6.025min (-0.006) 16.54ug/L

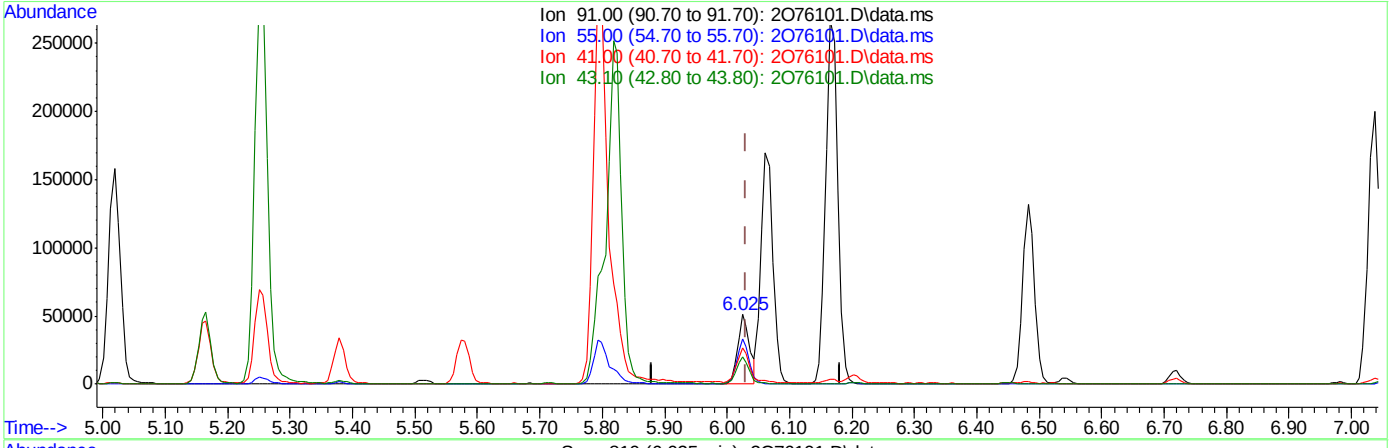
response 44276

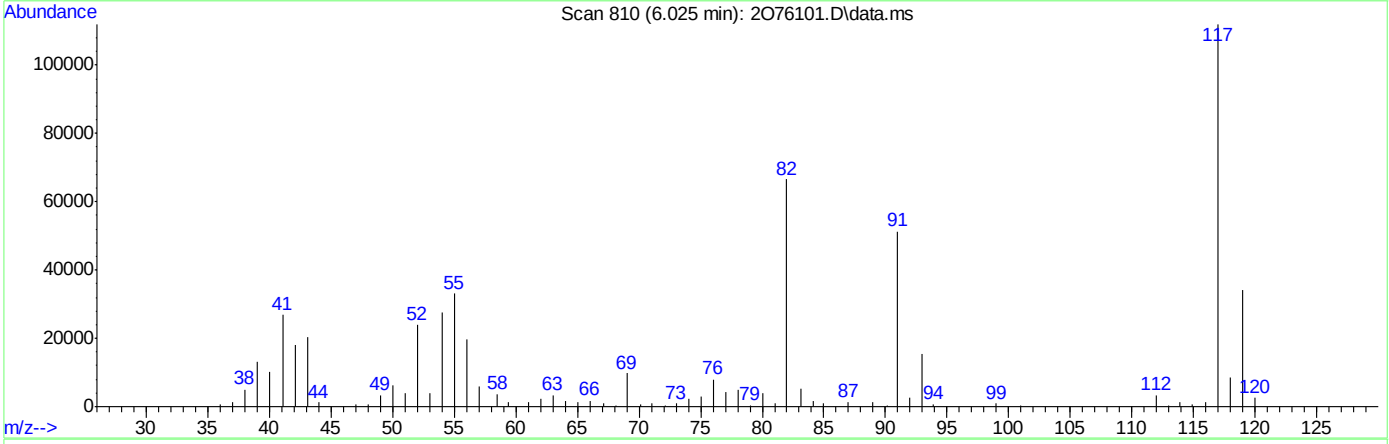
Ion	Exp%	Act%
91.00	100	100
55.00	66.30	63.85
41.00	53.70	48.59
43.10	42.30	38.13

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-05-05\
Data File : 2O76101.D
Acq On : 5 May 2023 12:10 pm
Operator : davidb2
Sample : BS Inst : MSVOA12
Misc : MS53846,V2O2954,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 05 12:21:59 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration





TIC: 2O76101.D\data.ms

(76) 1-Chlorohexane

6.025min (-0.006) 25.69ug/L m

response 68782

Ion	Exp%	Act%
91.00	100	100
55.00	66.30	64.62
41.00	53.70	52.30
43.10	42.30	39.55

Manual Integrations APPROVED (compounds with "m" flag)
Neil Christiana 05/04/23 11:30

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76021.d
Acq On : 3 May 2023 10:16 pm
Operator : davidb2
Sample : FC5679-12MS
Misc : MS53920,V2O2949,,,,,
ALS Vial : 25 Sample Multiplier: 1

Quant Time: May 03 23:09:47 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	4.025	96	375625	50.00	ug/L	0.00
62) Chlorobenzene-d5	6.037	117	293615	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.799	152	159236	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	3.556	113	102561	49.26	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery =	98.52%		
50) 1,2-Dichloroethane-d4	3.861	65	122010	55.14	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery =	110.28%		
63) Toluene-d8	4.989	98	374060	46.72	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery =	93.44%		
86) 4-Bromofluorobenzene	6.933	174	118575	48.80	ug/L	-0.01
Spiked Amount 50.000	Range 83 - 118		Recovery =	97.60%		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.227	85	44824	29.29	ug/L	98
3) Chloromethane	1.386	50	38569	23.31	ug/L	97
4) 1,3-butadiene	1.447	39	49886	30.07	ug/L	99
5) Vinyl Chloride	1.434	62	46885	28.54	ug/L	98
6) Bromomethane	1.672	94	12169	9.67	ug/L	92
7) Chloroethane	1.751	64	17142	16.81	ug/L	96
8) Trichlorofluoromethane	1.849	101	88716	30.41	ug/L	100
9) Ethyl Ether	2.062	59	40478	31.28	ug/L	98
10) Ethanol	2.166	45	25529	756.61	ug/L	99
11) 1,2-Dichlorotrifluoroe...	2.184	67	62899	32.65	ug/L	98
12) 1,1-Dichloroethene	2.184	61	68071	27.51	ug/L	97
13) Freon 113	2.215	101	56023	34.01	ug/L	95
14) Carbon Disulfide	2.203	76	130409	27.13	ug/L	97
15) Iodomethane	2.276	142	25557	9.94	ug/L	99
16) Acrolein	2.392	56	63062	133.91	ug/L	100
17) Allyl chloride	2.477	41	47130	24.60	ug/L	96
18) Methylene Chloride	2.538	49	58815	25.86	ug/L	98
19) Acetone	2.568	43	132177	139.90	ug/L	100
20) Methyl acetate	2.635	43	240122	110.52	ug/L	96
21) trans-1,2-Dichloroethene	2.635	61	64551	27.29	ug/L	98
22) Hexane	2.684	56	35626	28.51	ug/L	94
23) Methyl Tert Butyl Ether	2.696	73	124301	27.39	ug/L	88
24) Tert Butyl Alcohol	2.751	59	143418	388.75	ug/L	91
25) Acetonitrile	2.837	41	107732	302.79	ug/L	97
26) Di-isopropyl ether	2.916	45	132509	27.52	ug/L	98
27) Chloroprene	2.977	53	54818	24.22	ug/L	100
28) 1,1-Dichloroethane	2.989	63	83008	27.02	ug/L	97
29) Acrylonitrile	3.013	52	126505	138.25	ug/L	99
30) ETBE	3.123	59	120909	27.68	ug/L	97
31) Vinyl acetate	3.129	43	401532	114.35	ug/L	99
32) cis-1,2-Dichloroethene	3.294	96	65114	34.13	ug/L	97
33) 2,2-Dichloropropane	3.361	77	38871	18.84	ug/L	98
34) Bromochloromethane	3.410	128	27206	26.45	ug/L	91
35) Cyclohexane	3.416	56	76871	30.29	ug/L	95
36) Chloroform	3.446	83	93013	27.96	ug/L	98
37) Ethyl acetate	3.507	43	316517	114.73	ug/L	99
38) Tetrahydrofuran	3.544	42	28219	26.60	ug/L	99
40) Carbon Tetrachloride	3.538	117	59540m	28.58	ug/L	
41) 1,1,1-Trichloroethane	3.574	97	75730	28.05	ug/L	98
42) 2-Butanone	3.617	43	224328	143.14	ug/L	97
43) 1,1-Dichloropropene	3.641	75	68174	29.26	ug/L	95
44) tert-Butyl formate	3.641	59	322	0.56	ug/L #	1

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76021.d
Acq On : 3 May 2023 10:16 pm
Operator : davidb2
Sample : FC5679-12MS
Misc : MS53920,V2O2949,,,,,
ALS Vial : 25 Sample Multiplier: 1

Quant Time: May 03 23:09:47 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45) Propionitrile	3.794	54	141213	303.64	ug/L		84
46) Methacrylonitrile	3.806	41	440105	279.58	ug/L		99
47) Benzene	3.788	78	196297	28.49	ug/L		93
48) TAME	3.842	73	102917	25.17	ug/L		89
49) Isobutyl alcohol	3.885	43	130819m	878.46	ug/L		
51) 1,2-Dichloroethane	3.897	62	70808	28.84	ug/L		100
52) Tert Amyl Alcohol	3.946	59	82239	287.43	ug/L		83
53) Trichloroethene	4.123	95	53457	26.92	ug/L		95
54) Methylcyclohexane	4.129	83	79227	30.48	ug/L		98
55) Dibromomethane	4.379	93	34587	27.69	ug/L		97
56) 1,2-Dichloropropane	4.440	63	48115	29.78	ug/L		100
57) Bromodichloromethane	4.470	83	58032	26.22	ug/L		97
58) Methyl methacrylate	4.556	41	46932	25.97	ug/L		96
59) 1,4-Dioxane	4.592	88	25992	740.58	ug/L		96
61) cis-1,3-Dichloropropene	4.867	75	59534	23.52	ug/L		97
64) Toluene	5.019	91	208979	25.97	ug/L		98
65) 2-Nitropropane	5.165	41	59733	118.55	ug/L		100
66) 4-Methyl-2-pentanone	5.257	43	391755	136.26	ug/L		99
67) trans-1,3-Dichloropropene	5.281	75	56743	21.53	ug/L		96
68) Tetrachloroethene	5.275	166	54012	23.69	ug/L		96
69) Ethyl methacrylate	5.379	69	62369	26.60	ug/L		98
70) 1,1,2-Trichloroethane	5.391	83	42036	25.89	ug/L		98
71) Dibromochloromethane	5.519	129	46691	24.67	ug/L		97
72) 1,3-Dichloropropane	5.580	76	82307	27.67	ug/L		97
73) 1,2-Dibromoethane	5.684	107	52777	25.97	ug/L		96
74) 3,3-dimethyl-1-butanol	5.799	57	691503	1736.63	ug/L		99
75) 2-hexanone	5.824	43	437510	153.18	ug/L		95
76) 1-Chlorohexane	6.025	91	63876m	25.22	ug/L		
77) Ethylbenzene	6.068	91	231116	26.63	ug/L		98
78) Chlorobenzene	6.049	112	134545	24.74	ug/L		98
79) 1,1,1,2-Tetrachloroethane	6.092	131	42861	25.17	ug/L		97
80) m,p-Xylene	6.171	91	354193	52.44	ug/L		97
81) o-Xylene	6.482	91	179852	26.38	ug/L		94
82) Styrene	6.525	104	132441	24.72	ug/L		98
83) Bromoform	6.543	173	26400	21.99	ug/L		95
84) Isopropylbenzene	6.720	105	214152	26.05	ug/L		99
87) cis-1,4-Dichloro-2-butene	6.982	53	12105	16.78	ug/L	#	76
88) n-Propylbenzene	7.037	91	257538	26.09	ug/L		99
89) Bromobenzene	7.019	156	56112	25.61	ug/L		98
90) 1,1,2,2-Tetrachloroethane	7.086	83	80175	26.67	ug/L		98
91) 1,3,5-Trimethylbenzene	7.189	105	179031	25.69	ug/L		100
92) 2-Chlorotoluene	7.159	91	169496	25.46	ug/L		96
93) trans-1,4-Dichloro-2-B...	7.226	53	9843	15.77	ug/L	#	82
94) 1,2,3-Trichloropropane	7.195	110	25410	25.69	ug/L		97
95) Cyclohexanone	7.232	55	20715	151.00	ug/L		95
96) 4-Chlorotoluene	7.287	91	157260	25.67	ug/L		96
97) tert-Butylbenzene	7.439	91	99202	26.35	ug/L		96
99) 1,2,4-Trimethylbenzene	7.494	105	291604	42.34	ug/L		97
100) Pentachloroethane	7.458	167	24329	25.69	ug/L	#	70
101) sec-Butylbenzene	7.580	105	209396	25.10	ug/L		99
102) 4-Isopropyltoluene	7.689	119	184433	25.34	ug/L		99
103) 1,3-Dichlorobenzene	7.744	146	100920	23.31	ug/L		98
104) 1,2,3-Trimethylbenzene	7.823	105	315817	43.82	ug/L		99
105) 1,4-Dichlorobenzene	7.811	146	105683	24.10	ug/L		98
106) n-Butylbenzene	8.000	92	92197	25.18	ug/L		92
107) Benzyl Chloride	7.994	126	8968	11.52	ug/L	#	1
108) 1,2-Dichlorobenzene	8.122	146	99802	24.43	ug/L		98
109) 1,2-Dibromo-3-Chloropr...	8.695	75	16771	26.76	ug/L		92

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76021.d
Acq On : 3 May 2023 10:16 pm
Operator : davidb2
Sample : FC5679-12MS
Misc : MS53920,V2O2949,,,,,
ALS Vial : 25 Sample Multiplier: 1

Quant Time: May 03 23:09:47 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

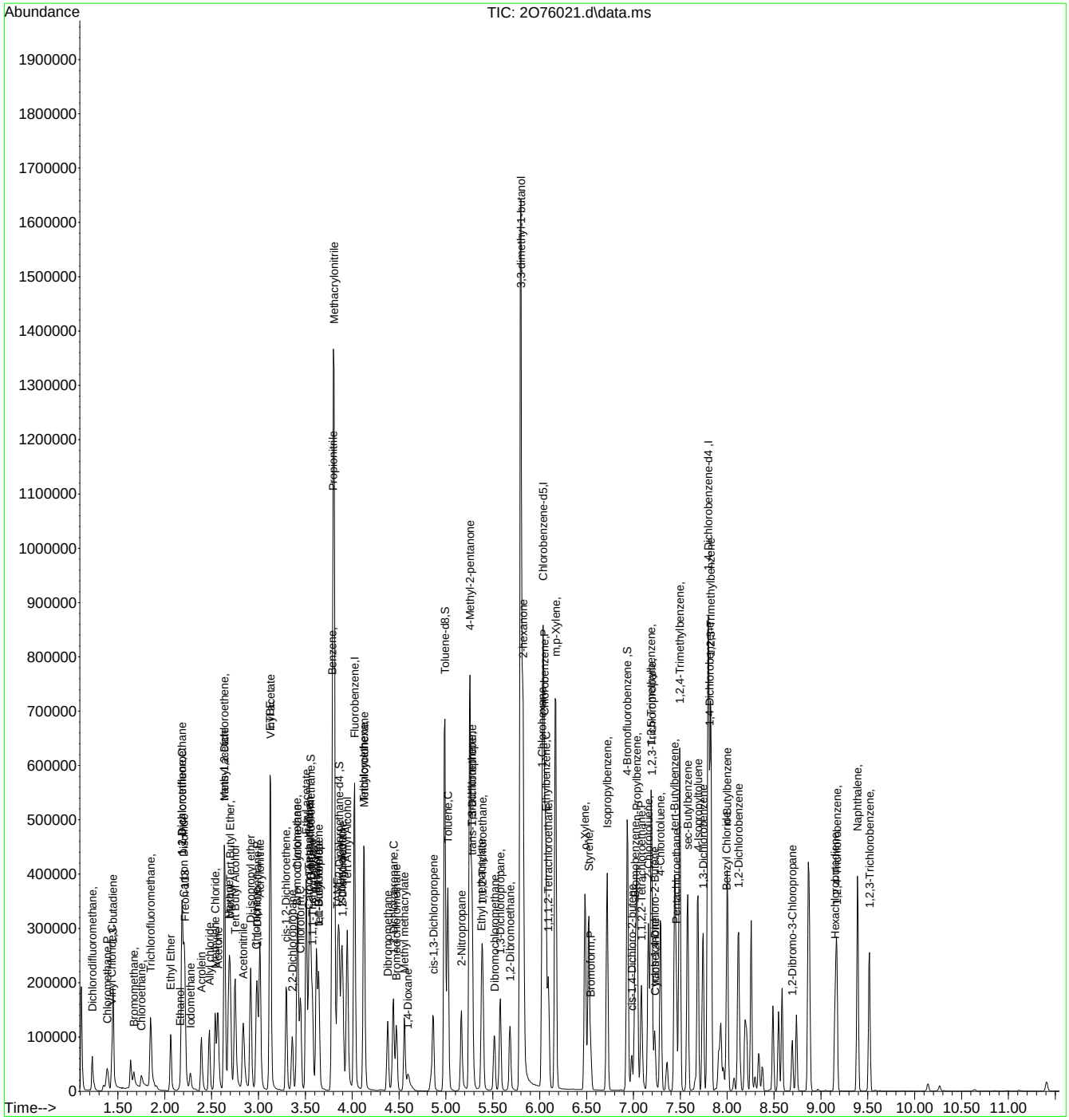
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
110) Hexachlorobutadiene	9.152	225	21843	24.64	ug/L	98
111) 1,2,4-Trichlorobenzene	9.171	180	64759	26.12	ug/L	98
112) Naphthalene	9.390	128	239168	27.26	ug/L	100
113) 1,2,3-Trichlorobenzene	9.518	180	61436	26.09	ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76021.d
Acq On : 3 May 2023 10:16 pm
Operator : davidb2
Sample : FC5679-12MS
Misc : MS53920,V2O2949,,,,,
ALS Vial : 25 Sample Multiplier: 1

Quant Time: May 03 23:09:47 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration



Manual Integration Approval Summary

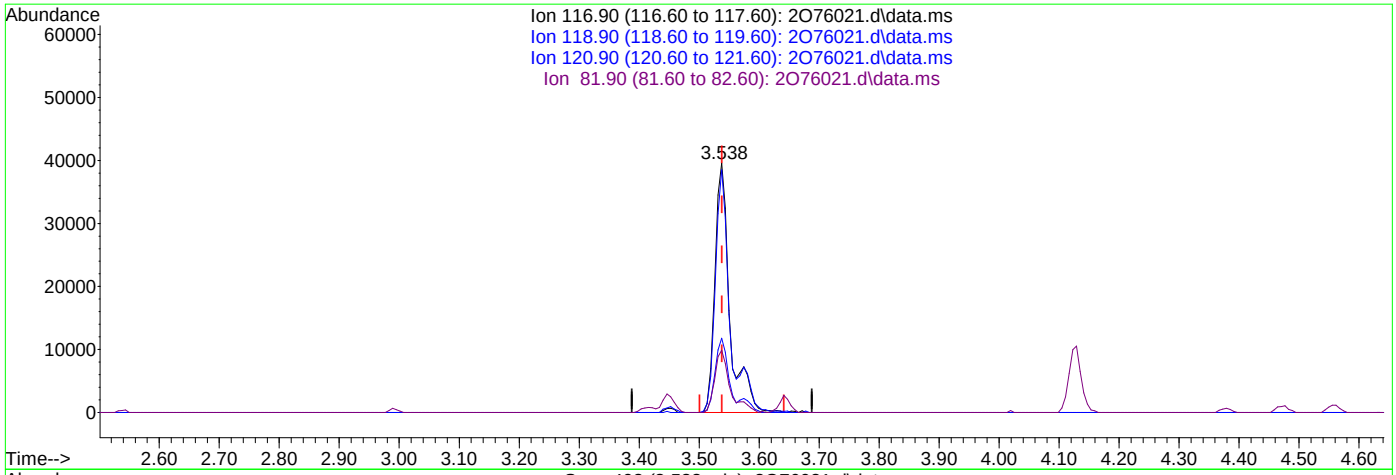
Sample Number: FC5679-12MS
Lab FileID: 2O76021.D
Injection Time: 05/03/23 22:16
Method: SW846 8260D
Analyst approved: 05/03/23 23:30 Celine Celis
Supervisor approved: 05/04/23 11:30 Neil Christiana

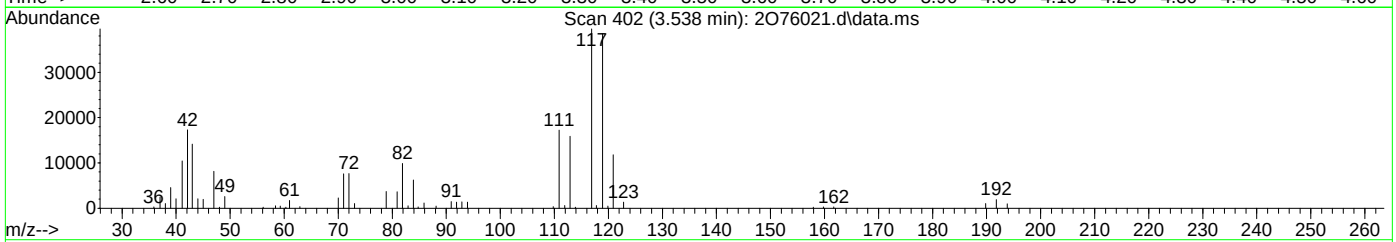
Parameter	CAS	Sig#	R.T. (min.)	Reason
Carbon Tetrachloride	56-23-5		3.54	Overlapping peak
Isobutyl Alcohol	78-83-1		3.89	Poor instrument integration
1-Chlorohexane	544-10-5		6.02	Poor instrument integration

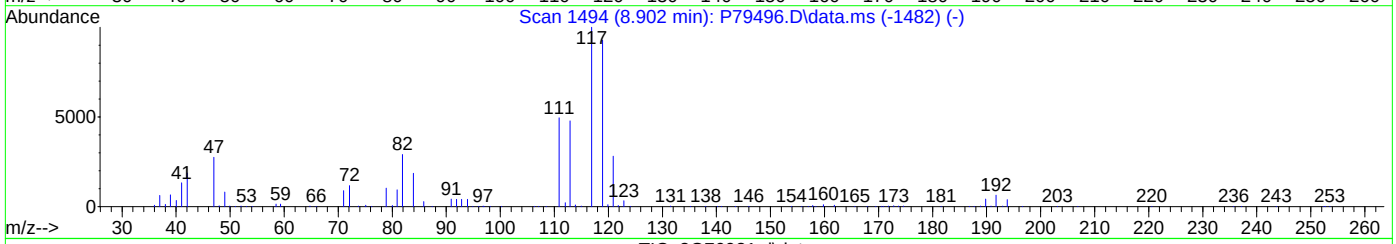
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76021.d
Acq On : 3 May 2023 10:16 pm
Operator : davidb2
Sample : FC5679-12MS
Misc : MS53920,V2O2949,,,,,
ALS Vial : 25 Sample Multiplier: 1

Quant Time: May 03 23:08:08 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration







TIC: 2O76021.d\data.ms

(40) Carbon Tetrachloride ( )

3.538min (-0.000) 33.31ug/L

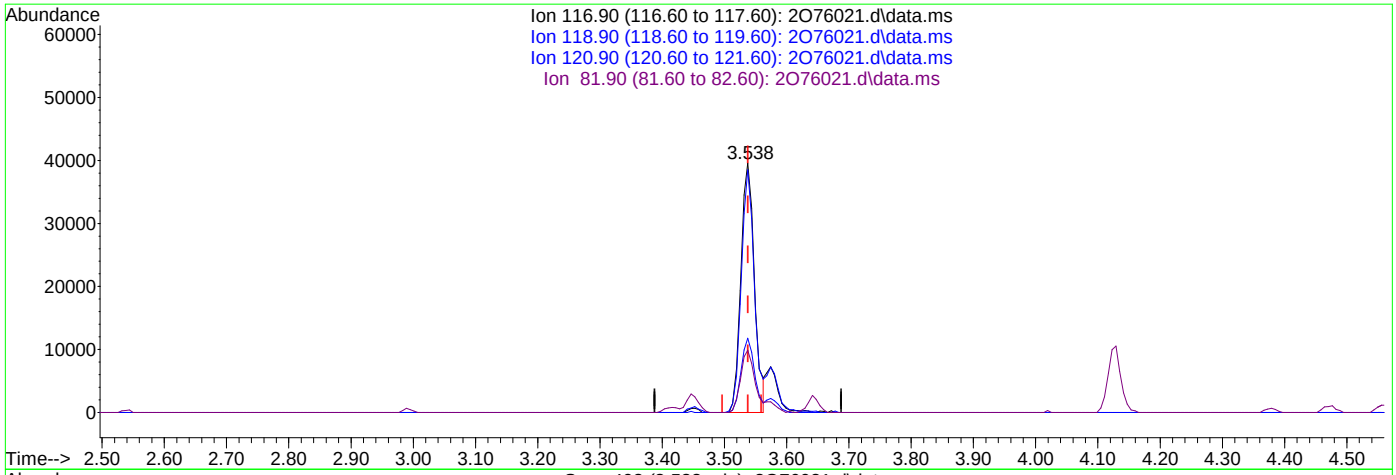
response 69396

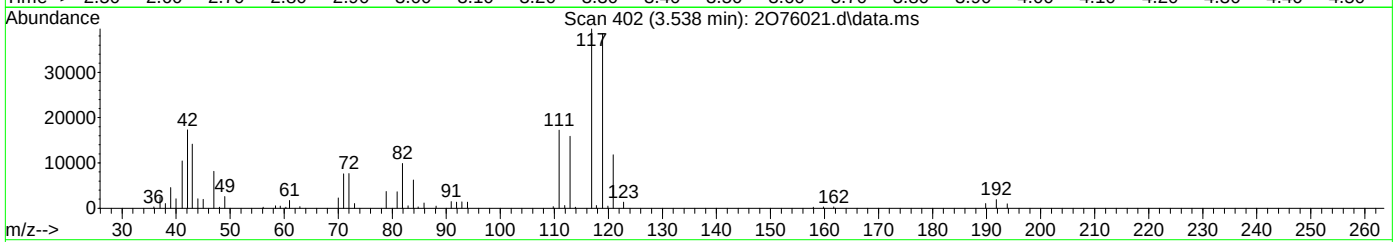
Ion	Exp%	Act%
116.90	100	100
118.90	97.60	97.23
120.90	31.00	29.81
81.90	24.80	24.99

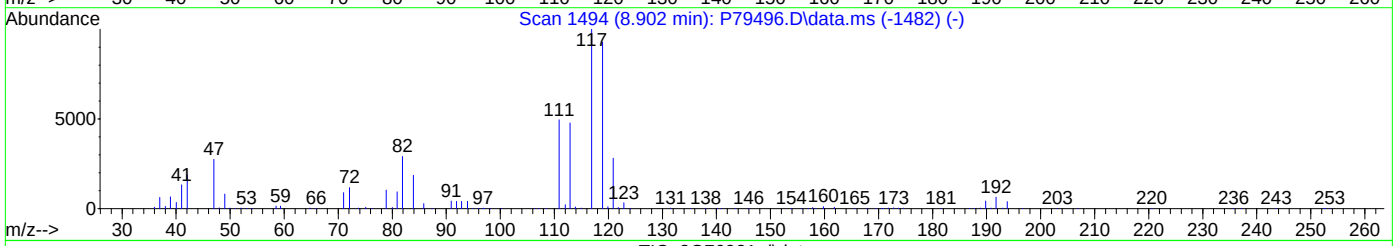
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76021.d
Acq On : 3 May 2023 10:16 pm
Operator : davidb2
Sample : FC5679-12MS
Misc : MS53920,V2O2949,,,,,
ALS Vial : 25 Sample Multiplier: 1

Quant Time: May 03 23:08:08 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration







TIC: 2O76021.d\data.ms

(40) Carbon Tetrachloride ( )

3.538min (-0.000) 28.58ug/L m

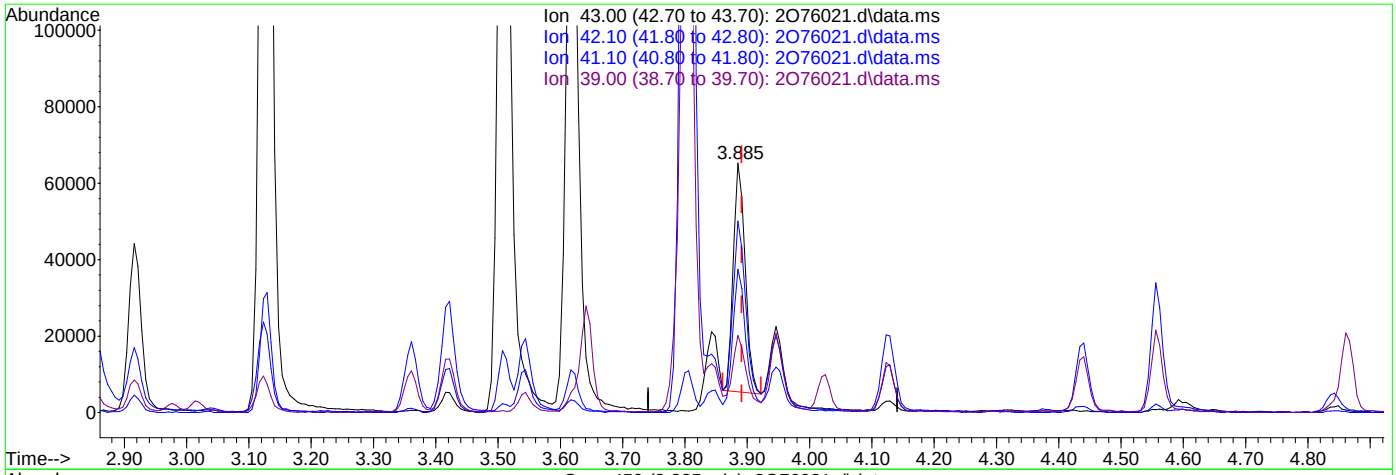
response 59540

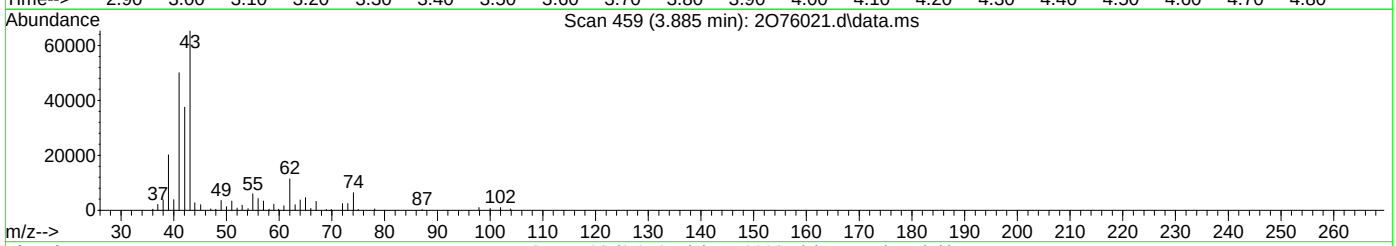
Ion	Exp%	Act%
116.90	100	100
118.90	97.60	97.23
120.90	31.00	29.81
81.90	24.80	24.99

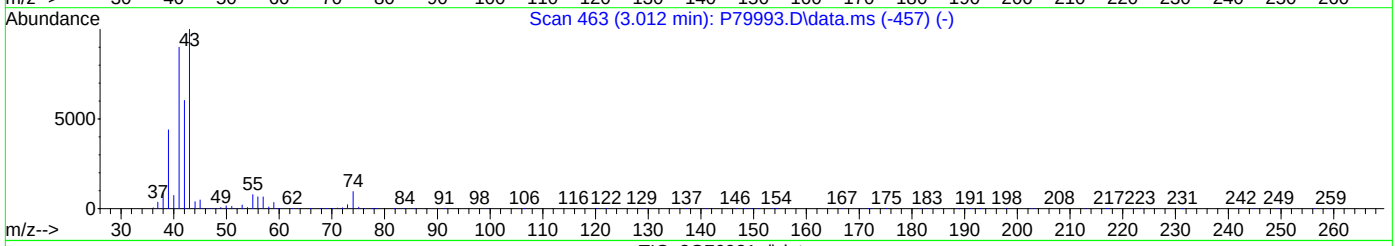
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76021.d
Acq On : 3 May 2023 10:16 pm
Operator : davidb2
Sample : FC5679-12MS
Misc : MS53920,V2O2949,,,,,
ALS Vial : 25 Sample Multiplier: 1

Quant Time: May 03 23:08:08 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration







TIC: 2O76021.d\data.ms

(49) Isobutyl alcohol

3.885min (-0.006) 552.68ug/L

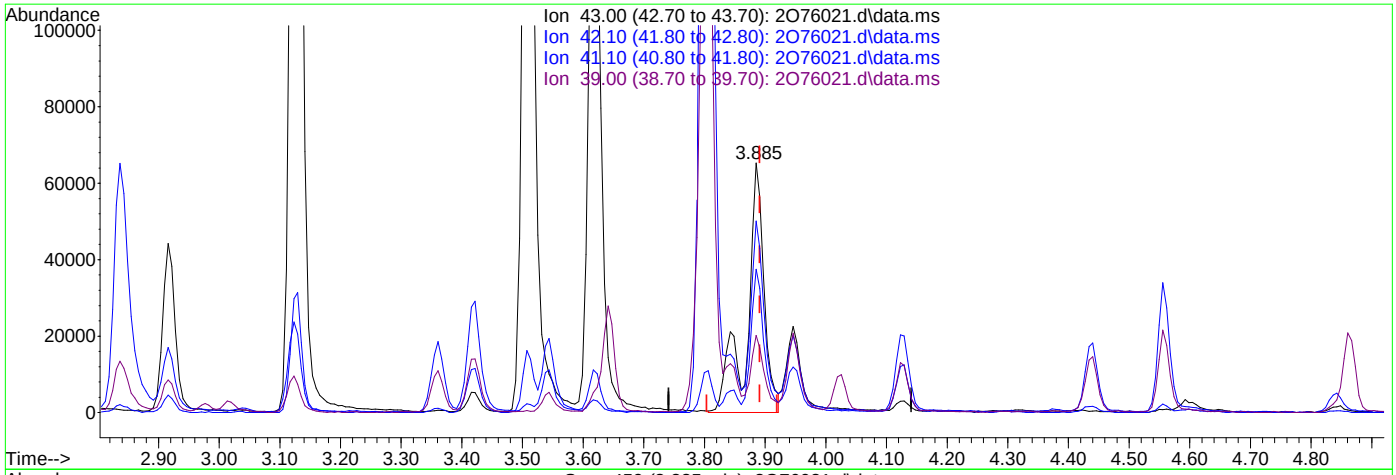
response 78978

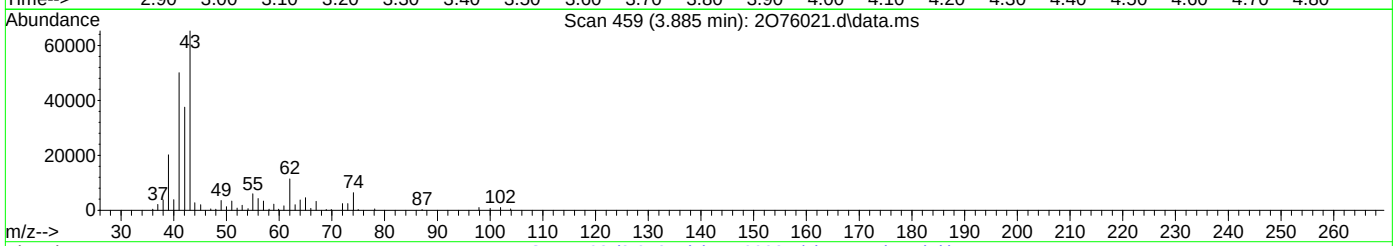
Ion	Exp%	Act%
43.00	100	100
42.10	60.00	58.60
41.10	73.50	74.63
39.00	30.20	29.10

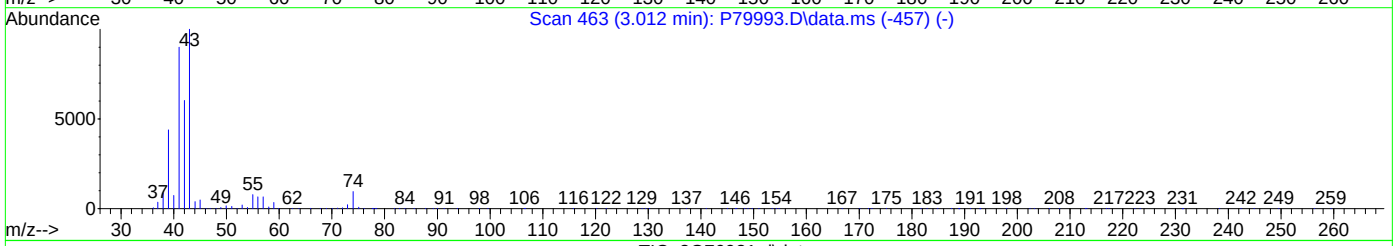
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76021.d
Acq On : 3 May 2023 10:16 pm
Operator : davidb2
Sample : FC5679-12MS
Misc : MS53920,V2O2949,,,,,
ALS Vial : 25 Sample Multiplier: 1

Quant Time: May 03 23:08:08 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration







TIC: 2O76021.d\data.ms

(49) Isobutyl alcohol

3.885min (-0.006) 878.46ug/L m

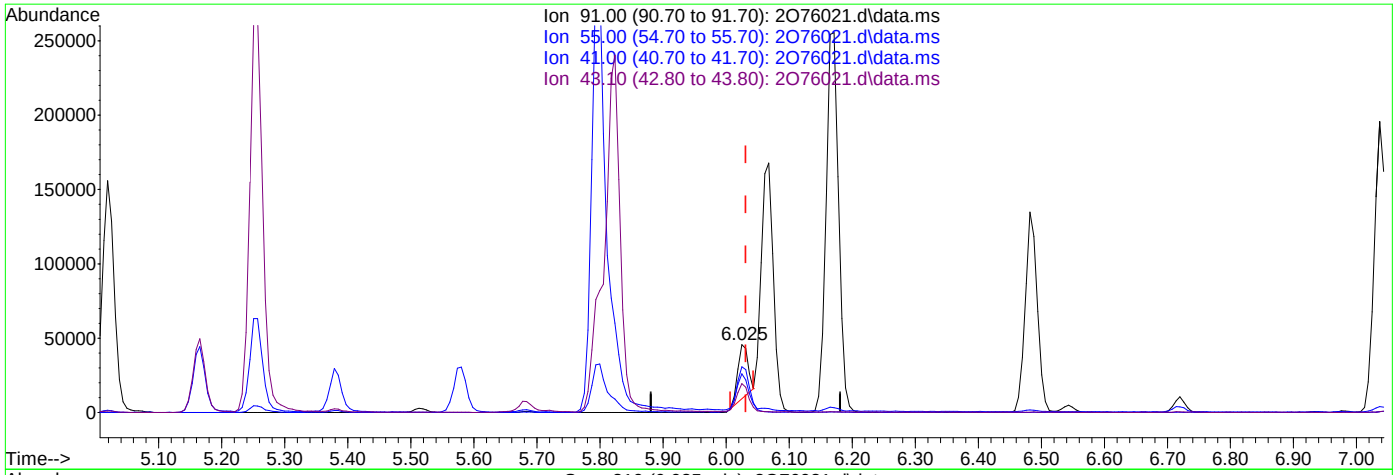
response 130819

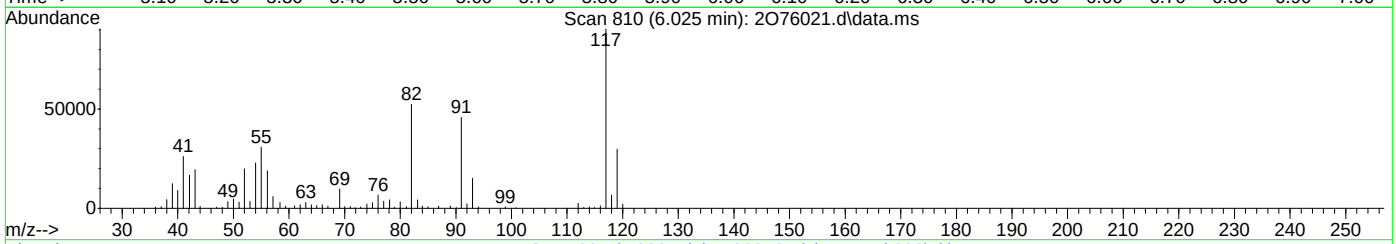
Ion	Exp%	Act%
43.00	100	100
42.10	60.00	57.40
41.10	73.50	76.68
39.00	30.20	30.88

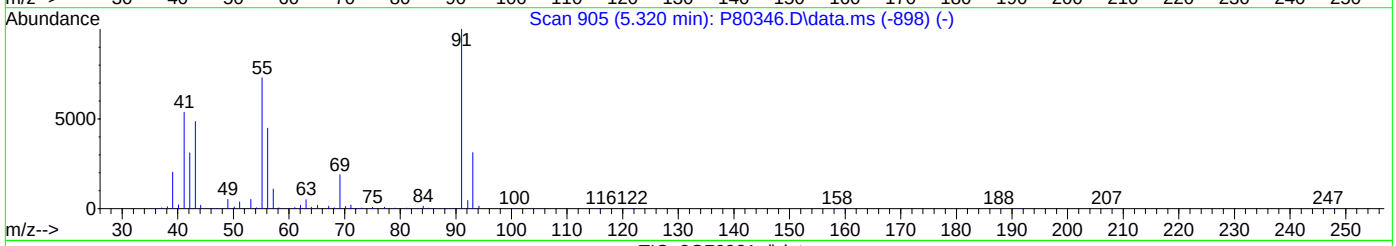
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76021.d
Acq On : 3 May 2023 10:16 pm
Operator : davidb2
Sample : FC5679-12MS
Misc : MS53920,V2O2949,,,,,
ALS Vial : 25 Sample Multiplier: 1

Quant Time: May 03 23:08:08 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration







TIC: 2O76021.d\data.ms

(76) 1-Chlorohexane

6.025min (-0.006) 17.02ug/L

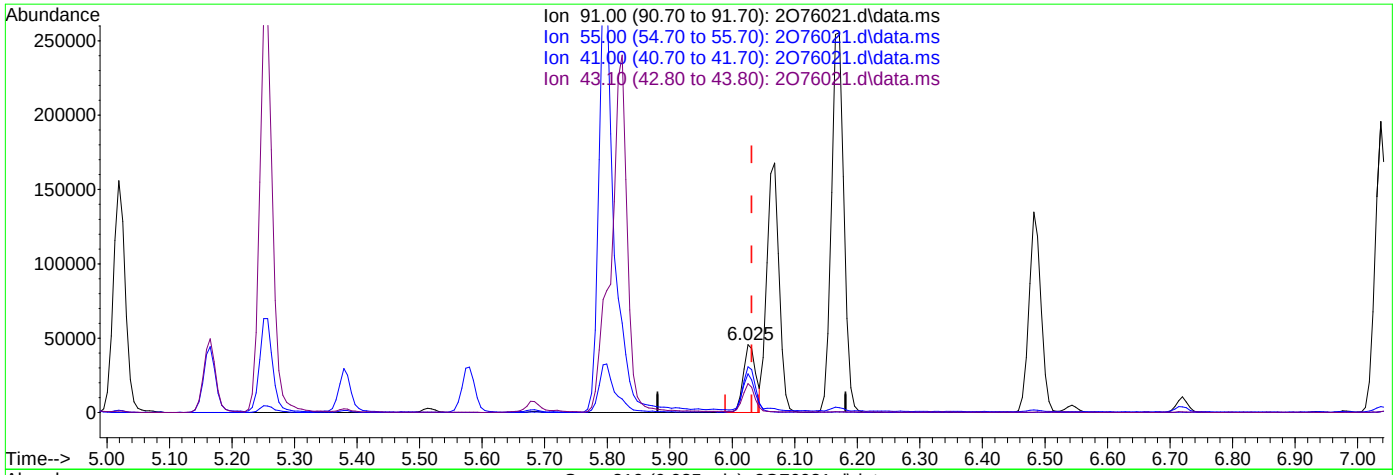
response 43106

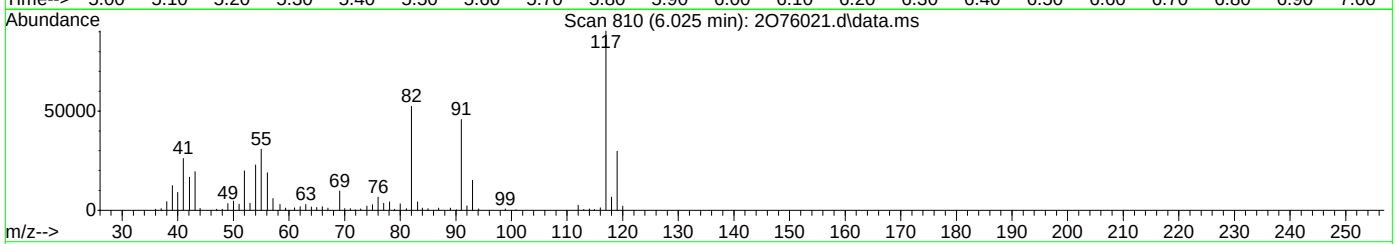
Ion	Exp%	Act%
91.00	100	100
55.00	66.30	66.48
41.00	53.70	53.18
43.10	42.30	40.84

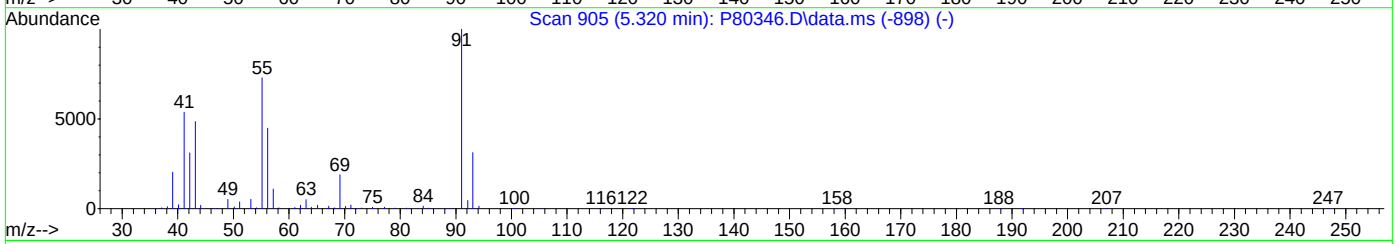
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76021.d
Acq On : 3 May 2023 10:16 pm
Operator : davidb2
Sample : FC5679-12MS
Misc : MS53920,V2O2949,,,,,
ALS Vial : 25 Sample Multiplier: 1

Quant Time: May 03 23:08:08 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration







TIC: 2O76021.d\data.ms

(76) 1-Chlorohexane

6.025min (-0.006) 25.22ug/L m

response 63876

Ion	Exp%	Act%
91.00	100	100
55.00	66.30	67.39
41.00	53.70	57.13
43.10	42.30	42.70

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\johnm\May 2023\05-04-2023\vi2913\
Data File : I756405.d
Acq On : 3 May 2023 10:16 pm
Operator : jeniferw
Sample : FC5678-7MS Inst : MSVOA16
Misc : MS53924,VI2913,,,,,
ALS Vial : 32 Sample Multiplier: 1

Quant Method : C:\msdchem\2\methods\VI-2023-05-02.m
Quant Results File: VI-2023-05-02.RES
Quant Time: May 04 07:08:21 2023
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.854	96	616991	50.00	ug/L	0.00
62) Chlorobenzene-d5	11.006	117	450506	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.371	152	239238	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	6.988	113	176352	50.51	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.02%			
49) 1,2-Dichloroethane-d4	7.561	65	199184	52.17	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 104.34%			
63) Toluene-d8	9.445	98	616868	49.39	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 98.78%			
86) 4-Bromofluorobenzene	12.225	174	185036	49.68	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.36%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.355	85	64308	33.83	ug/L	99
3) Chloromethane	2.647	50	72130	27.26	ug/L	99
4) Vinyl Chloride	2.763	62	94633	34.13	ug/L	99
5) 1,3-Butadiene	2.782	39	76747	28.57	ug/L	100
6) Bromomethane	3.227	94	33167	27.69	ug/L	95
7) Chloroethane	3.385	64	40395	23.36	ug/L	94
8) Trichlorofluoromethane	3.580	101	114364	26.08	ug/L	98
9) Ethyl Ether	4.013	59	61196	24.64	ug/L	90
10) 1,2-Dichlorotrifluoroe...	4.239	67	81242	29.67	ug/L	91
11) 1,1-Dichloroethene	4.263	61	99382	27.58	ug/L	95
12) Ethanol	4.214	45	53178	515.63	ug/L	80
13) Freon 113	4.306	101	67326	30.47	ug/L	97
14) Carbon Disulfide	4.318	76	184171	27.22	ug/L	97
15) Iodomethane	4.452	142	41725	22.50	ug/L	100
16) Acrolein	4.678	56	97261	108.45	ug/L	98
17) Allyl chloride	4.848	41	80542	25.24	ug/L	88
18) Methylene Chloride	4.976	49	91630	25.43	ug/L	91
19) Acetone	5.025	43	210377	114.15	ug/L	97
20) Methyl acetate	5.171	43	338211	84.89	ug/L	94
21) trans-1,2-Dichloroethene	5.177	61	89129	25.36	ug/L	93
22) Hexane	5.269	56	49412	26.55	ug/L #	78
23) Methyl Tert Butyl Ether	5.299	73	178163	24.41	ug/L	74
24) Tert butyl alcohol	5.397	59	358976	318.03	ug/L	94
25) Acetonitrile	5.568	41	161489	234.33	ug/L	97
26) Di-isopropyl ether	5.726	45	206506	24.29	ug/L	94
27) Chloroprene	5.860	53	83932	24.09	ug/L	97
28) 1,1-Dichloroethane	5.879	63	116357	24.01	ug/L	97
29) Acrylonitrile	5.927	53	215990	120.64	ug/L	98
30) ETBE	6.141	59	194163	24.91	ug/L	96
31) Vinyl acetate	6.141	43	559387	96.85	ug/L	95
32) cis-1,2-Dichloroethene	6.494	96	241296	97.61	ug/L	93
33) 2,2-Dichloropropane	6.616	77	47677	14.73	ug/L	97
34) Bromochloromethane	6.732	128	30423	24.64	ug/L #	83
35) Cyclohexane	6.750	56	106904	28.81	ug/L	94
36) Chloroform	6.793	83	116548	24.69	ug/L	99
37) Ethyl acetate	6.891	43	458465	88.25	ug/L	96
38) Tetrahydrofuran	6.982	42	49129	22.89	ug/L	91
40) Carbon Tetrachloride	6.970	117	92258	27.16	ug/L	98
41) 1,1,1-Trichloroethane	7.031	97	102141	27.23	ug/L	95
42) 2-Butanone	7.104	43	337873	118.06	ug/L	90
43) 1,1-Dichloropropene	7.171	75	84271	27.91	ug/L	96

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\johnm\May 2023\05-04-2023\vi2913\
Data File : I756405.d
Acq On : 3 May 2023 10:16 pm
Operator : jeniferw
Sample : FC5678-7MS Inst : MSVOA16
Misc : MS53924,VI2913,,,,,
ALS Vial : 32 Sample Multiplier: 1

Quant Method : C:\msdchem\2\methods\VI-2023-05-02.m
Quant Results File: VI-2023-05-02.RES
Quant Time: May 04 07:08:21 2023
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45) Propionitrile	7.415	54	211465	231.10	ug/L		98
46) Methacrylonitrile	7.439	41	628665	221.87	ug/L		95
47) Benzene	7.433	78	239991	25.06	ug/L	#	59
48) TAME	7.525	73	166967	23.40	ug/L		98
50) Isobutyl alcohol	7.592	42	122878	473.74	ug/L		89
51) 1,2-Dichloroethane	7.634	62	91525	24.22	ug/L		94
52) Tert Amyl Alcohol	7.701	59	223306	231.63	ug/L		92
53) Trichloroethene	8.043	95	64388	24.53	ug/L		89
54) Methylcyclohexane	8.049	83	84112	27.13	ug/L		93
55) Dibromomethane	8.482	93	41751	24.06	ug/L		87
56) 1,2-Dichloropropane	8.567	63	67891	26.33	ug/L		98
57) Bromodichloromethane	8.622	83	81713	23.10	ug/L		97
58) Methyl methacrylate	8.750	41	62734	20.47	ug/L		88
59) 1,4-Dioxane	8.823	88	33827	432.00	ug/L		85
61) cis-1,3-Dichloropropene	9.262	75	78123	20.36	ug/L		99
64) Toluene	9.500	91	245395	24.39	ug/L		100
65) 2-Nitropropane	9.695	41	150686	108.97	ug/L		98
66) 4-Methyl-2-pentanone	9.829	43	644736	113.19	ug/L		96
67) trans-1,3-Dichloropropene	9.896	75	69200	19.49	ug/L		95
68) Tetrachloroethene	9.908	166	61812	23.86	ug/L		99
69) Ethyl methacrylate	10.018	69	82305	23.99	ug/L		93
70) 1,1,2-Trichloroethane	10.061	83	50192	22.71	ug/L		96
71) Dibromochloromethane	10.256	129	67697	23.80	ug/L		93
72) 1,3-Dichloropropane	10.341	76	94733	24.87	ug/L		97
73) 1,2-Dibromoethane	10.518	107	61081	23.23	ug/L		100
74) 3,3-dimethyl-1-butanol	10.615	57	1341368	1194.29	ug/L		97
75) 2-hexanone	10.658	43	526466	118.75	ug/L		97
76) 1-Chlorohexane	10.963	91	71526	26.08	ug/L		86
77) Ethylbenzene	11.030	91	272073	24.34	ug/L		98
78) Chlorobenzene	11.024	112	158042	23.49	ug/L		93
79) 1,1,1,2-Tetrachloroethane	11.073	131	60230	23.61	ug/L		95
80) m,p-Xylene	11.170	91	410947	50.40	ug/L		99
81) o-Xylene	11.609	91	202957	24.12	ug/L		98
82) Styrene	11.658	104	147647	24.73	ug/L		98
83) Bromoform	11.713	173	46510	22.11	ug/L		96
84) Isopropylbenzene	11.914	105	246052	25.33	ug/L		99
87) cis-1,4-Dichloro-2-butene	12.268	53	17866	18.19	ug/L		82
88) n-Propylbenzene	12.335	91	292239	23.65	ug/L		96
89) Bromobenzene	12.353	156	65781	23.25	ug/L		98
90) 1,1,2,2-Tetrachloroethane	12.389	83	102753	22.49	ug/L		99
91) 1,3,5-Trimethylbenzene	12.517	105	203267	24.62	ug/L		99
92) 2-Chlorotoluene	12.524	91	199084	22.76	ug/L		99
93) trans-1,4-Dichloro-2-B...	12.578	53	17482	15.06	ug/L		94
94) 1,2,3-Trichloropropane	12.548	110	31809	24.06	ug/L		97
95) Cyclohexanone	12.609	55	36664	109.98	ug/L		93
96) 4-Chlorotoluene	12.688	91	173532	23.31	ug/L		98
97) tert-Butylbenzene	12.859	91	110066	24.21	ug/L		95
98) 1,2,4-Trimethylbenzene	12.926	105	196001	24.08	ug/L		98
99) Pentachloroethane	12.902	167	40075	25.59	ug/L		93
100) sec-Butylbenzene	13.042	105	223984	23.42	ug/L		98
101) 4-Isopropyltoluene	13.176	119	194087	24.41	ug/L		97
102) 1,3-Dichlorobenzene	13.304	146	110302	22.25	ug/L		98
103) 1,2,3-Trimethylbenzene	13.389	105	202358	22.35	ug/L		98
104) 1,4-Dichlorobenzene	13.389	146	118552	21.68	ug/L		97
105) n-Butylbenzene	13.615	92	98645	23.79	ug/L		90
106) Benzyl Chloride	13.633	126	13949	10.06	ug/L	#	93
107) 1,2-Dichlorobenzene	13.828	146	107126	22.50	ug/L		94

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\johnm\May 2023\05-04-2023\vi2913\
Data File : I756405.d
Acq On : 3 May 2023 10:16 pm
Operator : jeniferw
Sample : FC5678-7MS Inst : MSVOA16
Misc : MS53924,VI2913,,,,,
ALS Vial : 32 Sample Multiplier: 1

Quant Method : C:\msdchem\2\methods\VI-2023-05-02.m
Quant Results File: VI-2023-05-02.RES
Quant Time: May 04 07:08:21 2023
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

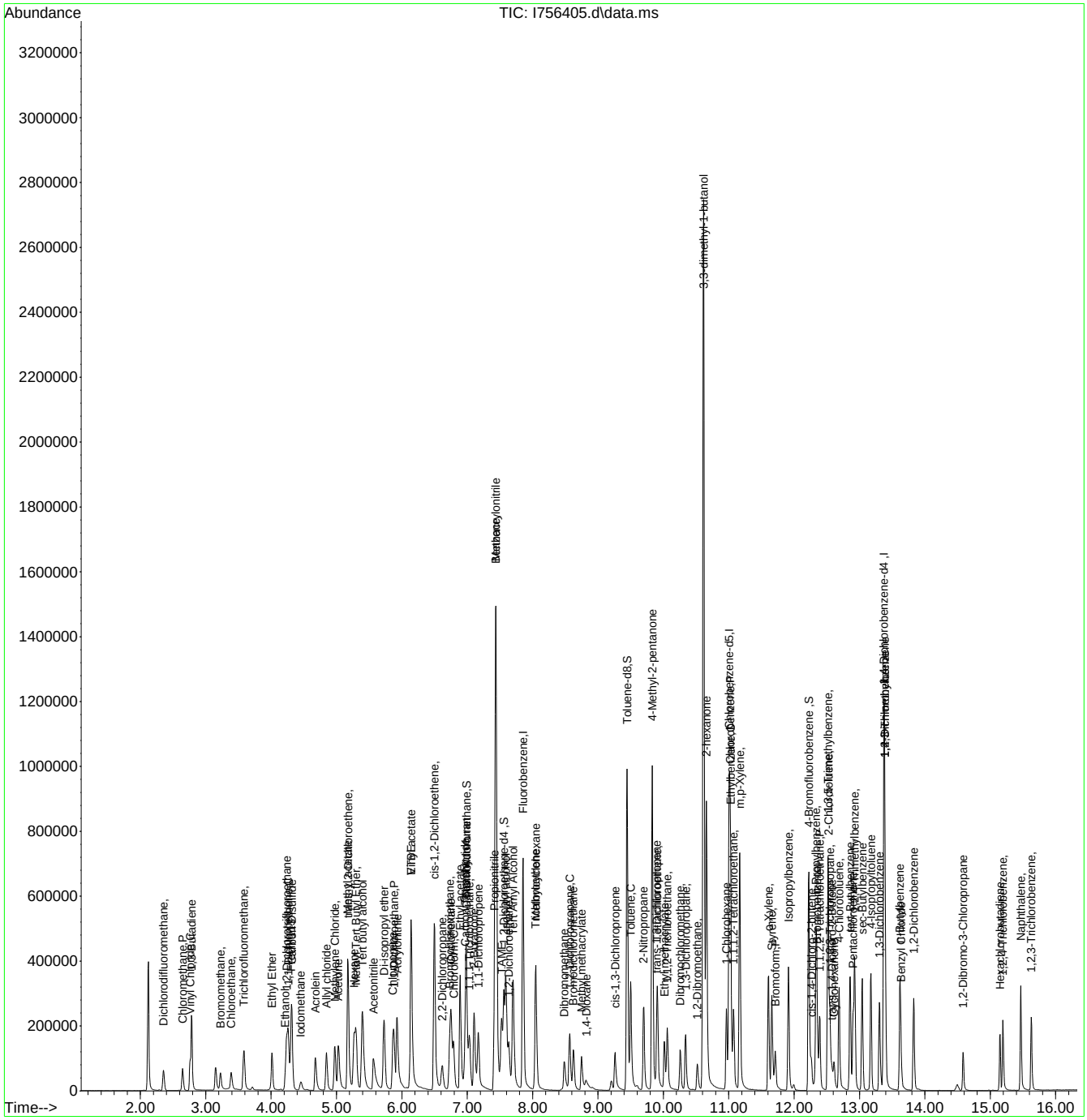
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
108) 1,2-Dibromo-3-Chloropr...	14.584	75	25084	22.89	ug/L	96
109) Hexachlorobutadiene	15.151	225	25716	24.96	ug/L	92
110) 1,2,4-Trichlorobenzene	15.194	180	58391	22.89	ug/L	93
111) Naphthalene	15.468	128	213164	21.93	ug/L	100
112) 1,2,3-Trichlorobenzene	15.627	180	58900	22.04	ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\johnm\May 2023\05-04-2023\vi2913\
Data File : I756405.d
Acq On : 3 May 2023 10:16 pm
Operator : jeniferw
Sample : FC5678-7MS Inst : MSVOA16
Misc : MS53924,VI2913,,,,,
ALS Vial : 32 Sample Multiplier: 1

Quant Method : C:\msdchem\2\methods\VI-2023-05-02.m
Quant Results File: VI-2023-05-02.RES
Quant Time: May 04 07:08:21 2023
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\johnm\May 2023\05-04-2023\vi2913\
Data File : I756406.d
Acq On : 3 May 2023 10:41 pm
Operator : jeniferw
Sample : FC5678-7MSD Inst : MSVOA16
Misc : MS53924,VI2913,,,,,
ALS Vial : 33 Sample Multiplier: 1

Quant Method : C:\msdchem\2\methods\VI-2023-05-02.m
Quant Results File: VI-2023-05-02.RES
Quant Time: May 04 07:08:27 2023
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.854	96	610445	50.00	ug/L	0.00
62) Chlorobenzene-d5	11.005	117	439449	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.371	152	229434	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	6.988	113	175292	50.75	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.50%			
49) 1,2-Dichloroethane-d4	7.561	65	189643	50.21	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 100.42%			
63) Toluene-d8	9.445	98	611444	50.19	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 100.38%			
86) 4-Bromofluorobenzene	12.225	174	181760	50.88	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.76%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.349	85	75256	40.01	ug/L	96
3) Chloromethane	2.641	50	86068	32.88	ug/L	96
4) Vinyl Chloride	2.757	62	109660	39.97	ug/L	99
5) 1,3-Butadiene	2.781	39	86980	32.73	ug/L	99
6) Bromomethane	3.227	94	36055	30.42	ug/L	98
7) Chloroethane	3.385	64	48060	28.45	ug/L	95
8) Trichlorofluoromethane	3.586	101	136626	31.49	ug/L	98
9) Ethyl Ether	4.013	59	68628	27.93	ug/L	93
10) 1,2-Dichlorotrifluoroe...	4.239	67	88610	32.71	ug/L	92
11) 1,1-Dichloroethene	4.263	61	109018	30.58	ug/L	98
12) Ethanol	4.214	45	56814	556.80	ug/L	76
13) Freon 113	4.306	101	73333	33.54	ug/L	97
14) Carbon Disulfide	4.318	76	204607	30.56	ug/L	97
15) Iodomethane	4.452	142	47971	25.80	ug/L	99
16) Acrolein	4.677	56	104816	118.13	ug/L	99
17) Allyl chloride	4.848	41	87357	27.67	ug/L	92
18) Methylene Chloride	4.976	49	103422	29.01	ug/L	90
19) Acetone	5.031	43	225608	123.73	ug/L	98
20) Methyl acetate	5.171	43	381975	96.90	ug/L	96
21) trans-1,2-Dichloroethene	5.177	61	100428	28.88	ug/L	94
22) Hexane	5.269	56	54062	29.36	ug/L #	80
23) Methyl Tert Butyl Ether	5.299	73	202301	28.01	ug/L	79
24) Tert butyl alcohol	5.397	59	407125	364.55	ug/L	93
25) Acetonitrile	5.561	41	180076	264.11	ug/L	97
26) Di-isopropyl ether	5.726	45	232135	27.60	ug/L	92
27) Chloroprene	5.866	53	89907	26.08	ug/L	96
28) 1,1-Dichloroethane	5.885	63	131802	27.49	ug/L	95
29) Acrylonitrile	5.921	53	225854	127.50	ug/L	97
30) ETBE	6.141	59	217187	28.16	ug/L	98
31) Vinyl acetate	6.141	43	588384	102.75	ug/L	95
32) cis-1,2-Dichloroethene	6.494	96	266511	108.97	ug/L	95
33) 2,2-Dichloropropane	6.616	77	52023	16.25	ug/L	94
34) Bromochloromethane	6.726	128	33098	27.10	ug/L #	73
35) Cyclohexane	6.750	56	118353	32.23	ug/L	94
36) Chloroform	6.793	83	130537	27.95	ug/L	97
37) Ethyl acetate	6.890	43	482196	93.82	ug/L	96
38) Tetrahydrofuran	6.982	42	54546	25.69	ug/L	93
40) Carbon Tetrachloride	6.970	117	102222	30.41	ug/L	99
41) 1,1,1-Trichloroethane	7.037	97	115139	31.02	ug/L	97
42) 2-Butanone	7.104	43	359961	127.13	ug/L	91
43) 1,1-Dichloropropene	7.171	75	94028	31.47	ug/L	96

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\johnm\May 2023\05-04-2023\vi2913\
Data File : I756406.d
Acq On : 3 May 2023 10:41 pm
Operator : jeniferw
Sample : FC5678-7MSD Inst : MSVOA16
Misc : MS53924,VI2913,,,,,
ALS Vial : 33 Sample Multiplier: 1

Quant Method : C:\msdchem\2\methods\VI-2023-05-02.m
Quant Results File: VI-2023-05-02.RES
Quant Time: May 04 07:08:27 2023
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
44) tert-Butyl Formate	7.177	59	530	0.22	ug/L	#	59
45) Propionitrile	7.415	54	233592	258.02	ug/L		97
46) Methacrylonitrile	7.439	41	690693	246.38	ug/L		93
47) Benzene	7.433	78	270257	28.53	ug/L	#	60
48) TAME	7.524	73	190709	27.01	ug/L		98
50) Isobutyl alcohol	7.591	42	135259	527.07	ug/L		87
51) 1,2-Dichloroethane	7.634	62	102631	27.45	ug/L		98
52) Tert Amyl Alcohol	7.701	59	249382	261.45	ug/L		91
53) Trichloroethene	8.049	95	70322	27.08	ug/L		96
54) Methylcyclohexane	8.049	83	93370	30.44	ug/L		92
55) Dibromomethane	8.488	93	47085	27.42	ug/L		95
56) 1,2-Dichloropropane	8.567	63	75196	29.48	ug/L		96
57) Bromodichloromethane	8.622	83	92222	26.35	ug/L		96
58) Methyl methacrylate	8.744	41	70277	23.18	ug/L		87
59) 1,4-Dioxane	8.817	88	39223	506.28	ug/L		73
61) cis-1,3-Dichloropropene	9.262	75	89307	23.52	ug/L		98
64) Toluene	9.500	91	272529	27.77	ug/L		99
65) 2-Nitropropane	9.701	41	173935	128.95	ug/L		98
66) 4-Methyl-2-pentanone	9.829	43	680918	122.55	ug/L		95
67) trans-1,3-Dichloropropene	9.902	75	77586	22.40	ug/L		94
68) Tetrachloroethene	9.908	166	68154	26.97	ug/L		97
69) Ethyl methacrylate	10.012	69	88994	26.60	ug/L		91
70) 1,1,2-Trichloroethane	10.061	83	56841	26.36	ug/L		96
71) Dibromochloromethane	10.256	129	74682	26.92	ug/L		95
72) 1,3-Dichloropropane	10.341	76	108229	29.13	ug/L		95
73) 1,2-Dibromoethane	10.518	107	69283	27.02	ug/L		98
74) 3,3-dimethyl-1-butanol	10.615	57	1443285	1317.36	ug/L		97
75) 2-hexanone	10.658	43	547974	126.71	ug/L		97
76) 1-Chlorohexane	10.969	91	79740	29.81	ug/L		94
77) Ethylbenzene	11.030	91	299684	27.49	ug/L		98
78) Chlorobenzene	11.024	112	174381	26.57	ug/L		94
79) 1,1,1,2-Tetrachloroethane	11.073	131	67187	27.00	ug/L		96
80) m,p-Xylene	11.164	91	455798	57.31	ug/L		99
81) o-Xylene	11.609	91	224540	27.35	ug/L		98
82) Styrene	11.658	104	166504	28.59	ug/L		98
83) Bromoform	11.713	173	51213	24.96	ug/L		99
84) Isopropylbenzene	11.914	105	271295	28.63	ug/L		99
87) cis-1,4-Dichloro-2-butene	12.267	53	18811	19.97	ug/L		87
88) n-Propylbenzene	12.334	91	321897	27.16	ug/L		96
89) Bromobenzene	12.347	156	73430	27.07	ug/L		91
90) 1,1,2,2-Tetrachloroethane	12.389	83	114822	26.20	ug/L		96
91) 1,3,5-Trimethylbenzene	12.517	105	224499	28.36	ug/L		100
92) 2-Chlorotoluene	12.517	91	218318	26.02	ug/L		99
93) trans-1,4-Dichloro-2-B...	12.578	53	17519	15.73	ug/L		89
94) 1,2,3-Trichloropropane	12.548	110	34753	27.40	ug/L		97
95) Cyclohexanone	12.609	55	38368	120.01	ug/L		95
96) 4-Chlorotoluene	12.688	91	192254	26.93	ug/L		97
97) tert-Butylbenzene	12.859	91	121768	27.93	ug/L		99
98) 1,2,4-Trimethylbenzene	12.926	105	219299	28.10	ug/L		95
99) Pentachloroethane	12.901	167	43208	28.77	ug/L		96
100) sec-Butylbenzene	13.042	105	243842	26.59	ug/L		99
101) 4-Isopropyltoluene	13.176	119	209397	27.46	ug/L		98
102) 1,3-Dichlorobenzene	13.304	146	123668	26.01	ug/L		98
103) 1,2,3-Trimethylbenzene	13.383	105	220875	25.44	ug/L		96
104) 1,4-Dichlorobenzene	13.389	146	130691	24.92	ug/L		98
105) n-Butylbenzene	13.621	92	105364	26.50	ug/L		96
106) Benzyl Chloride	13.633	126	14789	11.12	ug/L		94

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\johnm\May 2023\05-04-2023\vi2913\
Data File : I756406.d
Acq On : 3 May 2023 10:41 pm
Operator : jeniferw
Sample : FC5678-7MSD Inst : MSVOA16
Misc : MS53924,VI2913,,,,,
ALS Vial : 33 Sample Multiplier: 1

Quant Method : C:\msdchem\2\methods\VI-2023-05-02.m
Quant Results File: VI-2023-05-02.RES
Quant Time: May 04 07:08:27 2023
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
107) 1,2-Dichlorobenzene	13.828	146	120159	26.31	ug/L	97
108) 1,2-Dibromo-3-Chloropr...	14.584	75	28673	27.29	ug/L	97
109) Hexachlorobutadiene	15.151	225	27139	27.47	ug/L	94
110) 1,2,4-Trichlorobenzene	15.194	180	67126	27.43	ug/L	97
111) Naphthalene	15.468	128	244862	26.27	ug/L	100
112) 1,2,3-Trichlorobenzene	15.627	180	65085	25.39	ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

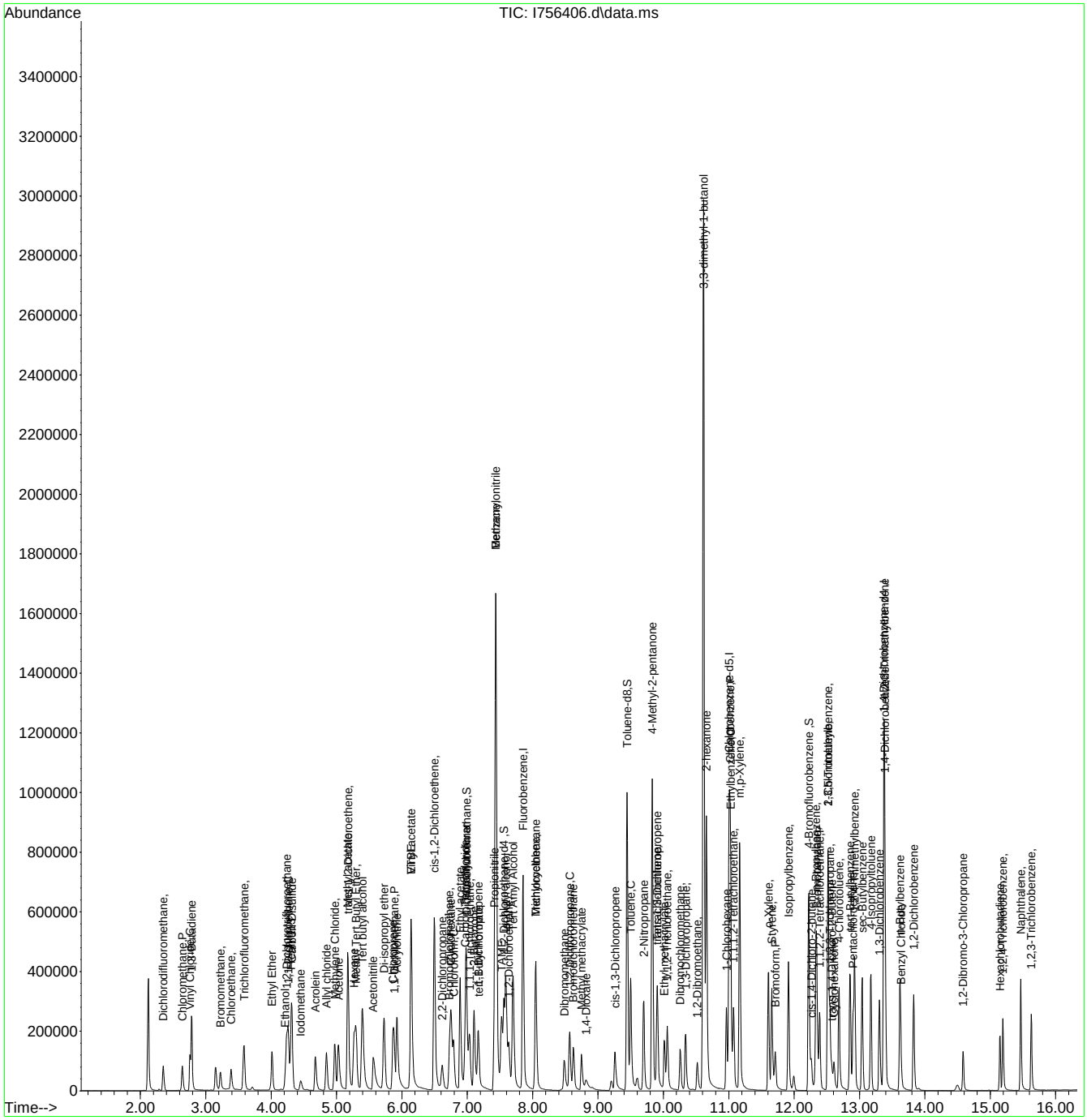
7.4.3

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\johnm\May 2023\05-04-2023\vi2913\
Data File : I756406.d
Acq On : 3 May 2023 10:41 pm
Operator : jeniferw
Sample : FC5678-7MSD Inst : MSVOA16
Misc : MS53924,VI2913,,,,,
ALS Vial : 33 Sample Multiplier: 1

Quant Method : C:\msdchem\2\methods\VI-2023-05-02.m
Quant Results File: VI-2023-05-02.RES
Quant Time: May 04 07:08:27 2023
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration



Manual Integrations APPROVED (compounds with "m" flag)
Neil Christiana 05/04/23 11:30

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76022.d
Acq On : 3 May 2023 10:42 pm
Operator : davidb2
Sample : FC5679-12MSD
Misc : MS53920,V2O2949,,,,,
ALS Vial : 26 Sample Multiplier: 1

Quant Time: May 03 23:11:23 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	4.025	96	389726	50.00	ug/L	0.00
62) Chlorobenzene-d5	6.037	117	303982	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.799	152	164947	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	3.556	113	106383	49.25	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 98.50%			
50) 1,2-Dichloroethane-d4	3.861	65	126211	54.97	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 109.94%			
63) Toluene-d8	4.989	98	388603	46.88	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 93.76%			
86) 4-Bromofluorobenzene	6.933	174	123970	49.25	ug/L	-0.01
Spiked Amount 50.000	Range 83 - 118		Recovery = 98.50%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.227	85	51333	32.33	ug/L	96
3) Chloromethane	1.386	50	44275	25.79	ug/L	99
4) 1,3-butadiene	1.453	39	52376	30.43	ug/L	97
5) Vinyl Chloride	1.434	62	51931	30.46	ug/L	95
6) Bromomethane	1.672	94	15254	11.68	ug/L	97
7) Chloroethane	1.751	64	17609	16.59	ug/L	98
8) Trichlorofluoromethane	1.849	101	101021	33.37	ug/L	97
9) Ethyl Ether	2.062	59	40281	30.00	ug/L	97
10) Ethanol	2.166	45	24325	694.41	ug/L	99
11) 1,2-Dichlorotrifluoroe...	2.184	67	63962	32.00	ug/L	99
12) 1,1-Dichloroethene	2.184	61	70205	27.35	ug/L	97
13) Freon 113	2.215	101	57192	33.46	ug/L	97
14) Carbon Disulfide	2.202	76	135663	27.21	ug/L	97
15) Iodomethane	2.276	142	36609	13.72	ug/L	98
16) Acrolein	2.391	56	64392	131.79	ug/L	98
17) Allyl chloride	2.477	41	48720	24.51	ug/L	94
18) Methylene Chloride	2.538	49	58696	24.85	ug/L	96
19) Acetone	2.568	43	135676	138.41	ug/L	100
20) Methyl acetate	2.641	43	241224	107.01	ug/L	99
21) trans-1,2-Dichloroethene	2.635	61	65706	26.77	ug/L	99
22) Hexane	2.684	56	37671	29.06	ug/L	95
23) Methyl Tert Butyl Ether	2.702	73	128013	27.18	ug/L	95
24) Tert Butyl Alcohol	2.751	59	154651	402.84	ug/L	92
25) Acetonitrile	2.836	41	109245	295.93	ug/L	99
26) Di-isopropyl ether	2.916	45	135650	27.15	ug/L	99
27) Chloroprene	2.977	53	56175	23.92	ug/L	99
28) 1,1-Dichloroethane	2.989	63	83590	26.23	ug/L	96
29) Acrylonitrile	3.013	52	124533	131.17	ug/L	100
30) ETBE	3.123	59	125963	27.80	ug/L	98
31) Vinyl acetate	3.129	43	407138	111.75	ug/L	100
32) cis-1,2-Dichloroethene	3.300	96	62713	31.68	ug/L	96
33) 2,2-Dichloropropane	3.361	77	39487	18.45	ug/L	97
34) Bromochloromethane	3.410	128	26542	24.87	ug/L	93
35) Cyclohexane	3.422	56	78991	30.00	ug/L	93
36) Chloroform	3.446	83	94679	27.43	ug/L	99
37) Ethyl acetate	3.507	43	319931	111.77	ug/L	98
38) Tetrahydrofuran	3.544	42	27992	25.43	ug/L	96
40) Carbon Tetrachloride	3.538	117	60852m	28.15	ug/L	
41) 1,1,1-Trichloroethane	3.574	97	77746	27.76	ug/L	97
42) 2-Butanone	3.617	43	229224	140.97	ug/L	95
43) 1,1-Dichloropropene	3.641	75	69996	28.95	ug/L	95
44) tert-Butyl formate	3.635	59	335	0.56	ug/L #	1

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76022.d
Acq On : 3 May 2023 10:42 pm
Operator : davidb2
Sample : FC5679-12MSD
Misc : MS53920,V2O2949,,,,,
ALS Vial : 26 Sample Multiplier: 1

Quant Time: May 03 23:11:23 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45) Propionitrile	3.794	54	144773	300.03	ug/L		88
46) Methacrylonitrile	3.806	41	451487	276.43	ug/L		99
47) Benzene	3.788	78	195801	27.39	ug/L		92
48) TAME	3.842	73	106290	25.06	ug/L		92
49) Isobutyl alcohol	3.885	43	136991m	885.82	ug/L		
51) 1,2-Dichloroethane	3.897	62	72643	28.52	ug/L		100
52) Tert Amyl Alcohol	3.946	59	84991	286.37	ug/L		84
53) Trichloroethene	4.123	95	55695	27.03	ug/L		90
54) Methylcyclohexane	4.129	83	81423	30.19	ug/L		98
55) Dibromomethane	4.379	93	34838	26.88	ug/L		98
56) 1,2-Dichloropropane	4.440	63	48205	28.75	ug/L		99
57) Bromodichloromethane	4.470	83	59922	26.10	ug/L		96
58) Methyl methacrylate	4.556	41	47698	25.43	ug/L		98
59) 1,4-Dioxane	4.592	88	26381	725.25	ug/L		97
60) 2-Chloroethyl vinyl ether	4.860	63	208	0.14	ug/L	#	22
61) cis-1,3-Dichloropropene	4.867	75	61048	23.25	ug/L		99
64) Toluene	5.019	91	211084	25.34	ug/L		99
65) 2-Nitropropane	5.165	41	61912	118.67	ug/L		97
66) 4-Methyl-2-pentanone	5.257	43	391392	131.49	ug/L		99
67) trans-1,3-Dichloropropene	5.281	75	56848	20.85	ug/L		93
68) Tetrachloroethene	5.275	166	54088	22.91	ug/L		96
69) Ethyl methacrylate	5.379	69	66009	27.18	ug/L		95
70) 1,1,2-Trichloroethane	5.391	83	41432	24.65	ug/L		97
71) Dibromochloromethane	5.519	129	47276	24.15	ug/L		99
72) 1,3-Dichloropropane	5.580	76	83281	27.05	ug/L		98
73) 1,2-Dibromoethane	5.684	107	53244	25.31	ug/L		98
74) 3,3-dimethyl-1-butanol	5.799	57	728690	1765.55	ug/L		99
75) 2-hexanone	5.824	43	444812	150.42	ug/L		95
76) 1-Chlorohexane	6.025	91	67058m	25.57	ug/L		
77) Ethylbenzene	6.068	91	232928	25.92	ug/L		98
78) Chlorobenzene	6.049	112	137757	24.47	ug/L		97
79) 1,1,1,2-Tetrachloroethane	6.092	131	43982	24.95	ug/L		99
80) m,p-Xylene	6.171	91	359573	51.42	ug/L		98
81) o-Xylene	6.482	91	182672	25.87	ug/L		96
82) Styrene	6.519	104	135756	24.47	ug/L		96
83) Bromoform	6.543	173	26516	21.37	ug/L		98
84) Isopropylbenzene	6.720	105	218546	25.67	ug/L		99
87) cis-1,4-Dichloro-2-butene	6.982	53	12541	16.79	ug/L	#	75
88) n-Propylbenzene	7.037	91	264815	25.90	ug/L		98
89) Bromobenzene	7.019	156	55872	24.62	ug/L		97
90) 1,1,2,2-Tetrachloroethane	7.086	83	80141	25.74	ug/L		100
91) 1,3,5-Trimethylbenzene	7.189	105	180846	25.05	ug/L		98
92) 2-Chlorotoluene	7.159	91	172408	25.00	ug/L		95
93) trans-1,4-Dichloro-2-B...	7.226	53	10901	16.82	ug/L	#	79
94) 1,2,3-Trichloropropane	7.195	110	27116	26.46	ug/L		96
95) Cyclohexanone	7.226	55	21834	153.65	ug/L		95
96) 4-Chlorotoluene	7.287	91	159593	25.15	ug/L		97
97) tert-Butylbenzene	7.439	91	98674	25.30	ug/L		96
99) 1,2,4-Trimethylbenzene	7.494	105	289737	40.62	ug/L		97
100) Pentachloroethane	7.458	167	23999	24.54	ug/L	#	65
101) sec-Butylbenzene	7.579	105	211646	24.49	ug/L		99
102) 4-Isopropyltoluene	7.689	119	187337	24.84	ug/L		100
103) 1,3-Dichlorobenzene	7.744	146	103576	23.10	ug/L		99
104) 1,2,3-Trimethylbenzene	7.823	105	316455	42.39	ug/L		98
105) 1,4-Dichlorobenzene	7.805	146	107208	23.60	ug/L		94
106) n-Butylbenzene	8.000	92	94466	24.91	ug/L		94
107) Benzyl Chloride	7.994	126	8829	10.98	ug/L	#	1
108) 1,2-Dichlorobenzene	8.122	146	103130	24.37	ug/L		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76022.d
Acq On : 3 May 2023 10:42 pm
Operator : davidb2
Sample : FC5679-12MSD
Misc : MS53920,V2O2949,,,,,
ALS Vial : 26 Sample Multiplier: 1

Quant Time: May 03 23:11:23 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

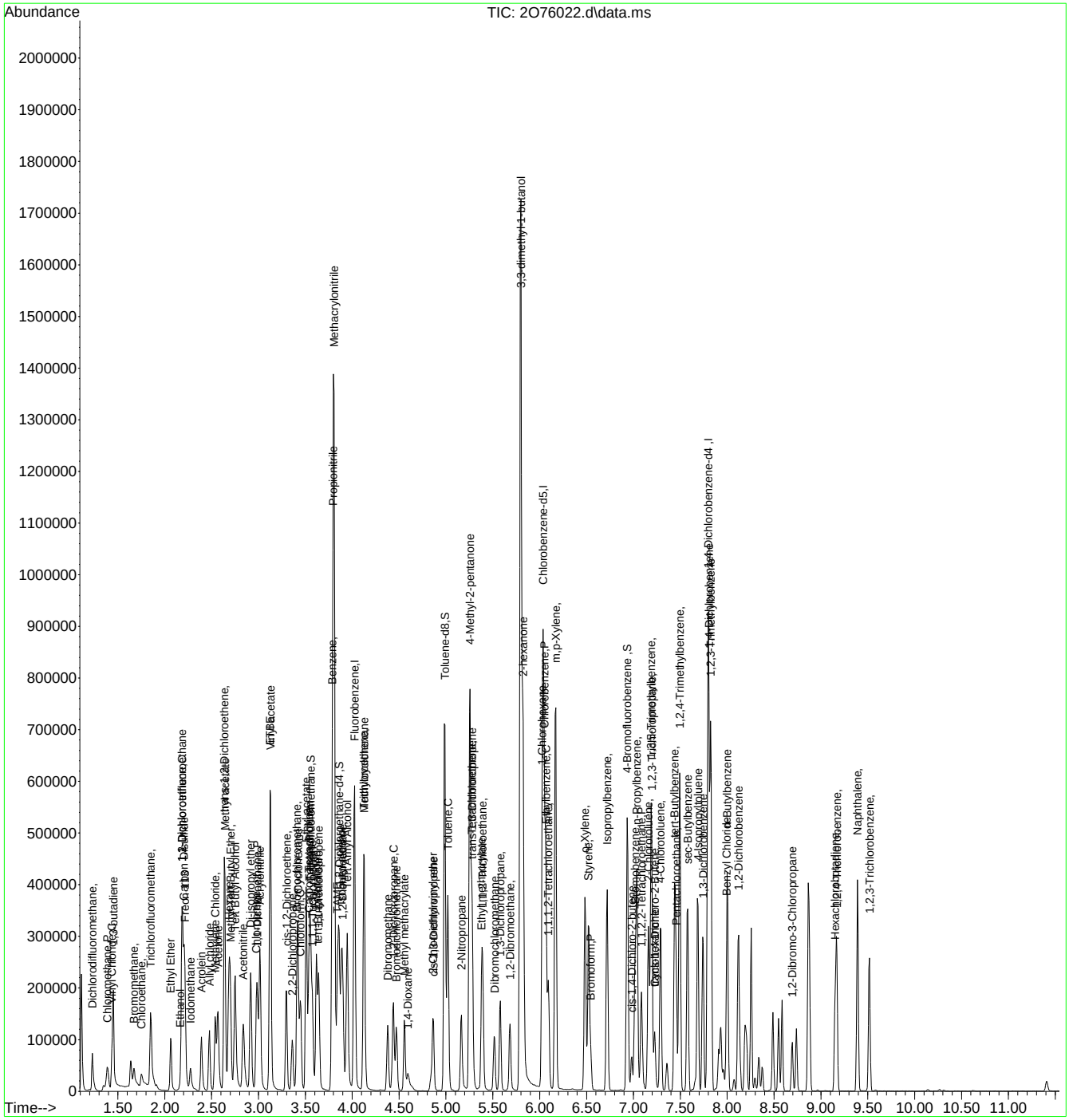
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
109) 1,2-Dibromo-3-Chloropr...	8.695	75	17265	26.61	ug/L	90
110) Hexachlorobutadiene	9.152	225	22206	24.19	ug/L	94
111) 1,2,4-Trichlorobenzene	9.171	180	65964	25.68	ug/L	99
112) Naphthalene	9.390	128	238535	26.25	ug/L	100
113) 1,2,3-Trichlorobenzene	9.518	180	62796	25.74	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76022.d
Acq On : 3 May 2023 10:42 pm
Operator : davidb2
Sample : FC5679-12MSD
Misc : MS53920,V2O2949,,,,,
ALS Vial : 26 Sample Multiplier: 1

Quant Time: May 03 23:11:23 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration



Manual Integration Approval Summary

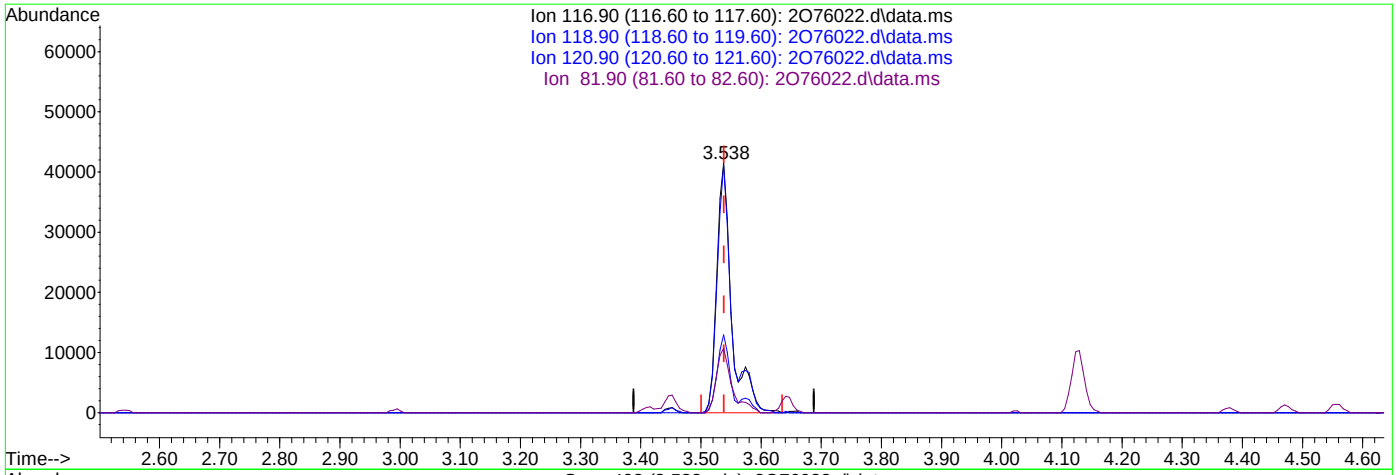
Sample Number: FC5679-12MSD
Lab FileID: 2O76022.D
Injection Time: 05/03/23 22:42
Method: SW846 8260D
Analyst approved: 05/03/23 23:30 Celine Celis
Supervisor approved: 05/04/23 11:30 Neil Christiana

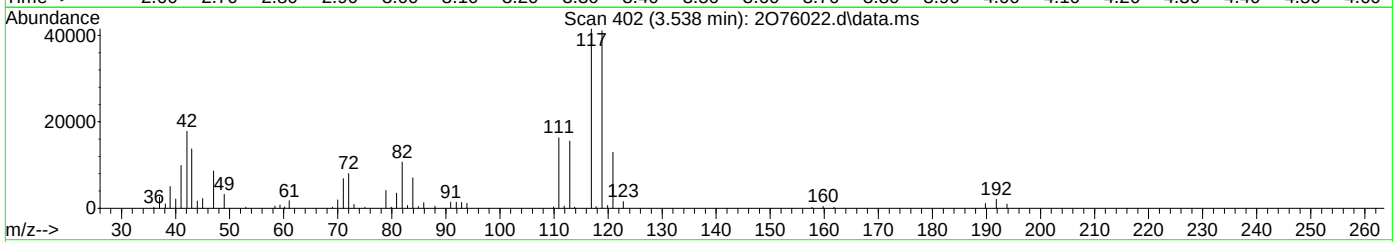
Parameter	CAS	Sig#	R.T. (min.)	Reason
Carbon Tetrachloride	56-23-5		3.54	Overlapping peak
Isobutyl Alcohol	78-83-1		3.89	Poor instrument integration
1-Chlorohexane	544-10-5		6.02	Poor instrument integration

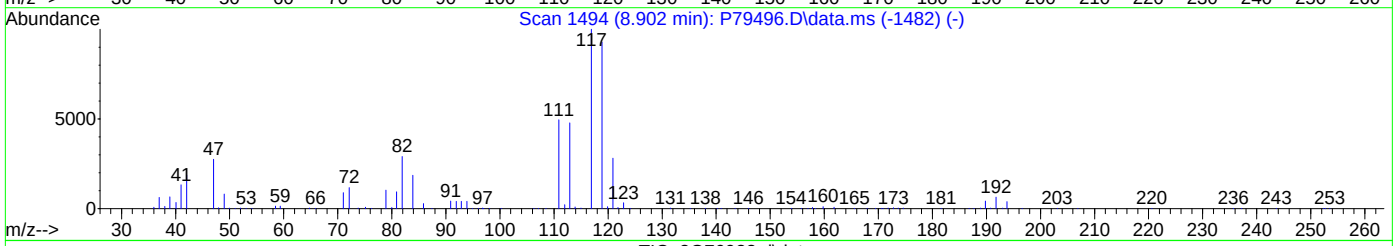
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76022.d
Acq On : 3 May 2023 10:42 pm
Operator : davidb2
Sample : FC5679-12MSD
Misc : MS53920,V2O2949,,,,,
ALS Vial : 26 Sample Multiplier: 1

Quant Time: May 03 23:08:12 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration







TIC: 2O76022.d\data.ms

(40) Carbon Tetrachloride ( )

3.538min (-0.000) 32.82ug/L

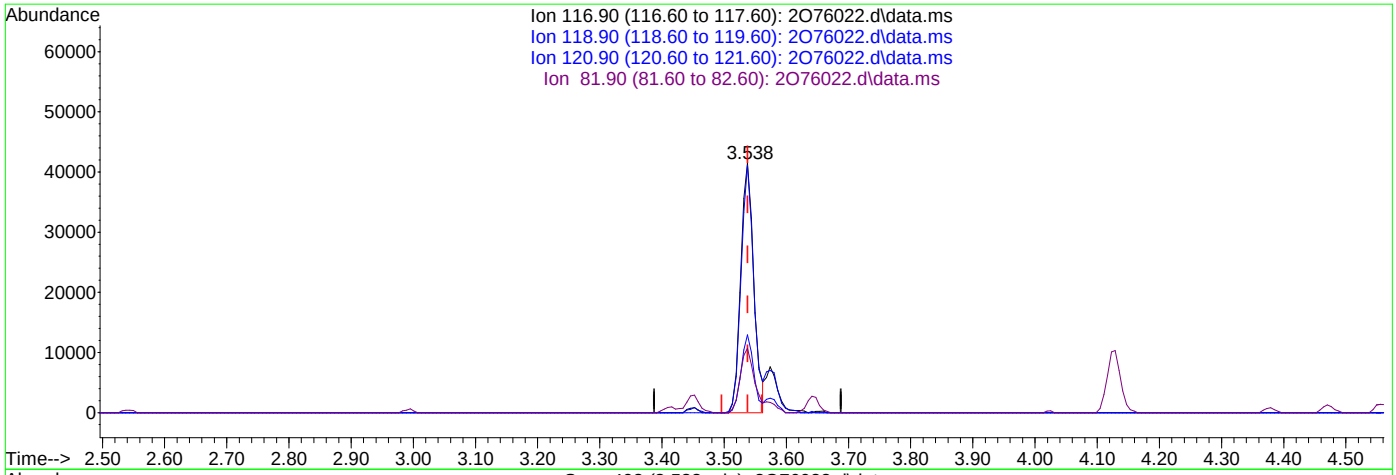
response 70960

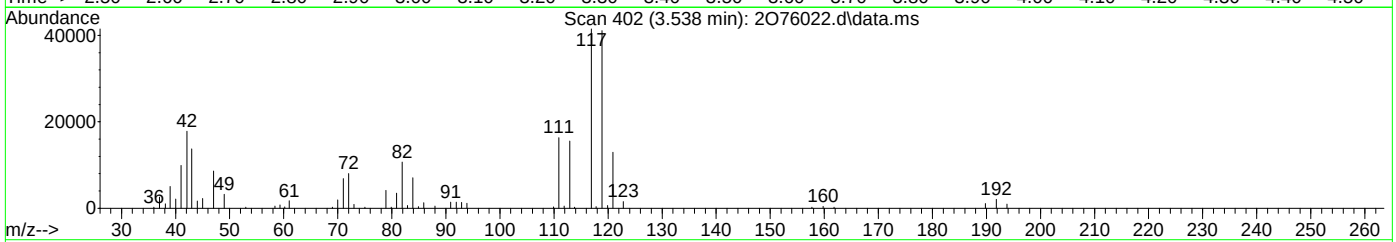
Ion	Exp%	Act%
116.90	100	100
118.90	97.60	99.04
120.90	31.00	31.19
81.90	24.80	25.77

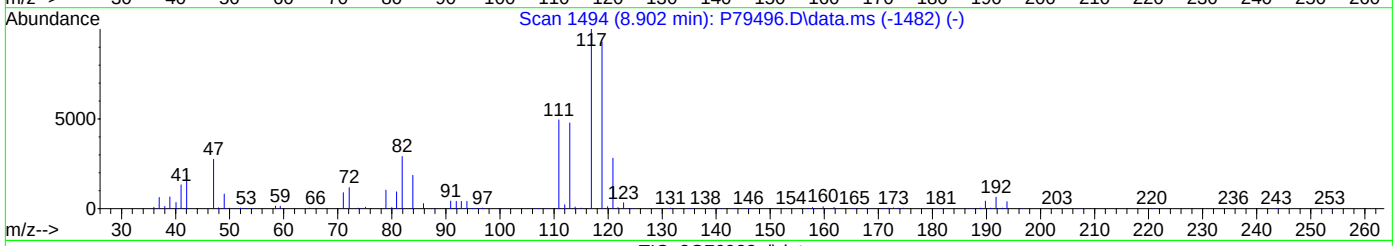
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76022.d
Acq On : 3 May 2023 10:42 pm
Operator : davidb2
Sample : FC5679-12MSD
Misc : MS53920,V2O2949,,,,,
ALS Vial : 26 Sample Multiplier: 1

Quant Time: May 03 23:08:12 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration







TIC: 2O76022.d\data.ms

(40) Carbon Tetrachloride ( )

3.538min (-0.000) 28.15ug/L m

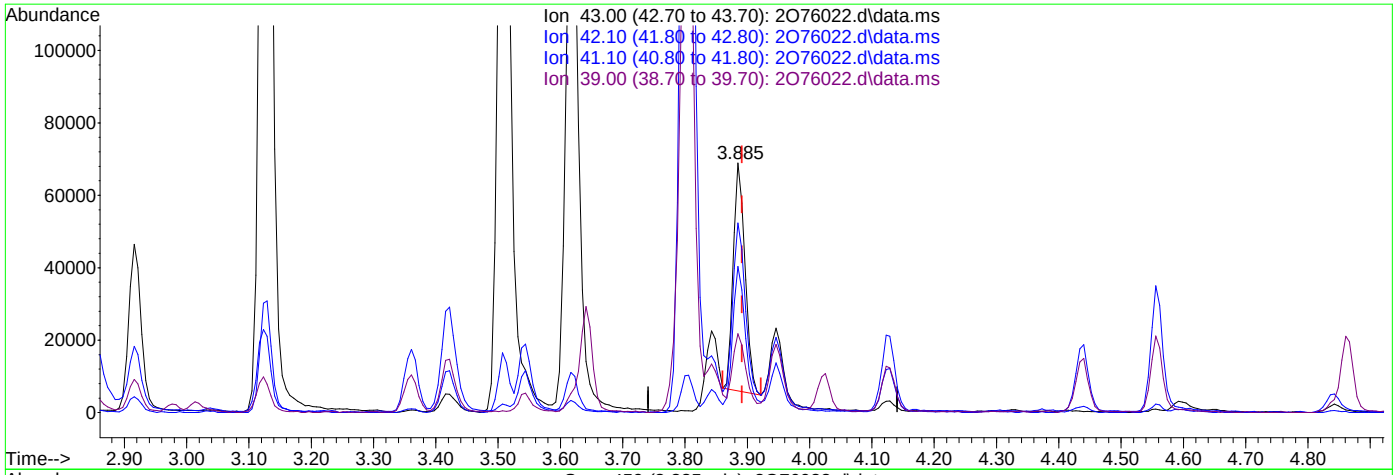
response 60852

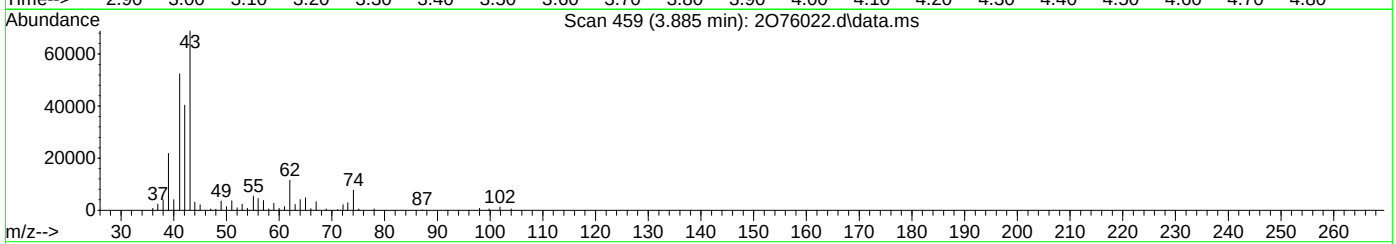
Ion	Exp%	Act%
116.90	100	100
118.90	97.60	99.04
120.90	31.00	31.19
81.90	24.80	25.77

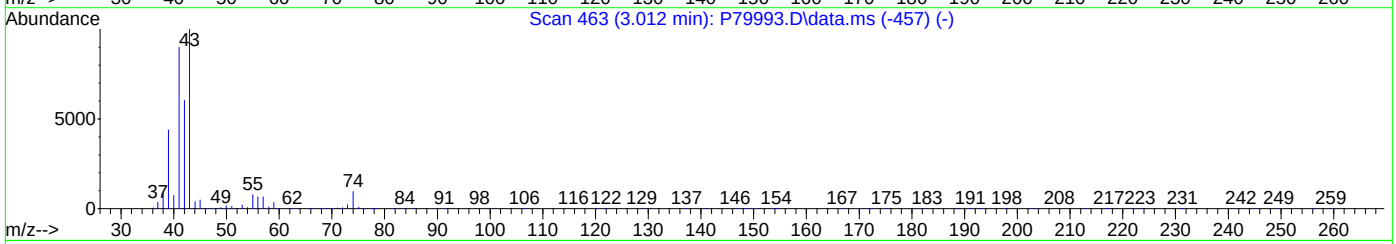
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76022.d
Acq On : 3 May 2023 10:42 pm
Operator : davidb2
Sample : FC5679-12MSD
Misc : MS53920,V2O2949,,,,,
ALS Vial : 26 Sample Multiplier: 1

Quant Time: May 03 23:08:12 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration







TIC: 2O76022.d\data.ms

(49) Isobutyl alcohol

3.885min (-0.006) 554.19ug/L

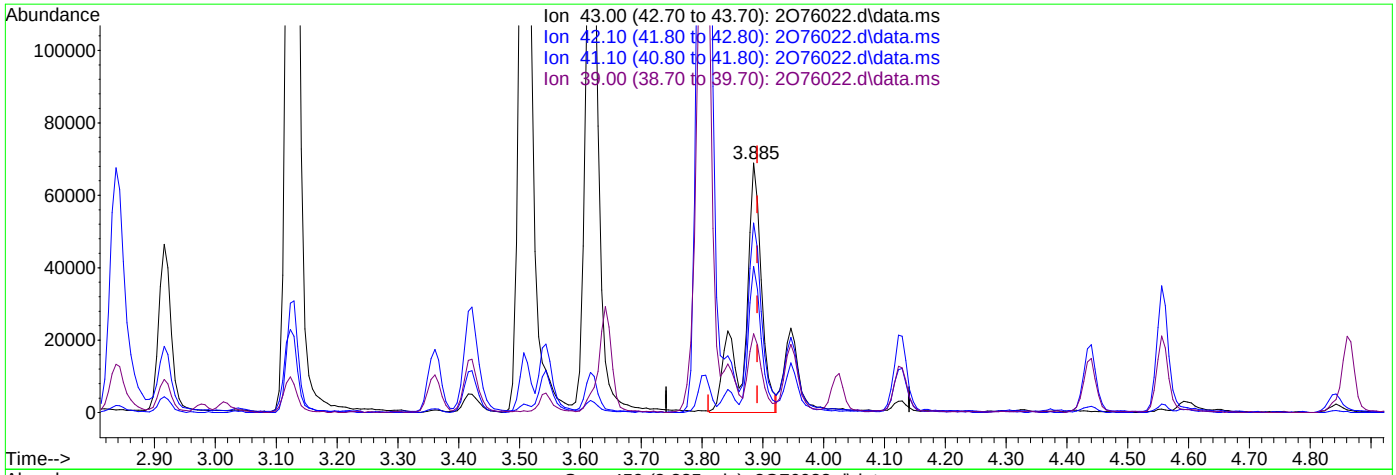
response 82184

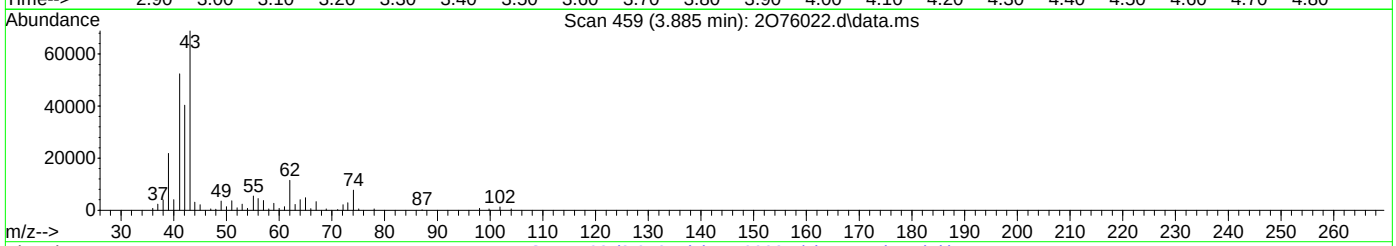
Ion	Exp%	Act%
43.00	100	100
42.10	60.00	59.51
41.10	73.50	74.28
39.00	30.20	29.85

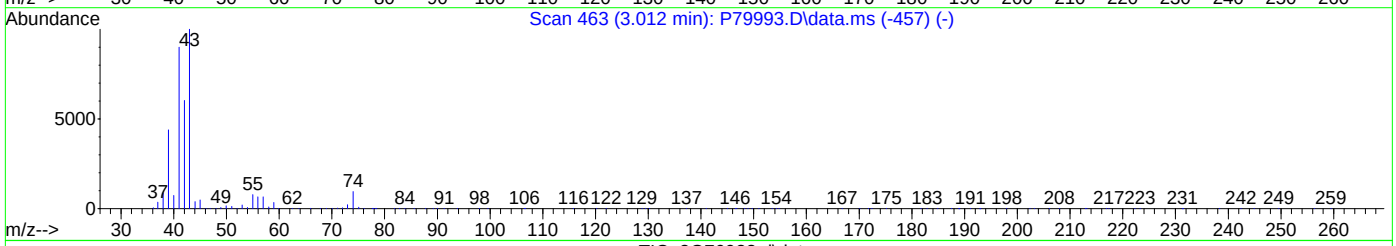
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76022.d
Acq On : 3 May 2023 10:42 pm
Operator : davidb2
Sample : FC5679-12MSD
Misc : MS53920,V2O2949,,,,,
ALS Vial : 26 Sample Multiplier: 1

Quant Time: May 03 23:08:12 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration







TIC: 2O76022.d\data.ms

(49) Isobutyl alcohol

3.885min (-0.006) 885.82ug/L m

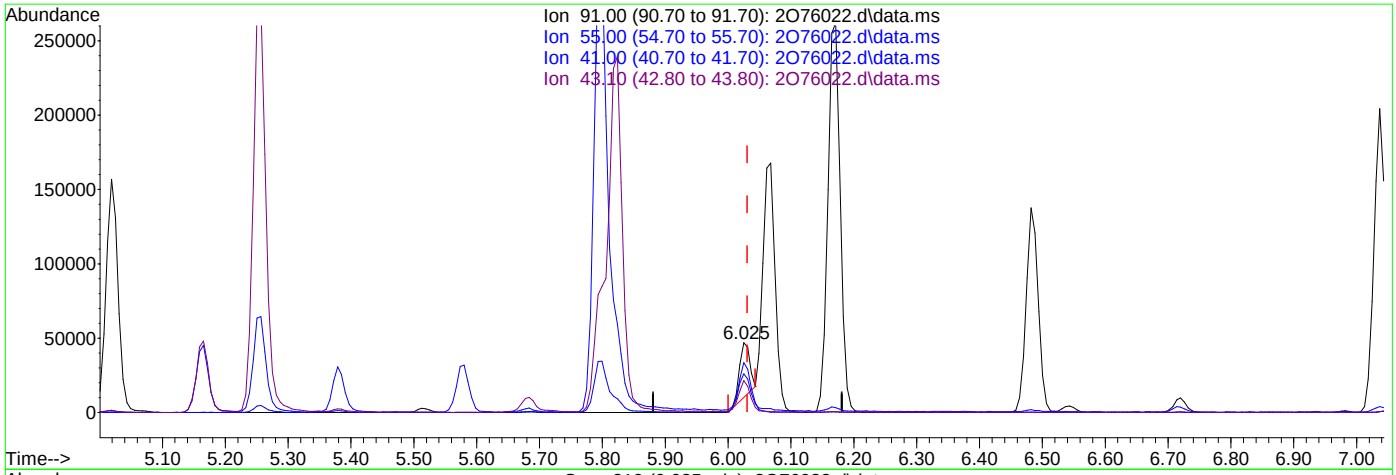
response 136991

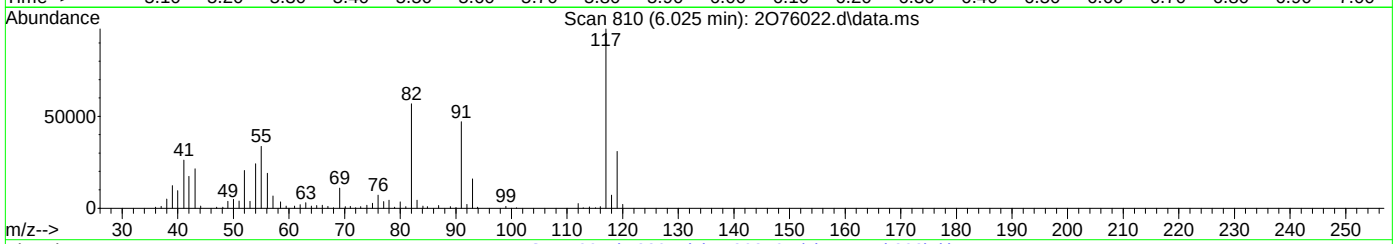
Ion	Exp%	Act%
43.00	100	100
42.10	60.00	58.51
41.10	73.50	75.98
39.00	30.20	31.61

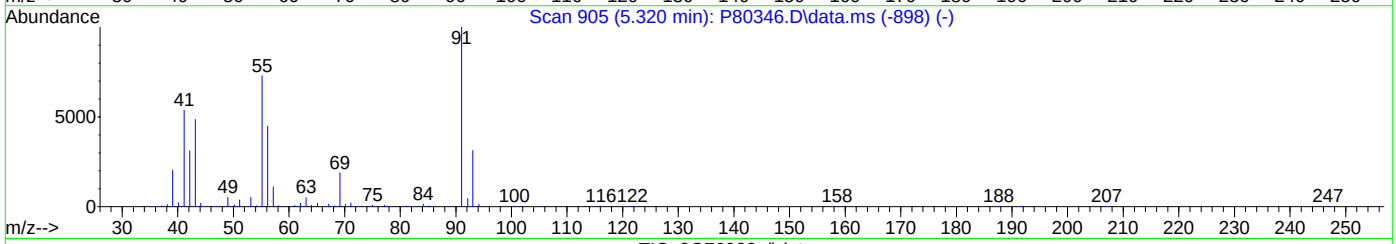
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76022.d
Acq On : 3 May 2023 10:42 pm
Operator : davidb2
Sample : FC5679-12MSD
Misc : MS53920,V2O2949,,,,,
ALS Vial : 26 Sample Multiplier: 1

Quant Time: May 03 23:08:12 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration







TIC: 2O76022.d\data.ms

(76) 1-Chlorohexane

6.025min (-0.006) 16.84ug/L

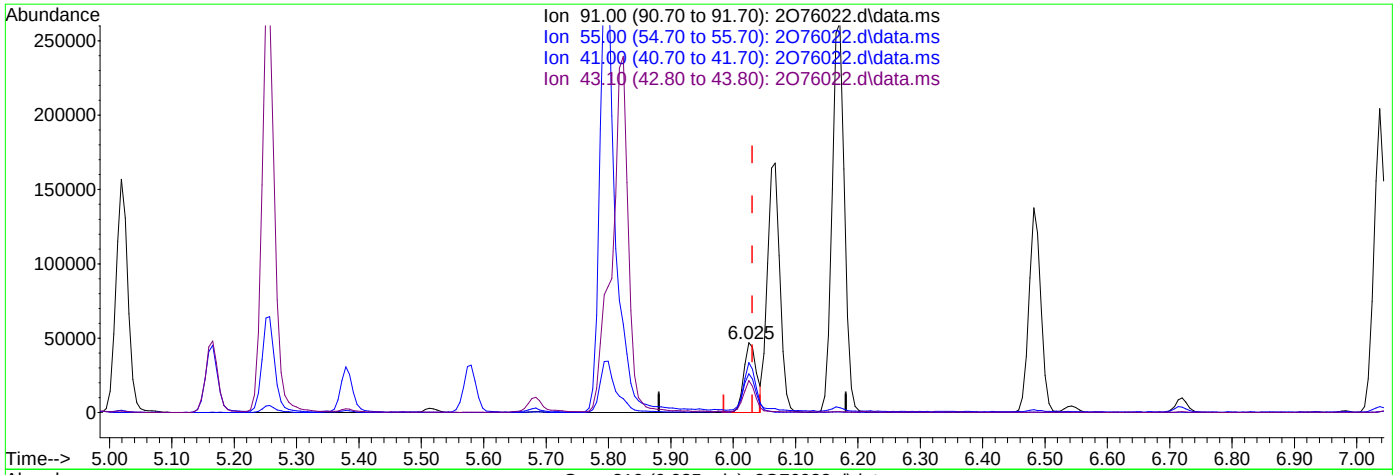
response 44155

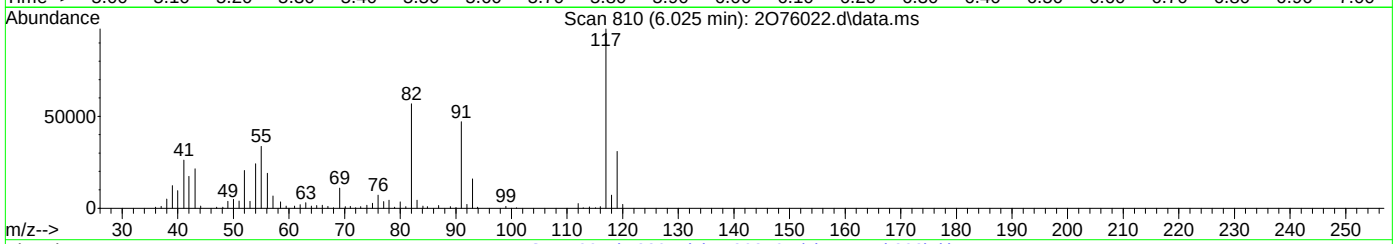
Ion	Exp%	Act%
91.00	100	100
55.00	66.30	70.20
41.00	53.70	51.72
43.10	42.30	43.93

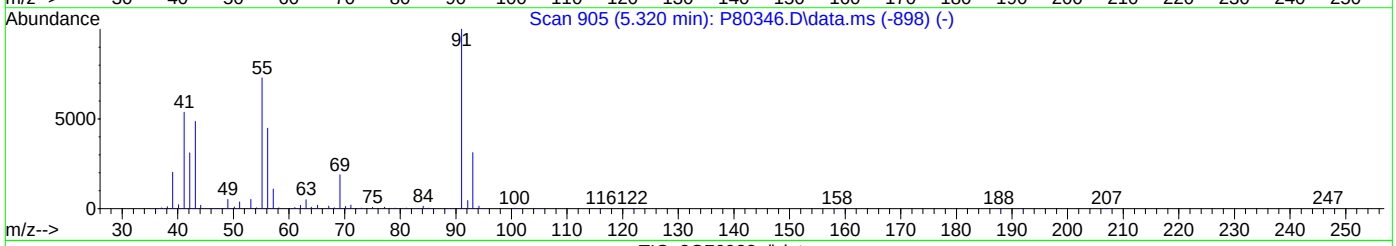
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76022.d
Acq On : 3 May 2023 10:42 pm
Operator : davidb2
Sample : FC5679-12MSD
Misc : MS53920,V2O2949,,,,,
ALS Vial : 26 Sample Multiplier: 1

Quant Time: May 03 23:08:12 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration







TIC: 2O76022.d\data.ms

(76) 1-Chlorohexane

6.025min (-0.006) 25.57ug/L m

response 67058

Ion	Exp%	Act%
91.00	100	100
55.00	66.30	71.55
41.00	53.70	55.50
43.10	42.30	45.67

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-05-2023\V5E1766\
Data File : 5E39482.d
Acq On : 4 May 2023 10:12 pm
Operator : joannel
Sample : FC5617-5MS 5X
Misc : MS53934,V5E1766,,,,,5
ALS Vial : 27 Sample Multiplier: 1

Quant Time: May 04 23:37:11 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.469	96	468734	50.00	ug/L	0.00
61) Chlorobenzene-d5	11.603	117	346590	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.962	152	205604	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.610	113	144200	51.13	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery =	102.26%		
49) 1,2-Dichloroethane-d4	8.183	65	178109	60.16	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery =	120.32%		
62) Toluene-d8	10.042	98	465846	53.64	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery =	107.28%		
86) 4-Bromofluorobenzene	12.816	95	178645	49.41	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery =	98.82%		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.812	85	19208	11.96	ug/L	100
3) Chloromethane	3.166	50	31427	10.47	ug/L	95
4) Vinyl Chloride	3.269	62	28821	11.23	ug/L	96
5) 1,3-Butadiene	3.294	39	37229	12.41	ug/L	96
6) Bromomethane	3.769	94	7991	6.22	ug/L	97
7) Chloroethane	3.946	64	13448	12.01	ug/L	94
8) Trichlorofluoromethane	4.159	101	33642	10.51	ug/L	99
9) Ethyl Ether	4.586	59	23111	10.29	ug/L	94
10) Ethanol	4.818	45	9461	133.13	ug/L	100
11) 1,2-Dichlorotrifluoroe...	4.830	67	26456	10.20	ug/L	96
12) 1,1-Dichloroethene	4.860	61	37059	10.57	ug/L	91
13) Freon 113	4.909	101	27310	12.38	ug/L	93
14) Carbon Disulfide	4.921	76	63091	9.65	ug/L	88
15) Iodomethane	5.068	142	13664	9.02	ug/L	89
16) Acrolein	5.293	56	23810	30.84	ug/L	90
17) Allyl chloride	5.464	41	22457	6.87	ug/L	86
18) Methylene Chloride	5.598	49	32063	7.91	ug/L	97
19) Acetone	5.653	43	44196	35.31	ug/L	94
20) Methyl acetate	5.787	43	93934	29.91	ug/L	99
21) trans-1,2-Dichloroethene	5.799	61	28957	8.20	ug/L	94
22) Hexane	5.878	56	17836	7.49	ug/L	96
23) Methyl Tert Butyl Ether	5.903	73	60633	8.65	ug/L	84
24) Acetonitrile	6.220	41	32821	58.68	ug/L	91
25) Di-isopropyl ether	6.330	45	64777	7.20	ug/L	99
26) Chloroprene	6.500	53	25568	6.97	ug/L	92
27) 1,1-Dichloroethane	6.525	63	34883	7.47	ug/L	94
28) Acrylonitrile	6.580	53	50029	30.14	ug/L	95
29) ETBE	6.750	59	71810	8.68	ug/L	99
30) Tert Butyl Alcohol	5.982	59	64298	86.77	ug/L	96
31) Vinyl acetate	6.775	43	232165	34.46	ug/L	97
32) cis-1,2-Dichloroethene	7.134	96	22765	8.85	ug/L	97
33) 2,2-Dichloropropane	7.256	77	21968	7.41	ug/L	95
34) Bromochloromethane	7.360	128	15144	12.22	ug/L	96
35) Cyclohexane	7.372	56	55145	11.50	ug/L	96
36) Chloroform	7.415	83	52751	12.37	ug/L	96
37) Ethyl acetate	7.506	43	231554	49.55	ug/L	99
38) Tetrahydrofuran	7.610	42	16475	10.22	ug/L	88
40) Carbon Tetrachloride	7.592	117	42049	13.48	ug/L	97
41) 1,1,1-Trichloroethane	7.665	97	46841	13.28	ug/L	94
42) 2-Butanone	7.732	43	110264	52.36	ug/L	94
43) 1,1-Dichloropropene	7.787	75	35519	12.25	ug/L	98
44) tert-Butyl formate	7.884	59	33048	23.86	ug/L	97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-05-2023\V5E1766\
Data File : 5E39482.d
Acq On : 4 May 2023 10:12 pm
Operator : joannel
Sample : FC5617-5MS 5X
Misc : MS53934,V5E1766,,,,,5
ALS Vial : 27 Sample Multiplier: 1

Quant Time: May 04 23:37:11 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45)	Propionitrile	8.055	54	76910	96.84	ug/L		96
46)	Methacrylonitrile	8.079	41	268953	106.88	ug/L		97
47)	Benzene	8.049	78	95885	11.00	ug/L		89
48)	TAME	8.122	73	75970	11.18	ug/L		95
50)	1,2-Dichloroethane	8.256	62	45723	13.37	ug/L		93
51)	tert Amyl alcohol	8.293	59	60328	97.01	ug/L		94
52)	Trichloroethene	8.646	95	28638	11.82	ug/L		96
53)	Methylcyclohexane	8.646	83	42812	10.46	ug/L		93
54)	Dibromomethane	9.085	93	19660	11.58	ug/L		97
55)	1,2-Dichloropropane	9.183	63	29727	11.37	ug/L		96
56)	Bromodichloromethane	9.225	83	38703	11.74	ug/L		97
57)	Methyl methacrylate	9.335	41	33763	10.20	ug/L		92
58)	1,4-Dioxane	9.420	88	9596	154.66	ug/L		94
60)	cis-1,3-Dichloropropene	9.853	75	35780	9.78	ug/L		99
63)	Toluene	10.091	91	103664	12.22	ug/L		97
64)	Isobutyl alcohol	8.177	43	52629	213.02	ug/L		96
65)	2-Nitropropane	10.323	41	61521	66.11	ug/L		99
66)	4-Methyl-2-pentanone	10.432	43	233997	63.63	ug/L		99
67)	trans-1,3-Dichloropropene	10.493	75	29863	10.49	ug/L		84
68)	Tetrachloroethene	10.499	166	31389	12.66	ug/L		96
69)	Ethyl methacrylate	10.597	69	34665	11.40	ug/L		97
70)	1,1,2-Trichloroethane	10.658	83	21225	12.50	ug/L		93
71)	Dibromochloromethane	10.853	129	33554	13.91	ug/L		98
72)	1,3-Dichloropropane	10.945	76	42631	13.16	ug/L		95
73)	1,2-Dibromoethane	11.121	107	28620	11.88	ug/L		94
74)	3,3-Dimethyl-1-butanol	11.194	57	294757	516.93	ug/L		94
75)	2-hexanone	11.255	43	167792	63.31	ug/L		100
76)	1-Chlorohexane	11.548	91	33961	12.69	ug/L		92
77)	Ethylbenzene	11.615	91	121314	12.69	ug/L		97
78)	Chlorobenzene	11.621	112	70202	12.07	ug/L		94
79)	1,1,1,2-Tetrachloroethane	11.670	131	30375	14.05	ug/L		92
80)	m,p-Xylene	11.755	91	188076	26.52	ug/L		97
81)	o-Xylene	12.194	91	94908	12.75	ug/L		99
82)	Styrene	12.249	104	72349	12.38	ug/L		96
83)	Bromoform	12.310	173	22918	12.21	ug/L		98
84)	Isopropylbenzene	12.499	105	122978	13.38	ug/L		98
87)	cis-1,4-Dichloro-2-butene	12.865	53	4841	8.47	ug/L	#	56
88)	n-Propylbenzene	12.920	91	145793	13.50	ug/L		94
89)	Bromobenzene	12.950	156	33270	13.83	ug/L		93
90)	1,1,2,2-Tetrachloroethane	12.987	83	40650	11.99	ug/L		98
91)	1,3,5-Trimethylbenzene	13.103	105	106706	13.76	ug/L		98
92)	2-Chlorotoluene	13.115	91	95915	13.57	ug/L		93
93)	trans-1,4-Dichloro-2-B...	13.176	53	5434	6.48	ug/L	#	65
94)	1,2,3-Trichloropropane	13.158	110	13446	13.29	ug/L		94
95)	Cyclohexanone	13.231	55	10148	47.95	ug/L		97
96)	4-Chlorotoluene	13.279	91	85564	12.20	ug/L		96
98)	tert-Butylbenzene	13.444	91	59716	13.99	ug/L		97
99)	1,2,4-Trimethylbenzene	13.511	105	105851	13.64	ug/L		99
100)	Pentachloroethane	13.499	167	18891	13.76	ug/L		97
101)	sec-Butylbenzene	13.627	105	128410	13.08	ug/L		98
102)	4-Isopropyltoluene	13.755	119	114692	13.19	ug/L		99
103)	1,3-Dichlorobenzene	13.895	146	60350	12.90	ug/L		98
104)	1,2,3-Trimethylbenzene	13.968	105	104526	12.91	ug/L		96
105)	1,4-Dichlorobenzene	13.974	146	64856	13.31	ug/L		95
106)	n-Butylbenzene	14.176	92	55249	12.62	ug/L		94
107)	Benzyl Chloride	14.206	126	4716	5.37	ug/L	#	86
108)	1,2-Dichlorobenzene	14.395	146	61215	13.22	ug/L		96
109)	1,2-Dibromo-3-Chloropr...	15.127	75	9467	12.47	ug/L		92

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-05-2023\V5E1766\
Data File : 5E39482.d
Acq On : 4 May 2023 10:12 pm
Operator : joannel
Sample : FC5617-5MS 5X
Misc : MS53934,V5E1766,,,,,5
ALS Vial : 27 Sample Multiplier: 1

Quant Time: May 04 23:37:11 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

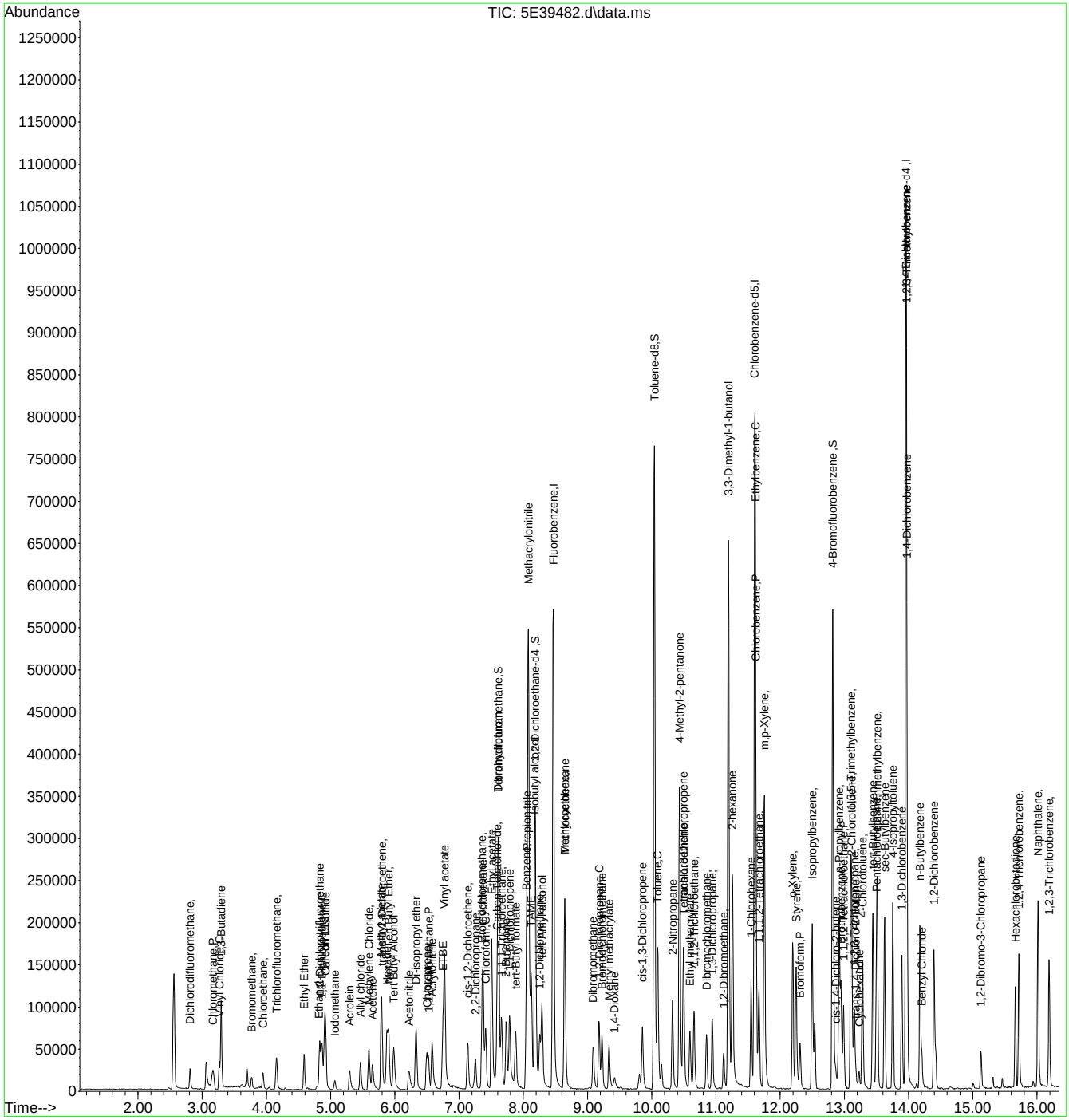
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
110) Hexachlorobutadiene	15.663	225	17672	12.57	ug/L	97
111) 1,2,4-Trichlorobenzene	15.718	180	46338	12.70	ug/L	98
112) Naphthalene	16.017	128	155436	13.75	ug/L	100
113) 1,2,3-Trichlorobenzene	16.187	180	42342	11.98	ug/L	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-05-2023\V5E1766\
Data File : 5E39482.d
Acq On : 4 May 2023 10:12 pm
Operator : joannel
Sample : FC5617-5MS 5X
Misc : MS53934,V5E1766,,,,,5
ALS Vial : 27 Sample Multiplier: 1

Quant Time: May 04 23:37:11 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-05-2023\V5E1766\
Data File : 5E39483.d
Acq On : 4 May 2023 10:37 pm
Operator : joannel
Sample : FC5617-5MSD 5X
Misc : MS53934,V5E1766,,,,,5
ALS Vial : 28 Sample Multiplier: 1

Quant Time: May 04 23:37:14 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.469	96	449988	50.00	ug/L	0.00
61) Chlorobenzene-d5	11.603	117	318110	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.962	152	153922	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.610	113	140267	51.80	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery =	103.60%		
49) 1,2-Dichloroethane-d4	8.183	65	169407	59.61	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery =	119.22%		
62) Toluene-d8	10.042	98	442777	55.55	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery =	111.10%		
86) 4-Bromofluorobenzene	12.816	95	128877	47.62	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery =	95.24%		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.812	85	18954	12.30	ug/L	93
3) Chloromethane	3.159	50	33718	11.72	ug/L	98
4) Vinyl Chloride	3.269	62	31680	12.85	ug/L	91
5) 1,3-Butadiene	3.294	39	41141	14.44	ug/L	95
6) Bromomethane	3.769	94	10535	8.57	ug/L	90
7) Chloroethane	3.952	64	16643	15.48	ug/L	94
8) Trichlorofluoromethane	4.159	101	36311	11.84	ug/L	95
9) Ethyl Ether	4.586	59	26617	12.35	ug/L	97
10) Ethanol	4.787	45	10876	159.42	ug/L	94
11) 1,2-Dichlorotrifluoroe...	4.830	67	31499	12.67	ug/L	95
12) 1,1-Dichloroethene	4.866	61	44007	13.08	ug/L	98
13) Freon 113	4.909	101	30171	14.25	ug/L	93
14) Carbon Disulfide	4.927	76	73151	11.67	ug/L	100
15) Iodomethane	5.068	142	23747	15.75	ug/L	96
16) Acrolein	5.293	56	37555	50.68	ug/L	97
17) Allyl chloride	5.464	41	35636	11.43	ug/L	96
18) Methylene Chloride	5.598	49	53599	13.89	ug/L	94
19) Acetone	5.653	43	65380	54.41	ug/L	98
20) Methyl acetate	5.787	43	156222	51.82	ug/L	94
21) trans-1,2-Dichloroethene	5.799	61	42281	12.47	ug/L	96
22) Hexane	5.872	56	29131	12.74	ug/L	98
23) Methyl Tert Butyl Ether	5.903	73	87206	12.95	ug/L	92
24) Acetonitrile	6.220	41	59415	110.90	ug/L	98
25) Di-isopropyl ether	6.330	45	107455	12.43	ug/L	98
26) Chloroprene	6.494	53	36922	10.48	ug/L	92
27) 1,1-Dichloroethane	6.525	63	53446	11.93	ug/L	97
28) Acrylonitrile	6.580	53	81121	50.90	ug/L	98
29) ETBE	6.750	59	104136	13.11	ug/L	98
30) Tert Butyl Alcohol	5.982	59	89584	125.92	ug/L	98
31) Vinyl acetate	6.775	43	374138	58.13	ug/L	100
32) cis-1,2-Dichloroethene	7.134	96	28622	11.60	ug/L	96
33) 2,2-Dichloropropane	7.256	77	24356	8.59	ug/L	98
34) Bromochloromethane	7.360	128	13954	11.73	ug/L	98
35) Cyclohexane	7.372	56	54576	11.85	ug/L	97
36) Chloroform	7.415	83	52056	12.72	ug/L	94
37) Ethyl acetate	7.506	43	221636	49.40	ug/L	98
38) Tetrahydrofuran	7.604	42	17119	11.06	ug/L	93
40) Carbon Tetrachloride	7.591	117	41387	13.82	ug/L	94
41) 1,1,1-Trichloroethane	7.659	97	45821	13.53	ug/L	98
42) 2-Butanone	7.732	43	107646	53.24	ug/L	92
43) 1,1-Dichloropropene	7.787	75	34247	12.30	ug/L	99
44) tert-Butyl formate	7.884	59	27527	20.70	ug/L	97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-05-2023\V5E1766\
Data File : 5E39483.d
Acq On : 4 May 2023 10:37 pm
Operator : joannel
Sample : FC5617-5MSD 5X
Misc : MS53934,V5E1766,,,,,5
ALS Vial : 28 Sample Multiplier: 1

Quant Time: May 04 23:37:14 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45) Propionitrile	8.061	54	74679	97.96	ug/L		97
46) Methacrylonitrile	8.079	41	257755	106.70	ug/L		96
47) Benzene	8.049	78	95206	11.38	ug/L		86
48) TAME	8.128	73	75027	11.50	ug/L		96
50) 1,2-Dichloroethane	8.256	62	44247	13.48	ug/L		96
51) tert Amyl alcohol	8.293	59	56887	95.29	ug/L		95
52) Trichloroethene	8.646	95	28825	12.39	ug/L		97
53) Methylcyclohexane	8.646	83	43744	11.14	ug/L		95
54) Dibromomethane	9.091	93	18592	11.40	ug/L		91
55) 1,2-Dichloropropane	9.177	63	29398	11.72	ug/L		95
56) Bromodichloromethane	9.225	83	37088	11.71	ug/L		97
57) Methyl methacrylate	9.335	41	31850	10.03	ug/L		98
58) 1,4-Dioxane	9.414	88	9704	162.92	ug/L		96
60) cis-1,3-Dichloropropene	9.859	75	33599	9.57	ug/L		99
63) Toluene	10.097	91	101215	13.00	ug/L		100
64) Isobutyl alcohol	8.177	43	48770	215.09	ug/L		96
65) 2-Nitropropane	10.323	41	59079	69.17	ug/L		99
66) 4-Methyl-2-pentanone	10.432	43	221447	65.61	ug/L		98
67) trans-1,3-Dichloropropene	10.493	75	28095	10.75	ug/L		85
68) Tetrachloroethene	10.499	166	31410	13.80	ug/L		89
69) Ethyl methacrylate	10.597	69	32679	11.71	ug/L		92
70) 1,1,2-Trichloroethane	10.658	83	21230	13.62	ug/L		87
71) Dibromochloromethane	10.853	129	33320	15.05	ug/L		98
72) 1,3-Dichloropropane	10.945	76	42269	14.22	ug/L		98
73) 1,2-Dibromoethane	11.121	107	28415	12.86	ug/L		98
74) 3,3-Dimethyl-1-butanol	11.194	57	291008	556.05	ug/L		95
75) 2-hexanone	11.255	43	159113	65.41	ug/L		98
76) 1-Chlorohexane	11.548	91	32006	13.03	ug/L		88
77) Ethylbenzene	11.615	91	114723	13.08	ug/L		96
78) Chlorobenzene	11.621	112	66116	12.39	ug/L		95
79) 1,1,1,2-Tetrachloroethane	11.670	131	26167	13.19	ug/L		96
80) m,p-Xylene	11.755	91	166038	25.51	ug/L		98
81) o-Xylene	12.194	91	71824	10.51	ug/L		96
82) Styrene	12.249	104	51787	9.65	ug/L		97
83) Bromoform	12.310	173	17733	10.29	ug/L		98
84) Isopropylbenzene	12.499	105	90893	10.77	ug/L		98
87) cis-1,4-Dichloro-2-butene	12.859	53	2709	6.36	ug/L	#	75
88) n-Propylbenzene	12.920	91	106028	13.11	ug/L		95
89) Bromobenzene	12.950	156	25533	14.18	ug/L		91
90) 1,1,2,2-Tetrachloroethane	12.987	83	27889	10.99	ug/L		96
91) 1,3,5-Trimethylbenzene	13.103	105	82980	14.29	ug/L		99
92) 2-Chlorotoluene	13.115	91	73527	13.90	ug/L		94
93) trans-1,4-Dichloro-2-B...	13.182	53	3364	5.35	ug/L	#	71
94) 1,2,3-Trichloropropane	13.151	110	10591	13.98	ug/L		88
95) Cyclohexanone	13.231	55	7478	47.19	ug/L		85
96) 4-Chlorotoluene	13.279	91	67496	12.87	ug/L		96
98) tert-Butylbenzene	13.444	91	47676	14.92	ug/L		94
99) 1,2,4-Trimethylbenzene	13.511	105	79915	13.76	ug/L		95
100) Pentachloroethane	13.499	167	15335	14.95	ug/L		88
101) sec-Butylbenzene	13.627	105	93820	12.76	ug/L		98
102) 4-Isopropyltoluene	13.755	119	85999	13.21	ug/L		98
103) 1,3-Dichlorobenzene	13.895	146	45971	13.12	ug/L		97
104) 1,2,3-Trimethylbenzene	13.968	105	81037	13.37	ug/L		94
105) 1,4-Dichlorobenzene	13.974	146	50577	13.87	ug/L		93
106) n-Butylbenzene	14.176	92	40198	12.27	ug/L		96
107) Benzyl Chloride	14.206	126	2938	4.47	ug/L	#	53
108) 1,2-Dichlorobenzene	14.395	146	45560	13.15	ug/L		94
109) 1,2-Dibromo-3-Chloropr...	15.127	75	7723	13.59	ug/L		91

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-05-2023\V5E1766\
Data File : 5E39483.d
Acq On : 4 May 2023 10:37 pm
Operator : joannel
Sample : FC5617-5MSD 5X
Misc : MS53934,V5E1766,,,,,5
ALS Vial : 28 Sample Multiplier: 1

Quant Time: May 04 23:37:14 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
110) Hexachlorobutadiene	15.663	225	14440	13.74	ug/L	96
111) 1,2,4-Trichlorobenzene	15.718	180	36216	13.26	ug/L	99
112) Naphthalene	16.017	128	121286	14.33	ug/L	100
113) 1,2,3-Trichlorobenzene	16.187	180	34233	12.94	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

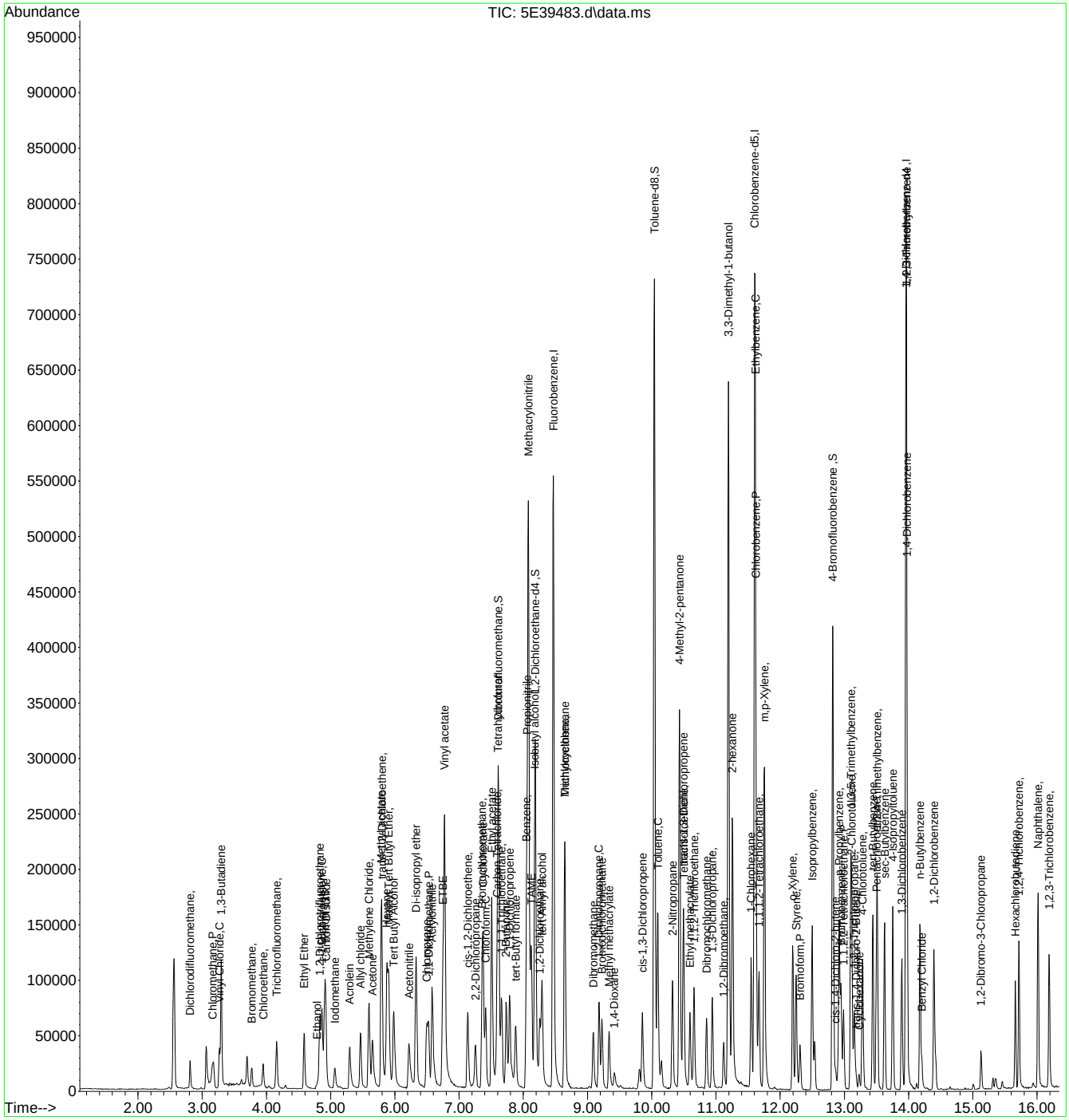
7.4.6

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-05-2023\V5E1766\
Data File : 5E39483.d
Acq On : 4 May 2023 10:37 pm
Operator : joannel
Sample : FC5617-5MSD 5X
Misc : MS53934,V5E1766,,,,,5
ALS Vial : 28 Sample Multiplier: 1

Quant Time: May 04 23:37:14 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration



Manual Integrations APPROVED (compounds with "m" flag)
Karen Watson
05/08/23 10:24

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-08-2023\V2O2954-55\
Data File : 2O76124.d
Acq On : 5 May 2023 10:16 pm
Operator : davidb2
Sample : FC5532-9MS 5X
Misc : MS53948,V2O2955,,,,,5
ALS Vial : 26 Sample Multiplier: 1

Quant Time: May 08 00:08:31 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	4.025	96	415693	50.00	ug/L	0.00
62) Chlorobenzene-d5	6.037	117	298798	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.799	152	156517	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	3.556	113	110887	48.13	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 96.26%			
50) 1,2-Dichloroethane-d4	3.861	65	136842	55.88	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 111.76%			
63) Toluene-d8	4.988	98	398973	48.96	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 97.92%			
86) 4-Bromofluorobenzene	6.933	174	117007	48.99	ug/L	-0.01
Spiked Amount 50.000	Range 83 - 118		Recovery = 97.98%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.227	85	39857	23.54	ug/L	97
3) Chloromethane	1.385	50	37304	20.37	ug/L	97
4) 1,3-butadiene	1.446	39	52638	28.67	ug/L	98
5) Vinyl Chloride	1.434	62	42908	23.60	ug/L	99
6) Bromomethane	1.666	94	20491	14.72	ug/L	98
7) Chloroethane	1.751	64	14459	12.05	ug/L	95
8) Trichlorofluoromethane	1.849	101	82064	25.42	ug/L	100
9) Ethyl Ether	2.062	59	39640	27.68	ug/L	98
10) Ethanol	2.172	45	24130	645.50	ug/L	100
11) 1,2-Dichlorotrifluoroe...	2.184	67	55464	26.01	ug/L	98
12) 1,1-Dichloroethene	2.184	61	58850	21.49	ug/L	96
13) Freon 113	2.208	101	48875	26.81	ug/L	98
14) Carbon Disulfide	2.202	76	110647	20.80	ug/L	96
15) Iodomethane	2.276	142	30964	10.88	ug/L	97
16) Acrolein	2.391	56	79209	151.99	ug/L	99
17) Allyl chloride	2.477	41	42966	20.26	ug/L	94
18) Methylene Chloride	2.538	49	61857	24.55	ug/L	98
19) Acetone	2.568	43	141170	135.01	ug/L	100
20) Methyl acetate	2.641	43	302426	125.78	ug/L	99
21) trans-1,2-Dichloroethene	2.635	61	59969	22.91	ug/L	98
22) Hexane	2.684	56	33845	24.48	ug/L	97
23) Methyl Tert Butyl Ether	2.696	73	128097	25.50	ug/L	92
24) Tert Butyl Alcohol	2.751	59	141094	348.53	ug/L	93
25) Acetonitrile	2.836	41	119410	303.26	ug/L	99
26) Di-isopropyl ether	2.916	45	130731	24.53	ug/L	99
27) Chloroprene	2.977	53	52542	20.97	ug/L	99
28) 1,1-Dichloroethane	2.989	63	76920	22.63	ug/L	98
29) Acrylonitrile	3.013	52	132523	130.86	ug/L	99
30) ETBE	3.123	59	122982	25.44	ug/L	97
31) Vinyl acetate	3.129	43	530451	136.50	ug/L	100
32) cis-1,2-Dichloroethene	3.294	96	50396	23.87	ug/L	98
33) 2,2-Dichloropropane	3.361	77	30553	13.38	ug/L	99
34) Bromochloromethane	3.409	128	26093	22.92	ug/L	92
35) Cyclohexane	3.422	56	68123	24.25	ug/L	97
36) Chloroform	3.446	83	89103	24.20	ug/L	99
37) Ethyl acetate	3.507	43	399884	130.97	ug/L	99
38) Tetrahydrofuran	3.544	42	31401	26.75	ug/L	99
40) Carbon Tetrachloride	3.537	117	53320m	23.12	ug/L	
41) 1,1,1-Trichloroethane	3.574	97	69361	23.22	ug/L	92
42) 2-Butanone	3.617	43	239669	138.19	ug/L	95
43) 1,1-Dichloropropene	3.641	75	60761	23.56	ug/L	96
44) tert-Butyl formate	3.702	59	44869	66.82	ug/L #	79

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-08-2023\V2O2954-55\
Data File : 2O76124.d
Acq On : 5 May 2023 10:16 pm
Operator : davidb2
Sample : FC5532-9MS 5X
Misc : MS53948,V2O2955,,,,,5
ALS Vial : 26 Sample Multiplier: 1

Quant Time: May 08 00:08:31 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45) Propionitrile	3.794	54	151652	294.65	ug/L		89
46) Methacrylonitrile	3.806	41	476765	273.68	ug/L		99
47) Benzene	3.787	78	188048	24.66	ug/L		91
48) TAME	3.842	73	111144	24.56	ug/L		93
49) Isobutyl alcohol	3.885	43	152377m	919.88	ug/L		
51) 1,2-Dichloroethane	3.897	62	73675	27.12	ug/L		99
52) Tert Amyl Alcohol	3.946	59	94963	299.10	ug/L		85
53) Trichloroethene	4.123	95	49874	22.69	ug/L		94
54) Methylcyclohexane	4.129	83	67924	23.61	ug/L		98
55) Dibromomethane	4.379	93	35272	25.51	ug/L		99
56) 1,2-Dichloropropane	4.440	63	45861	25.65	ug/L		97
57) Bromodichloromethane	4.470	83	56486	23.07	ug/L		97
58) Methyl methacrylate	4.556	41	50326	25.16	ug/L		95
59) 1,4-Dioxane	4.592	88	27973	721.18	ug/L		97
60) 2-Chloroethyl vinyl ether	4.867	63	229	0.15	ug/L	#	61
61) cis-1,3-Dichloropropene	4.867	75	57264	20.52	ug/L		98
64) Toluene	5.019	91	194802	23.79	ug/L		99
65) 2-Nitropropane	5.165	41	65014	125.94	ug/L		97
66) 4-Methyl-2-pentanone	5.257	43	406641	138.98	ug/L		99
67) trans-1,3-Dichloropropene	5.281	75	55588	20.74	ug/L		97
68) Tetrachloroethene	5.275	166	52502	22.63	ug/L		98
69) Ethyl methacrylate	5.379	69	66643	27.89	ug/L		96
70) 1,1,2-Trichloroethane	5.391	83	42251	25.57	ug/L		97
71) Dibromochloromethane	5.513	129	45255	23.54	ug/L		97
72) 1,3-Dichloropropane	5.580	76	84820	28.02	ug/L		98
73) 1,2-Dibromoethane	5.683	107	53726	25.98	ug/L		100
74) 3,3-dimethyl-1-butanol	5.799	57	706611	1743.32	ug/L		99
75) 2-hexanone	5.824	43	458647	157.79	ug/L		95
76) 1-Chlorohexane	6.025	91	58055m	22.52	ug/L		
77) Ethylbenzene	6.061	91	212528	24.06	ug/L		95
78) Chlorobenzene	6.049	112	131234	23.71	ug/L		96
79) 1,1,1,2-Tetrachloroethane	6.092	131	41174	23.76	ug/L		98
80) m,p-Xylene	6.171	91	336972	49.03	ug/L		98
81) o-Xylene	6.482	91	164041	23.64	ug/L		97
82) Styrene	6.519	104	134096	24.59	ug/L		98
83) Bromoform	6.543	173	26214	21.49	ug/L		98
84) Isopropylbenzene	6.720	105	195656	23.38	ug/L		99
87) cis-1,4-Dichloro-2-butene	6.982	53	11252	15.87	ug/L	#	66
88) n-Propylbenzene	7.037	91	234283	24.15	ug/L		99
89) Bromobenzene	7.019	156	53832	25.00	ug/L		96
90) 1,1,2,2-Tetrachloroethane	7.086	83	82612	27.96	ug/L		99
91) 1,3,5-Trimethylbenzene	7.189	105	167770	24.49	ug/L		96
92) 2-Chlorotoluene	7.159	91	162289	24.80	ug/L		97
93) trans-1,4-Dichloro-2-B...	7.220	53	9806	15.98	ug/L	#	74
94) 1,2,3-Trichloropropane	7.195	110	28182	28.99	ug/L		99
95) Cyclohexanone	7.226	55	23111	171.40	ug/L		97
96) 4-Chlorotoluene	7.287	91	150581	25.01	ug/L		96
97) tert-Butylbenzene	7.439	91	90431	24.43	ug/L		96
99) 1,2,4-Trimethylbenzene	7.494	105	166851	24.65	ug/L		97
100) Pentachloroethane	7.457	167	24200	25.98	ug/L	#	58
101) sec-Butylbenzene	7.579	105	187755	22.90	ug/L		99
102) 4-Isopropyltoluene	7.683	119	159828	22.34	ug/L		97
103) 1,3-Dichlorobenzene	7.738	146	100481	23.61	ug/L		97
104) 1,2,3-Trimethylbenzene	7.823	105	169529	23.93	ug/L		99
105) 1,4-Dichlorobenzene	7.805	146	102259	23.72	ug/L		94
106) n-Butylbenzene	8.000	92	83142	23.13	ug/L		93
107) Benzyl Chloride	7.994	126	7475	9.85	ug/L	#	1
108) 1,2-Dichlorobenzene	8.116	146	97517	24.29	ug/L		97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-08-2023\V2O2954-55\
Data File : 2O76124.d
Acq On : 5 May 2023 10:16 pm
Operator : davidb2
Sample : FC5532-9MS 5X
Misc : MS53948,V2O2955,,,,,5
ALS Vial : 26 Sample Multiplier: 1

Quant Time: May 08 00:08:31 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

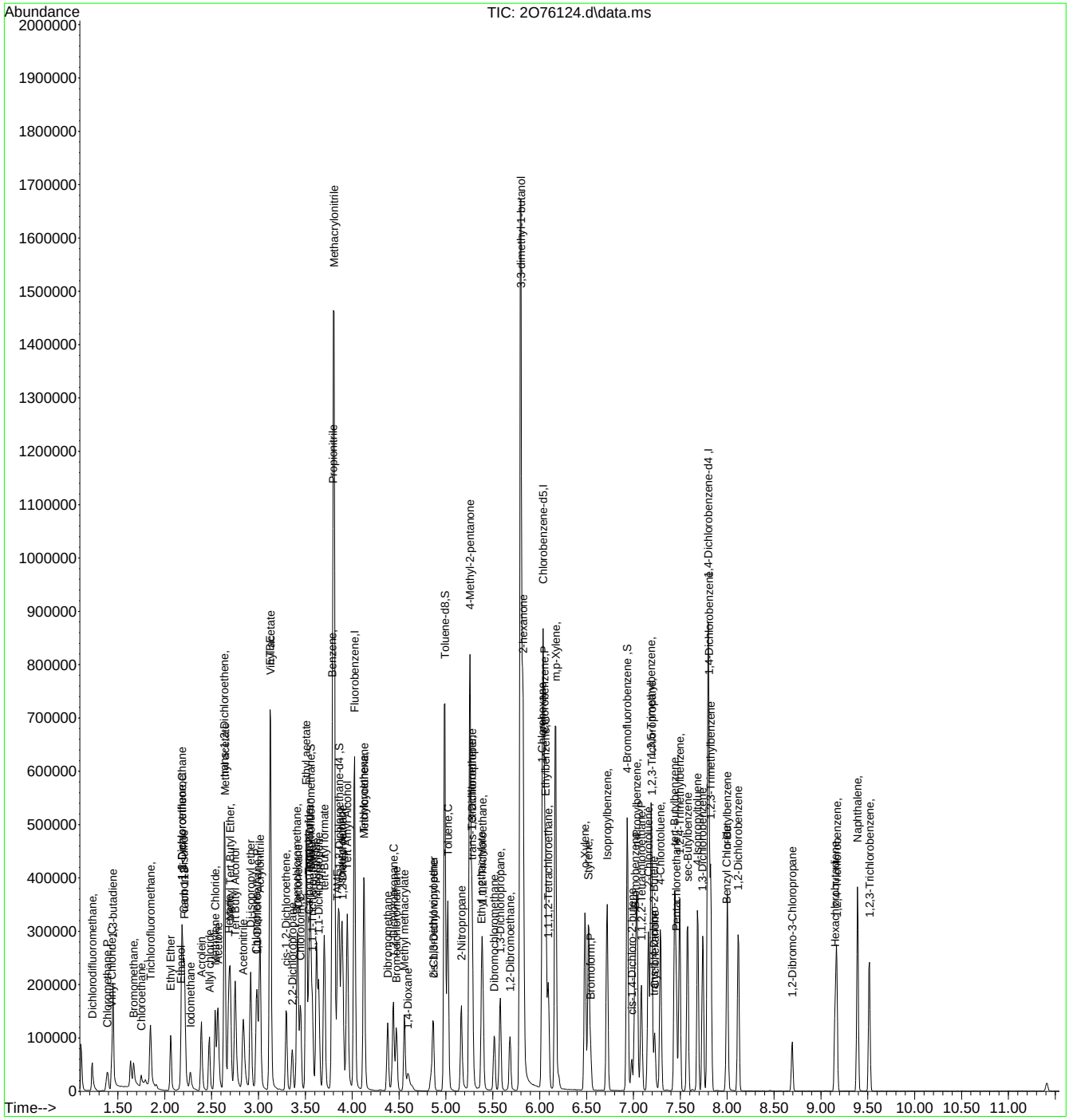
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
109) 1,2-Dibromo-3-Chloropr...	8.695	75	16970	27.51	ug/L	90
110) Hexachlorobutadiene	9.152	225	19309	22.21	ug/L	97
111) 1,2,4-Trichlorobenzene	9.171	180	60825	24.96	ug/L	98
112) Naphthalene	9.390	128	227936	26.43	ug/L	100
113) 1,2,3-Trichlorobenzene	9.518	180	60052	25.94	ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-08-2023\V2O2954-55\
Data File : 2O76124.d
Acq On : 5 May 2023 10:16 pm
Operator : davidb2
Sample : FC5532-9MS 5X
Misc : MS53948,V2O2955,,,,,5
ALS Vial : 26 Sample Multiplier: 1

Quant Time: May 08 00:08:31 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration



Manual Integration Approval Summary

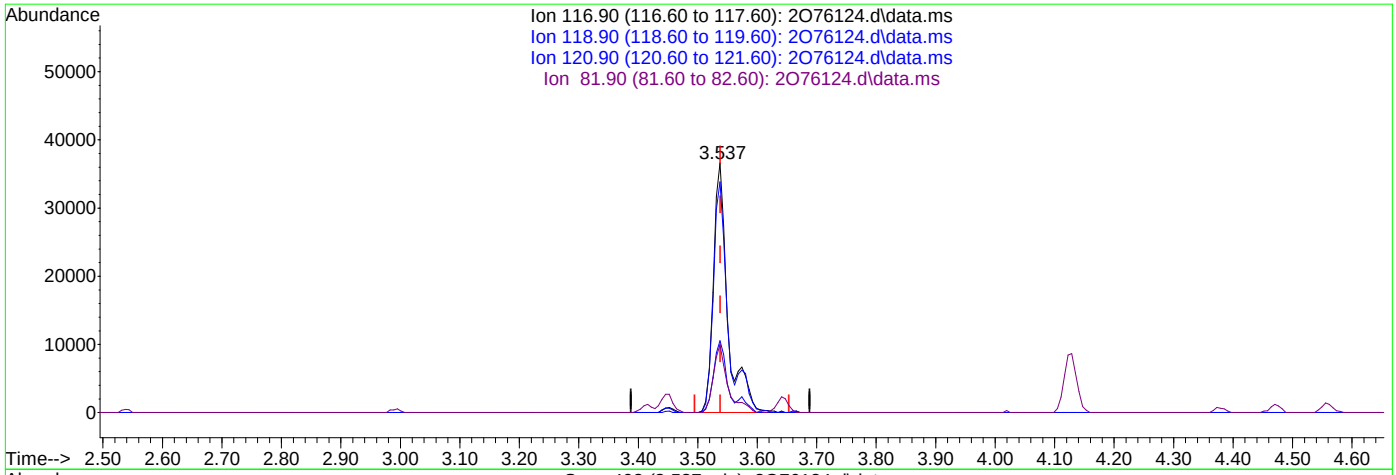
Sample Number: FC5532-9MS
Lab FileID: 2O76124.D
Injection Time: 05/05/23 22:16
Method: SW846 8260D
Analyst approved: 05/08/23 00:16 Celine Celis
Supervisor approved: 05/08/23 10:24 Karen Watson

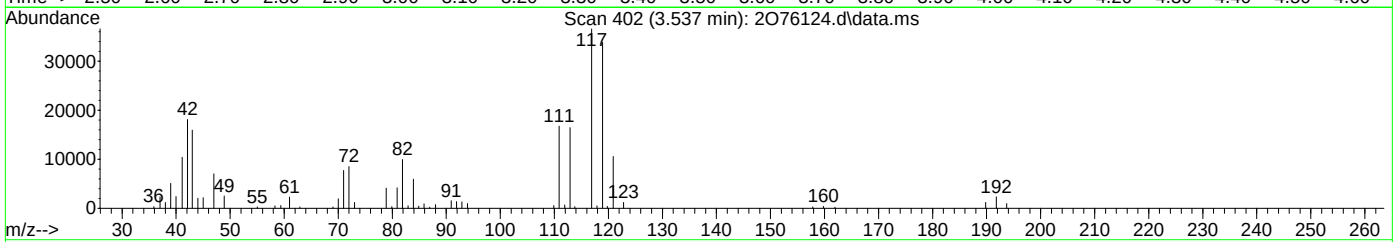
Parameter	CAS	Sig#	R.T. (min.)	Reason
Carbon Tetrachloride	56-23-5		3.54	Overlapping peak
Isobutyl Alcohol	78-83-1		3.88	Poor instrument integration
1-Chlorohexane	544-10-5		6.02	Poor instrument integration

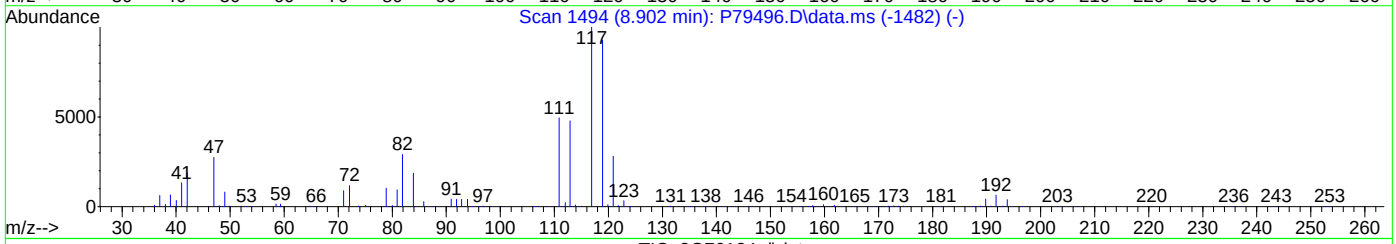
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-08-2023\V2O2954-55\
Data File : 2O76124.d
Acq On : 5 May 2023 10:16 pm
Operator : davidb2
Sample : FC5532-9MS 5X
Misc : MS53948,V2O2955,,,,,5
ALS Vial : 26 Sample Multiplier: 1

Quant Time: May 07 23:36:34 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration







TIC: 2O76124.d\data.ms

(40) Carbon Tetrachloride ( )

3.537min (-0.001) 27.14ug/L

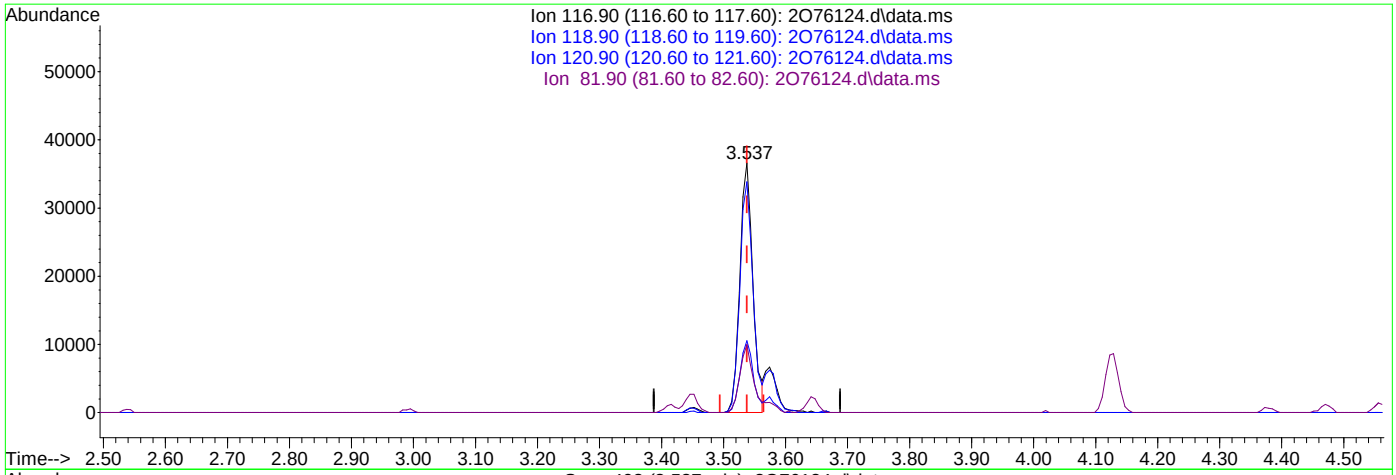
response 62582

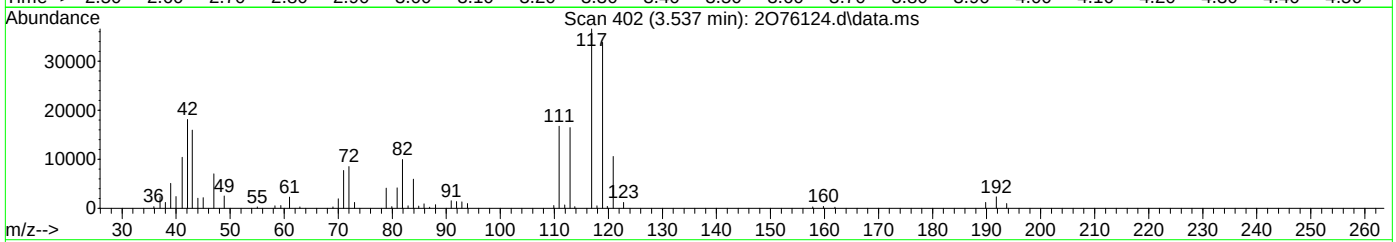
Ion	Exp%	Act%
116.90	100	100
118.90	97.60	92.46
120.90	31.00	28.77
81.90	24.80	27.16

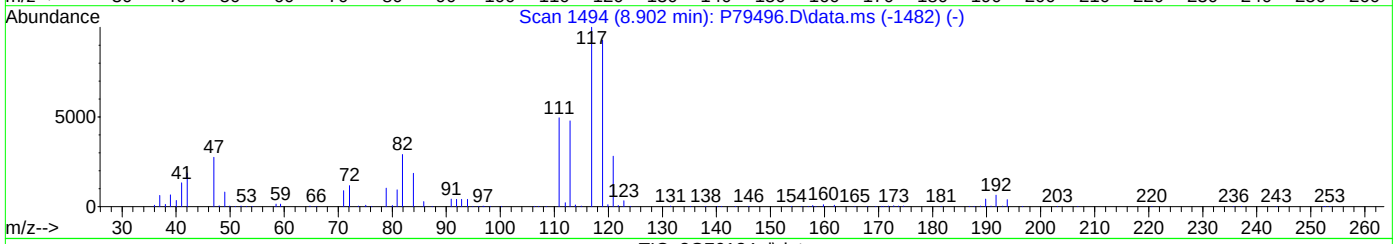
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-08-2023\V2O2954-55\
Data File : 2O76124.d
Acq On : 5 May 2023 10:16 pm
Operator : davidb2
Sample : FC5532-9MS 5X
Misc : MS53948,V2O2955,,,,,5
ALS Vial : 26 Sample Multiplier: 1

Quant Time: May 07 23:36:34 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration







TIC: 2O76124.d\data.ms

(40) Carbon Tetrachloride ( )

3.537min (-0.001) 23.12ug/L m

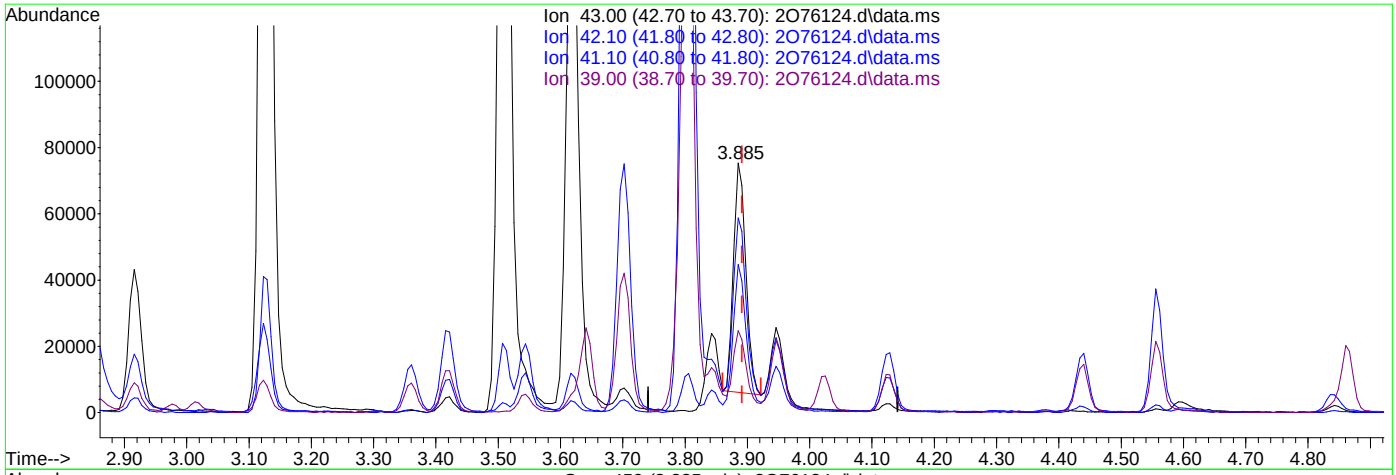
response 53320

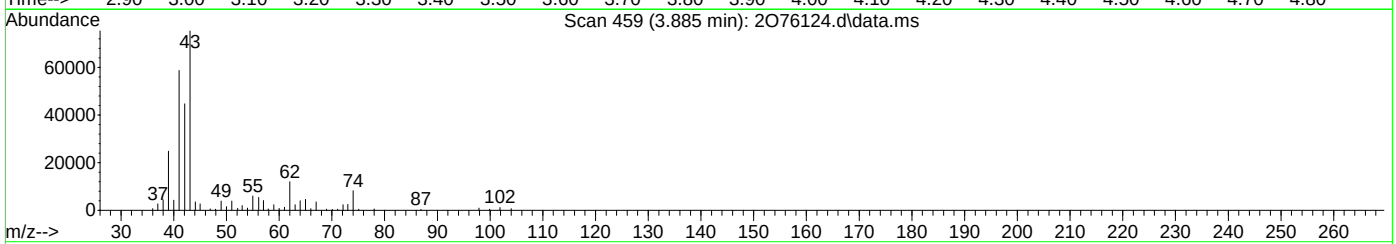
Ion	Exp%	Act%
116.90	100	100
118.90	97.60	92.46
120.90	31.00	28.77
81.90	24.80	27.16

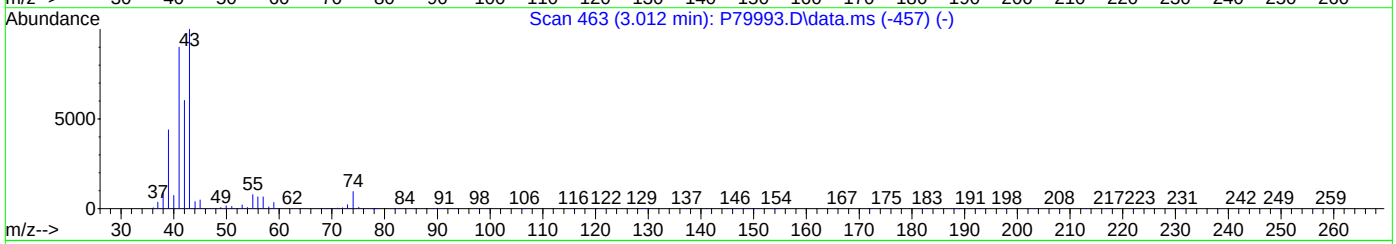
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-08-2023\V2O2954-55\
Data File : 2O76124.d
Acq On : 5 May 2023 10:16 pm
Operator : davidb2
Sample : FC5532-9MS 5X
Misc : MS53948,V2O2955,,,,,5
ALS Vial : 26 Sample Multiplier: 1

Quant Time: May 07 23:36:34 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration







TIC: 2O76124.d\data.ms

(49) Isobutyl alcohol

3.885min (-0.006) 597.16ug/L

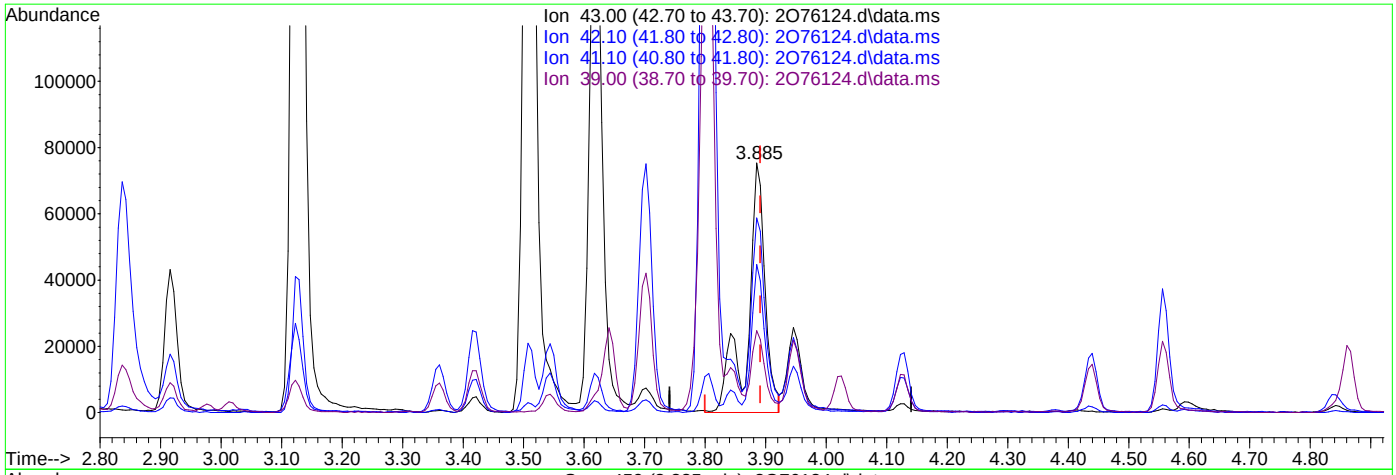
response 94980

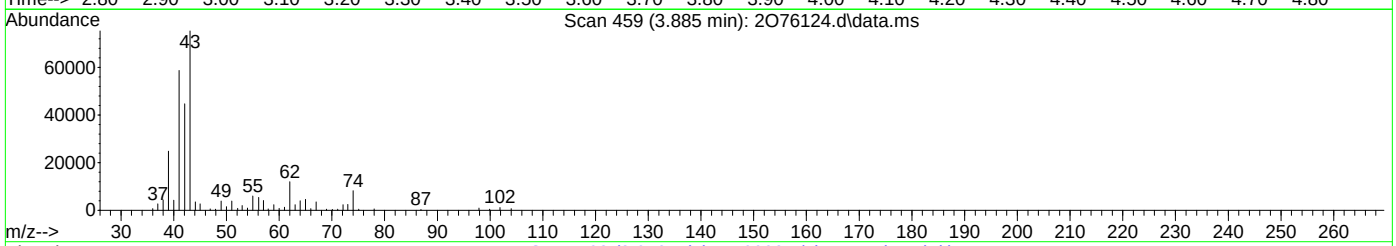
Ion	Exp%	Act%
43.00	100	100
42.10	60.00	60.62
41.10	73.50	76.54
39.00	30.20	31.47

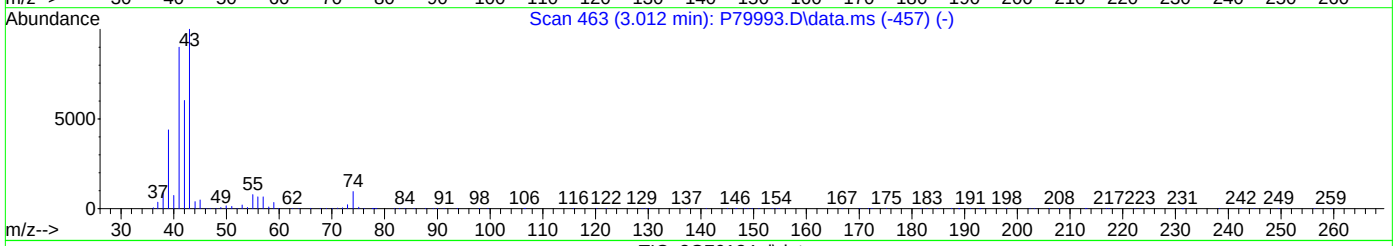
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-08-2023\V2O2954-55\
Data File : 2O76124.d
Acq On : 5 May 2023 10:16 pm
Operator : davidb2
Sample : FC5532-9MS 5X
Misc : MS53948,V2O2955,,,,,5
ALS Vial : 26 Sample Multiplier: 1

Quant Time: May 07 23:36:34 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration







TIC: 2O76124.d\data.ms

(49) Isobutyl alcohol

3.885min (-0.006) 919.88ug/L m

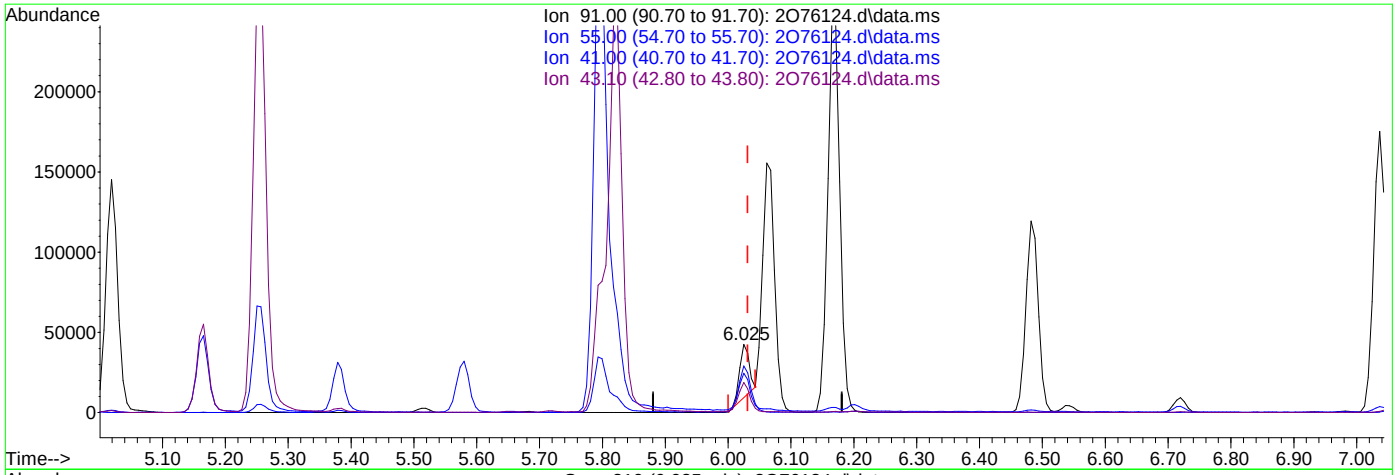
response 152377

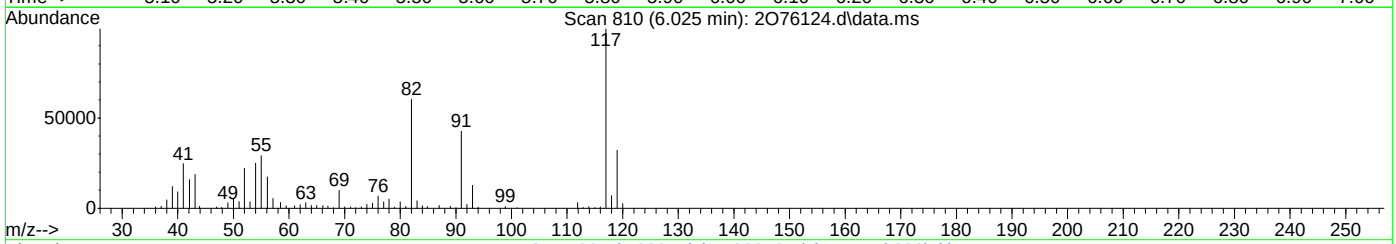
Ion	Exp%	Act%
43.00	100	100
42.10	60.00	59.34
41.10	73.50	77.90
39.00	30.20	32.85

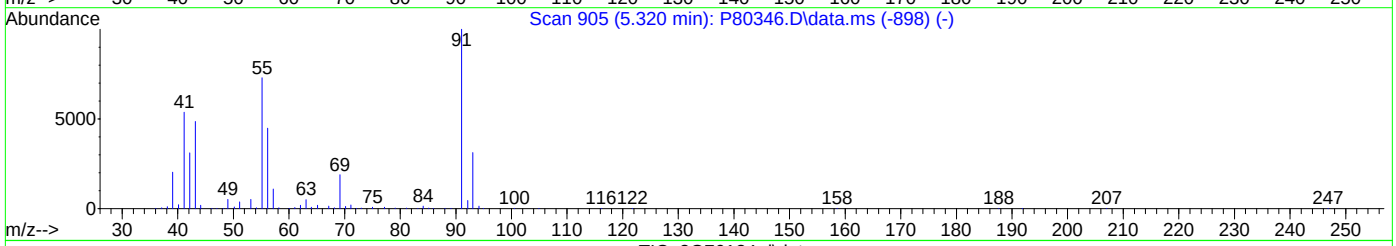
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-08-2023\V2O2954-55\
Data File : 2O76124.d
Acq On : 5 May 2023 10:16 pm
Operator : davidb2
Sample : FC5532-9MS 5X
Misc : MS53948,V2O2955,,,,,5
ALS Vial : 26 Sample Multiplier: 1

Quant Time: May 07 23:36:34 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration







TIC: 2O76124.d\data.ms

(76) 1-Chlorohexane

6.025min (-0.006) 14.43ug/L

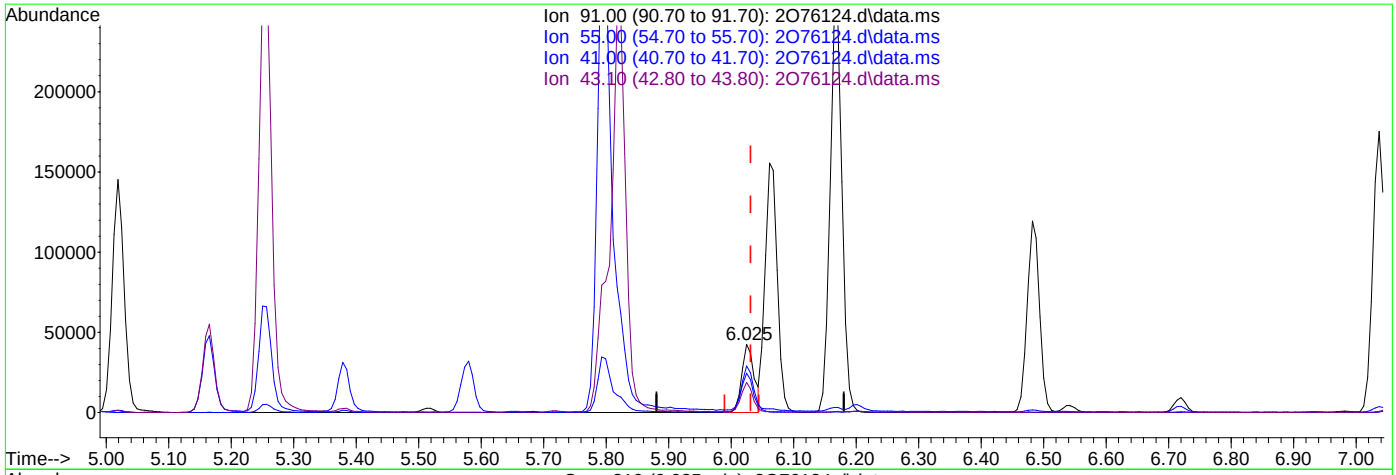
response 37198

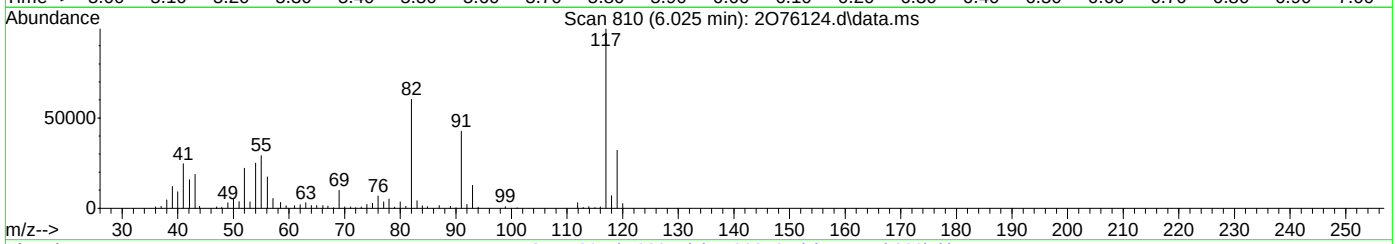
Ion	Exp%	Act%
91.00	100	100
55.00	66.30	67.48
41.00	53.70	54.00
43.10	42.30	42.29

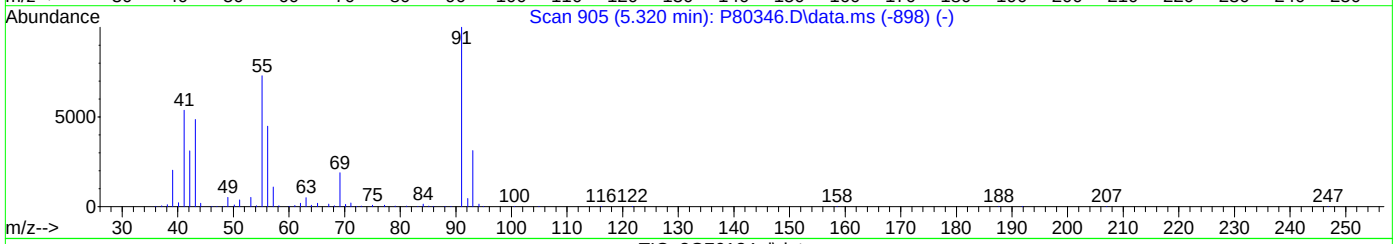
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-08-2023\V2O2954-55\
Data File : 2O76124.d
Acq On : 5 May 2023 10:16 pm
Operator : davidb2
Sample : FC5532-9MS 5X
Misc : MS53948,V2O2955,,,,,5
ALS Vial : 26 Sample Multiplier: 1

Quant Time: May 08 00:08:31 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration







TIC: 2O76124.d\data.ms

(76) 1-Chlorohexane

6.025min (-0.006) 22.52ug/L m

response 58055

Ion	Exp%	Act%
91.00	100	100
55.00	66.30	68.31
41.00	53.70	57.70
43.10	42.30	44.05

Manual Integrations APPROVED (compounds with "m" flag)
Karen Watson
05/08/23 10:24

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-08-2023\V2O2954-55\
Data File : 2O76125.d
Acq On : 5 May 2023 10:42 pm
Operator : davidb2
Sample : FC5532-9MSD 5X
Misc : MS53948,V2O2955,,,,,5
ALS Vial : 27 Sample Multiplier: 1

Quant Time: May 08 00:09:56 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	4.025	96	1388578	50.00	ug/L	0.00
62) Chlorobenzene-d5	6.037	117	1002454	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.799	152	518626	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	3.550	113	369098	47.96	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery =	95.92%		
50) 1,2-Dichloroethane-d4	3.861	65	446695	54.60	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery =	109.20%		
63) Toluene-d8	4.988	98	1346476	49.25	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery =	98.50%		
86) 4-Bromofluorobenzene	6.933	174	387677	48.99	ug/L	-0.01
Spiked Amount 50.000	Range 83 - 118		Recovery =	97.98%		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.227	85	42395	7.49	ug/L	98
3) Chloromethane	1.385	50	38388	6.28	ug/L	98
4) 1,3-butadiene	1.446	39	51910	8.46	ug/L	98
5) Vinyl Chloride	1.434	62	43725	7.20	ug/L	98
6) Bromomethane	1.666	94	21102	4.54	ug/L	93
7) Chloroethane	1.745	64	10445	2.45	ug/L	97
8) Trichlorofluoromethane	1.837	101	73628	6.83	ug/L	99
9) Ethyl Ether	2.062	59	40124	8.39	ug/L	99
10) Ethanol	2.184	45	25425	202.72	ug/L	94
11) 1,2-Dichlorotrifluoroe...	2.184	67	58819	8.26	ug/L	98
12) 1,1-Dichloroethene	2.178	61	62387	6.82	ug/L	99
13) Freon 113	2.208	101	51625	8.48	ug/L	99
14) Carbon Disulfide	2.196	76	112755	6.35	ug/L	99
15) Iodomethane	2.269	142	29323	3.08	ug/L	98
16) Acrolein	2.391	56	78065	44.84	ug/L	99
17) Allyl chloride	2.471	41	42814	6.04	ug/L	96
18) Methylene Chloride	2.538	49	64224	7.54	ug/L	96
19) Acetone	2.568	43	141133	40.41	ug/L	99
20) Methyl acetate	2.641	43	297617	37.06	ug/L	100
21) trans-1,2-Dichloroethene	2.635	61	61445	7.03	ug/L	97
22) Hexane	2.678	56	35318	7.65	ug/L	98
23) Methyl Tert Butyl Ether	2.696	73	126415	7.53	ug/L	98
24) Tert Butyl Alcohol	2.757	59	143243	111.52	ug/L	93
25) Acetonitrile	2.836	41	115361	87.71	ug/L	99
26) Di-isopropyl ether	2.916	45	131813	7.40	ug/L	98
27) Chloroprene	2.977	53	53979	6.45	ug/L	97
28) 1,1-Dichloroethane	2.989	63	79295	6.98	ug/L	98
29) Acrylonitrile	3.013	52	130740	38.65	ug/L	99
30) ETBE	3.123	59	125329	7.76	ug/L	96
31) Vinyl acetate	3.129	43	519520	40.02	ug/L	100
32) cis-1,2-Dichloroethene	3.294	96	49165	6.97	ug/L	94
33) 2,2-Dichloropropane	3.361	77	29749	3.90	ug/L	99
34) Bromochloromethane	3.409	128	25021	6.58	ug/L	87
35) Cyclohexane	3.416	56	69185	7.37	ug/L	93
36) Chloroform	3.446	83	93068	7.57	ug/L	97
37) Ethyl acetate	3.507	43	393866	38.62	ug/L	98
38) Tetrahydrofuran	3.544	42	29667	7.56	ug/L	97
40) Carbon Tetrachloride	3.537	117	54316	7.05	ug/L	96
41) 1,1,1-Trichloroethane	3.574	97	71420	7.16	ug/L	94
42) 2-Butanone	3.617	43	235816	40.70	ug/L	98
43) 1,1-Dichloropropene	3.641	75	64866	7.53	ug/L	96
44) tert-Butyl formate	3.702	59	41738	19.26	ug/L #	77

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-08-2023\V2O2954-55\
Data File : 2O76125.d
Acq On : 5 May 2023 10:42 pm
Operator : davidb2
Sample : FC5532-9MSD 5X
Misc : MS53948,V2O2955,,,,,5
ALS Vial : 27 Sample Multiplier: 1

Quant Time: May 08 00:09:56 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45) Propionitrile	3.793	54	149976	87.23	ug/L		90
46) Methacrylonitrile	3.806	41	467527	80.34	ug/L		99
47) Benzene	3.787	78	191548	7.52	ug/L		92
48) TAME	3.842	73	109108	7.22	ug/L		92
49) Isobutyl alcohol	3.891	43	150652m	295.01	ug/L		
51) 1,2-Dichloroethane	3.897	62	72228	7.96	ug/L		99
52) Tert Amyl Alcohol	3.952	59	92303	91.41	ug/L		87
53) Trichloroethene	4.123	95	52724	7.18	ug/L		95
54) Methylcyclohexane	4.129	83	71803	7.47	ug/L		96
55) Dibromomethane	4.379	93	34730	7.52	ug/L		94
56) 1,2-Dichloropropane	4.440	63	46472	7.78	ug/L		97
57) Bromodichloromethane	4.470	83	55828	6.82	ug/L		99
58) Methyl methacrylate	4.556	41	49883	7.47	ug/L		97
59) 1,4-Dioxane	4.598	88	27060	216.48	ug/L		95
61) cis-1,3-Dichloropropene	4.860	75	57987	6.34	ug/L		95
64) Toluene	5.019	91	206380	7.51	ug/L		98
65) 2-Nitropropane	5.165	41	59565	37.38	ug/L		96
66) 4-Methyl-2-pentanone	5.257	43	404893	41.25	ug/L		100
67) trans-1,3-Dichloropropene	5.281	75	53892	6.09	ug/L		93
68) Tetrachloroethene	5.275	166	54700	7.03	ug/L		97
69) Ethyl methacrylate	5.379	69	65257	8.35	ug/L		97
70) 1,1,2-Trichloroethane	5.391	83	41671	7.52	ug/L		99
71) Dibromochloromethane	5.519	129	44430	7.10	ug/L		98
72) 1,3-Dichloropropane	5.580	76	84198	8.29	ug/L		97
73) 1,2-Dibromoethane	5.683	107	52879	7.62	ug/L		97
74) 3,3-dimethyl-1-butanol	5.799	57	696219	538.15	ug/L		99
75) 2-hexanone	5.824	43	447515	45.89	ug/L		95
76) 1-Chlorohexane	6.025	91	62173m	7.19	ug/L		
77) Ethylbenzene	6.067	91	221382	7.47	ug/L		98
78) Chlorobenzene	6.049	112	133878	7.21	ug/L		95
79) 1,1,1,2-Tetrachloroethane	6.092	131	40483	6.96	ug/L		99
80) m,p-Xylene	6.171	91	347821	15.08	ug/L		97
81) o-Xylene	6.482	91	167253	7.18	ug/L		99
82) Styrene	6.519	104	136066	7.44	ug/L		96
83) Bromoform	6.543	173	24803	6.34	ug/L		97
84) Isopropylbenzene	6.720	105	203041	7.23	ug/L		99
87) cis-1,4-Dichloro-2-butene	6.982	53	11260	4.79	ug/L	#	64
88) n-Propylbenzene	7.037	91	241392	7.51	ug/L		99
89) Bromobenzene	7.018	156	55091	7.72	ug/L		98
90) 1,1,2,2-Tetrachloroethane	7.086	83	81729	8.35	ug/L		95
91) 1,3,5-Trimethylbenzene	7.189	105	171962	7.58	ug/L		99
92) 2-Chlorotoluene	7.159	91	166920	7.70	ug/L		96
93) trans-1,4-Dichloro-2-B...	7.220	53	8417	4.24	ug/L		85
94) 1,2,3-Trichloropropane	7.195	110	26647	8.27	ug/L		96
95) Cyclohexanone	7.232	55	20849	46.66	ug/L		93
96) 4-Chlorotoluene	7.287	91	153067	7.67	ug/L		98
97) tert-Butylbenzene	7.439	91	94484	7.70	ug/L		93
99) 1,2,4-Trimethylbenzene	7.494	105	172168	7.68	ug/L		97
100) Pentachloroethane	7.457	167	23726	8.09	ug/L	#	67
101) sec-Butylbenzene	7.579	105	194379	7.15	ug/L		99
102) 4-Isopropyltoluene	7.689	119	167214	7.05	ug/L		100
103) 1,3-Dichlorobenzene	7.744	146	100503	7.13	ug/L		99
104) 1,2,3-Trimethylbenzene	7.823	105	173926	7.41	ug/L		98
105) 1,4-Dichlorobenzene	7.744	146	100503	7.04	ug/L		98
106) n-Butylbenzene	8.000	92	85880	7.29	ug/L		90
107) Benzyl Chloride	7.988	126	6952	2.87	ug/L	#	25
108) 1,2-Dichlorobenzene	8.122	146	99392	7.47	ug/L		99
109) 1,2-Dibromo-3-Chloropr...	8.695	75	15782	8.06	ug/L		85

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-08-2023\V2O2954-55\
Data File : 2O76125.d
Acq On : 5 May 2023 10:42 pm
Operator : davidb2
Sample : FC5532-9MSD 5X
Misc : MS53948,V2O2955,,,,,5
ALS Vial : 27 Sample Multiplier: 1

Quant Time: May 08 00:09:56 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

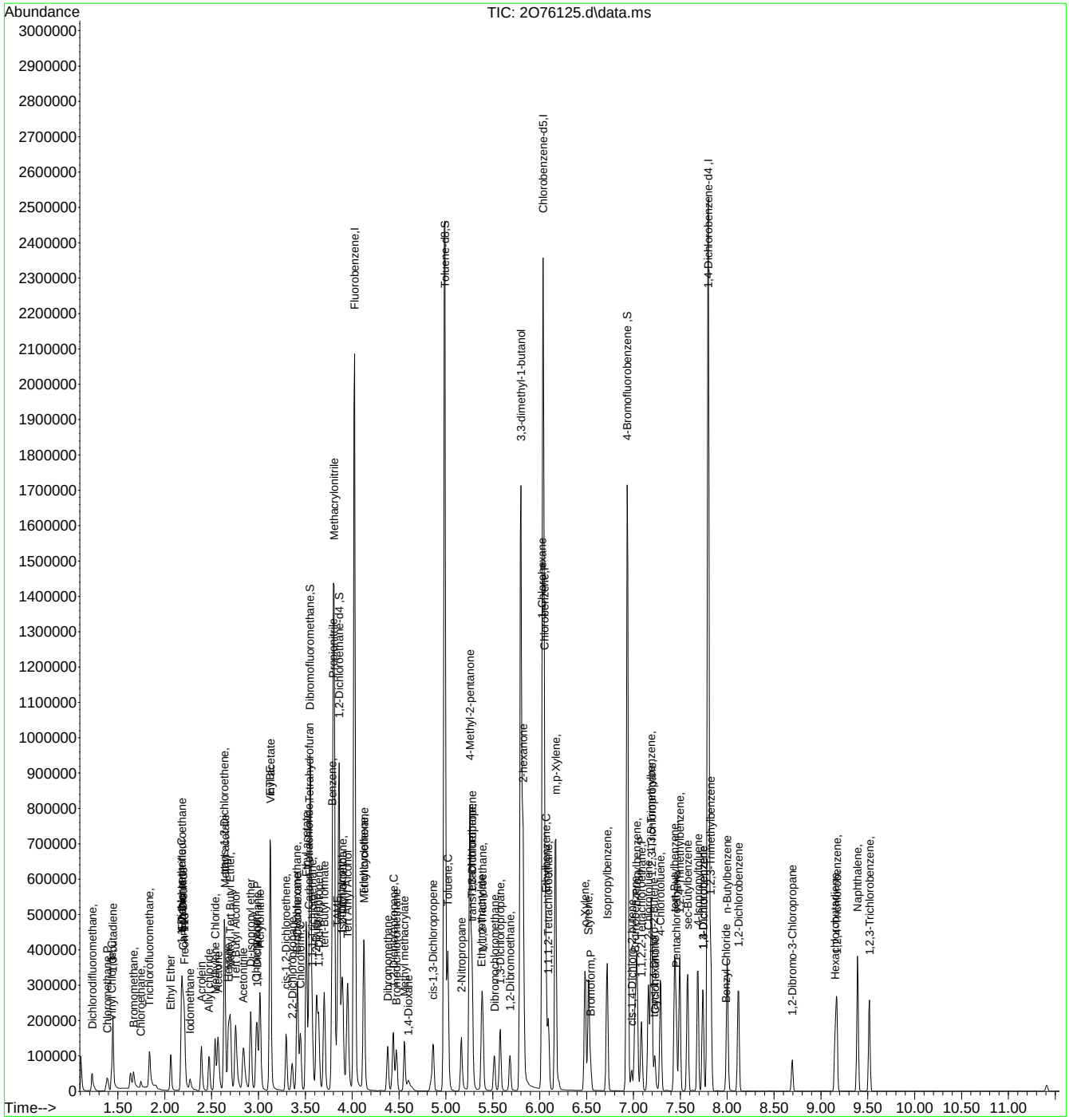
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
110) Hexachlorobutadiene	9.152	225	20406	7.18	ug/L	97
111) 1,2,4-Trichlorobenzene	9.171	180	61903	7.66	ug/L	97
112) Naphthalene	9.390	128	226245	7.92	ug/L	100
113) 1,2,3-Trichlorobenzene	9.518	180	61324	8.00	ug/L	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-08-2023\V2O2954-55\
Data File : 2O76125.d
Acq On : 5 May 2023 10:42 pm
Operator : davidb2
Sample : FC5532-9MSD 5X
Misc : MS53948,V2O2955,,,,,5
ALS Vial : 27 Sample Multiplier: 1

Quant Time: May 08 00:09:56 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration



Manual Integration Approval Summary

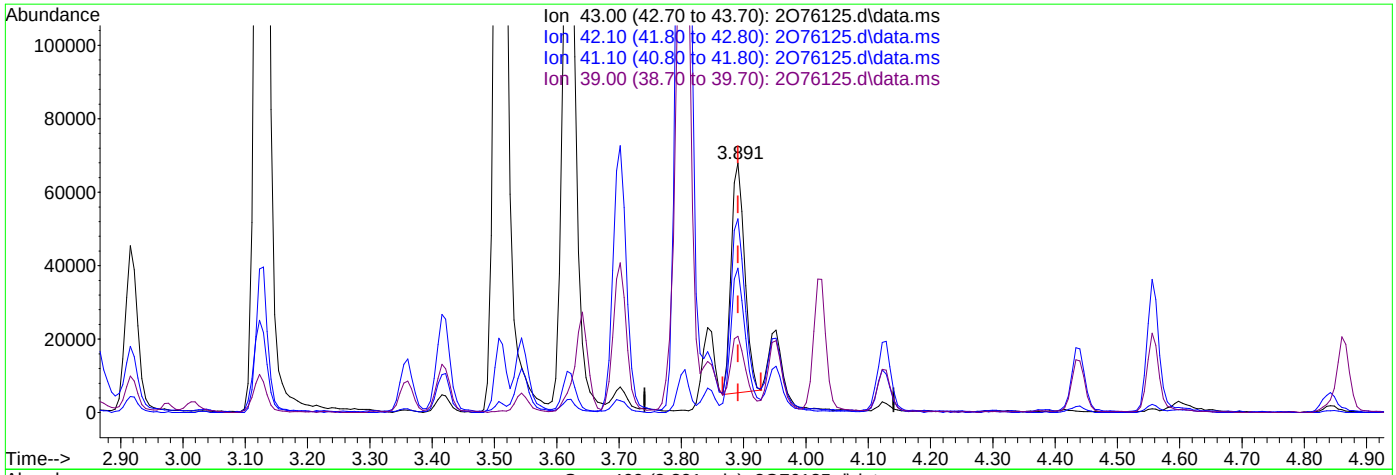
Sample Number: FC5532-9MSD
Lab FileID: 2O76125.D
Injection Time: 05/05/23 22:42
Method: SW846 8260D
Analyst approved: 05/08/23 00:16 Celine Celis
Supervisor approved: 05/08/23 10:24 Karen Watson

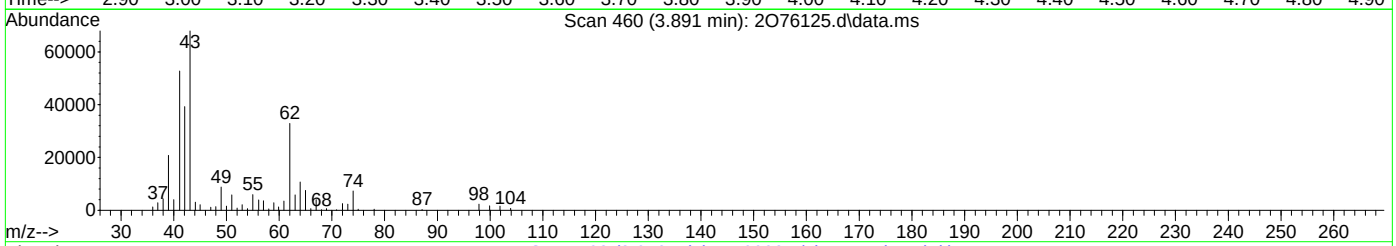
Parameter	CAS	Sig#	R.T. (min.)	Reason
Isobutyl Alcohol	78-83-1		3.89	Poor instrument integration
1-Chlorohexane	544-10-5		6.02	Poor instrument integration

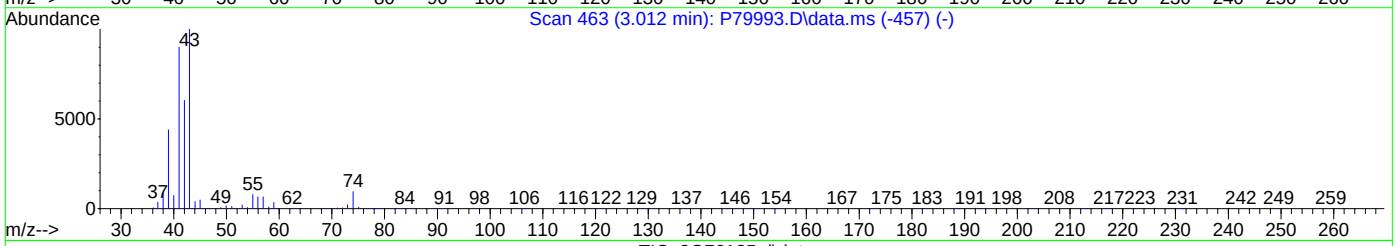
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-08-2023\V2O2954-55\
Data File : 2O76125.d
Acq On : 5 May 2023 10:42 pm
Operator : davidb2
Sample : FC5532-9MSD 5X
Misc : MS53948,V2O2955,,,,,5
ALS Vial : 27 Sample Multiplier: 1

Quant Time: May 07 23:36:38 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration







TIC: 2O76125.d\data.ms

(49) Isobutyl alcohol

3.891min (+0.000) 186.83ug/L

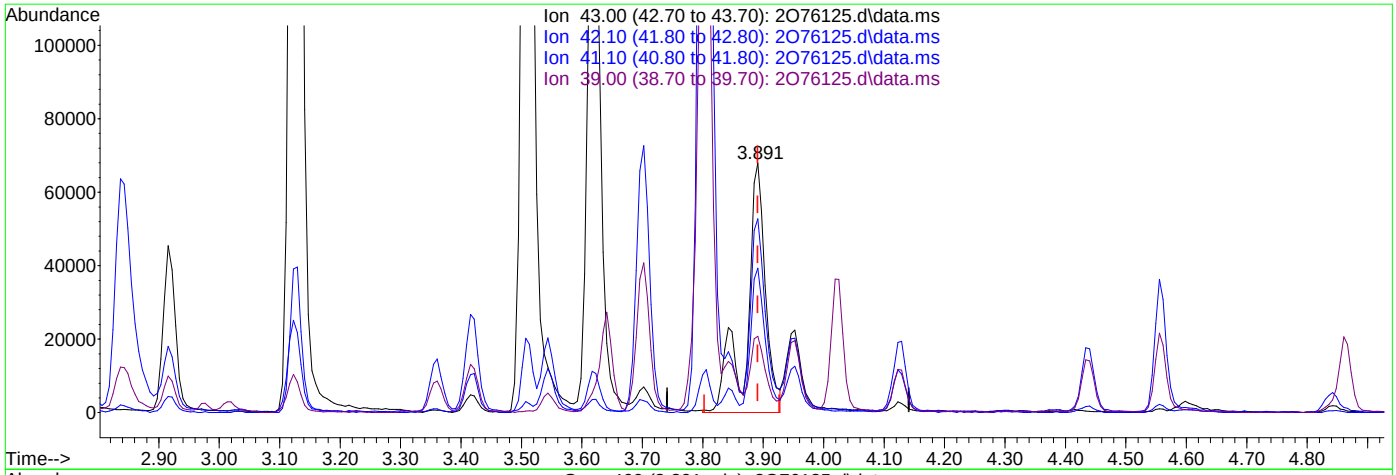
response 94029

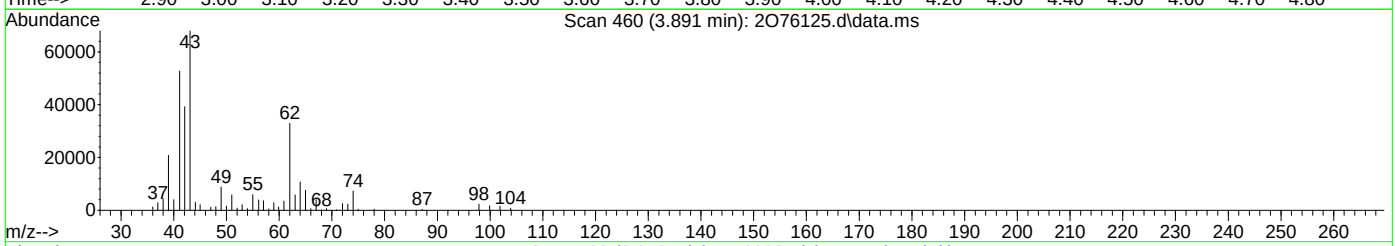
Ion	Exp%	Act%
43.00	100	100
42.10	60.00	58.22
41.10	73.50	75.28
39.00	30.20	27.68

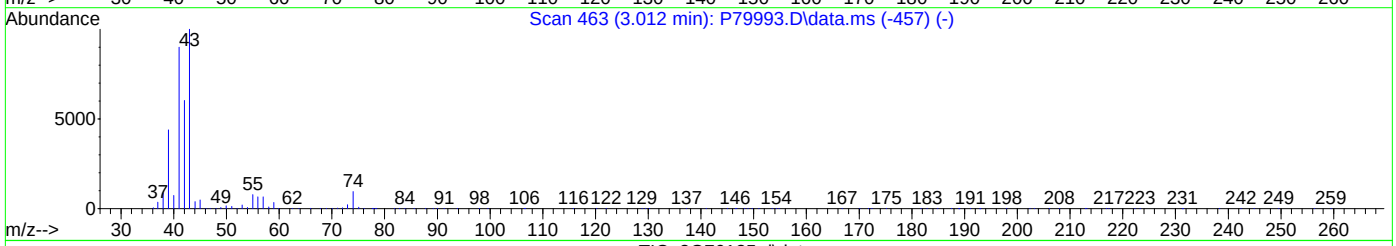
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-08-2023\V2O2954-55\
Data File : 2O76125.d
Acq On : 5 May 2023 10:42 pm
Operator : davidb2
Sample : FC5532-9MSD 5X
Misc : MS53948,V2O2955,,,,,5
ALS Vial : 27 Sample Multiplier: 1

Quant Time: May 07 23:36:38 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration







TIC: 2O76125.d\data.ms

(49) Isobutyl alcohol

3.891min (+0.000) 295.01ug/L m

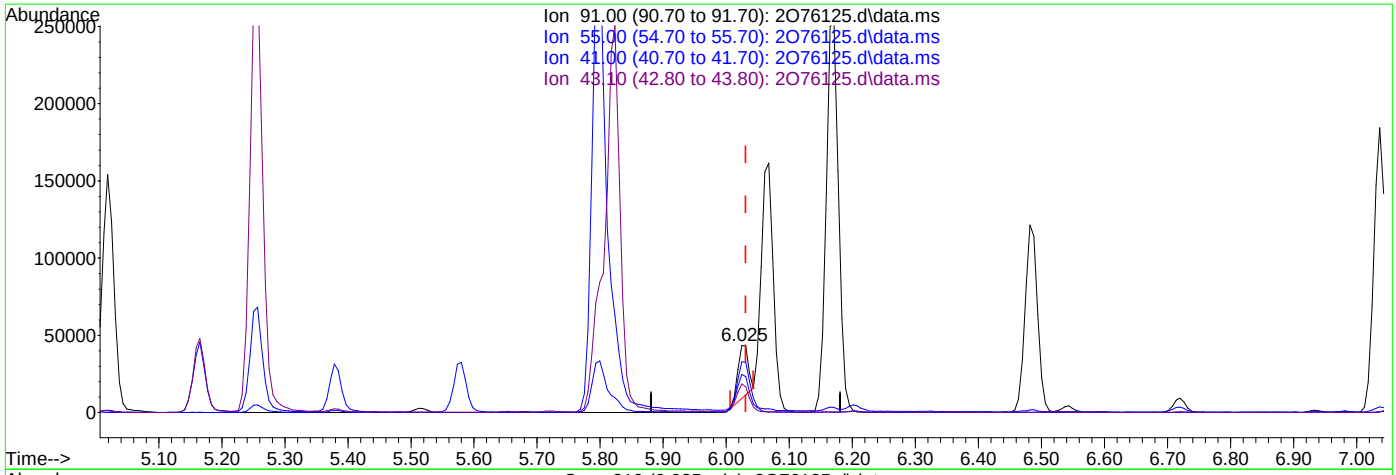
response 150652

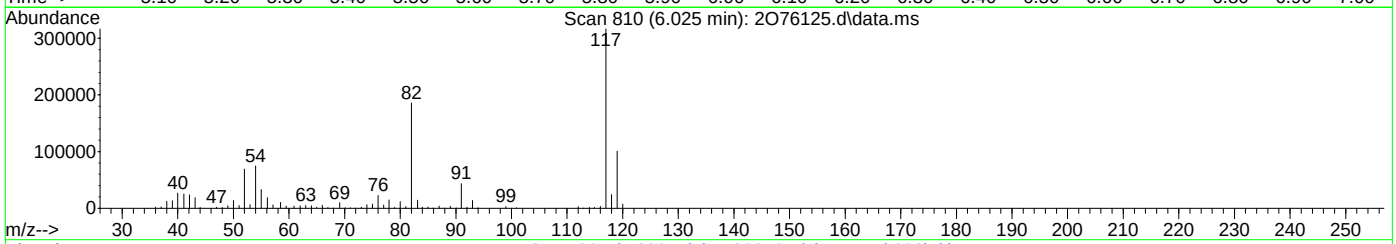
Ion	Exp%	Act%
43.00	100	100
42.10	60.00	57.81
41.10	73.50	77.64
39.00	30.20	30.54

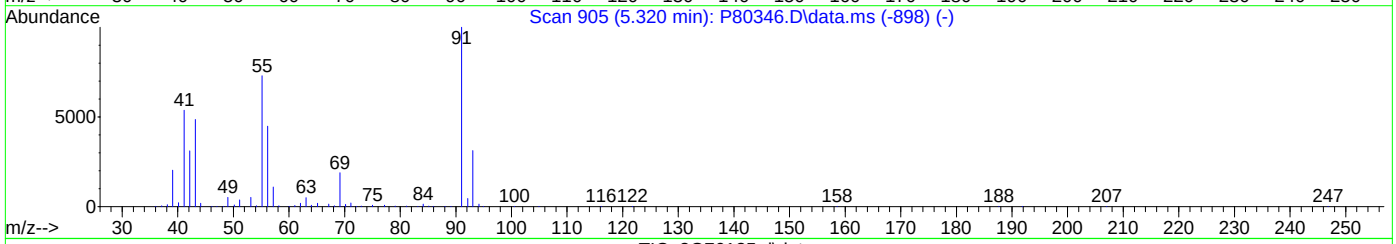
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-08-2023\V2O2954-55\
Data File : 2O76125.d
Acq On : 5 May 2023 10:42 pm
Operator : davidb2
Sample : FC5532-9MSD 5X
Misc : MS53948,V2O2955,,,,,5
ALS Vial : 27 Sample Multiplier: 1

Quant Time: May 07 23:36:38 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration







TIC: 2O76125.d\data.ms

(76) 1-Chlorohexane

6.025min (-0.006) 4.82ug/L

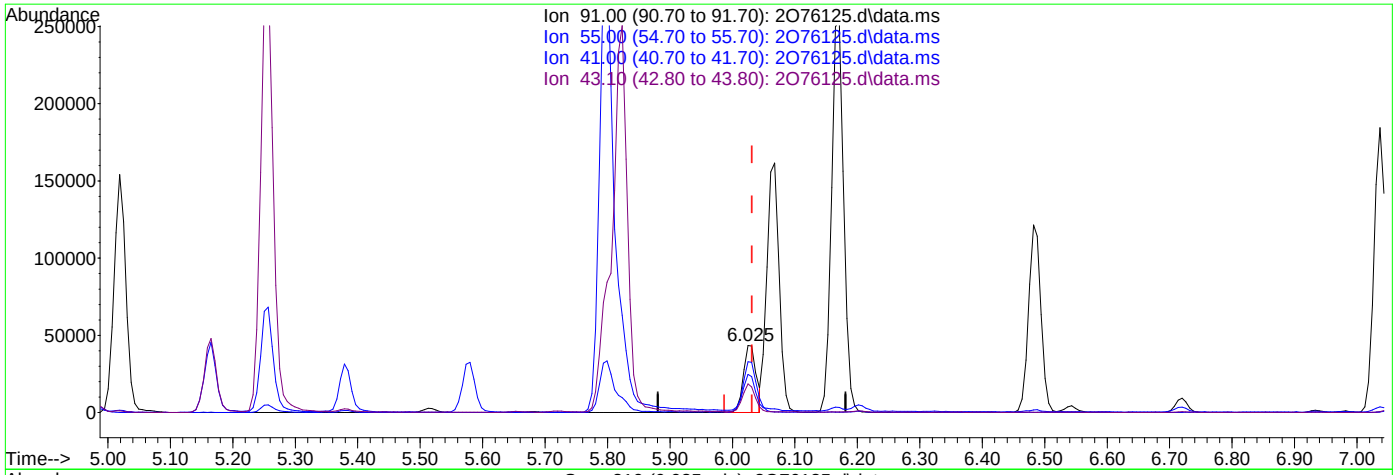
response 41675

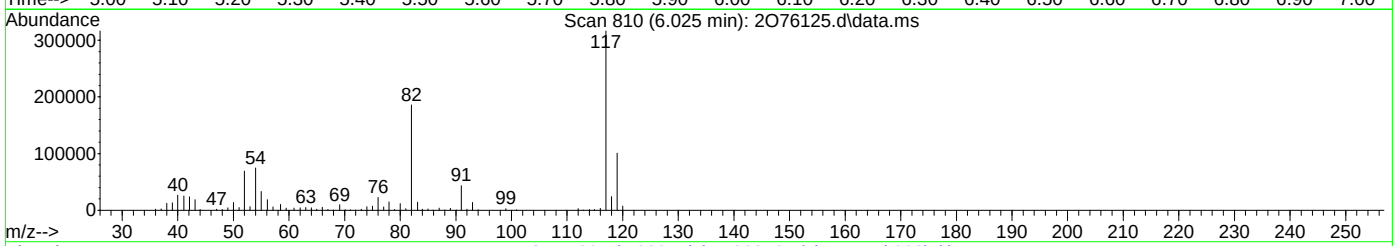
Ion	Exp%	Act%
91.00	100	100
55.00	66.30	73.29
41.00	53.70	51.93
43.10	42.30	40.68

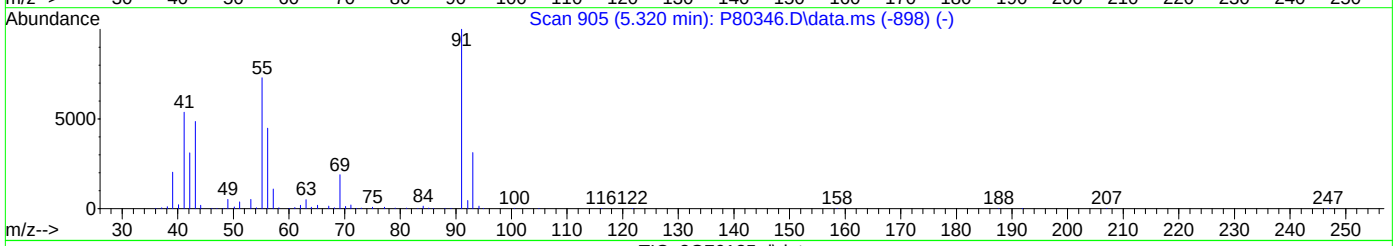
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-08-2023\V2O2954-55\
Data File : 2O76125.d
Acq On : 5 May 2023 10:42 pm
Operator : davidb2
Sample : FC5532-9MSD 5X
Misc : MS53948,V2O2955,,,,,5
ALS Vial : 27 Sample Multiplier: 1

Quant Time: May 08 00:09:56 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration







TIC: 2O76125.d\data.ms

(76) 1-Chlorohexane

6.025min (-0.006) 7.19ug/L m

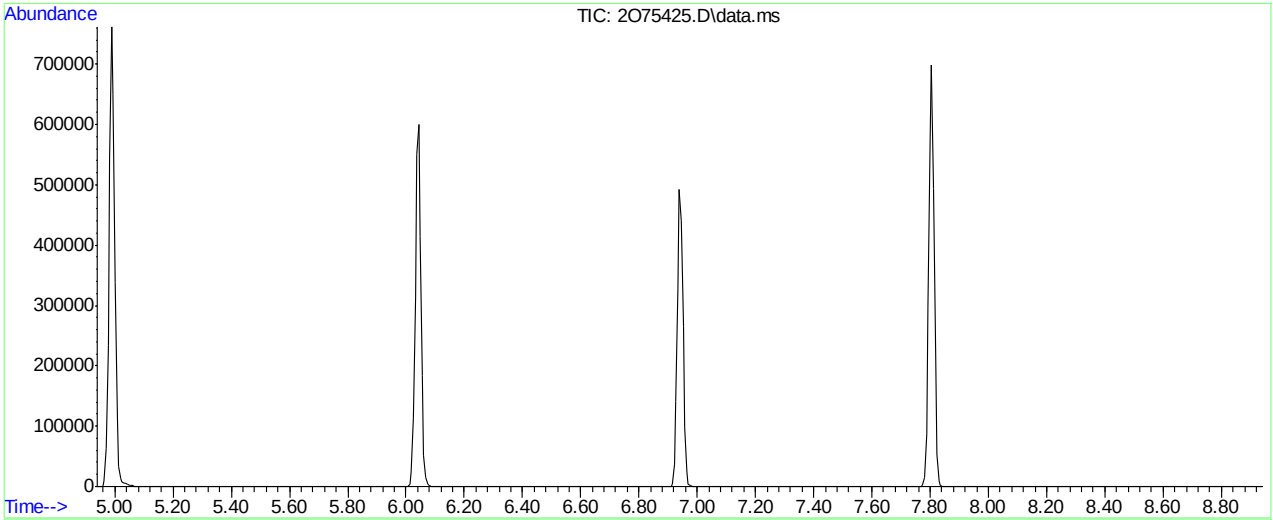
response 62173

Ion	Exp%	Act%
91.00	100	100
55.00	66.30	75.45
41.00	53.70	57.04
43.10	42.30	42.76

Methods: SW-846 8260B

```
Data File : C:\msdchem\2\data\2023-04-11\2O75425.D       Vial: 1
Acq On    : 11 Apr 2023   9:39 am                    Operator: davidb2
Sample    : BFB                                      Inst    : MSVOA12
Misc      : MS53646,V2O2924,,,,,                     Multiplr: 1.00
MS Integration Params: big.p

Method    : C:\msdchem\2\met...V2O_04-11-2023.M (RTE Integrator)
Title     : SW-846 Method 5035A/8260B
```



AutoFind: Scans 959, 960, 961; Background Corrected with Scan 952

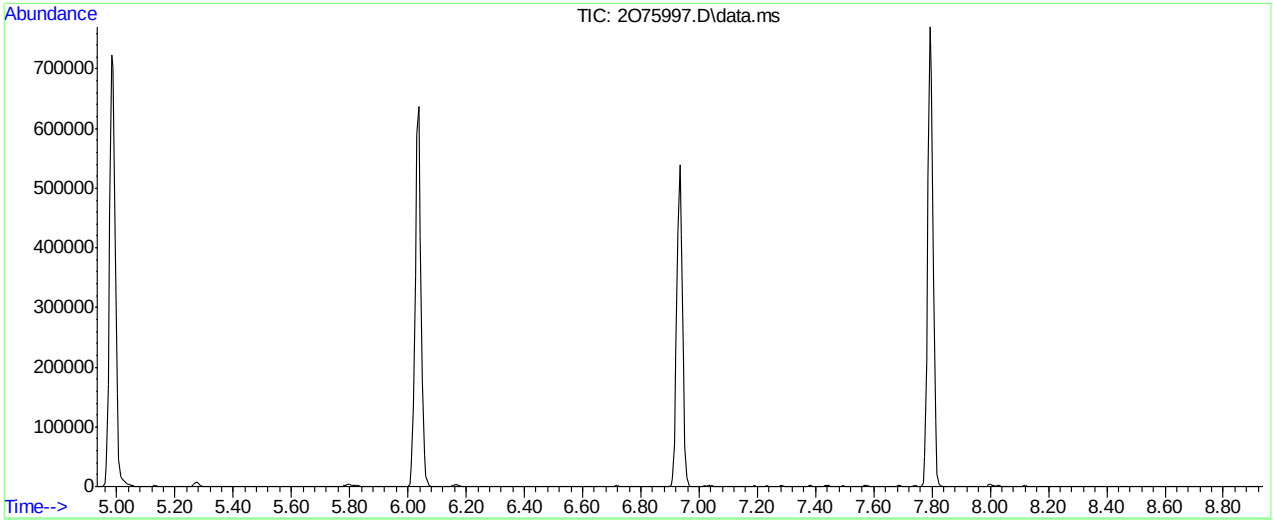
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.2	15110	PASS
75	95	30	60	48.7	42840	PASS
95	95	100	100	100.0	87968	PASS
96	95	5	9	6.8	6005	PASS
173	174	0.00	2	0.7	522	PASS
174	95	50	100	80.8	71059	PASS
175	174	5	9	6.9	4935	PASS
176	174	95	101	96.3	68445	PASS
177	176	5	9	6.2	4228	PASS

2O75425.D V2O_04-11-2023.M Tue Apr 11 14:30:49 2023

Methods: SW-846 8260B

Data File : C:\msdchem\2\data\2023-05-03\2O75997.D Vial: 1
Acq On : 3 May 2023 10:54 am Operator: davidb2
Sample : BFB Inst : MSVOA12
Misc : MS53910,V2O2949,,,,, Multiplr: 1.00
MS Integration Params: big.p

Method : C:\msdchem\2\met...V2O_04-11-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B



AutoFind: Scans 958, 959, 960; Background Corrected with Scan 951

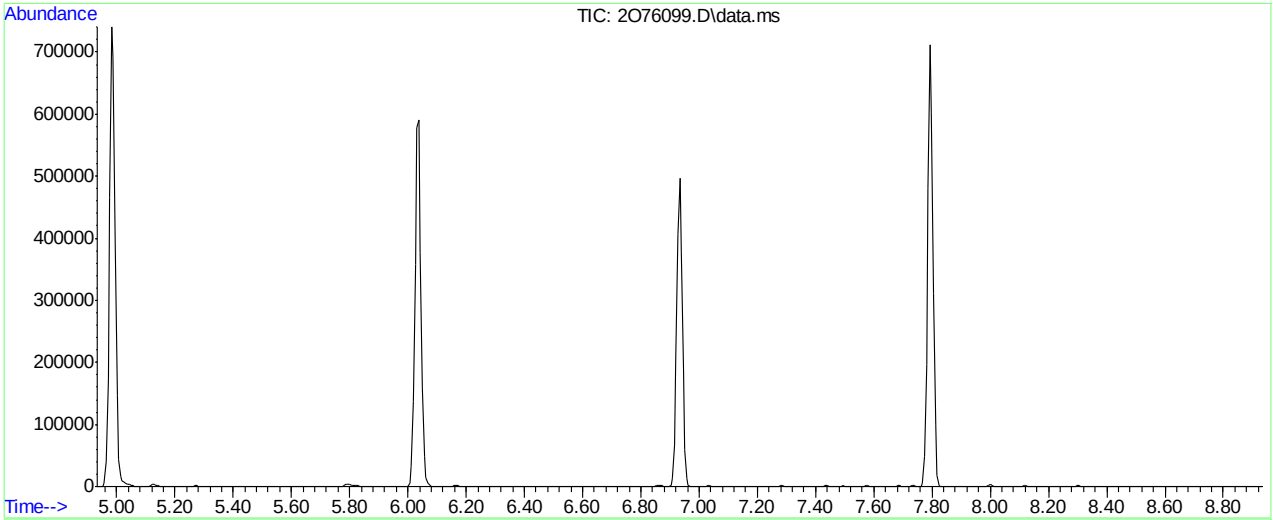
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.7	16124	PASS
75	95	30	60	49.6	47811	PASS
95	95	100	100	100.0	96352	PASS
96	95	5	9	7.1	6860	PASS
173	174	0.00	2	0.8	606	PASS
174	95	50	100	81.8	78856	PASS
175	174	5	9	7.1	5571	PASS
176	174	95	101	98.8	77909	PASS
177	176	5	9	6.6	5107	PASS

2O75997.D V2O_04-11-2023.M Wed May 03 12:07:47 2023

Methods: SW-846 8260B

Data File : C:\msdchem\2\data\2023-05-05\2O76099.D Vial: 1
Acq On : 5 May 2023 11:14 am Operator: davidb2
Sample : BFB Inst : MSVOA12
Misc : MS53846,V2O2954,,,,, Multiplr: 1.00
MS Integration Params: big.p

Method : C:\msdchem\2\met...V2O_04-11-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B



AutoFind: Scans 958, 959, 960; Background Corrected with Scan 951

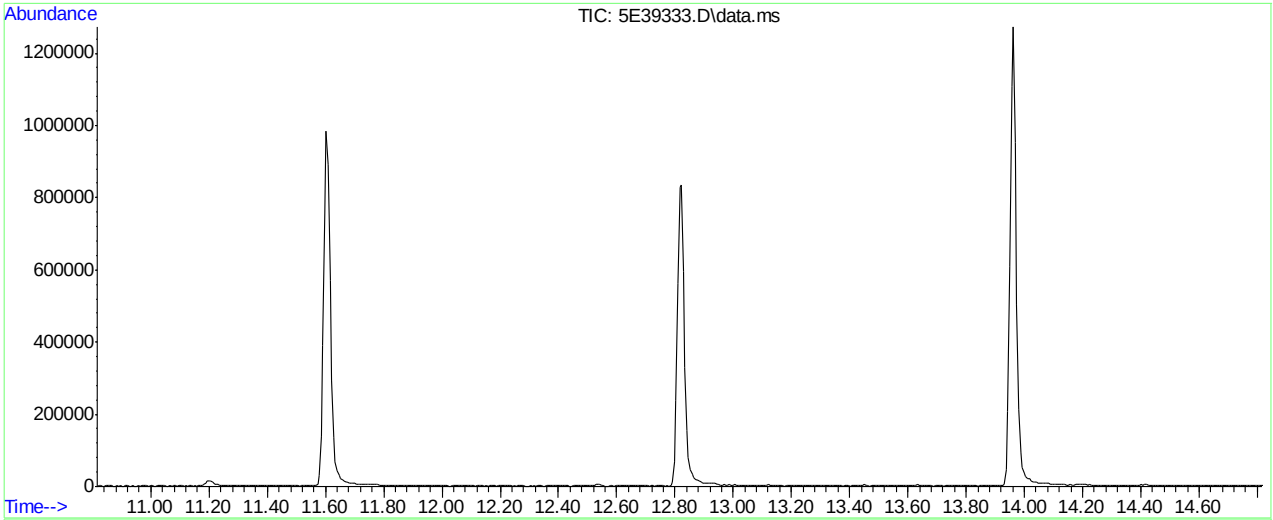
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.7	14928	PASS
75	95	30	60	48.7	43560	PASS
95	95	100	100	100.0	89467	PASS
96	95	5	9	7.2	6404	PASS
173	174	0.00	2	0.4	263	PASS
174	95	50	100	81.4	72808	PASS
175	174	5	9	6.9	5051	PASS
176	174	95	101	96.3	70141	PASS
177	176	5	9	6.6	4624	PASS

2O76099.D V2O_04-11-2023.M Fri May 05 11:27:57 2023

Methods: SW-846 8260B

```
Data File : C:\msdchem\1\data\05-01-2023\5E39333.D       Vial: 1
Acq On    :  1 May 2023   3:38 pm                    Operator: joannel
Sample    : BFB                                     Inst    : MSVOA20
Misc      : MS53796,V5E1761,,,,,                    Multiplr: 1.00
MS Integration Params: ult...ll.p

Method    : C:\msdchem\1\met...pIX05-01-2023_.M (RTE Integrator)
Title     : SW-846 Method 5030B/8260B & EPA 624
```



AutoFind: Scans 1923, 1924, 1925; Background Corrected with Scan 1916

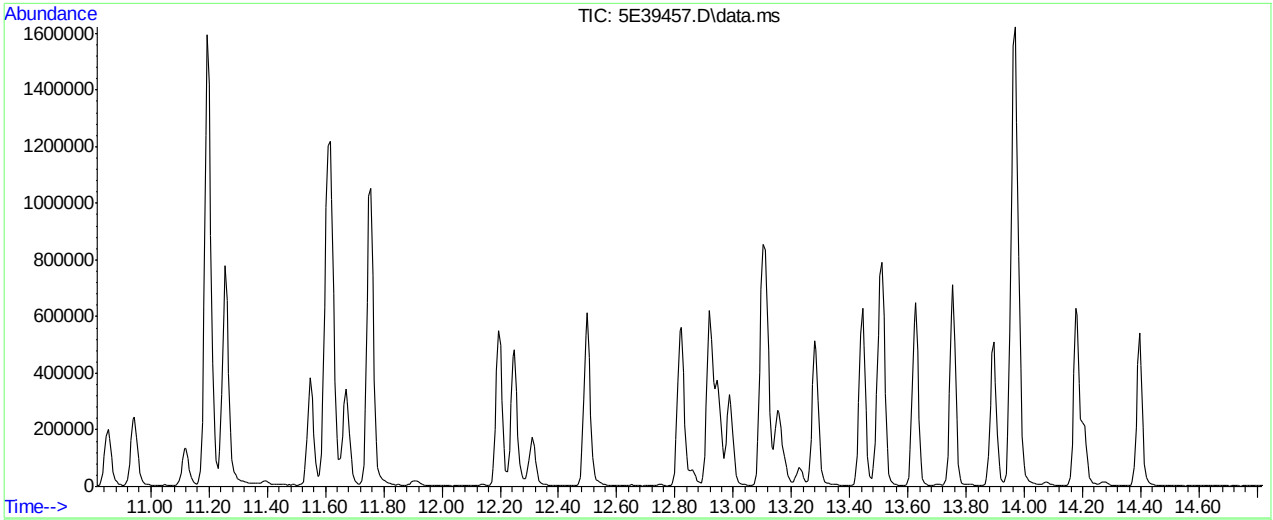
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.4	31195	PASS
75	95	30	60	47.0	71832	PASS
95	95	100	100	100.0	152701	PASS
96	95	5	9	6.6	10139	PASS
173	174	0.00	2	0.9	1153	PASS
174	95	50	100	81.7	124755	PASS
175	174	5	9	7.9	9900	PASS
176	174	95	101	96.9	120829	PASS
177	176	5	9	6.6	8032	PASS

5E39333.D appIX05-01-2023_.M Tue May 02 08:31:47 2023

Methods: SW-846 8260B

```
Data File : C:\msdchem\1\data\05-04-2023\5E39457.D       Vial: 2
Acq On    :  4 May 2023  11:32 am                    Operator: joannel
Sample    : BFB                                      Inst    : MSVOA20
Misc      : MS53926,V5E1766,,,,,                     Multiplr: 1.00
MS Integration Params: ult...ll.p

Method    : C:\msdchem\1\met...pIX05-01-2023_.M (RTE Integrator)
Title     : SW-846 Method 5030B/8260B & EPA 624
```



AutoFind: Scans 1923, 1924, 1925; Background Corrected with Scan 1917

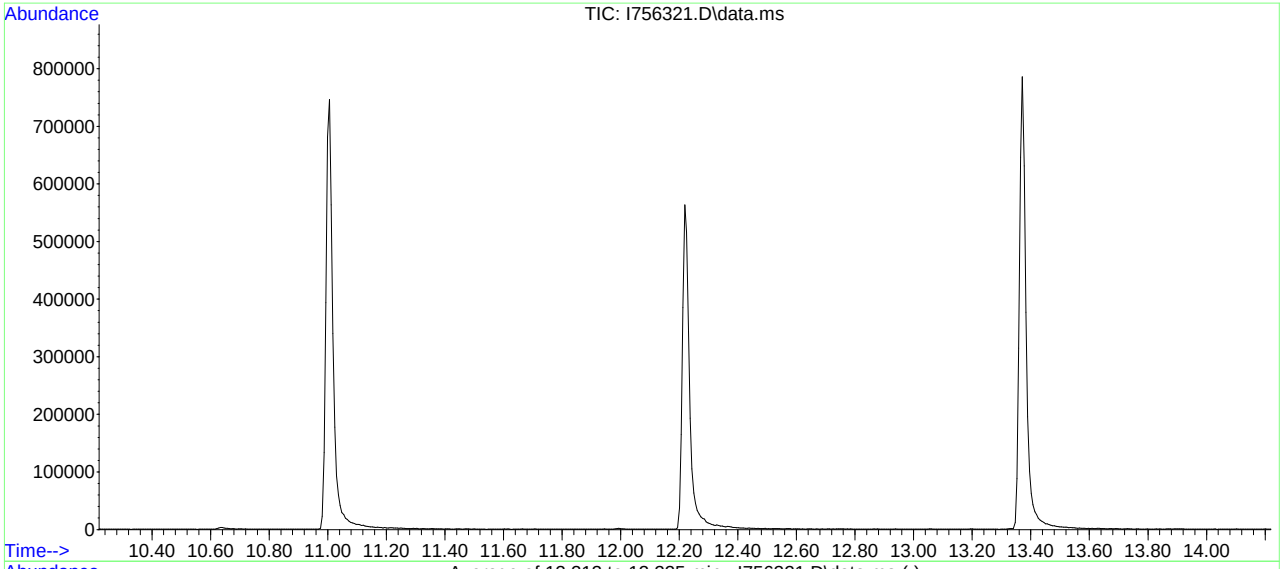
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	23.7	21771	PASS
75	95	30	60	52.3	48099	PASS
95	95	100	100	100.0	91880	PASS
96	95	5	9	7.1	6506	PASS
173	174	0.00	2	0.4	339	PASS
174	95	50	100	86.7	79688	PASS
175	174	5	9	8.5	6761	PASS
176	174	95	101	97.7	77840	PASS
177	176	5	9	6.7	5208	PASS

5E39457.D appIX05-01-2023_.M Thu May 04 12:51:46 2023

Methods: SW-846 8260B

Data File : C:\msdchem\1\data\2023-05-02\I756321.D Vial: 1
Acq On : 2 May 2023 8:34 am Operator: jeniferw
Sample : BFB Inst : MSVOA16
Misc : MS53904,VI2910,,,,, Multiplr: 1.00
MS Integration Params: tiny.p

Method : C:\msdchem\1\met...\VI-2023-05-02.m (RTE Integrator)
Title : SW-846 Method 5035A/8260B



AutoFind: Scans 1825, 1826, 1827; Background Corrected with Scan 1819

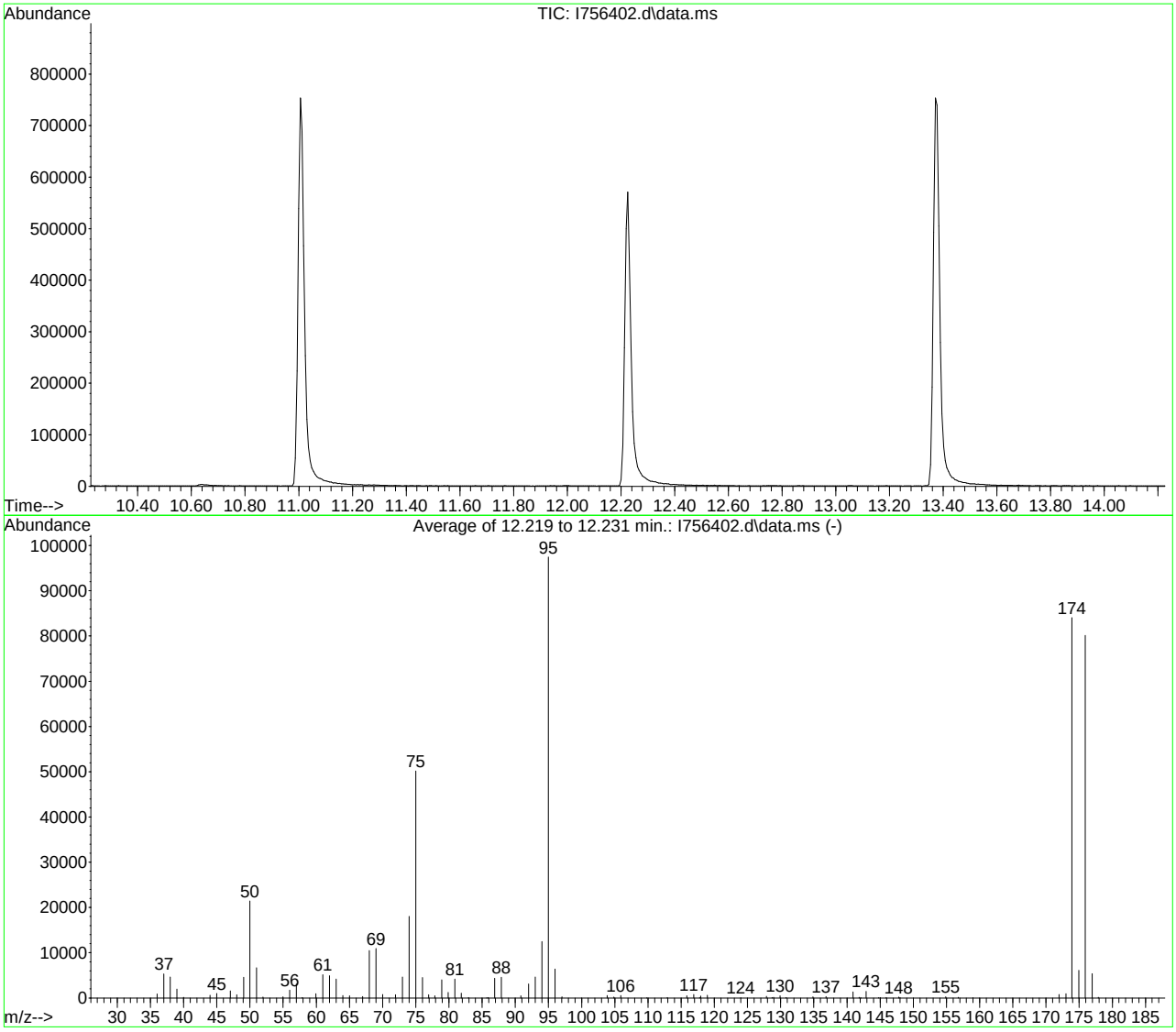
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.8	21651	PASS
75	95	30	60	52.9	50141	PASS
95	95	100	100	100.0	94821	PASS
96	95	5	9	6.9	6547	PASS
173	174	0.00	2	1.2	949	PASS
174	95	50	100	81.6	77384	PASS
175	174	5	9	7.8	6046	PASS
176	174	95	101	95.5	73883	PASS
177	176	5	9	6.7	4942	PASS

I756321.D VI-2023-05-02.m Tue May 02 13:49:25 2023

Methods: SW-846 8260B

Data File : C:\msdchem\1\data\jo...2023\vi2913\I756402.d Vial: 29
Acq On : 3 May 2023 9:01 pm Operator: jeniferw
Sample : BFB Inst : MSVOA16
Misc : MS53924,VI2913,,,,, Multiplr: 1.00
MS Integration Params: tiny.p

Method : C:\msdchem\2\met...\VI-2023-05-02.m (RTE Integrator)
Title : SW-846 Method 5035A/8260B



AutoFind: Scans 1826, 1827, 1828; Background Corrected with Scan 1819

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.0	21443	PASS
75	95	30	60	51.5	50173	PASS
95	95	100	100	100.0	97437	PASS
96	95	5	9	6.6	6404	PASS
173	174	0.00	2	1.1	939	PASS
174	95	50	100	86.3	84056	PASS
175	174	5	9	7.3	6114	PASS
176	174	95	101	95.4	80165	PASS
177	176	5	9	6.7	5351	PASS

I756402.d VI-2023-05-02.m Thu May 04 07:10:44 2023

Manual Integrations APPROVED (compounds with "m" flag)
Karen Watson
04/11/23 15:49

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75426.D
Acq On : 11 Apr 2023 10:06 am
Operator : davidb2
Sample : IC2924-1 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 11 11:05:25 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorobenzene	4.025	96	404269	50.00	ug/L		-0.02
62) Chlorobenzene-d5	6.043	117	275272	50.00	ug/L		-0.02
85) 1,4-Dichlorobenzene-d4	7.805	152	145115	50.00	ug/L		-0.02
System Monitoring Compounds							
39) Dibromofluoromethane	3.556	113	110328	59.12	ug/L		-0.01
Spiked Amount 50.000	Range 83 - 118		Recovery = 118.24%#				
50) 1,2-Dichloroethane-d4	3.867	65	117748	86.09	ug/L		-0.01
Spiked Amount 50.000	Range 79 - 125		Recovery = 172.18%#				
63) Toluene-d8	4.989	98	381676	39.18	ug/L		-0.02
Spiked Amount 50.000	Range 85 - 112		Recovery = 78.36%#				
86) 4-Bromofluorobenzene	6.945	174	111222	38.38	ug/L		-0.02
Spiked Amount 50.000	Range 83 - 118		Recovery = 76.76%#				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.227	85	1403	0.88	ug/L		89
3) Chloromethane	1.386	50	1668	0.89	ug/L		98
4) 1,3-butadiene	1.453	39	2689	1.67	ug/L		80
5) Vinyl Chloride	1.440	62	1360	0.77	ug/L		82
6) Bromomethane	1.672	94	1312	1.91	ug/L		97
7) Chloroethane	1.764	64	1123	1.00	ug/L		89
8) Trichlorofluoromethane	1.861	101	2775	1.21	ug/L		87
9) Ethyl Ether	2.068	59	1224	0.86	ug/L	#	74
10) Ethanol	2.154	45	214m	4.62	ug/L		
11) 1,2-Dichlorotrifluoroe...	2.190	67	1799	0.92	ug/L		98
12) 1,1-Dichloroethene	2.190	61	2577	1.08	ug/L		91
13) Freon 113	2.221	101	1443	0.96	ug/L		96
14) Carbon Disulfide	2.209	76	5040	1.15	ug/L		79
15) Iodomethane	2.282	142	2109	2.67	ug/L		99
16) Acrolein	2.391	56	1875	3.42	ug/L		99
17) Allyl chloride	2.483	41	2026	1.05	ug/L		88
18) Methylene Chloride	2.544	49	6617	2.45	ug/L		94
19) Acetone	2.568	43	6177	5.81	ug/L		92
20) Methyl acetate	2.641	43	11183	4.77	ug/L		96
21) trans-1,2-Dichloroethene	2.641	61	2143	0.90	ug/L		94
22) Hexane	2.690	56	1269	0.97	ug/L	#	83
23) Methyl Tert Butyl Ether	2.702	73	4219	0.91	ug/L		86
24) Tert Butyl Alcohol	2.745	59	2325	4.64	ug/L	#	67
25) Acetonitrile	2.836	41	4739	9.19	ug/L		75
26) Di-isopropyl ether	2.916	45	4575	0.95	ug/L		90
27) Chloroprene	2.983	53	2270	0.99	ug/L		90
28) 1,1-Dichloroethane	2.995	63	3030	0.99	ug/L		91
29) Acrylonitrile	3.019	52	4852	4.55	ug/L		86
30) ETBE	3.129	59	3612	0.74	ug/L		98
31) Vinyl acetate	3.129	43	16351	4.44	ug/L		93
32) cis-1,2-Dichloroethene	3.300	96	1888	1.06	ug/L		84
33) 2,2-Dichloropropane	3.361	77	1879	0.98	ug/L		87
34) Bromochloromethane	3.416	128	1058	1.17	ug/L		87
35) Cyclohexane	3.422	56	2380	0.86	ug/L	#	84

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75426.D
Acq On : 11 Apr 2023 10:06 am
Operator : davidb2
Sample : IC2924-1 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 11 11:05:25 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	3.452	83	3390	1.09	ug/L		99
37) Ethyl acetate	3.513	43	14165	4.87	ug/L		97
38) Tetrahydrofuran	3.550	42	986m	0.85	ug/L		
40) Carbon Tetrachloride	3.544	117	1858m	0.78	ug/L		
41) 1,1,1-Trichloroethane	3.580	97	2635	1.06	ug/L		93
42) 2-Butanone	3.623	43	7816	4.39	ug/L		92
43) 1,1-Dichloropropene	3.647	75	2213	1.02	ug/L		86
44) tert-Butyl formate	3.702	59	2498	2.66	ug/L	#	49
45) Propionitrile	3.794	54	4620	7.79	ug/L		95
46) Methacrylonitrile	3.806	41	16431	9.93	ug/L		96
47) Benzene	3.794	78	6970	1.03	ug/L		95
48) TAME	3.848	73	3342	0.77	ug/L		90
49) Isobutyl alcohol	3.885	43	2119m	14.79	ug/L		
51) 1,2-Dichloroethane	3.903	62	2413	1.00	ug/L		94
52) Tert Amyl Alcohol	3.946	59	1542	3.82	ug/L	#	62
53) Trichloroethene	4.129	95	2074	1.12	ug/L		95
54) Methylcyclohexane	4.129	83	2216	0.93	ug/L	#	84
55) Dibromomethane	4.385	93	1093	0.94	ug/L		77
56) 1,2-Dichloropropane	4.440	63	1461	0.87	ug/L		83
57) Bromodichloromethane	4.476	83	2179	1.00	ug/L		94
58) Methyl methacrylate	4.556	41	1773	1.04	ug/L	#	79
59) 1,4-Dioxane	4.598	88	362m	8.41	ug/L		
60) 2-Chloroethyl vinyl ether	4.824	63	6693	4.65	ug/L		95
61) cis-1,3-Dichloropropene	4.867	75	1833	0.68	ug/L		91
64) Toluene	5.019	91	7372	0.81	ug/L		88
65) 2-Nitropropane	5.165	41	1390	1.94	ug/L	#	73
66) 4-Methyl-2-pentanone	5.263	43	11843	3.36	ug/L		95
67) trans-1,3-Dichloropropene	5.287	75	1565	0.51	ug/L		79
68) Tetrachloroethene	5.281	166	2070	0.76	ug/L		91
69) Ethyl methacrylate	5.385	69	1386	2.84	ug/L	#	77
70) 1,1,2-Trichloroethane	5.391	83	1497	0.77	ug/L	#	83
71) Dibromochloromethane	5.525	129	1136	0.52	ug/L		79
72) 1,3-Dichloropropane	5.586	76	2438	0.68	ug/L		92
73) 1,2-Dibromoethane	5.690	107	1449	0.61	ug/L		84
74) 3,3-dimethyl-1-butanol	5.799	57	10278	14.68	ug/L		95
75) 2-hexanone	5.830	43	10856	2.81	ug/L		88
76) 1-Chlorohexane	6.037	91	2630m	1.58	ug/L		
77) Ethylbenzene	6.068	91	7558	0.78	ug/L		97
78) Chlorobenzene	6.055	112	4829	0.78	ug/L		80
79) 1,1,1,2-Tetrachloroethane	6.098	131	1126	0.54	ug/L		89
80) m,p-Xylene	6.171	91	11356	1.51	ug/L		99
81) o-Xylene	6.488	91	5991	0.82	ug/L		90
82) Styrene	6.531	104	3992	0.69	ug/L		96
83) Bromoform	6.549	173	590m	0.37	ug/L		
84) Isopropylbenzene	6.726	105	6496	0.75	ug/L		96
87) cis-1,4-Dichloro-2-butene	6.988	53	483m	0.25	ug/L		
88) n-Propylbenzene	7.043	91	8086	0.31	ug/L		98
89) Bromobenzene	7.025	156	1725	0.29	ug/L		96
90) 1,1,2,2-Tetrachloroethane	7.098	83	2283	0.28	ug/L		92
91) 1,3,5-Trimethylbenzene	7.195	105	5303	0.28	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75426.D
Acq On : 11 Apr 2023 10:06 am
Operator : davidb2
Sample : IC2924-1 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 11 11:05:25 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration

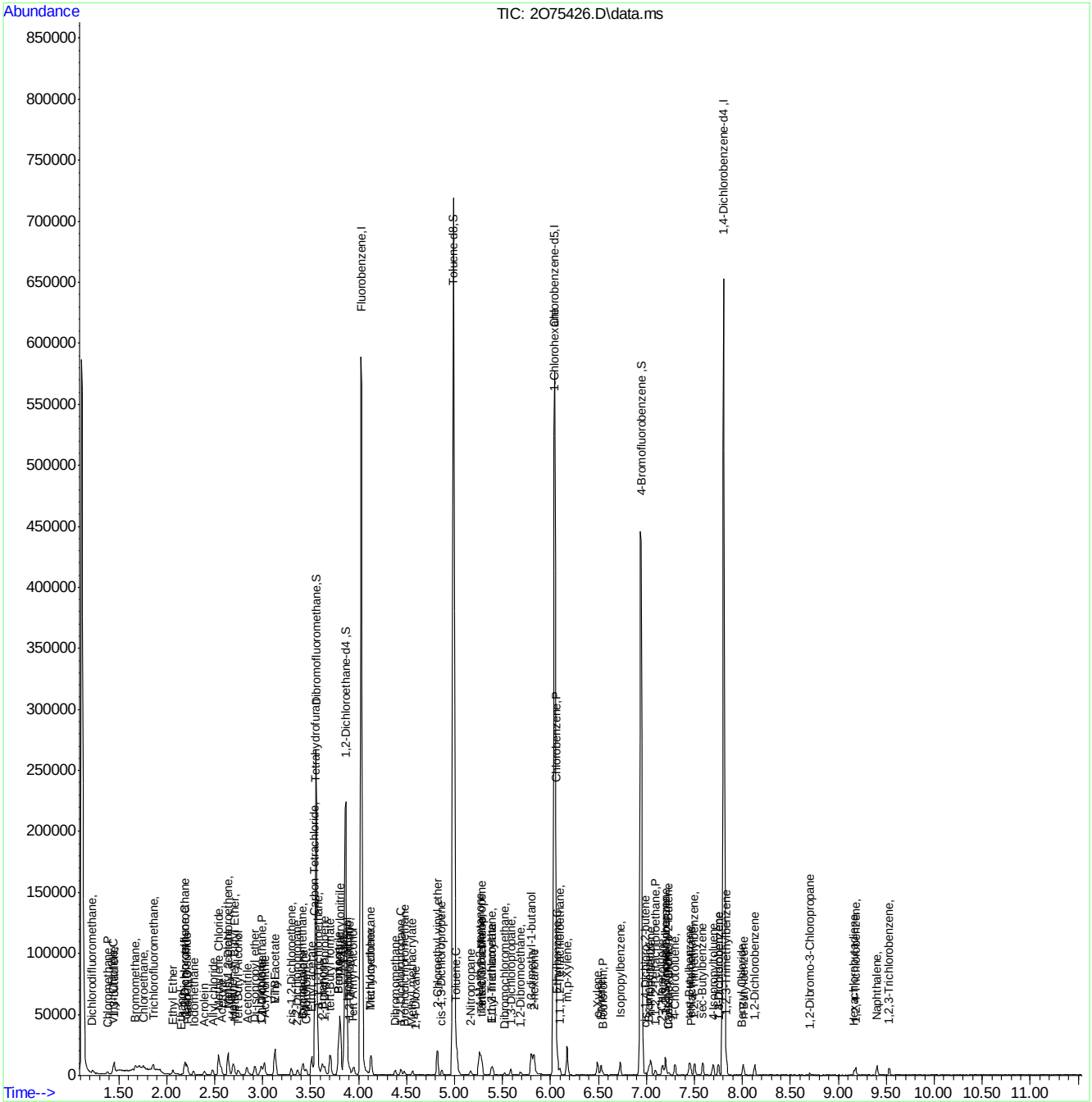
	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
92)	2-Chlorotoluene	7.165	91	5642	0.32	ug/L	97
93)	trans-1,4-Dichloro-2-B...	7.226	53	377m	0.18	ug/L	
94)	1,2,3-Trichloropropane	7.201	110	872m	0.34	ug/L	
95)	Cyclohexanone	7.232	55	358m	0.76	ug/L	
96)	4-Chlorotoluene	7.299	91	4787	0.28	ug/L	98
97)	tert-Butylbenzene	7.445	91	3031	0.38	ug/L	92
99)	1,2,4-Trimethylbenzene	7.500	105	4855	0.32	ug/L	96
100)	Pentachloroethane	7.470	167	495m	0.18	ug/L	
101)	sec-Butylbenzene	7.586	105	6657	0.30	ug/L	98
102)	4-Isopropyltoluene	7.695	119	5625	0.38	ug/L	95
103)	1,3-Dichlorobenzene	7.750	146	3519	0.30	ug/L	89
104)	1,2,3-Trimethylbenzene	7.835	105	5719	0.37	ug/L	97
105)	1,4-Dichlorobenzene	7.750	146	3519	0.29	ug/L	90
106)	n-Butylbenzene	8.012	92	2114	0.27	ug/L	93
107)	Benzyl Chloride	7.994	126	261m	0.11	ug/L	
108)	1,2-Dichlorobenzene	8.128	146	3483	0.30	ug/L	96
109)	1,2-Dibromo-3-Chloropr...	8.701	75	287m	0.16	ug/L	
110)	Hexachlorobutadiene	9.165	225	520m	0.20	ug/L	
111)	1,2,4-Trichlorobenzene	9.183	180	1748	0.28	ug/L	86
112)	Naphthalene	9.402	128	5830	0.23	ug/L	93
113)	1,2,3-Trichlorobenzene	9.530	180	1730	0.29	ug/L	88

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75426.D
Acq On : 11 Apr 2023 10:06 am
Operator : davidb2
Sample : IC2924-1 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 11 11:05:25 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration



Manual Integration Approval Summary

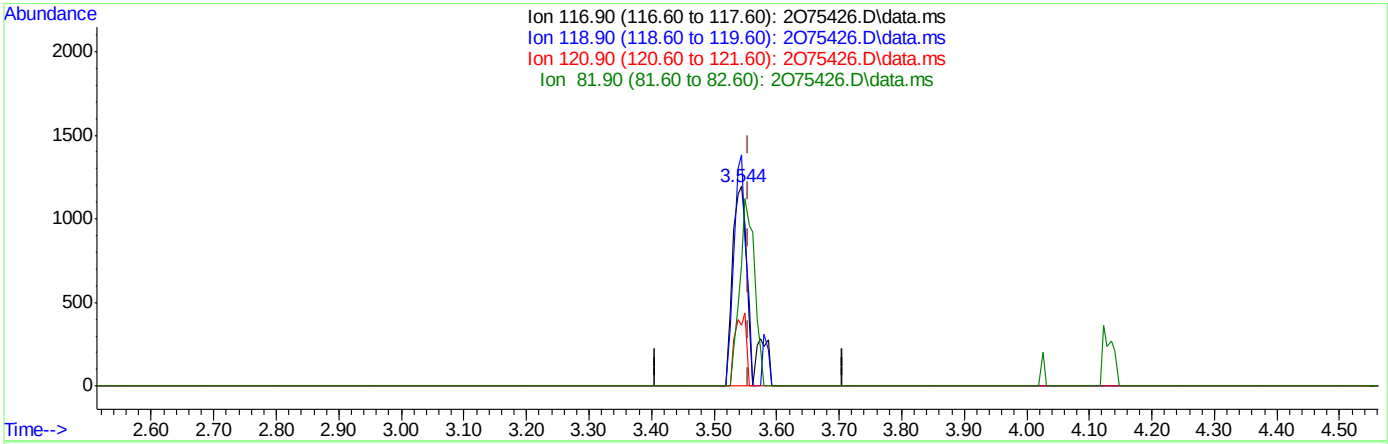
Sample Number: V2O2924-IC2924
Lab FileID: 2O75426.D
Injection Time: 04/11/23 10:06
Method: SW846 8260D
Analyst approved: 04/11/23 14:45 David Butler
Supervisor approved: 04/11/23 15:49 Karen Watson

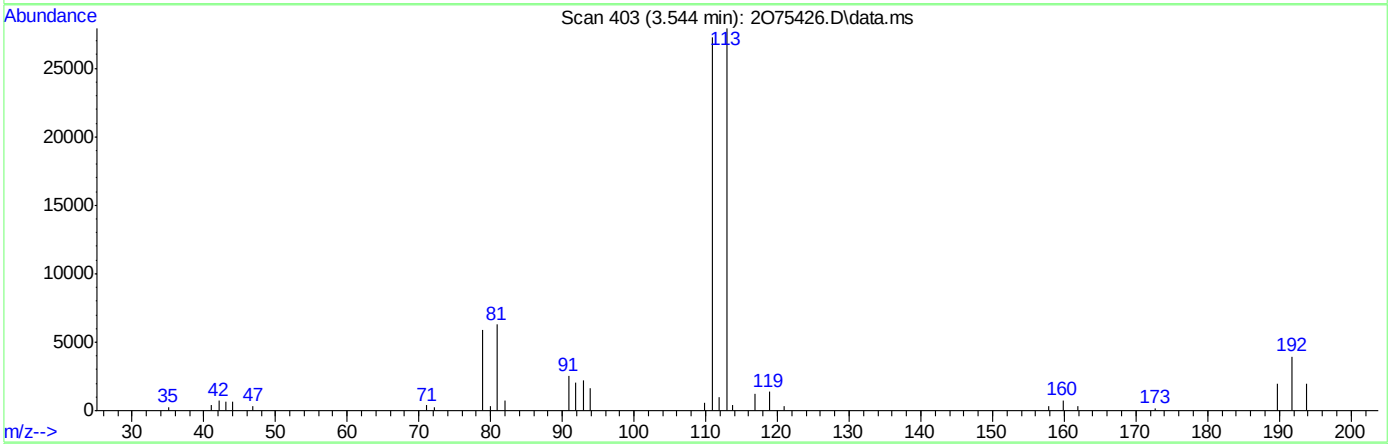
Parameter	CAS	Sig#	R.T. (min.)	Reason
Ethyl Alcohol	64-17-5		2.15	Missed peak
Carbon Tetrachloride	56-23-5		3.54	Poor instrument integration
Tetrahydrofuran	109-99-9		3.55	Missed peak
Isobutyl Alcohol	78-83-1		3.89	Poor instrument integration
1,4-Dioxane	123-91-1		4.60	Missed peak
1-Chlorohexane	544-10-5		6.04	Poor instrument integration
Bromoform	75-25-2		6.55	Missed peak
cis-1,4-Dichloro-2-Butene	1476-11-5		6.99	Missed peak
1,2,3-Trichloropropane	96-18-4		7.20	Missed peak
Cyclohexanone	108-94-1		7.23	Missed peak
trans-1,4-Dichloro-2-Butene	110-57-6		7.23	Missed peak
Pentachloroethane	76-01-7		7.47	Missed peak
Benzyl Chloride	100-44-7		7.99	Missed peak
1,2-Dibromo-3-chloropropane	96-12-8		8.70	Missed peak
Hexachlorobutadiene	87-68-3		9.16	Missed peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75426.D
Acq On : 11 Apr 2023 10:06 am
Operator : davidb2
Sample : IC2924-1 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 11 10:21:10 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75426.D\data.ms

(40) Carbon Tetrachloride ( )

3.544min (-0.012) 0.78ug/L

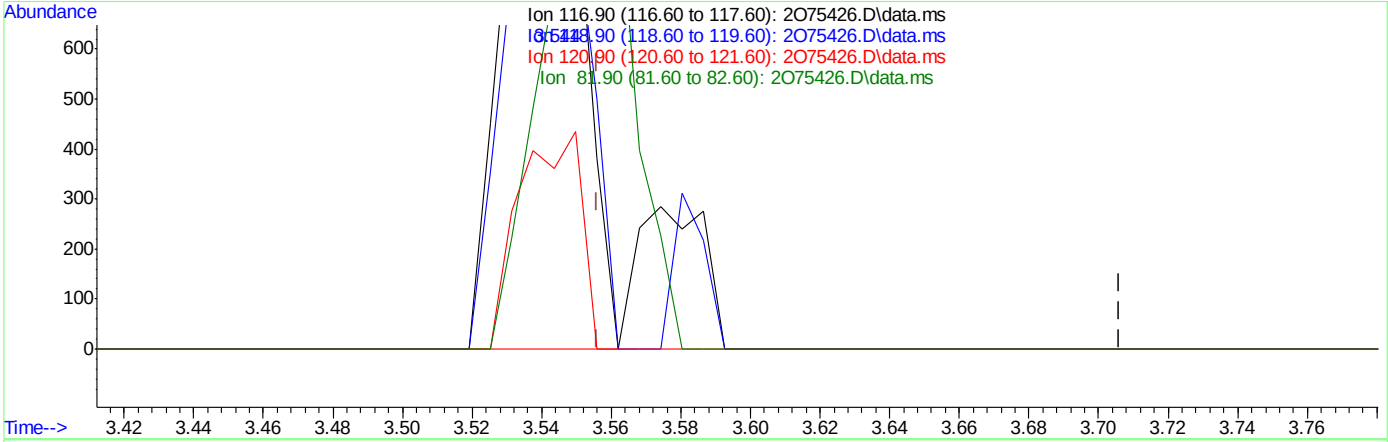
response 1858

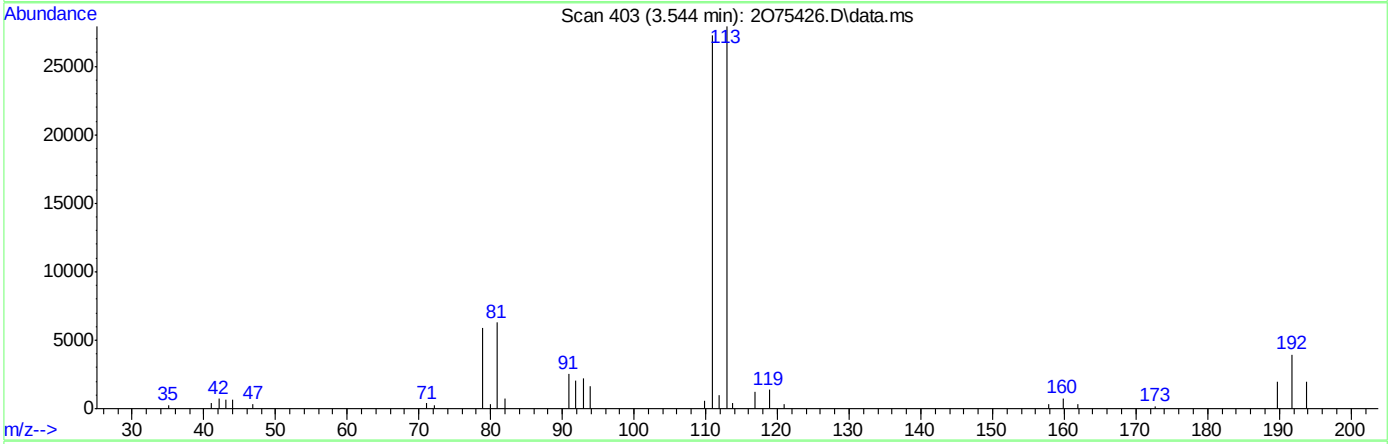
Ion	Exp%	Act%
116.90	100	100
118.90	96.00	115.90
120.90	31.80	30.21
81.90	22.80	60.50#

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75426.D
Acq On : 11 Apr 2023 10:06 am
Operator : davidb2
Sample : IC2924-1 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 11 10:21:10 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75426.D\data.ms

(40) Carbon Tetrachloride ( )

3.544min (-0.012) 0.78ug/L m

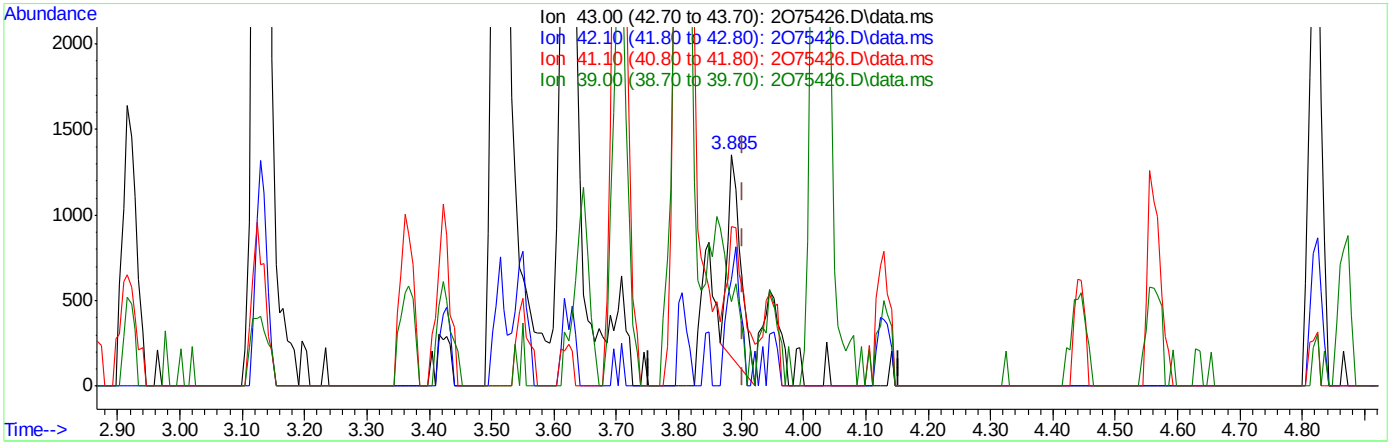
response 1858

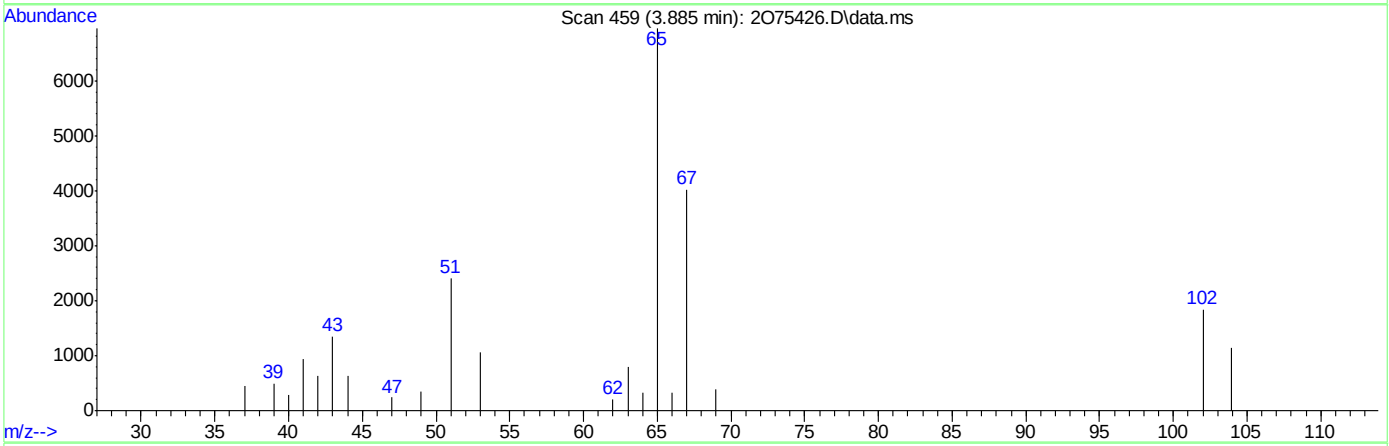
Ion	Exp%	Act%
116.90	100	100
118.90	96.00	115.90
120.90	31.80	30.21
81.90	22.80	60.50#

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75426.D
Acq On : 11 Apr 2023 10:06 am
Operator : davidb2
Sample : IC2924-1 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 11 10:21:10 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75426.D\data.ms

(49) Isobutyl alcohol

3.885min (-0.018) 11.89ug/L

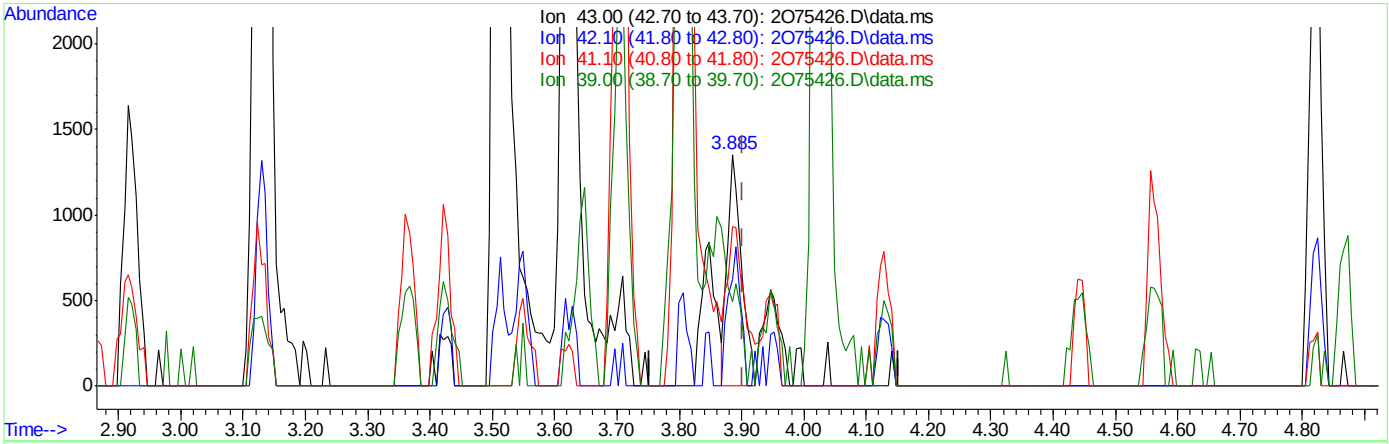
response 1703

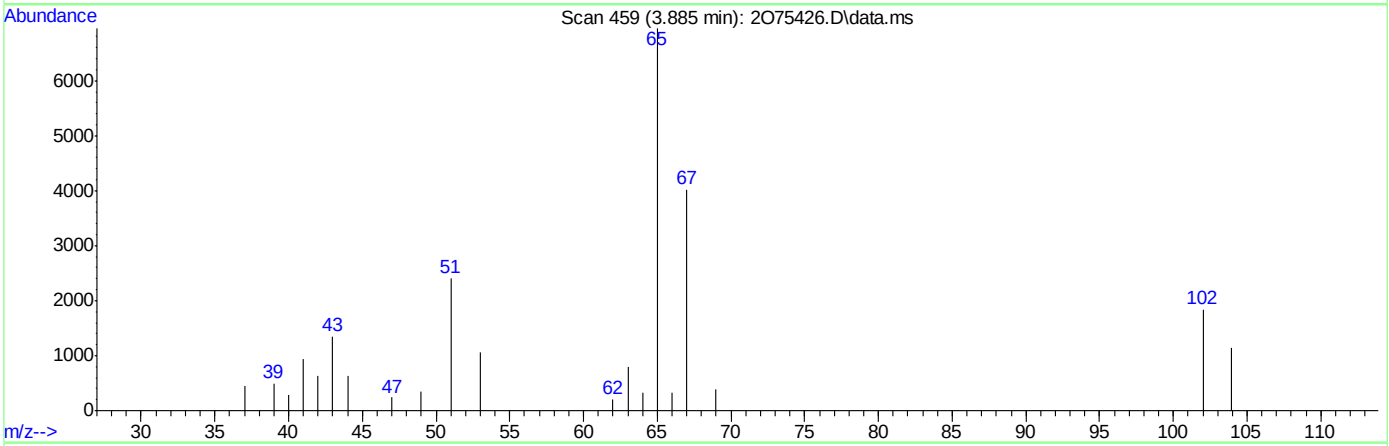
Ion	Exp%	Act%
43.00	100	100
42.10	60.60	46.09
41.10	73.30	50.37
39.00	24.10	36.26

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75426.D
Acq On : 11 Apr 2023 10:06 am
Operator : davidb2
Sample : IC2924-1 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 11 10:21:10 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75426.D\data.ms

(49) Isobutyl alcohol

3.885min (-0.018) 14.79ug/L m

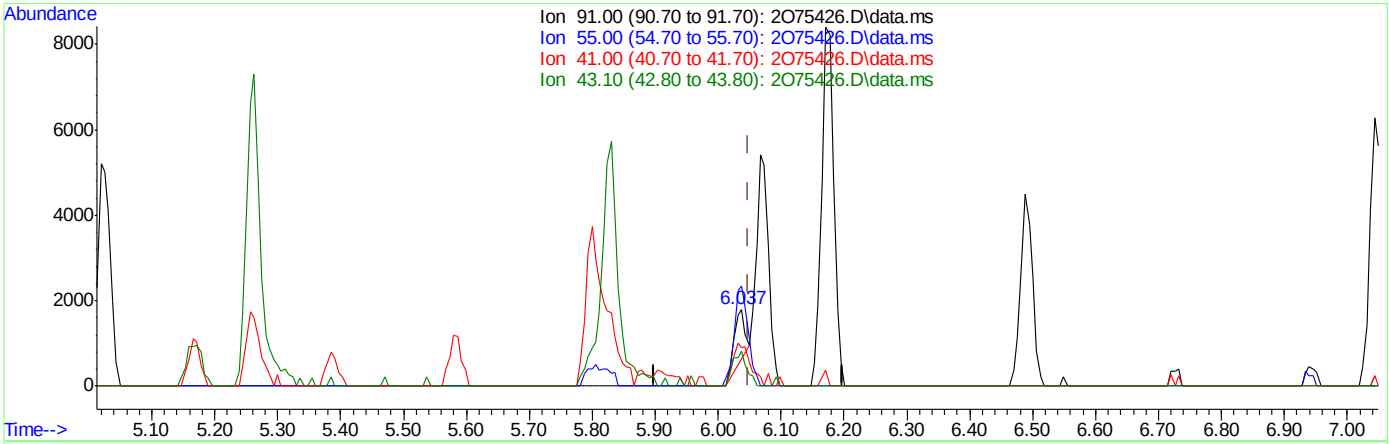
response 2119

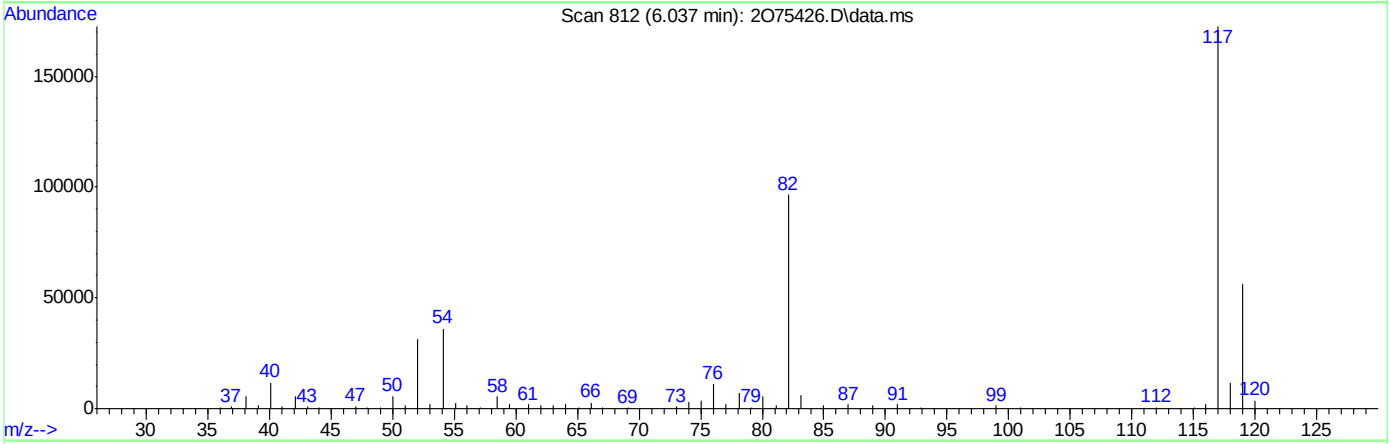
Ion	Exp%	Act%
43.00	100	100
42.10	60.60	46.09
41.10	73.30	68.69
39.00	24.10	36.26

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75426.D
Acq On : 11 Apr 2023 10:06 am
Operator : davidb2
Sample : IC2924-1 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 11 10:21:10 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75426.D\data.ms

(76) 1-Chlorohexane

6.037min (-0.012) 0.96ug/L

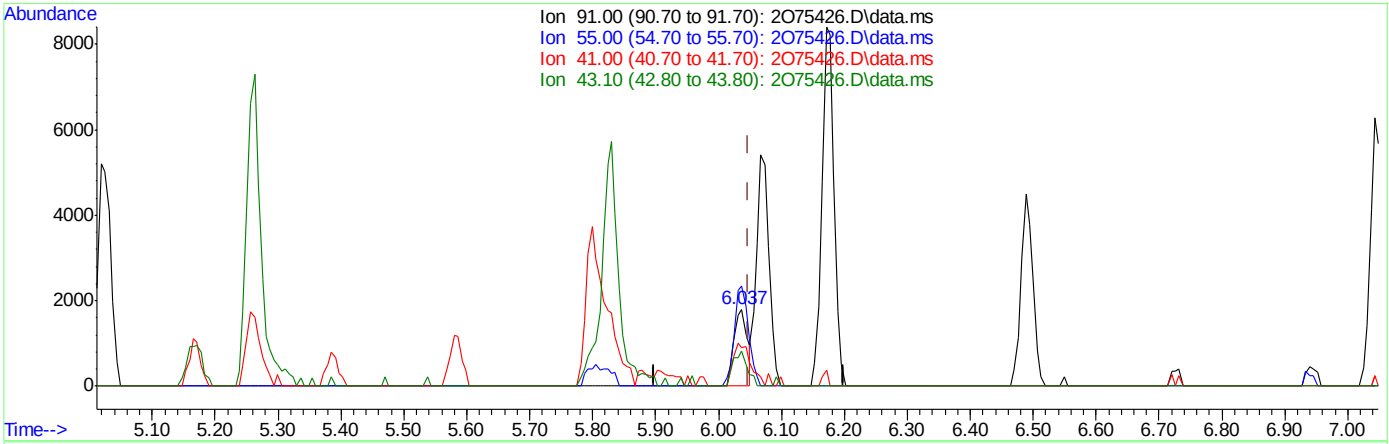
response 1595

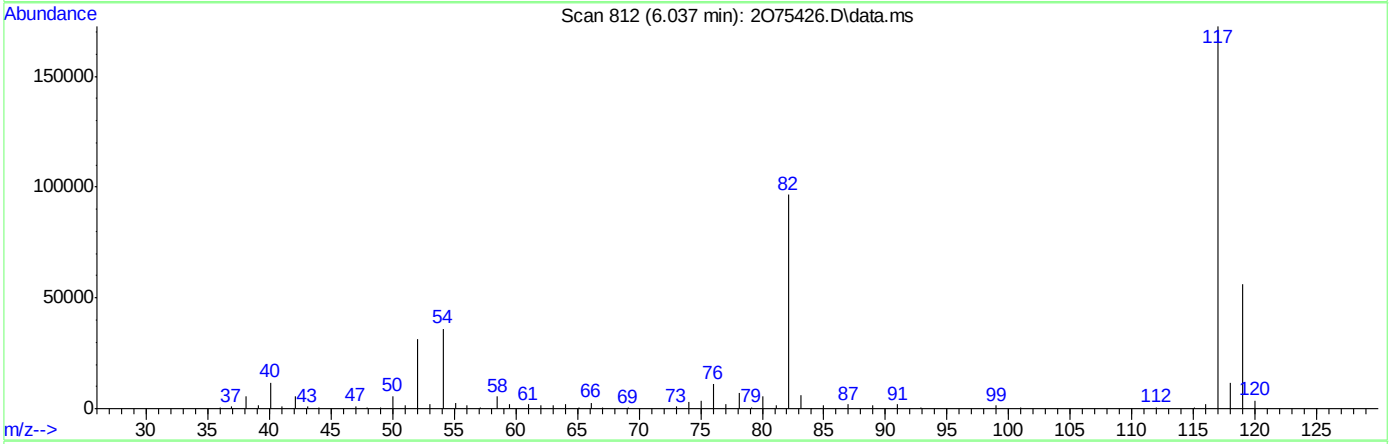
Ion	Exp%	Act%
91.00	100	100
55.00	73.60	119.55#
41.00	56.00	49.97
43.10	44.90	46.46

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75426.D
Acq On : 11 Apr 2023 10:06 am
Operator : davidb2
Sample : IC2924-1 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 11 10:21:10 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75426.D\data.ms

(76) 1-Chlorohexane

6.037min (-0.012) 1.58ug/L m

response 2630

Ion	Exp%	Act%
91.00	100	100
55.00	73.60	130.75#
41.00	56.00	49.97
43.10	44.90	46.46

Manual Integrations APPROVED (compounds with "m" flag)
Karen Watson
04/11/23 15:49

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75427.D
Acq On : 11 Apr 2023 10:38 am
Operator : davidb2
Sample : IC2924-2 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 11 11:06:08 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	4.031	96	418939	50.00	ug/L	-0.01
62) Chlorobenzene-d5	6.043	117	292051	50.00	ug/L	-0.02
85) 1,4-Dichlorobenzene-d4	7.805	152	149081	50.00	ug/L	-0.02
System Monitoring Compounds						
39) Dibromofluoromethane	3.556	113	115291	59.62	ug/L	-0.01
Spiked Amount 50.000	Range 83 - 118		Recovery = 119.24%#			
50) 1,2-Dichloroethane-d4	3.867	65	118041	83.28	ug/L	-0.01
Spiked Amount 50.000	Range 79 - 125		Recovery = 166.56%#			
63) Toluene-d8	4.989	98	403334	39.02	ug/L	-0.02
Spiked Amount 50.000	Range 85 - 112		Recovery = 78.04%#			
86) 4-Bromofluorobenzene	6.946	174	114882	38.59	ug/L	-0.02
Spiked Amount 50.000	Range 83 - 118		Recovery = 77.18%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.233	85	8026	4.83	ug/L	95
3) Chloromethane	1.386	50	8968	4.60	ug/L	96
4) 1,3-butadiene	1.453	39	10488	6.30	ug/L	79
5) Vinyl Chloride	1.440	62	9145	4.98	ug/L	99
6) Bromomethane	1.678	94	7101	9.97	ug/L	96
7) Chloroethane	1.764	64	6545	5.84	ug/L	96
8) Trichlorofluoromethane	1.861	101	17030	7.18	ug/L	94
9) Ethyl Ether	2.068	59	7432	5.05	ug/L	93
10) Ethanol	2.154	45	3285	68.47	ug/L	86
11) 1,2-Dichlorotrifluoroe...	2.190	67	10660	5.27	ug/L	97
12) 1,1-Dichloroethene	2.190	61	13451	5.44	ug/L	98
13) Freon 113	2.221	101	8388	5.38	ug/L	94
14) Carbon Disulfide	2.209	76	27077	5.98	ug/L	98
15) Iodomethane	2.282	142	12535	13.73	ug/L	90
16) Acrolein	2.398	56	12817	22.57	ug/L	100
17) Allyl chloride	2.483	41	10805	5.42	ug/L	97
18) Methylene Chloride	2.544	49	16604	5.99	ug/L	96
19) Acetone	2.568	43	26976	24.47	ug/L	98
20) Methyl acetate	2.641	43	62161	25.61	ug/L	98
21) trans-1,2-Dichloroethene	2.641	61	12977	5.25	ug/L	94
22) Hexane	2.690	56	6473	4.80	ug/L	96
23) Methyl Tert Butyl Ether	2.702	73	24979	5.18	ug/L	94
24) Tert Butyl Alcohol	2.745	59	17049	32.83	ug/L	81
25) Acetonitrile	2.837	41	20649	39.00	ug/L	97
26) Di-isopropyl ether	2.922	45	26670	5.32	ug/L	99
27) Chloroprene	2.983	53	13193	5.57	ug/L	90
28) 1,1-Dichloroethane	2.995	63	17324	5.45	ug/L	94
29) Acrylonitrile	3.019	52	26007	23.51	ug/L	99
30) ETBE	3.129	59	23811	4.70	ug/L	87
31) Vinyl acetate	3.129	43	94424	24.75	ug/L	93
32) cis-1,2-Dichloroethene	3.300	96	10712	5.78	ug/L	93
33) 2,2-Dichloropropane	3.367	77	10623	5.32	ug/L	94
34) Bromochloromethane	3.416	128	5761	6.13	ug/L	93
35) Cyclohexane	3.422	56	12672	4.42	ug/L #	88

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75427.D
Acq On : 11 Apr 2023 10:38 am
Operator : davidb2
Sample : IC2924-2 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 11 11:06:08 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	3.452	83	18469	5.71	ug/L		95
37) Ethyl acetate	3.513	43	75450	25.03	ug/L		99
38) Tetrahydrofuran	3.550	42	5967	4.98	ug/L		92
40) Carbon Tetrachloride	3.544	117	10480m	4.22	ug/L		
41) 1,1,1-Trichloroethane	3.580	97	15045	5.86	ug/L		90
42) 2-Butanone	3.623	43	43815	23.76	ug/L		100
43) 1,1-Dichloropropene	3.647	75	12251	5.46	ug/L		93
44) tert-Butyl formate	3.708	59	14279	14.66	ug/L	#	66
45) Propionitrile	3.794	54	28235	45.92	ug/L		90
46) Methacrylonitrile	3.806	41	90690	52.89	ug/L		98
47) Benzene	3.794	78	39027	5.59	ug/L		99
48) TAME	3.849	73	22374	4.95	ug/L		95
49) Isobutyl alcohol	3.885	43	12894m	86.84	ug/L		
51) 1,2-Dichloroethane	3.903	62	13959	5.56	ug/L		99
52) Tert Amyl Alcohol	3.946	59	12528	29.95	ug/L		86
53) Trichloroethene	4.129	95	11093	5.77	ug/L		97
54) Methylcyclohexane	4.129	83	13379	5.44	ug/L		96
55) Dibromomethane	4.379	93	7335	6.06	ug/L		81
56) 1,2-Dichloropropane	4.446	63	9125	5.24	ug/L		95
57) Bromodichloromethane	4.476	83	11730	5.20	ug/L		99
58) Methyl methacrylate	4.562	41	10196	5.76	ug/L		95
59) 1,4-Dioxane	4.598	88	3292	73.78	ug/L		94
60) 2-Chloroethyl vinyl ether	4.824	63	37919	25.41	ug/L		98
61) cis-1,3-Dichloropropene	4.867	75	12161	4.38	ug/L		95
64) Toluene	5.025	91	40965	4.26	ug/L		96
65) 2-Nitropropane	5.165	41	9300	12.25	ug/L		88
66) 4-Methyl-2-pentanone	5.257	43	74008	19.78	ug/L		95
67) trans-1,3-Dichloropropene	5.287	75	11666	3.59	ug/L		97
68) Tetrachloroethene	5.281	166	11352	3.92	ug/L		94
69) Ethyl methacrylate	5.385	69	10462	5.31	ug/L		87
70) 1,1,2-Trichloroethane	5.397	83	8109	3.94	ug/L		87
71) Dibromochloromethane	5.519	129	8357	3.58	ug/L		93
72) 1,3-Dichloropropane	5.586	76	15353	4.03	ug/L		97
73) 1,2-Dibromoethane	5.690	107	10184	4.03	ug/L		98
74) 3,3-dimethyl-1-butanol	5.799	57	73390	98.93	ug/L		99
75) 2-hexanone	5.824	43	71039	17.36	ug/L		94
76) 1-Chlorohexane	6.037	91	12032m	6.83	ug/L		
77) Ethylbenzene	6.074	91	44117	4.28	ug/L		98
78) Chlorobenzene	6.055	112	27642	4.22	ug/L		92
79) 1,1,1,2-Tetrachloroethane	6.098	131	7948	3.58	ug/L		97
80) m,p-Xylene	6.177	91	68280	8.54	ug/L		97
81) o-Xylene	6.488	91	33777	4.34	ug/L		97
82) Styrene	6.531	104	26095	4.22	ug/L		98
83) Bromoform	6.549	173	5098	3.04	ug/L		92
84) Isopropylbenzene	6.726	105	41055	4.46	ug/L		99
87) cis-1,4-Dichloro-2-butene	6.988	53	3259	1.63	ug/L	#	77
88) n-Propylbenzene	7.043	91	46695	1.75	ug/L		99
89) Bromobenzene	7.025	156	10835	1.79	ug/L		97
90) 1,1,2,2-Tetrachloroethane	7.092	83	14632	1.73	ug/L		88
91) 1,3,5-Trimethylbenzene	7.195	105	32666	1.71	ug/L		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75427.D
Acq On : 11 Apr 2023 10:38 am
Operator : davidb2
Sample : IC2924-2 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 11 11:06:08 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration

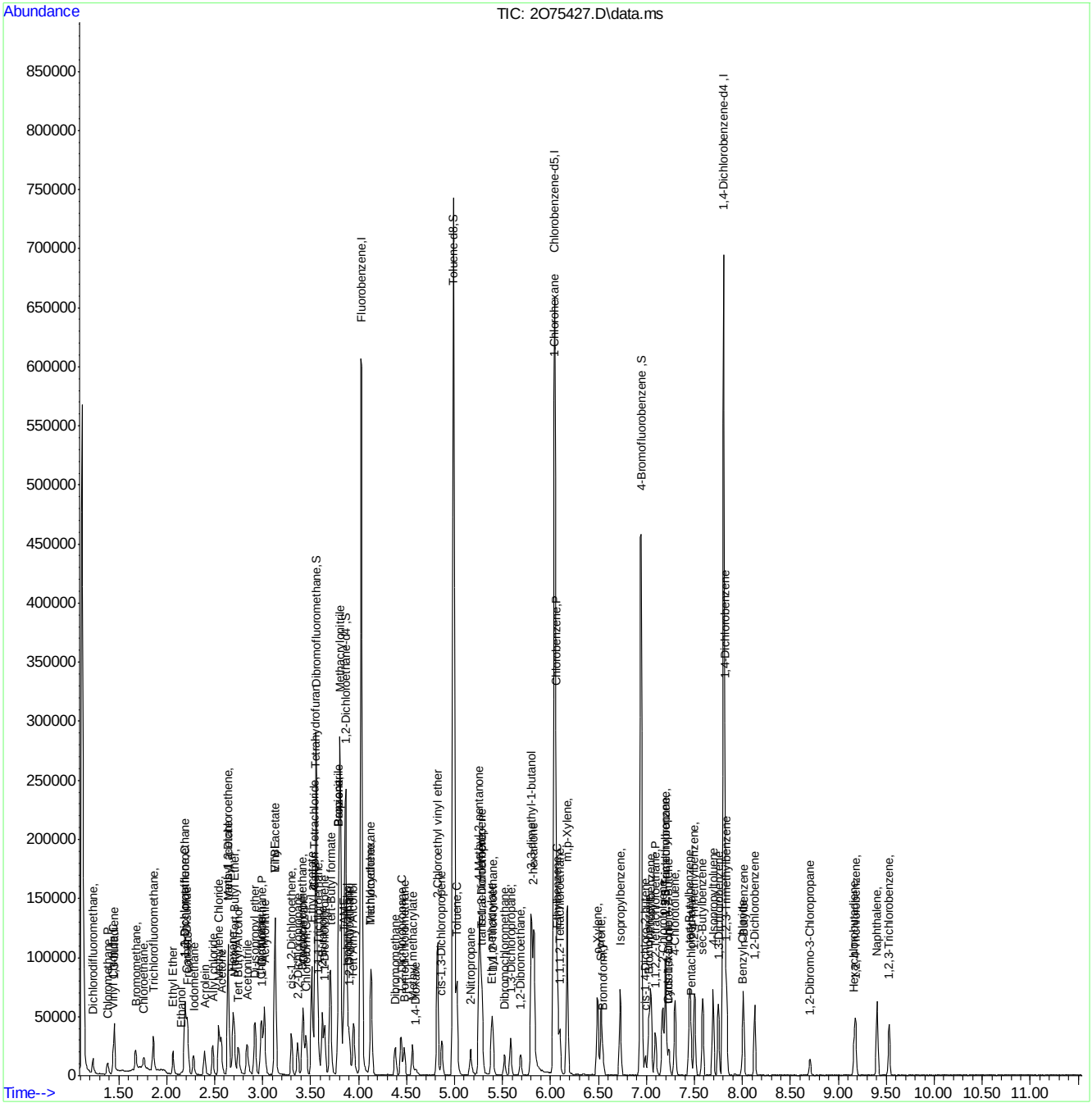
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92) 2-Chlorotoluene	7.171	91	33186	1.84	ug/L		96
93) trans-1,4-Dichloro-2-B...	7.232	53	3140	1.49	ug/L	#	79
94) 1,2,3-Trichloropropane	7.202	110	4864	1.85	ug/L		97
95) Cyclohexanone	7.232	55	2360	4.87	ug/L		88
96) 4-Chlorotoluene	7.299	91	30171	1.75	ug/L		96
97) tert-Butylbenzene	7.451	91	18018	2.19	ug/L		95
99) 1,2,4-Trimethylbenzene	7.500	105	33095	2.14	ug/L		99
100) Pentachloroethane	7.470	167	3741	1.34	ug/L	#	43
101) sec-Butylbenzene	7.586	105	38692	1.71	ug/L		98
102) 4-Isopropyltoluene	7.695	119	33338	2.19	ug/L		97
103) 1,3-Dichlorobenzene	7.750	146	21524	1.77	ug/L		99
104) 1,2,3-Trimethylbenzene	7.836	105	34774	2.18	ug/L		98
105) 1,4-Dichlorobenzene	7.817	146	21821	1.75	ug/L		86
106) n-Butylbenzene	8.012	92	15712	1.94	ug/L		91
107) Benzyl Chloride	8.000	126	2621	1.05	ug/L	#	76
108) 1,2-Dichlorobenzene	8.128	146	19398	1.66	ug/L		98
109) 1,2-Dibromo-3-Chloropr...	8.707	75	2537	1.40	ug/L		73
110) Hexachlorobutadiene	9.165	225	4110	1.55	ug/L		91
111) 1,2,4-Trichlorobenzene	9.183	180	11588	1.83	ug/L		93
112) Naphthalene	9.402	128	39921	1.55	ug/L		97
113) 1,2,3-Trichlorobenzene	9.530	180	11049	1.80	ug/L		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75427.D
Acq On : 11 Apr 2023 10:38 am
Operator : davidb2
Sample : IC2924-2 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 11 11:06:08 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration



Manual Integration Approval Summary

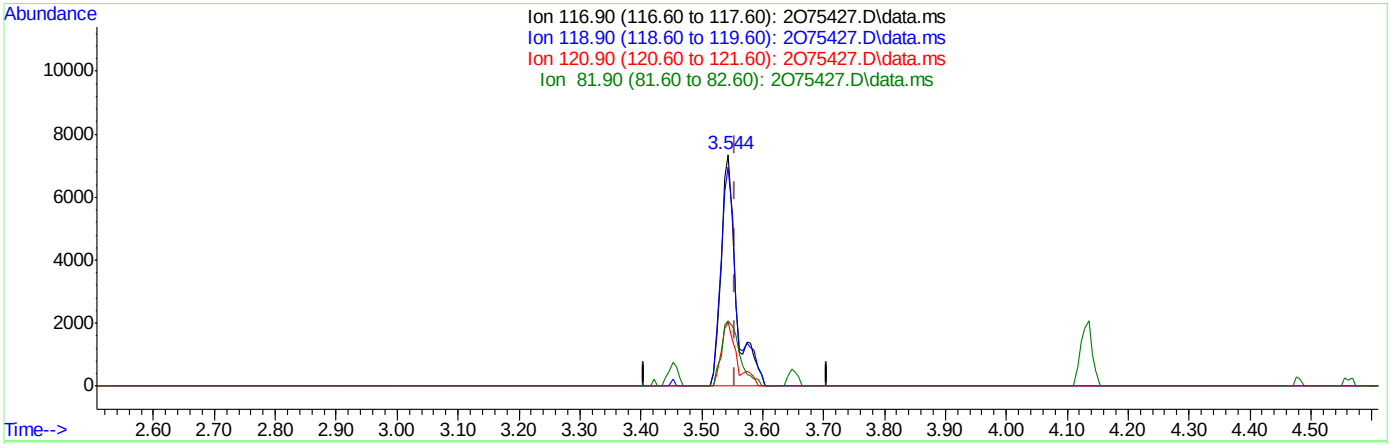
Sample Number: V2O2924-IC2924
Lab FileID: 2O75427.D
Injection Time: 04/11/23 10:38
Method: SW846 8260D
Analyst approved: 04/11/23 14:45 David Butler
Supervisor approved: 04/11/23 15:49 Karen Watson

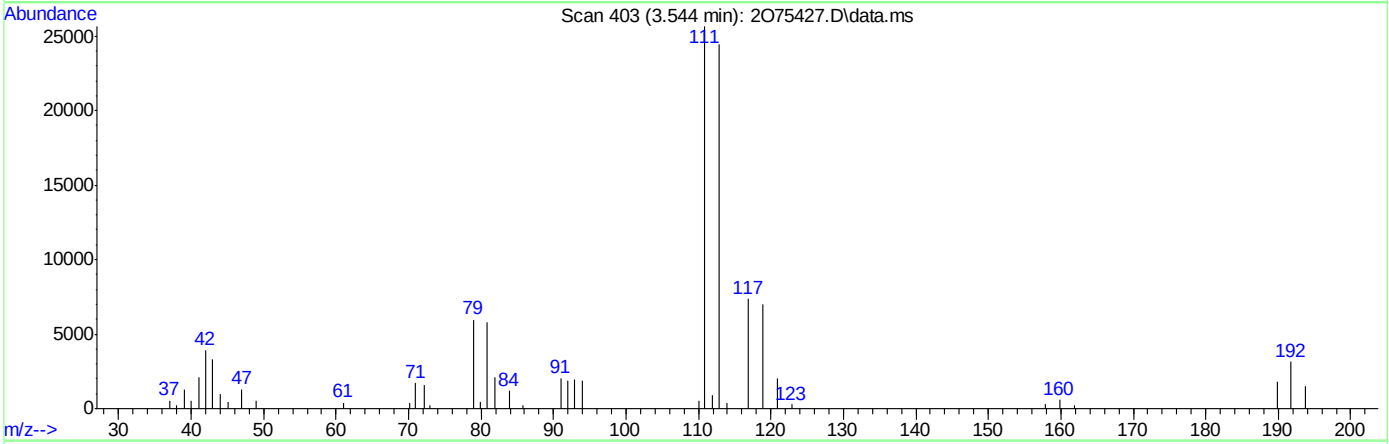
Parameter	CAS	Sig#	R.T. (min.)	Reason
Carbon Tetrachloride	56-23-5		3.54	Poor instrument integration
Isobutyl Alcohol	78-83-1		3.89	Poor instrument integration
1-Chlorohexane	544-10-5		6.04	Poor instrument integration

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75427.D
Acq On : 11 Apr 2023 10:38 am
Operator : davidb2
Sample : IC2924-2 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 11 10:49:49 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75427.D\data.ms

(40) Carbon Tetrachloride ( )

3.544min (-0.012) 5.05ug/L

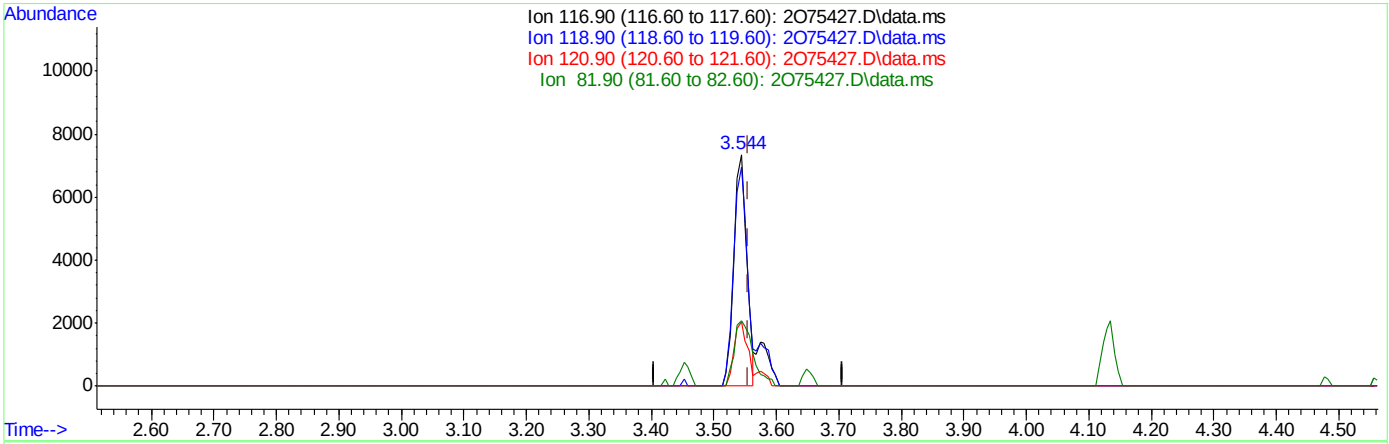
response 12549

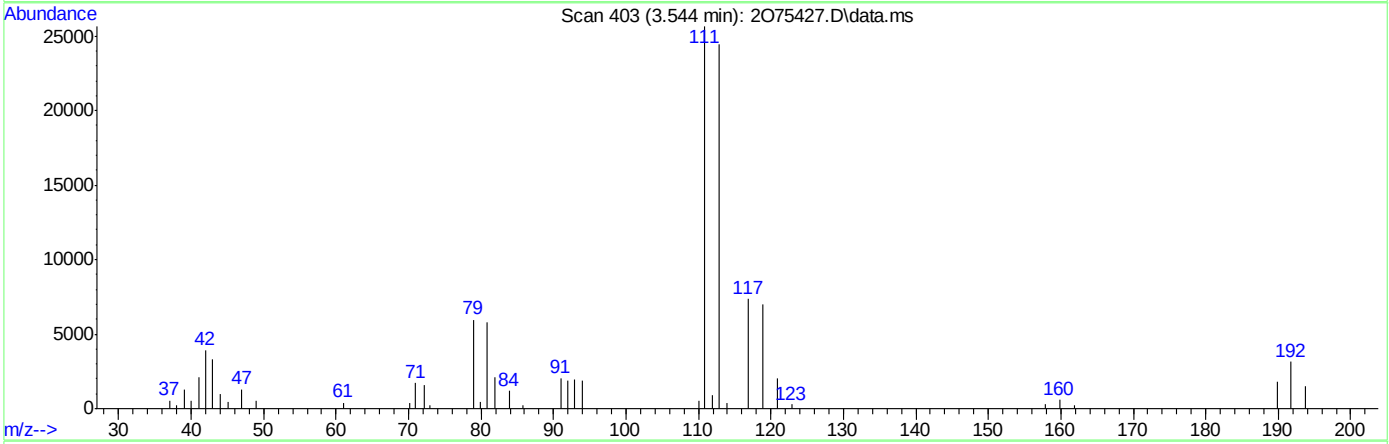
Ion	Exp%	Act%
116.90	100	100
118.90	96.00	94.68
120.90	31.80	27.81
81.90	22.80	28.19

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75427.D
Acq On : 11 Apr 2023 10:38 am
Operator : davidb2
Sample : IC2924-2 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 11 10:49:49 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75427.D\data.ms

(40) Carbon Tetrachloride ( )

3.544min (-0.012) 4.22ug/L m

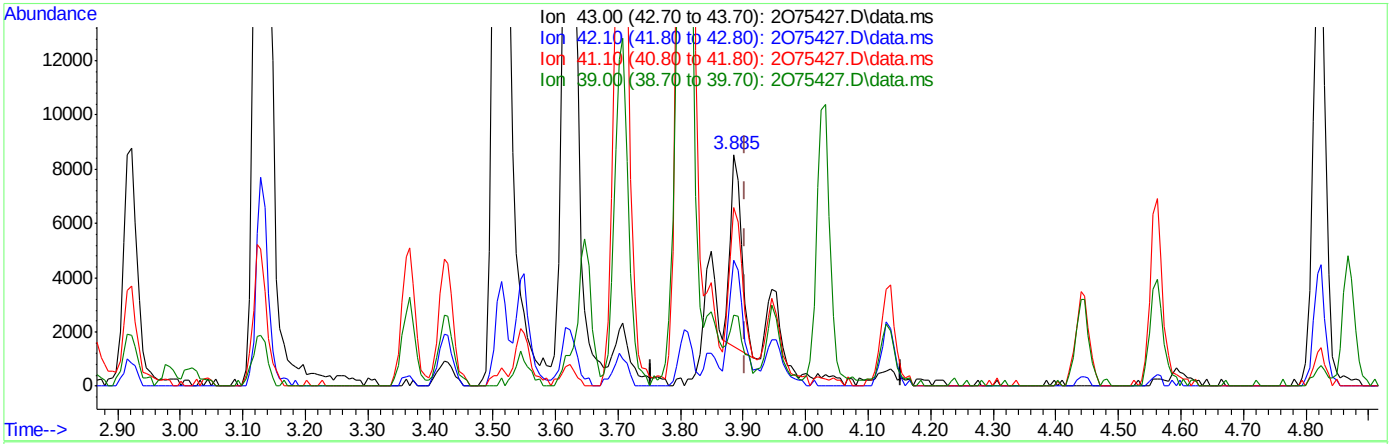
response 10480

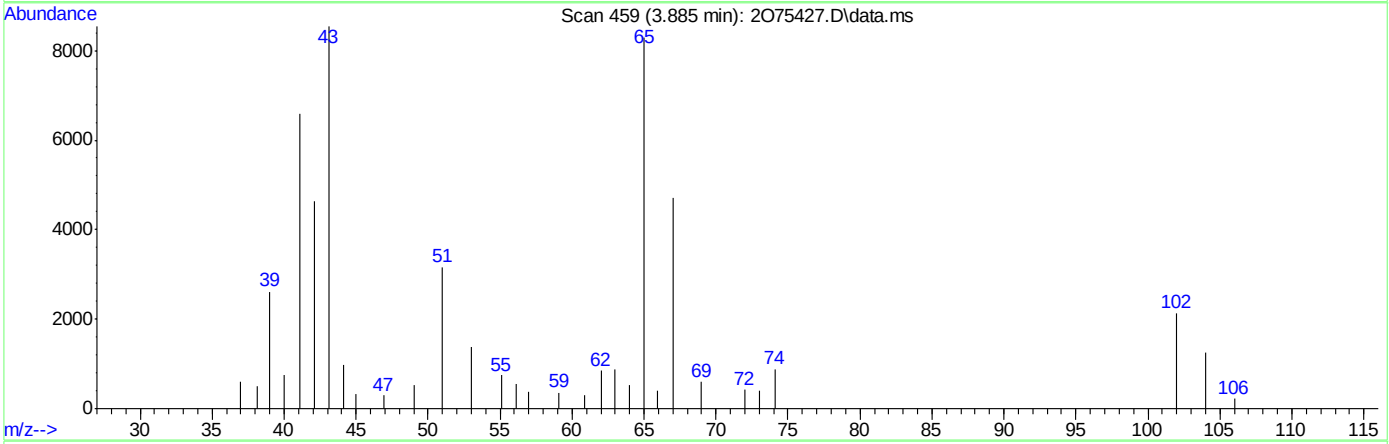
Ion	Exp%	Act%
116.90	100	100
118.90	96.00	94.68
120.90	31.80	27.81
81.90	22.80	28.19

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75427.D
Acq On : 11 Apr 2023 10:38 am
Operator : davidb2
Sample : IC2924-2 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 11 10:49:49 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75427.D\data.ms

(49) Isobutyl alcohol

3.885min (-0.018) 59.34ug/L

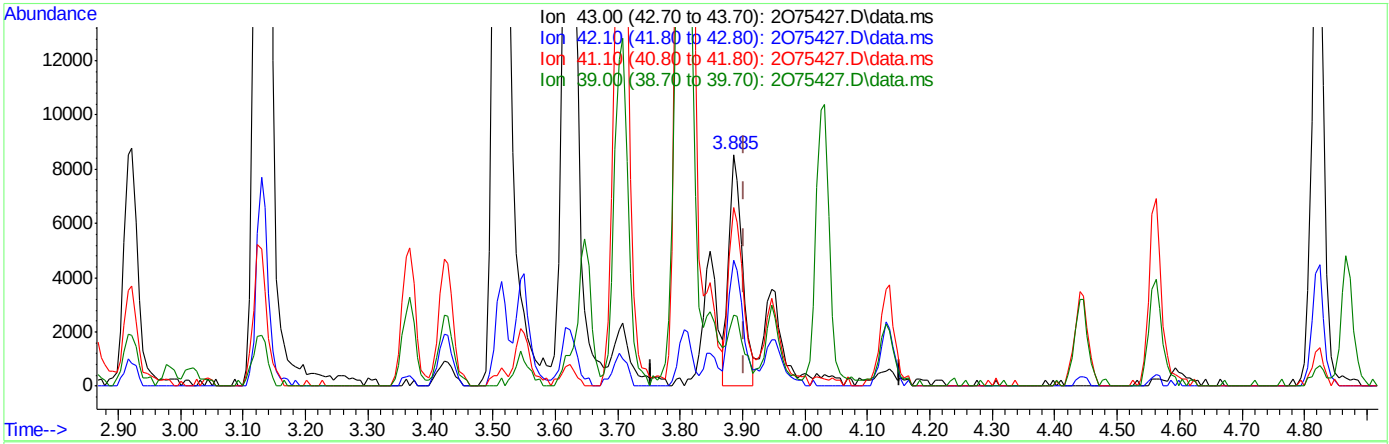
response 8811

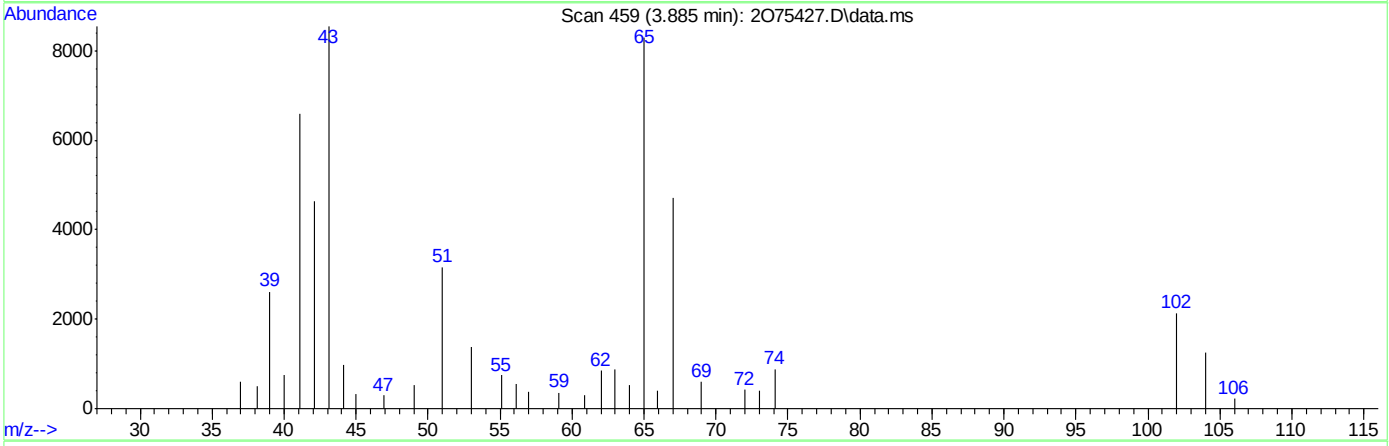
Ion	Exp%	Act%
43.00	100	100
42.10	60.60	54.79
41.10	73.30	73.40
39.00	24.10	28.84

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75427.D
Acq On : 11 Apr 2023 10:38 am
Operator : davidb2
Sample : IC2924-2 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 11 10:49:49 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75427.D\data.ms

(49) Isobutyl alcohol

3.885min (-0.018) 86.84ug/L m

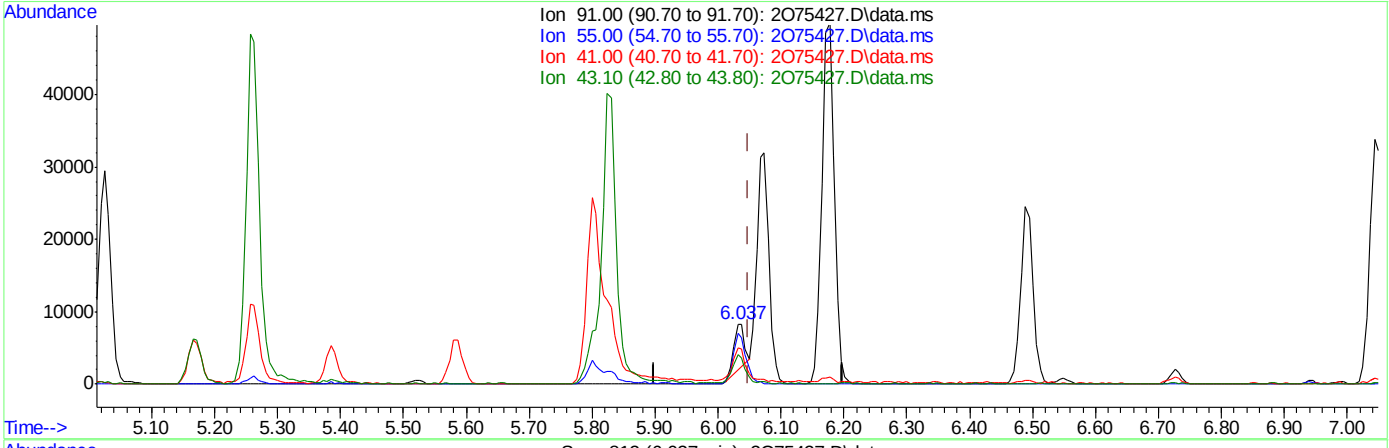
response 12894

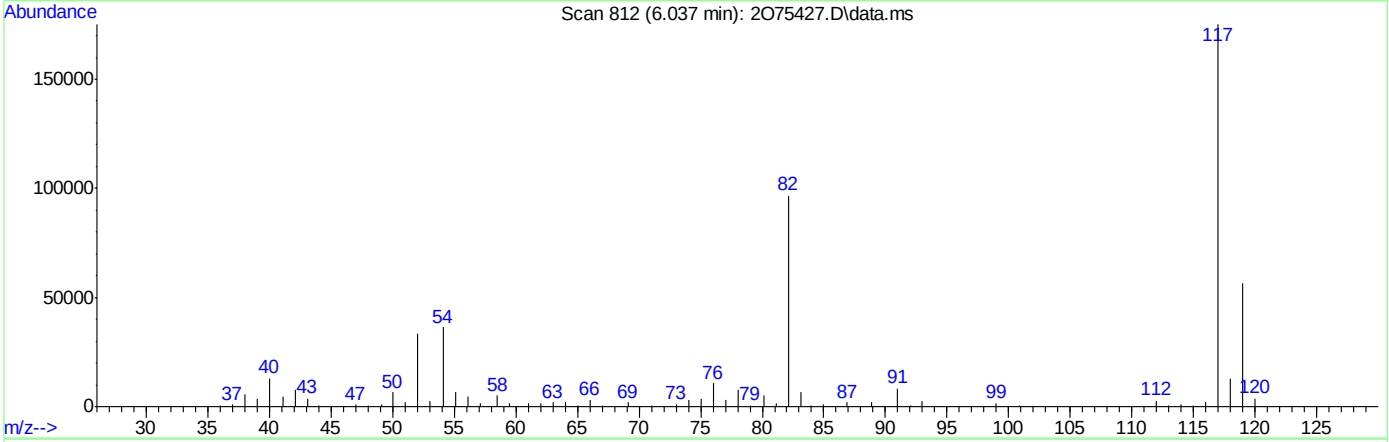
Ion	Exp%	Act%
43.00	100	100
42.10	60.60	54.37
41.10	73.30	77.21
39.00	24.10	30.63

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75427.D
Acq On : 11 Apr 2023 10:38 am
Operator : davidb2
Sample : IC2924-2 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 11 10:49:49 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75427.D\data.ms

(76) 1-Chlorohexane

6.037min (-0.012) 4.38ug/L

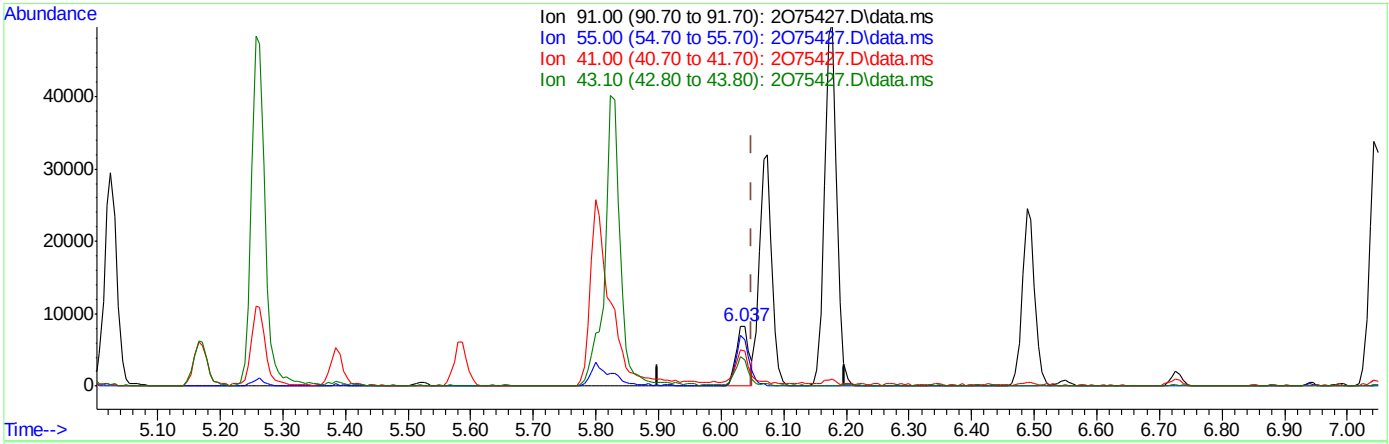
response 7719

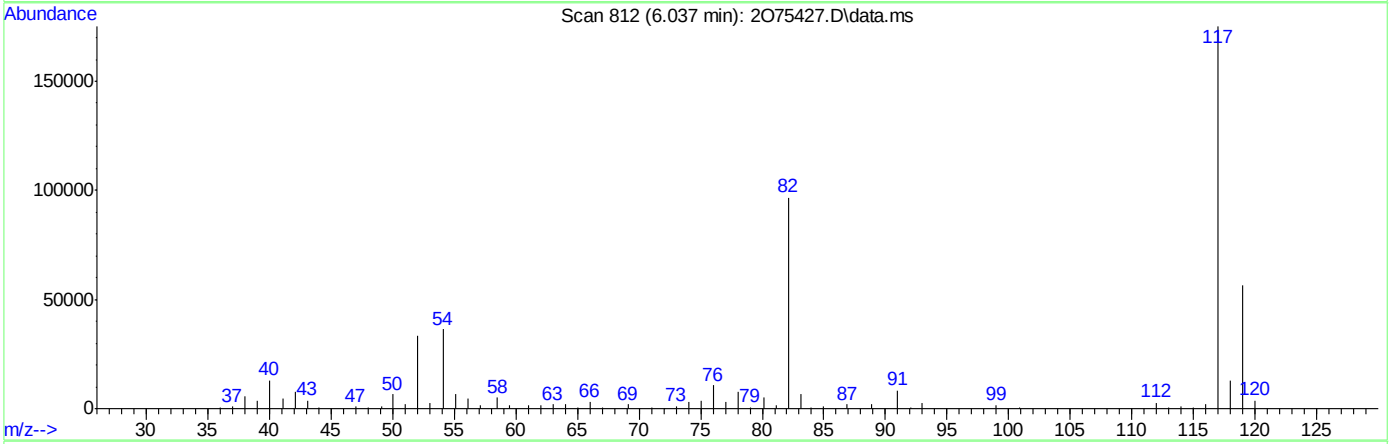
Ion	Exp%	Act%
91.00	100	100
55.00	73.60	75.78
41.00	56.00	48.76
43.10	44.90	39.78

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75427.D
Acq On : 11 Apr 2023 10:38 am
Operator : davidb2
Sample : IC2924-2 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 11 10:49:49 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75427.D\data.ms

(76) 1-Chlorohexane

6.037min (-0.012) 6.83ug/L m

response 12032

Ion	Exp%	Act%
91.00	100	100
55.00	73.60	77.89
41.00	56.00	57.82
43.10	44.90	43.87

Manual Integrations APPROVED (compounds with "m" flag)
Karen Watson
04/11/23 15:49

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75428.D
Acq On : 11 Apr 2023 11:05 am
Operator : davidb2
Sample : IC2924-3 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 11 11:19:00 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorobenzene	4.025	96	432170	50.00	ug/L		-0.02
62) Chlorobenzene-d5	6.043	117	302645	50.00	ug/L		-0.02
85) 1,4-Dichlorobenzene-d4	7.805	152	158391	50.00	ug/L		-0.02
System Monitoring Compounds							
39) Dibromofluoromethane	3.556	113	118092	59.20	ug/L		-0.01
Spiked Amount 50.000	Range 83 - 118		Recovery = 118.40%#				
50) 1,2-Dichloroethane-d4	3.867	65	124900	85.43	ug/L		-0.01
Spiked Amount 50.000	Range 79 - 125		Recovery = 170.86%#				
63) Toluene-d8	4.989	98	412941	38.56	ug/L		-0.02
Spiked Amount 50.000	Range 85 - 112		Recovery = 77.12%#				
86) 4-Bromofluorobenzene	6.946	174	121085	38.28	ug/L		-0.02
Spiked Amount 50.000	Range 83 - 118		Recovery = 76.56%#				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.227	85	17653	10.30	ug/L		93
3) Chloromethane	1.380	50	18740	9.32	ug/L		97
4) 1,3-butadiene	1.453	39	20456	11.91	ug/L	#	77
5) Vinyl Chloride	1.441	62	18722	9.89	ug/L		95
6) Bromomethane	1.678	94	13578	18.48	ug/L		99
7) Chloroethane	1.758	64	13041	11.83	ug/L		96
8) Trichlorofluoromethane	1.861	101	35558	14.54	ug/L		98
9) Ethyl Ether	2.068	59	14772	9.73	ug/L		95
10) Ethanol	2.154	45	7578	153.12	ug/L		96
11) 1,2-Dichlorotrifluoroe...	2.190	67	22667	10.86	ug/L		97
12) 1,1-Dichloroethene	2.190	61	27888	10.93	ug/L		98
13) Freon 113	2.221	101	19917	12.39	ug/L		97
14) Carbon Disulfide	2.209	76	56434	12.08	ug/L		96
15) Iodomethane	2.282	142	29715	27.83	ug/L		94
16) Acrolein	2.392	56	26632	45.47	ug/L		97
17) Allyl chloride	2.477	41	21829	10.61	ug/L		91
18) Methylene Chloride	2.544	49	30850	10.92	ug/L		97
19) Acetone	2.568	43	51983	45.71	ug/L		97
20) Methyl acetate	2.642	43	124450	49.70	ug/L		97
21) trans-1,2-Dichloroethene	2.635	61	28356	11.12	ug/L		94
22) Hexane	2.690	56	14587	10.48	ug/L		96
23) Methyl Tert Butyl Ether	2.702	73	50769	10.21	ug/L		98
24) Tert Butyl Alcohol	2.745	59	38244	71.33	ug/L		88
25) Acetonitrile	2.837	41	40292	74.65	ug/L		97
26) Di-isopropyl ether	2.916	45	55835	10.80	ug/L		94
27) Chloroprene	2.983	53	25415	10.41	ug/L		97
28) 1,1-Dichloroethane	2.995	63	35404	10.80	ug/L		94
29) Acrylonitrile	3.019	52	52529	46.04	ug/L		95
30) ETBE	3.129	59	50076	9.58	ug/L		96
31) Vinyl acetate	3.129	43	198071	50.33	ug/L		96
32) cis-1,2-Dichloroethene	3.300	96	22403	11.72	ug/L		94
33) 2,2-Dichloropropane	3.367	77	23316	11.32	ug/L		99
34) Bromochloromethane	3.416	128	12030	12.41	ug/L	#	85
35) Cyclohexane	3.422	56	30779	10.42	ug/L	#	86

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75428.D
Acq On : 11 Apr 2023 11:05 am
Operator : davidb2
Sample : IC2924-3 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 11 11:19:00 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	3.452	83	38618	11.58	ug/L		99
37) Ethyl acetate	3.513	43	154655	49.74	ug/L		98
38) Tetrahydrofuran	3.544	42	12596	10.20	ug/L		93
40) Carbon Tetrachloride	3.538	117	23716m	9.26	ug/L		
41) 1,1,1-Trichloroethane	3.580	97	30186	11.40	ug/L		98
42) 2-Butanone	3.623	43	90618	47.64	ug/L		99
43) 1,1-Dichloropropene	3.647	75	27384	11.83	ug/L		95
44) tert-Butyl formate	3.708	59	31378	31.22	ug/L	#	75
45) Propionitrile	3.794	54	52227	82.34	ug/L		83
46) Methacrylonitrile	3.806	41	180793	102.21	ug/L		96
47) Benzene	3.788	78	80965	11.23	ug/L		85
48) TAME	3.849	73	46701	10.03	ug/L		95
49) Isobutyl alcohol	3.885	43	28741m	187.65	ug/L		
51) 1,2-Dichloroethane	3.903	62	28478	11.00	ug/L		97
52) Tert Amyl Alcohol	3.946	59	28874	66.90	ug/L		84
53) Trichloroethene	4.129	95	23399	11.80	ug/L		97
54) Methylcyclohexane	4.135	83	30783	12.14	ug/L		94
55) Dibromomethane	4.385	93	14774	11.83	ug/L		91
56) 1,2-Dichloropropane	4.440	63	19047	10.61	ug/L		93
57) Bromodichloromethane	4.476	83	24173	10.38	ug/L		95
58) Methyl methacrylate	4.562	41	20093	11.00	ug/L		96
59) 1,4-Dioxane	4.598	88	7639	165.96	ug/L		95
60) 2-Chloroethyl vinyl ether	4.824	63	80140	52.07	ug/L		97
61) cis-1,3-Dichloropropene	4.867	75	26545	9.28	ug/L		97
64) Toluene	5.025	91	84144	8.44	ug/L		97
65) 2-Nitropropane	5.165	41	20382	25.90	ug/L		88
66) 4-Methyl-2-pentanone	5.257	43	149459	38.55	ug/L		96
67) trans-1,3-Dichloropropene	5.287	75	25418	7.55	ug/L		95
68) Tetrachloroethene	5.281	166	23527	7.84	ug/L		91
69) Ethyl methacrylate	5.385	69	22366	8.38	ug/L		91
70) 1,1,2-Trichloroethane	5.397	83	16991	7.96	ug/L		97
71) Dibromochloromethane	5.519	129	18417	7.61	ug/L		97
72) 1,3-Dichloropropane	5.586	76	31855	8.06	ug/L		95
73) 1,2-Dibromoethane	5.690	107	21108	8.06	ug/L		97
74) 3,3-dimethyl-1-butanol	5.799	57	169051	220.42	ug/L		97
75) 2-hexanone	5.830	43	147432	34.76	ug/L		93
76) 1-Chlorohexane	6.031	91	26113m	14.31	ug/L		
77) Ethylbenzene	6.068	91	91913	8.61	ug/L		99
78) Chlorobenzene	6.055	112	57376	8.46	ug/L		97
79) 1,1,1,2-Tetrachloroethane	6.098	131	17798	7.74	ug/L		91
80) m,p-Xylene	6.177	91	143650	17.34	ug/L		98
81) o-Xylene	6.488	91	71200	8.83	ug/L		99
82) Styrene	6.531	104	55977	8.74	ug/L		96
83) Bromoform	6.549	173	11150	6.41	ug/L		95
84) Isopropylbenzene	6.726	105	86598	9.09	ug/L		99
87) cis-1,4-Dichloro-2-butene	6.988	53	6993	3.29	ug/L		84
88) n-Propylbenzene	7.043	91	101925	3.61	ug/L		99
89) Bromobenzene	7.025	156	22172	3.45	ug/L		99
90) 1,1,2,2-Tetrachloroethane	7.092	83	30085	3.35	ug/L		94
91) 1,3,5-Trimethylbenzene	7.195	105	71872	3.55	ug/L		97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75428.D
Acq On : 11 Apr 2023 11:05 am
Operator : davidb2
Sample : IC2924-3 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 11 11:19:00 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration

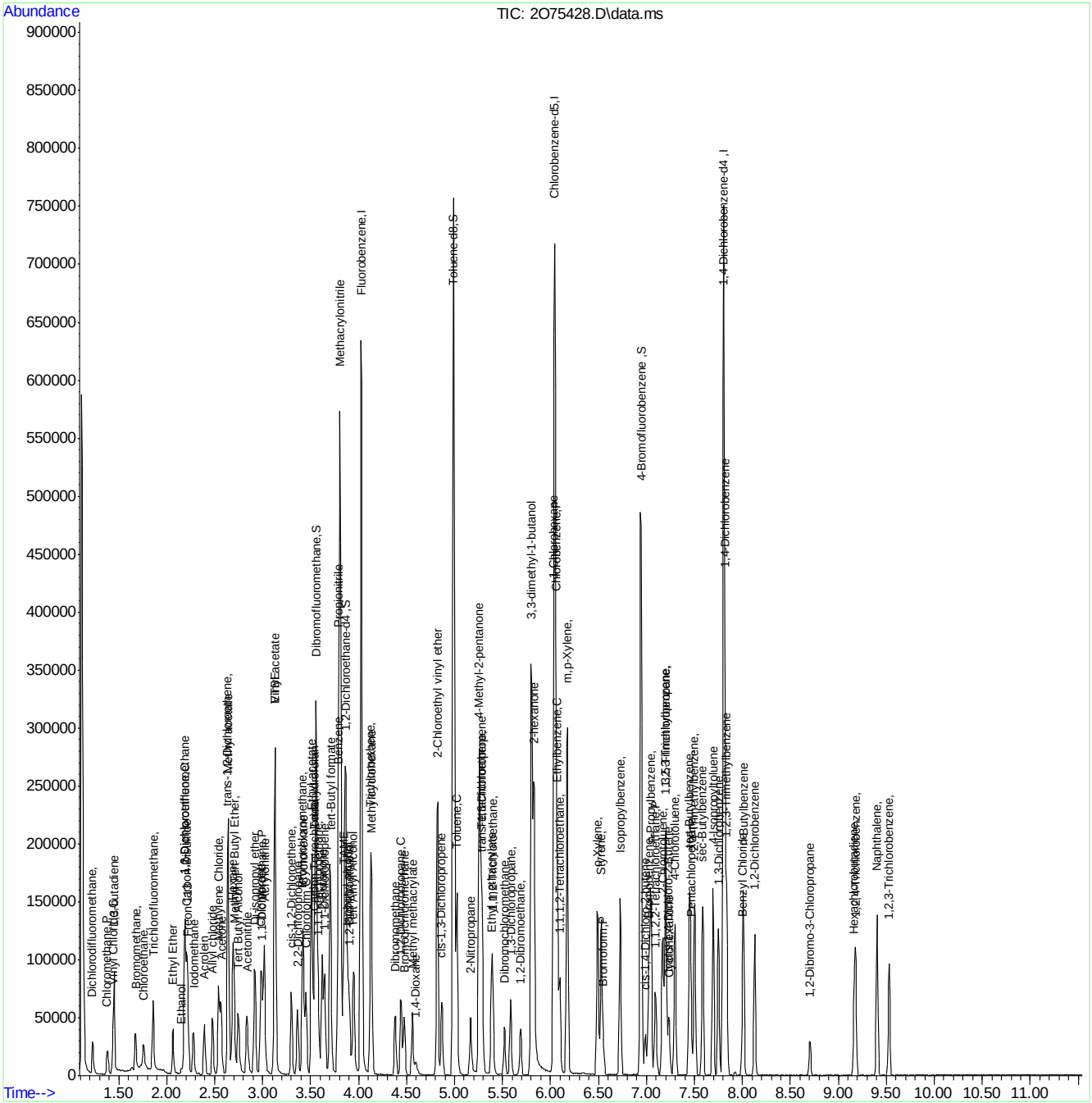
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92) 2-Chlorotoluene	7.171	91	67111	3.51	ug/L		98
93) trans-1,4-Dichloro-2-B...	7.232	53	6504	2.91	ug/L		98
94) 1,2,3-Trichloropropane	7.202	110	9722	3.48	ug/L		95
95) Cyclohexanone	7.238	55	5735	11.16	ug/L		94
96) 4-Chlorotoluene	7.299	91	62989	3.46	ug/L		96
97) tert-Butylbenzene	7.452	91	37998	4.34	ug/L		94
99) 1,2,4-Trimethylbenzene	7.500	105	70460	4.28	ug/L		98
100) Pentachloroethane	7.464	167	8115	2.74	ug/L	#	81
101) sec-Butylbenzene	7.586	105	85680	3.58	ug/L		99
102) 4-Isopropyltoluene	7.695	119	74130	4.58	ug/L		99
103) 1,3-Dichlorobenzene	7.750	146	44074	3.43	ug/L		99
104) 1,2,3-Trimethylbenzene	7.836	105	71991	4.24	ug/L		96
105) 1,4-Dichlorobenzene	7.817	146	44916	3.40	ug/L		95
106) n-Butylbenzene	8.012	92	35583	4.14	ug/L		93
107) Benzyl Chloride	8.000	126	6248	2.36	ug/L	#	66
108) 1,2-Dichlorobenzene	8.128	146	40895	3.30	ug/L		99
109) 1,2-Dibromo-3-Chloropr...	8.707	75	5676	2.95	ug/L		88
110) Hexachlorobutadiene	9.165	225	9579	3.41	ug/L		92
111) 1,2,4-Trichlorobenzene	9.183	180	24747	3.68	ug/L		94
112) Naphthalene	9.402	128	86124	3.16	ug/L		99
113) 1,2,3-Trichlorobenzene	9.530	180	23677	3.63	ug/L		95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75428.D
Acq On : 11 Apr 2023 11:05 am
Operator : davidb2
Sample : IC2924-3 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 11 11:19:00 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration



Manual Integration Approval Summary

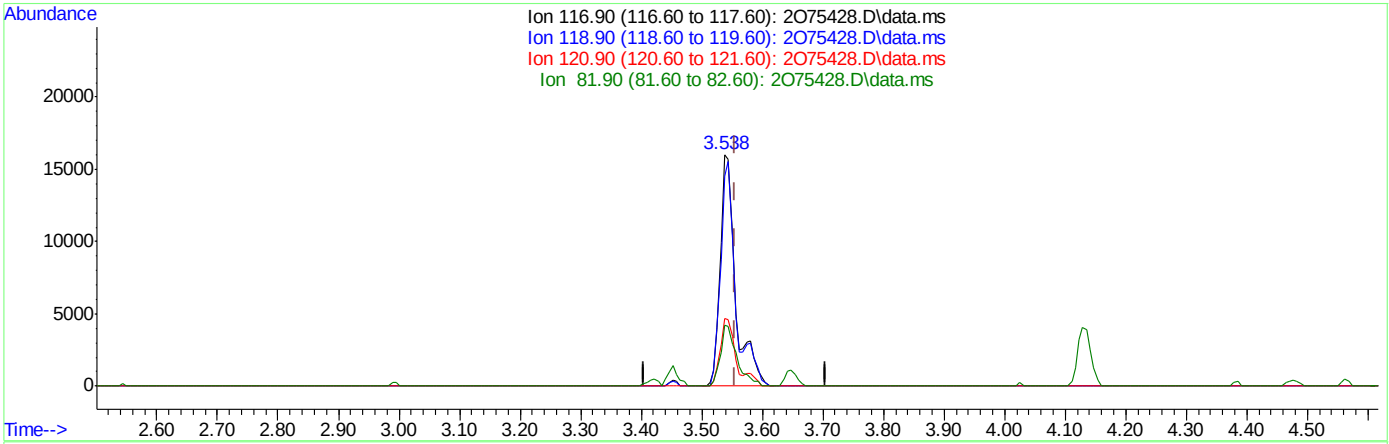
Sample Number: V2O2924-IC2924
Lab FileID: 2O75428.D
Injection Time: 04/11/23 11:05
Method: SW846 8260D
Analyst approved: 04/11/23 14:45 David Butler
Supervisor approved: 04/11/23 15:49 Karen Watson

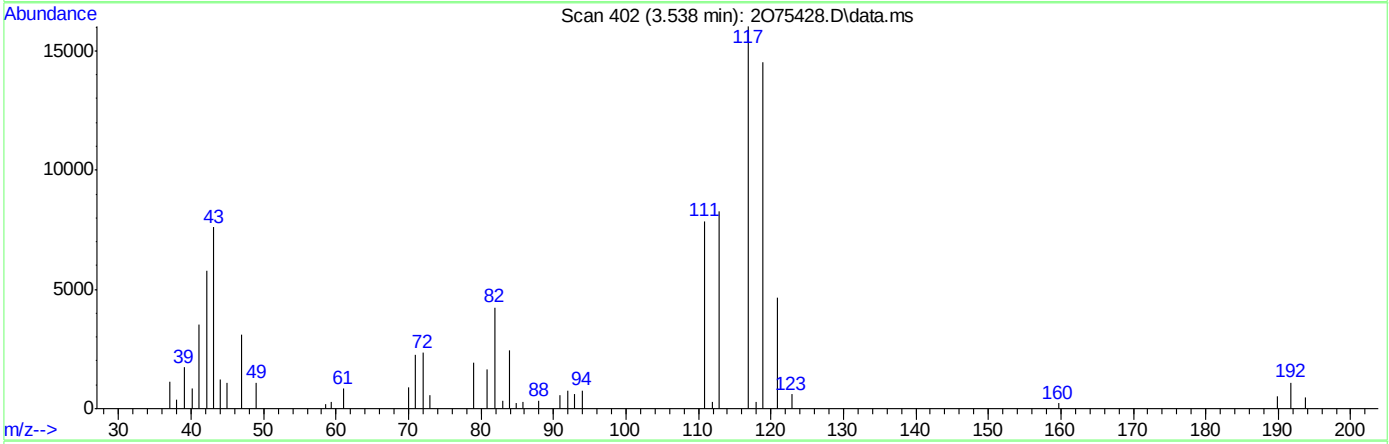
Parameter	CAS	Sig#	R.T. (min.)	Reason
Carbon Tetrachloride	56-23-5		3.54	Poor instrument integration
Isobutyl Alcohol	78-83-1		3.89	Poor instrument integration
1-Chlorohexane	544-10-5		6.03	Poor instrument integration

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75428.D
Acq On : 11 Apr 2023 11:05 am
Operator : davidb2
Sample : IC2924-3 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 11 11:18:15 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75428.D\data.ms

(40) Carbon Tetrachloride ( )

3.538min (-0.018) 11.08ug/L

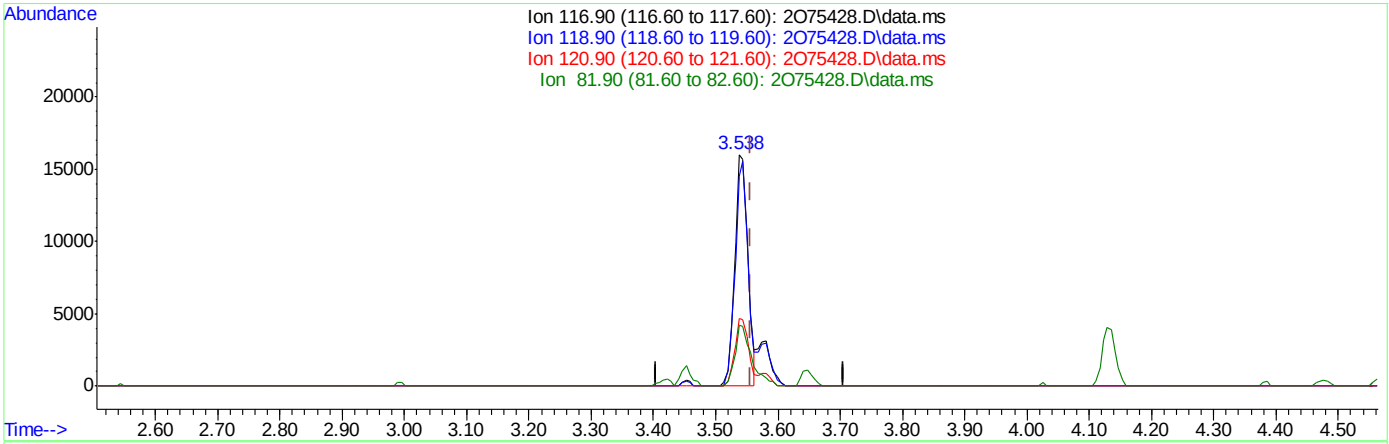
response 28372

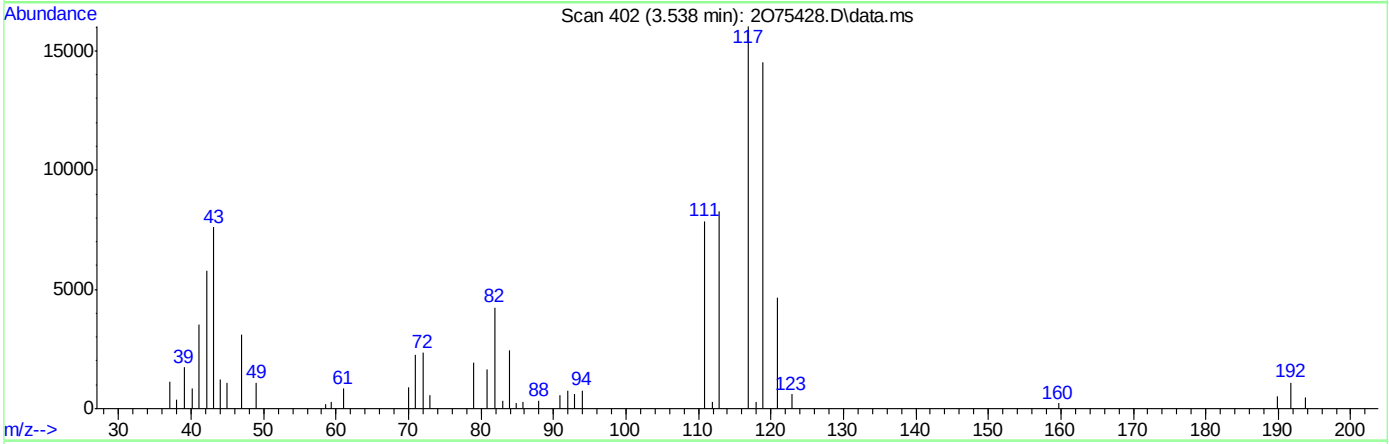
Ion	Exp%	Act%
116.90	100	100
118.90	96.00	90.64
120.90	31.80	29.11
81.90	22.80	26.40

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75428.D
Acq On : 11 Apr 2023 11:05 am
Operator : davidb2
Sample : IC2924-3 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 11 11:18:15 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75428.D\data.ms

(40) Carbon Tetrachloride ( )

3.538min (-0.018) 9.26ug/L m

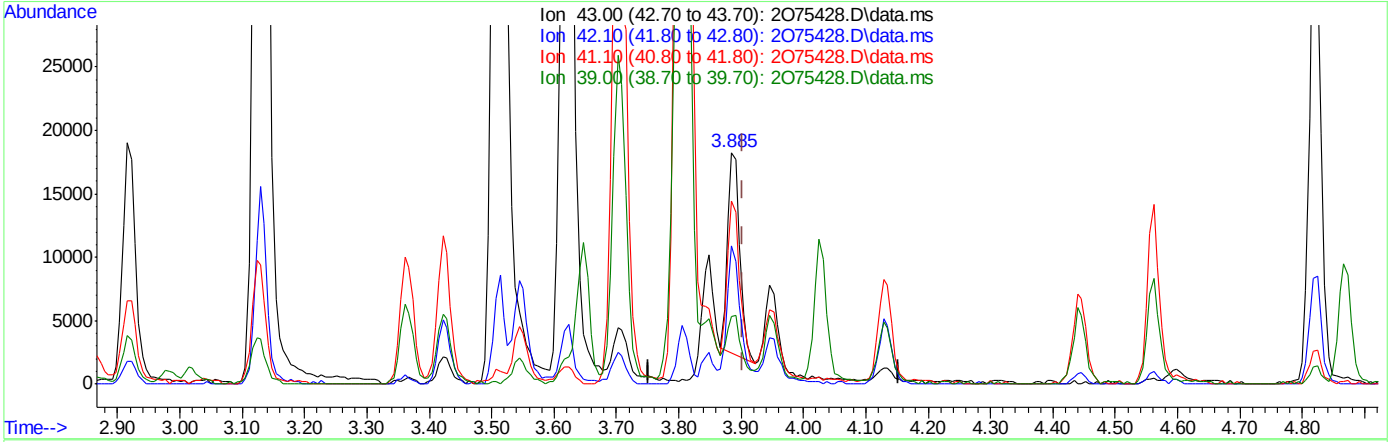
response 23716

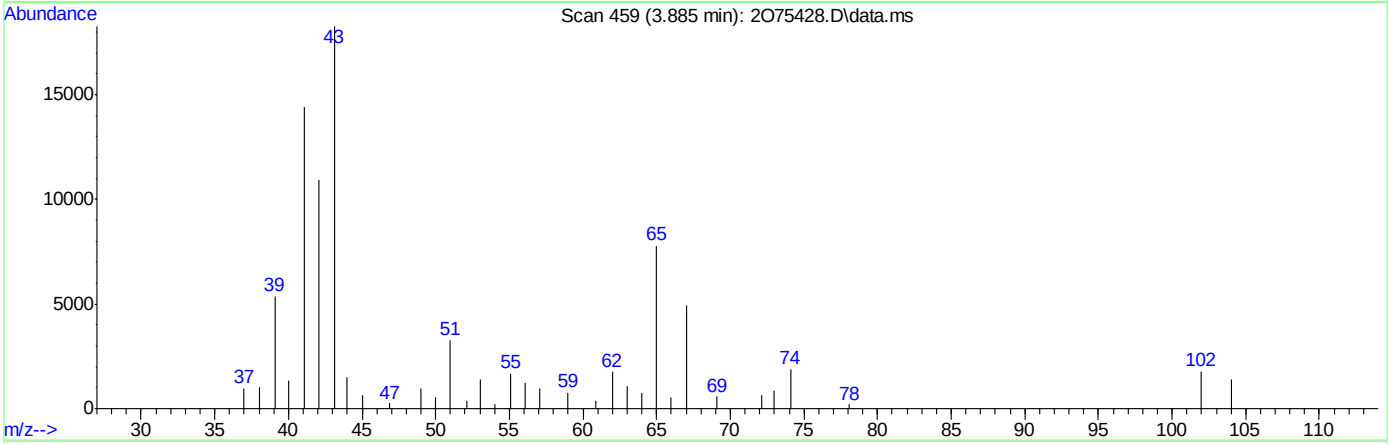
Ion	Exp%	Act%
116.90	100	100
118.90	96.00	90.64
120.90	31.80	29.11
81.90	22.80	26.40

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75428.D
Acq On : 11 Apr 2023 11:05 am
Operator : davidb2
Sample : IC2924-3 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 11 11:18:15 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75428.D\data.ms

(49) Isobutyl alcohol

3.885min (-0.018) 140.15ug/L

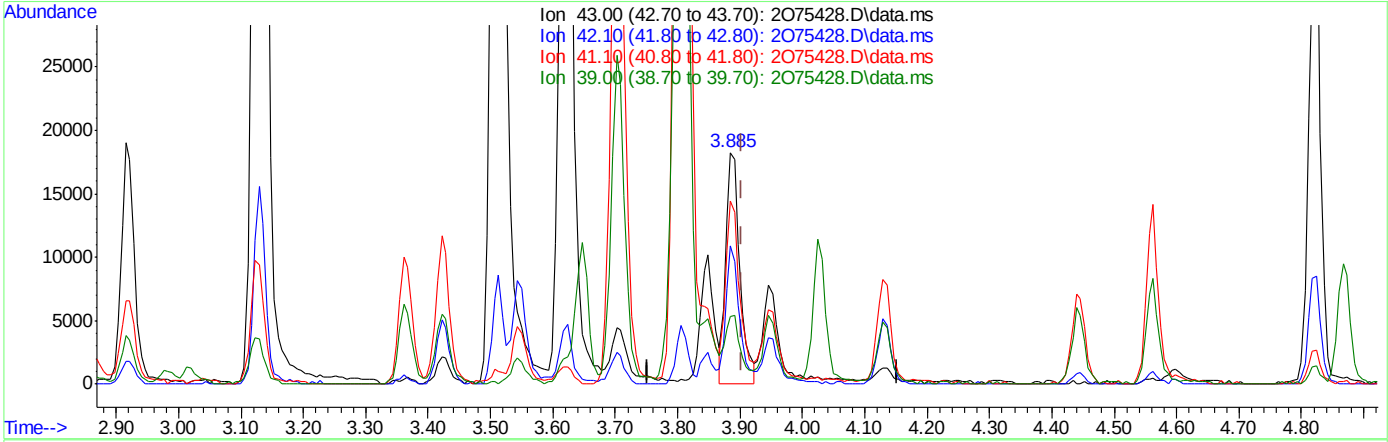
response 21465

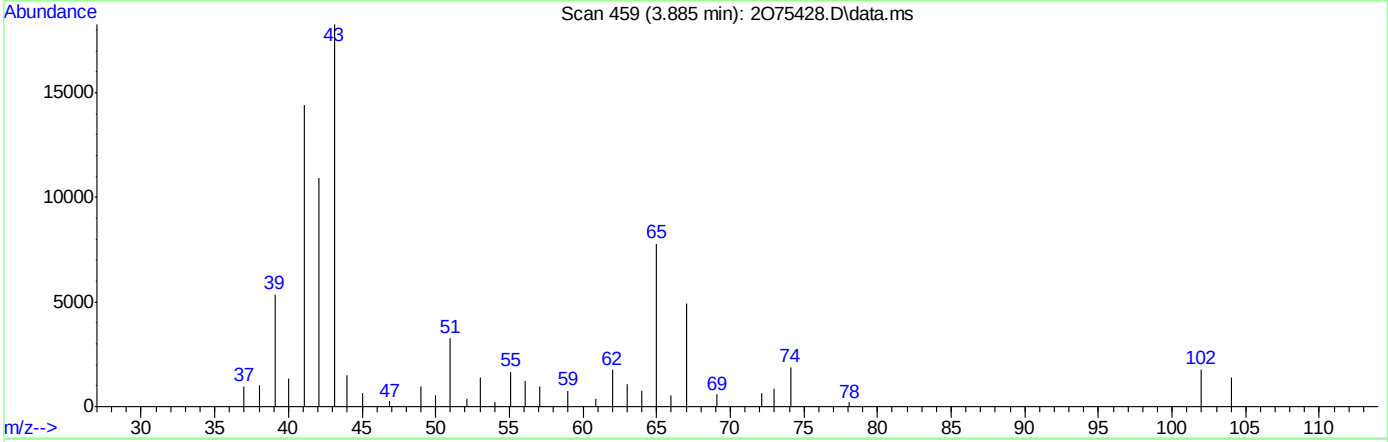
Ion	Exp%	Act%
43.00	100	100
42.10	60.60	59.57
41.10	73.30	76.04
39.00	24.10	25.62

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75428.D
Acq On : 11 Apr 2023 11:05 am
Operator : davidb2
Sample : IC2924-3 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 11 11:18:15 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75428.D\data.ms

(49) Isobutyl alcohol

3.885min (-0.018) 187.65ug/L m

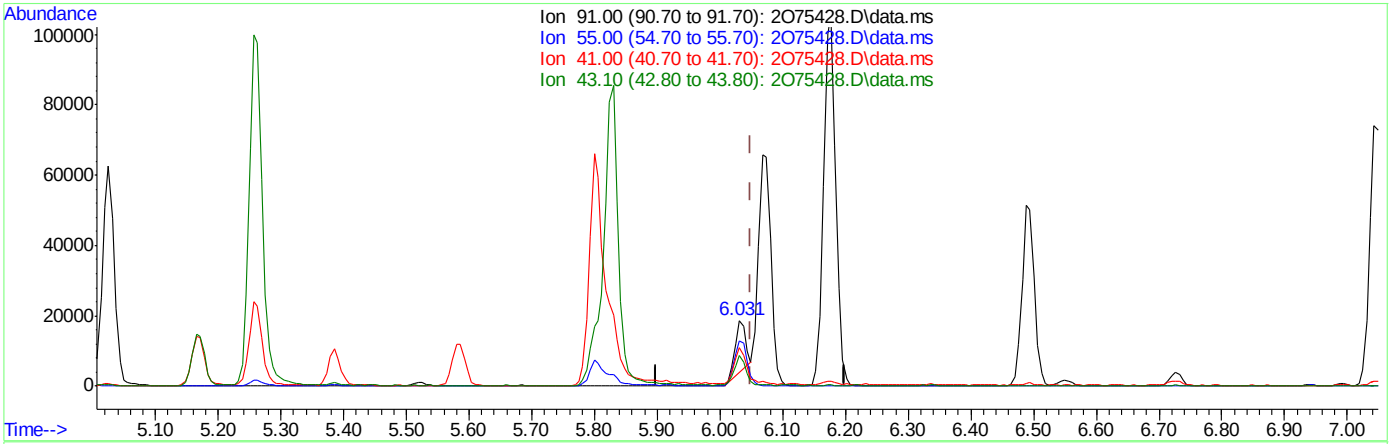
response 28741

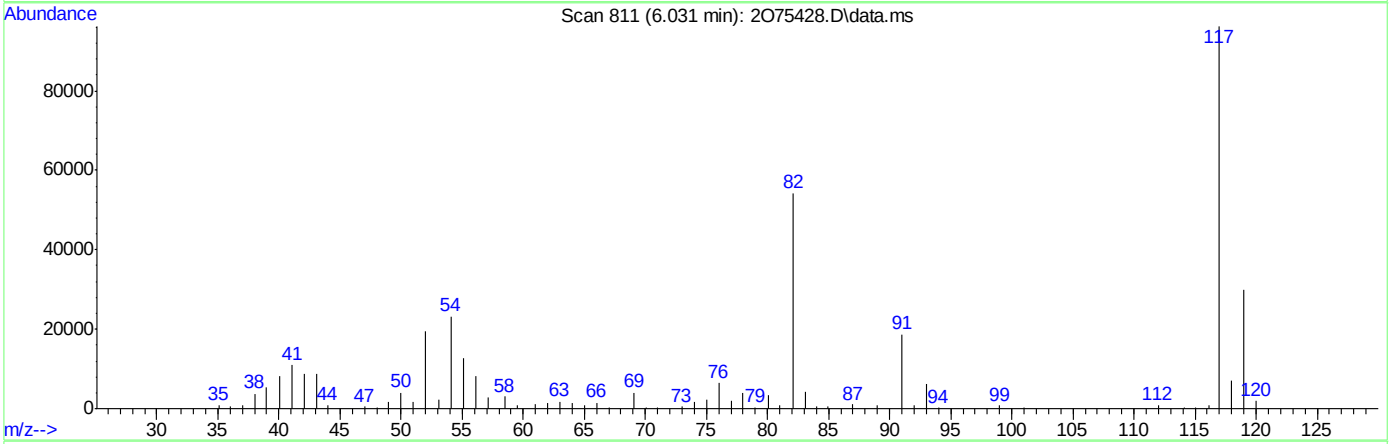
Ion	Exp%	Act%
43.00	100	100
42.10	60.60	59.86
41.10	73.30	78.88
39.00	24.10	29.43

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75428.D
Acq On : 11 Apr 2023 11:05 am
Operator : davidb2
Sample : IC2924-3 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 11 11:18:15 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75428.D\data.ms

(76) 1-Chlorohexane

6.031min (-0.018) 9.45ug/L

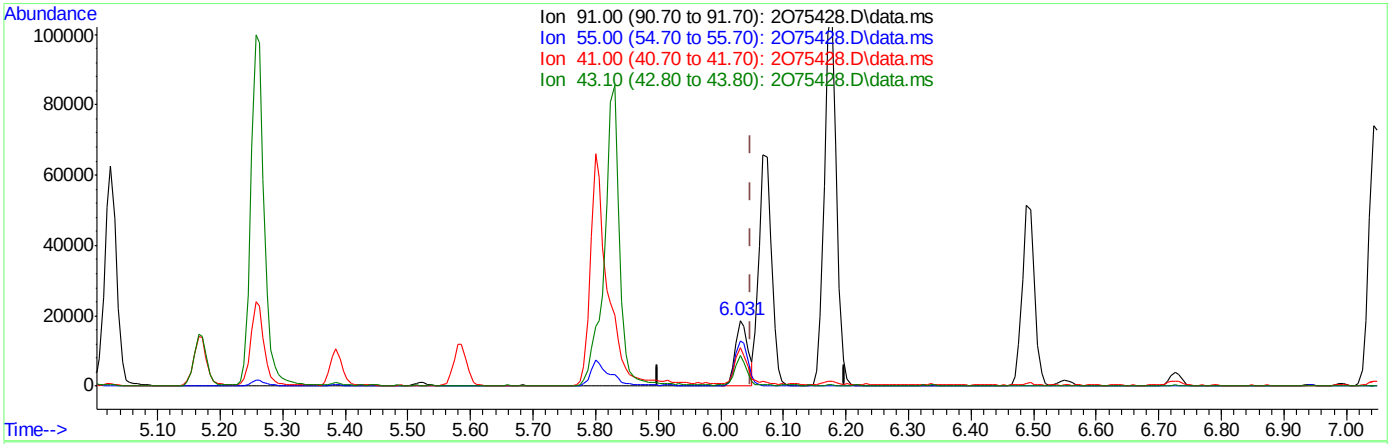
response 17238

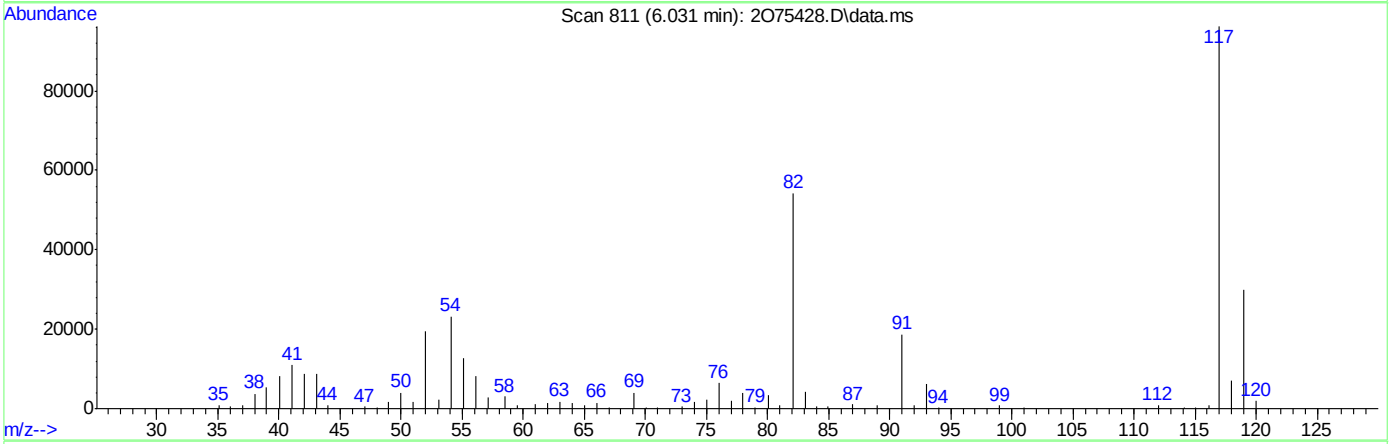
Ion	Exp%	Act%
91.00	100	100
55.00	73.60	66.99
41.00	56.00	54.53
43.10	44.90	44.62

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75428.D
Acq On : 11 Apr 2023 11:05 am
Operator : davidb2
Sample : IC2924-3 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 11 11:18:15 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75428.D\data.ms

(76) 1-Chlorohexane

6.031min (-0.018) 14.31ug/L m

response 26113

Ion	Exp%	Act%
91.00	100	100
55.00	73.60	68.44
41.00	56.00	58.28
43.10	44.90	46.50

Manual Integrations APPROVED (compounds with "m" flag)
Karen Watson
04/11/23 15:49

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75429.D
Acq On : 11 Apr 2023 11:31 am
Operator : davidb2
Sample : IC2924-4 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Apr 11 11:46:40 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	4.025	96	427301	50.00	ug/L	-0.02
62) Chlorobenzene-d5	6.043	117	303782	50.00	ug/L	-0.02
85) 1,4-Dichlorobenzene-d4	7.805	152	158401	50.00	ug/L	-0.02
System Monitoring Compounds						
39) Dibromofluoromethane	3.556	113	116870	59.25	ug/L	-0.01
Spiked Amount 50.000	Range 83 - 118		Recovery = 118.50%#			
50) 1,2-Dichloroethane-d4	3.867	65	120897	83.63	ug/L	-0.01
Spiked Amount 50.000	Range 79 - 125		Recovery = 167.26%#			
63) Toluene-d8	4.988	98	413739	38.49	ug/L	-0.02
Spiked Amount 50.000	Range 85 - 112		Recovery = 76.98%#			
86) 4-Bromofluorobenzene	6.945	174	122812	38.82	ug/L	-0.02
Spiked Amount 50.000	Range 83 - 118		Recovery = 77.64%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.227	85	45770	27.02	ug/L	98
3) Chloromethane	1.379	50	48816	24.56	ug/L	99
4) 1,3-butadiene	1.453	39	48704	28.68	ug/L	79
5) Vinyl Chloride	1.440	62	50817	27.14	ug/L	99
6) Bromomethane	1.672	94	35887	49.40	ug/L	96
7) Chloroethane	1.751	64	27384	29.35	ug/L	97
8) Trichlorofluoromethane	1.855	101	93291	38.58	ug/L	99
9) Ethyl Ether	2.062	59	36670	24.42	ug/L	94
10) Ethanol	2.160	45	18725	382.66	ug/L	98
11) 1,2-Dichlorotrifluoroe...	2.184	67	57083	27.66	ug/L	96
12) 1,1-Dichloroethene	2.190	61	71152	28.20	ug/L	97
13) Freon 113	2.215	101	49523	31.17	ug/L	97
14) Carbon Disulfide	2.209	76	138040	29.90	ug/L	96
15) Iodomethane	2.276	142	78655	59.09	ug/L	92
16) Acrolein	2.391	56	70194	121.20	ug/L	98
17) Allyl chloride	2.477	41	53450	26.28	ug/L	90
18) Methylene Chloride	2.538	49	67900	25.25	ug/L	98
19) Acetone	2.568	43	127606	113.50	ug/L	97
20) Methyl acetate	2.641	43	310569	125.44	ug/L	97
21) trans-1,2-Dichloroethene	2.635	61	69343	27.50	ug/L	98
22) Hexane	2.684	56	36967	26.86	ug/L #	90
23) Methyl Tert Butyl Ether	2.702	73	131009	26.64	ug/L	95
24) Tert Butyl Alcohol	2.745	59	99075	186.51	ug/L	89
25) Acetonitrile	2.836	41	97531	190.00	ug/L	98
26) Di-isopropyl ether	2.916	45	138680	27.13	ug/L	96
27) Chloroprene	2.983	53	63041	26.11	ug/L	91
28) 1,1-Dichloroethane	2.995	63	89620	27.65	ug/L	98
29) Acrylonitrile	3.019	52	129659	114.93	ug/L	97
30) ETBE	3.123	59	128166	24.81	ug/L	98
31) Vinyl acetate	3.129	43	506528	130.18	ug/L	95
32) cis-1,2-Dichloroethene	3.300	96	54945	29.08	ug/L	97
33) 2,2-Dichloropropane	3.361	77	59022	28.98	ug/L	98
34) Bromochloromethane	3.416	128	29753	31.05	ug/L	87
35) Cyclohexane	3.422	56	76680	26.24	ug/L	88

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75429.D
Acq On : 11 Apr 2023 11:31 am
Operator : davidb2
Sample : IC2924-4 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Apr 11 11:46:40 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	3.452	83	96454	29.24	ug/L		99
37) Ethyl acetate	3.513	43	394351	128.27	ug/L		99
38) Tetrahydrofuran	3.544	42	30742	25.17	ug/L		98
40) Carbon Tetrachloride	3.544	117	60027m	23.71	ug/L		
41) 1,1,1-Trichloroethane	3.580	97	79021	30.19	ug/L		97
42) 2-Butanone	3.623	43	226279	120.33	ug/L		97
43) 1,1-Dichloropropene	3.647	75	70019	30.61	ug/L		97
44) tert-Butyl formate	3.702	59	86830	87.20	ug/L	#	80
45) Propionitrile	3.794	54	131640	209.90	ug/L		84
46) Methacrylonitrile	3.806	41	440112	251.65	ug/L		97
47) Benzene	3.787	78	199154	27.95	ug/L		84
48) TAME	3.848	73	118478	25.72	ug/L		100
49) Isobutyl alcohol	3.885	43	78184m	516.28	ug/L		
51) 1,2-Dichloroethane	3.903	62	70318	27.48	ug/L		96
52) Tert Amyl Alcohol	3.946	59	79277	185.78	ug/L		91
53) Trichloroethene	4.129	95	56965	29.05	ug/L		93
54) Methylcyclohexane	4.129	83	79163	31.58	ug/L		96
55) Dibromomethane	4.379	93	36472	29.53	ug/L		89
56) 1,2-Dichloropropane	4.440	63	46747	26.33	ug/L		94
57) Bromodichloromethane	4.476	83	63174	27.44	ug/L		98
58) Methyl methacrylate	4.562	41	49343	27.31	ug/L		93
59) 1,4-Dioxane	4.598	88	19476	427.95	ug/L		85
60) 2-Chloroethyl vinyl ether	4.824	63	204263	134.22	ug/L		96
61) cis-1,3-Dichloropropene	4.867	75	71656	25.32	ug/L		98
64) Toluene	5.025	91	210933	21.08	ug/L		99
65) 2-Nitropropane	5.171	41	64180	81.26	ug/L		92
66) 4-Methyl-2-pentanone	5.257	43	381406	98.02	ug/L		97
67) trans-1,3-Dichloropropene	5.287	75	68898	20.39	ug/L		97
68) Tetrachloroethene	5.281	166	60452	20.06	ug/L		96
69) Ethyl methacrylate	5.385	69	59501	18.46	ug/L		92
70) 1,1,2-Trichloroethane	5.397	83	42704	19.93	ug/L		95
71) Dibromochloromethane	5.519	129	49780	20.49	ug/L		98
72) 1,3-Dichloropropane	5.586	76	79244	19.99	ug/L		97
73) 1,2-Dibromoethane	5.690	107	55927	21.29	ug/L		99
74) 3,3-dimethyl-1-butanol	5.799	57	493908	646.89	ug/L		95
75) 2-hexanone	5.824	43	380965	89.49	ug/L		95
76) 1-Chlorohexane	6.031	91	65532m	35.77	ug/L		
77) Ethylbenzene	6.074	91	230318	21.49	ug/L		97
78) Chlorobenzene	6.055	112	142661	20.96	ug/L		98
79) 1,1,1,2-Tetrachloroethane	6.098	131	46914	20.33	ug/L		95
80) m,p-Xylene	6.177	91	359904	43.28	ug/L		98
81) o-Xylene	6.488	91	180579	22.31	ug/L		98
82) Styrene	6.531	104	146020	22.72	ug/L		98
83) Bromoform	6.549	173	30598	17.53	ug/L		97
84) Isopropylbenzene	6.726	105	221938	23.20	ug/L		99
87) cis-1,4-Dichloro-2-butene	6.988	53	18637	8.76	ug/L		91
88) n-Propylbenzene	7.043	91	257358	9.24	ug/L		98
89) Bromobenzene	7.025	156	57380	9.03	ug/L		97
90) 1,1,2,2-Tetrachloroethane	7.092	83	77618	8.74	ug/L		99
91) 1,3,5-Trimethylbenzene	7.195	105	183276	9.17	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75429.D
Acq On : 11 Apr 2023 11:31 am
Operator : davidb2
Sample : IC2924-4 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Apr 11 11:46:40 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration

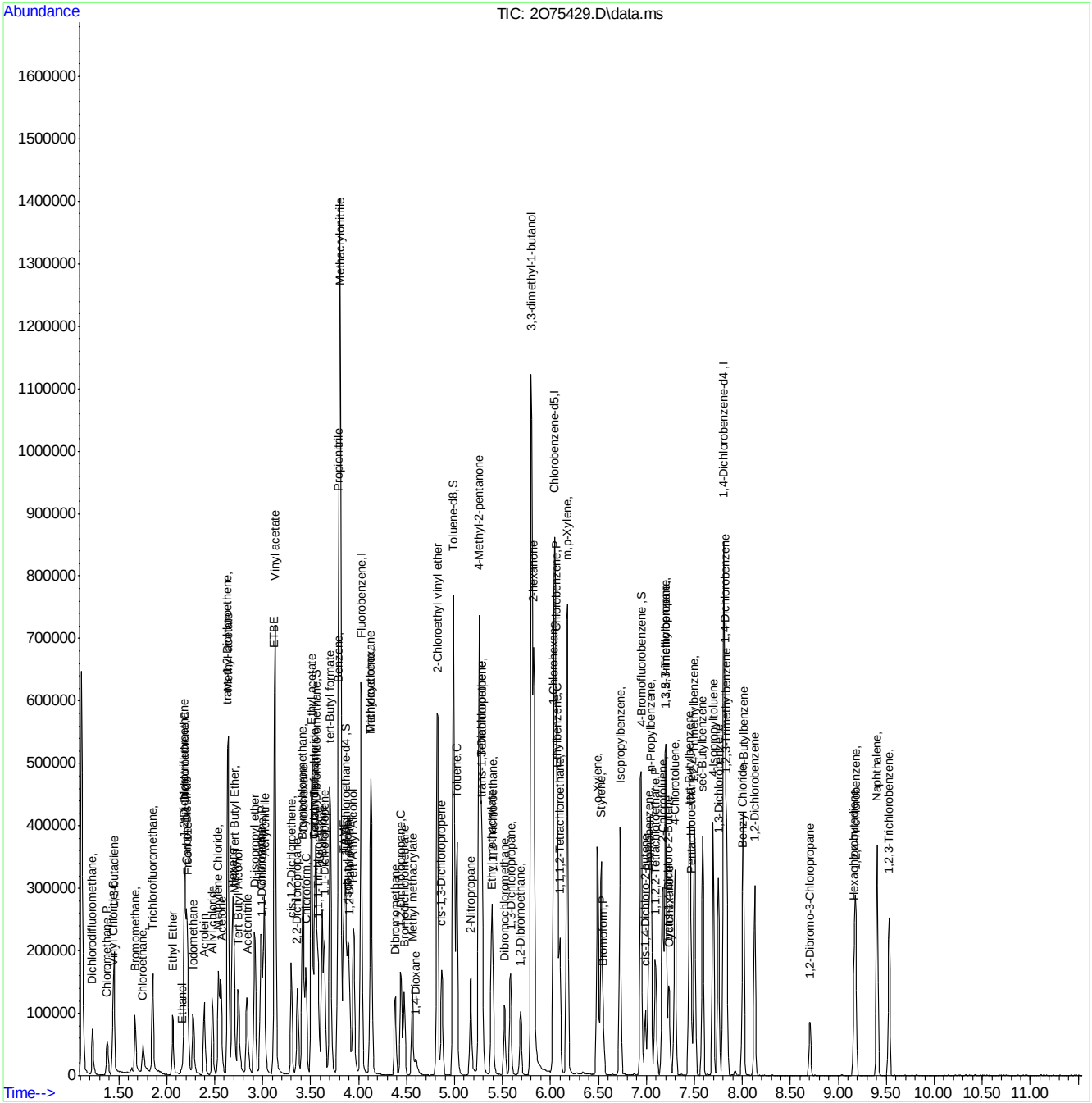
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92) 2-Chlorotoluene	7.171	91	174367	9.23	ug/L		96
93) trans-1,4-Dichloro-2-B...	7.232	53	16124	7.26	ug/L		94
94) 1,2,3-Trichloropropane	7.201	110	24690	8.94	ug/L		95
95) Cyclohexanone	7.238	55	15386	30.18	ug/L		95
96) 4-Chlorotoluene	7.299	91	160273	8.90	ug/L		98
97) tert-Butylbenzene	7.445	91	97951	11.19	ug/L		98
99) 1,2,4-Trimethylbenzene	7.500	105	183213	11.14	ug/L		97
100) Pentachloroethane	7.464	167	23371	8.00	ug/L		97
101) sec-Butylbenzene	7.586	105	217618	9.20	ug/L		99
102) 4-Isopropyltoluene	7.695	119	191592	11.84	ug/L		99
103) 1,3-Dichlorobenzene	7.750	146	109876	8.66	ug/L		97
104) 1,2,3-Trimethylbenzene	7.835	105	188189	11.09	ug/L		98
105) 1,4-Dichlorobenzene	7.817	146	112498	8.62	ug/L		99
106) n-Butylbenzene	8.012	92	94071	10.95	ug/L		92
107) Benzyl Chloride	8.000	126	20114	7.63	ug/L	#	84
108) 1,2-Dichlorobenzene	8.128	146	103814	8.47	ug/L		99
109) 1,2-Dibromo-3-Chloropr...	8.701	75	15584	8.09	ug/L		94
110) Hexachlorobutadiene	9.164	225	23546	8.47	ug/L		95
111) 1,2,4-Trichlorobenzene	9.183	180	66685	9.91	ug/L		98
112) Naphthalene	9.402	128	234761	8.69	ug/L		98
113) 1,2,3-Trichlorobenzene	9.530	180	62104	9.51	ug/L		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75429.D
Acq On : 11 Apr 2023 11:31 am
Operator : davidb2
Sample : IC2924-4 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Apr 11 11:46:40 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration



Manual Integration Approval Summary

Sample Number: V2O2924-IC2924
Lab FileID: 2O75429.D
Injection Time: 04/11/23 11:31

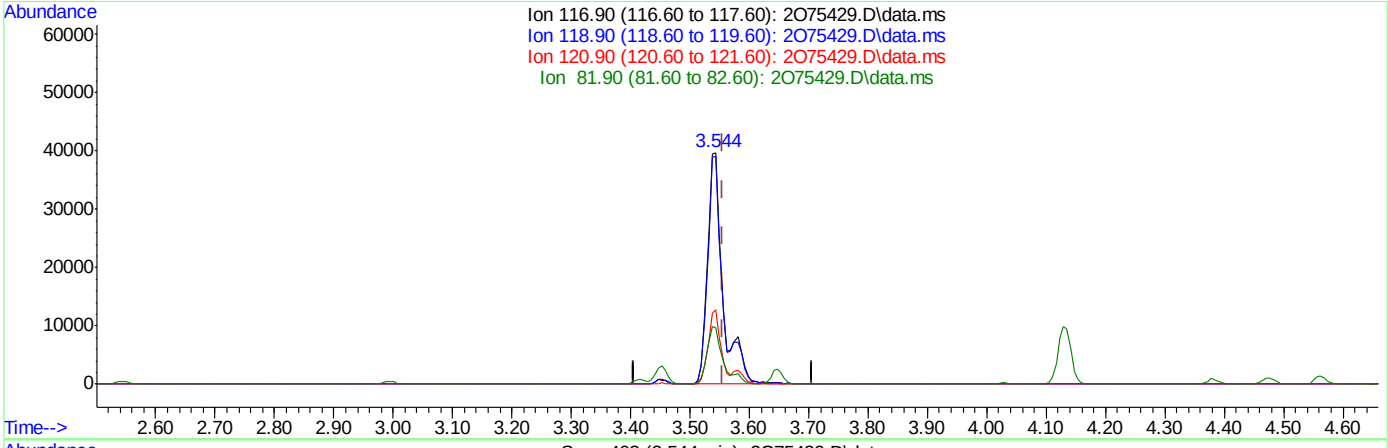
Method: SW846 8260D
Analyst approved: 04/11/23 14:45 David Butler
Supervisor approved: 04/11/23 15:49 Karen Watson

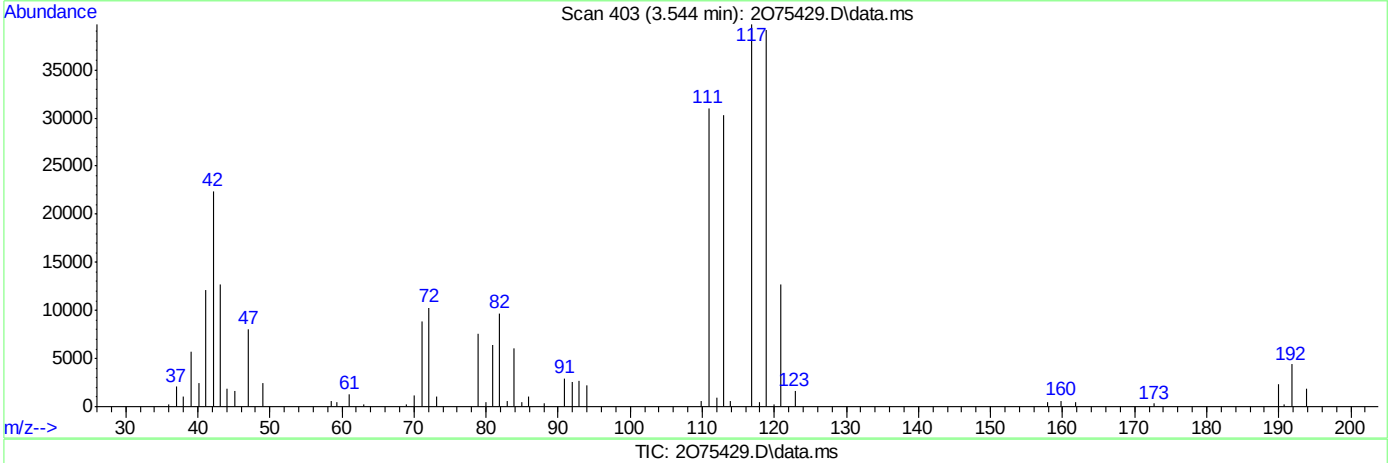
Parameter	CAS	Sig#	R.T. (min.)	Reason
Carbon Tetrachloride	56-23-5		3.54	Poor instrument integration
Isobutyl Alcohol	78-83-1		3.89	Poor instrument integration
1-Chlorohexane	544-10-5		6.03	Poor instrument integration

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75429.D
Acq On : 11 Apr 2023 11:31 am
Operator : davidb2
Sample : IC2924-4 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Apr 11 11:45:58 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75429.D\data.ms

(40) Carbon Tetrachloride ( )

3.544min (-0.012) 28.56ug/L

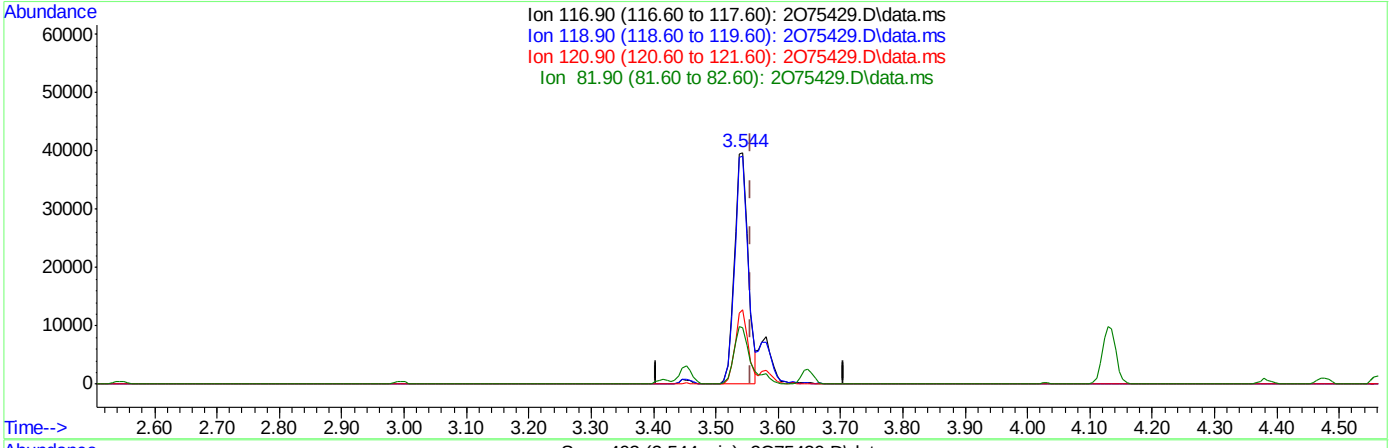
response 72330

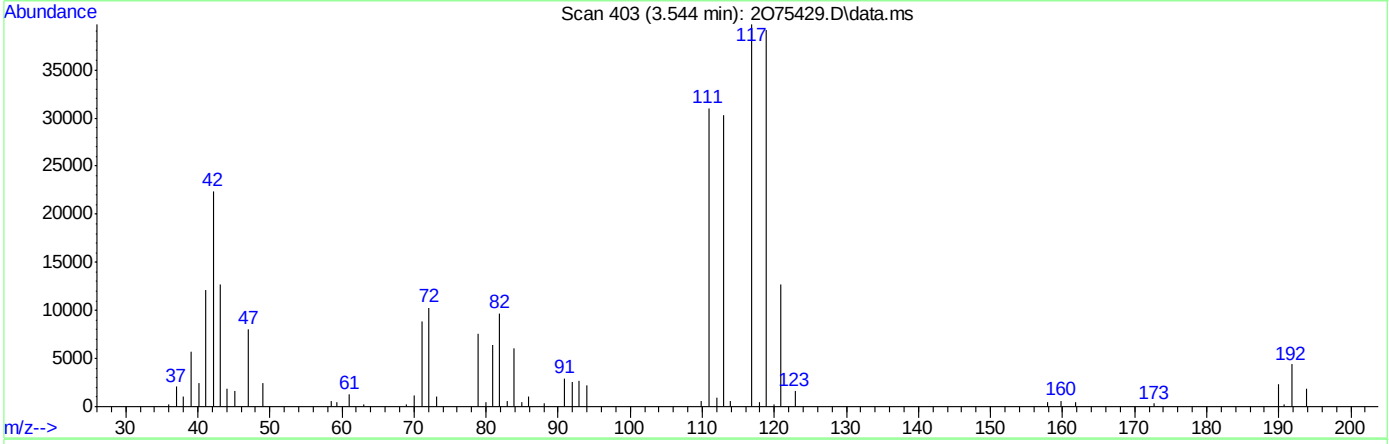
Ion	Exp%	Act%
116.90	100	100
118.90	96.00	98.49
120.90	31.80	31.92
81.90	22.80	24.36

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75429.D
Acq On : 11 Apr 2023 11:31 am
Operator : davidb2
Sample : IC2924-4 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Apr 11 11:45:58 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75429.D\data.ms

(40) Carbon Tetrachloride ( )

3.544min (-0.012) 23.71ug/L m

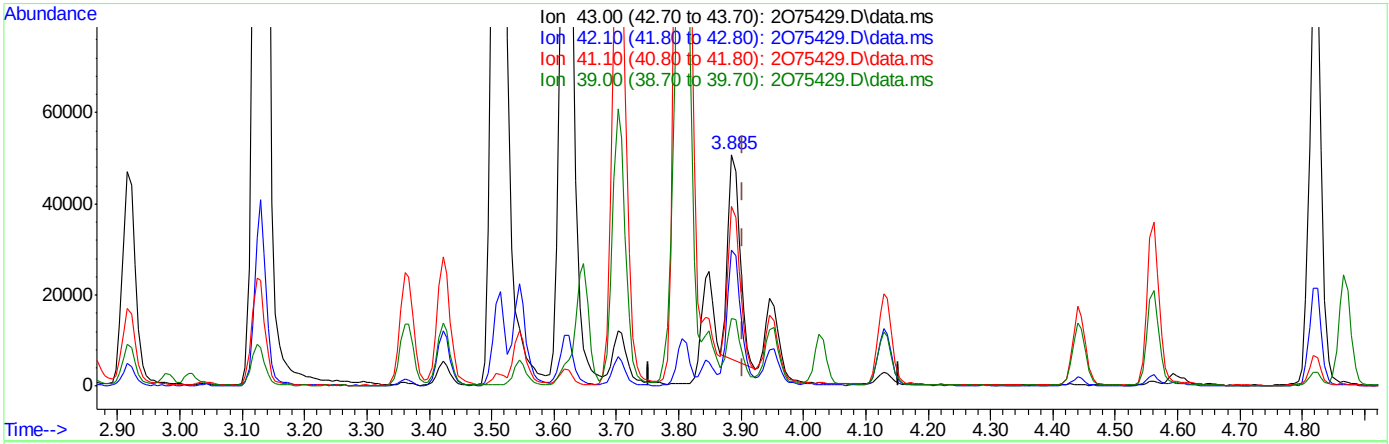
response 60027

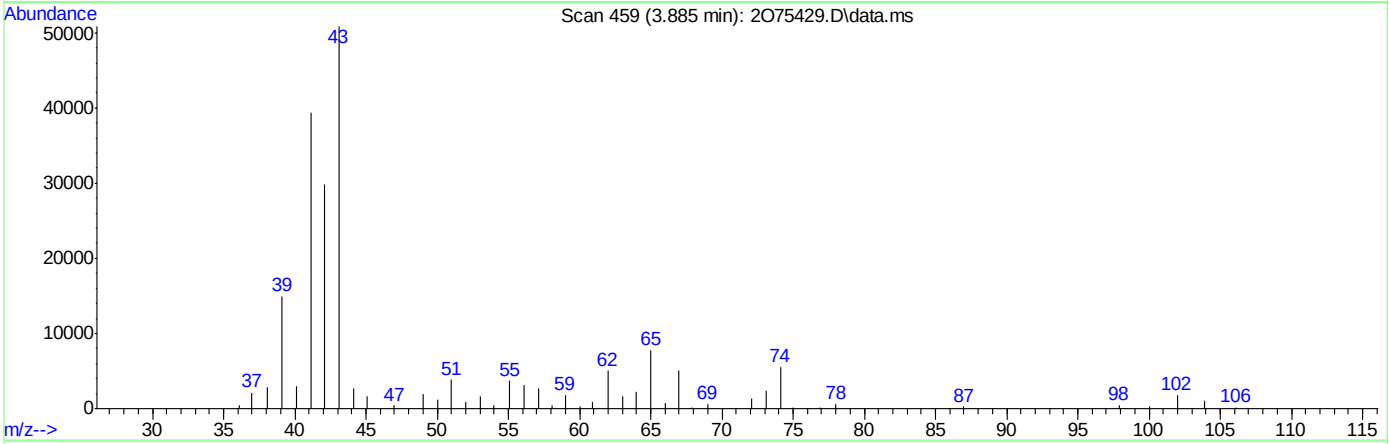
Ion	Exp%	Act%
116.90	100	100
118.90	96.00	98.49
120.90	31.80	31.92
81.90	22.80	24.36

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75429.D
Acq On : 11 Apr 2023 11:31 am
Operator : davidb2
Sample : IC2924-4 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Apr 11 11:45:58 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75429.D\data.ms

(49) Isobutyl alcohol

3.885min (-0.018) 401.45ug/L

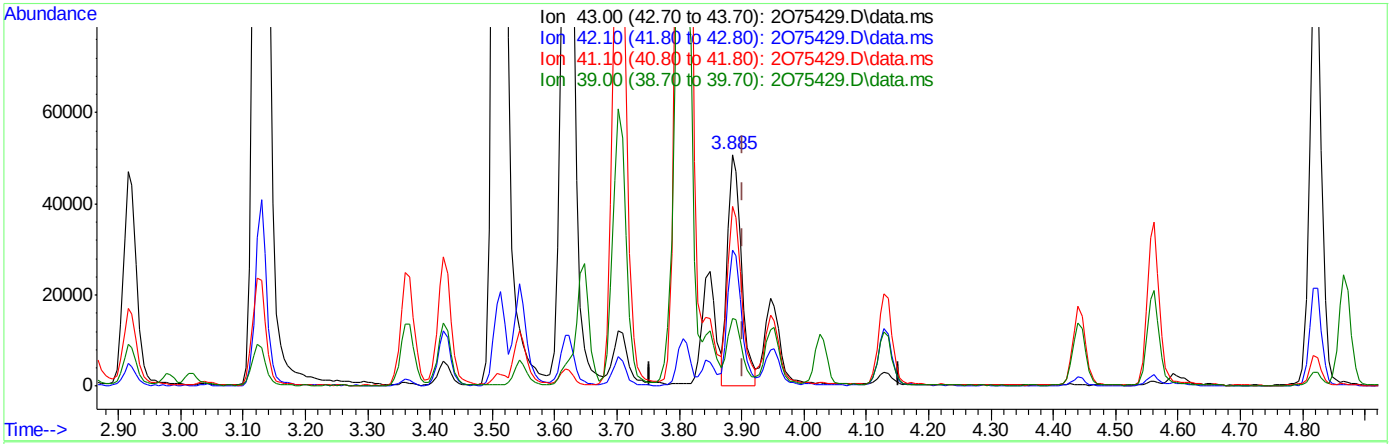
response 60794

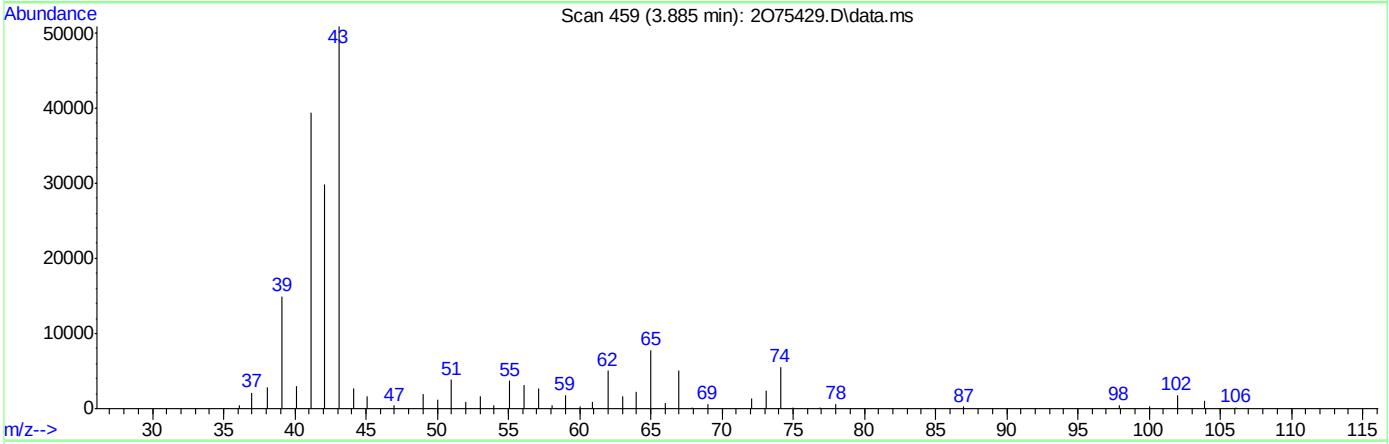
Ion	Exp%	Act%
43.00	100	100
42.10	60.60	59.37
41.10	73.30	75.86
39.00	24.10	27.43

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75429.D
Acq On : 11 Apr 2023 11:31 am
Operator : davidb2
Sample : IC2924-4 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Apr 11 11:45:58 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75429.D\data.ms

(49) Isobutyl alcohol

3.885min (-0.018) 516.28ug/L m

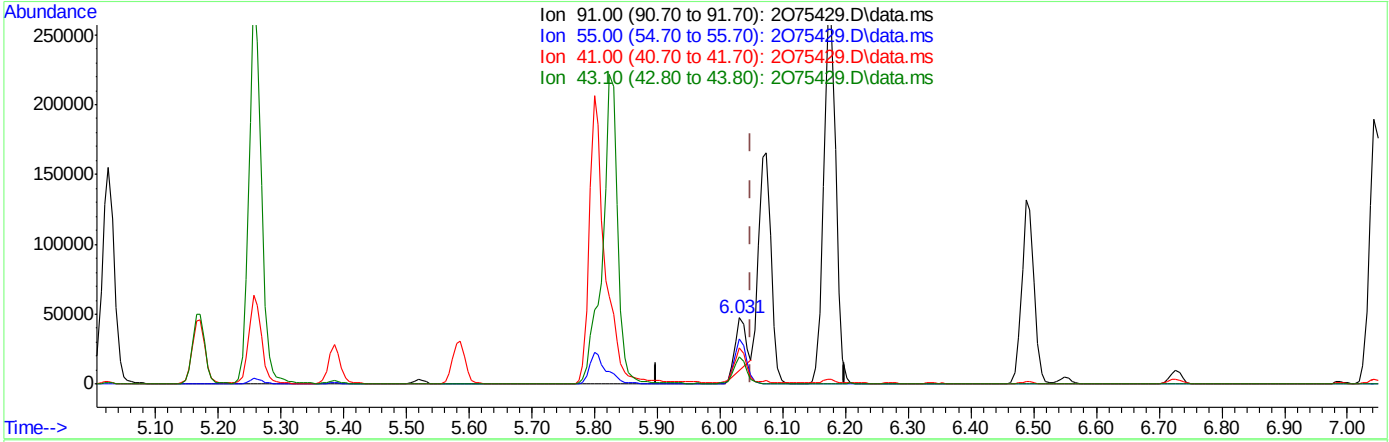
response 78184

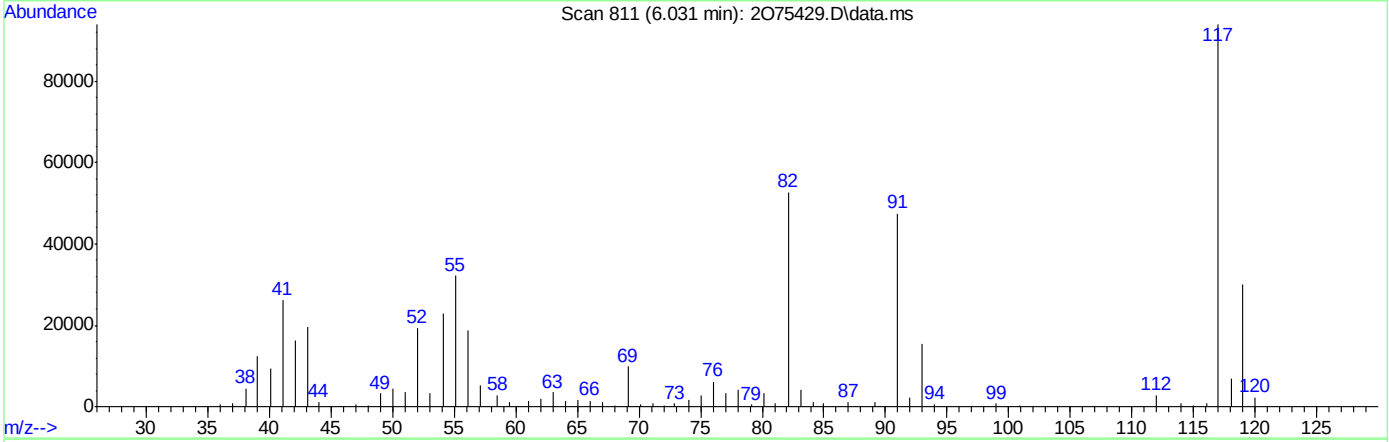
Ion	Exp%	Act%
43.00	100	100
42.10	60.60	58.64
41.10	73.30	77.52
39.00	24.10	29.36

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75429.D
Acq On : 11 Apr 2023 11:31 am
Operator : davidb2
Sample : IC2924-4 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Apr 11 11:45:58 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75429.D\data.ms

(76) 1-Chlorohexane

6.031min (-0.018) 23.53ug/L

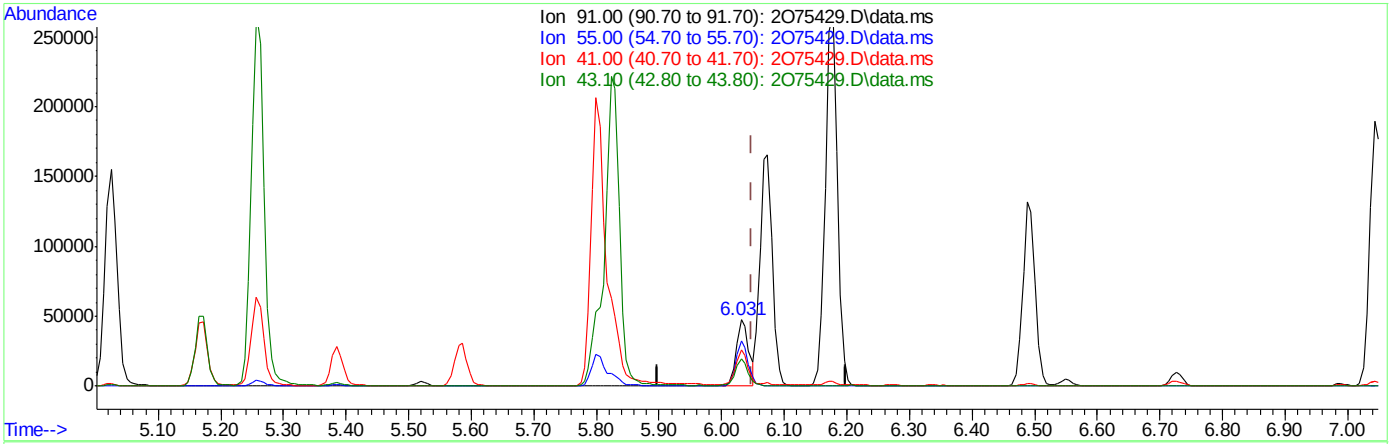
response 43109

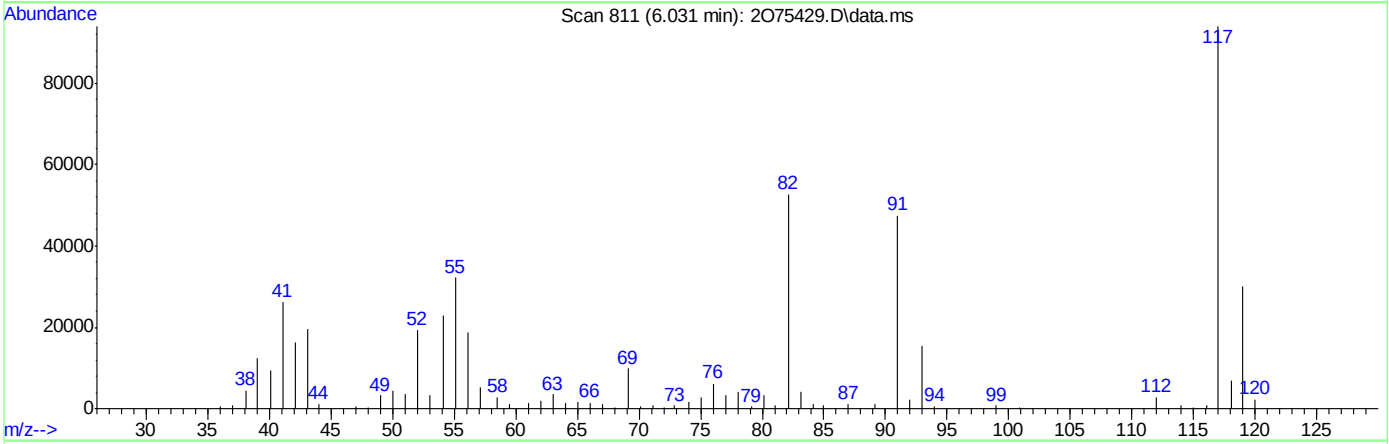
Ion	Exp%	Act%
91.00	100	100
55.00	73.60	67.08
41.00	56.00	51.98
43.10	44.90	39.57

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75429.D
Acq On : 11 Apr 2023 11:31 am
Operator : davidb2
Sample : IC2924-4 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Apr 11 11:45:58 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75429.D\data.ms

(76) 1-Chlorohexane

6.031min (-0.018) 35.77ug/L m

response 65532

Ion	Exp%	Act%
91.00	100	100
55.00	73.60	67.71
41.00	56.00	55.40
43.10	44.90	41.03

Manual Integrations APPROVED (compounds with "m" flag)
Karen Watson
04/11/23 15:49

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75430.D
Acq On : 11 Apr 2023 11:56 am
Operator : davidb2
Sample : ICC2924-5 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Apr 11 12:09:59 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	4.025	96	437363	50.00	ug/L	-0.02
62) Chlorobenzene-d5	6.043	117	318093	50.00	ug/L	-0.02
85) 1,4-Dichlorobenzene-d4	7.805	152	172809	50.00	ug/L	-0.02
System Monitoring Compounds						
39) Dibromofluoromethane	3.556	113	122547	60.70	ug/L	-0.01
Spiked Amount 50.000	Range 83 - 118		Recovery = 121.40%#			
50) 1,2-Dichloroethane-d4	3.867	65	131881	89.13	ug/L	-0.01
Spiked Amount 50.000	Range 79 - 125		Recovery = 178.26%#			
63) Toluene-d8	4.988	98	429000	38.11	ug/L	-0.02
Spiked Amount 50.000	Range 85 - 112		Recovery = 76.22%#			
86) 4-Bromofluorobenzene	6.945	174	128803	37.32	ug/L	-0.02
Spiked Amount 50.000	Range 83 - 118		Recovery = 74.64%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.227	85	71483	41.22	ug/L	99
3) Chloromethane	1.379	50	75870	37.30	ug/L	97
4) 1,3-butadiene	1.453	39	76148	43.81	ug/L	80
5) Vinyl Chloride	1.440	62	78516	40.97	ug/L	100
6) Bromomethane	1.672	94	57158	76.87	ug/L	98
7) Chloroethane	1.751	64	25152	25.37	ug/L	97
8) Trichlorofluoromethane	1.855	101	144993	58.58	ug/L	99
9) Ethyl Ether	2.062	59	61539	40.04	ug/L	94
10) Ethanol	2.166	45	31193	622.78	ug/L	95
11) 1,2-Dichlorotrifluoroe...	2.184	67	87079	41.22	ug/L	98
12) 1,1-Dichloroethene	2.184	61	112869	43.70	ug/L	99
13) Freon 113	2.215	101	76635	47.12	ug/L	97
14) Carbon Disulfide	2.202	76	217017	45.92	ug/L	94
15) Iodomethane	2.276	142	127093	81.32	ug/L	94
16) Acrolein	2.391	56	114786	193.64	ug/L	98
17) Allyl chloride	2.477	41	89533	43.00	ug/L	94
18) Methylene Chloride	2.538	49	100670	37.84	ug/L	97
19) Acetone	2.568	43	206165	179.15	ug/L	96
20) Methyl acetate	2.641	43	502258	198.19	ug/L	96
21) trans-1,2-Dichloroethene	2.635	61	111381	43.16	ug/L	98
22) Hexane	2.684	56	57552	40.86	ug/L	95
23) Methyl Tert Butyl Ether	2.702	73	216702	43.06	ug/L	93
24) Tert Butyl Alcohol	2.751	59	171993	315.60	ug/L	97
25) Acetonitrile	2.836	41	159442	317.38	ug/L	98
26) Di-isopropyl ether	2.916	45	227075	43.40	ug/L	98
27) Chloroprene	2.977	53	102702	41.56	ug/L	94
28) 1,1-Dichloroethane	2.995	63	142743	43.03	ug/L	98
29) Acrylonitrile	3.019	52	208254	180.34	ug/L	98
30) ETBE	3.123	59	210801	39.86	ug/L	95
31) Vinyl acetate	3.129	43	827080	207.67	ug/L	95
32) cis-1,2-Dichloroethene	3.300	96	89593	46.33	ug/L	93
33) 2,2-Dichloropropane	3.361	77	97661	46.86	ug/L	100
34) Bromochloromethane	3.416	128	47267	48.19	ug/L	87
35) Cyclohexane	3.422	56	117858	39.41	ug/L	89

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75430.D
Acq On : 11 Apr 2023 11:56 am
Operator : davidb2
Sample : ICC2924-5 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Apr 11 12:09:59 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	3.452	83	155456	46.04	ug/L		98
37) Ethyl acetate	3.513	43	639765	203.31	ug/L		99
38) Tetrahydrofuran	3.544	42	49272	39.41	ug/L		94
40) Carbon Tetrachloride	3.538	117	100672	38.84	ug/L		98
41) 1,1,1-Trichloroethane	3.580	97	122722	45.81	ug/L		98
42) 2-Butanone	3.623	43	362647	188.40	ug/L		95
43) 1,1-Dichloropropene	3.647	75	109727	46.86	ug/L		97
44) tert-Butyl formate	3.702	59	153009	149.79	ug/L	#	84
45) Propionitrile	3.794	54	216282	336.93	ug/L		84
46) Methacrylonitrile	3.806	41	726618	405.92	ug/L		96
47) Benzene	3.787	78	319798	43.85	ug/L		84
48) TAME	3.848	73	197724	41.94	ug/L		98
49) Isobutyl alcohol	3.891	43	144221m	930.45	ug/L		
51) 1,2-Dichloroethane	3.903	62	113617	43.38	ug/L		97
52) Tert Amyl Alcohol	3.952	59	135939	311.24	ug/L		90
53) Trichloroethene	4.129	95	91513	45.59	ug/L		95
54) Methylcyclohexane	4.129	83	123476	48.12	ug/L		95
55) Dibromomethane	4.379	93	58936	46.62	ug/L		91
56) 1,2-Dichloropropane	4.440	63	76064	41.86	ug/L		95
57) Bromodichloromethane	4.476	83	105080	44.58	ug/L		96
58) Methyl methacrylate	4.562	41	84167	45.51	ug/L		92
59) 1,4-Dioxane	4.598	88	33242	713.62	ug/L		95
60) 2-Chloroethyl vinyl ether	4.824	63	334648	214.83	ug/L		95
61) cis-1,3-Dichloropropene	4.867	75	119278	41.18	ug/L		99
64) Toluene	5.025	91	340321	32.48	ug/L		100
65) 2-Nitropropane	5.165	41	114277	138.18	ug/L		93
66) 4-Methyl-2-pentanone	5.257	43	621666	152.58	ug/L		97
67) trans-1,3-Dichloropropene	5.287	75	115408	32.61	ug/L		98
68) Tetrachloroethene	5.281	166	97604	30.93	ug/L		94
69) Ethyl methacrylate	5.385	69	102211	29.22	ug/L		93
70) 1,1,2-Trichloroethane	5.397	83	69305	30.88	ug/L		96
71) Dibromochloromethane	5.519	129	84536	33.23	ug/L		99
72) 1,3-Dichloropropane	5.586	76	128952	31.06	ug/L		95
73) 1,2-Dibromoethane	5.690	107	90916	33.05	ug/L		96
74) 3,3-dimethyl-1-butanol	5.805	57	871600	1099.84	ug/L		94
75) 2-hexanone	5.824	43	624681	140.13	ug/L		94
76) 1-Chlorohexane	6.031	91	105263m	54.88	ug/L		
77) Ethylbenzene	6.074	91	367965	32.79	ug/L		96
78) Chlorobenzene	6.055	112	232459	32.62	ug/L		97
79) 1,1,1,2-Tetrachloroethane	6.098	131	77134	31.92	ug/L		97
80) m,p-Xylene	6.177	91	581934	66.83	ug/L		97
81) o-Xylene	6.494	91	295190	34.83	ug/L		98
82) Styrene	6.531	104	238365	35.42	ug/L		98
83) Bromoform	6.549	173	54042	29.57	ug/L		98
84) Isopropylbenzene	6.726	105	360658	36.00	ug/L		99
87) cis-1,4-Dichloro-2-butene	6.988	53	31977	13.77	ug/L		90
88) n-Propylbenzene	7.043	91	417233	13.87	ug/L		98
89) Bromobenzene	7.025	156	93144	13.57	ug/L		99
90) 1,1,2,2-Tetrachloroethane	7.092	83	128766	13.42	ug/L		99
91) 1,3,5-Trimethylbenzene	7.201	105	302192	13.99	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75430.D
Acq On : 11 Apr 2023 11:56 am
Operator : davidb2
Sample : ICC2924-5 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Apr 11 12:09:59 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration

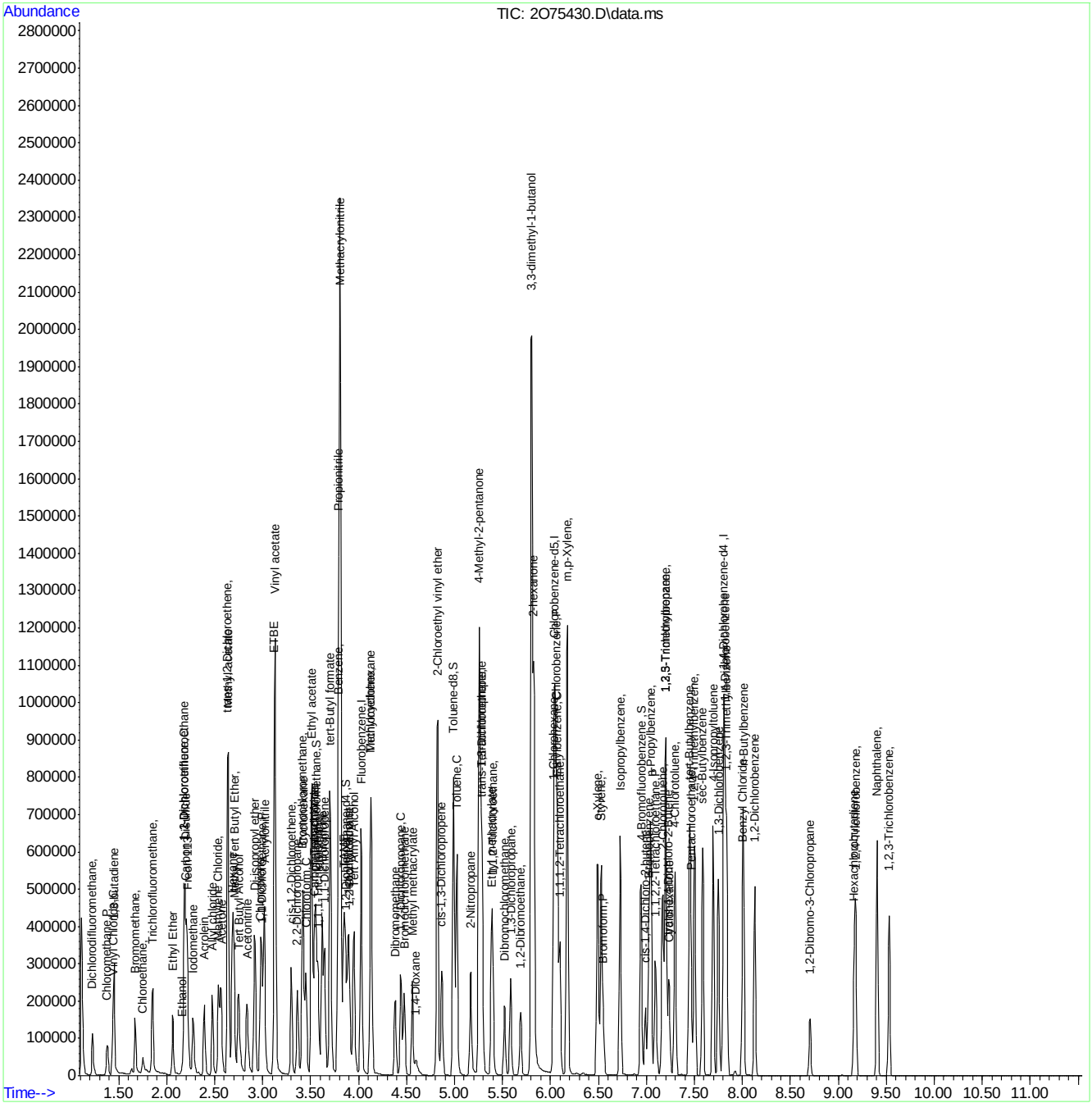
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	7.171	91	276437	13.55	ug/L		96
93)	trans-1,4-Dichloro-2-B...	7.232	53	27421	11.40	ug/L		86
94)	1,2,3-Trichloropropane	7.201	110	41322	13.85	ug/L		96
95)	Cyclohexanone	7.238	55	27239	49.38	ug/L		93
96)	4-Chlorotoluene	7.299	91	262313	13.50	ug/L		98
97)	tert-Butylbenzene	7.451	91	162273	16.99	ug/L		94
99)	1,2,4-Trimethylbenzene	7.500	105	300045	16.72	ug/L		97
100)	Pentachloroethane	7.464	167	42115	13.40	ug/L		95
101)	sec-Butylbenzene	7.585	105	355564	13.93	ug/L		100
102)	4-Isopropyltoluene	7.695	119	315432	17.87	ug/L		98
103)	1,3-Dichlorobenzene	7.750	146	184740	13.50	ug/L		99
104)	1,2,3-Trimethylbenzene	7.835	105	311702	16.84	ug/L		100
105)	1,4-Dichlorobenzene	7.817	146	184476	13.10	ug/L		99
106)	n-Butylbenzene	8.012	92	156432	16.69	ug/L		97
107)	Benzyl Chloride	8.000	126	38340	13.38	ug/L	#	93
108)	1,2-Dichlorobenzene	8.128	146	173357	13.11	ug/L		98
109)	1,2-Dibromo-3-Chloropr...	8.707	75	27059	12.88	ug/L		81
110)	Hexachlorobutadiene	9.164	225	37125	12.35	ug/L		93
111)	1,2,4-Trichlorobenzene	9.183	180	111277	15.15	ug/L		99
112)	Naphthalene	9.402	128	395737	13.53	ug/L		99
113)	1,2,3-Trichlorobenzene	9.530	180	104761	14.70	ug/L		99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75430.D
Acq On : 11 Apr 2023 11:56 am
Operator : davidb2
Sample : ICC2924-5 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Apr 11 12:09:59 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration



Manual Integration Approval Summary

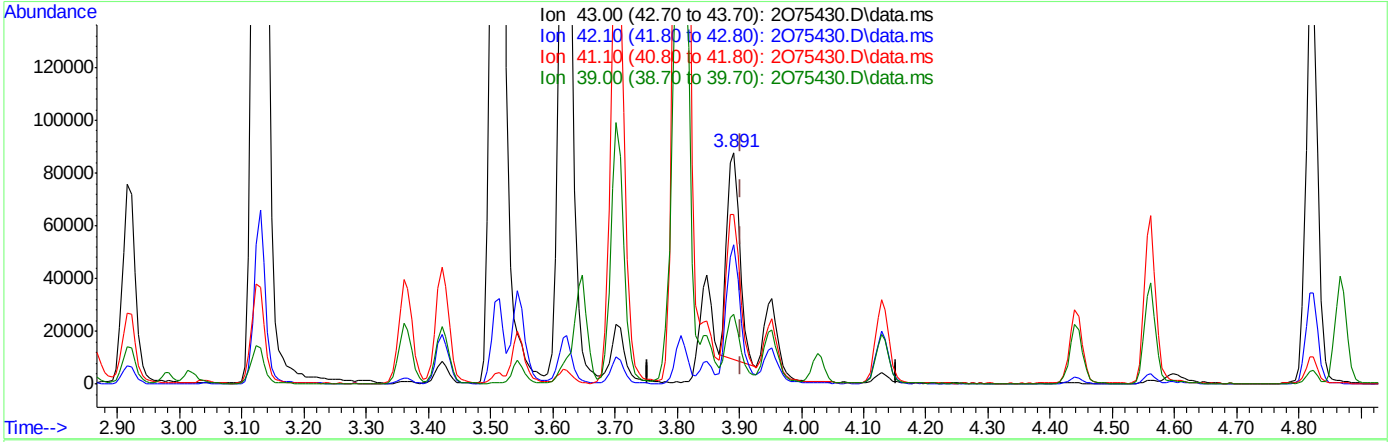
Sample Number: V2O2924-ICC2924 **Method:** SW846 8260D
Lab FileID: 2O75430.D **Analyst approved:** 04/11/23 14:45 David Butler
Injection Time: 04/11/23 11:56 **Supervisor approved:** 04/11/23 15:49 Karen Watson

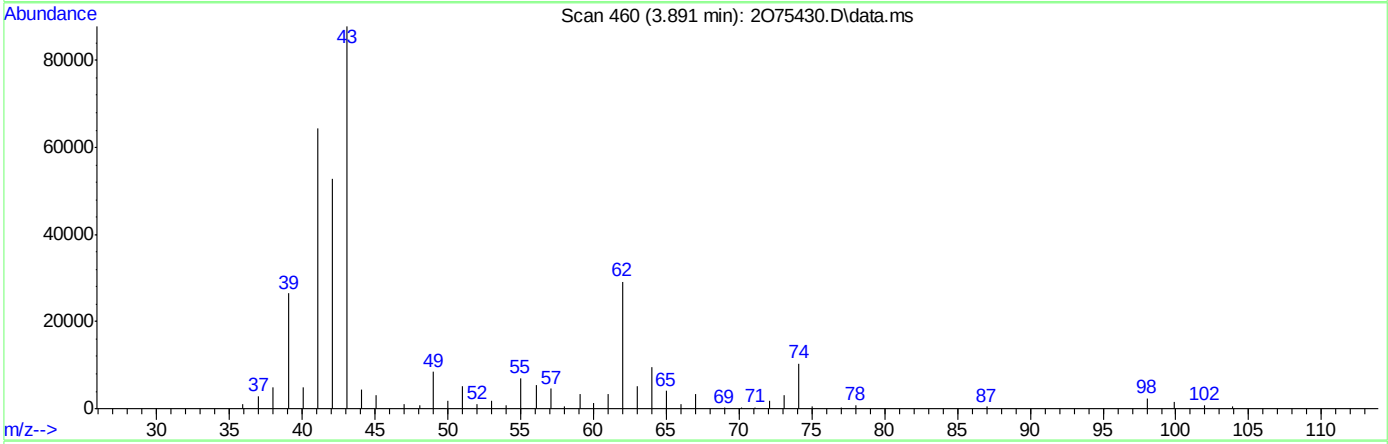
Parameter	CAS	Sig#	R.T. (min.)	Reason
Isobutyl Alcohol	78-83-1		3.89	Poor instrument integration
1-Chlorohexane	544-10-5		6.03	Poor instrument integration

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75430.D
Acq On : 11 Apr 2023 11:56 am
Operator : davidb2
Sample : ICC2924-5 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Apr 11 12:09:26 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75430.D\data.ms

(49) Isobutyl alcohol

3.891min (-0.012) 718.16ug/L

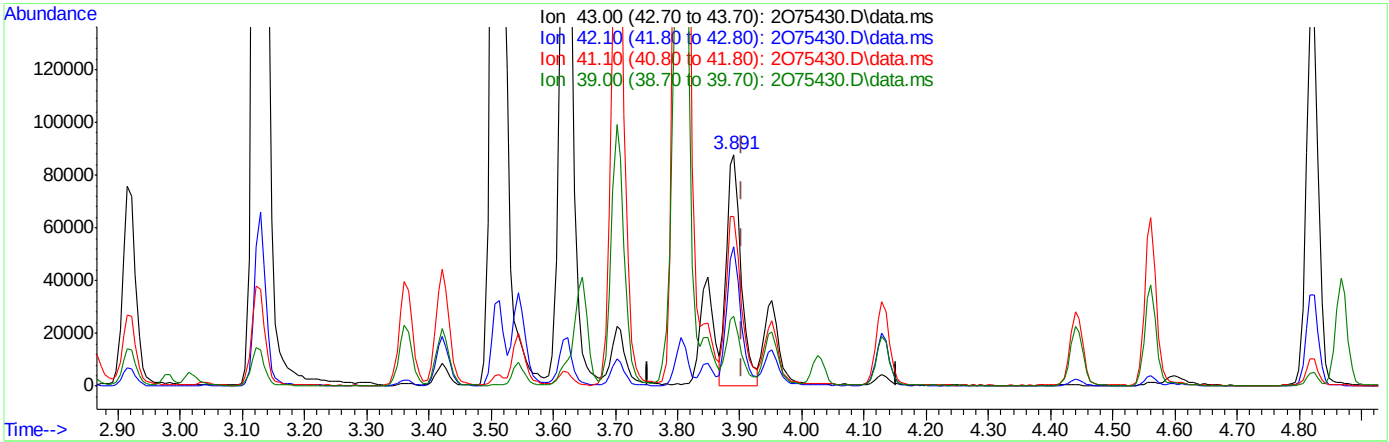
response 111317

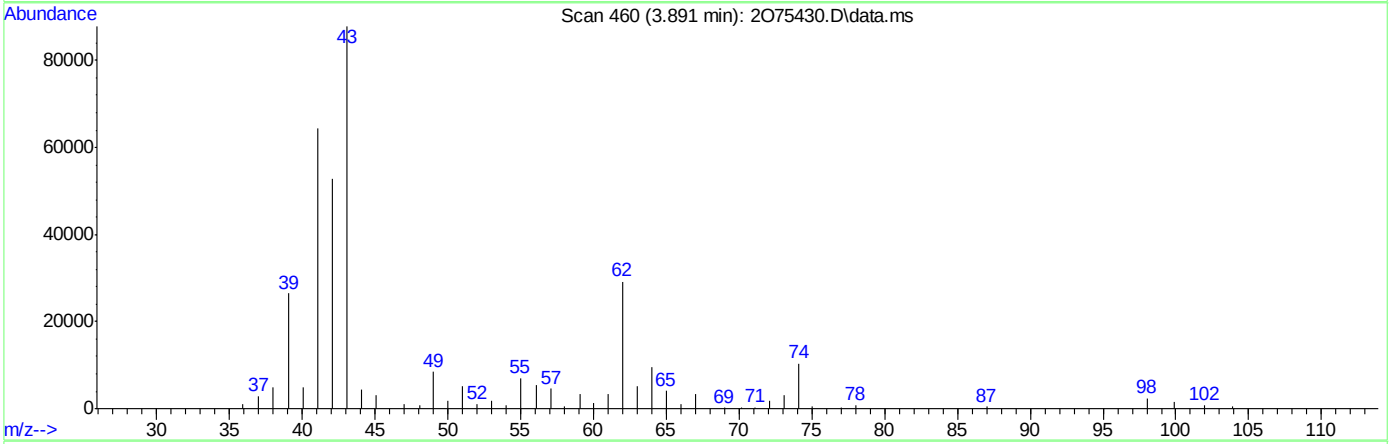
Ion	Exp%	Act%
43.00	100	100
42.10	60.60	60.76
41.10	73.30	72.13
39.00	24.10	28.25

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75430.D
Acq On : 11 Apr 2023 11:56 am
Operator : davidb2
Sample : ICC2924-5 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Apr 11 12:09:26 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75430.D\data.ms

(49) Isobutyl alcohol

3.891min (-0.012) 930.45ug/L m

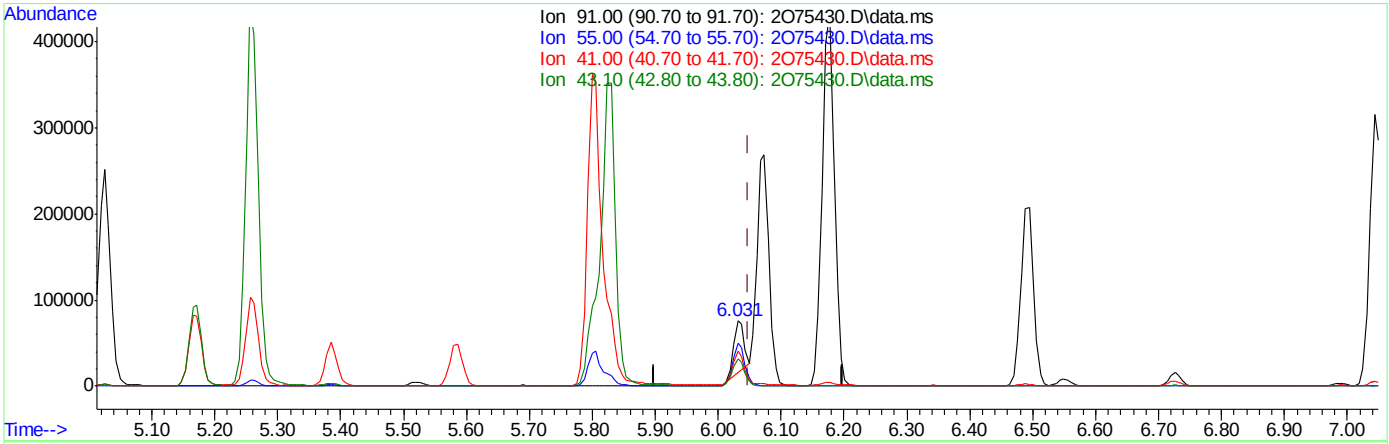
response 144221

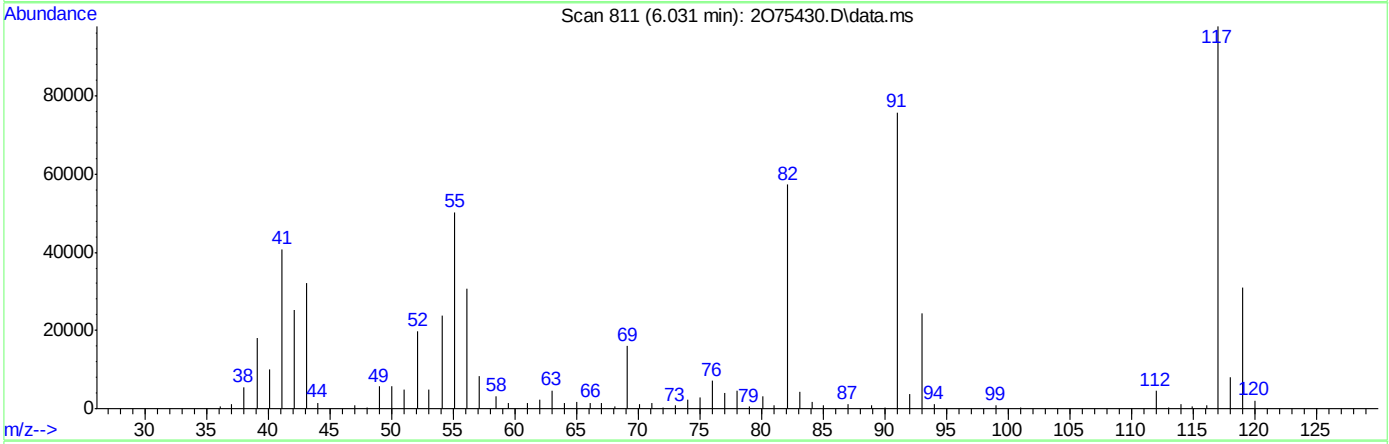
Ion	Exp%	Act%
43.00	100	100
42.10	60.60	60.04
41.10	73.30	73.46
39.00	24.10	30.17

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75430.D
Acq On : 11 Apr 2023 11:56 am
Operator : davidb2
Sample : ICC2924-5 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Apr 11 12:09:26 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75430.D\data.ms

(76) 1-Chlorohexane

6.031min (-0.018) 37.22ug/L

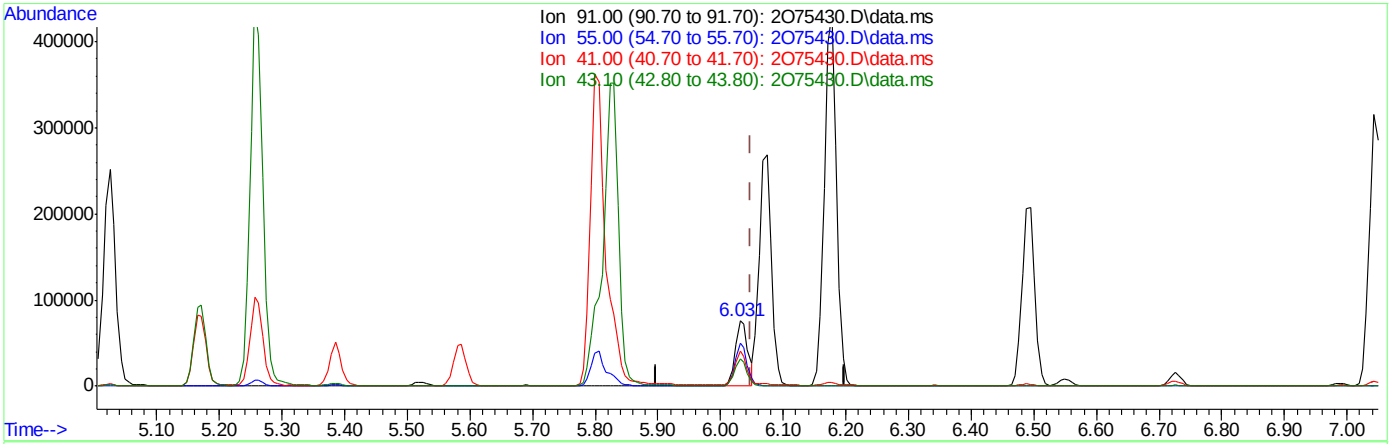
response 71397

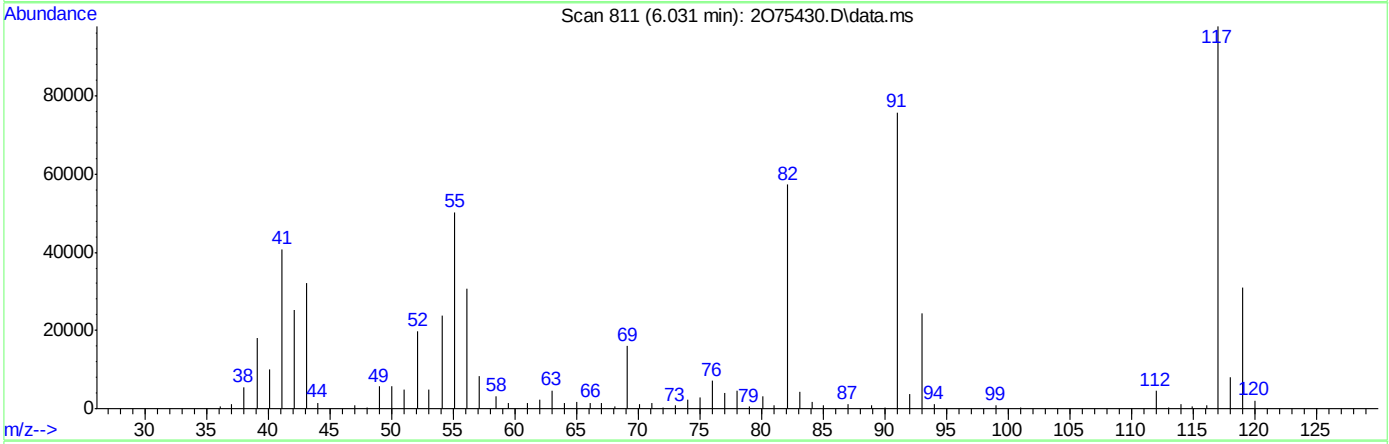
Ion	Exp%	Act%
91.00	100	100
55.00	73.60	65.16
41.00	56.00	50.73
43.10	44.90	40.94

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75430.D
Acq On : 11 Apr 2023 11:56 am
Operator : davidb2
Sample : ICC2924-5 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Apr 11 12:09:26 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75430.D\data.ms

(76) 1-Chlorohexane

6.031min (-0.018) 54.88ug/L m

response 105263

Ion	Exp%	Act%
91.00	100	100
55.00	73.60	66.27
41.00	56.00	53.73
43.10	44.90	42.25

Manual Integrations APPROVED (compounds with "m" flag)
Karen Watson
04/11/23 15:49

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75431.D
Acq On : 11 Apr 2023 12:22 pm
Operator : davidb2
Sample : IC2924-6 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 11 12:35:48 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	4.025	96	440389	50.00	ug/L	-0.02
62) Chlorobenzene-d5	6.043	117	322962	50.00	ug/L	-0.02
85) 1,4-Dichlorobenzene-d4	7.805	152	174011	50.00	ug/L	-0.02
System Monitoring Compounds						
39) Dibromofluoromethane	3.556	113	124539	61.26	ug/L	-0.01
Spiked Amount 50.000	Range 83 - 118		Recovery = 122.52%#			
50) 1,2-Dichloroethane-d4	3.867	65	140650	94.40	ug/L	-0.01
Spiked Amount 50.000	Range 79 - 125		Recovery = 188.80%#			
63) Toluene-d8	4.988	98	434742	38.04	ug/L	-0.02
Spiked Amount 50.000	Range 85 - 112		Recovery = 76.08%#			
86) 4-Bromofluorobenzene	6.945	174	131036	37.71	ug/L	-0.02
Spiked Amount 50.000	Range 83 - 118		Recovery = 75.42%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.227	85	133952	76.72	ug/L	97
3) Chloromethane	1.379	50	141269	68.97	ug/L	98
4) 1,3-butadiene	1.453	39	138181	78.96	ug/L	81
5) Vinyl Chloride	1.434	62	143206	74.22	ug/L	98
6) Bromomethane	1.672	94	107503	143.57	ug/L	99
7) Chloroethane	1.751	64	25899	26.13	ug/L	97
8) Trichlorofluoromethane	1.849	101	241815	97.03	ug/L	99
9) Ethyl Ether	2.062	59	111508	72.06	ug/L	97
10) Ethanol	2.172	45	56006	1110.50	ug/L	95
11) 1,2-Dichlorotrifluoroe...	2.184	67	167697	78.83	ug/L	98
12) 1,1-Dichloroethene	2.184	61	210730	81.03	ug/L	99
13) Freon 113	2.215	101	146062	89.19	ug/L	97
14) Carbon Disulfide	2.202	76	397024	83.43	ug/L	96
15) Iodomethane	2.276	142	233651	120.89	ug/L	92
16) Acrolein	2.391	56	212597	356.18	ug/L	99
17) Allyl chloride	2.477	41	162485	77.50	ug/L	92
18) Methylene Chloride	2.538	49	179750	74.69	ug/L	97
19) Acetone	2.568	43	372984	321.88	ug/L	96
20) Methyl acetate	2.641	43	906370	355.20	ug/L	97
21) trans-1,2-Dichloroethene	2.635	61	202544	77.94	ug/L	99
22) Hexane	2.684	56	106421	75.04	ug/L	97
23) Methyl Tert Butyl Ether	2.702	73	397269	78.39	ug/L	90
24) Tert Butyl Alcohol	2.751	59	326642	592.32	ug/L	97
25) Acetonitrile	2.836	41	276961	612.63	ug/L	98
26) Di-isopropyl ether	2.916	45	413204	78.43	ug/L	96
27) Chloroprene	2.983	53	193309	77.68	ug/L	91
28) 1,1-Dichloroethane	2.995	63	258488	77.39	ug/L	97
29) Acrylonitrile	3.019	52	382821	329.24	ug/L	98
30) ETBE	3.129	59	389206	73.09	ug/L	97
31) Vinyl acetate	3.129	43	1562425	389.60	ug/L	95
32) cis-1,2-Dichloroethene	3.300	96	160552	82.46	ug/L	94
33) 2,2-Dichloropropane	3.361	77	187470	89.33	ug/L	98
34) Bromochloromethane	3.416	128	85949	87.02	ug/L	87
35) Cyclohexane	3.422	56	220976	73.38	ug/L	89

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75431.D
Acq On : 11 Apr 2023 12:22 pm
Operator : davidb2
Sample : IC2924-6 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 11 12:35:48 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
36) Chloroform	3.452	83	280094	82.39	ug/L	99
37) Ethyl acetate	3.513	43	1187552	374.80	ug/L	99
38) Tetrahydrofuran	3.544	42	90926	72.23	ug/L	97
40) Carbon Tetrachloride	3.538	117	188824m	72.35	ug/L	
41) 1,1,1-Trichloroethane	3.580	97	232294	86.11	ug/L	98
42) 2-Butanone	3.623	43	660302	340.69	ug/L	97
43) 1,1-Dichloropropene	3.647	75	199780	84.73	ug/L	99
44) tert-Butyl formate	3.708	59	305633	295.61	ug/L	96
45) Propionitrile	3.794	54	388927	601.72	ug/L	85
46) Methacrylonitrile	3.806	41	1329514	737.61	ug/L	95
47) Benzene	3.787	78	574154	78.18	ug/L	80
48) TAME	3.848	73	369497	77.84	ug/L	96
49) Isobutyl alcohol	3.891	43	270774m	1734.90	ug/L	
51) 1,2-Dichloroethane	3.903	62	206247	78.20	ug/L	96
52) Tert Amyl Alcohol	3.952	59	261217	593.96	ug/L	96
53) Trichloroethene	4.129	95	164166	81.22	ug/L	95
54) Methylcyclohexane	4.129	83	231876	89.74	ug/L	95
55) Dibromomethane	4.379	93	106367	83.55	ug/L	89
56) 1,2-Dichloropropane	4.440	63	139696	76.35	ug/L	97
57) Bromodichloromethane	4.476	83	195159	82.24	ug/L	99
58) Methyl methacrylate	4.562	41	158208	84.96	ug/L	95
59) 1,4-Dioxane	4.598	88	60102	1281.37	ug/L	92
60) 2-Chloroethyl vinyl ether	4.824	63	607686	387.43	ug/L	97
61) cis-1,3-Dichloropropene	4.867	75	223047	76.48	ug/L	98
64) Toluene	5.025	91	616409	57.94	ug/L	99
65) 2-Nitropropane	5.171	41	241967	288.17	ug/L	94
66) 4-Methyl-2-pentanone	5.257	43	1131298	273.47	ug/L	96
67) trans-1,3-Dichloropropene	5.287	75	215295	59.92	ug/L	97
68) Tetrachloroethene	5.281	166	178796	55.80	ug/L	94
69) Ethyl methacrylate	5.385	69	193627	54.76	ug/L	95
70) 1,1,2-Trichloroethane	5.397	83	124280	54.55	ug/L	96
71) Dibromochloromethane	5.525	129	161261	62.43	ug/L	99
72) 1,3-Dichloropropane	5.586	76	231744	54.98	ug/L	96
73) 1,2-Dibromoethane	5.690	107	166421	59.58	ug/L	99
74) 3,3-dimethyl-1-butanol	5.805	57	1670000	2117.62	ug/L	94
75) 2-hexanone	5.830	43	1166454	257.73	ug/L	94
76) 1-Chlorohexane	6.037	91	192204m	98.69	ug/L	
77) Ethylbenzene	6.074	91	673740	59.13	ug/L	97
78) Chlorobenzene	6.055	112	419481	57.97	ug/L	96
79) 1,1,1,2-Tetrachloroethane	6.098	131	145122	59.14	ug/L	98
80) m,p-Xylene	6.177	91	1052501	119.04	ug/L	98
81) o-Xylene	6.494	91	530180	61.61	ug/L	98
82) Styrene	6.531	104	440148	64.42	ug/L	99
83) Bromoform	6.549	173	107379	57.86	ug/L	98
84) Isopropylbenzene	6.726	105	655352	64.44	ug/L	99
87) cis-1,4-Dichloro-2-butene	6.988	53	61682	26.38	ug/L	90
88) n-Propylbenzene	7.049	91	763724	25.91	ug/L	95
89) Bromobenzene	7.025	156	169195	25.07	ug/L	98
90) 1,1,2,2-Tetrachloroethane	7.092	83	239916	25.45	ug/L	99
91) 1,3,5-Trimethylbenzene	7.201	105	550030	25.92	ug/L	99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75431.D
Acq On : 11 Apr 2023 12:22 pm
Operator : davidb2
Sample : IC2924-6 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 11 12:35:48 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration

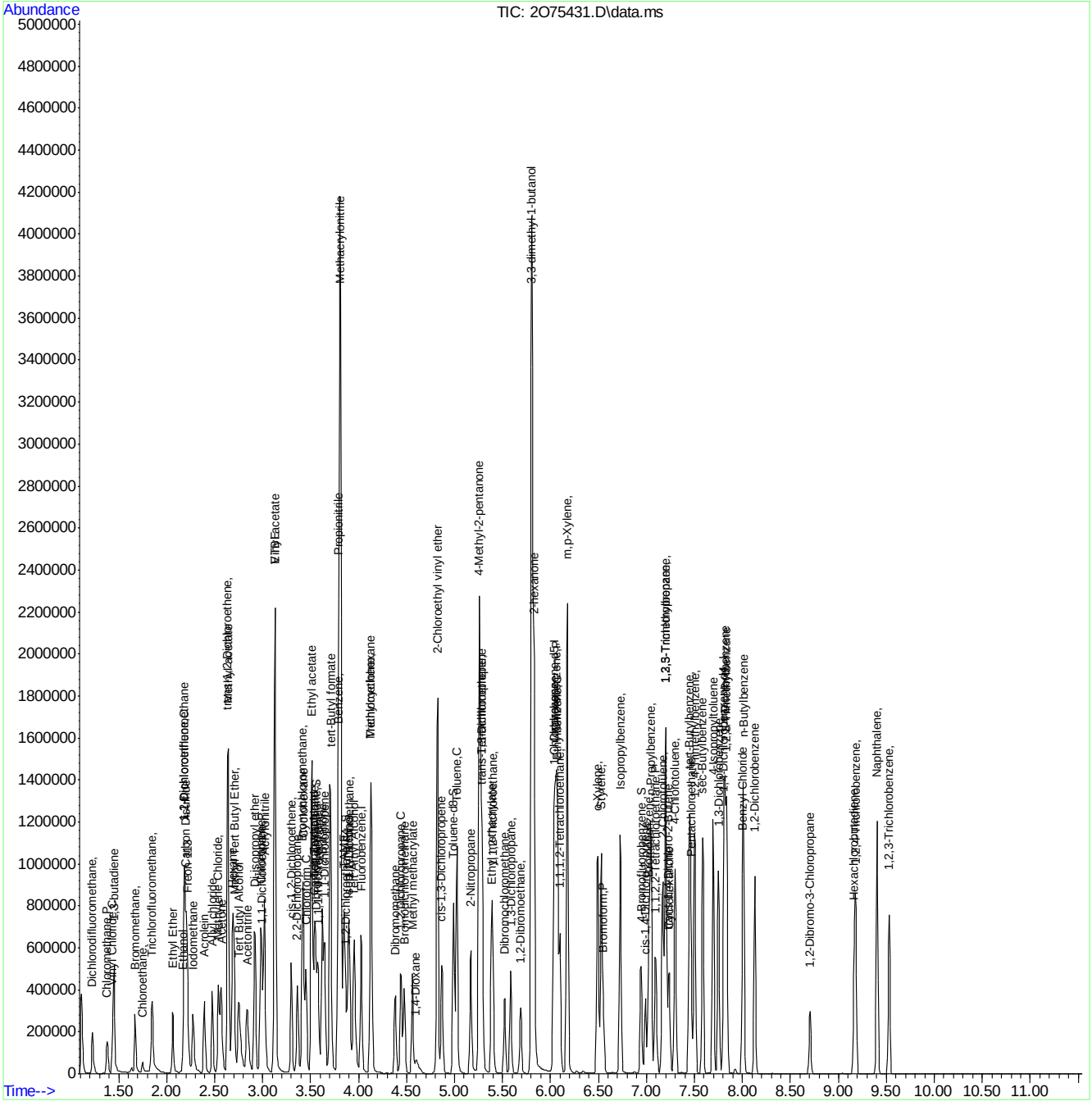
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	7.171	91	500773	25.03	ug/L		97
93)	trans-1,4-Dichloro-2-B...	7.232	53	53825	22.70	ug/L	#	81
94)	1,2,3-Trichloropropane	7.201	110	75012	25.55	ug/L		94
95)	Cyclohexanone	7.238	55	51751	95.03	ug/L		93
96)	4-Chlorotoluene	7.299	91	471168	24.70	ug/L		97
97)	tert-Butylbenzene	7.451	91	291815	30.35	ug/L		93
99)	1,2,4-Trimethylbenzene	7.506	105	554195	30.67	ug/L		98
100)	Pentachloroethane	7.464	167	82683	27.08	ug/L		92
101)	sec-Butylbenzene	7.586	105	659689	26.39	ug/L		99
102)	4-Isopropyltoluene	7.695	119	584424	32.87	ug/L		98
103)	1,3-Dichlorobenzene	7.750	146	333007	24.82	ug/L		98
104)	1,2,3-Trimethylbenzene	7.835	105	564845	30.30	ug/L		99
105)	1,4-Dichlorobenzene	7.817	146	338514	24.55	ug/L		99
106)	n-Butylbenzene	8.012	92	290569	30.79	ug/L		96
107)	Benzyl Chloride	8.000	126	79429	27.78	ug/L	#	83
108)	1,2-Dichlorobenzene	8.128	146	318795	24.60	ug/L		98
109)	1,2-Dibromo-3-Chloropr...	8.707	75	53737	25.40	ug/L		83
110)	Hexachlorobutadiene	9.164	225	70896	24.04	ug/L		93
111)	1,2,4-Trichlorobenzene	9.183	180	200467	27.11	ug/L		98
112)	Naphthalene	9.402	128	734915	25.47	ug/L		99
113)	1,2,3-Trichlorobenzene	9.530	180	188996	26.35	ug/L		99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75431.D
Acq On : 11 Apr 2023 12:22 pm
Operator : davidb2
Sample : IC2924-6 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 11 12:35:48 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration



Manual Integration Approval Summary

Sample Number: V2O2924-IC2924
Lab FileID: 2O75431.D
Injection Time: 04/11/23 12:22

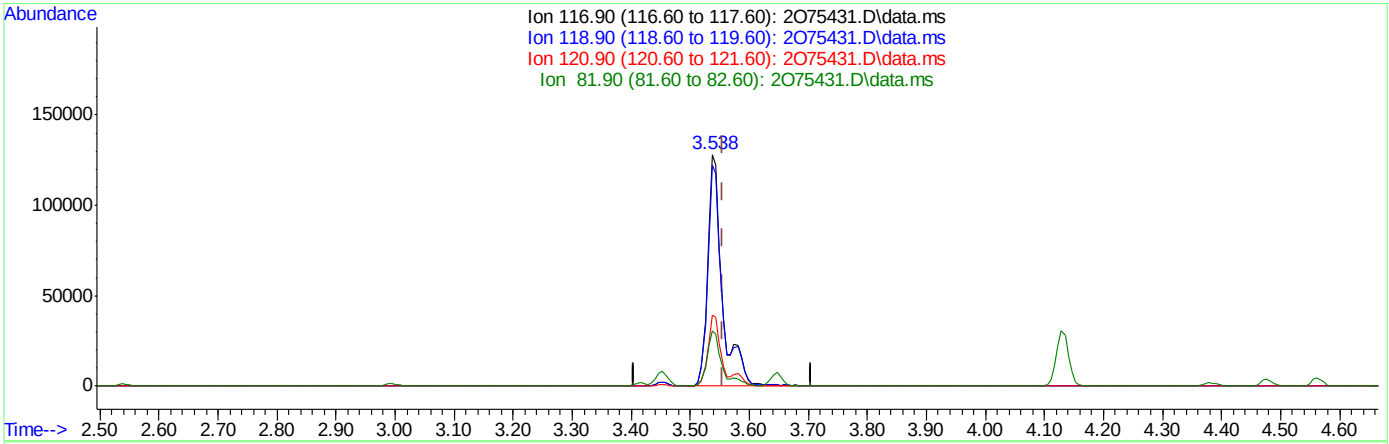
Method: SW846 8260D
Analyst approved: 04/11/23 14:45 David Butler
Supervisor approved: 04/11/23 15:49 Karen Watson

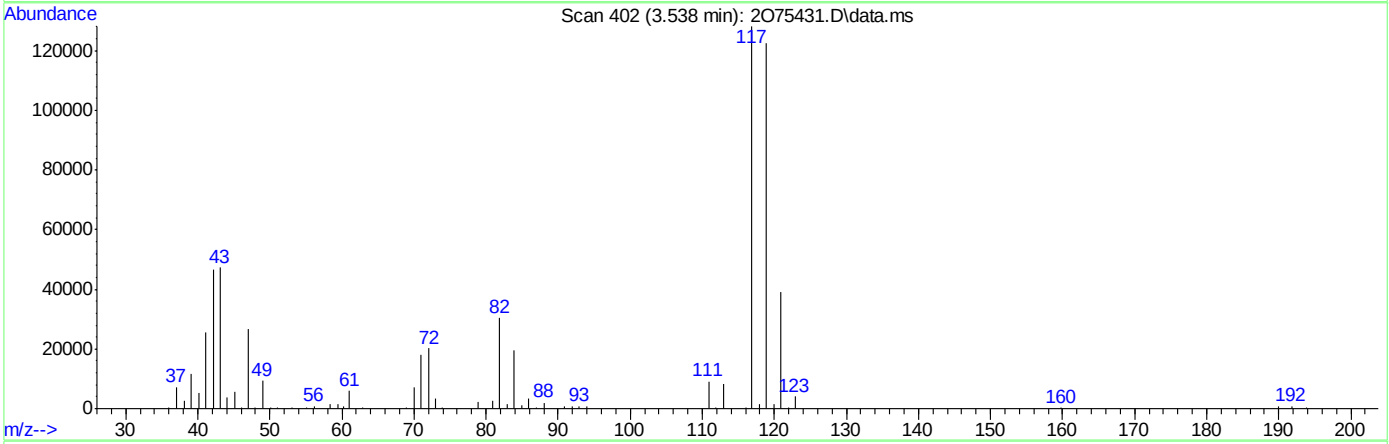
Parameter	CAS	Sig#	R.T. (min.)	Reason
Carbon Tetrachloride	56-23-5		3.54	Poor instrument integration
Isobutyl Alcohol	78-83-1		3.89	Poor instrument integration
1-Chlorohexane	544-10-5		6.04	Poor instrument integration

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75431.D
Acq On : 11 Apr 2023 12:22 pm
Operator : davidb2
Sample : IC2924-6 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 11 12:35:14 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75431.D\data.ms

(40) Carbon Tetrachloride ( )

3.538min (-0.018) 86.41ug/L

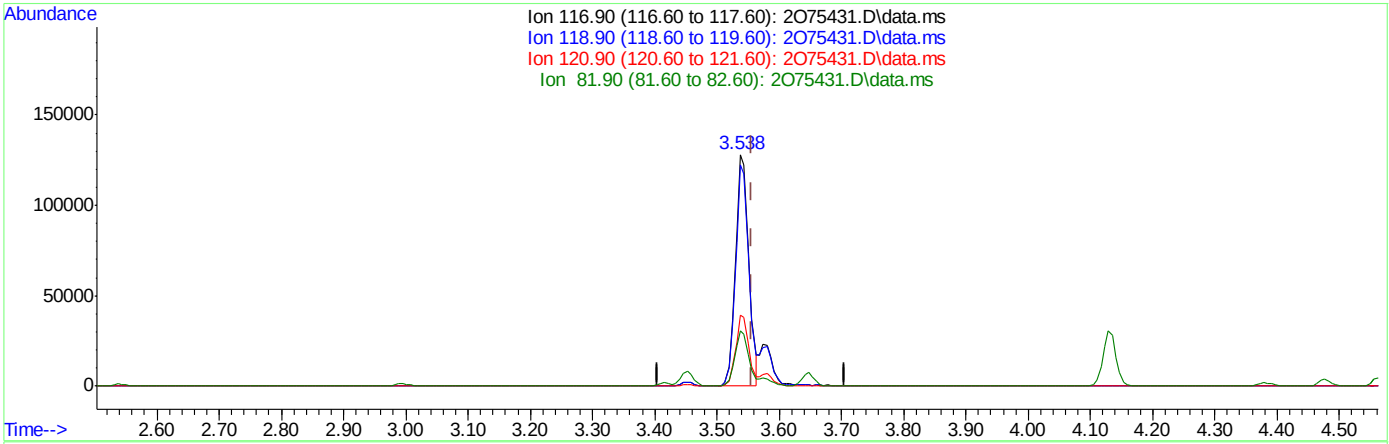
response 225497

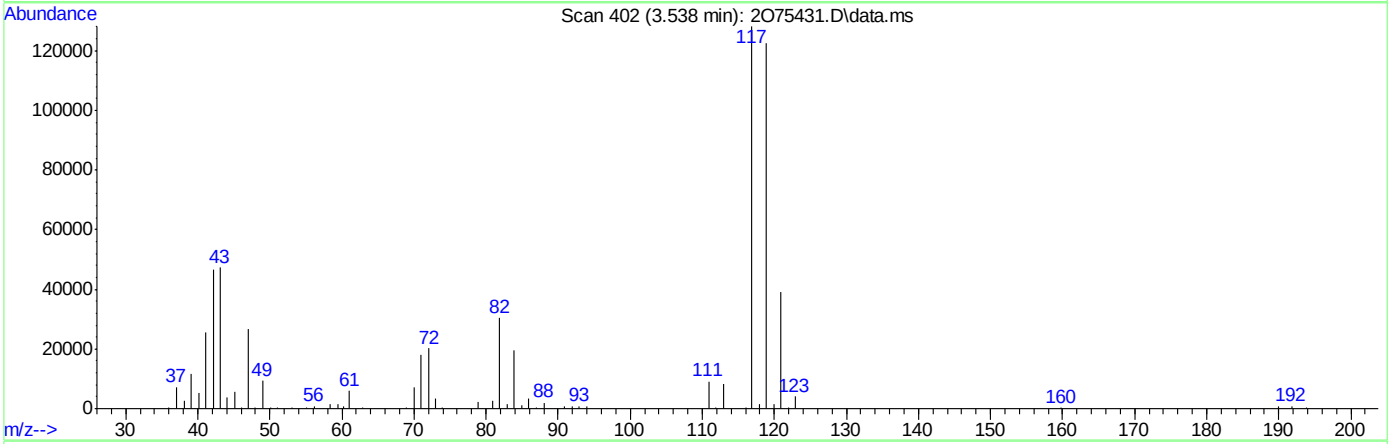
Ion	Exp%	Act%
116.90	100	100
118.90	96.00	95.73
120.90	31.80	30.64
81.90	22.80	23.68

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75431.D
Acq On : 11 Apr 2023 12:22 pm
Operator : davidb2
Sample : IC2924-6 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 11 12:35:14 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75431.D\data.ms

(40) Carbon Tetrachloride ( )

3.538min (-0.018) 72.35ug/L m

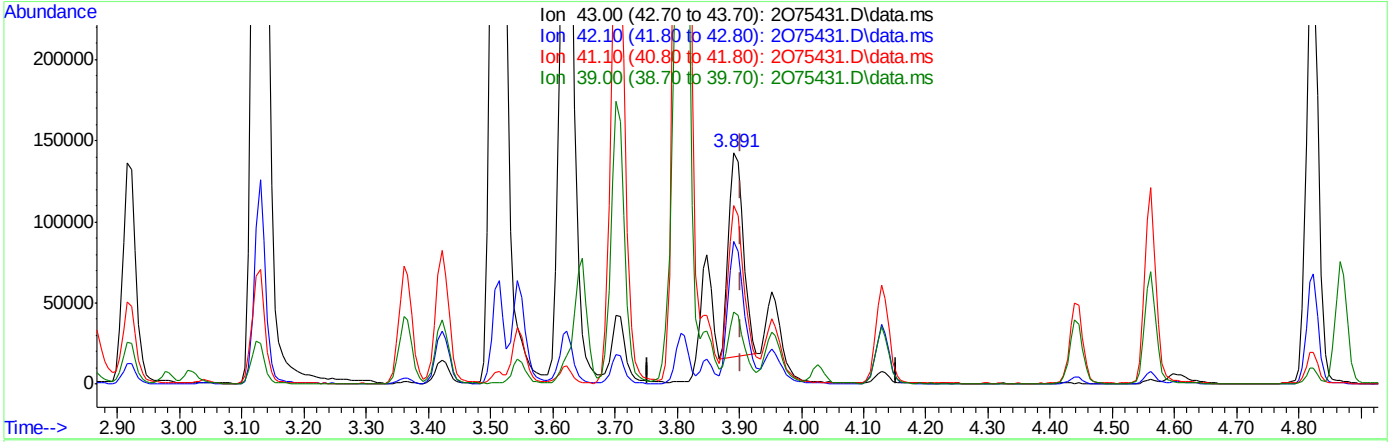
response 188824

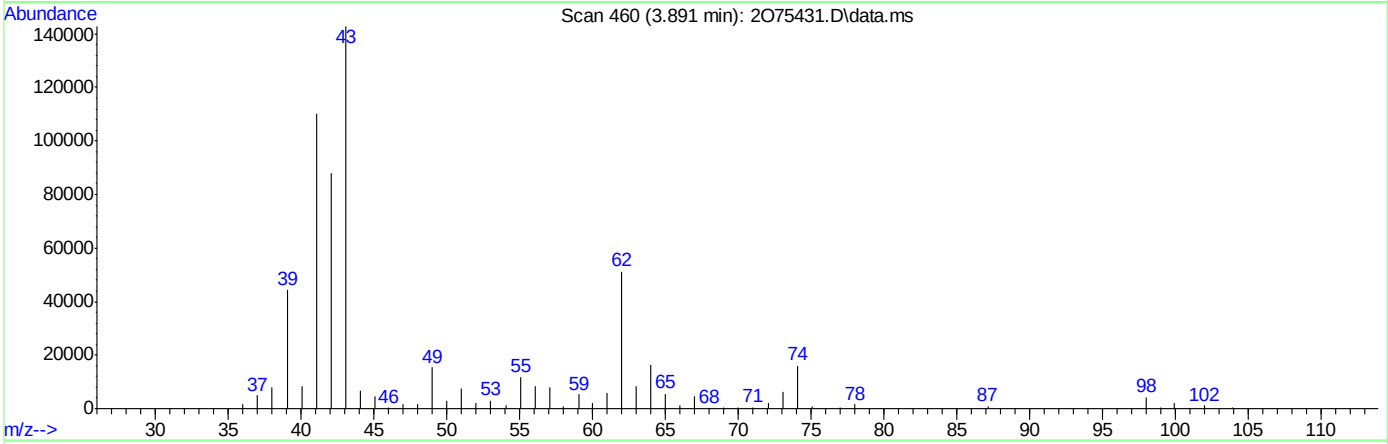
Ion	Exp%	Act%
116.90	100	100
118.90	96.00	95.73
120.90	31.80	30.64
81.90	22.80	23.68

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75431.D
Acq On : 11 Apr 2023 12:22 pm
Operator : davidb2
Sample : IC2924-6 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 11 12:35:14 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75431.D\data.ms

(49) Isobutyl alcohol

3.891min (-0.012) 1331.93ug/L

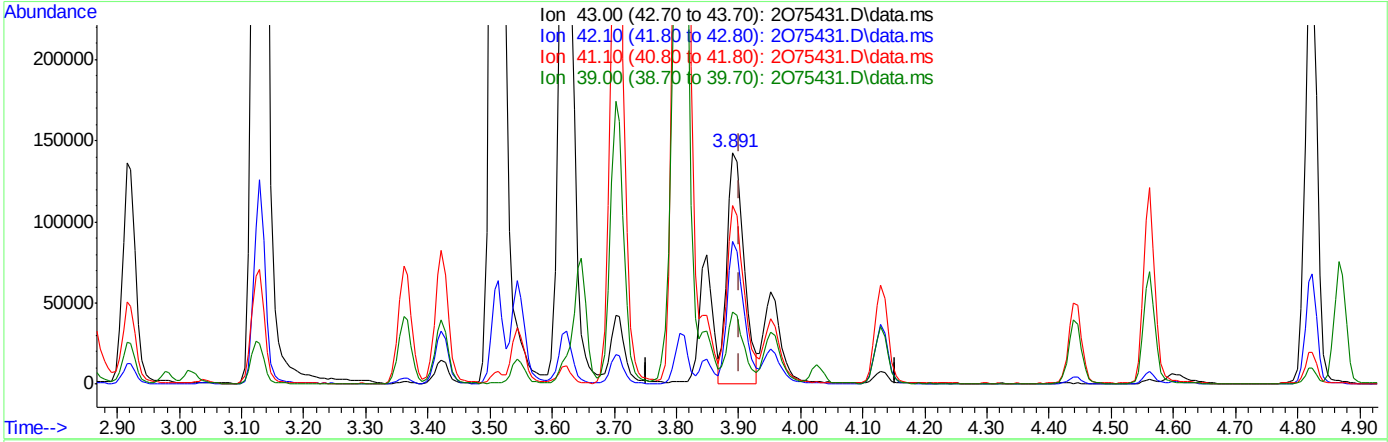
response 207880

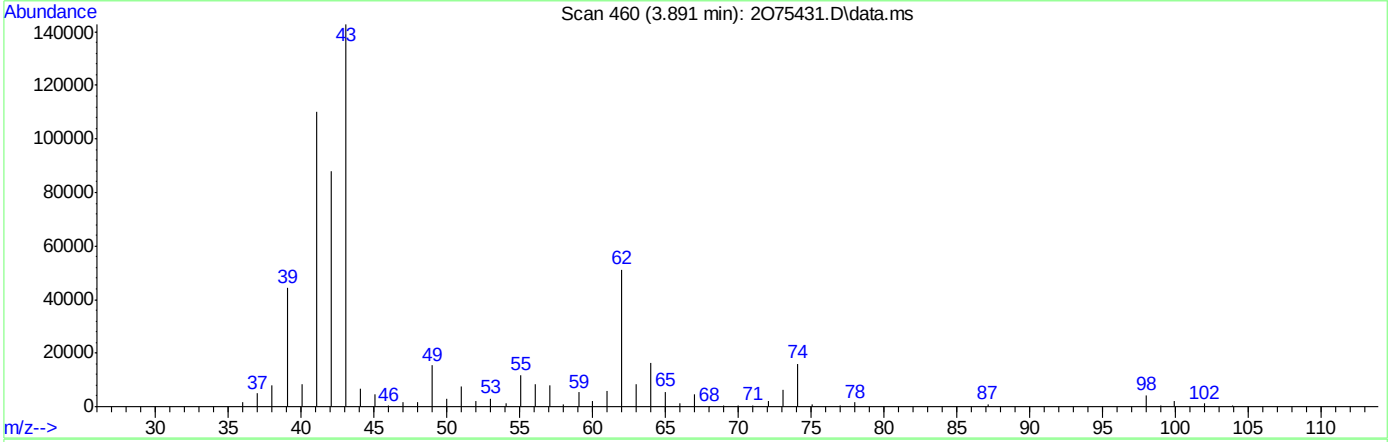
Ion	Exp%	Act%
43.00	100	100
42.10	60.60	65.12
41.10	73.30	76.59
39.00	24.10	29.05

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75431.D
Acq On : 11 Apr 2023 12:22 pm
Operator : davidb2
Sample : IC2924-6 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 11 12:35:14 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75431.D\data.ms

(49) Isobutyl alcohol

3.891min (-0.012) 1734.90ug/L m

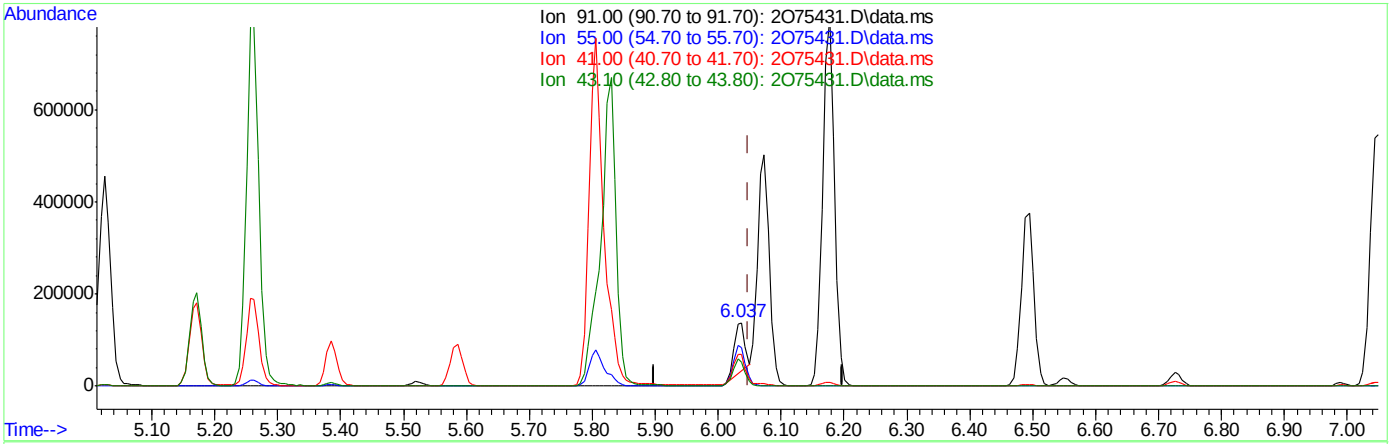
response 270774

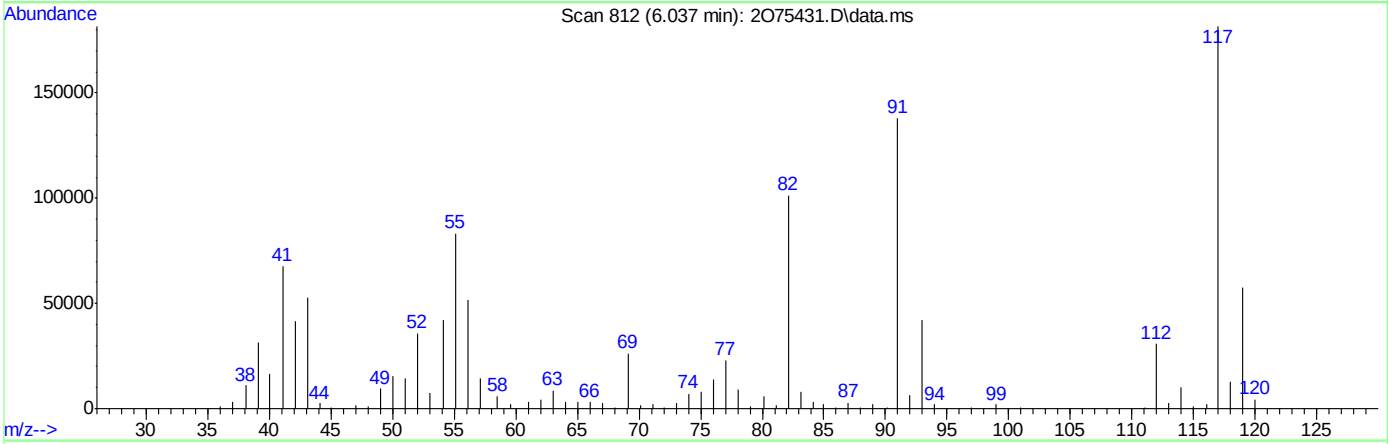
Ion	Exp%	Act%
43.00	100	100
42.10	60.60	61.54
41.10	73.30	77.20
39.00	24.10	31.08

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75431.D
Acq On : 11 Apr 2023 12:22 pm
Operator : davidb2
Sample : IC2924-6 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 11 12:35:14 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75431.D\data.ms

(76) 1-Chlorohexane

6.037min (-0.012) 68.01ug/L

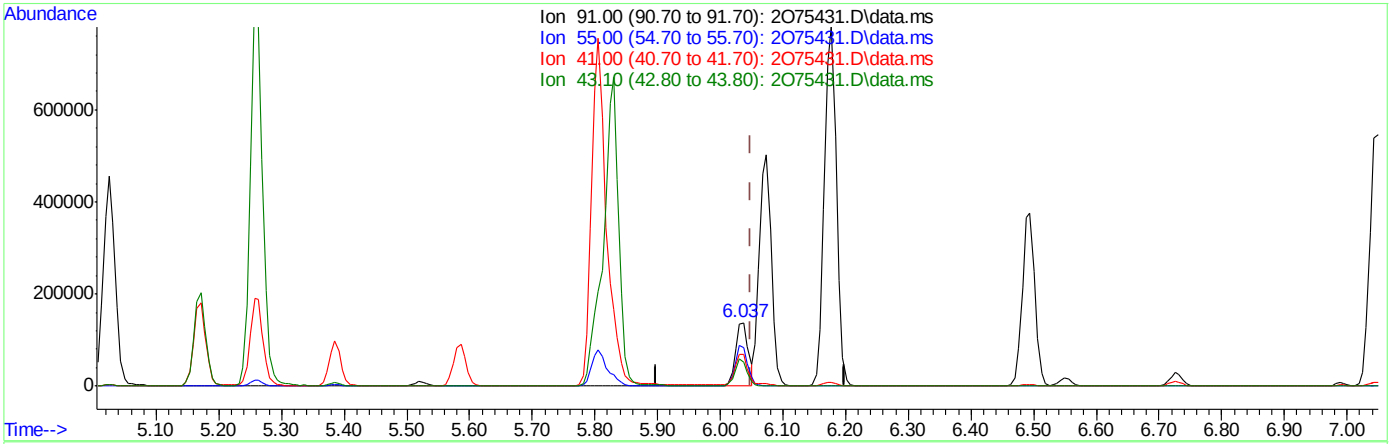
response 132460

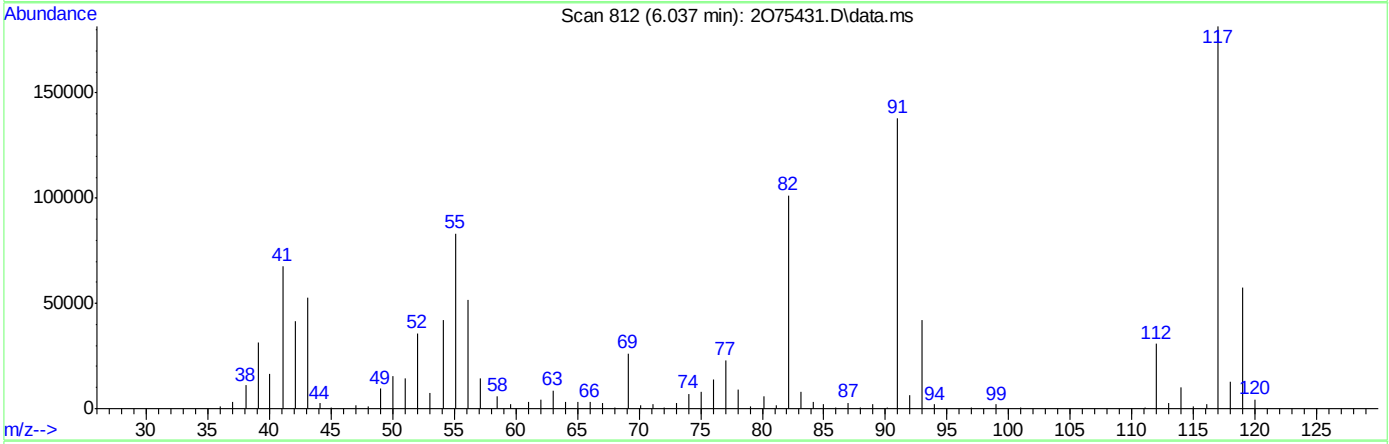
Ion	Exp%	Act%
91.00	100	100
55.00	73.60	59.09
41.00	56.00	47.18
43.10	44.90	36.55

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75431.D
Acq On : 11 Apr 2023 12:22 pm
Operator : davidb2
Sample : IC2924-6 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 11 12:35:14 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75431.D\data.ms

(76) 1-Chlorohexane

6.037min (-0.012) 98.69ug/L m

response 192204

Ion	Exp%	Act%
91.00	100	100
55.00	73.60	60.35
41.00	56.00	49.20
43.10	44.90	38.19

2O75432.D

Manual Integrations APPROVED (compounds with "m" flag)

Karen Watson
04/11/23 15:49

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75432.D
Acq On : 11 Apr 2023 12:48 pm
Operator : davidb2
Sample : IC2924-7 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 11 13:01:12 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	4.025	96	450882	50.00	ug/L	-0.02
62) Chlorobenzene-d5	6.043	117	329771	50.00	ug/L	-0.02
85) 1,4-Dichlorobenzene-d4	7.805	152	176778	50.00	ug/L	-0.02
System Monitoring Compounds						
39) Dibromofluoromethane	3.556	113	127190	61.11	ug/L	-0.01
Spiked Amount 50.000	Range 83 - 118		Recovery = 122.22%#			
50) 1,2-Dichloroethane-d4	3.867	65	133496	87.52	ug/L	-0.01
Spiked Amount 50.000	Range 79 - 125		Recovery = 175.04%#			
63) Toluene-d8	4.989	98	447116	38.31	ug/L	-0.02
Spiked Amount 50.000	Range 85 - 112		Recovery = 76.62%#			
86) 4-Bromofluorobenzene	6.945	174	135307	38.33	ug/L	-0.02
Spiked Amount 50.000	Range 83 - 118		Recovery = 76.66%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.227	85	199013	111.33	ug/L	99
3) Chloromethane	1.379	50	207513	98.96	ug/L	98
4) 1,3-butadiene	1.447	39	197513	110.24	ug/L	80
5) Vinyl Chloride	1.434	62	210360	106.48	ug/L	98
6) Bromomethane	1.672	94	160362	209.19	ug/L	99
7) Chloroethane	1.745	64	34085	37.60	ug/L	95
8) Trichlorofluoromethane	1.843	101	283389	111.06	ug/L	99
9) Ethyl Ether	2.062	59	160400	101.25	ug/L	95
10) Ethanol	2.190	45	79587	1541.35	ug/L	91
11) 1,2-Dichlorotrifluoroe...	2.184	67	241564	110.92	ug/L	96
12) 1,1-Dichloroethene	2.184	61	311780	117.10	ug/L	98
13) Freon 113	2.209	101	214605	127.99	ug/L	99
14) Carbon Disulfide	2.196	76	581931	119.44	ug/L	94
15) Iodomethane	2.276	142	344294	151.88	ug/L	93
16) Acrolein	2.391	56	312572	511.49	ug/L	99
17) Allyl chloride	2.477	41	229587	106.96	ug/L	93
18) Methylene Chloride	2.538	49	259696	124.33	ug/L	97
19) Acetone	2.568	43	541997	456.85	ug/L	95
20) Methyl acetate	2.641	43	1312903	502.54	ug/L	96
21) trans-1,2-Dichloroethene	2.635	61	297623	111.86	ug/L	99
22) Hexane	2.684	56	156842	108.02	ug/L	95
23) Methyl Tert Butyl Ether	2.702	73	583424	112.45	ug/L	86
24) Tert Butyl Alcohol	2.757	59	497789	877.20	ug/L	94
25) Acetonitrile	2.843	41	368562	900.83	ug/L	97
26) Di-isopropyl ether	2.916	45	604231	112.02	ug/L	97
27) Chloroprene	2.977	53	286251	112.35	ug/L	93
28) 1,1-Dichloroethane	2.989	63	376494	110.09	ug/L	98
29) Acrylonitrile	3.019	52	551529	463.29	ug/L	97
30) ETBE	3.123	59	578713	106.15	ug/L	98
31) Vinyl acetate	3.129	43	2275358	554.17	ug/L	95
32) cis-1,2-Dichloroethene	3.300	96	230757	115.76	ug/L	92
33) 2,2-Dichloropropane	3.361	77	277047	128.94	ug/L	98
34) Bromochloromethane	3.416	128	123742	122.37	ug/L #	86
35) Cyclohexane	3.422	56	322603	104.64	ug/L	92

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75432.D
Acq On : 11 Apr 2023 12:48 pm
Operator : davidb2
Sample : IC2924-7 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 11 13:01:12 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	3.452	83	399674	114.83	ug/L		98
37) Ethyl acetate	3.513	43	1722939	531.12	ug/L		98
38) Tetrahydrofuran	3.544	42	131879	102.33	ug/L		95
40) Carbon Tetrachloride	3.538	117	281483m	105.35	ug/L		
41) 1,1,1-Trichloroethane	3.574	97	346233	125.35	ug/L		97
42) 2-Butanone	3.623	43	968276	487.96	ug/L		97
43) 1,1-Dichloropropene	3.647	75	291093	120.58	ug/L		99
44) tert-Butyl formate	3.702	59	473383	444.86	ug/L		97
45) Propionitrile	3.800	54	557975	843.17	ug/L	#	48
46) Methacrylonitrile	3.812	41	1881146	1019.37	ug/L		96
47) Benzene	3.788	78	823629	109.54	ug/L		79
48) TAME	3.849	73	543736	111.88	ug/L		94
49) Isobutyl alcohol	3.897	43	397926m	2490.26	ug/L		
51) 1,2-Dichloroethane	3.903	62	304764	112.87	ug/L		96
52) Tert Amyl Alcohol	3.958	59	398272	884.53	ug/L		94
53) Trichloroethene	4.129	95	238111	115.06	ug/L		95
54) Methylcyclohexane	4.129	83	336309	127.13	ug/L		95
55) Dibromomethane	4.379	93	154319	118.40	ug/L		91
56) 1,2-Dichloropropane	4.440	63	202004	107.83	ug/L		96
57) Bromodichloromethane	4.476	83	288750	118.84	ug/L		98
58) Methyl methacrylate	4.562	41	235272	123.41	ug/L		95
59) 1,4-Dioxane	4.604	88	91681	1909.15	ug/L		94
60) 2-Chloroethyl vinyl ether	4.824	63	883600	550.23	ug/L		97
61) cis-1,3-Dichloropropene	4.867	75	332145	111.24	ug/L		98
64) Toluene	5.025	91	903198	83.15	ug/L		99
65) 2-Nitropropane	5.171	41	378170	441.09	ug/L		94
66) 4-Methyl-2-pentanone	5.263	43	1665825	394.37	ug/L		98
67) trans-1,3-Dichloropropene	5.287	75	320259	87.29	ug/L		94
68) Tetrachloroethene	5.281	166	255602	78.13	ug/L		95
69) Ethyl methacrylate	5.385	69	286690	82.40	ug/L		94
70) 1,1,2-Trichloroethane	5.397	83	182508	78.45	ug/L		94
71) Dibromochloromethane	5.525	129	237883	90.19	ug/L		99
72) 1,3-Dichloropropane	5.586	76	336126	78.10	ug/L		97
73) 1,2-Dibromoethane	5.690	107	242644	85.08	ug/L		97
74) 3,3-dimethyl-1-butanol	5.805	57	2517741	3195.26	ug/L		94
75) 2-hexanone	5.830	43	1741732	376.89	ug/L		96
76) 1-Chlorohexane	6.031	91	282314m	141.97	ug/L		
77) Ethylbenzene	6.074	91	983078	84.50	ug/L		97
78) Chlorobenzene	6.055	112	613729	83.06	ug/L		96
79) 1,1,1,2-Tetrachloroethane	6.098	131	215233	85.91	ug/L		98
80) m,p-Xylene	6.177	91	1546001	171.25	ug/L		98
81) o-Xylene	6.494	91	782240	89.02	ug/L		99
82) Styrene	6.531	104	641227	91.92	ug/L		99
83) Bromoform	6.549	173	164545	86.83	ug/L		97
84) Isopropylbenzene	6.726	105	960762	92.52	ug/L		100
87) cis-1,4-Dichloro-2-butene	6.988	53	91811	38.65	ug/L		88
88) n-Propylbenzene	7.043	91	1117025	38.40	ug/L		98
89) Bromobenzene	7.025	156	248005	37.11	ug/L		99
90) 1,1,2,2-Tetrachloroethane	7.092	83	351031	37.59	ug/L		99
91) 1,3,5-Trimethylbenzene	7.202	105	804013	38.29	ug/L		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75432.D
Acq On : 11 Apr 2023 12:48 pm
Operator : davidb2
Sample : IC2924-7 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 11 13:01:12 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration

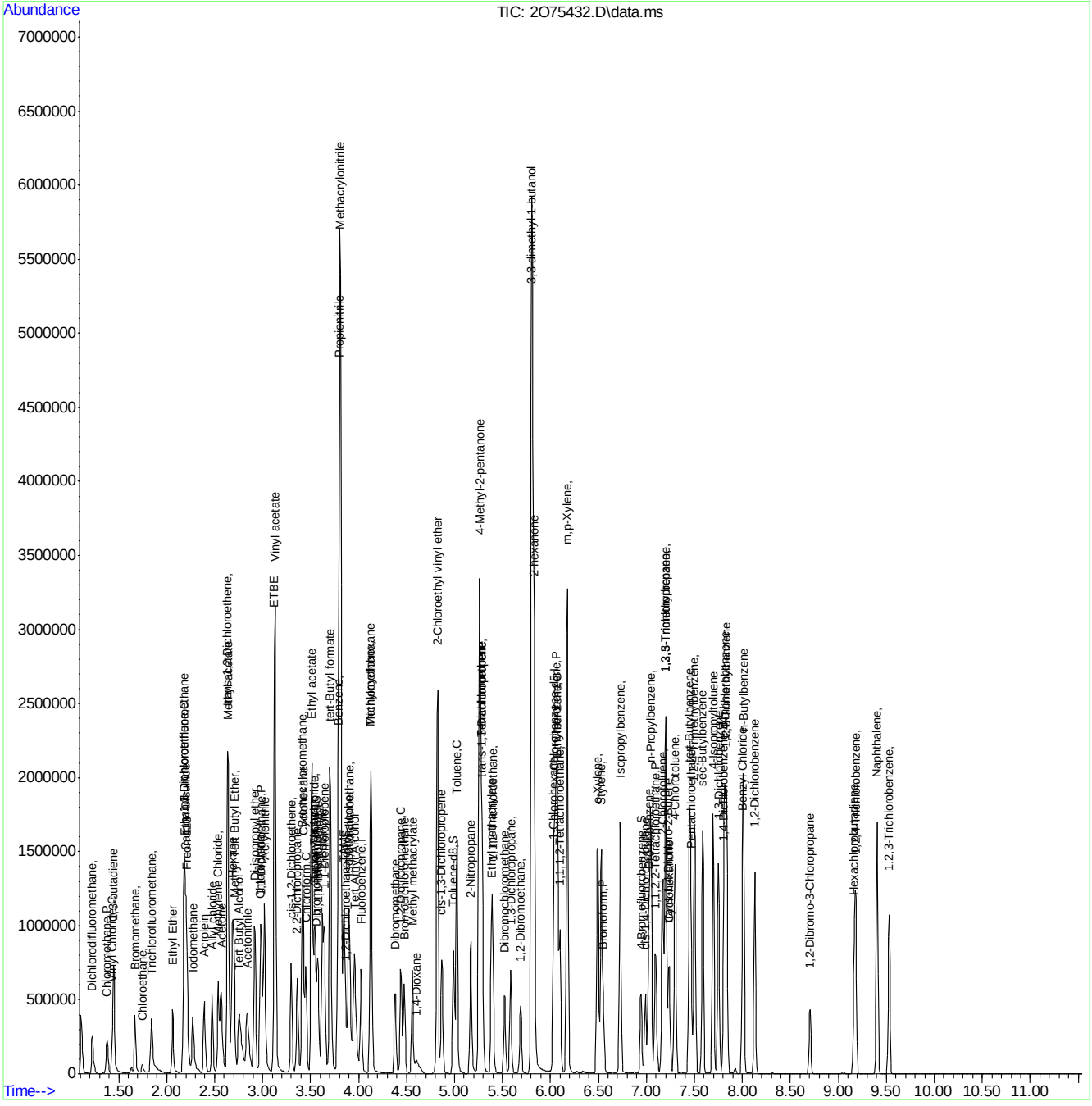
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92) 2-Chlorotoluene	7.171	91	737256	37.33	ug/L		98
93) trans-1,4-Dichloro-2-B...	7.232	53	81301	34.52	ug/L	#	78
94) 1,2,3-Trichloropropane	7.202	110	113861	39.24	ug/L		95
95) Cyclohexanone	7.238	55	78336	144.74	ug/L		96
96) 4-Chlorotoluene	7.299	91	689125	36.57	ug/L		97
97) tert-Butylbenzene	7.451	91	429591	43.98	ug/L		94
99) 1,2,4-Trimethylbenzene	7.500	105	799404	43.54	ug/L		99
100) Pentachloroethane	7.464	167	126096	42.39	ug/L		91
101) sec-Butylbenzene	7.586	105	959986	38.92	ug/L		100
102) 4-Isopropyltoluene	7.695	119	843535	46.71	ug/L		99
103) 1,3-Dichlorobenzene	7.750	146	486968	36.78	ug/L		99
104) 1,2,3-Trimethylbenzene	7.836	105	818745	43.23	ug/L		99
105) 1,4-Dichlorobenzene	7.817	146	495216	36.42	ug/L		98
106) n-Butylbenzene	8.012	92	425707	44.41	ug/L		97
107) Benzyl Chloride	8.000	126	124857	43.42	ug/L	#	77
108) 1,2-Dichlorobenzene	8.128	146	463926	36.25	ug/L		98
109) 1,2-Dibromo-3-Chloropr...	8.701	75	80276	37.34	ug/L		95
110) Hexachlorobutadiene	9.165	225	105180	36.10	ug/L		95
111) 1,2,4-Trichlorobenzene	9.183	180	289867	38.58	ug/L		98
112) Naphthalene	9.402	128	1073189	37.36	ug/L		100
113) 1,2,3-Trichlorobenzene	9.530	180	273584	37.54	ug/L		99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75432.D
Acq On : 11 Apr 2023 12:48 pm
Operator : davidb2
Sample : IC2924-7 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 11 13:01:12 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration



Manual Integration Approval Summary

Sample Number: V2O2924-IC2924
Lab FileID: 2O75432.D
Injection Time: 04/11/23 12:48

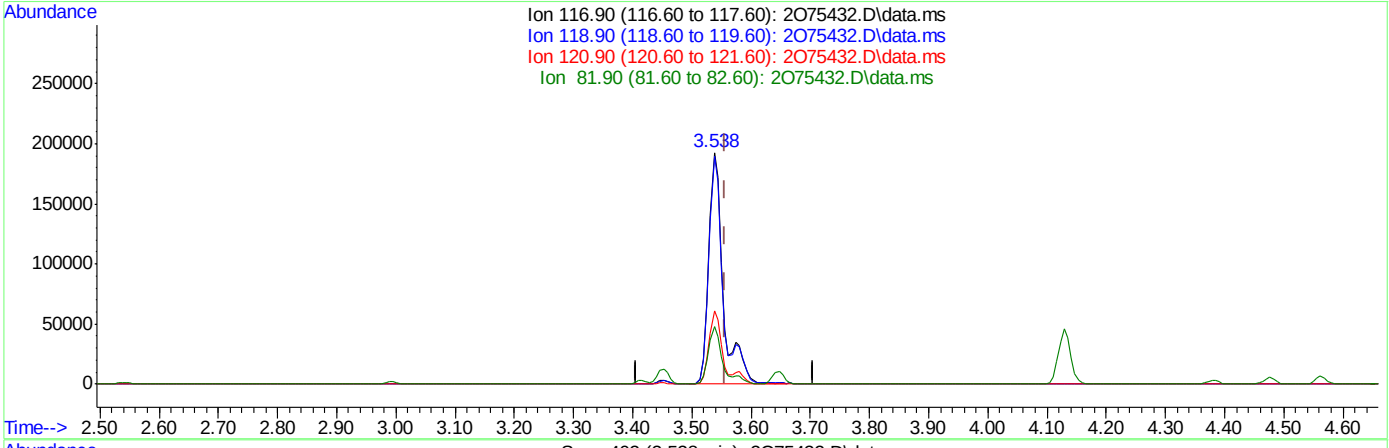
Method: SW846 8260D
Analyst approved: 04/11/23 14:45 David Butler
Supervisor approved: 04/11/23 15:49 Karen Watson

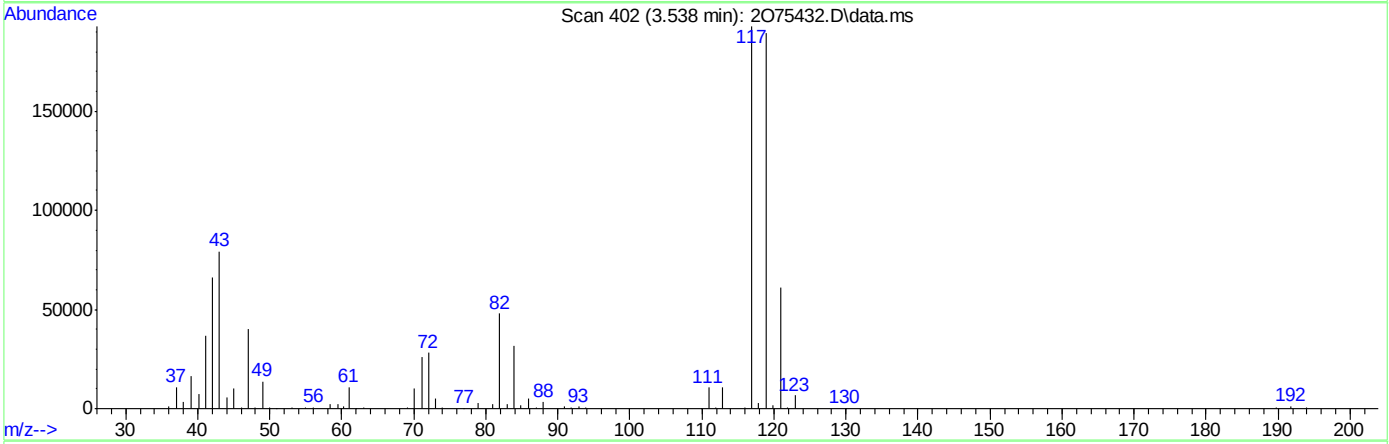
Parameter	CAS	Sig#	R.T. (min.)	Reason
Carbon Tetrachloride	56-23-5		3.54	Poor instrument integration
Isobutyl Alcohol	78-83-1		3.90	Poor instrument integration
1-Chlorohexane	544-10-5		6.03	Poor instrument integration

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75432.D
Acq On : 11 Apr 2023 12:48 pm
Operator : davidb2
Sample : IC2924-7 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 11 13:00:38 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75432.D\data.ms

(40) Carbon Tetrachloride ( )

3.538min (-0.018) 124.88ug/L

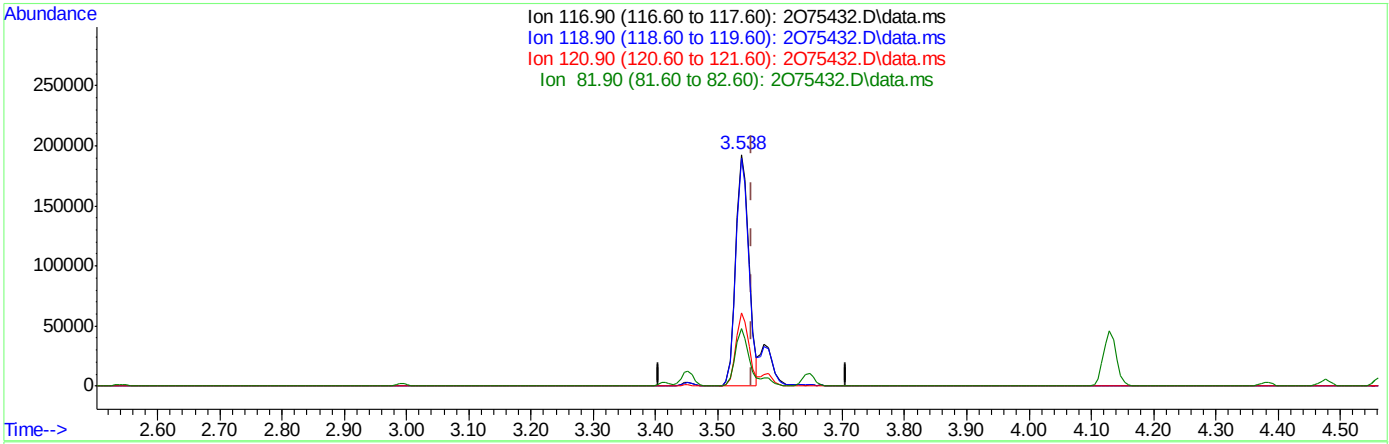
response 333681

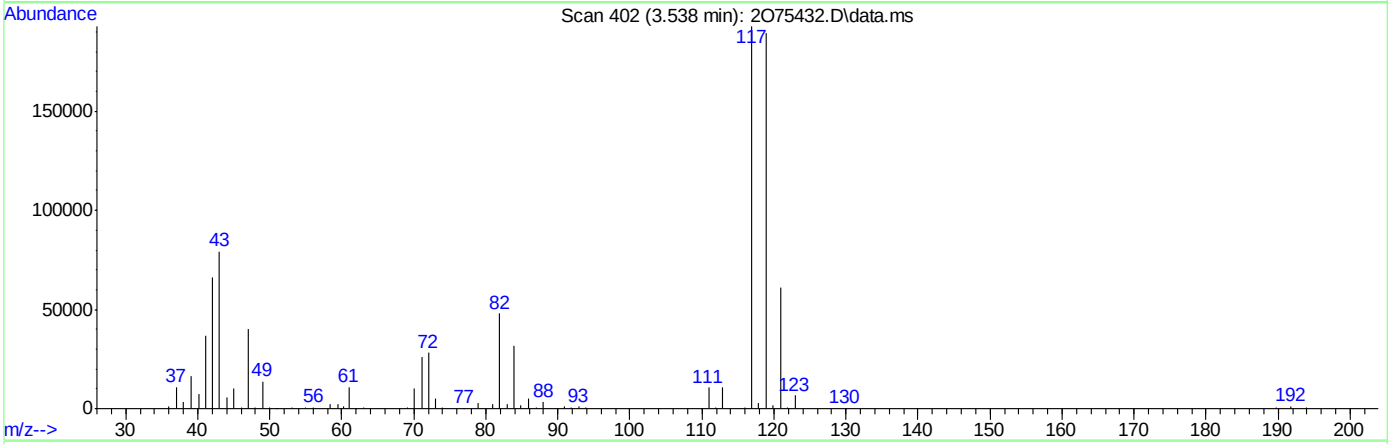
Ion	Exp%	Act%
116.90	100	100
118.90	96.00	98.21
120.90	31.80	31.55
81.90	22.80	24.82

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75432.D
Acq On : 11 Apr 2023 12:48 pm
Operator : davidb2
Sample : IC2924-7 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 11 13:00:38 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75432.D\data.ms

(40) Carbon Tetrachloride ( )

3.538min (-0.018) 105.35ug/L m

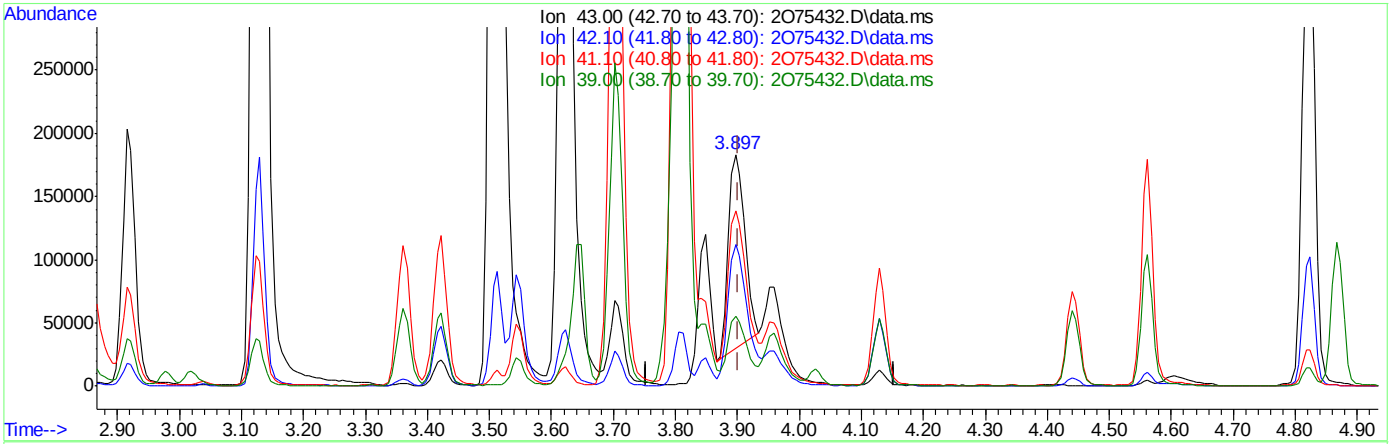
response 281483

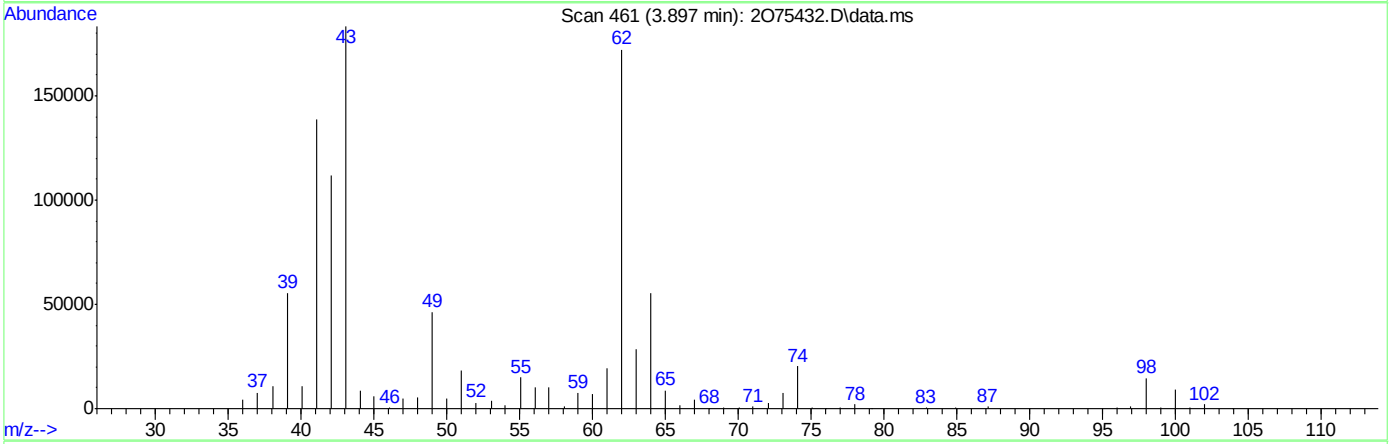
Ion	Exp%	Act%
116.90	100	100
118.90	96.00	98.21
120.90	31.80	31.55
81.90	22.80	24.82

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75432.D
Acq On : 11 Apr 2023 12:48 pm
Operator : davidb2
Sample : IC2924-7 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 11 13:00:38 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75432.D\data.ms

(49) Isobutyl alcohol

3.897min (-0.006) 1776.38ug/L

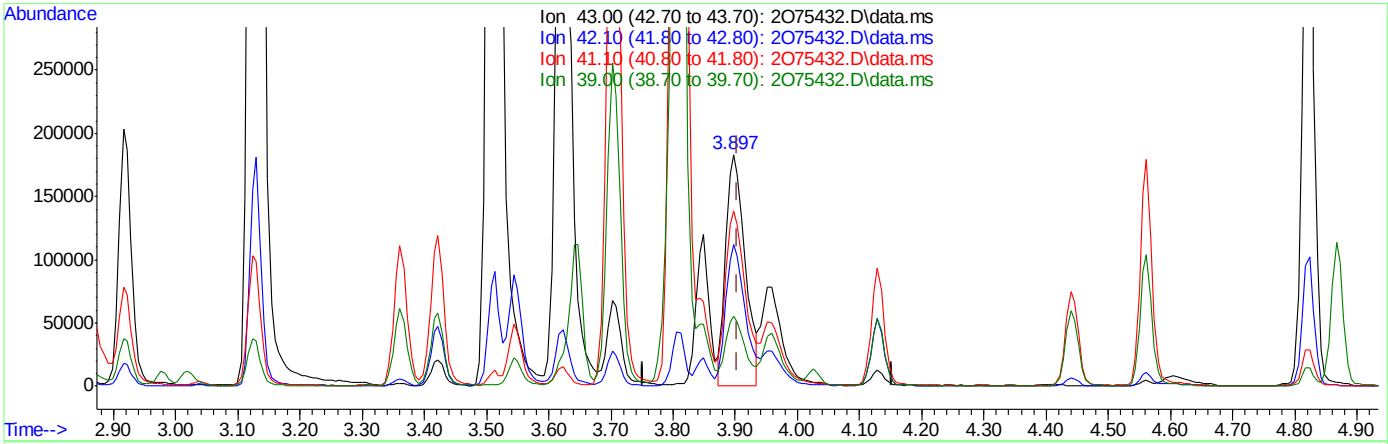
response 283853

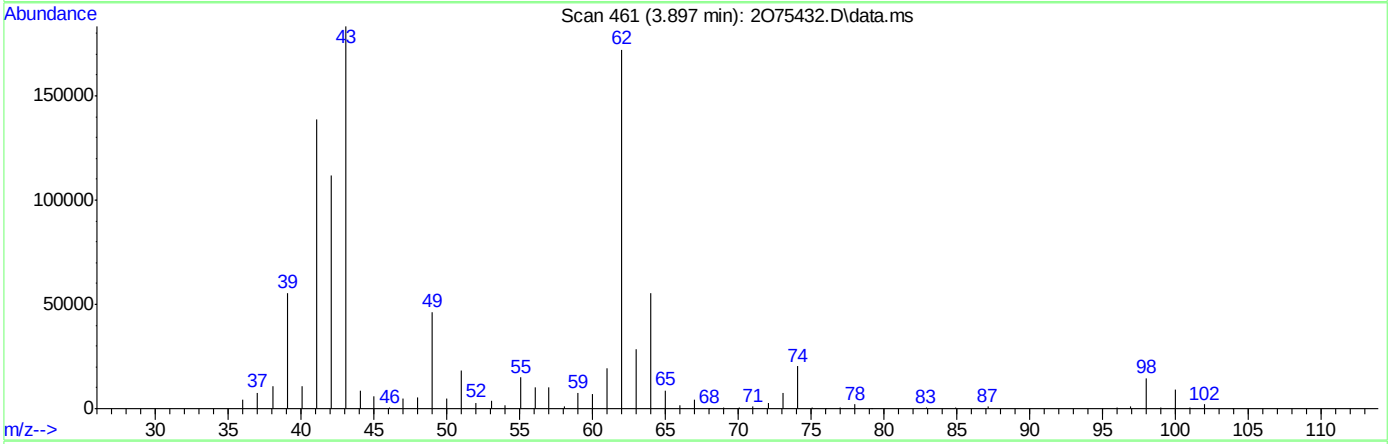
Ion	Exp%	Act%
43.00	100	100
42.10	60.60	65.16
41.10	73.30	73.49
39.00	24.10	26.09

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75432.D
Acq On : 11 Apr 2023 12:48 pm
Operator : davidb2
Sample : IC2924-7 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 11 13:00:38 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75432.D\data.ms

(49) Isobutyl alcohol

3.897min (-0.006) 2490.26ug/L m

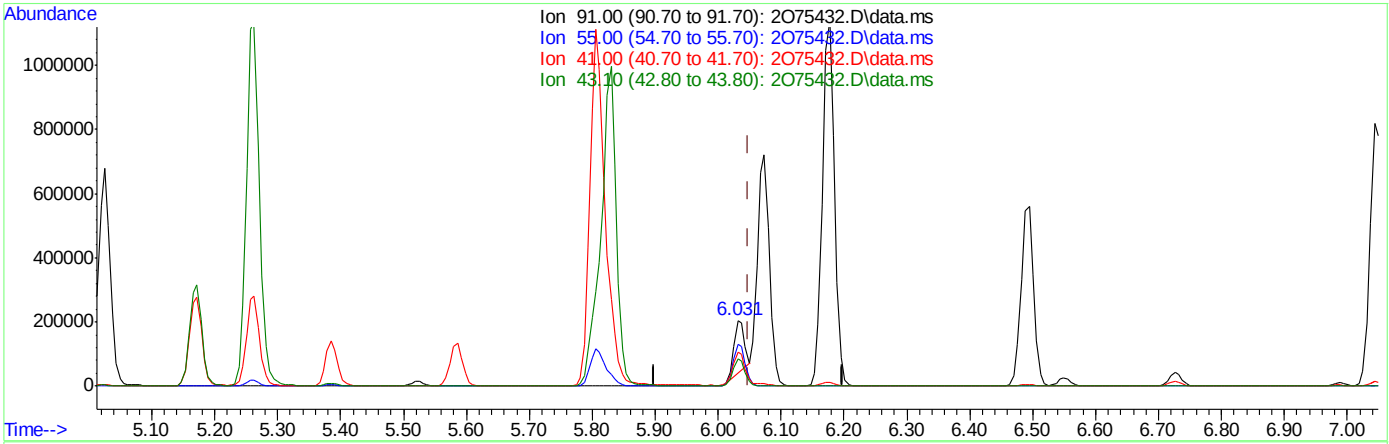
response 397926

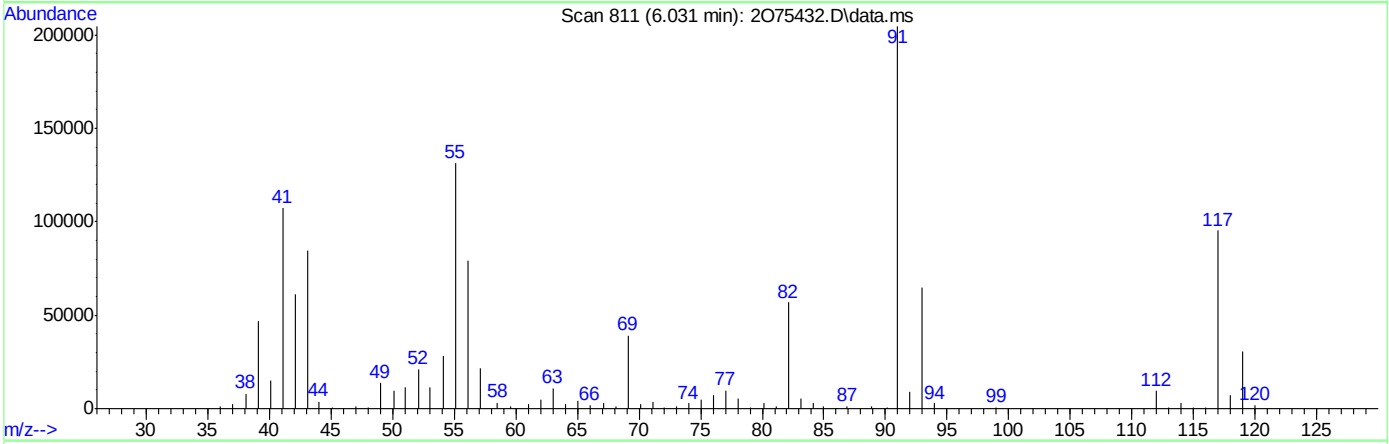
Ion	Exp%	Act%
43.00	100	100
42.10	60.60	60.98
41.10	73.30	75.73
39.00	24.10	30.23

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75432.D
Acq On : 11 Apr 2023 12:48 pm
Operator : davidb2
Sample : IC2924-7 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 11 13:00:38 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75432.D\data.ms

(76) 1-Chlorohexane

6.031min (-0.018) 97.69ug/L

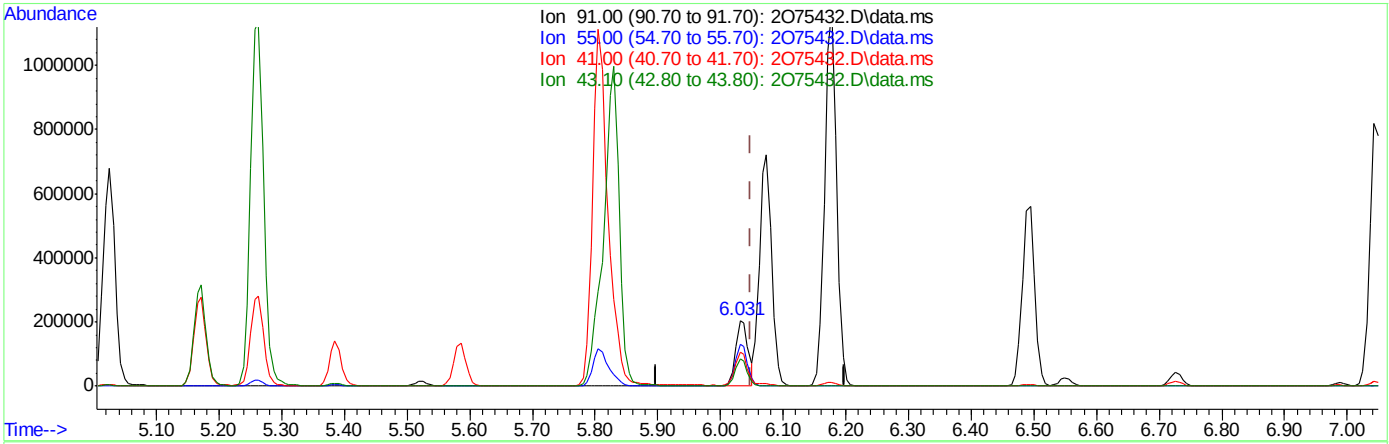
response 194262

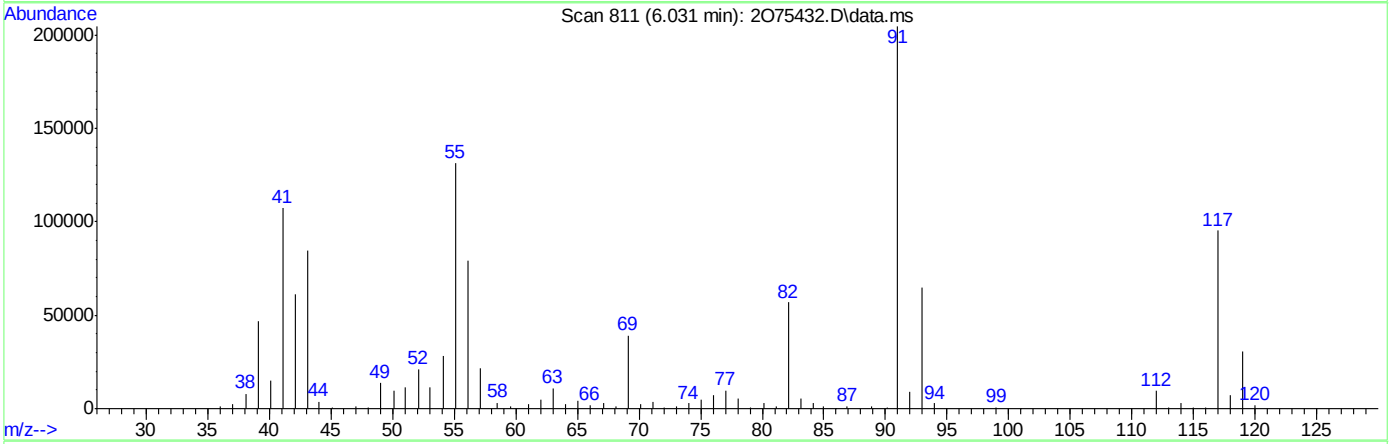
Ion	Exp%	Act%
91.00	100	100
55.00	73.60	63.45
41.00	56.00	50.60
43.10	44.90	40.14

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75432.D
Acq On : 11 Apr 2023 12:48 pm
Operator : davidb2
Sample : IC2924-7 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 11 13:00:38 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Mon Apr 03 06:49:05 2023
Response via : Initial Calibration





TIC: 2O75432.D\data.ms

(76) 1-Chlorohexane

6.031min (-0.018) 141.97ug/L m

response 282314

Ion	Exp%	Act%
91.00	100	100
55.00	73.60	64.29
41.00	56.00	52.49
43.10	44.90	41.47

Manual Integrations APPROVED (compounds with "m" flag)
Karen Watson
04/11/23 15:49

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75434.D
Acq On : 11 Apr 2023 1:39 pm
Operator : davidb2
Sample : ICV2924-5 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 11 14:25:54 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	4.031	96	451681	50.00	ug/L	0.00
62) Chlorobenzene-d5	6.043	117	324252	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.805	152	173220	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	3.556	113	124912	49.89	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.78%			
50) 1,2-Dichloroethane-d4	3.867	65	135285	50.84	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 101.68%			
63) Toluene-d8	4.988	98	438684	49.61	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 99.22%			
86) 4-Bromofluorobenzene	6.945	174	131344	49.69	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.38%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.227	85	86507	47.01	ug/L	99
3) Chloromethane	1.379	50	82962	41.70	ug/L	97
5) Vinyl Chloride	1.440	62	83187	42.11	ug/L	99
6) Bromomethane	1.672	94	62520	41.32	ug/L	97
7) Chloroethane	1.757	64	30380	30.66	ug/L	94
8) Trichlorofluoromethane	1.855	101	145859	41.57	ug/L	100
9) Ethyl Ether	2.068	59	71464	45.92	ug/L	97
10) Ethanol	2.166	45	31905	786.59	ug/L	97
11) 1,2-Dichlorotrifluoroe...	2.190	67	104580	45.14	ug/L	96
12) 1,1-Dichloroethene	2.190	61	122685	41.23	ug/L	97
14) Carbon Disulfide	2.208	76	243247	42.09	ug/L	97
15) Iodomethane	2.282	142	140567	45.46	ug/L	99
16) Acrolein	2.391	56	136390	240.85	ug/L	99
17) Allyl chloride	2.477	41	102723	44.59	ug/L	98
18) Methylene Chloride	2.544	49	111750	41.31	ug/L	96
19) Acetone	2.568	43	192170	169.15	ug/L	99
20) Methyl acetate	2.641	43	530637	203.12	ug/L	98
21) trans-1,2-Dichloroethene	2.635	61	120992	42.53	ug/L	97
22) Hexane	2.690	56	66134	44.02	ug/L	92
23) Methyl Tert Butyl Ether	2.702	73	245286	44.94	ug/L	97
24) Tert Butyl Alcohol	2.751	59	176440	397.04	ug/L	95
25) Acetonitrile	2.836	41	167850	392.32	ug/L	99
26) Di-isopropyl ether	2.922	45	250433	43.25	ug/L	98
27) Chloroprene	2.983	53	99770	36.65	ug/L	100
28) 1,1-Dichloroethane	2.995	63	149104	40.37	ug/L	99
29) Acrylonitrile	3.019	52	216349	196.62	ug/L	98
30) ETBE	3.129	59	240208	45.73	ug/L	99
31) Vinyl acetate	3.129	43	843677	199.80	ug/L	100
32) cis-1,2-Dichloroethene	3.300	96	93491	40.75	ug/L	98
33) 2,2-Dichloropropane	3.367	77	118982	47.96	ug/L	98
34) Bromochloromethane	3.416	128	52345	42.32	ug/L	98
35) Cyclohexane	3.422	56	135538	44.41	ug/L	99
36) Chloroform	3.452	83	164894	41.21	ug/L	99
37) Ethyl acetate	3.513	43	638712	192.53	ug/L	100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75434.D
Acq On : 11 Apr 2023 1:39 pm
Operator : davidb2
Sample : ICV2924-5 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 11 14:25:54 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
38) Tetrahydrofuran	3.544	42	51637	40.48	ug/L	98
40) Carbon Tetrachloride	3.544	117	109091m	43.54	ug/L	
41) 1,1,1-Trichloroethane	3.580	97	137700	42.42	ug/L	99
42) 2-Butanone	3.623	43	395703	209.98	ug/L	92
43) 1,1-Dichloropropene	3.647	75	121818	43.48	ug/L	96
44) tert-Butyl formate	3.708	59	183389	225.84	ug/L	94
45) Propionitrile	3.794	54	218684	391.04	ug/L	99
46) Methacrylonitrile	3.806	41	777742	410.87	ug/L	98
47) Benzene	3.794	78	344481	41.57	ug/L	85
48) TAME	3.848	73	218765	44.50	ug/L	97
49) Isobutyl alcohol	3.891	43	142697m	804.28	ug/L	
51) 1,2-Dichloroethane	3.903	62	122377	41.46	ug/L	98
52) Tert Amyl Alcohol	3.952	59	139212	394.82	ug/L	98
53) Trichloroethene	4.129	95	98920	41.42	ug/L	97
54) Methylcyclohexane	4.129	83	136286	43.60	ug/L	98
55) Dibromomethane	4.385	93	64429	42.89	ug/L	92
56) 1,2-Dichloropropane	4.446	63	85719	44.12	ug/L	99
57) Bromodichloromethane	4.476	83	110754	41.62	ug/L	99
58) Methyl methacrylate	4.562	41	91760	42.22	ug/L	95
59) 1,4-Dioxane	4.598	88	34884	821.91	ug/L	98
60) 2-Chloroethyl vinyl ether	4.824	63	346004	205.04	ug/L	98
61) cis-1,3-Dichloropropene	4.866	75	131912	42.32	ug/L	99
64) Toluene	5.025	91	368144	41.43	ug/L	98
65) 2-Nitropropane	5.171	41	114491	192.75	ug/L	100
66) 4-Methyl-2-pentanone	5.257	43	668449	210.53	ug/L	99
67) trans-1,3-Dichloropropene	5.287	75	119339	40.20	ug/L	98
68) Tetrachloroethene	5.281	166	103682	41.18	ug/L	99
69) Ethyl methacrylate	5.385	69	114541	43.32	ug/L	98
70) 1,1,2-Trichloroethane	5.397	83	73390	40.93	ug/L	98
71) Dibromochloromethane	5.525	129	93276	43.21	ug/L	100
72) 1,3-Dichloropropane	5.586	76	149023	45.37	ug/L	99
73) 1,2-Dibromoethane	5.689	107	98246	43.78	ug/L	100
74) 3,3-dimethyl-1-butanol	5.805	57	906623	2037.05	ug/L	99
75) 2-hexanone	5.830	43	624132	197.87	ug/L	93
76) 1-Chlorohexane	6.031	91	113220m	40.48	ug/L	
77) Ethylbenzene	6.074	91	396072	41.33	ug/L	99
78) Chlorobenzene	6.055	112	246858	41.10	ug/L	99
79) 1,1,1,2-Tetrachloroethane	6.098	131	83201	44.24	ug/L	98
80) m,p-Xylene	6.177	91	625083	83.81	ug/L	99
81) o-Xylene	6.494	91	309848	41.15	ug/L	99
82) Styrene	6.531	104	256907	43.42	ug/L	98
83) Bromoform	6.549	173	56283	40.30	ug/L	98
84) Isopropylbenzene	6.726	105	380076	41.86	ug/L	100
88) n-Propylbenzene	7.049	91	442627	41.22	ug/L	97
89) Bromobenzene	7.025	156	103249	43.32	ug/L	98
90) 1,1,2,2-Tetrachloroethane	7.092	83	138858	42.47	ug/L	99
91) 1,3,5-Trimethylbenzene	7.201	105	326027	43.00	ug/L	99
92) 2-Chlorotoluene	7.171	91	299562	41.37	ug/L	99
93) trans-1,4-Dichloro-2-B...	7.232	53	29863	41.72	ug/L	97
94) 1,2,3-Trichloropropane	7.201	110	46223	42.96	ug/L	98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75434.D
Acq On : 11 Apr 2023 1:39 pm
Operator : davidb2
Sample : ICV2924-5 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 11 14:25:54 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

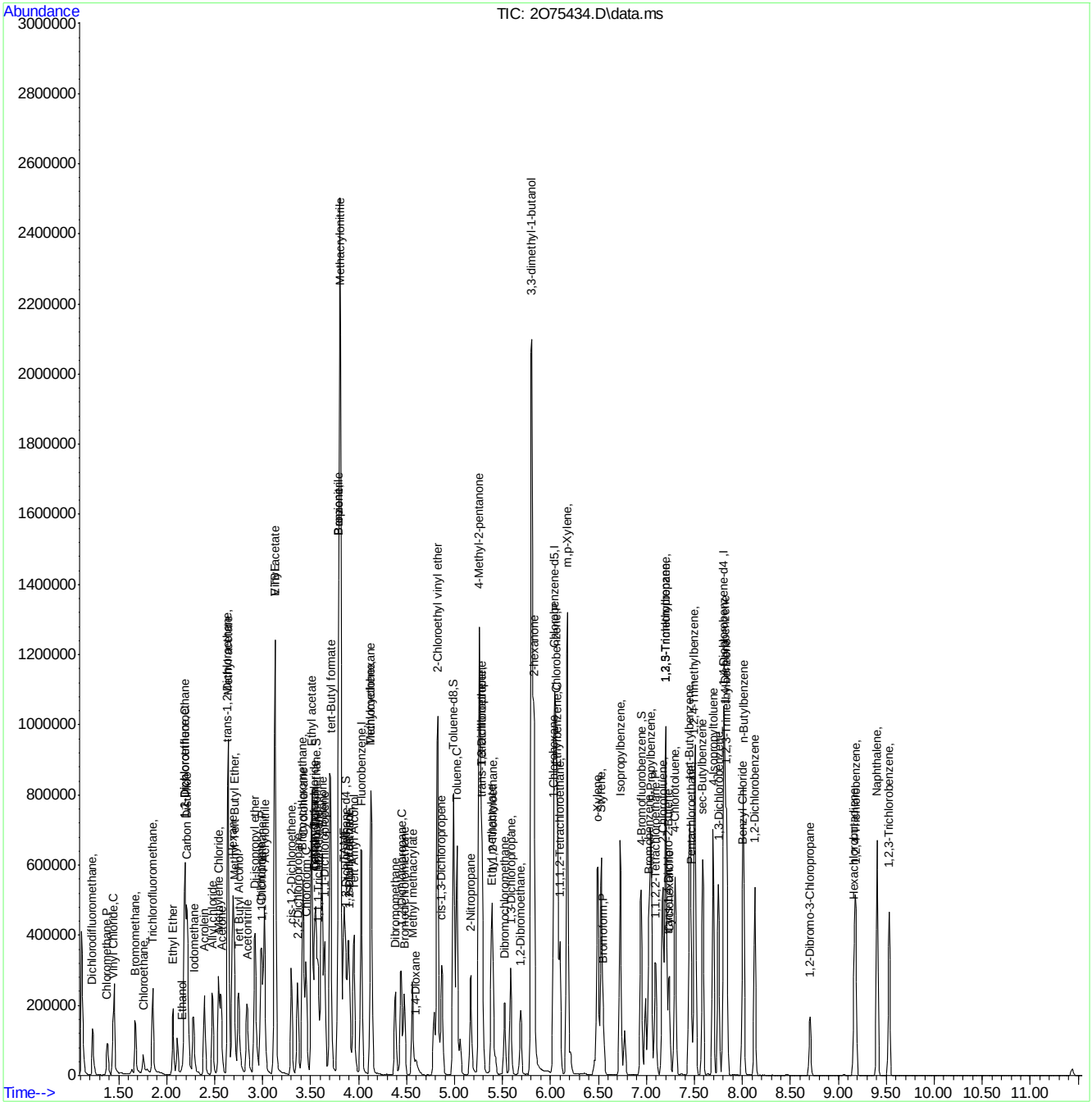
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
95) Cyclohexanone	7.238	55	36681	245.80	ug/L		97
96) 4-Chlorotoluene	7.299	91	275586	41.35	ug/L		98
97) tert-Butylbenzene	7.451	91	173581	42.38	ug/L		99
99) 1,2,4-Trimethylbenzene	7.500	105	330783	44.16	ug/L		98
100) Pentachloroethane	7.464	167	45999	42.66	ug/L		92
101) sec-Butylbenzene	7.585	105	363544	40.06	ug/L		99
102) 4-Isopropyltoluene	7.695	119	331947	41.92	ug/L		99
103) 1,3-Dichlorobenzene	7.750	146	190675	40.49	ug/L		100
104) 1,2,3-Trimethylbenzene	7.835	105	327976	41.83	ug/L		100
105) 1,4-Dichlorobenzene	7.817	146	198037	41.51	ug/L		99
106) n-Butylbenzene	8.012	92	176147	43.70	ug/L		97
107) Benzyl Chloride	8.000	126	42866	43.47	ug/L	#	87
108) 1,2-Dichlorobenzene	8.128	146	184578	41.54	ug/L		99
109) 1,2-Dibromo-3-Chloropr...	8.701	75	30438	43.10	ug/L		82
110) Hexachlorobutadiene	9.164	225	43572	44.39	ug/L		98
111) 1,2,4-Trichlorobenzene	9.183	180	118213	43.82	ug/L		98
112) Naphthalene	9.402	128	422093	44.23	ug/L		99
113) 1,2,3-Trichlorobenzene	9.530	180	115029	44.90	ug/L		96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75434.D
Acq On : 11 Apr 2023 1:39 pm
Operator : davidb2
Sample : ICV2924-5 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 11 14:25:54 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration



Manual Integration Approval Summary

Sample Number: V2O2924-ICV2924
Lab FileID: 2O75434.D
Injection Time: 04/11/23 13:39

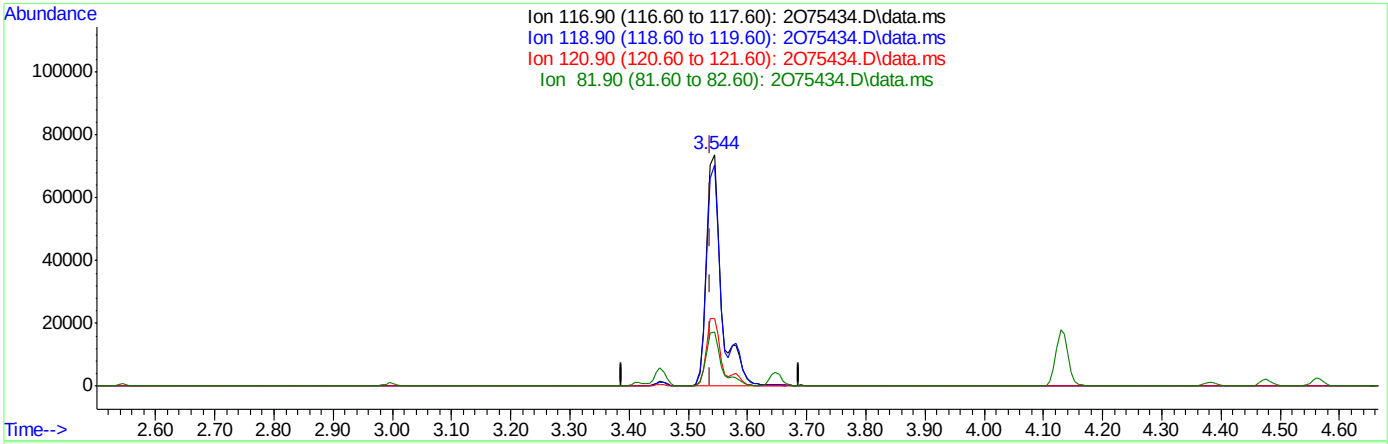
Method: SW846 8260D
Analyst approved: 04/11/23 14:45 David Butler
Supervisor approved: 04/11/23 15:49 Karen Watson

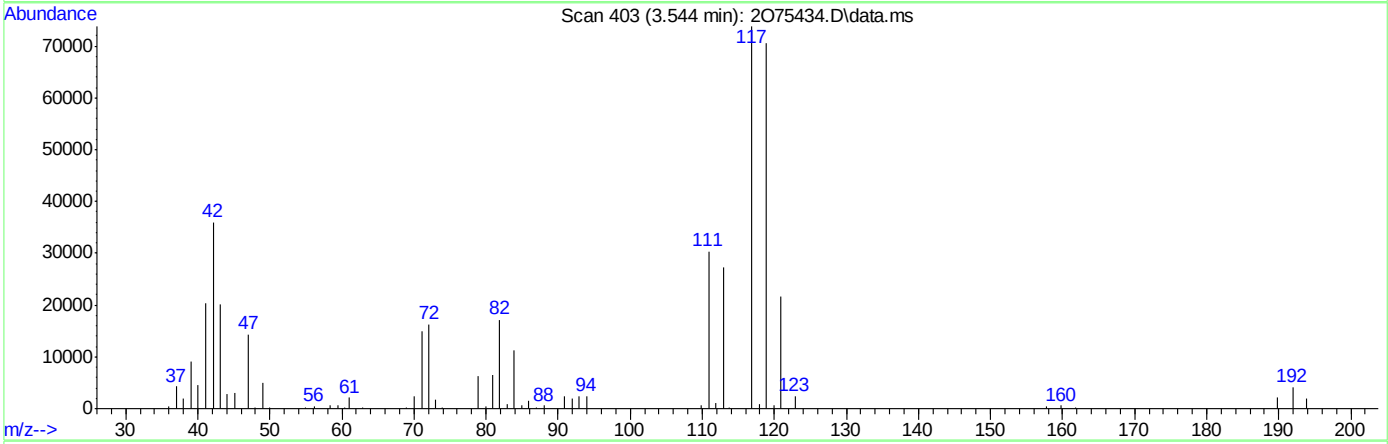
Parameter	CAS	Sig#	R.T. (min.)	Reason
Carbon Tetrachloride	56-23-5		3.54	Poor instrument integration
Isobutyl Alcohol	78-83-1		3.89	Poor instrument integration
1-Chlorohexane	544-10-5		6.03	Poor instrument integration

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75434.D
Acq On : 11 Apr 2023 1:39 pm
Operator : davidb2
Sample : ICV2924-5 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 11 14:07:47 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:07:38 2023
Response via : Initial Calibration





TIC: 2O75434.D\data.ms

(40) Carbon Tetrachloride ( )

3.544min (+0.006) 52.33ug/L

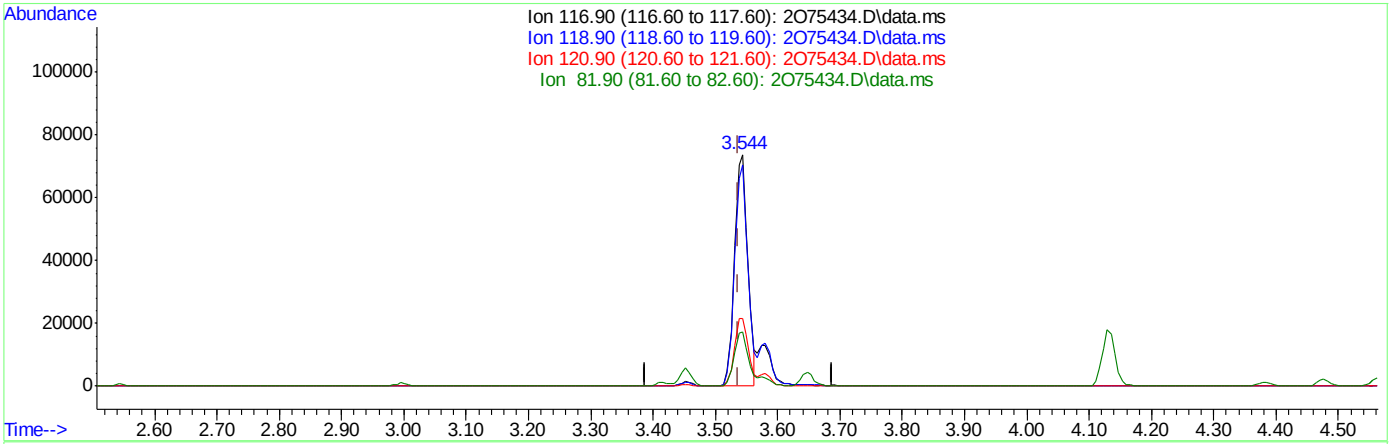
response 131113

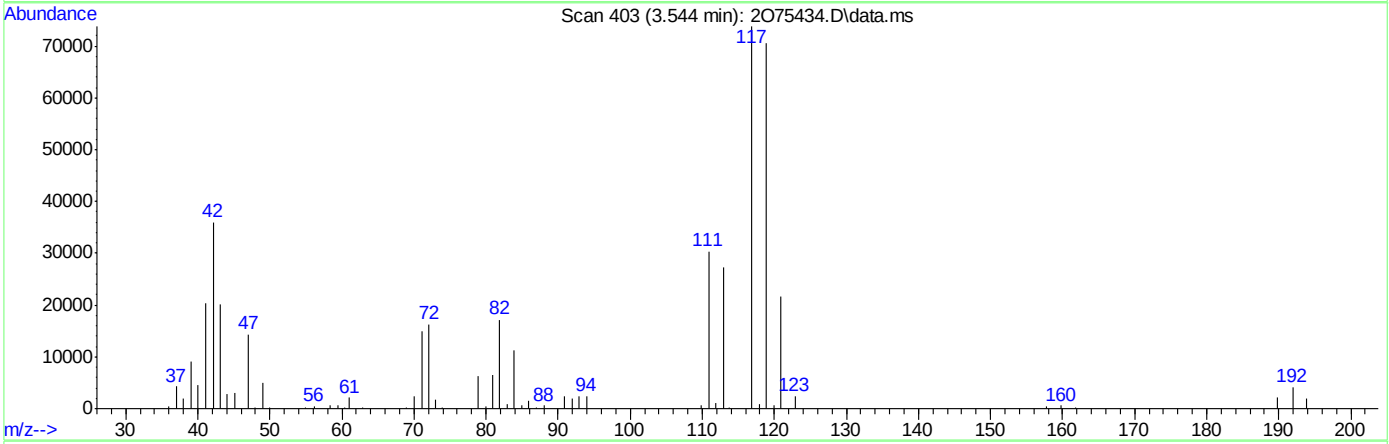
Ion	Exp%	Act%
116.90	100	100
118.90	97.60	95.60
120.90	31.00	29.45
81.90	24.80	23.31

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75434.D
Acq On : 11 Apr 2023 1:39 pm
Operator : davidb2
Sample : ICV2924-5 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 11 14:07:47 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:07:38 2023
Response via : Initial Calibration





TIC: 2O75434.D\data.ms

(40) Carbon Tetrachloride ( )

3.544min (+0.006) 43.54ug/L m

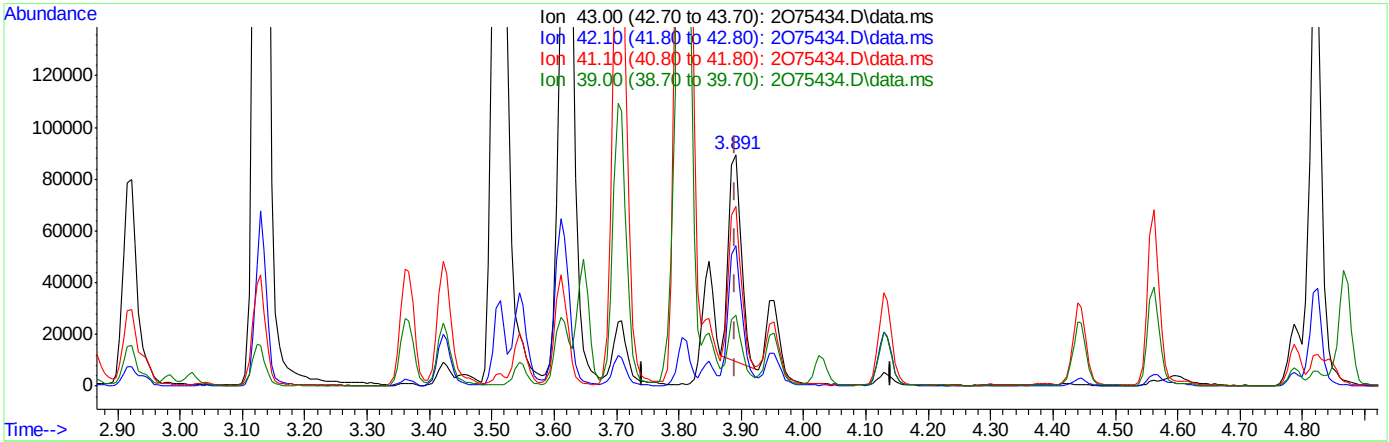
response 109091

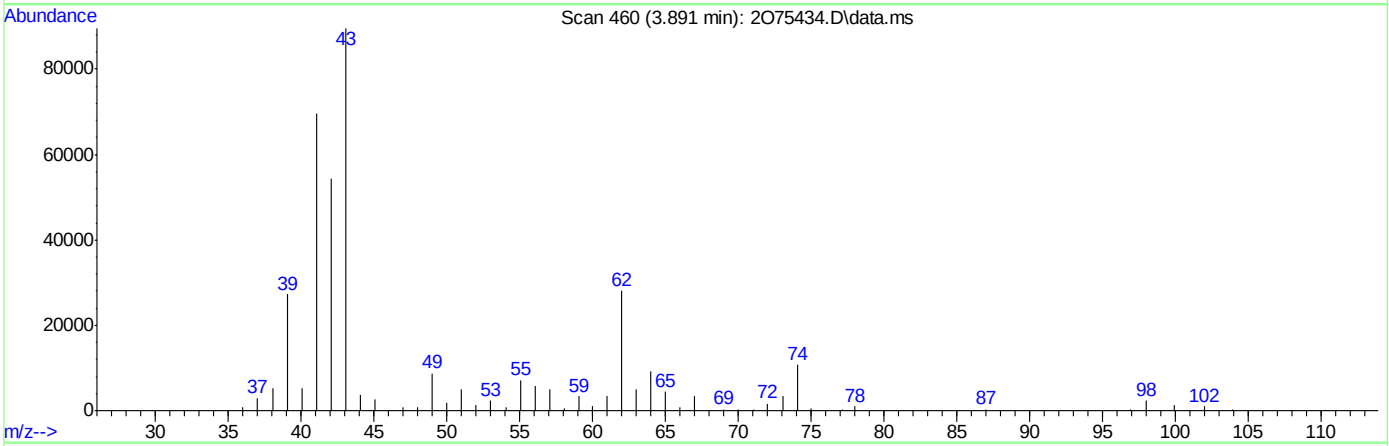
Ion	Exp%	Act%
116.90	100	100
118.90	97.60	95.60
120.90	31.00	29.45
81.90	24.80	23.31

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75434.D
Acq On : 11 Apr 2023 1:39 pm
Operator : davidb2
Sample : ICV2924-5 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 11 14:07:47 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:07:38 2023
Response via : Initial Calibration





TIC: 2O75434.D\data.ms

(49) Isobutyl alcohol

3.891min (+0.000) 644.62ug/L

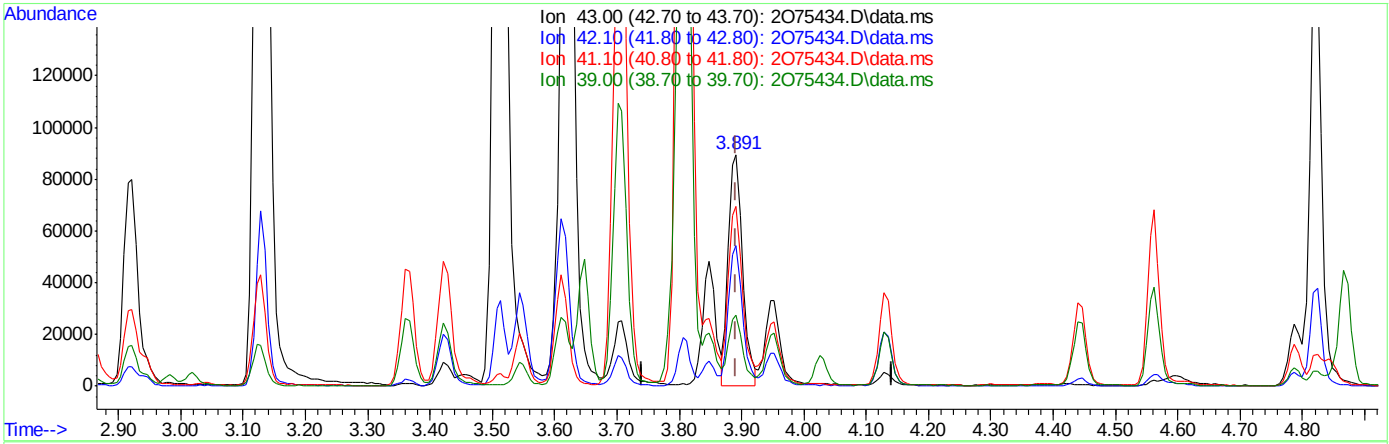
response 112085

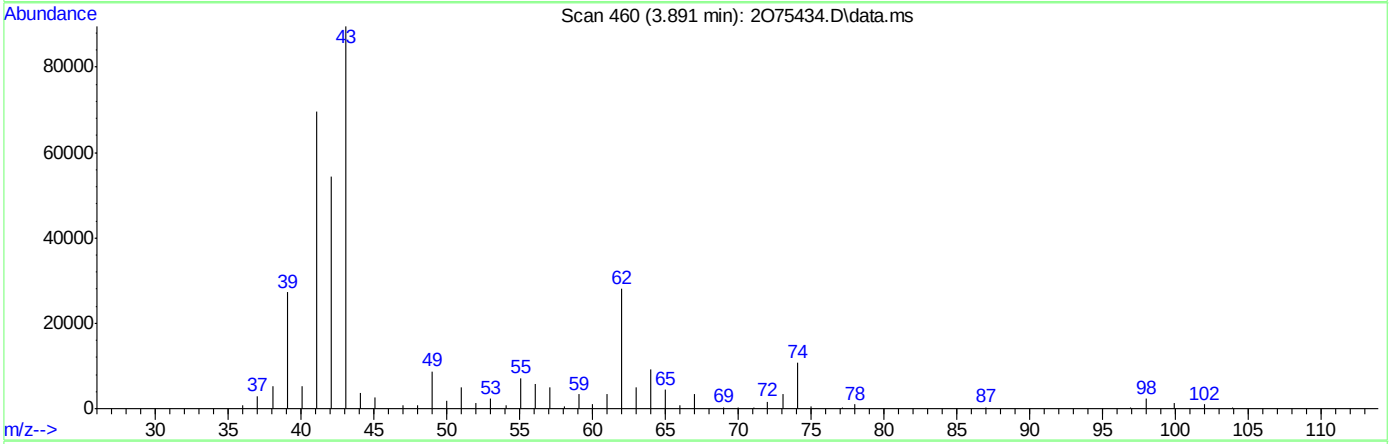
Ion	Exp%	Act%
43.00	100	100
42.10	60.00	61.20
41.10	73.50	74.87
39.00	30.20	28.94

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75434.D
Acq On : 11 Apr 2023 1:39 pm
Operator : davidb2
Sample : ICV2924-5 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 11 14:07:47 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:07:38 2023
Response via : Initial Calibration





TIC: 2O75434.D\data.ms

(49) Isobutyl alcohol

3.891min (+0.000) 804.28ug/L m

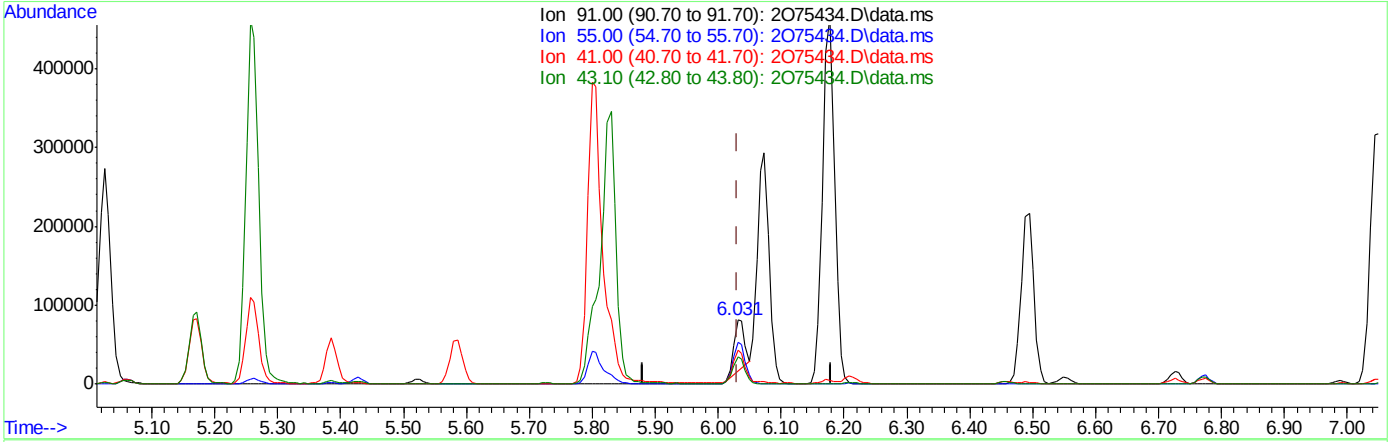
response 142697

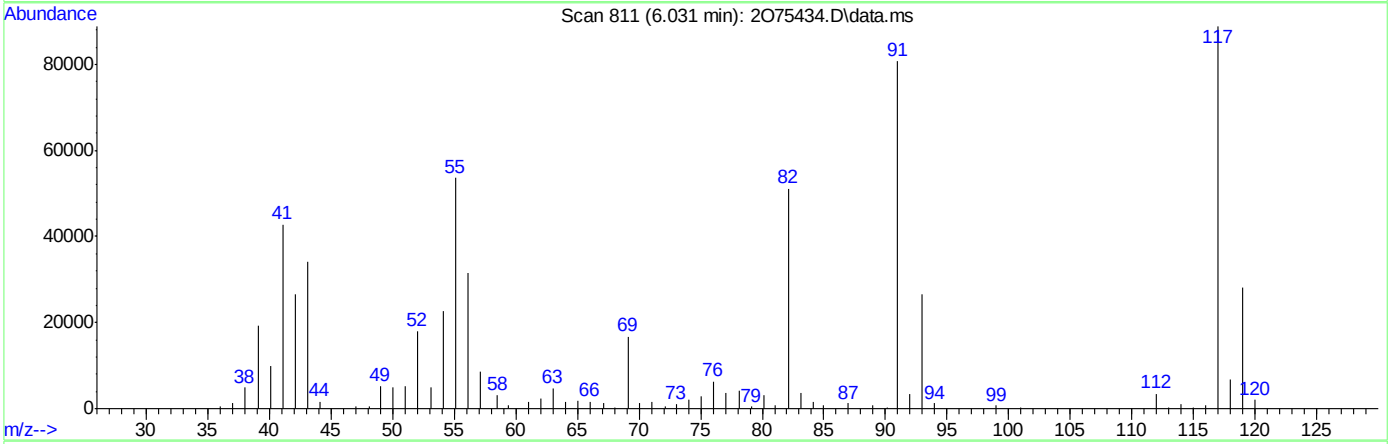
Ion	Exp%	Act%
43.00	100	100
42.10	60.00	60.62
41.10	73.50	77.79
39.00	30.20	30.48

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75434.D
Acq On : 11 Apr 2023 1:39 pm
Operator : davidb2
Sample : ICV2924-5 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 11 14:07:47 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:07:38 2023
Response via : Initial Calibration





TIC: 2O75434.D\data.ms

(76) 1-Chlorohexane

6.031min (-0.000) 27.85ug/L

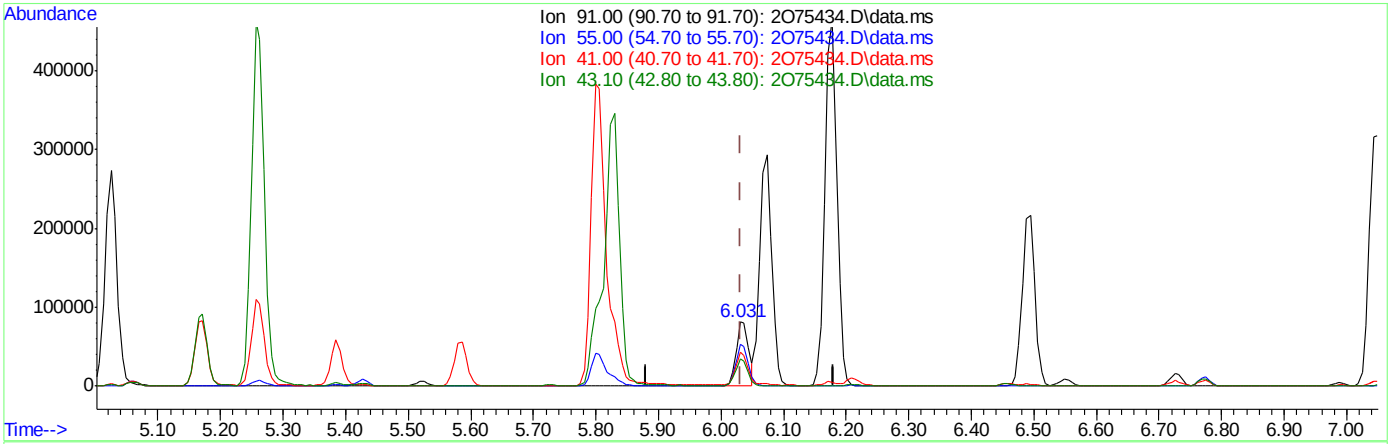
response 77892

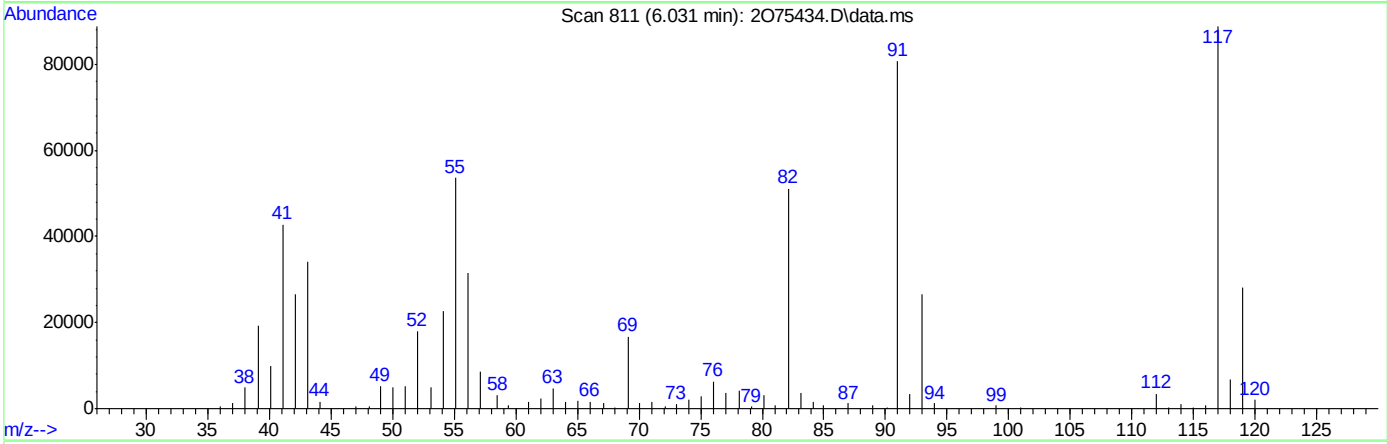
Ion	Exp%	Act%
91.00	100	100
55.00	66.30	65.31
41.00	53.70	50.31
43.10	42.30	40.66

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75434.D
Acq On : 11 Apr 2023 1:39 pm
Operator : davidb2
Sample : ICV2924-5 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 11 14:07:47 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:07:38 2023
Response via : Initial Calibration





TIC: 2O75434.D\data.ms

(76) 1-Chlorohexane

6.031min (-0.000) 40.48ug/L m

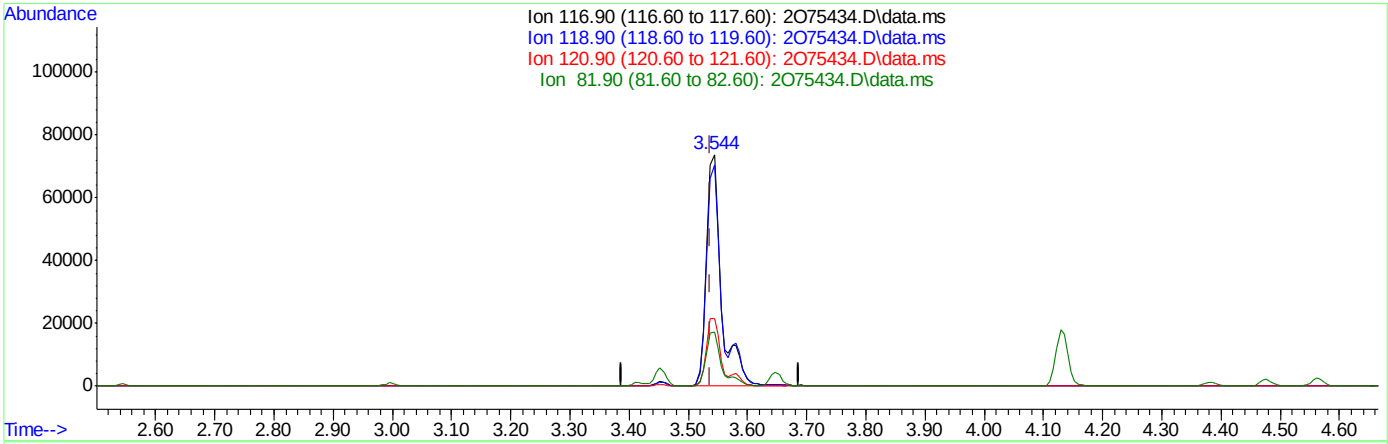
response 113220

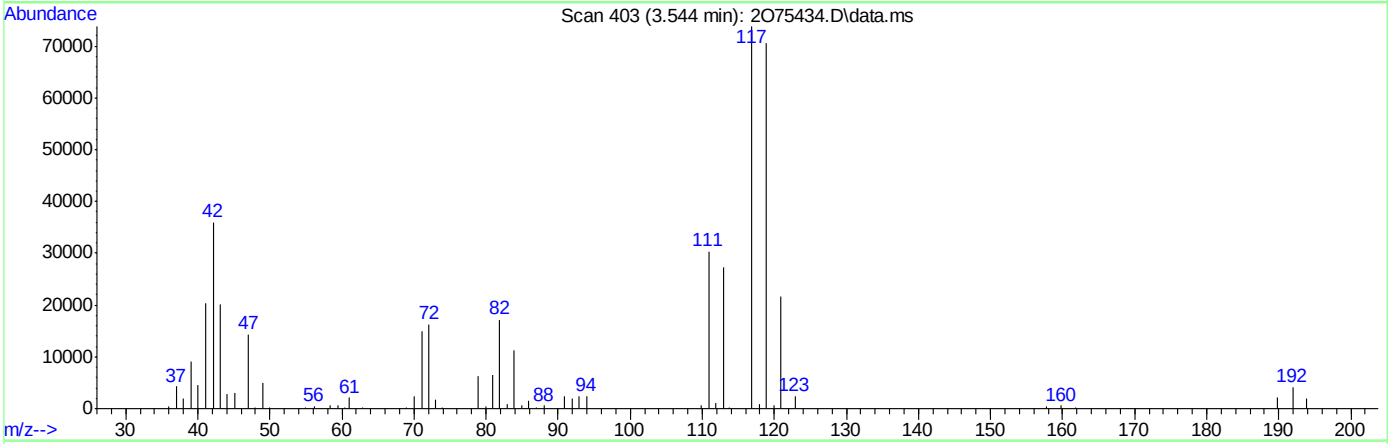
Ion	Exp%	Act%
91.00	100	100
55.00	66.30	66.27
41.00	53.70	52.90
43.10	42.30	42.34

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75434.D
Acq On : 11 Apr 2023 1:39 pm
Operator : davidb2
Sample : ICV2924-5 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 11 14:22:24 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration





TIC: 2O75434.D\data.ms

(40) Carbon Tetrachloride ( )

3.544min (+0.006) 52.33ug/L

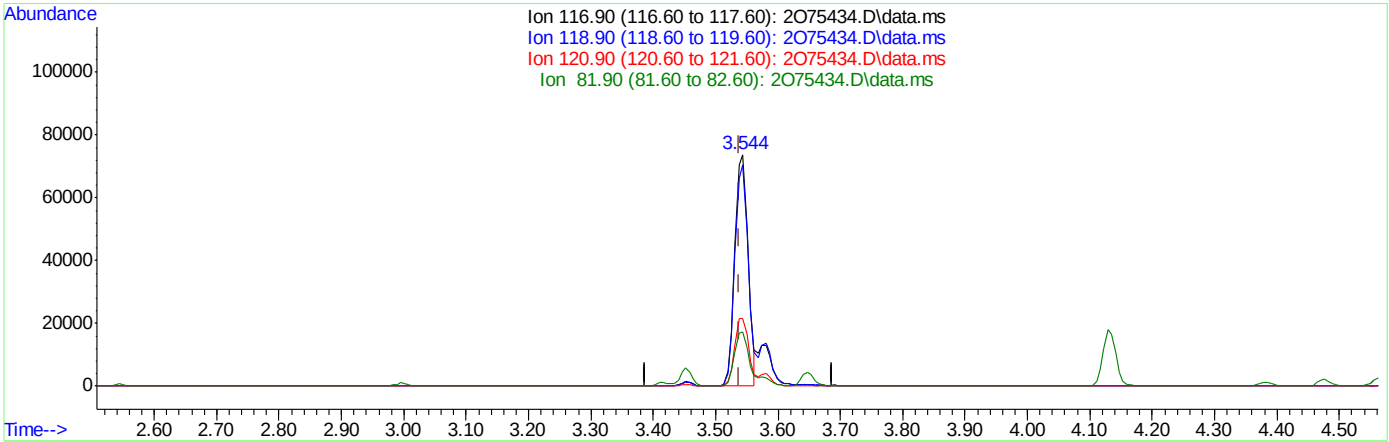
response 131113

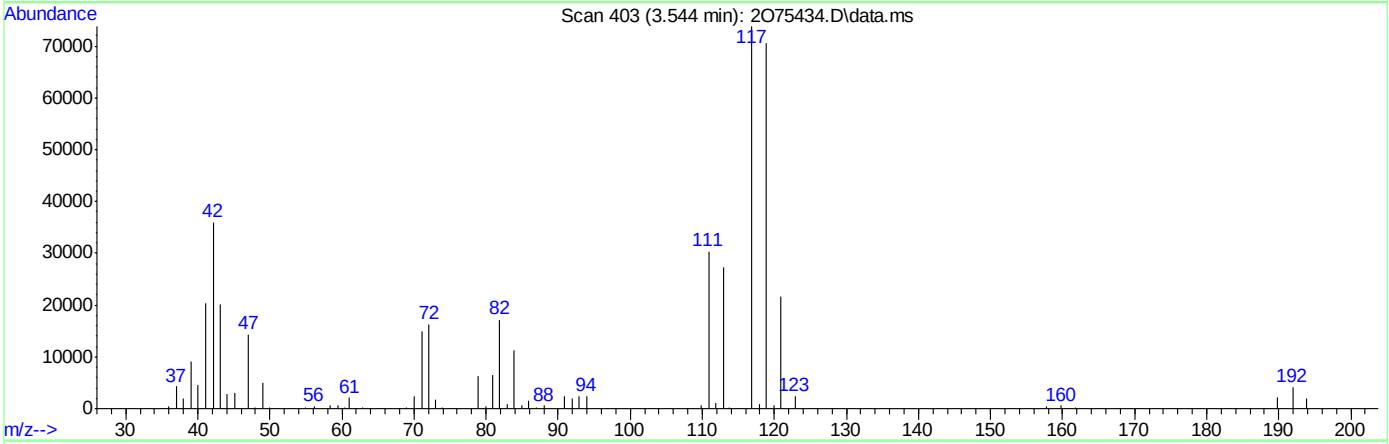
Ion	Exp%	Act%
116.90	100	100
118.90	97.60	95.60
120.90	31.00	29.45
81.90	24.80	23.31

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75434.D
Acq On : 11 Apr 2023 1:39 pm
Operator : davidb2
Sample : ICV2924-5 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 11 14:22:24 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration





TIC: 2O75434.D\data.ms

(40) Carbon Tetrachloride ( )

3.544min (+0.006) 43.54ug/L m

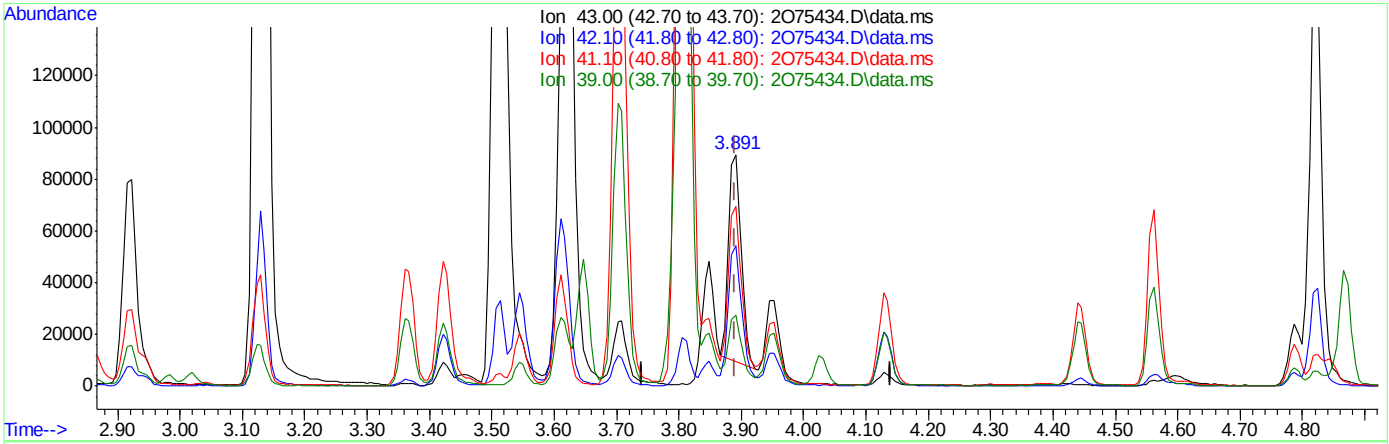
response 109091

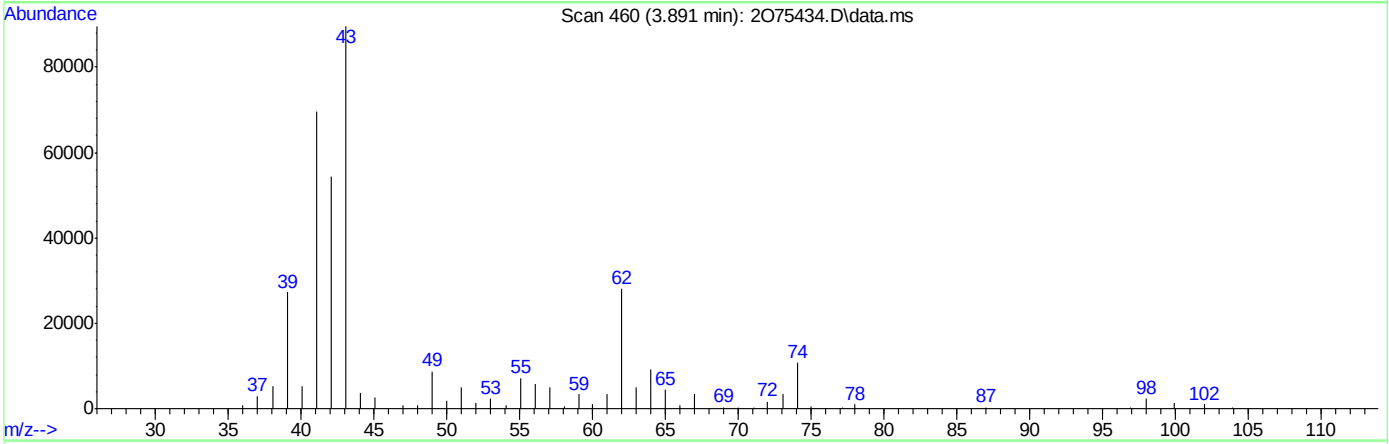
Ion	Exp%	Act%
116.90	100	100
118.90	97.60	95.60
120.90	31.00	29.45
81.90	24.80	23.31

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75434.D
Acq On : 11 Apr 2023 1:39 pm
Operator : davidb2
Sample : ICV2924-5 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 11 14:22:24 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration





TIC: 2O75434.D\data.ms

(49) Isobutyl alcohol

3.891min (+0.000) 644.62ug/L

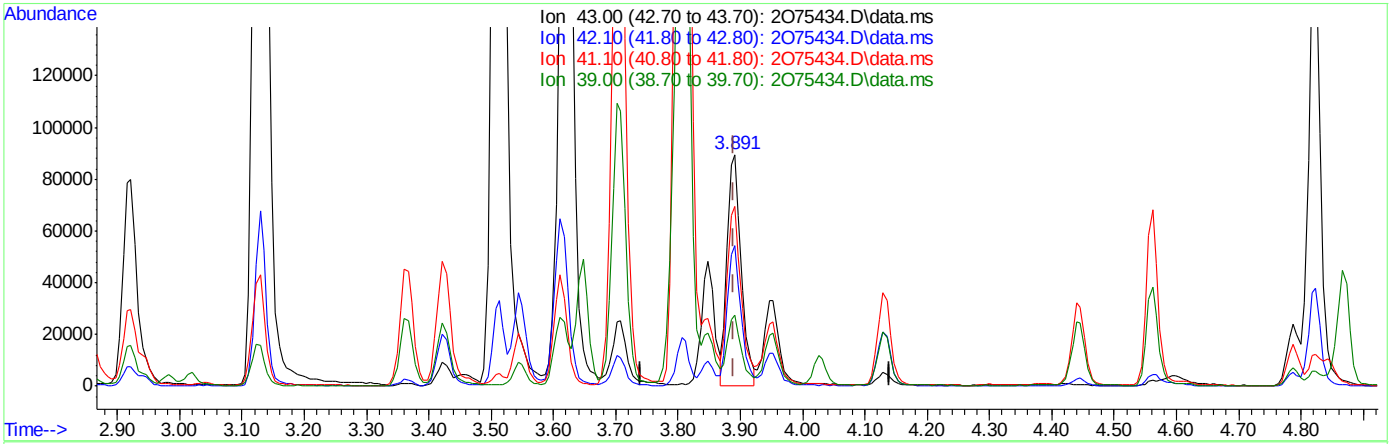
response 112085

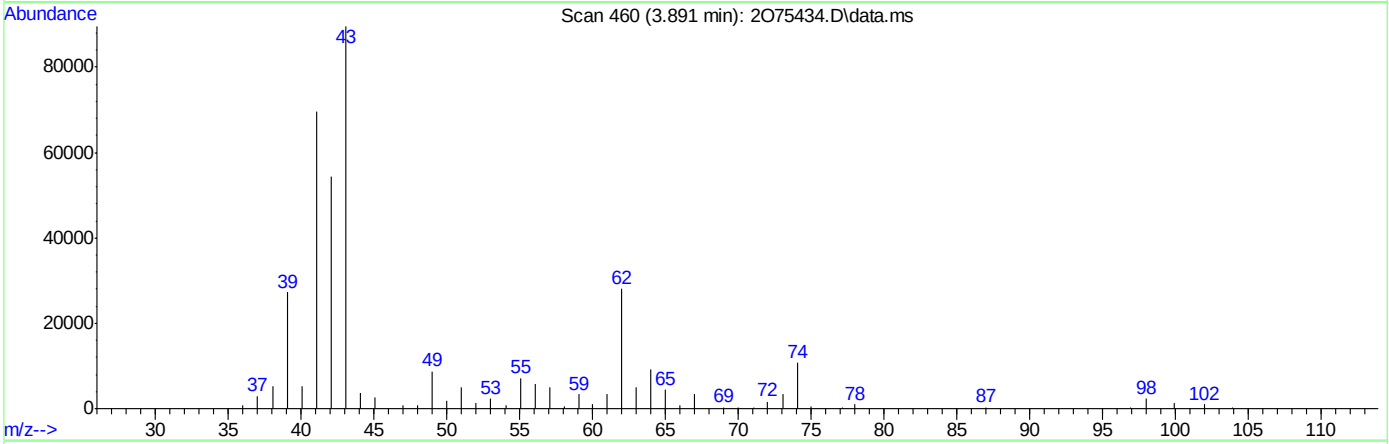
Ion	Exp%	Act%
43.00	100	100
42.10	60.00	61.20
41.10	73.50	74.87
39.00	30.20	28.94

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75434.D
Acq On : 11 Apr 2023 1:39 pm
Operator : davidb2
Sample : ICV2924-5 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 11 14:22:24 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration





TIC: 2O75434.D\data.ms

(49) Isobutyl alcohol

3.891min (+0.000) 804.28ug/L m

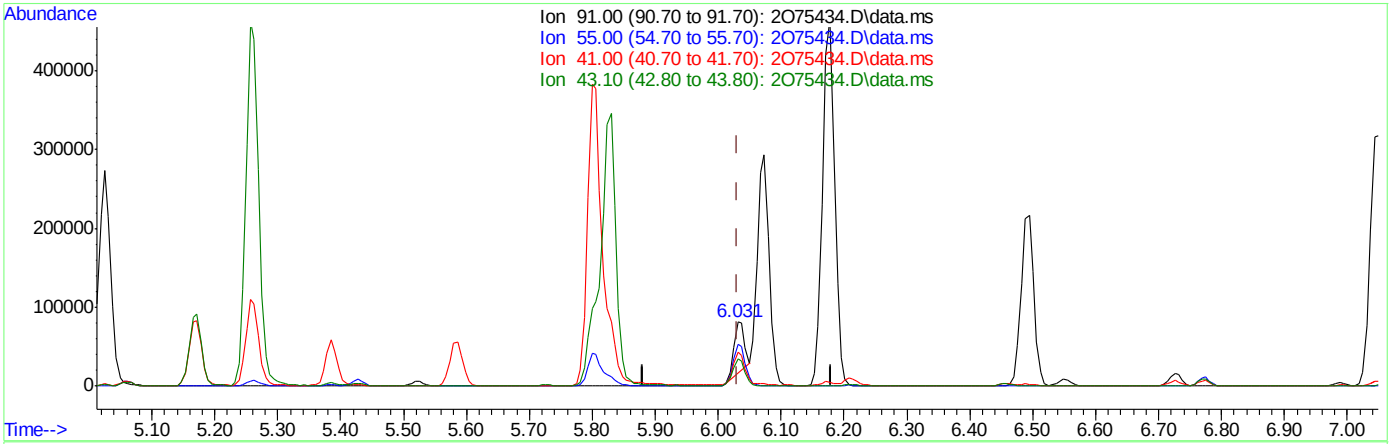
response 142697

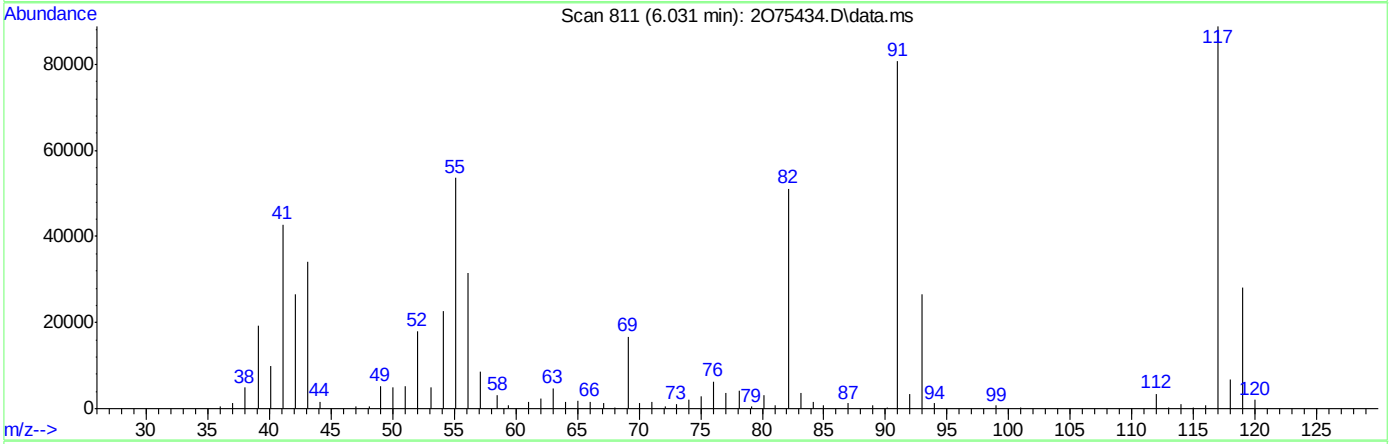
Ion	Exp%	Act%
43.00	100	100
42.10	60.00	60.62
41.10	73.50	77.79
39.00	30.20	30.48

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75434.D
Acq On : 11 Apr 2023 1:39 pm
Operator : davidb2
Sample : ICV2924-5 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 11 14:22:24 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration





TIC: 2O75434.D\data.ms

(76) 1-Chlorohexane

6.031min (-0.000) 27.85ug/L

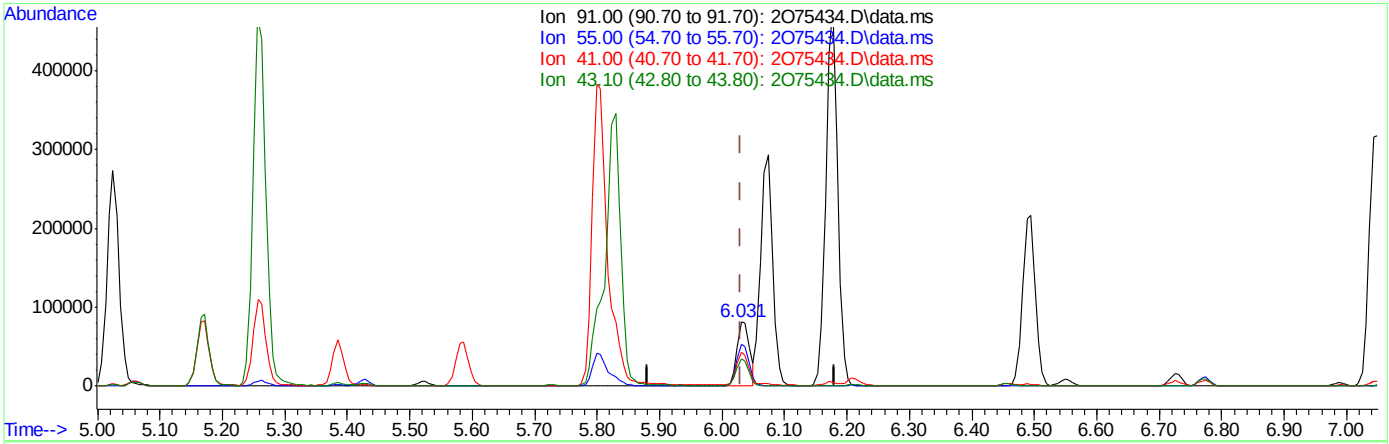
response 77892

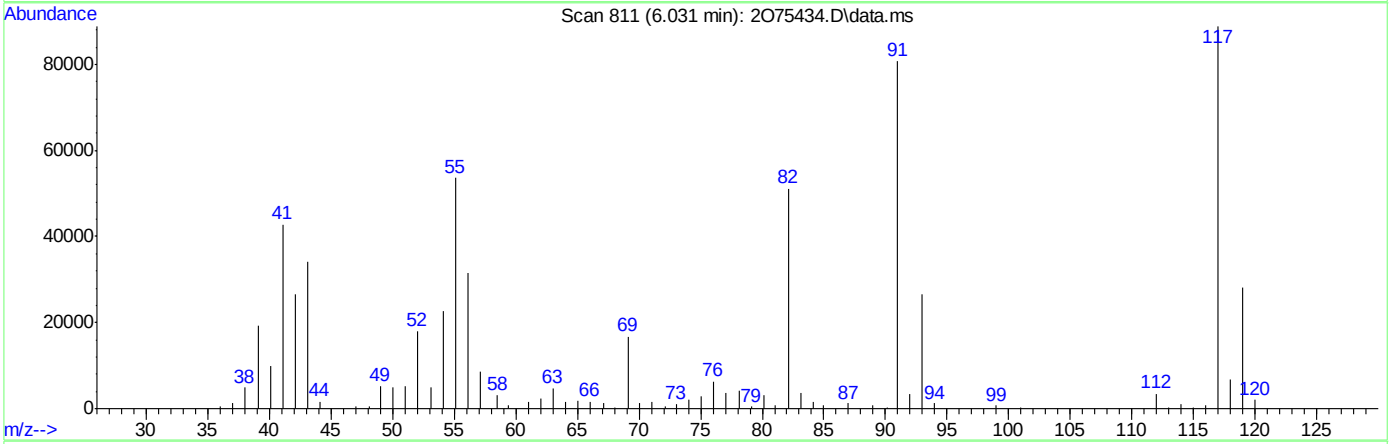
Ion	Exp%	Act%
91.00	100	100
55.00	66.30	65.31
41.00	53.70	50.31
43.10	42.30	40.66

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75434.D
Acq On : 11 Apr 2023 1:39 pm
Operator : davidb2
Sample : ICV2924-5 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 11 14:22:24 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration





TIC: 2O75434.D\data.ms

(76) 1-Chlorohexane

6.031min (-0.000) 40.48ug/L m

response 113220

Ion	Exp%	Act%
91.00	100	100
55.00	66.30	66.27
41.00	53.70	52.90
43.10	42.30	42.34

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75435.D
Acq On : 11 Apr 2023 2:04 pm
Operator : davidb2
Sample : ICV2924-4 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,,
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Apr 11 14:29:15 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

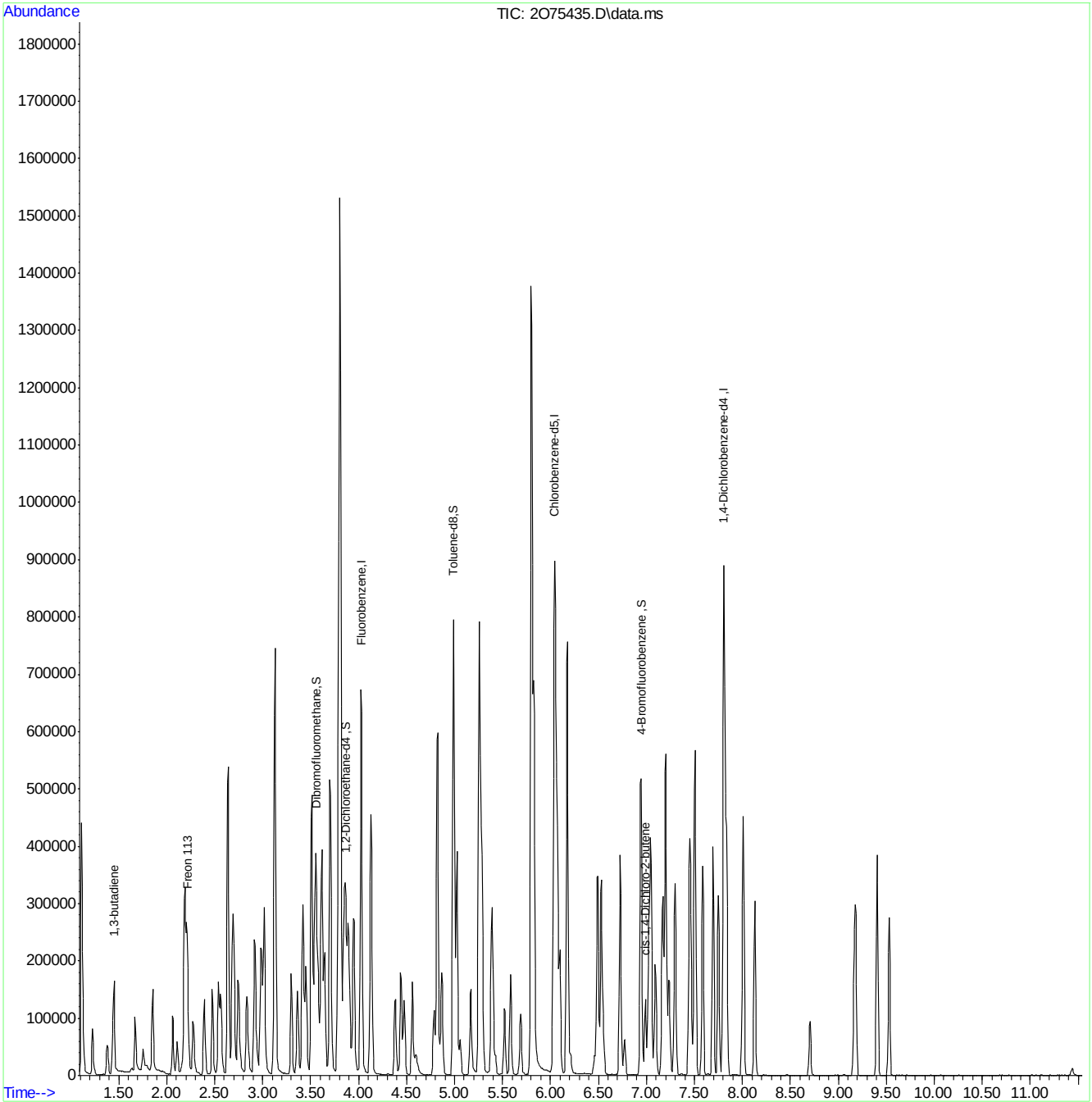
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	4.025	96	452882	50.00	ug/L	0.00
62) Chlorobenzene-d5	6.043	117	321578	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.805	152	171936	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	3.556	113	125358	49.94	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.88%			
50) 1,2-Dichloroethane-d4	3.867	65	132105	49.51	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 99.02%			
63) Toluene-d8	4.988	98	438102	49.96	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 99.92%			
86) 4-Bromofluorobenzene	6.945	174	131467	50.11	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.22%			
Target Compounds						Qvalue
4) 1,3-butadiene	1.453	39	40666	20.33	ug/L	95
13) Freon 113	2.215	101	51035	25.70	ug/L	94
87) cis-1,4-Dichloro-2-butene	6.988	53	22994	29.53	ug/L	88

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75435.D
Acq On : 11 Apr 2023 2:04 pm
Operator : davidb2
Sample : ICV2924-4 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,,
ALS Vial : 11 Sample Multiplier: 1

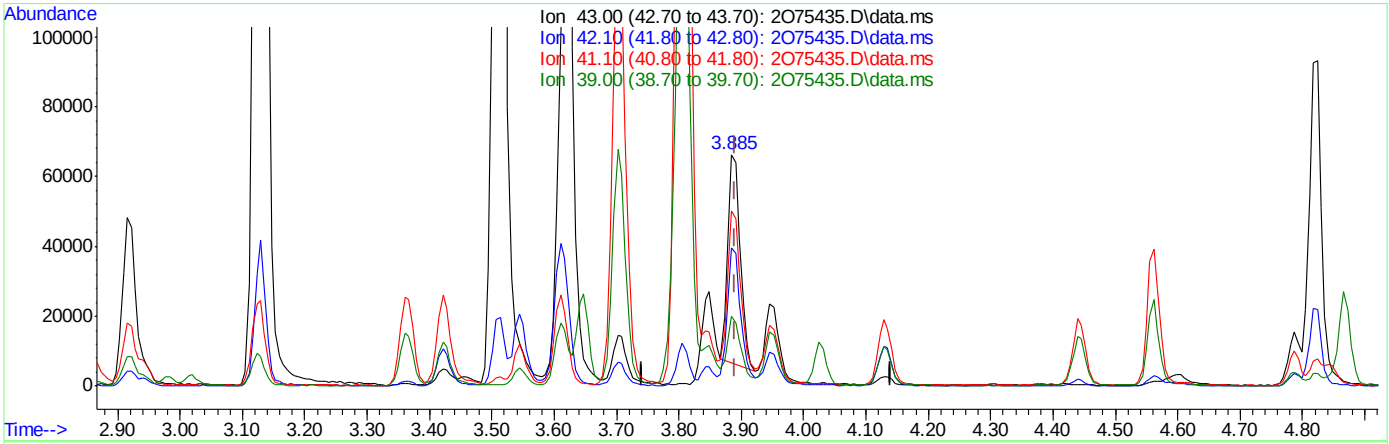
Quant Time: Apr 11 14:29:15 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

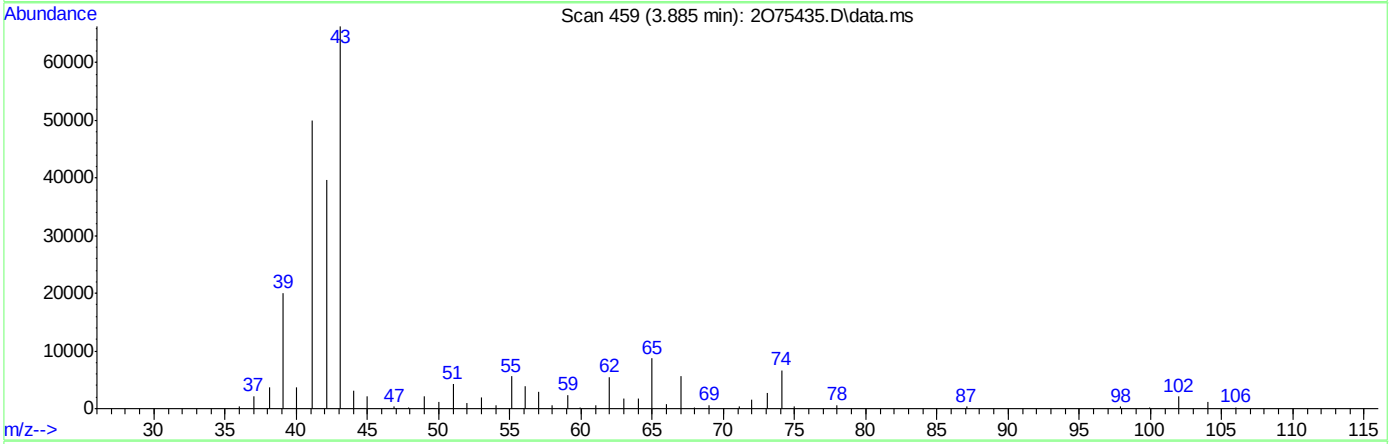


Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75435.D
Acq On : 11 Apr 2023 2:04 pm
Operator : davidb2
Sample : ICV2924-4 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Apr 11 14:16:46 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:10:28 2023
Response via : Initial Calibration





TIC: 2O75435.D\data.ms

(49) Isobutyl alcohol

3.885min (-0.006) 481.26ug/L

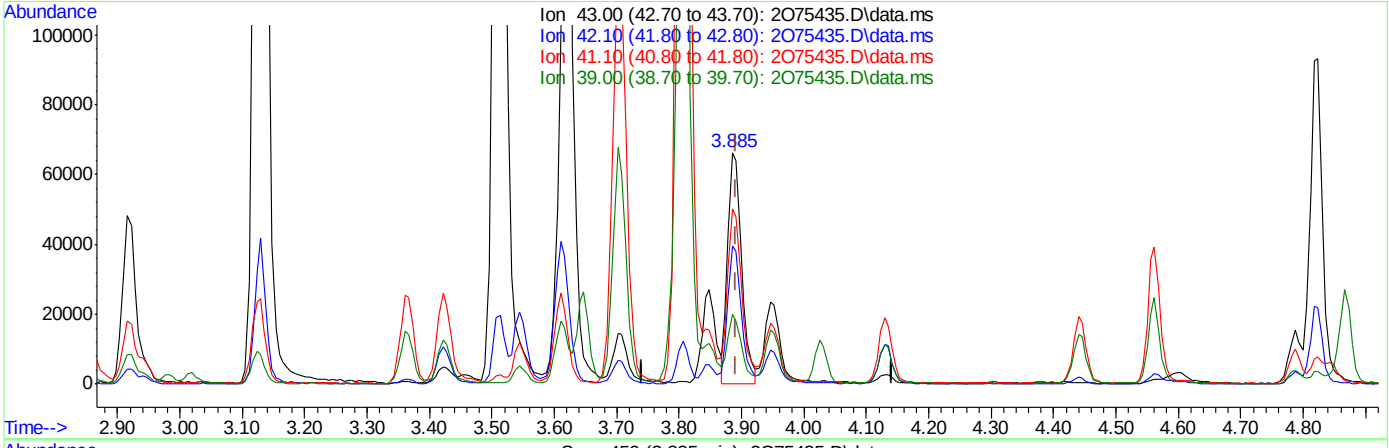
response 82153

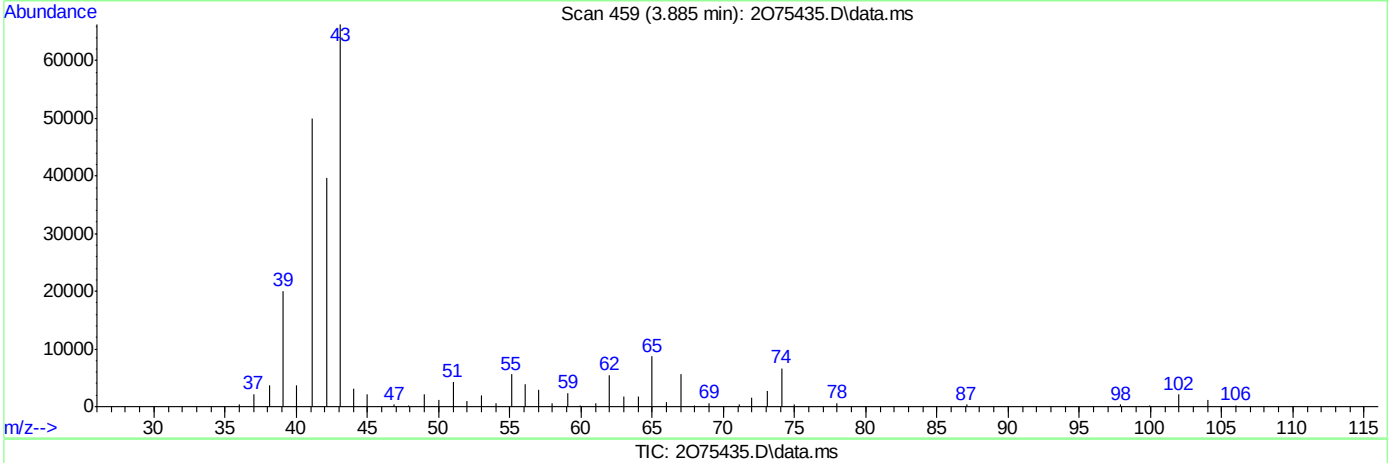
Ion	Exp%	Act%
43.00	100	100
42.10	60.00	60.21
41.10	73.50	72.86
39.00	30.20	28.41

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75435.D
Acq On : 11 Apr 2023 2:04 pm
Operator : davidb2
Sample : ICV2924-4 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Apr 11 14:16:46 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:10:28 2023
Response via : Initial Calibration





TIC: 2O75435.D\data.ms

(49) Isobutyl alcohol

3.885min (-0.006) 591.99ug/L m

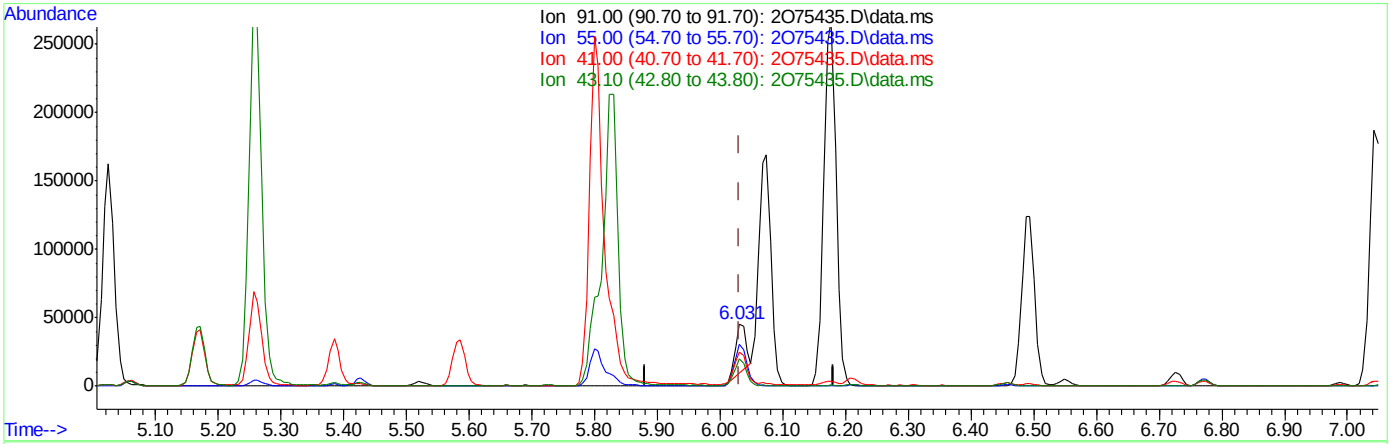
response 102513

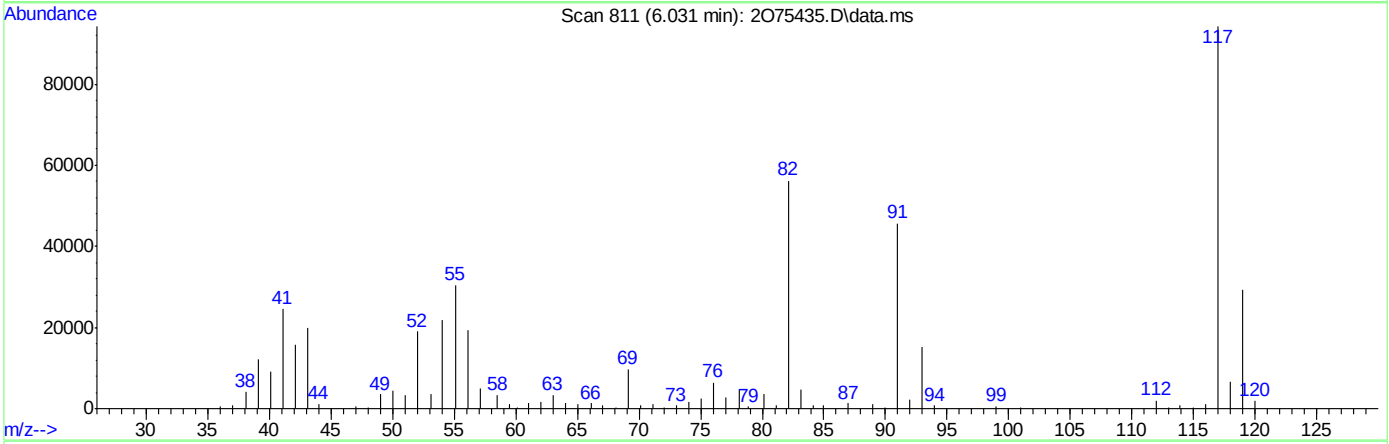
Ion	Exp%	Act%
43.00	100	100
42.10	60.00	59.93
41.10	73.50	75.47
39.00	30.20	30.29

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75435.D
Acq On : 11 Apr 2023 2:04 pm
Operator : davidb2
Sample : ICV2924-4 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Apr 11 14:16:46 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:10:28 2023
Response via : Initial Calibration





TIC: 2O75435.D\data.ms

(76) 1-Chlorohexane

6.031min (-0.000) 15.38ug/L

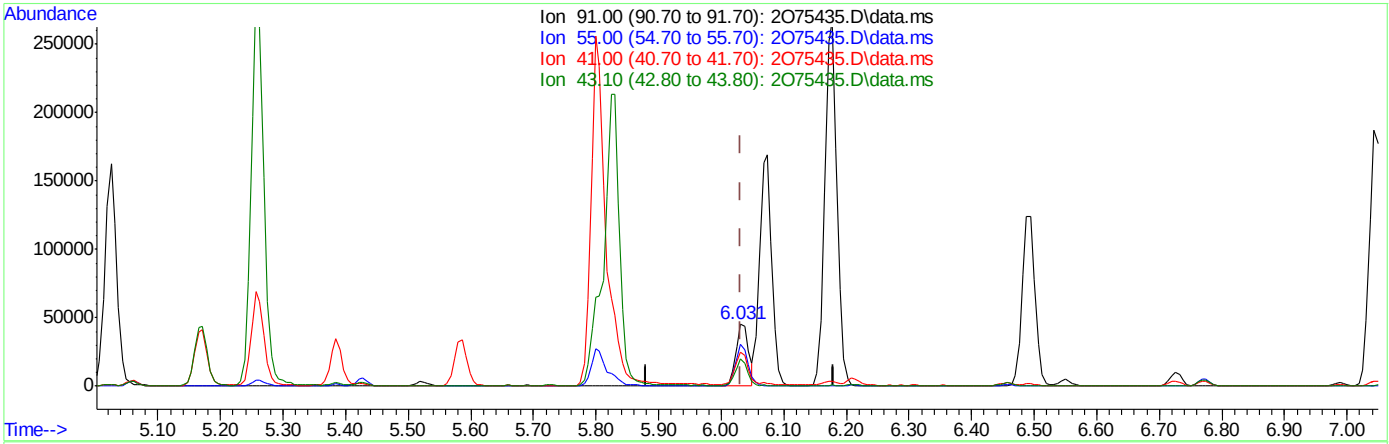
response 42677

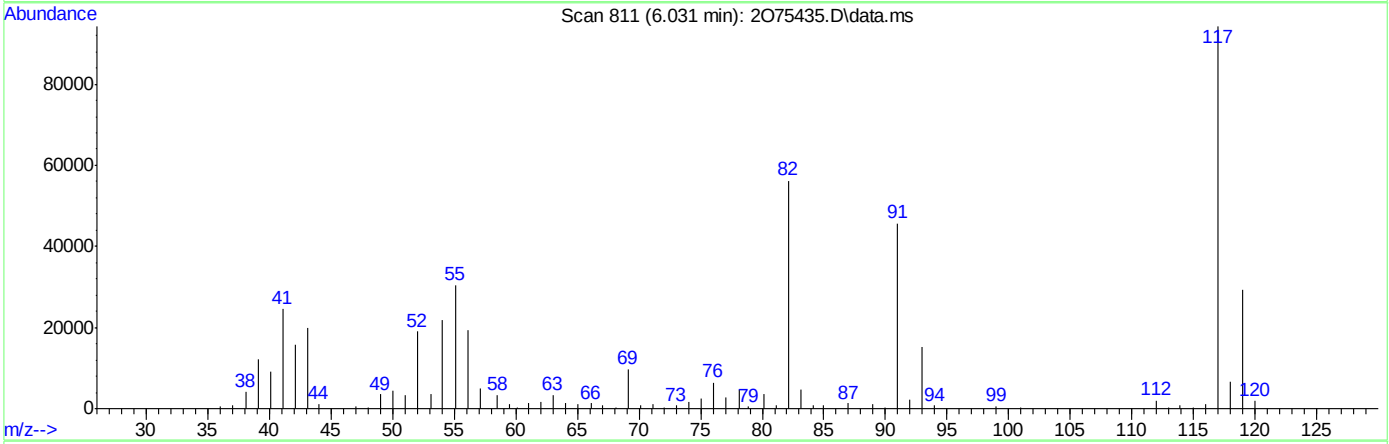
Ion	Exp%	Act%
91.00	100	100
55.00	66.30	66.40
41.00	53.70	50.33
43.10	42.30	42.14

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-04-11\
Data File : 2O75435.D
Acq On : 11 Apr 2023 2:04 pm
Operator : davidb2
Sample : ICV2924-4 Inst : MSVOA12
Misc : MS53646,V2O2924,,,,,
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Apr 11 14:16:46 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:10:28 2023
Response via : Initial Calibration





TIC: 2O75435.D\data.ms

(76) 1-Chlorohexane

6.031min (-0.000) 23.15ug/L m

response 64220

Ion	Exp%	Act%
91.00	100	100
55.00	66.30	66.72
41.00	53.70	53.72
43.10	42.30	43.81

Manual Integrations APPROVED (compounds with "m" flag)
Neil Christiana 05/04/23 11:30

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-05-03\
Data File : 2O75998.D
Acq On : 3 May 2023 11:21 am
Operator : davidb2
Sample : CC2924-5 Inst : MSVOA12
Misc : MS53846,V2O2949,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 03 11:34:30 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	4.025	96	399440	50.00	ug/L	0.00
62) Chlorobenzene-d5	6.037	117	313378	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.799	152	171320	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	3.556	113	108749	49.12	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 98.24%			
50) 1,2-Dichloroethane-d4	3.861	65	134745	57.26	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 114.52%			
63) Toluene-d8	4.989	98	402841	47.14	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 94.28%			
86) 4-Bromofluorobenzene	6.933	174	126794	48.50	ug/L	-0.01
Spiked Amount 50.000	Range 83 - 118		Recovery = 97.00%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.227	85	54503	33.49	ug/L	98
3) Chloromethane	1.386	50	63380	36.02	ug/L	99
4) 1,3-butadiene	1.453	39	70201	39.79	ug/L	98
5) Vinyl Chloride	1.434	62	71008	40.64	ug/L	98
6) Bromomethane	1.672	94	54235	40.53	ug/L	96
7) Chloroethane	1.751	64	18534	17.17	ug/L	97
8) Trichlorofluoromethane	1.843	101	135857	43.79	ug/L	99
9) Ethyl Ether	2.062	59	59520	43.25	ug/L	99
10) Ethanol	2.172	45	40938	1145.37	ug/L	95
11) 1,2-Dichlorotrifluoroe...	2.184	67	85747	41.85	ug/L	99
12) 1,1-Dichloroethene	2.184	61	103268	39.25	ug/L	95
13) Freon 113	2.209	101	77303	44.13	ug/L	98
14) Carbon Disulfide	2.202	76	199932	39.12	ug/L	96
15) Iodomethane	2.276	142	74833	27.37	ug/L	99
16) Acrolein	2.391	56	119455	238.53	ug/L	98
17) Allyl chloride	2.477	41	74266	36.45	ug/L	93
18) Methylene Chloride	2.538	49	96317	40.23	ug/L	96
19) Acetone	2.568	43	242328	241.19	ug/L	99
20) Methyl acetate	2.641	43	520490	225.29	ug/L	100
21) trans-1,2-Dichloroethene	2.635	61	102388	40.70	ug/L	100
22) Hexane	2.684	56	58211	43.81	ug/L	97
23) Methyl Tert Butyl Ether	2.696	73	202220	41.90	ug/L	89
24) Tert Butyl Alcohol	2.751	59	206887	513.87	ug/L	93
25) Acetonitrile	2.836	41	177004	467.82	ug/L	100
26) Di-isopropyl ether	2.916	45	217690	42.51	ug/L	98
27) Chloroprene	2.977	53	101886	42.33	ug/L	99
28) 1,1-Dichloroethane	2.989	63	134926	41.31	ug/L	98
29) Acrylonitrile	3.013	52	216854	222.85	ug/L	99
30) ETBE	3.123	59	198727	42.79	ug/L	96
31) Vinyl acetate	3.129	43	812718	217.64	ug/L	100
32) cis-1,2-Dichloroethene	3.294	96	85428	42.10	ug/L	99
33) 2,2-Dichloropropane	3.361	77	92895	42.34	ug/L	97
34) Bromochloromethane	3.410	128	44503	40.68	ug/L	93
35) Cyclohexane	3.422	56	115147	42.66	ug/L	97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-05-03\
Data File : 2O75998.D
Acq On : 3 May 2023 11:21 am
Operator : davidb2
Sample : CC2924-5 Inst : MSVOA12
Misc : MS53846,V2O2949,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 03 11:34:30 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	3.446	83	151876	42.93	ug/L		97
37) Ethyl acetate	3.507	43	655962	223.59	ug/L		99
38) Tetrahydrofuran	3.544	42	50151	44.45	ug/L		96
40) Carbon Tetrachloride	3.538	117	94967m	42.86	ug/L		
41) 1,1,1-Trichloroethane	3.574	97	121177	42.21	ug/L		99
42) 2-Butanone	3.617	43	402525	241.54	ug/L		96
43) 1,1-Dichloropropene	3.641	75	105174	42.45	ug/L		97
44) tert-Butyl formate	3.702	59	138565	196.62	ug/L		93
45) Propionitrile	3.794	54	246035	497.48	ug/L		92
46) Methacrylonitrile	3.806	41	743145	443.94	ug/L		100
47) Benzene	3.788	78	309543	42.24	ug/L		92
48) TAME	3.842	73	184261	42.38	ug/L		94
49) Isobutyl alcohol	3.885	43	183556m	1124.76	ug/L		
51) 1,2-Dichloroethane	3.897	62	118193	45.27	ug/L		98
52) Tert Amyl Alcohol	3.946	59	162967	509.47	ug/L		93
53) Trichloroethene	4.123	95	87320	41.35	ug/L		96
54) Methylcyclohexane	4.129	83	121382	43.91	ug/L		97
55) Dibromomethane	4.379	93	56515	42.54	ug/L		96
56) 1,2-Dichloropropane	4.440	63	74379	43.29	ug/L		98
57) Bromodichloromethane	4.470	83	102215	43.44	ug/L		98
58) Methyl methacrylate	4.556	41	85316	44.39	ug/L		96
59) 1,4-Dioxane	4.592	88	47498	1230.60	ug/L		96
60) 2-Chloroethyl vinyl ether	4.818	63	319399	214.03	ug/L		99
61) cis-1,3-Dichloropropene	4.860	75	114183	41.47	ug/L		99
64) Toluene	5.019	91	335707	39.09	ug/L		98
65) 2-Nitropropane	5.165	41	130719	222.14	ug/L		98
66) 4-Methyl-2-pentanone	5.251	43	664572	216.57	ug/L		99
67) trans-1,3-Dichloropropene	5.281	75	113589	39.61	ug/L		96
68) Tetrachloroethene	5.275	166	87635	36.01	ug/L		97
69) Ethyl methacrylate	5.379	69	104242	40.91	ug/L		97
70) 1,1,2-Trichloroethane	5.391	83	69897	40.34	ug/L		99
71) Dibromochloromethane	5.513	129	80137	38.71	ug/L		99
72) 1,3-Dichloropropane	5.580	76	129599	40.83	ug/L		98
73) 1,2-Dibromoethane	5.683	107	90002	41.50	ug/L		98
74) 3,3-dimethyl-1-butanol	5.799	57	1179547	2674.28	ug/L		99
75) 2-hexanone	5.824	43	756419	248.13	ug/L		95
76) 1-Chlorohexane	6.025	91	106003m	39.21	ug/L		
77) Ethylbenzene	6.061	91	370657	40.02	ug/L		96
78) Chlorobenzene	6.049	112	224963	38.76	ug/L		97
79) 1,1,1,2-Tetrachloroethane	6.092	131	74629	41.06	ug/L		98
80) m,p-Xylene	6.171	91	582595	80.82	ug/L		97
81) o-Xylene	6.482	91	293575	40.34	ug/L		97
82) Styrene	6.525	104	232840	40.71	ug/L		100
83) Bromoform	6.543	173	50881	37.95	ug/L		97
84) Isopropylbenzene	6.720	105	355627	40.53	ug/L		99
87) cis-1,4-Dichloro-2-butene	6.982	53	28966	37.33	ug/L	#	87
88) n-Propylbenzene	7.037	91	426333	40.14	ug/L		99
89) Bromobenzene	7.019	156	90130	38.24	ug/L		99
90) 1,1,2,2-Tetrachloroethane	7.086	83	136020	42.06	ug/L		98
91) 1,3,5-Trimethylbenzene	7.189	105	293489	39.14	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-05-03\
Data File : 2O75998.D
Acq On : 3 May 2023 11:21 am
Operator : davidb2
Sample : CC2924-5 Inst : MSVOA12
Misc : MS53846,V2O2949,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 03 11:34:30 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

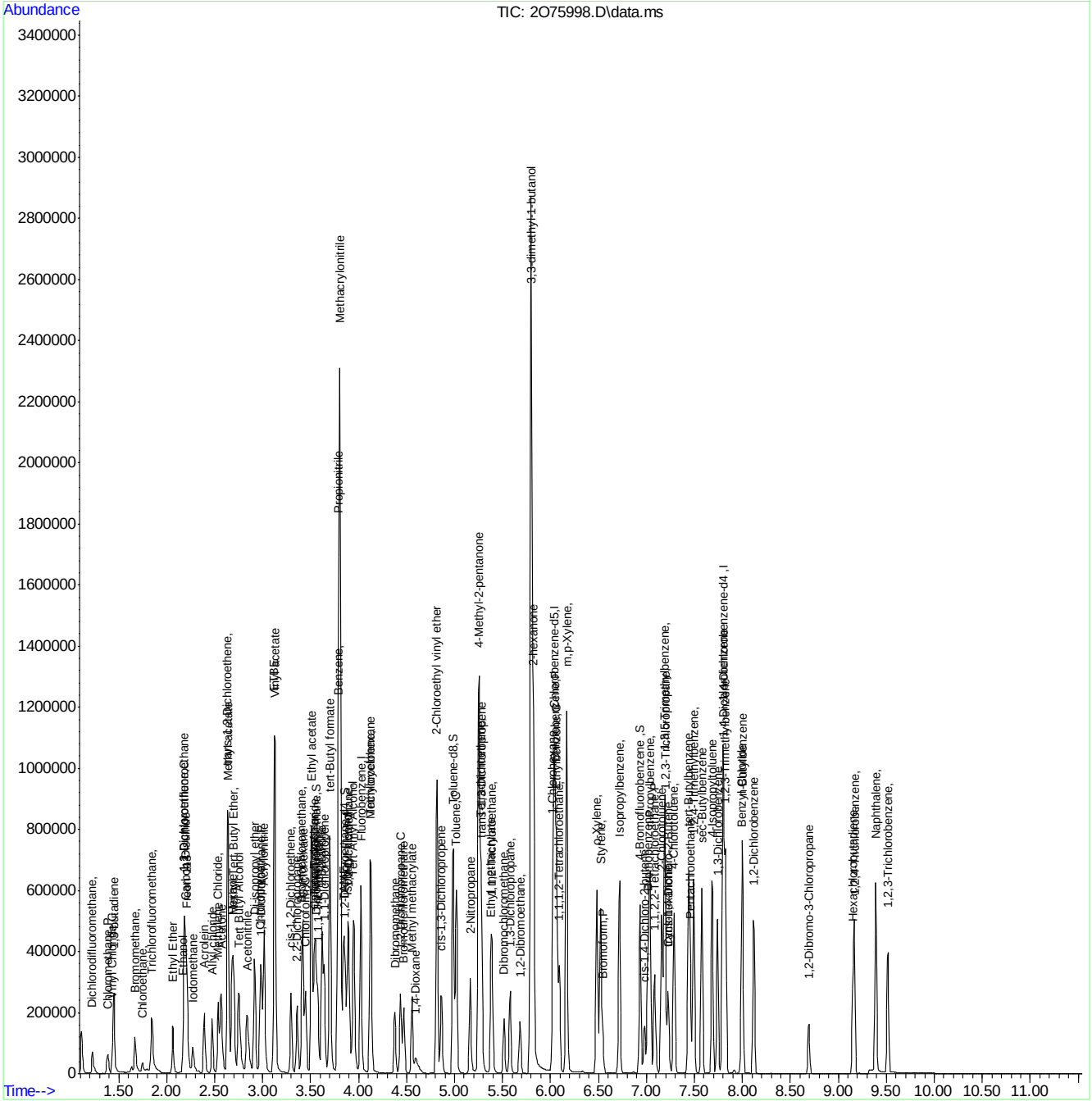
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92) 2-Chlorotoluene	7.159	91	282391	39.43	ug/L		97
93) trans-1,4-Dichloro-2-B...	7.226	53	27836	39.49	ug/L		92
94) 1,2,3-Trichloropropane	7.195	110	42472	39.91	ug/L		96
95) Cyclohexanone	7.226	55	39056	264.62	ug/L		93
96) 4-Chlorotoluene	7.287	91	266589	40.45	ug/L		98
97) tert-Butylbenzene	7.439	91	162980	40.23	ug/L		95
99) 1,2,4-Trimethylbenzene	7.494	105	299068	40.36	ug/L		98
100) Pentachloroethane	7.458	167	40991	38.83	ug/L	#	76
101) sec-Butylbenzene	7.579	105	357090	39.79	ug/L		99
102) 4-Isopropyltoluene	7.683	119	306980	39.20	ug/L		98
103) 1,3-Dichlorobenzene	7.744	146	178615	38.35	ug/L		99
104) 1,2,3-Trimethylbenzene	7.823	105	306190	39.49	ug/L		99
105) 1,4-Dichlorobenzene	7.805	146	181035	38.37	ug/L		97
106) n-Butylbenzene	8.000	92	160898	40.44	ug/L		93
107) Benzyl Chloride	7.994	126	34654	36.64	ug/L	#	27
108) 1,2-Dichlorobenzene	8.122	146	170816	38.87	ug/L		100
109) 1,2-Dibromo-3-Chloropr...	8.695	75	29754	42.64	ug/L		93
110) Hexachlorobutadiene	9.152	225	37456	38.78	ug/L		95
111) 1,2,4-Trichlorobenzene	9.171	180	112135	42.03	ug/L		97
112) Naphthalene	9.390	128	370078	39.21	ug/L		99
113) 1,2,3-Trichlorobenzene	9.518	180	97206	38.37	ug/L		96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-05-03\
Data File : 2O75998.D
Acq On : 3 May 2023 11:21 am
Operator : davidb2
Sample : CC2924-5 Inst : MSVOA12
Misc : MS53846,V2O2949,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 03 11:34:30 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration



Manual Integration Approval Summary

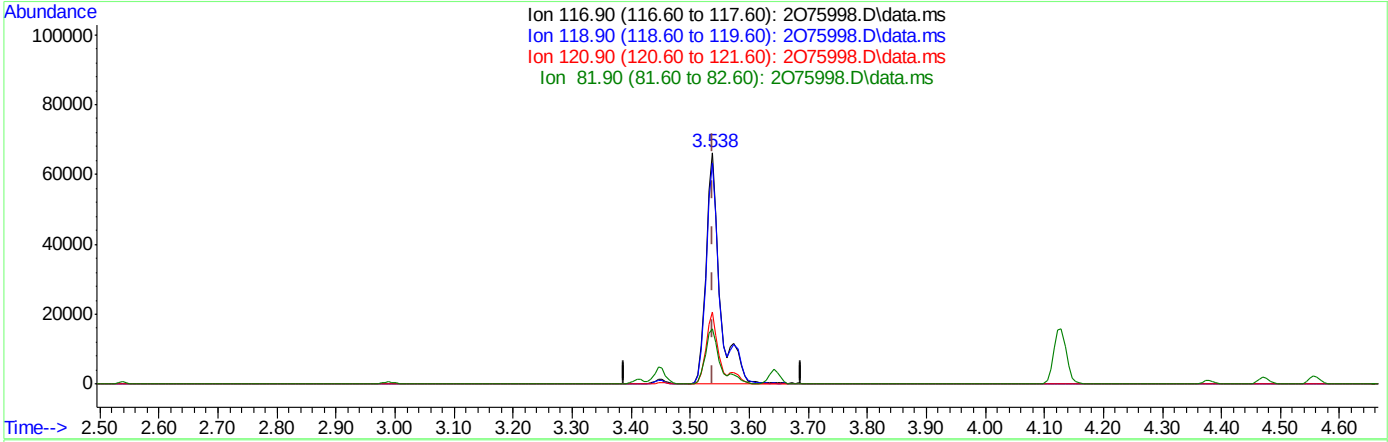
Sample Number:	V2O2949-CC2924	**Method:**	SW846 8260D
Lab FileID:	2O75998.D	**Analyst approved:**	05/03/23 12:08 David Butler
Injection Time:	05/03/23 11:21	**Supervisor approved:**	05/04/23 11:30 Neil Christiana

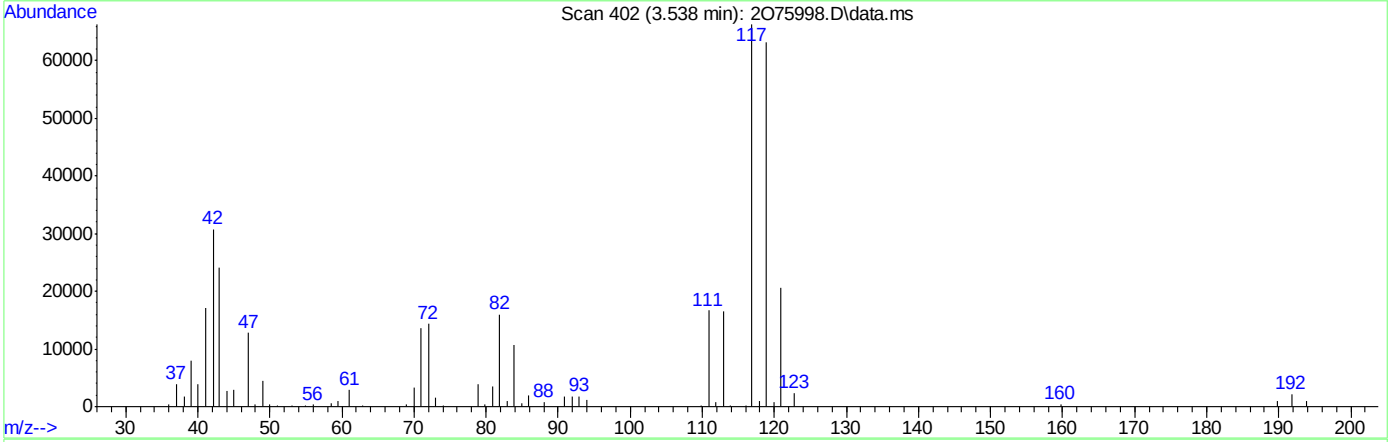
Parameter	CAS	Sig#	R.T. (min.)	Reason
Carbon Tetrachloride	56-23-5		3.54	Poor instrument integration
Isobutyl Alcohol	78-83-1		3.89	Poor instrument integration
1-Chlorohexane	544-10-5		6.02	Poor instrument integration

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-05-03\
Data File : 2O75998.D
Acq On : 3 May 2023 11:21 am
Operator : davidb2
Sample : CC2924-5 Inst : MSVOA12
Misc : MS53846,V2O2949,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 03 11:33:55 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration





TIC: 2O75998.D\data.ms

(40) Carbon Tetrachloride ( )

3.538min (-0.000) 50.25ug/L

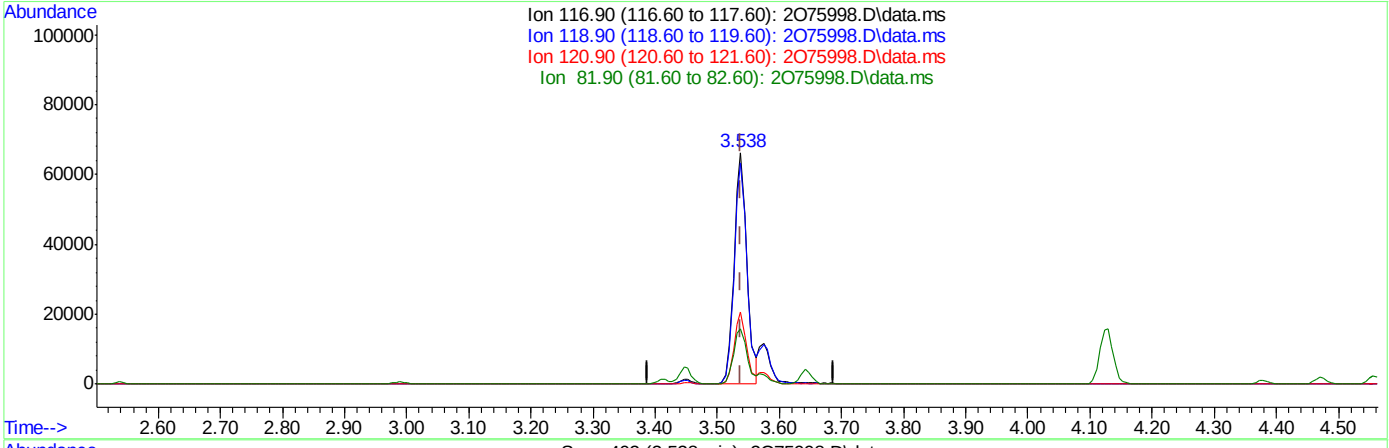
response 111341

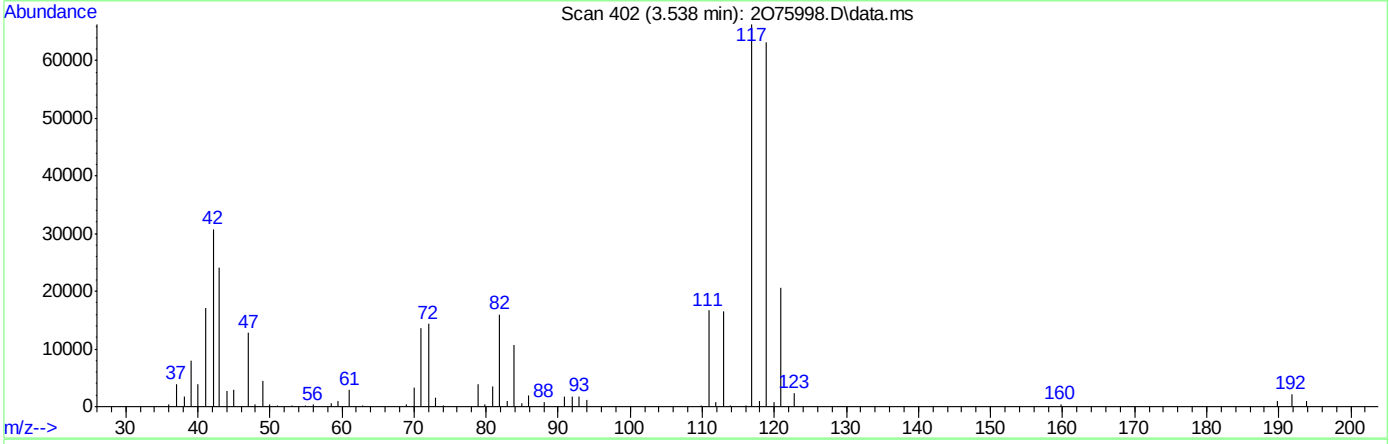
Ion	Exp%	Act%
116.90	100	100
118.90	97.60	95.46
120.90	31.00	31.02
81.90	24.80	24.13

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-05-03\
Data File : 2O75998.D
Acq On : 3 May 2023 11:21 am
Operator : davidb2
Sample : CC2924-5 Inst : MSVOA12
Misc : MS53846,V2O2949,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 03 11:33:55 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration





TIC: 2O75998.D\data.ms

(40) Carbon Tetrachloride ( )

3.538min (-0.000) 42.86ug/L m

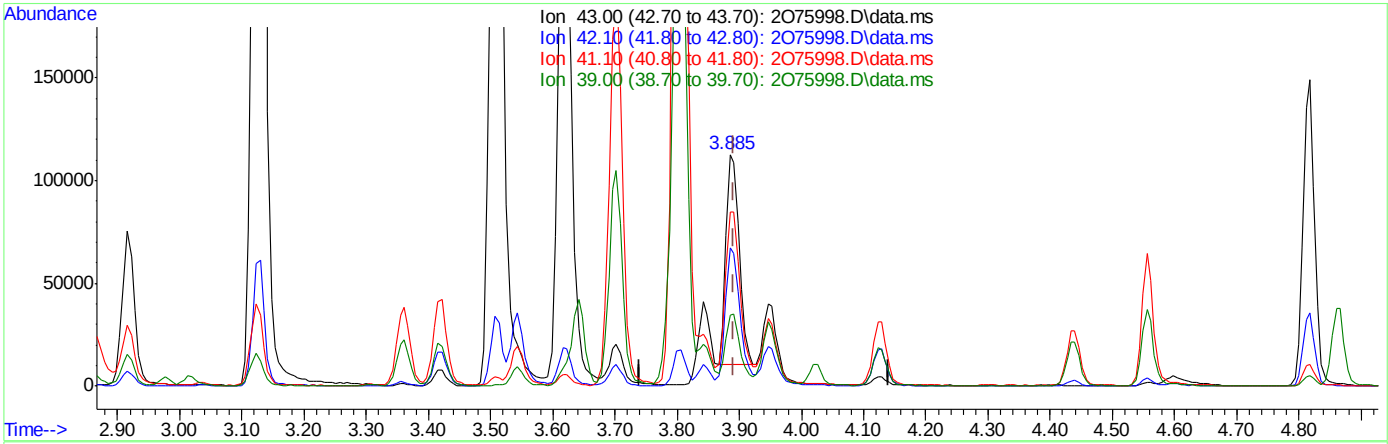
response 94967

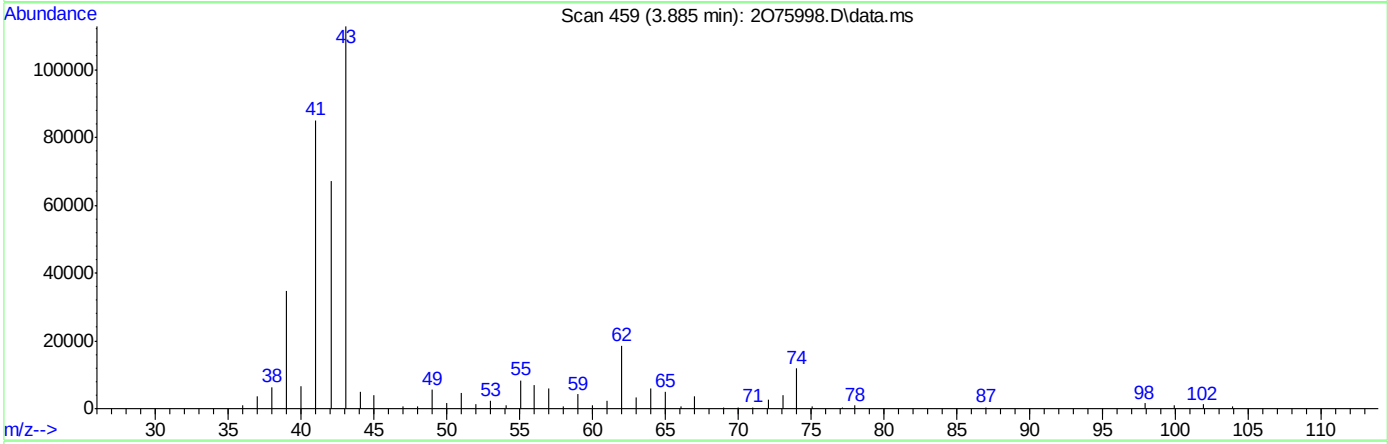
Ion	Exp%	Act%
116.90	100	100
118.90	97.60	95.46
120.90	31.00	31.02
81.90	24.80	24.13

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-05-03\
Data File : 2O75998.D
Acq On : 3 May 2023 11:21 am
Operator : davidb2
Sample : CC2924-5 Inst : MSVOA12
Misc : MS53846,V2O2949,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 03 11:33:55 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration





TIC: 2O75998.D\data.ms

(49) Isobutyl alcohol

3.885min (-0.006) 937.21ug/L

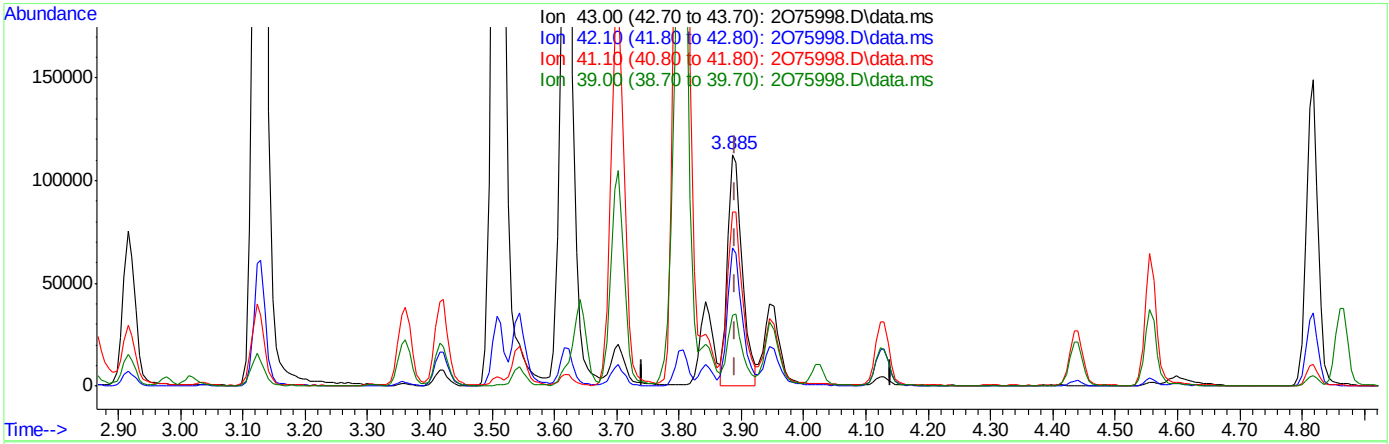
response 149497

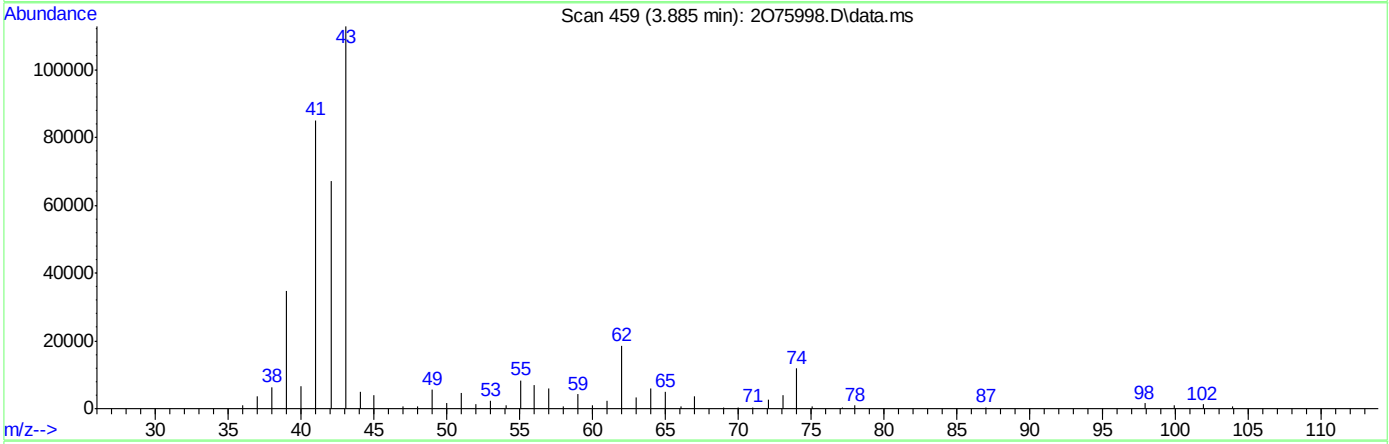
Ion	Exp%	Act%
43.00	100	100
42.10	60.00	60.53
41.10	73.50	73.90
39.00	30.20	28.53

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-05-03\
Data File : 2O75998.D
Acq On : 3 May 2023 11:21 am
Operator : davidb2
Sample : CC2924-5 Inst : MSVOA12
Misc : MS53846,V2O2949,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 03 11:33:55 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration





TIC: 2O75998.D\data.ms

(49) Isobutyl alcohol

3.885min (-0.006) 1124.76ug/L m

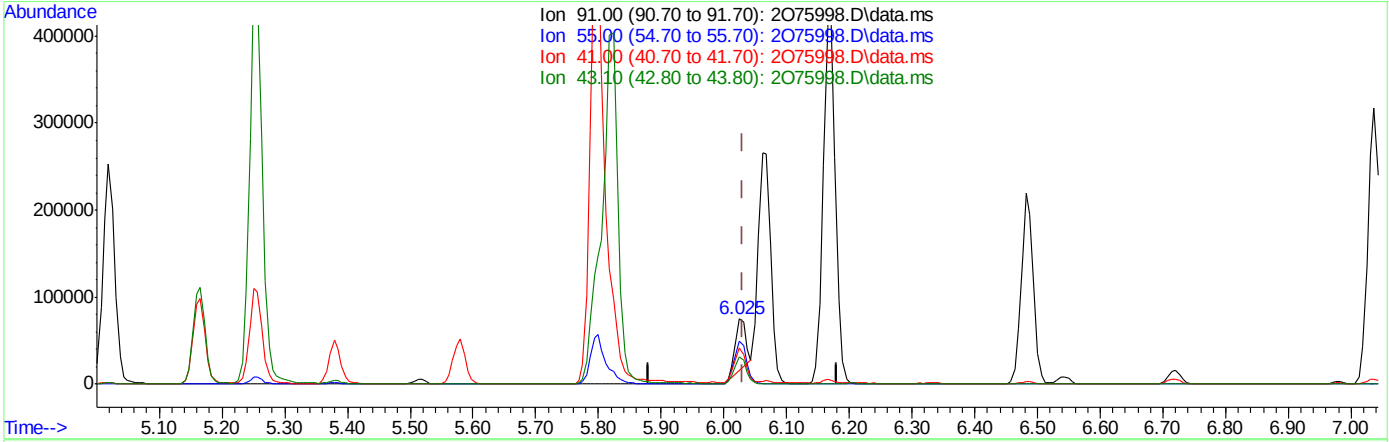
response 183556

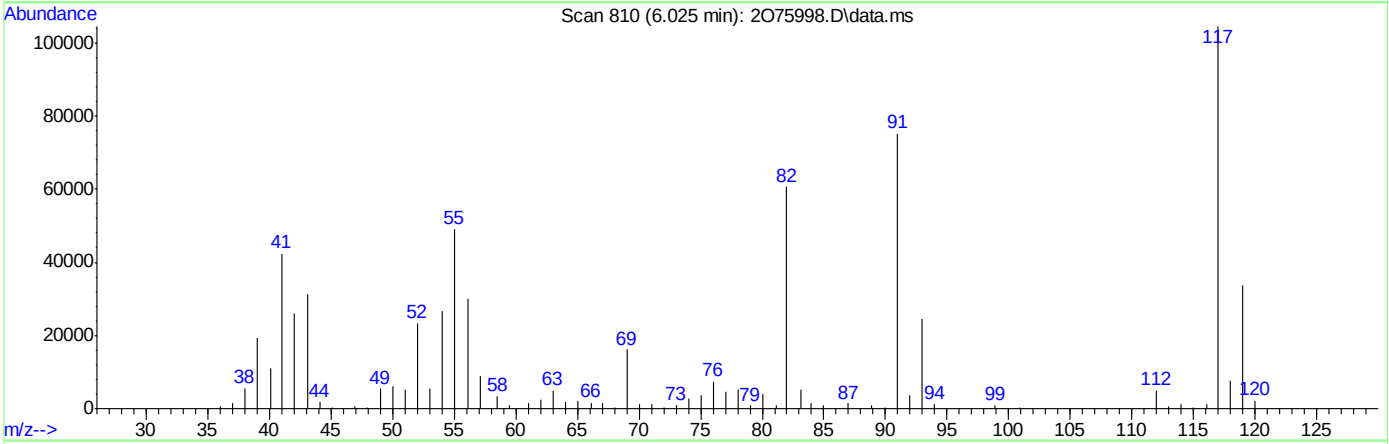
Ion	Exp%	Act%
43.00	100	100
42.10	60.00	59.50
41.10	73.50	75.38
39.00	30.20	30.87

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-05-03\
Data File : 2O75998.D
Acq On : 3 May 2023 11:21 am
Operator : davidb2
Sample : CC2924-5 Inst : MSVOA12
Misc : MS53846,V2O2949,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 03 11:33:55 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration





TIC: 2O75998.D\data.ms

(76) 1-Chlorohexane

6.025min (-0.006) 26.01ug/L

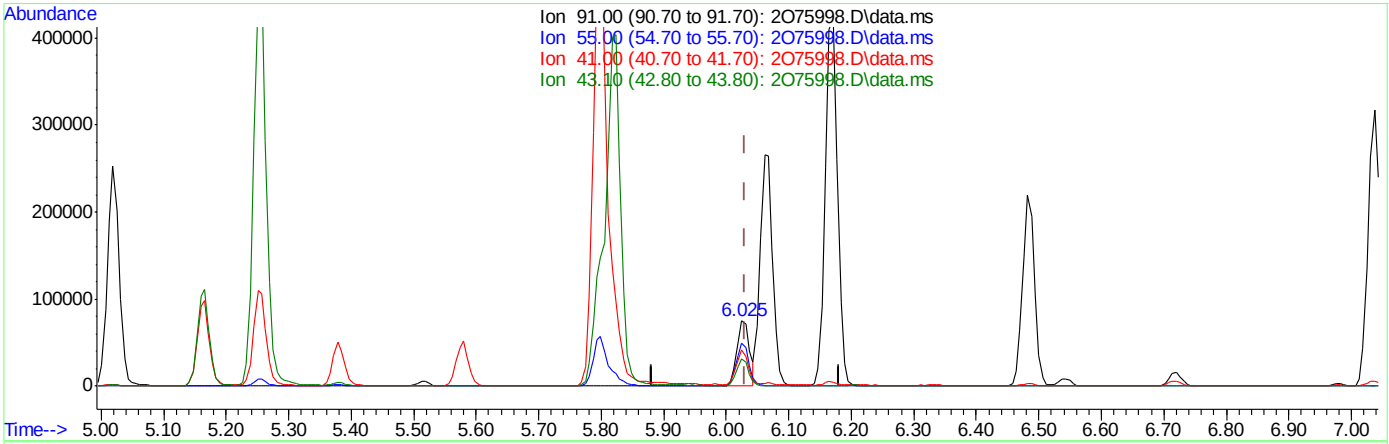
response 70306

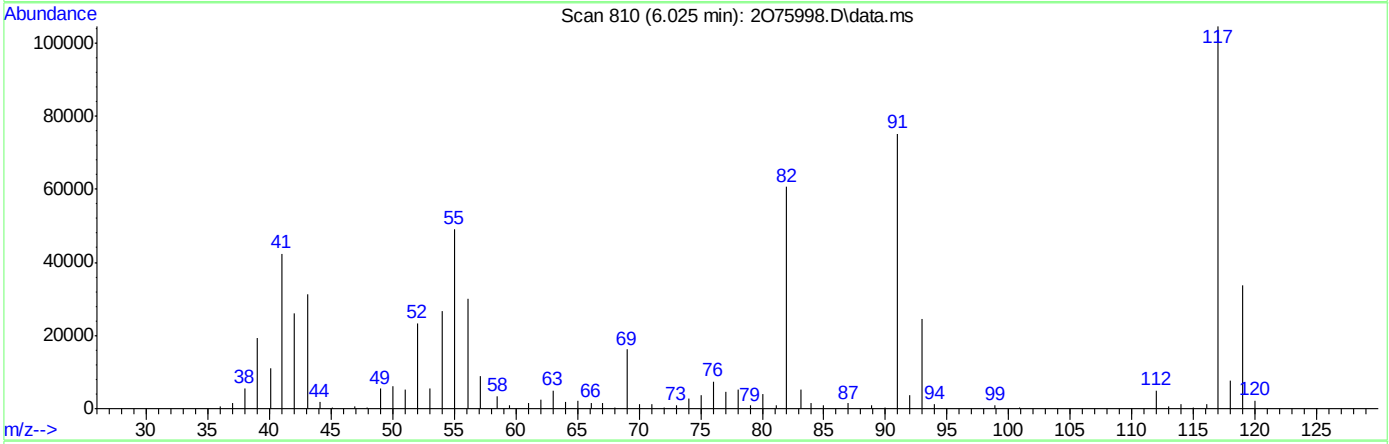
Ion	Exp%	Act%
91.00	100	100
55.00	66.30	65.02
41.00	53.70	53.91
43.10	42.30	40.89

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-05-03\
Data File : 2O75998.D
Acq On : 3 May 2023 11:21 am
Operator : davidb2
Sample : CC2924-5 Inst : MSVOA12
Misc : MS53846,V2O2949,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 03 11:33:55 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration





TIC: 2O75998.D\data.ms

(76) 1-Chlorohexane

6.025min (-0.006) 39.21ug/L m

response 106003

Ion	Exp%	Act%
91.00	100	100
55.00	66.30	65.49
41.00	53.70	56.38
43.10	42.30	41.79

Manual Integrations APPROVED (compounds with "m" flag)
Neil Christiana 05/04/23 11:30

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76023.d
Acq On : 3 May 2023 11:08 pm
Operator : davidb2
Sample : ECC2924-5
Misc : MS53920,V2O2949,,,,,
ALS Vial : 27 Sample Multiplier: 1

Quant Time: May 03 23:22:50 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	4.025	96	395956	50.00	ug/L	0.00
62) Chlorobenzene-d5	6.037	117	310901	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.799	152	170904	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	3.550	113	109284	49.80	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.60%			
50) 1,2-Dichloroethane-d4	3.861	65	132937	56.99	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 113.98%			
63) Toluene-d8	4.988	98	396882	46.81	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 93.62%			
86) 4-Bromofluorobenzene	6.933	174	127545	48.91	ug/L	-0.01
Spiked Amount 50.000	Range 83 - 118		Recovery = 97.82%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.227	85	51048	31.65	ug/L	97
3) Chloromethane	1.385	50	58372	33.47	ug/L	99
4) 1,3-butadiene	1.446	39	77117	44.10	ug/L	99
5) Vinyl Chloride	1.434	62	67211	38.81	ug/L	99
6) Bromomethane	1.672	94	23086	17.41	ug/L	97
7) Chloroethane	1.751	64	17090	15.65	ug/L	96
8) Trichlorofluoromethane	1.843	101	127089	41.32	ug/L	99
9) Ethyl Ether	2.068	59	59816	43.84	ug/L	97
10) Ethanol	2.172	45	42532	1201.11	ug/L	96
11) 1,2-Dichlorotrifluoroe...	2.184	67	82262	40.51	ug/L	99
12) 1,1-Dichloroethene	2.184	61	99819	38.27	ug/L	97
13) Freon 113	2.208	101	72465	41.73	ug/L	95
14) Carbon Disulfide	2.202	76	182311	35.99	ug/L	96
15) Iodomethane	2.275	142	60682	22.39	ug/L	98
16) Acrolein	2.391	56	98066	197.55	ug/L	99
17) Allyl chloride	2.477	41	66452	32.90	ug/L	95
18) Methylene Chloride	2.538	49	94041	39.61	ug/L	96
19) Acetone	2.568	43	247217	248.22	ug/L	99
20) Methyl acetate	2.641	43	549309	239.86	ug/L	100
21) trans-1,2-Dichloroethene	2.635	61	96940	38.87	ug/L	97
22) Hexane	2.684	56	52174	39.61	ug/L	98
23) Methyl Tert Butyl Ether	2.702	73	205271	42.90	ug/L	91
24) Tert Butyl Alcohol	2.751	59	212167	529.89	ug/L	93
25) Acetonitrile	2.836	41	182973	487.85	ug/L	98
26) Di-isopropyl ether	2.916	45	216570	42.67	ug/L	97
27) Chloroprene	2.977	53	97000	40.65	ug/L	98
28) 1,1-Dichloroethane	2.989	63	132328	40.87	ug/L	99
29) Acrylonitrile	3.013	52	215889	223.81	ug/L	99
30) ETBE	3.123	59	203031	44.10	ug/L	97
31) Vinyl acetate	3.129	43	698334	188.66	ug/L	100
32) cis-1,2-Dichloroethene	3.294	96	82875	41.20	ug/L	98
33) 2,2-Dichloropropane	3.361	77	55033	25.30	ug/L	99
34) Bromochloromethane	3.409	128	41959	38.69	ug/L	92
35) Cyclohexane	3.422	56	109584	40.96	ug/L	96
36) Chloroform	3.446	83	145516	41.49	ug/L	99
37) Ethyl acetate	3.507	43	654254	224.97	ug/L	99
38) Tetrahydrofuran	3.543	42	51634	46.17	ug/L	98
40) Carbon Tetrachloride	3.537	117	88935m	40.49	ug/L	
41) 1,1,1-Trichloroethane	3.574	97	116630	40.98	ug/L	98
42) 2-Butanone	3.617	43	401203	242.86	ug/L	97
43) 1,1-Dichloropropene	3.641	75	99708	40.59	ug/L	97
44) tert-Butyl formate	3.702	59	123136	178.38	ug/L	91

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76023.d
Acq On : 3 May 2023 11:08 pm
Operator : davidb2
Sample : ECC2924-5
Misc : MS53920,V2O2949,,,,,
ALS Vial : 27 Sample Multiplier: 1

Quant Time: May 03 23:22:50 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45)	Propionitrile	3.793	54	245913	501.61	ug/L		91
46)	Methacrylonitrile	3.806	41	743476	448.05	ug/L		99
47)	Benzene	3.787	78	298255	41.06	ug/L		91
48)	TAME	3.842	73	189100	43.88	ug/L		96
49)	Isobutyl alcohol	3.891	43	252296m	1493.33	ug/L		
51)	1,2-Dichloroethane	3.897	62	119418	46.15	ug/L		98
52)	Tert Amyl Alcohol	3.952	59	166979	524.83	ug/L		92
53)	Trichloroethene	4.123	95	85655	40.92	ug/L		94
54)	Methylcyclohexane	4.129	83	114005	41.61	ug/L		96
55)	Dibromomethane	4.379	93	56567	42.96	ug/L		98
56)	1,2-Dichloropropane	4.440	63	72721	42.69	ug/L		100
57)	Bromodichloromethane	4.470	83	99233	42.54	ug/L		99
58)	Methyl methacrylate	4.556	41	88020	46.20	ug/L		97
59)	1,4-Dioxane	4.598	88	48033	1253.47	ug/L		100
60)	2-Chloroethyl vinyl ether	4.818	63	306609	207.26	ug/L		97
61)	cis-1,3-Dichloropropene	4.860	75	104095	38.29	ug/L		98
64)	Toluene	5.019	91	323473	37.97	ug/L		100
65)	2-Nitropropane	5.165	41	121547	210.28	ug/L		99
66)	4-Methyl-2-pentanone	5.257	43	676310	222.15	ug/L		99
67)	trans-1,3-Dichloropropene	5.281	75	103078	36.36	ug/L		94
68)	Tetrachloroethene	5.275	166	116159	48.11	ug/L		96
69)	Ethyl methacrylate	5.379	69	107863	42.58	ug/L		97
70)	1,1,2-Trichloroethane	5.391	83	70317	40.90	ug/L		96
71)	Dibromochloromethane	5.519	129	78760	38.37	ug/L		99
72)	1,3-Dichloropropane	5.580	76	129204	41.03	ug/L		99
73)	1,2-Dibromoethane	5.683	107	90259	41.95	ug/L		97
74)	3,3-dimethyl-1-butanol	5.799	57	1205192	2746.48	ug/L		99
75)	2-hexanone	5.824	43	763596	252.48	ug/L		94
76)	1-Chlorohexane	6.025	91	100425m	37.44	ug/L		
77)	Ethylbenzene	6.067	91	357915	38.95	ug/L		97
78)	Chlorobenzene	6.049	112	219169	38.06	ug/L		97
79)	1,1,1,2-Tetrachloroethane	6.092	131	71418	39.61	ug/L		98
80)	m,p-Xylene	6.171	91	557134	77.90	ug/L		98
81)	o-Xylene	6.482	91	285687	39.57	ug/L		97
82)	Styrene	6.525	104	227254	40.05	ug/L		99
83)	Bromoform	6.543	173	48601	36.67	ug/L		98
84)	Isopropylbenzene	6.720	105	340124	39.07	ug/L		99
87)	cis-1,4-Dichloro-2-butene	6.982	53	19384	25.04	ug/L	#	79
88)	n-Propylbenzene	7.037	91	406211	38.34	ug/L		100
89)	Bromobenzene	7.018	156	87953	37.41	ug/L		97
90)	1,1,2,2-Tetrachloroethane	7.085	83	134247	41.61	ug/L		98
91)	1,3,5-Trimethylbenzene	7.189	105	285454	38.16	ug/L		98
92)	2-Chlorotoluene	7.159	91	270939	37.93	ug/L		97
93)	trans-1,4-Dichloro-2-B...	7.226	53	19161	27.90	ug/L	#	85
94)	1,2,3-Trichloropropane	7.195	110	42929	40.44	ug/L		98
95)	Cyclohexanone	7.232	55	38300	260.13	ug/L		95
96)	4-Chlorotoluene	7.287	91	256362	38.99	ug/L		98
97)	tert-Butylbenzene	7.439	91	156755	38.79	ug/L		96
99)	1,2,4-Trimethylbenzene	7.494	105	287818	38.94	ug/L		99
100)	Pentachloroethane	7.457	167	18282	18.36	ug/L	#	79
101)	sec-Butylbenzene	7.579	105	340261	38.00	ug/L		99
102)	4-Isopropyltoluene	7.689	119	289116	37.01	ug/L		99
103)	1,3-Dichlorobenzene	7.744	146	172104	37.04	ug/L		98
104)	1,2,3-Trimethylbenzene	7.823	105	303388	39.22	ug/L		99
105)	1,4-Dichlorobenzene	7.805	146	174318	37.04	ug/L		96
106)	n-Butylbenzene	8.000	92	141725	35.82	ug/L		97
107)	Benzyl Chloride	7.994	126	16361	18.87	ug/L	#	1
108)	1,2-Dichlorobenzene	8.122	146	167021	38.10	ug/L		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76023.d
Acq On : 3 May 2023 11:08 pm
Operator : davidb2
Sample : ECC2924-5
Misc : MS53920,V2O2949,,,,,
ALS Vial : 27 Sample Multiplier: 1

Quant Time: May 03 23:22:50 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

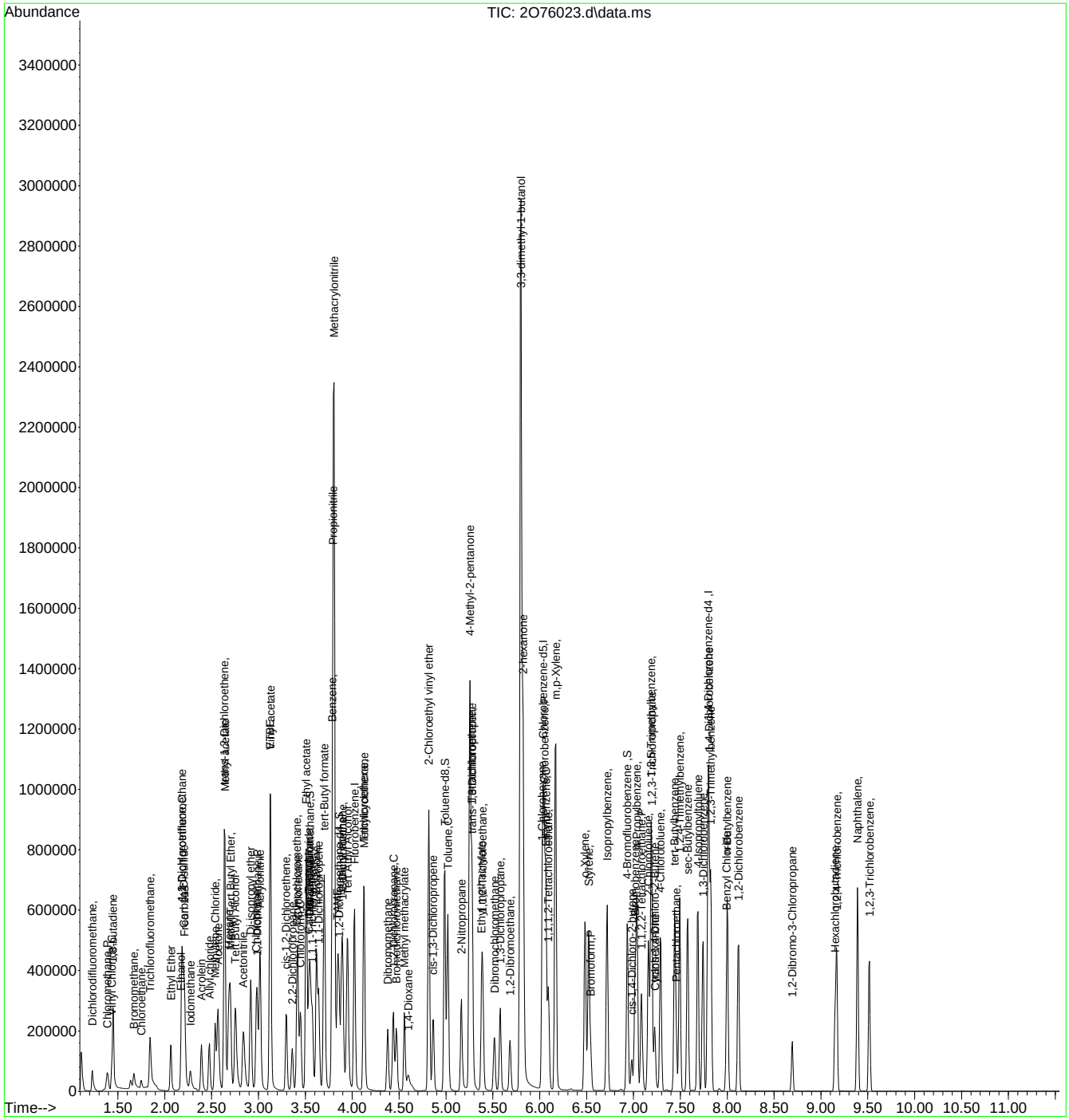
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
109) 1,2-Dibromo-3-Chloropr...	8.695	75	28783	41.46	ug/L	91
110) Hexachlorobutadiene	9.152	225	32997	34.38	ug/L	98
111) 1,2,4-Trichlorobenzene	9.170	180	108159	40.64	ug/L	98
112) Naphthalene	9.390	128	406566	43.18	ug/L	99
113) 1,2,3-Trichlorobenzene	9.518	180	105668	41.81	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76023.d
Acq On : 3 May 2023 11:08 pm
Operator : davidb2
Sample : ECC2924-5
Misc : MS53920,V2O2949,,,,,
ALS Vial : 27 Sample Multiplier: 1

Quant Time: May 03 23:22:50 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration



Manual Integration Approval Summary

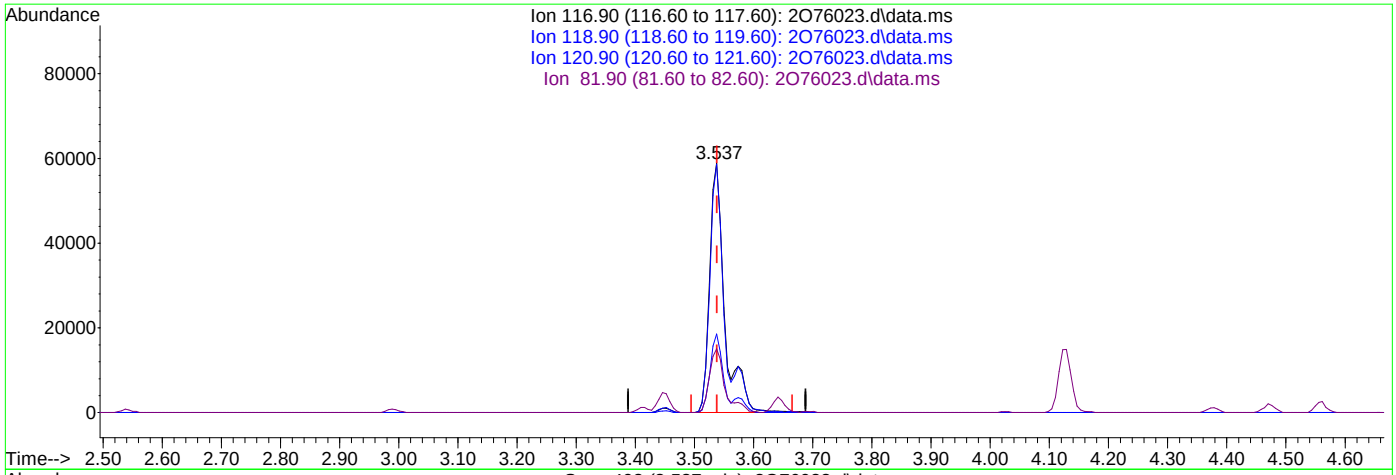
Sample Number: V2O2949-ECC2924 **Method:** SW846 8260D
Lab FileID: 2O76023.D **Analyst approved:** 05/03/23 23:30 Celine Celis
Injection Time: 05/03/23 23:08 **Supervisor approved:** 05/04/23 11:30 Neil Christiana

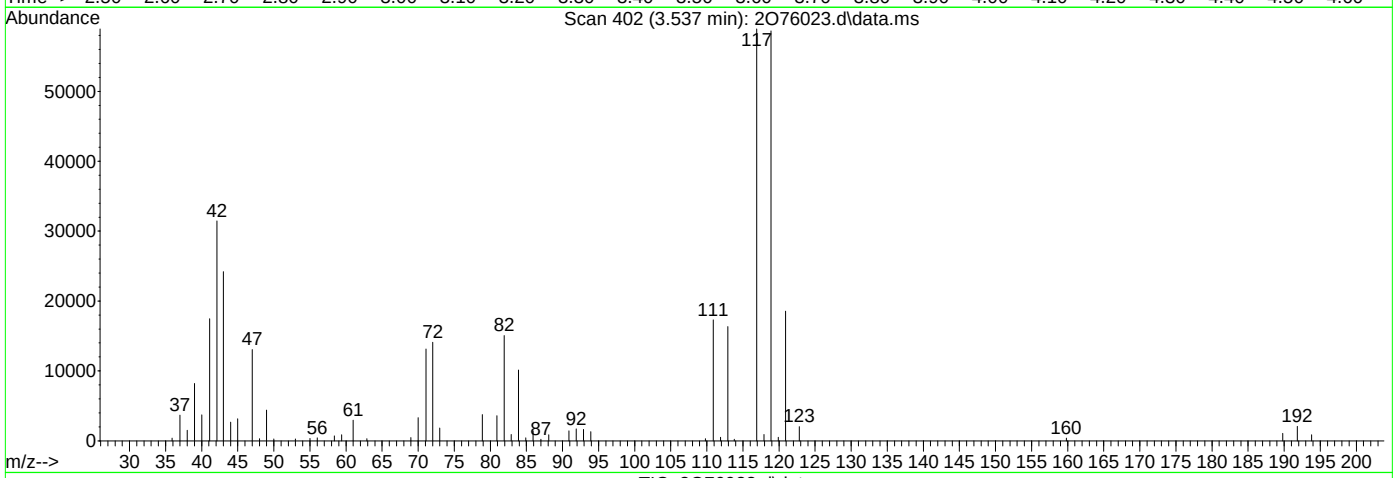
Parameter	CAS	Sig#	R.T. (min.)	Reason
Carbon Tetrachloride	56-23-5		3.54	Overlapping peak
Isobutyl Alcohol	78-83-1		3.89	Poor instrument integration
1-Chlorohexane	544-10-5		6.02	Poor instrument integration

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76023.d
Acq On : 3 May 2023 11:08 pm
Operator : davidb2
Sample : ECC2924-5
Misc : MS53920,V2O2949,,,,,
ALS Vial : 27 Sample Multiplier: 1

Quant Time: May 03 23:21:11 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration





TIC: 2O76023.d\data.ms

(40) Carbon Tetrachloride ( )

3.537min (-0.001) 47.76ug/L

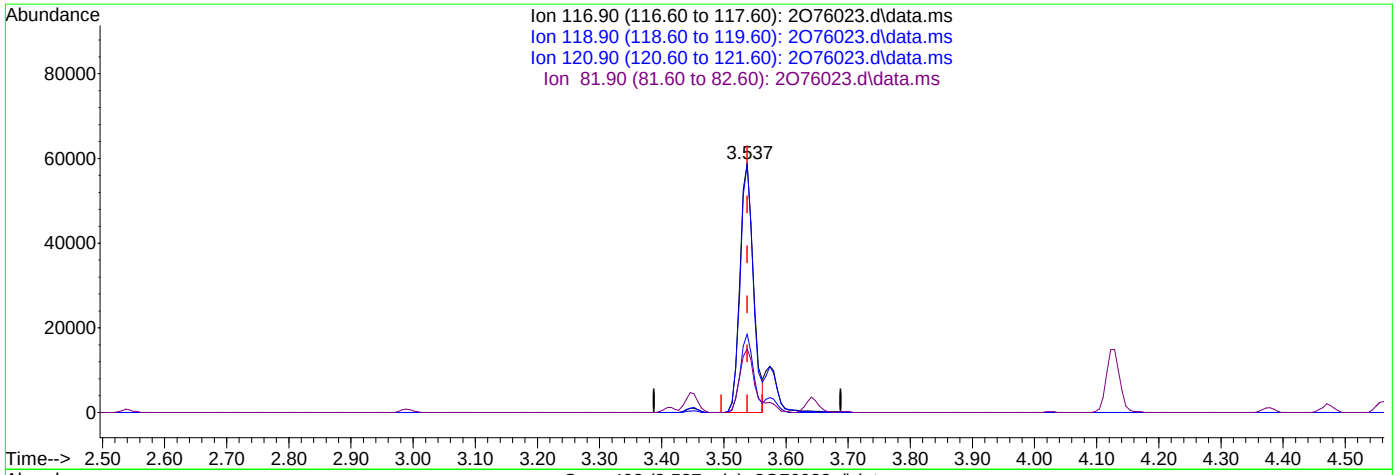
response 104906

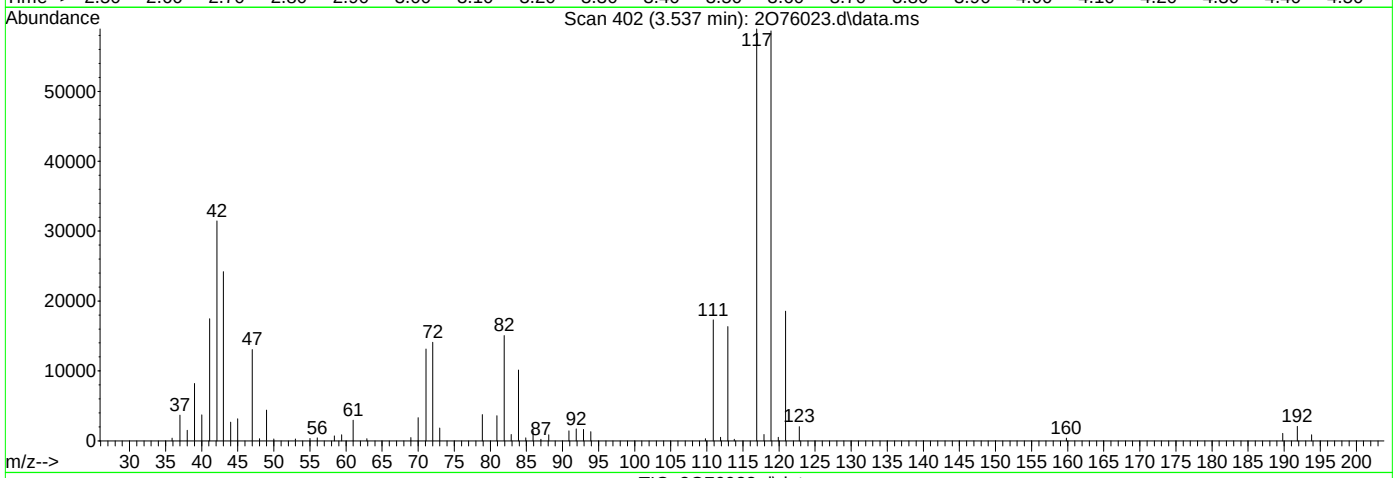
Ion	Exp%	Act%
116.90	100	100
118.90	97.60	99.50
120.90	31.00	31.44
81.90	24.80	25.58

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76023.d
Acq On : 3 May 2023 11:08 pm
Operator : davidb2
Sample : ECC2924-5
Misc : MS53920,V2O2949,,,,,
ALS Vial : 27 Sample Multiplier: 1

Quant Time: May 03 23:21:11 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration





TIC: 2O76023.d\data.ms

(40) Carbon Tetrachloride ( )

3.537min (-0.001) 40.49ug/L m

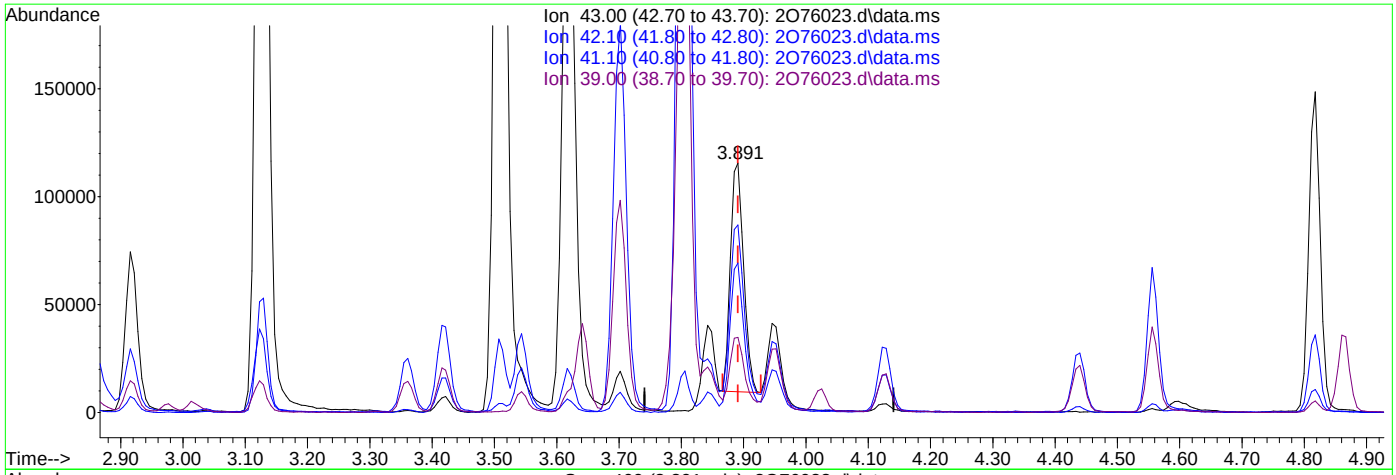
response 88935

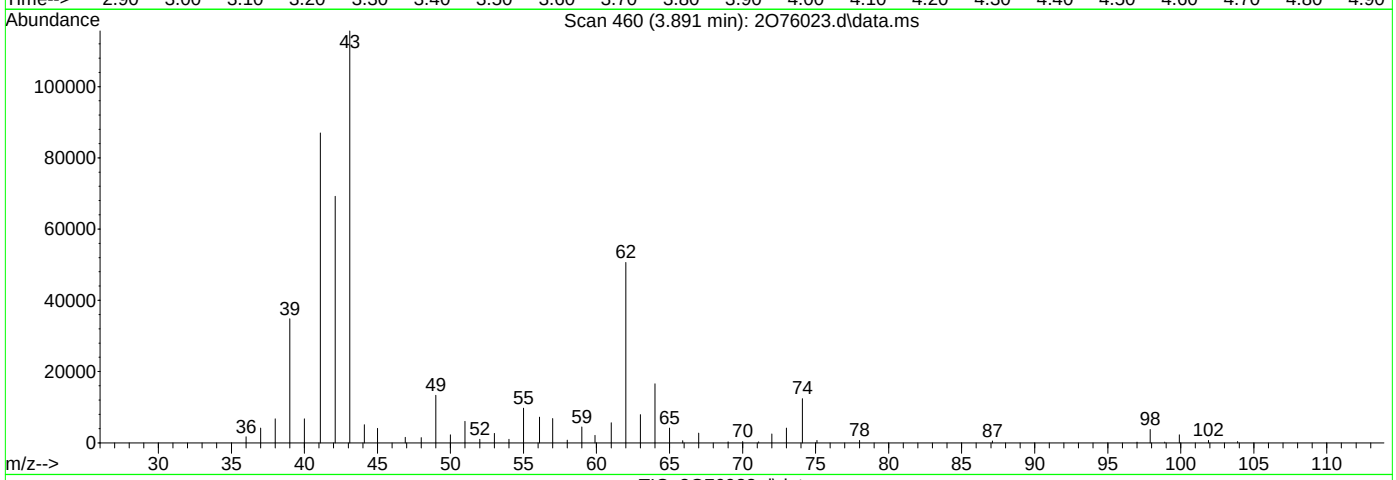
Ion	Exp%	Act%
116.90	100	100
118.90	97.60	99.50
120.90	31.00	31.44
81.90	24.80	25.58

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76023.d
Acq On : 3 May 2023 11:08 pm
Operator : davidb2
Sample : ECC2924-5
Misc : MS53920,V2O2949,,,,,
ALS Vial : 27 Sample Multiplier: 1

Quant Time: May 03 23:21:11 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration





TIC: 2O76023.d\data.ms

(49) Isobutyl alcohol

3.891min (0.000) 976.48ug/L

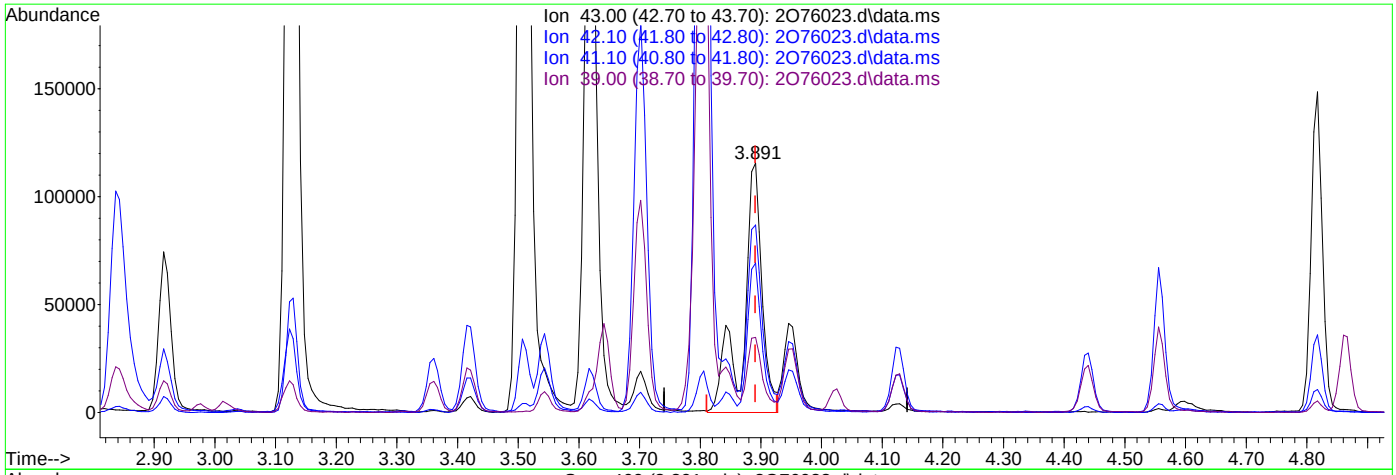
response 155149

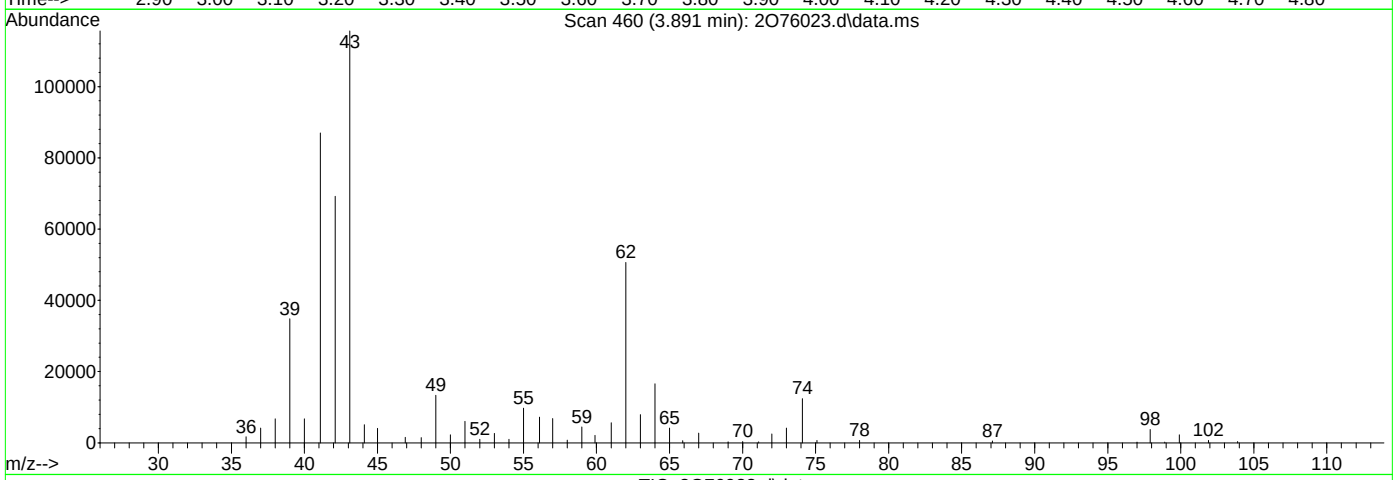
Ion	Exp%	Act%
43.00	100	100
42.10	60.00	60.51
41.10	73.50	73.84
39.00	30.20	27.72

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76023.d
Acq On : 3 May 2023 11:08 pm
Operator : davidb2
Sample : ECC2924-5
Misc : MS53920,V2O2949,,,,,
ALS Vial : 27 Sample Multiplier: 1

Quant Time: May 03 23:21:11 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration





TIC: 2O76023.d\data.ms

(49) Isobutyl alcohol

3.891min (0.000) 1493.33ug/L m

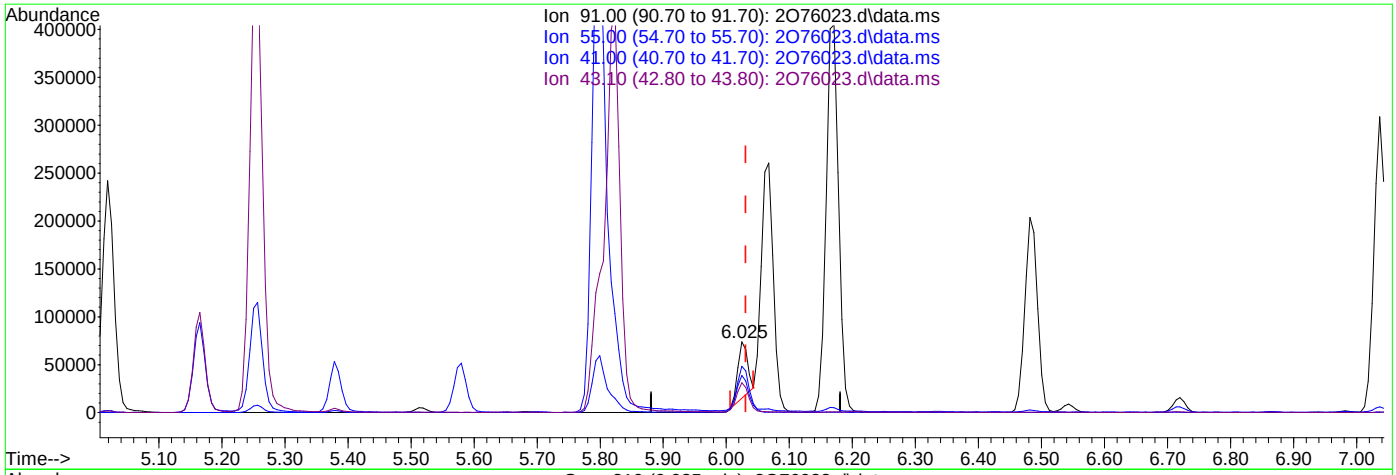
response 252296

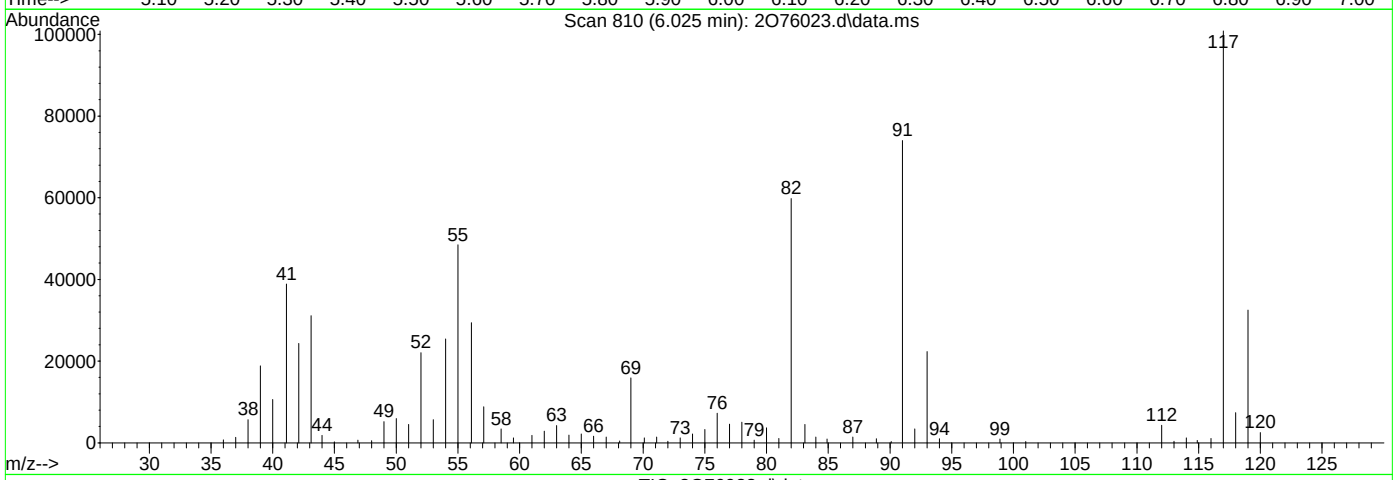
Ion	Exp%	Act%
43.00	100	100
42.10	60.00	59.85
41.10	73.50	75.19
39.00	30.20	30.10

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76023.d
Acq On : 3 May 2023 11:08 pm
Operator : davidb2
Sample : ECC2924-5
Misc : MS53920,V2O2949,,,,,
ALS Vial : 27 Sample Multiplier: 1

Quant Time: May 03 23:21:11 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration





TIC: 2O76023.d\data.ms

(76) 1-Chlorohexane

6.025min (-0.006) 25.08ug/L

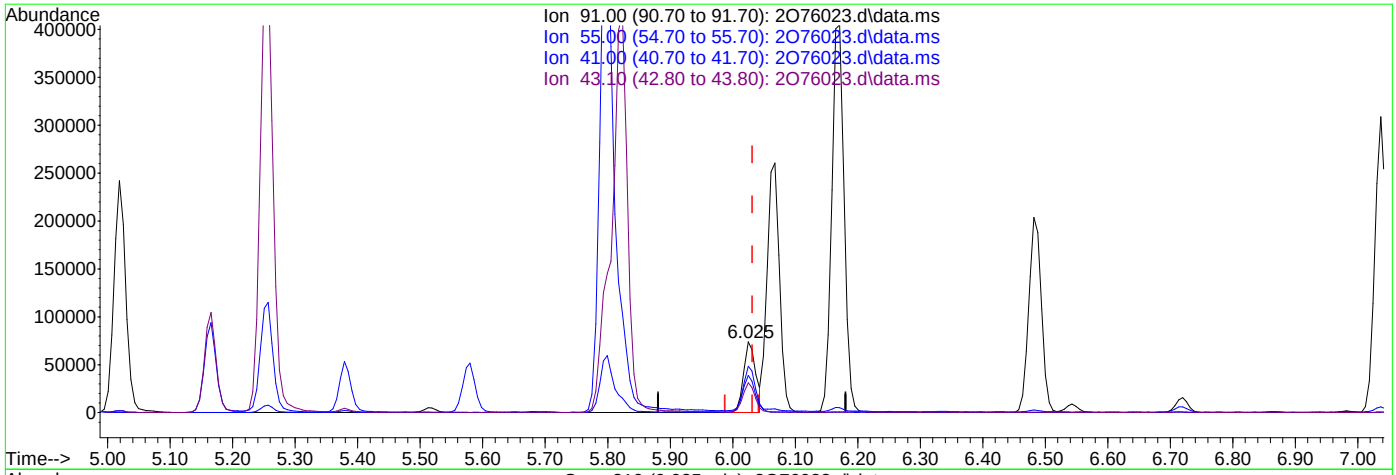
response 67255

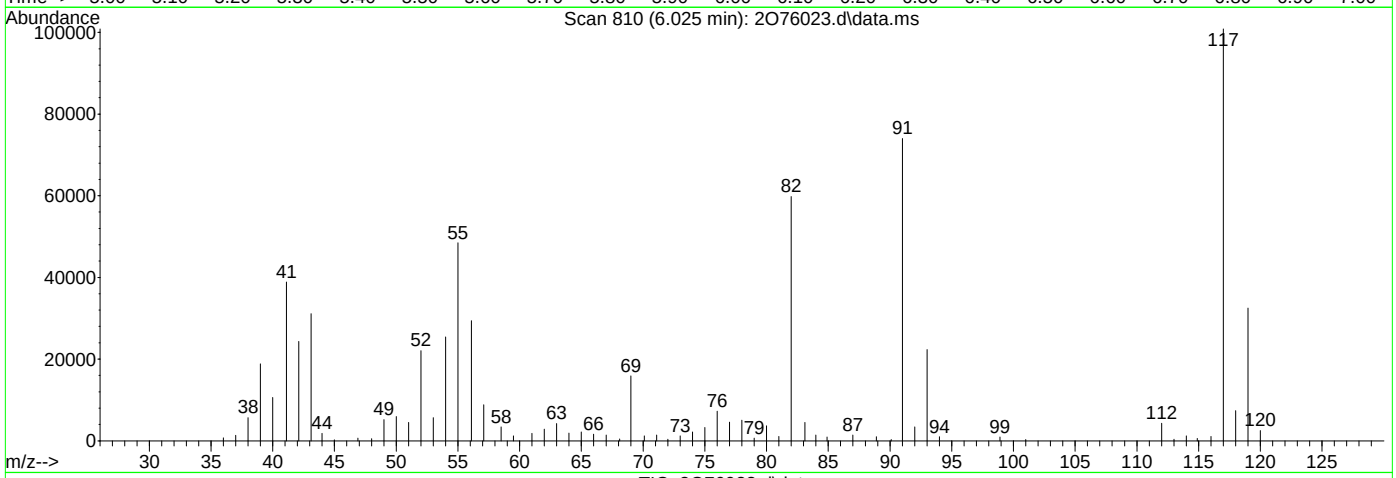
Ion	Exp%	Act%
91.00	100	100
55.00	66.30	64.47
41.00	53.70	49.07
43.10	42.30	40.18

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-04-2023\V2O2949\
Data File : 2O76023.d
Acq On : 3 May 2023 11:08 pm
Operator : davidb2
Sample : ECC2924-5
Misc : MS53920,V2O2949,,,,,
ALS Vial : 27 Sample Multiplier: 1

Quant Time: May 03 23:21:11 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration





TIC: 2O76023.d\data.ms

(76) 1-Chlorohexane

6.025min (-0.006) 37.44ug/L m

response 100425

Ion	Exp%	Act%
91.00	100	100
55.00	66.30	65.52
41.00	53.70	52.57
43.10	42.30	42.04

Manual Integrations APPROVED (compounds with "m" flag)
Karen Watson
05/08/23 10:03

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-05-05\
Data File : 2O76100.D
Acq On : 5 May 2023 11:41 am
Operator : davidb2
Sample : CC2924-5 Inst : MSVOA12
Misc : MS53846,V2O2954,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 05 11:53:55 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	4.025	96	423910	50.00	ug/L	0.00
62) Chlorobenzene-d5	6.037	117	308394	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.793	152	162349	50.00	ug/L	-0.01
System Monitoring Compounds						
39) Dibromofluoromethane	3.550	113	113707	48.39	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 96.78%			
50) 1,2-Dichloroethane-d4	3.861	65	141274	56.57	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 113.14%			
63) Toluene-d8	4.982	98	408652	48.59	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 97.18%			
86) 4-Bromofluorobenzene	6.933	174	120593	48.68	ug/L	-0.01
Spiked Amount 50.000	Range 83 - 118		Recovery = 97.36%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.227	85	49922	28.91	ug/L	98
3) Chloromethane	1.385	50	58589	31.38	ug/L	97
4) 1,3-butadiene	1.446	39	74577	39.83	ug/L	97
5) Vinyl Chloride	1.434	62	67755	36.54	ug/L	99
6) Bromomethane	1.666	94	40979	28.86	ug/L	95
7) Chloroethane	1.745	64	17729	15.05	ug/L	99
8) Trichlorofluoromethane	1.843	101	128259	38.95	ug/L	100
9) Ethyl Ether	2.062	59	58211	39.85	ug/L	99
10) Ethanol	2.172	45	40851	1076.22	ug/L	99
11) 1,2-Dichlorotrifluoroe...	2.184	67	90379	41.57	ug/L	96
12) 1,1-Dichloroethene	2.184	61	100838	36.11	ug/L	95
13) Freon 113	2.208	101	74905	40.29	ug/L	96
14) Carbon Disulfide	2.196	76	185848	34.26	ug/L	100
15) Iodomethane	2.269	142	51630	17.79	ug/L	98
16) Acrolein	2.391	56	116083	218.42	ug/L	99
17) Allyl chloride	2.477	41	70979	32.83	ug/L	94
18) Methylene Chloride	2.538	49	94807	37.23	ug/L	95
19) Acetone	2.568	43	238715	223.88	ug/L	99
20) Methyl acetate	2.635	43	504818	205.89	ug/L	97
21) trans-1,2-Dichloroethene	2.635	61	101007	37.83	ug/L	98
22) Hexane	2.684	56	57609	40.85	ug/L	98
23) Methyl Tert Butyl Ether	2.696	73	195539	38.17	ug/L	96
24) Tert Butyl Alcohol	2.751	59	189456	449.34	ug/L	92
25) Acetonitrile	2.836	41	174094	433.57	ug/L	99
26) Di-isopropyl ether	2.916	45	209359	38.53	ug/L	97
27) Chloroprene	2.977	53	102977	40.31	ug/L	98
28) 1,1-Dichloroethane	2.989	63	134132	38.69	ug/L	97
29) Acrylonitrile	3.013	52	212420	205.69	ug/L	100
30) ETBE	3.123	59	195286	39.62	ug/L	96
31) Vinyl acetate	3.123	43	802708	202.56	ug/L	99
32) cis-1,2-Dichloroethene	3.294	96	83572	38.81	ug/L	98
33) 2,2-Dichloropropane	3.361	77	86730	37.25	ug/L	97
34) Bromochloromethane	3.409	128	42872	36.93	ug/L	96
35) Cyclohexane	3.416	56	109646	38.28	ug/L	97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-05-05\
Data File : 2O76100.D
Acq On : 5 May 2023 11:41 am
Operator : davidb2
Sample : CC2924-5 Inst : MSVOA12
Misc : MS53846,V2O2954,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 05 11:53:55 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	3.446	83	148968	39.67	ug/L		100
37) Ethyl acetate	3.507	43	640515	205.72	ug/L		99
38) Tetrahydrofuran	3.544	42	47788	39.91	ug/L		98
40) Carbon Tetrachloride	3.537	117	92764	39.45	ug/L		99
41) 1,1,1-Trichloroethane	3.574	97	117578	38.59	ug/L		95
42) 2-Butanone	3.617	43	389255	220.09	ug/L		96
43) 1,1-Dichloropropene	3.641	75	104053	39.57	ug/L		98
44) tert-Butyl formate	3.702	59	124577	169.55	ug/L		91
45) Propionitrile	3.794	54	241977	461.03	ug/L		85
46) Methacrylonitrile	3.806	41	740571	416.87	ug/L		99
47) Benzene	3.787	78	308479	39.67	ug/L		87
48) TAME	3.842	73	181287	39.29	ug/L		94
49) Isobutyl alcohol	3.885	43	182275m	1060.62	ug/L		
51) 1,2-Dichloroethane	3.897	62	118232	42.68	ug/L		99
52) Tert Amyl Alcohol	3.946	59	155615	463.12	ug/L		89
53) Trichloroethene	4.123	95	87816	39.18	ug/L		96
54) Methylcyclohexane	4.123	83	117317	39.99	ug/L		99
55) Dibromomethane	4.379	93	55552	39.40	ug/L		96
56) 1,2-Dichloropropane	4.434	63	73364	40.23	ug/L		98
57) Bromodichloromethane	4.470	83	98378	39.39	ug/L		100
58) Methyl methacrylate	4.556	41	83069	40.72	ug/L		98
59) 1,4-Dioxane	4.592	88	46695	1146.46	ug/L		94
60) 2-Chloroethyl vinyl ether	4.818	63	298411	188.42	ug/L		98
61) cis-1,3-Dichloropropene	4.860	75	110046	37.83	ug/L		98
64) Toluene	5.019	91	330286	39.08	ug/L		100
65) 2-Nitropropane	5.165	41	117265	205.36	ug/L		100
66) 4-Methyl-2-pentanone	5.251	43	656696	217.46	ug/L		99
67) trans-1,3-Dichloropropene	5.281	75	110404	39.14	ug/L		97
68) Tetrachloroethene	5.275	166	88337	36.89	ug/L		97
69) Ethyl methacrylate	5.379	69	105588	42.05	ug/L		97
70) 1,1,2-Trichloroethane	5.391	83	68811	40.35	ug/L		99
71) Dibromochloromethane	5.513	129	76586	37.66	ug/L		100
72) 1,3-Dichloropropane	5.580	76	127246	40.73	ug/L		98
73) 1,2-Dibromoethane	5.683	107	88774	41.60	ug/L		96
74) 3,3-dimethyl-1-butanol	5.799	57	1100365	2547.62	ug/L		99
75) 2-hexanone	5.818	43	732227	244.08	ug/L		99
76) 1-Chlorohexane	6.025	91	106314m	39.96	ug/L		
77) Ethylbenzene	6.061	91	367888	40.36	ug/L		96
78) Chlorobenzene	6.049	112	225119	39.41	ug/L		98
79) 1,1,1,2-Tetrachloroethane	6.092	131	71554	40.00	ug/L		97
80) m,p-Xylene	6.165	91	578550	81.56	ug/L		97
81) o-Xylene	6.482	91	289628	40.44	ug/L		98
82) Styrene	6.519	104	231519	41.14	ug/L		96
83) Bromoform	6.543	173	46311	35.35	ug/L		99
84) Isopropylbenzene	6.720	105	350628	40.60	ug/L		98
87) cis-1,4-Dichloro-2-butene	6.976	53	24262	32.99	ug/L	#	75
88) n-Propylbenzene	7.037	91	417232	41.46	ug/L		100
89) Bromobenzene	7.019	156	87073	38.98	ug/L		97
90) 1,1,2,2-Tetrachloroethane	7.086	83	132636	43.28	ug/L		99
91) 1,3,5-Trimethylbenzene	7.189	105	294948	41.51	ug/L		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-05-05\
Data File : 2O76100.D
Acq On : 5 May 2023 11:41 am
Operator : davidb2
Sample : CC2924-5 Inst : MSVOA12
Misc : MS53846,V2O2954,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 05 11:53:55 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

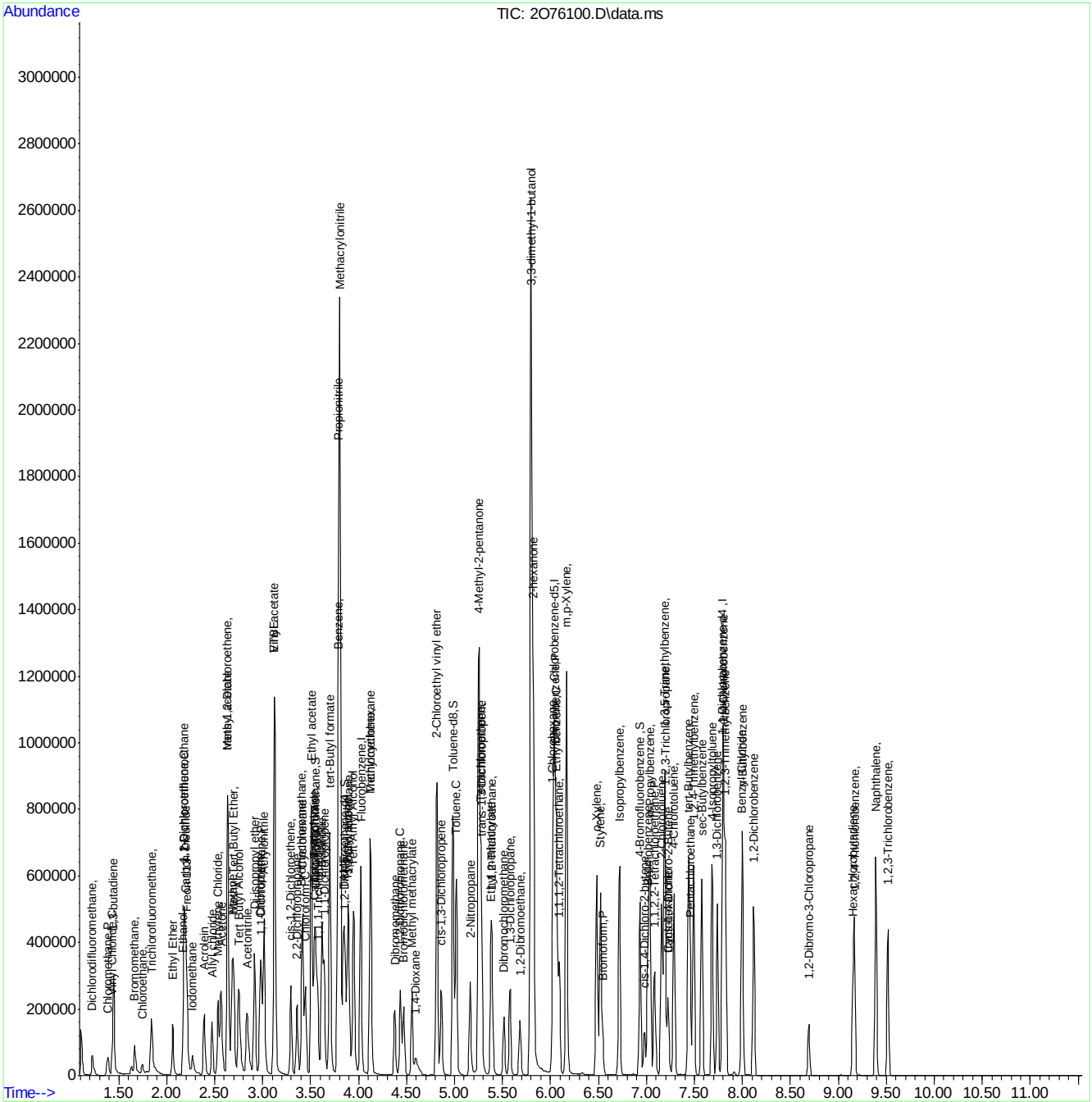
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92) 2-Chlorotoluene	7.159	91	275885	40.65	ug/L		97
93) trans-1,4-Dichloro-2-B...	7.226	53	23752	35.82	ug/L		87
94) 1,2,3-Trichloropropane	7.195	110	42351	41.99	ug/L		97
95) Cyclohexanone	7.226	55	37191	265.91	ug/L		97
96) 4-Chlorotoluene	7.287	91	261120	41.80	ug/L		99
97) tert-Butylbenzene	7.439	91	159666	41.59	ug/L		98
99) 1,2,4-Trimethylbenzene	7.494	105	293181	41.76	ug/L		98
100) Pentachloroethane	7.457	167	39711	39.61	ug/L	#	73
101) sec-Butylbenzene	7.579	105	354416	41.67	ug/L		100
102) 4-Isopropyltoluene	7.683	119	301527	40.63	ug/L		98
103) 1,3-Dichlorobenzene	7.738	146	173670	39.35	ug/L		96
104) 1,2,3-Trimethylbenzene	7.823	105	295598	40.23	ug/L		99
105) 1,4-Dichlorobenzene	7.805	146	175597	39.27	ug/L		95
106) n-Butylbenzene	8.000	92	157497	41.74	ug/L		96
107) Benzyl Chloride	7.994	126	30367	34.25	ug/L	#	1
108) 1,2-Dichlorobenzene	8.116	146	168202	40.39	ug/L		97
109) 1,2-Dibromo-3-Chloropr...	8.695	75	27945	42.30	ug/L		88
110) Hexachlorobutadiene	9.152	225	36264	39.59	ug/L		97
111) 1,2,4-Trichlorobenzene	9.171	180	108758	43.02	ug/L		98
112) Naphthalene	9.390	128	396852	44.37	ug/L		100
113) 1,2,3-Trichlorobenzene	9.518	180	104580	43.56	ug/L		99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\2023-05-05\
Data File : 2O76100.D
Acq On : 5 May 2023 11:41 am
Operator : davidb2
Sample : CC2924-5 Inst : MSVOA12
Misc : MS53846,V2O2954,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 05 11:53:55 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration



Manual Integration Approval Summary

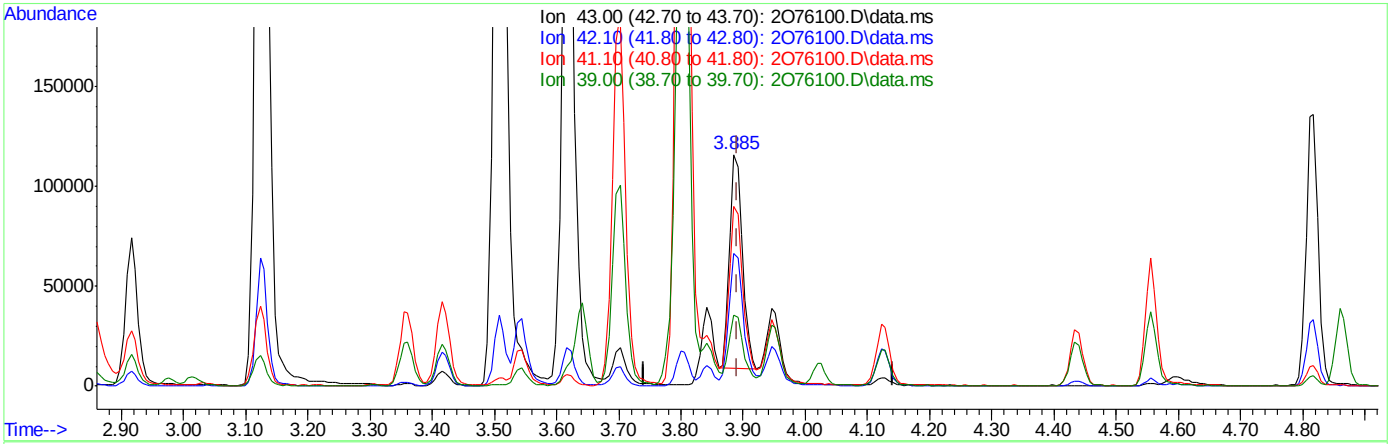
Sample Number: V2O2954-CC2924
Lab FileID: 2O76100.D
Injection Time: 05/05/23 11:41
Method: SW846 8260D
Analyst approved: 05/05/23 12:24 David Butler
Supervisor approved: 05/08/23 10:03 Karen Watson

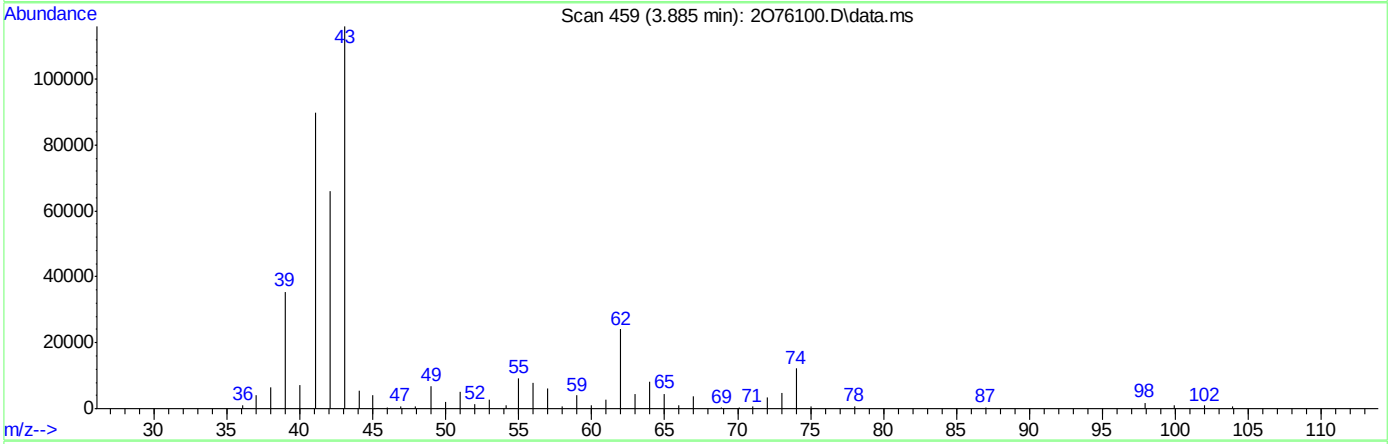
Parameter	CAS	Sig#	R.T. (min.)	Reason
Isobutyl Alcohol	78-83-1		3.88	Poor instrument integration
1-Chlorohexane	544-10-5		6.02	Poor instrument integration

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-05-05\
Data File : 2O76100.D
Acq On : 5 May 2023 11:41 am
Operator : davidb2
Sample : CC2924-5 Inst : MSVOA12
Misc : MS53846,V2O2954,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 05 11:53:30 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration





TIC: 2O76100.D\data.ms

(49) Isobutyl alcohol

3.885min (-0.006) 907.91ug/L

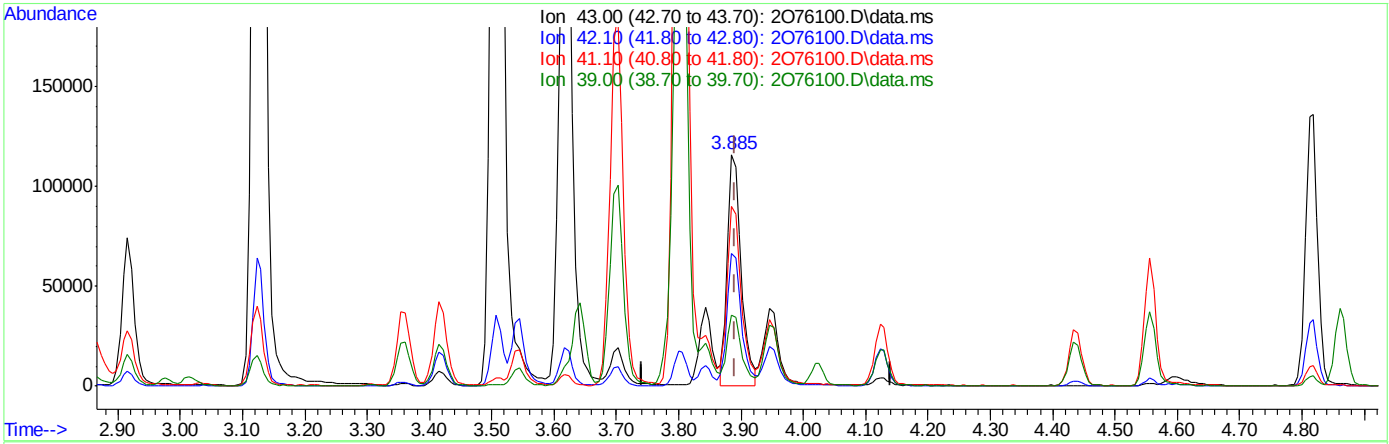
response 153141

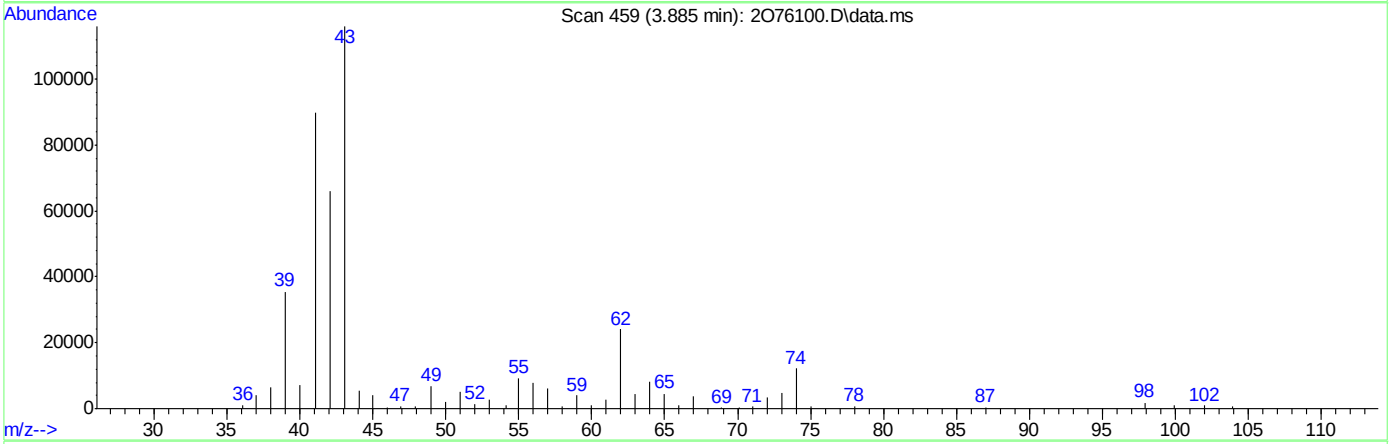
Ion	Exp%	Act%
43.00	100	100
42.10	60.00	58.83
41.10	73.50	76.21
39.00	30.20	29.16

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-05-05\
Data File : 2O76100.D
Acq On : 5 May 2023 11:41 am
Operator : davidb2
Sample : CC2924-5 Inst : MSVOA12
Misc : MS53846,V2O2954,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 05 11:53:30 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration





TIC: 2O76100.D\data.ms

(49) Isobutyl alcohol

3.885min (-0.006) 1060.62ug/L m

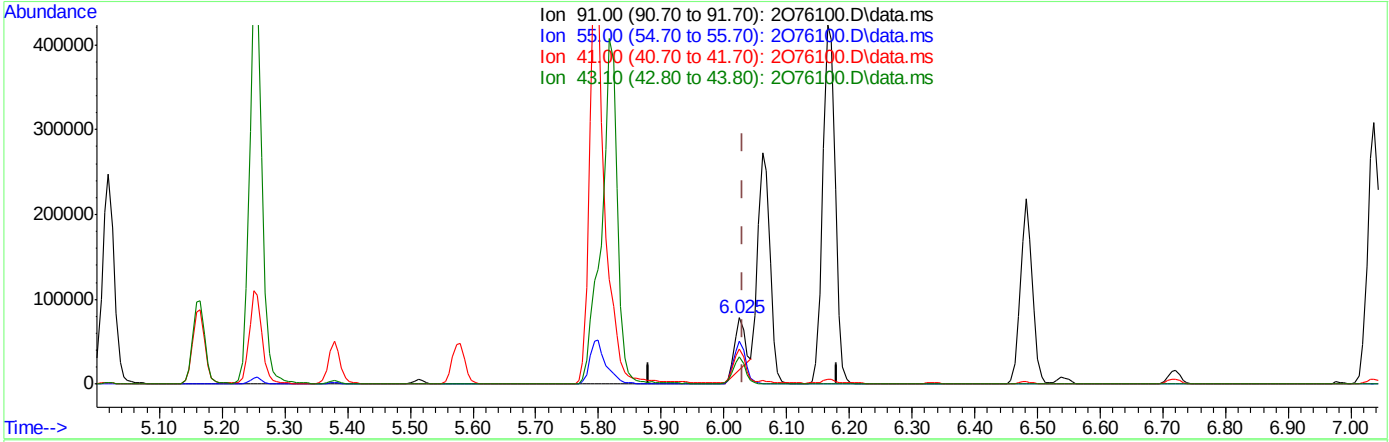
response 182275

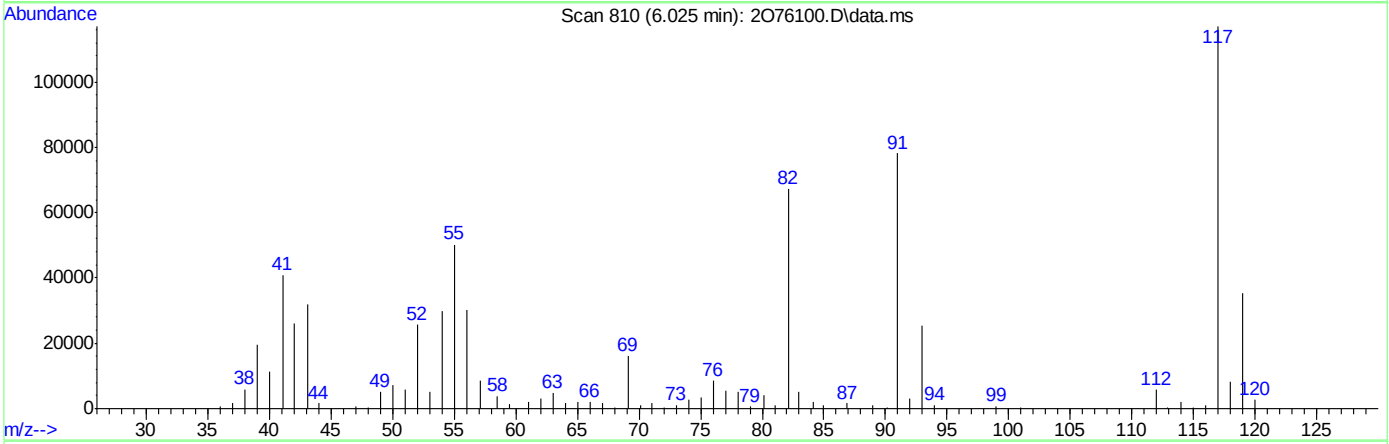
Ion	Exp%	Act%
43.00	100	100
42.10	60.00	57.04
41.10	73.50	77.50
39.00	30.20	30.53

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-05-05\
Data File : 2O76100.D
Acq On : 5 May 2023 11:41 am
Operator : davidb2
Sample : CC2924-5 Inst : MSVOA12
Misc : MS53846,V2O2954,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 05 11:53:30 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration





TIC: 2O76100.D\data.ms

(76) 1-Chlorohexane

6.025min (-0.006) 25.40ug/L

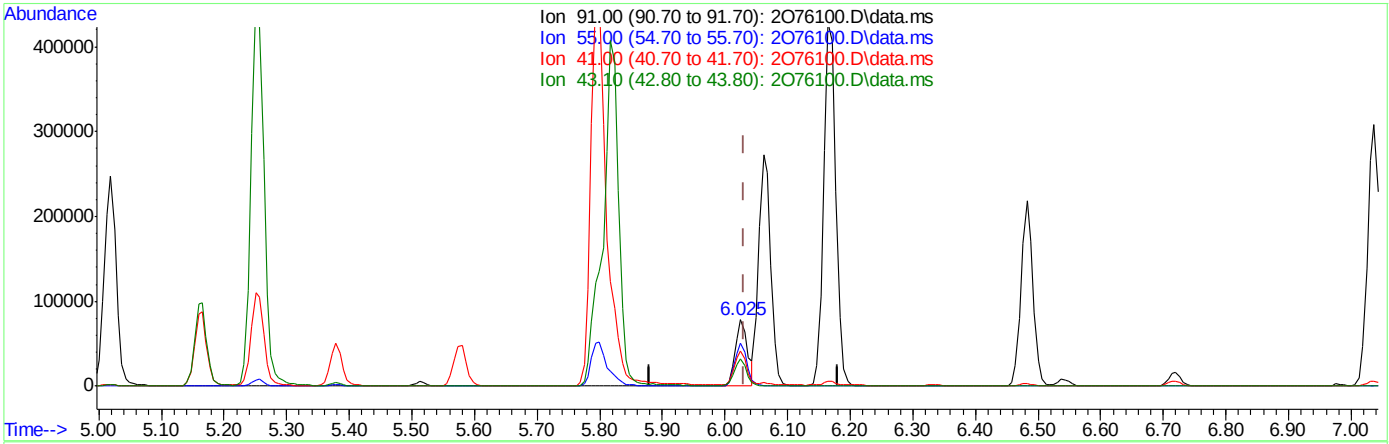
response 67582

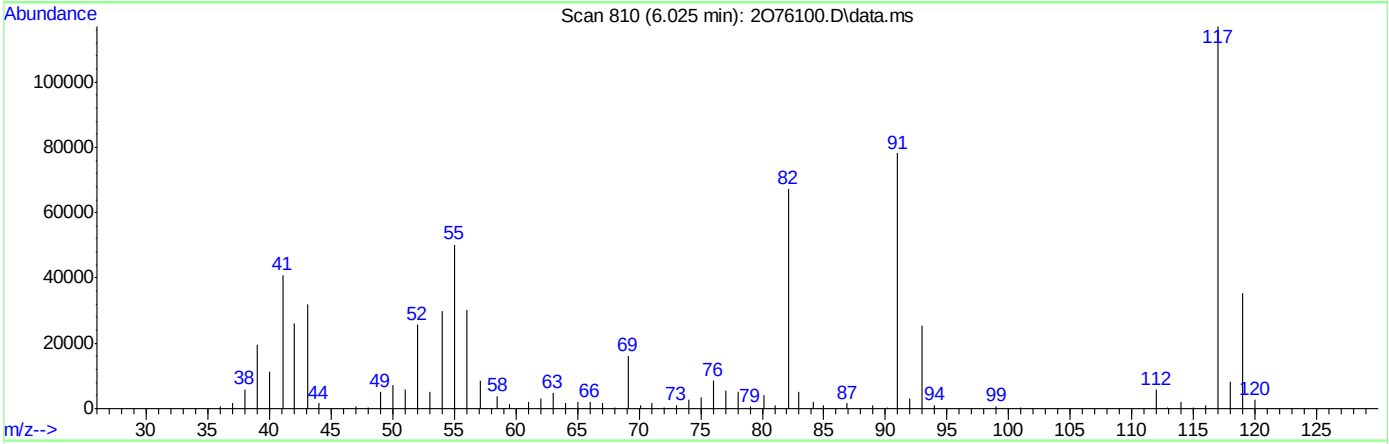
Ion	Exp%	Act%
91.00	100	100
55.00	66.30	63.37
41.00	53.70	49.96
43.10	42.30	39.52

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\2023-05-05\
Data File : 2O76100.D
Acq On : 5 May 2023 11:41 am
Operator : davidb2
Sample : CC2924-5 Inst : MSVOA12
Misc : MS53846,V2O2954,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 05 11:53:30 2023
Quant Method : C:\msdchem\2\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration





TIC: 2O76100.D\data.ms

(76) 1-Chlorohexane

6.025min (-0.006) 39.96ug/L m

response 106314

Ion	Exp%	Act%
91.00	100	100
55.00	66.30	64.22
41.00	53.70	52.34
43.10	42.30	40.96

Manual Integrations APPROVED (compounds with "m" flag)
Karen Watson
05/08/23 10:03

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-08-2023\V2O2954-55\
Data File : 2O76126.d
Acq On : 5 May 2023 11:08 pm
Operator : davidb2
Sample : ECC2924-5
Misc : MS53846,V2O2954,,,,,
ALS Vial : 28 Sample Multiplier: 1

Quant Time: May 08 00:11:11 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	4.025	96	420822	50.00	ug/L	0.00
62) Chlorobenzene-d5	6.037	117	310633	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.799	152	161756	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	3.550	113	112728	48.33	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 96.66%			
50) 1,2-Dichloroethane-d4	3.861	65	143026	57.69	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 115.38%			
63) Toluene-d8	4.982	98	409833	48.38	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 96.76%			
86) 4-Bromofluorobenzene	6.939	174	119717	48.50	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 97.00%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.221	85	49130	28.66	ug/L	99
3) Chloromethane	1.386	50	55212	29.78	ug/L	98
4) 1,3-butadiene	1.447	39	77813	41.87	ug/L	94
5) Vinyl Chloride	1.434	62	64927	35.27	ug/L	99
6) Bromomethane	1.666	94	33364	23.67	ug/L	94
7) Chloroethane	1.745	64	16103	13.50	ug/L	95
8) Trichlorofluoromethane	1.843	101	120038	36.72	ug/L	97
9) Ethyl Ether	2.062	59	58770	40.53	ug/L	98
10) Ethanol	2.178	45	41802	1109.73	ug/L	97
11) 1,2-Dichlorotrifluoroe...	2.184	67	86900	40.26	ug/L	96
12) 1,1-Dichloroethene	2.178	61	96870	34.94	ug/L	98
13) Freon 113	2.209	101	70200	38.04	ug/L	98
14) Carbon Disulfide	2.196	76	172286	32.00	ug/L	99
15) Iodomethane	2.270	142	52456	18.21	ug/L	94
16) Acrolein	2.392	56	98284	186.29	ug/L	99
17) Allyl chloride	2.471	41	64759	30.17	ug/L	95
18) Methylene Chloride	2.538	49	95216	37.68	ug/L	94
19) Acetone	2.568	43	249526	235.74	ug/L	100
20) Methyl acetate	2.635	43	539603	221.69	ug/L	98
21) trans-1,2-Dichloroethene	2.629	61	97424	36.76	ug/L	96
22) Hexane	2.678	56	50028	35.74	ug/L	98
23) Methyl Tert Butyl Ether	2.696	73	199472	39.23	ug/L	98
24) Tert Butyl Alcohol	2.751	59	203026	481.82	ug/L	94
25) Acetonitrile	2.837	41	179083	449.27	ug/L	98
26) Di-isopropyl ether	2.916	45	214784	39.81	ug/L	100
27) Chloroprene	2.977	53	98899	39.00	ug/L	99
28) 1,1-Dichloroethane	2.989	63	131293	38.15	ug/L	98
29) Acrylonitrile	3.013	52	219344	213.96	ug/L	100
30) ETBE	3.123	59	198947	40.66	ug/L	99
31) Vinyl acetate	3.123	43	738286	187.67	ug/L	99
32) cis-1,2-Dichloroethene	3.294	96	85761	40.12	ug/L	99
33) 2,2-Dichloropropane	3.361	77	45790	19.81	ug/L	99
34) Bromochloromethane	3.410	128	40789	35.39	ug/L	93
35) Cyclohexane	3.416	56	107373	37.76	ug/L	97
36) Chloroform	3.446	83	143579	38.52	ug/L	99
37) Ethyl acetate	3.507	43	651752	210.87	ug/L	99
38) Tetrahydrofuran	3.544	42	50228	42.26	ug/L	97
40) Carbon Tetrachloride	3.538	117	87544	37.50	ug/L	99
41) 1,1,1-Trichloroethane	3.574	97	116723	38.59	ug/L	97
42) 2-Butanone	3.617	43	400374	228.04	ug/L	96
43) 1,1-Dichloropropene	3.641	75	101343	38.82	ug/L	95
44) tert-Butyl formate	3.702	59	121927	167.40	ug/L	90

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-08-2023\V2O2954-55\
Data File : 2O76126.d
Acq On : 5 May 2023 11:08 pm
Operator : davidb2
Sample : ECC2924-5
Misc : MS53846,V2O2954,,,,,
ALS Vial : 28 Sample Multiplier: 1

Quant Time: May 08 00:11:11 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45) Propionitrile	3.794	54	247027	474.11	ug/L		88
46) Methacrylonitrile	3.806	41	749099	424.76	ug/L		100
47) Benzene	3.788	78	302906	39.23	ug/L		89
48) TAME	3.842	73	183977	40.17	ug/L		94
49) Isobutyl alcohol	3.885	43	253400m	1422.80	ug/L		
51) 1,2-Dichloroethane	3.897	62	119865	43.58	ug/L		98
52) Tert Amyl Alcohol	3.946	59	160542	479.54	ug/L		91
53) Trichloroethene	4.123	95	85402	38.38	ug/L		95
54) Methylcyclohexane	4.123	83	108540	37.27	ug/L		98
55) Dibromomethane	4.379	93	55342	39.54	ug/L		97
56) 1,2-Dichloropropane	4.440	63	70793	39.11	ug/L		98
57) Bromodichloromethane	4.470	83	96771	39.03	ug/L		100
58) Methyl methacrylate	4.556	41	85235	42.09	ug/L		97
59) 1,4-Dioxane	4.598	88	46059	1139.67	ug/L		99
60) 2-Chloroethyl vinyl ether	4.818	63	301461	191.74	ug/L		97
61) cis-1,3-Dichloropropene	4.867	75	99419	34.57	ug/L		99
64) Toluene	5.019	91	325771	38.27	ug/L		99
65) 2-Nitropropane	5.165	41	114657	200.22	ug/L		99
66) 4-Methyl-2-pentanone	5.251	43	663153	218.02	ug/L		99
67) trans-1,3-Dichloropropene	5.281	75	99195	35.06	ug/L		95
68) Tetrachloroethene	5.275	166	106532	44.16	ug/L		96
69) Ethyl methacrylate	5.379	69	107667	42.54	ug/L		96
70) 1,1,2-Trichloroethane	5.391	83	69279	40.33	ug/L		98
71) Dibromochloromethane	5.519	129	75316	36.83	ug/L		99
72) 1,3-Dichloropropane	5.580	76	129009	41.00	ug/L		96
73) 1,2-Dibromoethane	5.684	107	87958	40.92	ug/L		100
74) 3,3-dimethyl-1-butanol	5.799	57	1134091	2601.32	ug/L		99
75) 2-hexanone	5.824	43	745917	246.85	ug/L		93
76) 1-Chlorohexane	6.025	91	98359m	36.70	ug/L		
77) Ethylbenzene	6.062	91	356908	38.87	ug/L		96
78) Chlorobenzene	6.049	112	217943	37.88	ug/L		96
79) 1,1,1,2-Tetrachloroethane	6.092	131	70433	39.09	ug/L		95
80) m,p-Xylene	6.171	91	564203	78.96	ug/L		97
81) o-Xylene	6.482	91	284157	39.39	ug/L		96
82) Styrene	6.525	104	224316	39.57	ug/L		98
83) Bromoform	6.543	173	45058	34.25	ug/L		96
84) Isopropylbenzene	6.720	105	335654	38.59	ug/L		99
87) cis-1,4-Dichloro-2-butene	6.976	53	17297	23.61	ug/L	#	62
88) n-Propylbenzene	7.037	91	402082	40.10	ug/L		98
89) Bromobenzene	7.019	156	86023	38.65	ug/L		98
90) 1,1,2,2-Tetrachloroethane	7.086	83	130873	42.86	ug/L		99
91) 1,3,5-Trimethylbenzene	7.189	105	283449	40.04	ug/L		98
92) 2-Chlorotoluene	7.159	91	274518	40.60	ug/L		95
93) trans-1,4-Dichloro-2-B...	7.226	53	16353	25.29	ug/L	#	82
94) 1,2,3-Trichloropropane	7.195	110	42587	42.38	ug/L		97
95) Cyclohexanone	7.232	55	37236	267.21	ug/L		98
96) 4-Chlorotoluene	7.287	91	254188	40.84	ug/L		96
97) tert-Butylbenzene	7.439	91	156831	41.00	ug/L		94
99) 1,2,4-Trimethylbenzene	7.494	105	284707	40.70	ug/L		99
100) Pentachloroethane	7.458	167	23033	24.05	ug/L	#	75
101) sec-Butylbenzene	7.580	105	335375	39.58	ug/L		99
102) 4-Isopropyltoluene	7.689	119	285006	38.54	ug/L		99
103) 1,3-Dichlorobenzene	7.744	146	168672	38.35	ug/L		99
104) 1,2,3-Trimethylbenzene	7.823	105	289131	39.49	ug/L		99
105) 1,4-Dichlorobenzene	7.805	146	171495	38.50	ug/L		95
106) n-Butylbenzene	8.000	92	137668	36.74	ug/L		91
107) Benzyl Chloride	7.994	126	11779	14.66	ug/L	#	1
108) 1,2-Dichlorobenzene	8.122	146	164486	39.64	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-08-2023\V2O2954-55\
Data File : 2O76126.d
Acq On : 5 May 2023 11:08 pm
Operator : davidb2
Sample : ECC2924-5
Misc : MS53846,V2O2954,,,,,
ALS Vial : 28 Sample Multiplier: 1

Quant Time: May 08 00:11:11 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

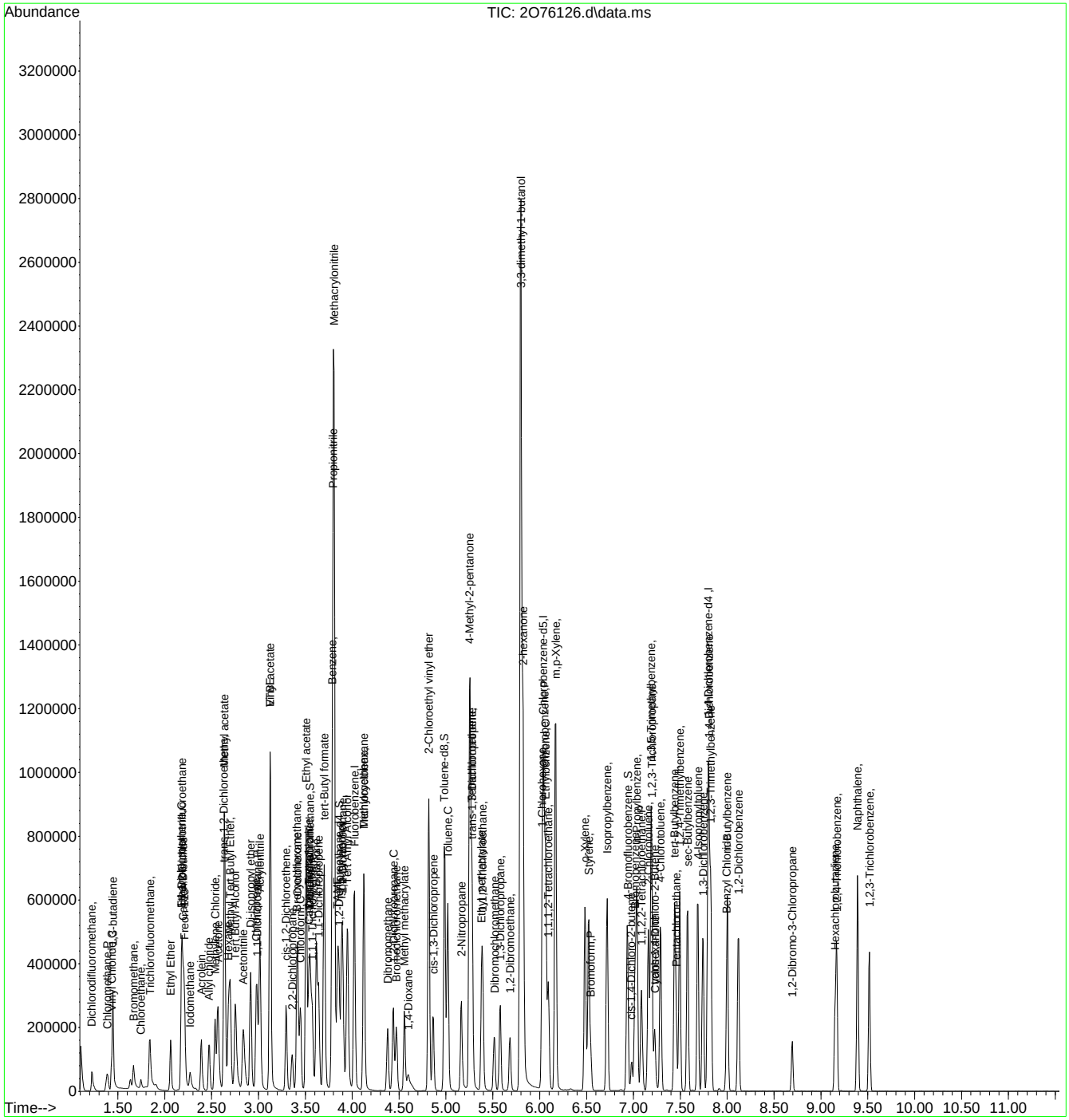
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
109) 1,2-Dibromo-3-Chloropr...	8.695	75	28015	42.54	ug/L	89
110) Hexachlorobutadiene	9.152	225	31952	35.15	ug/L	97
111) 1,2,4-Trichlorobenzene	9.171	180	105019	41.69	ug/L	99
112) Naphthalene	9.390	128	401261	45.02	ug/L	99
113) 1,2,3-Trichlorobenzene	9.518	180	105320	44.03	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-08-2023\V2O2954-55\
Data File : 2O76126.d
Acq On : 5 May 2023 11:08 pm
Operator : davidb2
Sample : ECC2924-5
Misc : MS53846,V2O2954,,,,,
ALS Vial : 28 Sample Multiplier: 1

Quant Time: May 08 00:11:11 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration



Manual Integration Approval Summary

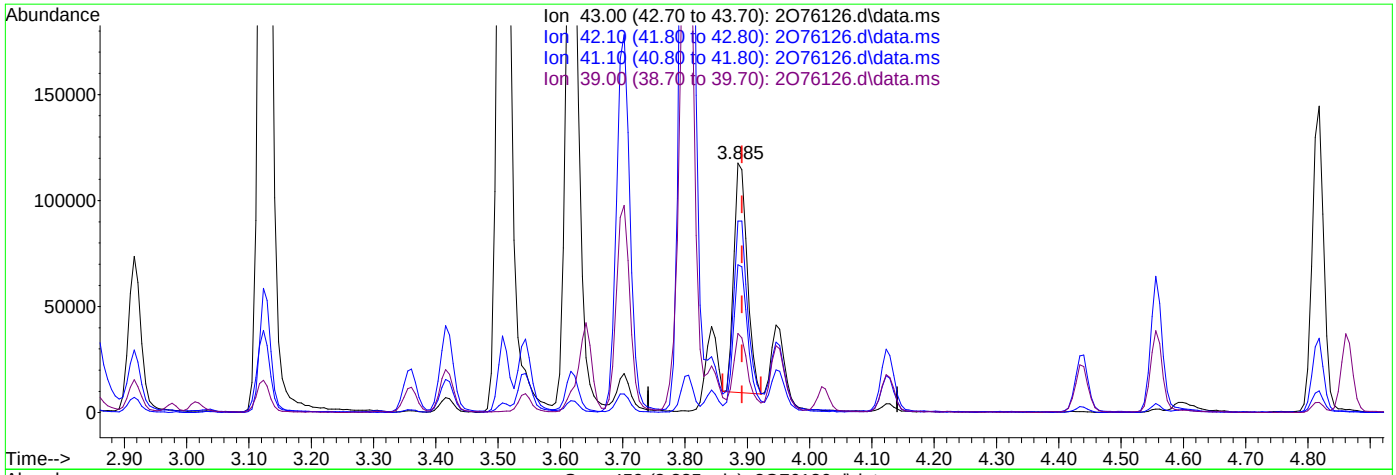
Sample Number: V2O2954-ECC2924 **Method:** SW846 8260D
Lab FileID: 2O76126.D **Analyst approved:** 05/08/23 00:15 Celine Celis
Injection Time: 05/05/23 23:08 **Supervisor approved:** 05/08/23 10:03 Karen Watson

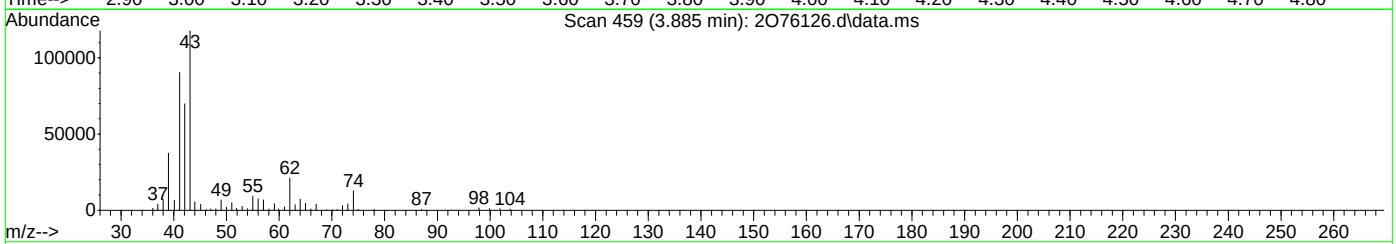
Parameter	CAS	Sig#	R.T. (min.)	Reason
Isobutyl Alcohol	78-83-1		3.89	Poor instrument integration
1-Chlorohexane	544-10-5		6.02	Poor instrument integration

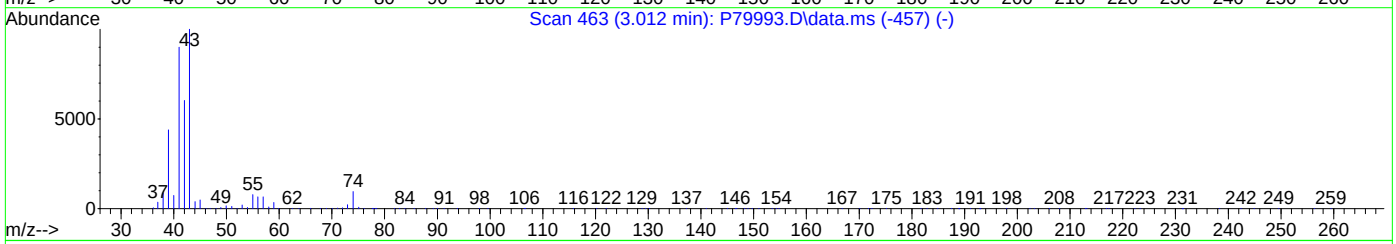
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-08-2023\V2O2954-55\
Data File : 2O76126.d
Acq On : 5 May 2023 11:08 pm
Operator : davidb2
Sample : ECC2924-5
Misc : MS53846,V2O2954,,,,,
ALS Vial : 28 Sample Multiplier: 1

Quant Time: May 07 23:36:41 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration







TIC: 2O76126.d\data.ms

(49) Isobutyl alcohol

3.885min (-0.006) 949.35ug/L

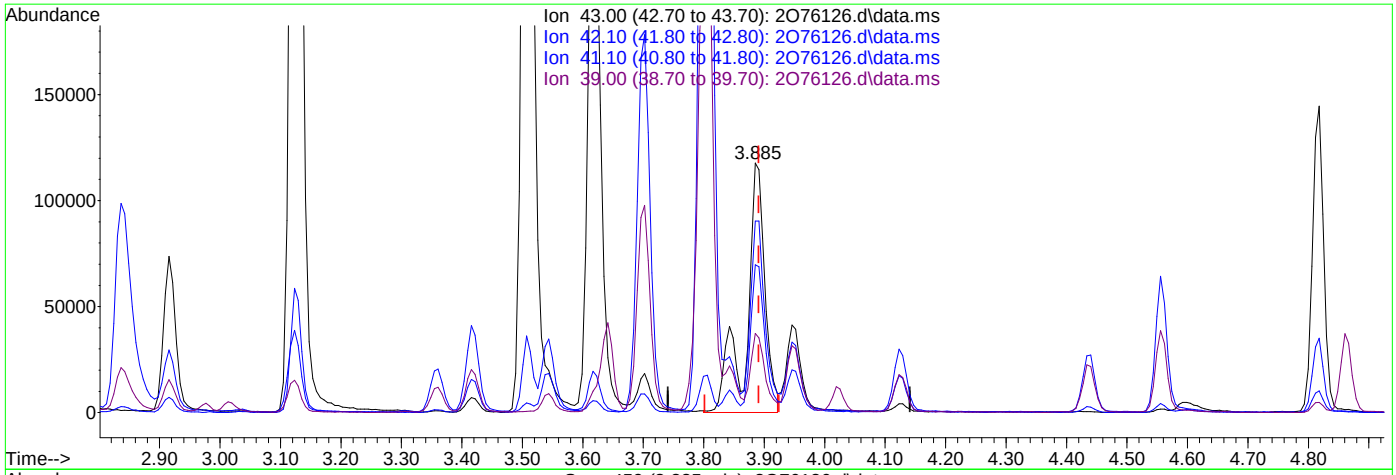
response 159778

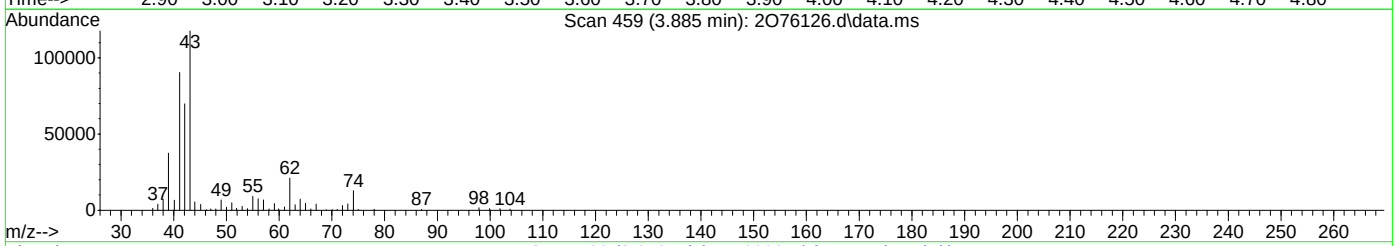
Ion	Exp%	Act%
43.00	100	100
42.10	60.00	60.96
41.10	73.50	74.80
39.00	30.20	30.07

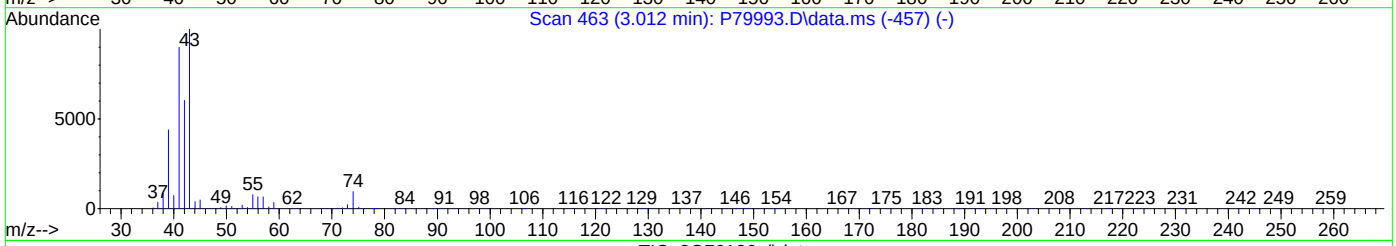
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-08-2023\V2O2954-55\
Data File : 2O76126.d
Acq On : 5 May 2023 11:08 pm
Operator : davidb2
Sample : ECC2924-5
Misc : MS53846,V2O2954,,,,,
ALS Vial : 28 Sample Multiplier: 1

Quant Time: May 07 23:36:41 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration







TIC: 2O76126.d\data.ms

(49) Isobutyl alcohol

3.885min (-0.006) 1422.80ug/L m

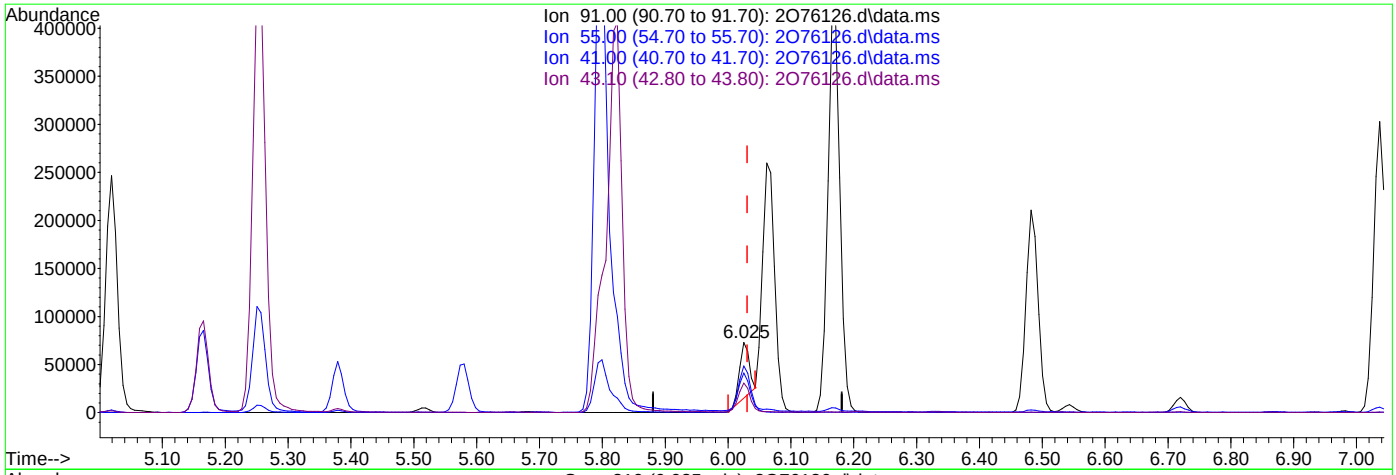
response 253400

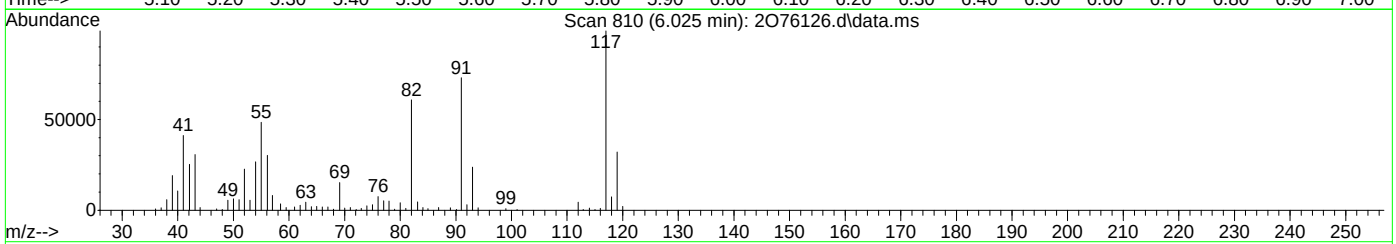
Ion	Exp%	Act%
43.00	100	100
42.10	60.00	59.23
41.10	73.50	76.75
39.00	30.20	31.75

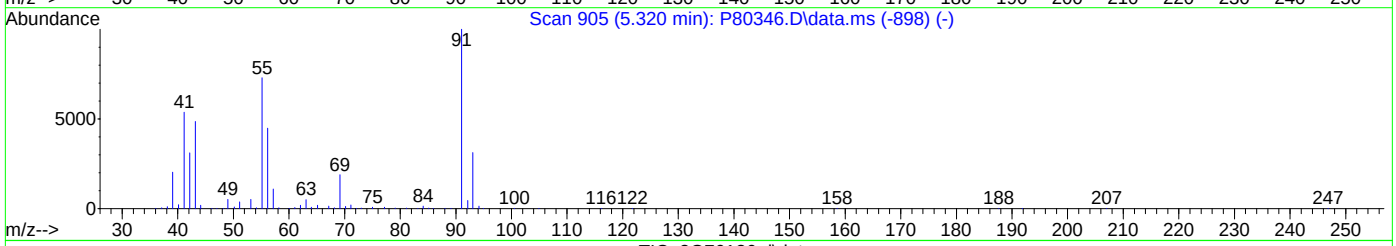
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-08-2023\V2O2954-55\
Data File : 2O76126.d
Acq On : 5 May 2023 11:08 pm
Operator : davidb2
Sample : ECC2924-5
Misc : MS53846,V2O2954,,,,,
ALS Vial : 28 Sample Multiplier: 1

Quant Time: May 07 23:36:41 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration







TIC: 2O76126.d\data.ms

(76) 1-Chlorohexane

6.025min (-0.006) 24.05ug/L

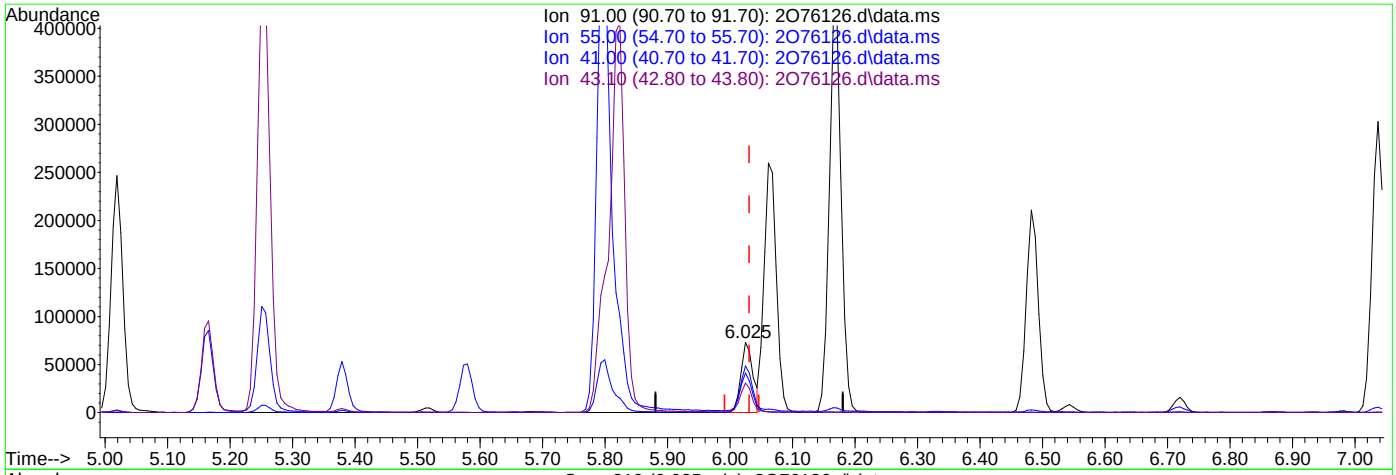
response 64456

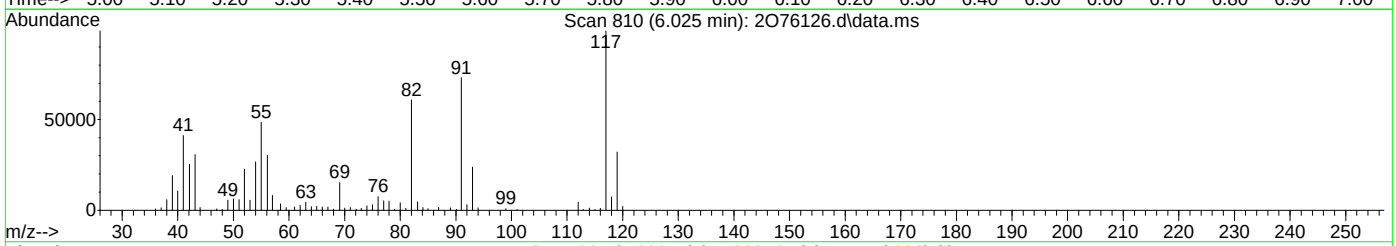
Ion	Exp%	Act%
91.00	100	100
55.00	66.30	65.60
41.00	53.70	53.37
43.10	42.30	40.84

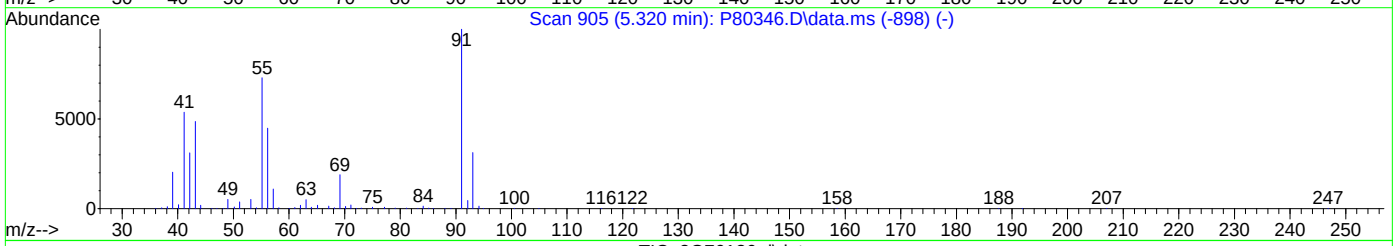
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-08-2023\V2O2954-55\
Data File : 2O76126.d
Acq On : 5 May 2023 11:08 pm
Operator : davidb2
Sample : ECC2924-5
Misc : MS53846,V2O2954,,,,,
ALS Vial : 28 Sample Multiplier: 1

Quant Time: May 07 23:36:41 2023
Quant Method : C:\msdchem\1\methods\V2O_04-11-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration







TIC: 2O76126.d\data.ms

(76) 1-Chlorohexane

6.025min (-0.006) 36.70ug/L m

response 98359

Ion	Exp%	Act%
91.00	100	100
55.00	66.30	66.34
41.00	53.70	56.35
43.10	42.30	42.00

Manual Integrations APPROVED (compounds with "m" flag)
Karen Watson
05/02/23 11:33

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-01-2023\
Data File : 5E39334.D
Acq On : 1 May 2023 4:03 pm
Operator : joannel
Sample : IC1761-1
Misc : MS53796,V5E1761,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 02 06:43:08 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon May 01 15:05:21 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorobenzene	8.469	96	674455	50.00	ug/L		0.00
61) Chlorobenzene-d5	11.603	117	581978	50.00	ug/L		0.00
85) 1,4-Dichlorobenzene-d4	13.962	152	347993	50.00	ug/L		0.00
System Monitoring Compounds							
39) Dibromofluoromethane	7.610	113	199116	51.60	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 103.20%				
49) 1,2-Dichloroethane-d4	8.183	65	217912	46.51	ug/L		0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 93.02%				
62) Toluene-d8	10.042	98	709414	44.51	ug/L		0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 89.02%				
86) 4-Bromofluorobenzene	12.816	95	301611	47.20	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 94.40%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	2.812	85	1470	0.51	ug/L		88
3) Chloromethane	3.159	50	4376	1.17	ug/L		98
4) Vinyl Chloride	3.263	62	2473	0.70	ug/L		89
5) 1,3-Butadiene	3.294	39	3654	1.04	ug/L		95
6) Bromomethane	3.769	94	4338	3.11	ug/L		90
7) Chloroethane	3.958	64	1476	0.69	ug/L		88
8) Trichlorofluoromethane	4.159	101	2832	0.62	ug/L		96
9) Ethyl Ether	4.586	59	2337	0.77	ug/L		86
10) Ethanol	4.818	45	691	18.76	ug/L	#	44
11) 1,2-Dichlorotrifluoroe...	4.830	67	2080	0.63	ug/L		84
12) 1,1-Dichloroethene	4.866	61	2755	0.53	ug/L		93
13) Freon 113	4.903	101	1410	0.51	ug/L		91
14) Carbon Disulfide	4.927	76	8323	1.06	ug/L		96
15) Iodomethane	5.074	142	885	0.54	ug/L	#	39
16) Acrolein	5.305	56	6160	9.80	ug/L		72
17) Allyl chloride	5.470	41	4311	1.02	ug/L		87
18) Methylene Chloride	5.598	49	8608	1.72	ug/L		88
19) Acetone	5.671	43	9206	7.97	ug/L		95
20) Methyl acetate	5.793	43	16141	5.66	ug/L		96
21) trans-1,2-Dichloroethene	5.799	61	3158	0.61	ug/L		90
22) Hexane	5.872	56	2710	0.82	ug/L	#	87
23) Methyl Tert Butyl Ether	5.903	73	6979	0.70	ug/L		96
24) Acetonitrile	6.238	41	8781	21.57	ug/L		84
25) Di-isopropyl ether	6.330	45	8394	0.69	ug/L		96
26) Chloroprene	6.494	53	3748	0.77	ug/L		94
27) 1,1-Dichloroethane	6.531	63	4394	0.66	ug/L		88
28) Acrylonitrile	6.592	53	14076	9.56	ug/L		93
29) ETBE	6.756	59	8256	0.70	ug/L		89
30) Tert Butyl Alcohol	5.988	59	7999	16.81	ug/L		78
31) Vinyl acetate	6.781	43	55724	6.95	ug/L		96
32) cis-1,2-Dichloroethene	7.134	96	2275	0.64	ug/L		85
33) 2,2-Dichloropropane	7.256	77	2745	0.59	ug/L		88
34) Bromochloromethane	7.360	128	1393	0.79	ug/L	#	67
35) Cyclohexane	7.372	56	3404	0.58	ug/L		81

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-01-2023\
Data File : 5E39334.D
Acq On : 1 May 2023 4:03 pm
Operator : joannel
Sample : IC1761-1
Misc : MS53796,V5E1761,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 02 06:43:08 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon May 01 15:05:21 2023
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36)	Chloroform	7.415	83	4327	0.73	ug/L		88
37)	Ethyl acetate	7.512	43	42157	10.62	ug/L		97
38)	Tetrahydrofuran	7.616	42	3775	2.78	ug/L		92
40)	Carbon Tetrachloride	7.592	117	2239	0.50	ug/L		90
41)	1,1,1-Trichloroethane	7.659	97	2675	0.51	ug/L		96
42)	2-Butanone	7.750	43	12872	7.24	ug/L		93
43)	1,1-Dichloropropene	7.787	75	2441	0.58	ug/L		97
44)	tert-Butyl formate	7.884	59	20019	11.62	ug/L		97
45)	Propionitrile	8.067	54	8042	13.89	ug/L		93
46)	Methacrylonitrile	8.085	41	32387	13.14	ug/L		97
47)	Benzene	8.055	78	8342	0.67	ug/L		95
48)	TAME	8.128	73	7368	0.76	ug/L		91
50)	1,2-Dichloroethane	8.262	62	3496	0.67	ug/L		85
51)	tert Amyl alcohol	8.299	59	5969	16.79	ug/L		86
52)	Trichloroethene	8.640	95	2339	0.67	ug/L	#	71
53)	Methylcyclohexane	8.652	83	3100	0.61	ug/L	#	82
54)	Dibromomethane	9.097	93	1461	0.64	ug/L		91
55)	1,2-Dichloropropane	9.183	63	2712	0.77	ug/L		92
56)	Bromodichloromethane	9.225	83	3406	0.72	ug/L		96
57)	Methyl methacrylate	9.347	41	4653	1.45	ug/L	#	80
58)	1,4-Dioxane	9.433	88	877	24.63	ug/L	#	70
59)	2-Chloroethyl vinyl ether	9.762	63	11696	4.79	ug/L		96
60)	cis-1,3-Dichloropropene	9.859	75	3027	0.61	ug/L		90
63)	Toluene	10.091	91	9778	0.67	ug/L		95
64)	Isobutyl alcohol	8.189	43	5265	29.15	ug/L	#	78
65)	2-Nitropropane	10.323	41	6986	5.24	ug/L		98
66)	4-Methyl-2-pentanone	10.439	43	31305	6.67	ug/L		92
67)	trans-1,3-Dichloropropene	10.512	75	2665	0.49	ug/L	#	61
68)	Tetrachloroethene	10.499	166	2359	0.54	ug/L		91
69)	Ethyl methacrylate	10.603	69	3651	0.84	ug/L	#	80
70)	1,1,2-Trichloroethane	10.664	83	1987	0.63	ug/L		92
71)	Dibromochloromethane	10.865	129	2777	0.64	ug/L		91
72)	1,3-Dichloropropane	10.951	76	3983	0.67	ug/L		93
73)	1,2-Dibromoethane	11.127	107	2615	0.65	ug/L		100
74)	3,3-Dimethyl-1-butanol	11.194	57	46564	116.81	ug/L		98
75)	2-hexanone	11.268	43	18680	5.99	ug/L		87
76)	1-Chlorohexane	11.554	91	2493	0.50	ug/L		94
77)	Ethylbenzene	11.621	91	11309	0.70	ug/L		89
78)	Chlorobenzene	11.627	112	6161	0.63	ug/L		92
79)	1,1,1,2-Tetrachloroethane	11.670	131	2331	0.60	ug/L	#	47
80)	m,p-Xylene	11.755	91	15957	1.15	ug/L		90
81)	o-Xylene	12.200	91	7916	0.55	ug/L		95
82)	Styrene	12.261	104	6365	0.61	ug/L		94
83)	Bromoform	12.322	173	2195	0.77	ug/L		85
84)	Isopropylbenzene	12.505	105	9906	0.57	ug/L		94
88)	n-Propylbenzene	12.926	91	11722	0.52	ug/L		94
89)	Bromobenzene	12.950	156	2793	0.61	ug/L		86
90)	1,1,2,2-Tetrachloroethane	12.993	83	4734	0.85	ug/L		90
91)	1,3,5-Trimethylbenzene	13.103	105	8460	0.53	ug/L		87
92)	2-Chlorotoluene	13.121	91	8854	0.60	ug/L		96

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-01-2023\
Data File : 5E39334.D
Acq On : 1 May 2023 4:03 pm
Operator : joannel
Sample : IC1761-1
Misc : MS53796,V5E1761,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 02 06:43:08 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon May 01 15:05:21 2023
Response via : Initial Calibration

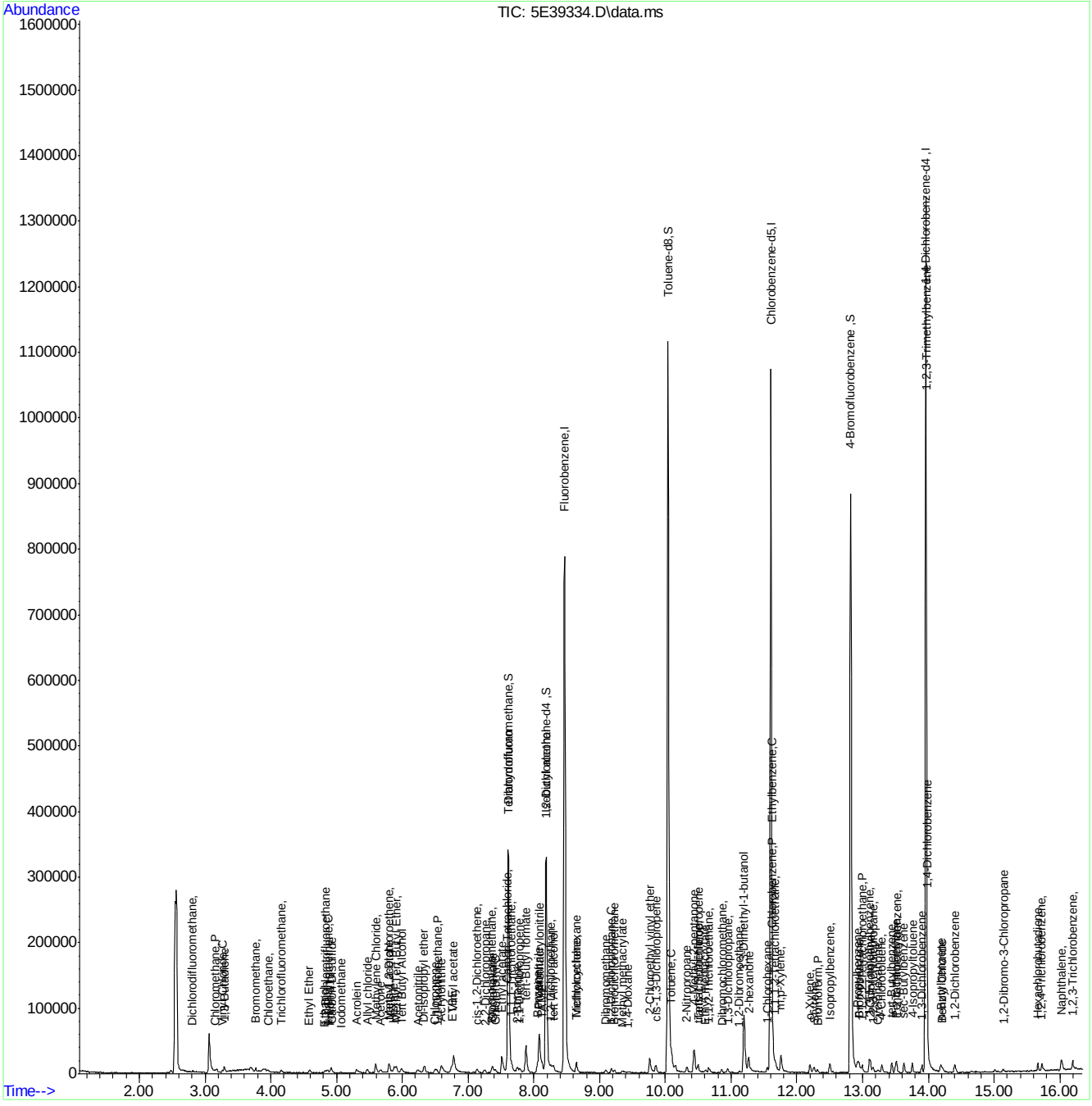
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
94)	1,2,3-Trichloropropane	13.158	110	1110	0.70	ug/L		89
95)	Cyclohexanone	13.231	55	4040	24.21	ug/L		93
96)	4-Chlorotoluene	13.292	91	8243	0.64	ug/L		93
98)	tert-Butylbenzene	13.444	91	4799	0.54	ug/L		84
99)	1,2,4-Trimethylbenzene	13.517	105	8501	0.54	ug/L		91
100)	Pentachloroethane	13.505	167	1908	0.83	ug/L	#	79
101)	sec-Butylbenzene	13.627	105	11636	0.59	ug/L		95
102)	4-Isopropyltoluene	13.755	119	9403	0.55	ug/L		98
103)	1,3-Dichlorobenzene	13.901	146	5685	0.62	ug/L		92
104)	1,2,3-Trimethylbenzene	13.968	105	9273	0.57	ug/L	#	39
105)	1,4-Dichlorobenzene	13.981	146	6366m	0.65	ug/L		
106)	n-Butylbenzene	14.188	92	4444	0.51	ug/L		96
107)	Benzyl Chloride	14.212	126	735	0.43	ug/L		92
108)	1,2-Dichlorobenzene	14.401	146	5047	0.57	ug/L		93
109)	1,2-Dibromo-3-Chloropr...	15.139	75	901	0.86	ug/L	#	84
110)	Hexachlorobutadiene	15.663	225	2215	1.11	ug/L		91
111)	1,2,4-Trichlorobenzene	15.724	180	4474	0.77	ug/L		95
112)	Naphthalene	16.023	128	16201	1.01	ug/L		92
113)	1,2,3-Trichlorobenzene	16.194	180	4730	0.91	ug/L		95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-01-2023\
Data File : 5E39334.D
Acq On : 1 May 2023 4:03 pm
Operator : joannel
Sample : IC1761-1
Misc : MS53796,V5E1761,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 02 06:43:08 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon May 01 15:05:21 2023
Response via : Initial Calibration



Manual Integration Approval Summary

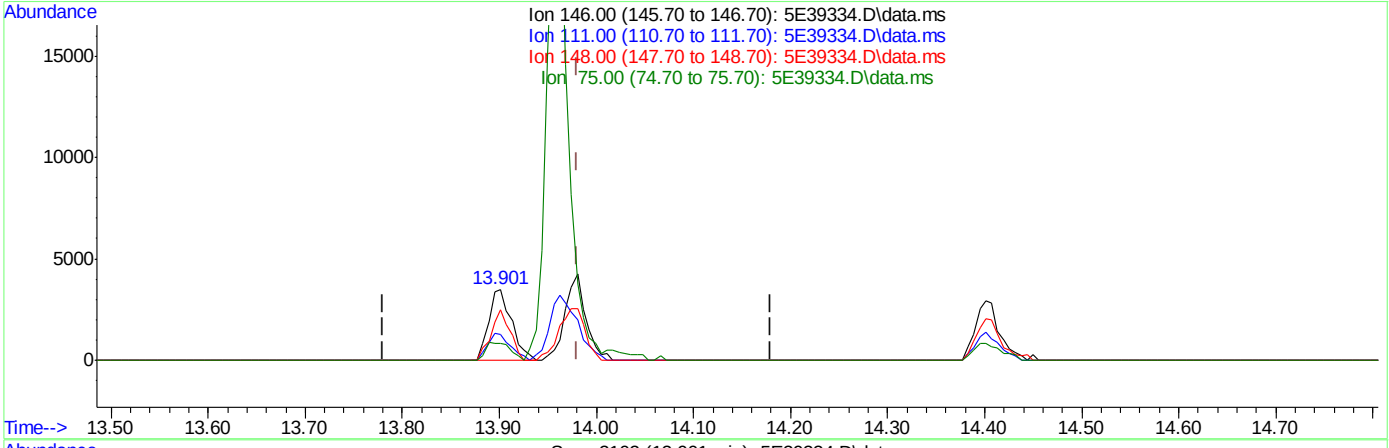
Sample Number: V5E1761-IC1761
Lab FileID: 5E39334.D
Injection Time: 05/01/23 16:03
Method: SW846 8260D
Analyst approved: 05/02/23 08:26 Jo-Ann Lugo De Jesus
Supervisor approved: 05/02/23 11:33 Karen Watson

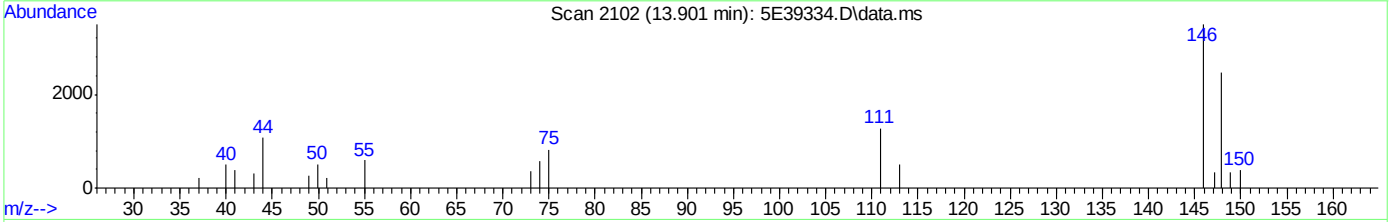
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dichlorobenzene	106-46-7		13.98	Missed peak

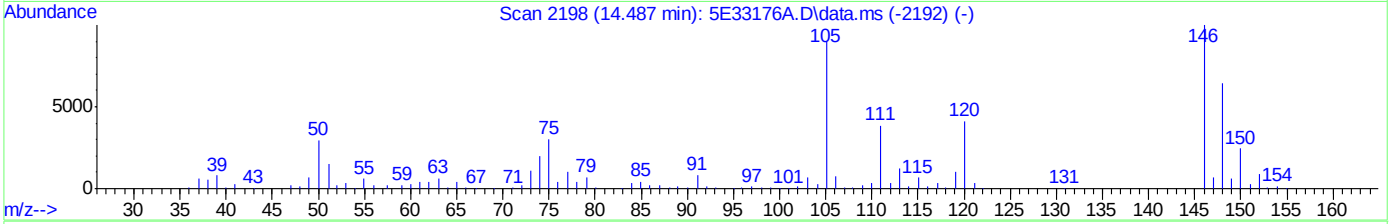
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\05-01-2023\
Data File : 5E39334.D
Acq On : 1 May 2023 4:03 pm
Operator : joannel
Sample : IC1761-1
Misc : MS53796,V5E1761,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 02 06:35:47 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon May 01 15:05:21 2023
Response via : Initial Calibration







TIC: 5E39334.D\data.ms

(105) 1,4-Dichlorobenzene

13.901min (-0.079) 0.58ug/L

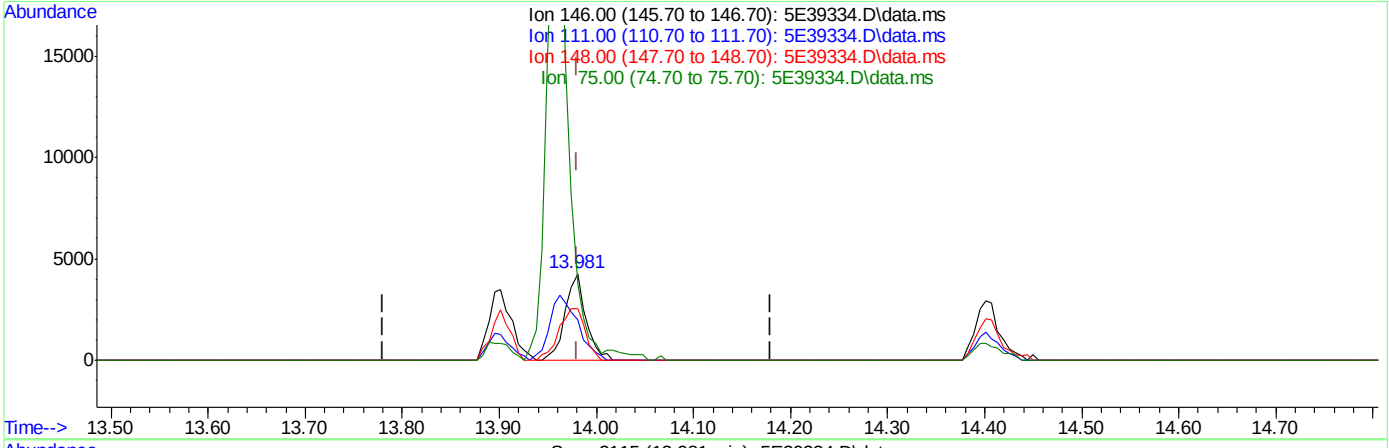
response 5685

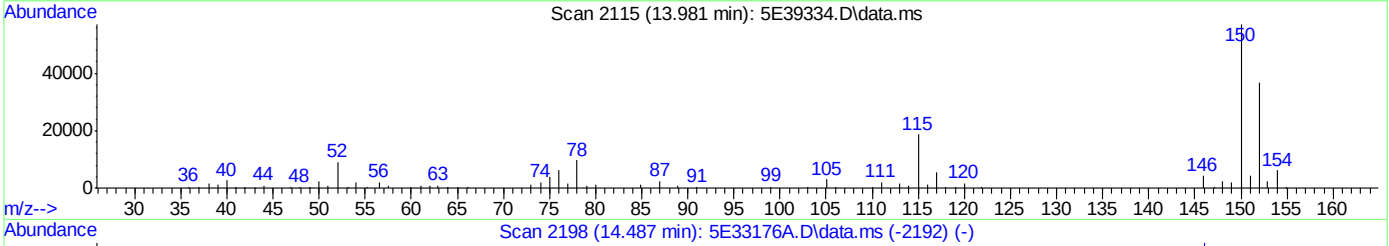
Ion	Exp%	Act%
146.00	100	100
111.00	38.20	36.38
148.00	64.40	70.74
75.00	30.70	23.40

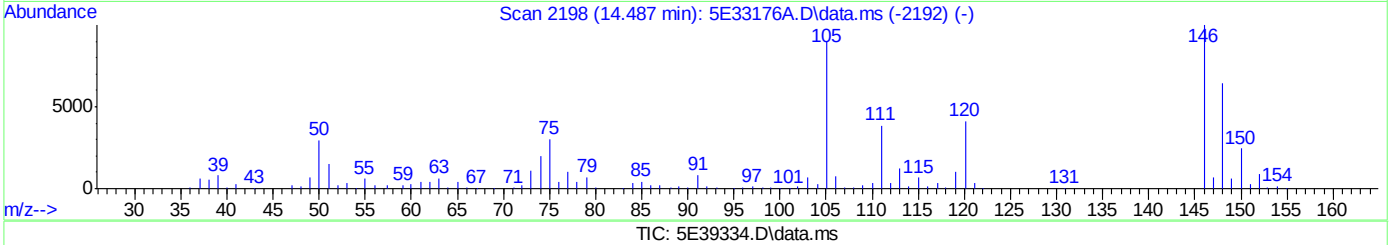
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\05-01-2023\
Data File : 5E39334.D
Acq On : 1 May 2023 4:03 pm
Operator : joannel
Sample : IC1761-1
Misc : MS53796,V5E1761,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 02 06:35:47 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon May 01 15:05:21 2023
Response via : Initial Calibration







TIC: 5E39334.D\data.ms

(105) 1,4-Dichlorobenzene

13.981min (-0.000) 0.65ug/L m

response 6366

Ion	Exp%	Act%
146.00	100	100
111.00	38.20	45.84
148.00	64.40	58.91
75.00	30.70	87.78#

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-01-2023\
Data File : 5E39335.D
Acq On : 1 May 2023 4:29 pm
Operator : joannel
Sample : IC1761-2
Misc : MS53796,V5E1761,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 02 06:43:31 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon May 01 15:05:21 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.470	96	666818	50.00	ug/L	0.00
61) Chlorobenzene-d5	11.603	117	572692	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.962	152	348373	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.610	113	197669	51.82	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 103.64%			
49) 1,2-Dichloroethane-d4	8.189	65	216408	46.72	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 93.44%			
62) Toluene-d8	10.042	98	709577	45.24	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 90.48%			
86) 4-Bromofluorobenzene	12.816	95	302726	47.32	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 94.64%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.812	85	12186	4.30	ug/L	92
3) Chloromethane	3.160	50	22389	6.04	ug/L	100
4) Vinyl Chloride	3.263	62	19385	5.55	ug/L	99
5) 1,3-Butadiene	3.294	39	27341	7.86	ug/L	84
6) Bromomethane	3.769	94	12073	8.68	ug/L	98
7) Chloroethane	3.946	64	10342	4.93	ug/L	96
8) Trichlorofluoromethane	4.153	101	21862	4.83	ug/L	96
9) Ethyl Ether	4.592	59	16808	5.60	ug/L	95
10) Ethanol	4.812	45	13179	361.80	ug/L	98
11) 1,2-Dichlorotrifluoroe...	4.830	67	20188	6.11	ug/L	92
12) 1,1-Dichloroethene	4.867	61	28631	5.61	ug/L	95
13) Freon 113	4.903	101	16624	6.02	ug/L	94
14) Carbon Disulfide	4.921	76	51696	6.59	ug/L	100
15) Iodomethane	5.068	142	5837	3.52	ug/L	96
16) Acrolein	5.299	56	25979	41.80	ug/L	96
17) Allyl chloride	5.464	41	33793	8.02	ug/L	91
18) Methylene Chloride	5.598	49	32002	6.49	ug/L	92
19) Acetone	5.659	43	37875	33.18	ug/L	89
20) Methyl acetate	5.793	43	109319	38.81	ug/L	100
21) trans-1,2-Dichloroethene	5.799	61	27367	5.36	ug/L	96
22) Hexane	5.879	56	20307	6.18	ug/L	92
23) Methyl Tert Butyl Ether	5.903	73	55800	5.70	ug/L	97
24) Acetonitrile	6.226	41	51116	125.44	ug/L	91
25) Di-isopropyl ether	6.330	45	69911	5.78	ug/L	94
26) Chloroprene	6.494	53	37511	7.84	ug/L	96
27) 1,1-Dichloroethane	6.525	63	36344	5.52	ug/L	99
28) Acrylonitrile	6.586	53	51502	35.36	ug/L	99
29) ETBE	6.750	59	66321	5.66	ug/L	98
30) Tert Butyl Alcohol	5.988	59	56670	120.44	ug/L	93
31) Vinyl acetate	6.775	43	230415	28.95	ug/L	99
32) cis-1,2-Dichloroethene	7.134	96	20042	5.74	ug/L	96
33) 2,2-Dichloropropane	7.256	77	23993	5.18	ug/L	99
34) Bromochloromethane	7.354	128	9816	5.66	ug/L	96
35) Cyclohexane	7.372	56	36951	6.35	ug/L	99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-01-2023\
Data File : 5E39335.D
Acq On : 1 May 2023 4:29 pm
Operator : joannel
Sample : IC1761-2
Misc : MS53796,V5E1761,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 02 06:43:31 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon May 01 15:05:21 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
36) Chloroform	7.415	83	34797	5.93	ug/L	98
37) Ethyl acetate	7.512	43	153853	39.22	ug/L	98
38) Tetrahydrofuran	7.610	42	12965	9.67	ug/L	90
40) Carbon Tetrachloride	7.592	117	25932	5.80	ug/L	93
41) 1,1,1-Trichloroethane	7.659	97	28560	5.55	ug/L	95
42) 2-Butanone	7.738	43	62402	35.48	ug/L	98
43) 1,1-Dichloropropene	7.787	75	22898	5.46	ug/L	96
44) tert-Butyl formate	7.878	59	121463	71.30	ug/L	98
45) Propionitrile	8.061	54	71704	123.62	ug/L	92
46) Methacrylonitrile	8.079	41	234653	96.31	ug/L	99
47) Benzene	8.049	78	69644	5.63	ug/L	92
48) TAME	8.128	73	55748	5.81	ug/L	98
50) 1,2-Dichloroethane	8.262	62	27144	5.23	ug/L	96
51) tert Amyl alcohol	8.293	59	49746	141.51	ug/L	93
52) Trichloroethene	8.646	95	20323	5.87	ug/L	92
53) Methylcyclohexane	8.646	83	32748	6.51	ug/L	95
54) Dibromomethane	9.091	93	13029	5.82	ug/L	99
55) 1,2-Dichloropropane	9.183	63	19827	5.71	ug/L	96
56) Bromodichloromethane	9.226	83	26195	5.62	ug/L	97
57) Methyl methacrylate	9.335	41	32777	10.19	ug/L	95
58) 1,4-Dioxane	9.421	88	8899	252.75	ug/L	82
59) 2-Chloroethyl vinyl ether	9.756	63	74505	30.83	ug/L	98
60) cis-1,3-Dichloropropene	9.853	75	26279	5.33	ug/L	95
63) Toluene	10.091	91	76753	5.33	ug/L	95
64) Isobutyl alcohol	8.183	43	53438	295.44	ug/L	94
65) 2-Nitropropane	10.323	41	41135	31.37	ug/L	96
66) 4-Methyl-2-pentanone	10.433	43	136891	29.66	ug/L	96
67) trans-1,3-Dichloropropene	10.494	75	23637	4.37	ug/L	91
68) Tetrachloroethene	10.500	166	23037	5.37	ug/L	89
69) Ethyl methacrylate	10.597	69	32067	7.42	ug/L	87
70) 1,1,2-Trichloroethane	10.658	83	15702	5.09	ug/L	94
71) Dibromochloromethane	10.859	129	21909	5.16	ug/L	100
72) 1,3-Dichloropropane	10.945	76	30330	5.16	ug/L	96
73) 1,2-Dibromoethane	11.121	107	20780	5.25	ug/L	93
74) 3,3-Dimethyl-1-butanol	11.195	57	269584	687.23	ug/L	98
75) 2-hexanone	11.262	43	97529	31.80	ug/L	93
76) 1-Chlorohexane	11.548	91	25686	5.19	ug/L	96
77) Ethylbenzene	11.615	91	86473	5.39	ug/L	97
78) Chlorobenzene	11.621	112	52807	5.47	ug/L	91
79) 1,1,1,2-Tetrachloroethane	11.670	131	20253	5.28	ug/L	97
80) m,p-Xylene	11.756	91	134520	9.82	ug/L	97
81) o-Xylene	12.194	91	70790	5.04	ug/L	96
82) Styrene	12.249	104	52292	5.11	ug/L	97
83) Bromoform	12.310	173	16615	5.96	ug/L	98
84) Isopropylbenzene	12.499	105	88114	5.12	ug/L	99
87) cis-1,4-Dichloro-2-butene	12.865	53	5534	5.07	ug/L	90
88) n-Propylbenzene	12.920	91	107180	4.75	ug/L	98
89) Bromobenzene	12.950	156	23254	5.04	ug/L	98
90) 1,1,2,2-Tetrachloroethane	12.987	83	32460	5.85	ug/L	96
91) 1,3,5-Trimethylbenzene	13.103	105	73146	4.58	ug/L	98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-01-2023\
Data File : 5E39335.D
Acq On : 1 May 2023 4:29 pm
Operator : joannel
Sample : IC1761-2
Misc : MS53796,V5E1761,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 02 06:43:31 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon May 01 15:05:21 2023
Response via : Initial Calibration

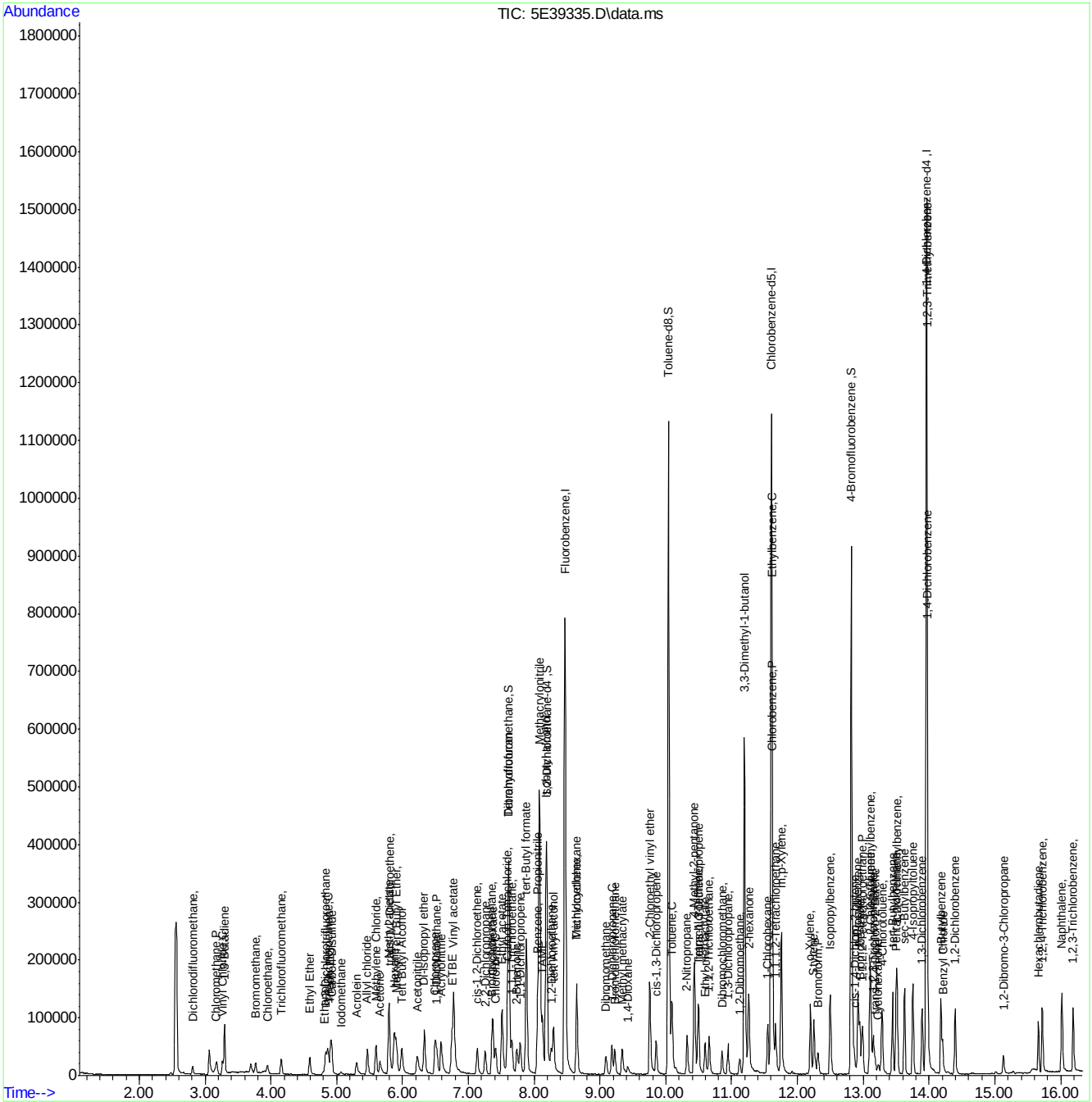
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	13.115	91	71105	4.82	ug/L		98
93)	trans-1,4-Dichloro-2-B...	13.182	53	6613	4.96	ug/L	#	88
94)	1,2,3-Trichloropropane	13.158	110	9946	6.29	ug/L		86
95)	Cyclohexanone	13.225	55	8844	53.10	ug/L		97
96)	4-Chlorotoluene	13.286	91	66029	5.12	ug/L		100
98)	tert-Butylbenzene	13.444	91	42527	4.79	ug/L		97
99)	1,2,4-Trimethylbenzene	13.511	105	74756	4.77	ug/L		99
100)	Pentachloroethane	13.499	167	15793	6.79	ug/L		96
101)	sec-Butylbenzene	13.627	105	98113	4.96	ug/L		96
102)	4-Isopropyltoluene	13.755	119	83887	4.93	ug/L		98
103)	1,3-Dichlorobenzene	13.895	146	45528	4.99	ug/L		99
104)	1,2,3-Trimethylbenzene	13.969	105	77207	4.74	ug/L		92
105)	1,4-Dichlorobenzene	13.975	146	48867	5.02	ug/L		87
106)	n-Butylbenzene	14.182	92	42231	4.80	ug/L		93
107)	Benzyl Chloride	14.206	126	6806	3.97	ug/L	#	83
108)	1,2-Dichlorobenzene	14.395	146	44539	5.03	ug/L		99
109)	1,2-Dibromo-3-Chloropr...	15.133	75	6757	6.45	ug/L		81
110)	Hexachlorobutadiene	15.663	225	13308	6.61	ug/L		92
111)	1,2,4-Trichlorobenzene	15.718	180	33776	5.79	ug/L		95
112)	Naphthalene	16.017	128	103135	6.39	ug/L		98
113)	1,2,3-Trichlorobenzene	16.188	180	33721	6.51	ug/L		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-01-2023\
Data File : 5E39335.D
Acq On : 1 May 2023 4:29 pm
Operator : joannel
Sample : IC1761-2
Misc : MS53796,V5E1761,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 02 06:43:31 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon May 01 15:05:21 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-01-2023\
Data File : 5E39336.D
Acq On : 1 May 2023 4:55 pm
Operator : joannel
Sample : IC1761-3
Misc : MS53796,V5E1761,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 02 06:43:34 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon May 01 15:05:21 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.469	96	658328	50.00	ug/L	0.00
61) Chlorobenzene-d5	11.603	117	568384	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.962	152	343560	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.610	113	198503	52.71	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 105.42%			
49) 1,2-Dichloroethane-d4	8.183	65	215058	47.03	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 94.06%			
62) Toluene-d8	10.042	98	707572	45.46	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 90.92%			
86) 4-Bromofluorobenzene	12.816	95	298875	47.37	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 94.74%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.812	85	24265	8.67	ug/L	97
3) Chloromethane	3.166	50	43085	11.78	ug/L	97
4) Vinyl Chloride	3.263	62	37724	10.93	ug/L	99
5) 1,3-Butadiene	3.294	39	42288	12.32	ug/L	92
6) Bromomethane	3.763	94	20093	14.49	ug/L	93
7) Chloroethane	3.946	64	17755	8.61	ug/L	99
8) Trichlorofluoromethane	4.153	101	45595	10.20	ug/L	99
9) Ethyl Ether	4.586	59	29976	10.12	ug/L	90
10) Ethanol	4.793	45	19839	551.66	ug/L	98
11) 1,2-Dichlorotrifluoroe...	4.836	67	32951	10.05	ug/L	97
12) 1,1-Dichloroethene	4.866	61	47919	9.51	ug/L	97
13) Freon 113	4.909	101	28938	10.55	ug/L	98
14) Carbon Disulfide	4.921	76	84627	10.87	ug/L	100
15) Iodomethane	5.062	142	14212	8.48	ug/L	92
16) Acrolein	5.299	56	44442	72.43	ug/L	94
17) Allyl chloride	5.464	41	47232	11.33	ug/L	92
18) Methylene Chloride	5.598	49	52925	10.89	ug/L	98
19) Acetone	5.653	43	89106	79.06	ug/L	90
20) Methyl acetate	5.787	43	209415	75.30	ug/L	100
21) trans-1,2-Dichloroethene	5.793	61	48455	9.61	ug/L	96
22) Hexane	5.872	56	33360	10.28	ug/L	96
23) Methyl Tert Butyl Ether	5.903	73	94507	9.77	ug/L	99
24) Acetonitrile	6.220	41	75175	185.55	ug/L	99
25) Di-isopropyl ether	6.330	45	120469	10.09	ug/L	97
26) Chloroprene	6.494	53	53821	11.40	ug/L	97
27) 1,1-Dichloroethane	6.525	63	63373	9.75	ug/L	97
28) Acrylonitrile	6.580	53	126687	88.11	ug/L	97
29) ETBE	6.750	59	113653	9.82	ug/L	99
30) Tert Butyl Alcohol	5.988	59	97966	210.90	ug/L	97
31) Vinyl acetate	6.775	43	532339	67.35	ug/L	100
32) cis-1,2-Dichloroethene	7.134	96	34405	9.98	ug/L	95
33) 2,2-Dichloropropane	7.256	77	39193	8.58	ug/L	97
34) Bromochloromethane	7.354	128	16830	9.83	ug/L	87
35) Cyclohexane	7.372	56	61799	10.69	ug/L	95

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-01-2023\
Data File : 5E39336.D
Acq On : 1 May 2023 4:55 pm
Operator : joannel
Sample : IC1761-3
Misc : MS53796,V5E1761,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 02 06:43:34 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon May 01 15:05:21 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	7.415	83	59731	10.31	ug/L		96
37) Ethyl acetate	7.506	43	357778	92.38	ug/L		99
38) Tetrahydrofuran	7.610	42	21964	16.59	ug/L		95
40) Carbon Tetrachloride	7.592	117	42614	9.65	ug/L		95
41) 1,1,1-Trichloroethane	7.659	97	47810	9.41	ug/L		97
42) 2-Butanone	7.732	43	155544	89.57	ug/L		99
43) 1,1-Dichloropropene	7.787	75	39219	9.47	ug/L		88
44) tert-Butyl formate	7.878	59	157006	93.35	ug/L		97
45) Propionitrile	8.061	54	108707	188.38	ug/L		96
46) Methacrylonitrile	8.079	41	342824	142.52	ug/L		99
47) Benzene	8.049	78	121568	9.95	ug/L		91
48) TAME	8.128	73	94835	10.00	ug/L		93
50) 1,2-Dichloroethane	8.256	62	48417	9.46	ug/L		98
51) tert Amyl alcohol	8.293	59	81444	234.66	ug/L		94
52) Trichloroethene	8.646	95	32858	9.61	ug/L		97
53) Methylcyclohexane	8.646	83	53029	10.60	ug/L		97
54) Dibromomethane	9.091	93	22101	9.99	ug/L		88
55) 1,2-Dichloropropane	9.177	63	36006	10.50	ug/L		91
56) Bromodichloromethane	9.225	83	44763	9.73	ug/L		97
57) Methyl methacrylate	9.335	41	43130	13.52	ug/L		96
58) 1,4-Dioxane	9.420	88	15817	455.03	ug/L		85
59) 2-Chloroethyl vinyl ether	9.756	63	97345	40.81	ug/L		97
60) cis-1,3-Dichloropropene	9.853	75	47272	9.72	ug/L		98
63) Toluene	10.091	91	127239	8.90	ug/L		99
64) Isobutyl alcohol	8.183	43	76785	424.17	ug/L		96
65) 2-Nitropropane	10.323	41	71115	54.64	ug/L		99
66) 4-Methyl-2-pentanone	10.432	43	319480	69.73	ug/L		98
67) trans-1,3-Dichloropropene	10.493	75	42086	7.85	ug/L		86
68) Tetrachloroethene	10.500	166	38420	9.02	ug/L		93
69) Ethyl methacrylate	10.597	69	47264	10.97	ug/L		97
70) 1,1,2-Trichloroethane	10.658	83	27981	9.14	ug/L		95
71) Dibromochloromethane	10.853	129	38082	9.04	ug/L		99
72) 1,3-Dichloropropane	10.945	76	52014	8.92	ug/L		93
73) 1,2-Dibromoethane	11.121	107	36737	9.35	ug/L		97
74) 3,3-Dimethyl-1-butanol	11.195	57	366717	941.93	ug/L		98
75) 2-hexanone	11.255	43	236666	77.74	ug/L		98
76) 1-Chlorohexane	11.548	91	41111	8.36	ug/L		95
77) Ethylbenzene	11.615	91	145902	9.14	ug/L		97
78) Chlorobenzene	11.621	112	89769	9.36	ug/L		94
79) 1,1,1,2-Tetrachloroethane	11.670	131	34563	9.07	ug/L		94
80) m,p-Xylene	11.755	91	230002	16.91	ug/L		99
81) o-Xylene	12.194	91	120193	8.62	ug/L		96
82) Styrene	12.249	104	88759	8.73	ug/L		98
83) Bromoform	12.310	173	29012	10.48	ug/L		94
84) Isopropylbenzene	12.499	105	147842	8.65	ug/L		99
87) cis-1,4-Dichloro-2-butene	12.859	53	8509	7.86	ug/L	#	82
88) n-Propylbenzene	12.920	91	175019	7.87	ug/L		96
89) Bromobenzene	12.950	156	39213	8.62	ug/L		96
90) 1,1,2,2-Tetrachloroethane	12.987	83	54383	9.94	ug/L		97
91) 1,3,5-Trimethylbenzene	13.103	105	126134	8.01	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-01-2023\
Data File : 5E39336.D
Acq On : 1 May 2023 4:55 pm
Operator : joannel
Sample : IC1761-3
Misc : MS53796,V5E1761,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 02 06:43:34 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon May 01 15:05:21 2023
Response via : Initial Calibration

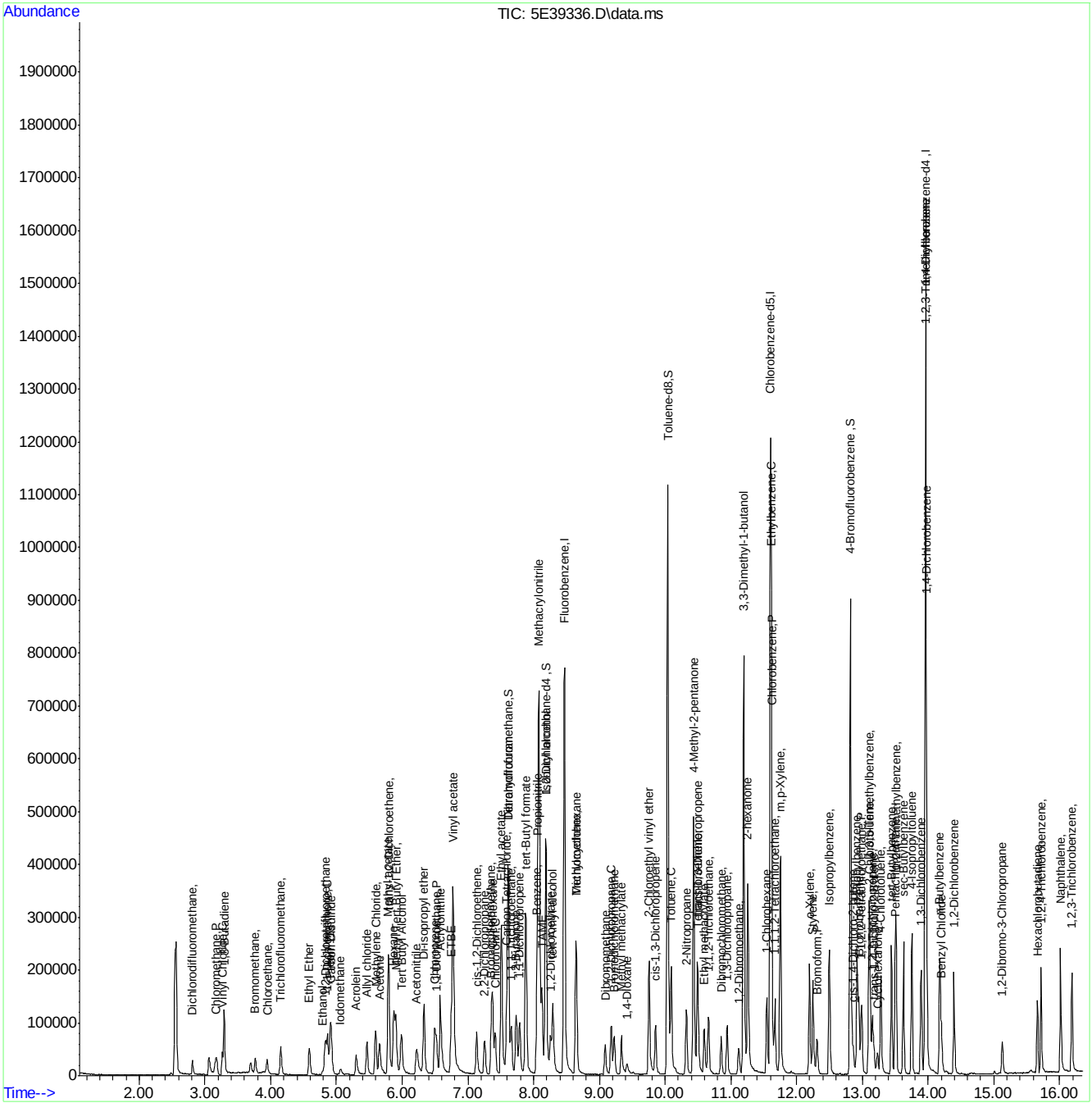
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	13.115	91	118690	8.16	ug/L		97
93)	trans-1,4-Dichloro-2-B...	13.176	53	12045	9.12	ug/L	#	79
94)	1,2,3-Trichloropropane	13.151	110	16050	10.29	ug/L		96
95)	Cyclohexanone	13.231	55	21232	130.33	ug/L		98
96)	4-Chlorotoluene	13.279	91	108044	8.49	ug/L		99
98)	tert-Butylbenzene	13.444	91	70068	8.00	ug/L		95
99)	1,2,4-Trimethylbenzene	13.511	105	125335	8.11	ug/L		95
100)	Pentachloroethane	13.499	167	22788	9.91	ug/L		98
101)	sec-Butylbenzene	13.627	105	163744	8.40	ug/L		99
102)	4-Isopropyltoluene	13.755	119	142362	8.48	ug/L		96
103)	1,3-Dichlorobenzene	13.895	146	77387	8.61	ug/L		100
104)	1,2,3-Trimethylbenzene	13.968	105	132481	8.24	ug/L		96
105)	1,4-Dichlorobenzene	13.974	146	81518	8.48	ug/L		92
106)	n-Butylbenzene	14.176	92	69317	7.99	ug/L		99
107)	Benzyl Chloride	14.206	126	11899	6.98	ug/L	#	86
108)	1,2-Dichlorobenzene	14.395	146	75197	8.62	ug/L		98
109)	1,2-Dibromo-3-Chloropr...	15.127	75	12048	11.65	ug/L		90
110)	Hexachlorobutadiene	15.663	225	21471	10.76	ug/L		93
111)	1,2,4-Trichlorobenzene	15.718	180	59179	10.29	ug/L		97
112)	Naphthalene	16.017	128	174105	10.95	ug/L		99
113)	1,2,3-Trichlorobenzene	16.187	180	57009	11.16	ug/L		96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-01-2023\
Data File : 5E39336.D
Acq On : 1 May 2023 4:55 pm
Operator : joannel
Sample : IC1761-3
Misc : MS53796,V5E1761,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 02 06:43:34 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon May 01 15:05:21 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-01-2023\
Data File : 5E39337.D
Acq On : 1 May 2023 5:20 pm
Operator : joannel
Sample : IC1761-4
Misc : MS53796,V5E1761,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 02 06:43:36 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon May 01 15:05:21 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.463	96	663475	50.00	ug/L	0.00
61) Chlorobenzene-d5	11.603	117	568981	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.962	152	341625	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.610	113	197143	51.94	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 103.88%			
49) 1,2-Dichloroethane-d4	8.183	65	204892	44.46	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 88.92%			
62) Toluene-d8	10.042	98	715537	45.92	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 91.84%			
86) 4-Bromofluorobenzene	12.816	95	301610	48.08	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 96.16%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.806	85	57058	20.22	ug/L	100
3) Chloromethane	3.166	50	100031	27.13	ug/L	100
4) Vinyl Chloride	3.263	62	90688	26.08	ug/L	99
5) 1,3-Butadiene	3.294	39	96768	27.97	ug/L	93
6) Bromomethane	3.763	94	42504	29.71	ug/L	99
7) Chloroethane	3.940	64	37925	18.51	ug/L	98
8) Trichlorofluoromethane	4.141	101	108677	24.13	ug/L	99
9) Ethyl Ether	4.586	59	88808	29.74	ug/L	98
10) Ethanol	4.793	45	48195	1329.76	ug/L	76
11) 1,2-Dichlorotrifluoroe...	4.830	67	100381	29.61	ug/L	97
12) 1,1-Dichloroethene	4.860	61	142357	28.05	ug/L	97
13) Freon 113	4.897	101	88922	31.42	ug/L	97
14) Carbon Disulfide	4.915	76	246517	30.76	ug/L	95
15) Iodomethane	5.062	142	65518	34.57	ug/L	94
16) Acrolein	5.293	56	132217	213.81	ug/L	99
17) Allyl chloride	5.464	41	112498	26.52	ug/L	91
18) Methylene Chloride	5.592	49	147449	30.42	ug/L	95
19) Acetone	5.647	43	201902	177.76	ug/L	100
20) Methyl acetate	5.787	43	630405	224.91	ug/L	100
21) trans-1,2-Dichloroethene	5.793	61	138617	27.29	ug/L	97
22) Hexane	5.872	56	98343	30.08	ug/L	91
23) Methyl Tert Butyl Ether	5.903	73	277303	28.45	ug/L	97
24) Acetonitrile	6.214	41	190255	451.88	ug/L	99
25) Di-isopropyl ether	6.330	45	350648	29.13	ug/L	99
26) Chloroprene	6.494	53	139063	29.23	ug/L	97
27) 1,1-Dichloroethane	6.519	63	183702	28.05	ug/L	96
28) Acrylonitrile	6.580	53	273383	188.65	ug/L	99
29) ETBE	6.750	59	332742	28.52	ug/L	99
30) Tert Butyl Alcohol	5.988	59	290421	620.36	ug/L	96
31) Vinyl acetate	6.769	43	1140832	141.59	ug/L	99
32) cis-1,2-Dichloroethene	7.128	96	99779	28.73	ug/L	98
33) 2,2-Dichloropropane	7.250	77	108620	23.59	ug/L	98
34) Bromochloromethane	7.354	128	50594	29.32	ug/L	90
35) Cyclohexane	7.372	56	189892	31.62	ug/L	98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-01-2023\
Data File : 5E39337.D
Acq On : 1 May 2023 5:20 pm
Operator : joannel
Sample : IC1761-4
Misc : MS53796,V5E1761,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 02 06:43:36 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon May 01 15:05:21 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
36) Chloroform	7.415	83	170912	29.28	ug/L	98
37) Ethyl acetate	7.506	43	776368	198.90	ug/L	98
38) Tetrahydrofuran	7.604	42	62289	46.68	ug/L	96
40) Carbon Tetrachloride	7.592	117	126385	28.41	ug/L	98
41) 1,1,1-Trichloroethane	7.659	97	141658	27.66	ug/L	98
42) 2-Butanone	7.732	43	359266	205.29	ug/L	100
43) 1,1-Dichloropropene	7.787	75	117553	28.16	ug/L	93
44) tert-Butyl formate	7.878	59	485147	286.22	ug/L	99
45) Propionitrile	8.055	54	275580	459.18	ug/L	89
46) Methacrylonitrile	8.079	41	877152	361.83	ug/L	98
47) Benzene	8.049	78	342951	27.85	ug/L	92
48) TAME	8.122	73	264092	27.64	ug/L	98
50) 1,2-Dichloroethane	8.256	62	138194	26.78	ug/L	97
51) tert Amyl alcohol	8.293	59	239786	685.53	ug/L	94
52) Trichloroethene	8.646	95	95390	27.68	ug/L	93
53) Methylcyclohexane	8.646	83	158199	30.45	ug/L	98
54) Dibromomethane	9.085	93	65958	29.59	ug/L	96
55) 1,2-Dichloropropane	9.177	63	105309	30.47	ug/L	94
56) Bromodichloromethane	9.225	83	129836	28.01	ug/L	98
57) Methyl methacrylate	9.335	41	113725	34.29	ug/L	91
58) 1,4-Dioxane	9.421	88	46341	1322.83	ug/L	88
59) 2-Chloroethyl vinyl ether	9.756	63	341898	142.21	ug/L	99
60) cis-1,3-Dichloropropene	9.853	75	141970	28.96	ug/L	95
63) Toluene	10.091	91	371480	25.87	ug/L	99
64) Isobutyl alcohol	8.183	43	201493	1067.44	ug/L	95
65) 2-Nitropropane	10.323	41	212156	162.84	ug/L	95
66) 4-Methyl-2-pentanone	10.433	43	705884	153.91	ug/L	97
67) trans-1,3-Dichloropropene	10.487	75	131791	24.54	ug/L	97
68) Tetrachloroethene	10.493	166	114910	26.95	ug/L	94
69) Ethyl methacrylate	10.591	69	123385	27.99	ug/L	93
70) 1,1,2-Trichloroethane	10.658	83	78686	25.68	ug/L	96
71) Dibromochloromethane	10.853	129	111707	26.48	ug/L	99
72) 1,3-Dichloropropane	10.945	76	148306	25.40	ug/L	97
73) 1,2-Dibromoethane	11.121	107	107962	27.46	ug/L	97
74) 3,3-Dimethyl-1-butanol	11.195	57	1199047	3076.57	ug/L	97
75) 2-hexanone	11.256	43	528146	173.30	ug/L	97
76) 1-Chlorohexane	11.548	91	127089	25.83	ug/L	96
77) Ethylbenzene	11.615	91	416763	25.82	ug/L	98
78) Chlorobenzene	11.621	112	252222	26.20	ug/L	96
79) 1,1,1,2-Tetrachloroethane	11.670	131	97327	25.52	ug/L	98
80) m,p-Xylene	11.749	91	653043	47.96	ug/L	100
81) o-Xylene	12.194	91	335979	24.08	ug/L	97
82) Styrene	12.243	104	263664	25.91	ug/L	97
83) Bromoform	12.310	173	87719	31.66	ug/L	97
84) Isopropylbenzene	12.499	105	426675	24.94	ug/L	98
87) cis-1,4-Dichloro-2-butene	12.859	53	27431	24.78	ug/L	94
88) n-Propylbenzene	12.920	91	509614	23.05	ug/L	97
89) Bromobenzene	12.950	156	111622	24.67	ug/L	95
90) 1,1,2,2-Tetrachloroethane	12.987	83	155721	28.62	ug/L	97
91) 1,3,5-Trimethylbenzene	13.097	105	364832	23.30	ug/L	99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-01-2023\
Data File : 5E39337.D
Acq On : 1 May 2023 5:20 pm
Operator : joannel
Sample : IC1761-4
Misc : MS53796,V5E1761,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 02 06:43:36 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon May 01 15:05:21 2023
Response via : Initial Calibration

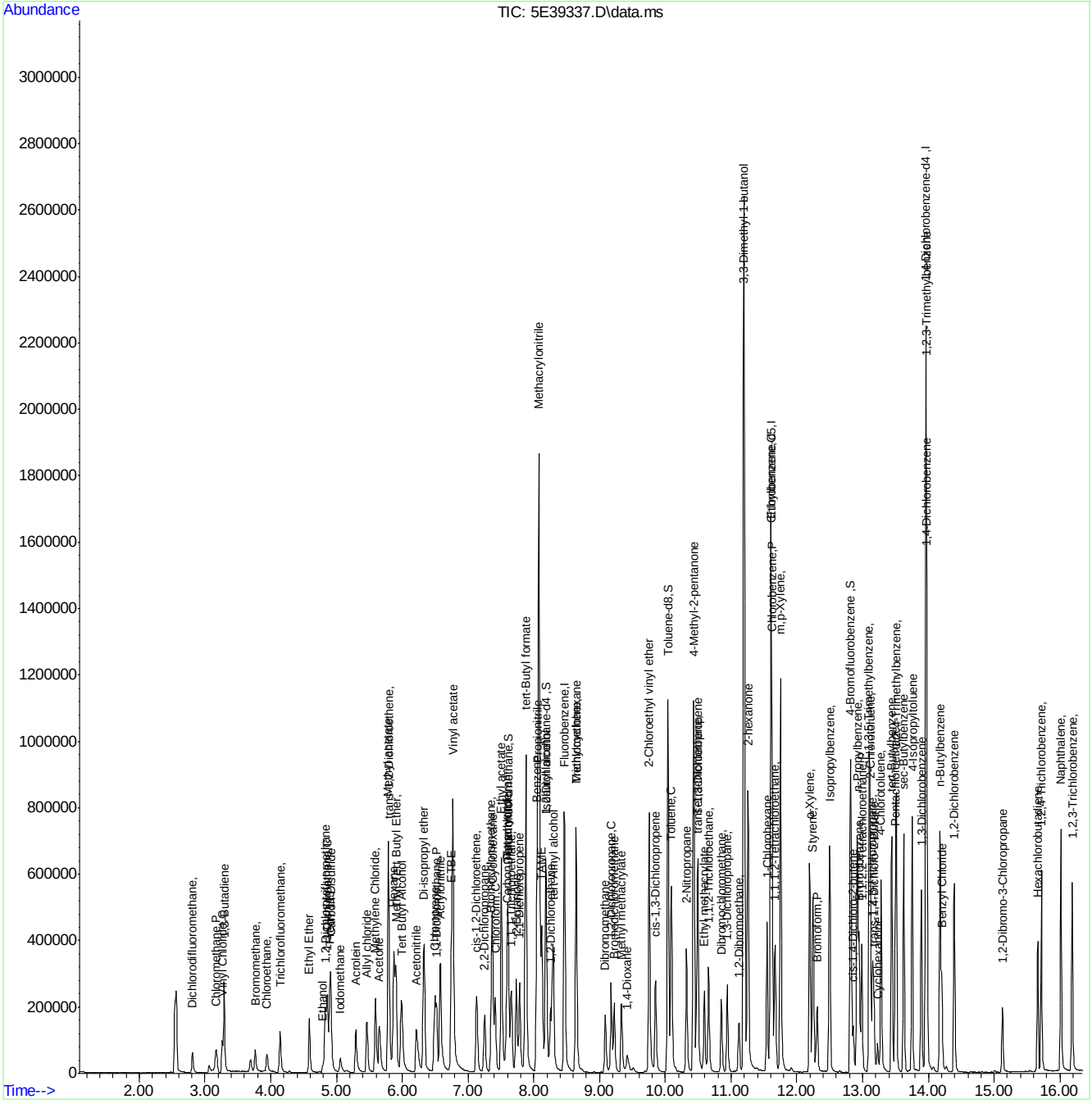
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	13.115	91	329480	22.78	ug/L		96
93)	trans-1,4-Dichloro-2-B...	13.170	53	38762	28.83	ug/L	#	59
94)	1,2,3-Trichloropropane	13.151	110	46956	30.26	ug/L		97
95)	Cyclohexanone	13.225	55	40496	253.35	ug/L		94
96)	4-Chlorotoluene	13.280	91	308598	24.34	ug/L		98
98)	tert-Butylbenzene	13.444	91	202359	23.25	ug/L		95
99)	1,2,4-Trimethylbenzene	13.511	105	360394	23.44	ug/L		97
100)	Pentachloroethane	13.499	167	56634	24.46	ug/L		95
101)	sec-Butylbenzene	13.627	105	467437	24.11	ug/L		98
102)	4-Isopropyltoluene	13.755	119	410053	24.56	ug/L		98
103)	1,3-Dichlorobenzene	13.895	146	221567	24.78	ug/L		97
104)	1,2,3-Trimethylbenzene	13.968	105	375738	23.52	ug/L		99
105)	1,4-Dichlorobenzene	13.975	146	225181	23.57	ug/L		99
106)	n-Butylbenzene	14.176	92	207678	24.08	ug/L		98
107)	Benzyl Chloride	14.206	126	41781	23.66	ug/L		93
108)	1,2-Dichlorobenzene	14.395	146	212251	24.47	ug/L		97
109)	1,2-Dibromo-3-Chloropr...	15.127	75	36034	35.05	ug/L		86
110)	Hexachlorobutadiene	15.663	225	61808	30.59	ug/L		94
111)	1,2,4-Trichlorobenzene	15.718	180	170867	29.88	ug/L		96
112)	Naphthalene	16.017	128	520206	32.89	ug/L		99
113)	1,2,3-Trichlorobenzene	16.187	180	161389	31.78	ug/L		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-01-2023\
Data File : 5E39337.D
Acq On : 1 May 2023 5:20 pm
Operator : joannel
Sample : IC1761-4
Misc : MS53796,V5E1761,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 02 06:43:36 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon May 01 15:05:21 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-01-2023\
Data File : 5E39338.D
Acq On : 1 May 2023 5:46 pm
Operator : joannel
Sample : ICC1761-5
Misc : MS53796,V5E1761,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 02 06:43:38 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon May 01 15:05:21 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.469	96	648995	50.00	ug/L	0.00
61) Chlorobenzene-d5	11.603	117	561822	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.962	152	341252	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.610	113	198760	53.53	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 107.06%			
49) 1,2-Dichloroethane-d4	8.189	65	202069	44.82	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 89.64%			
62) Toluene-d8	10.042	98	716209	46.55	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 93.10%			
86) 4-Bromofluorobenzene	12.816	95	302705	48.30	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 96.60%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.812	85	86290	31.27	ug/L	98
3) Chloromethane	3.166	50	161029	44.65	ug/L	98
4) Vinyl Chloride	3.263	62	146030	42.93	ug/L	99
5) 1,3-Butadiene	3.294	39	137776	40.71	ug/L	92
6) Bromomethane	3.769	94	62332	43.62	ug/L	97
7) Chloroethane	3.946	64	62934	32.04	ug/L	98
8) Trichlorofluoromethane	4.141	101	169745	38.53	ug/L	100
9) Ethyl Ether	4.592	59	130396	44.64	ug/L	95
10) Ethanol	4.805	45	81285	2292.80	ug/L	85
11) 1,2-Dichlorotrifluoroe...	4.836	67	131950	39.30	ug/L	97
12) 1,1-Dichloroethene	4.860	61	187874	37.84	ug/L	96
13) Freon 113	4.897	101	110281	39.49	ug/L	98
14) Carbon Disulfide	4.915	76	335364	42.27	ug/L	97
15) Iodomethane	5.062	142	105507	52.86	ug/L	96
16) Acrolein	5.299	56	236385	390.79	ug/L	97
17) Allyl chloride	5.464	41	166511	39.81	ug/L	96
18) Methylene Chloride	5.592	49	202898	43.07	ug/L	98
19) Acetone	5.653	43	367766	331.01	ug/L	99
20) Methyl acetate	5.787	43	926227	337.82	ug/L	99
21) trans-1,2-Dichloroethene	5.793	61	193774	38.99	ug/L	98
22) Hexane	5.872	56	122995	38.45	ug/L	93
23) Methyl Tert Butyl Ether	5.909	73	402367	42.20	ug/L	95
24) Acetonitrile	6.220	41	312737	735.69	ug/L	98
25) Di-isopropyl ether	6.336	45	496171	42.14	ug/L	97
26) Chloroprene	6.494	53	202894	43.59	ug/L	97
27) 1,1-Dichloroethane	6.525	63	259509	40.51	ug/L	99
28) Acrylonitrile	6.580	53	457536	322.78	ug/L	99
29) ETBE	6.750	59	472522	41.40	ug/L	99
30) Tert Butyl Alcohol	5.994	59	431107	941.41	ug/L	95
31) Vinyl acetate	6.775	43	1824693	228.51	ug/L	99
32) cis-1,2-Dichloroethene	7.134	96	141844	41.75	ug/L	98
33) 2,2-Dichloropropane	7.256	77	141269	31.36	ug/L	97
34) Bromochloromethane	7.360	128	66531	39.42	ug/L	90
35) Cyclohexane	7.372	56	237662	39.98	ug/L	98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-01-2023\
Data File : 5E39338.D
Acq On : 1 May 2023 5:46 pm
Operator : joannel
Sample : ICC1761-5
Misc : MS53796,V5E1761,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 02 06:43:38 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon May 01 15:05:21 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
36) Chloroform	7.415	83	235944	41.32	ug/L	98
37) Ethyl acetate	7.506	43	1265013	331.33	ug/L	99
38) Tetrahydrofuran	7.604	42	89562	68.61	ug/L	93
40) Carbon Tetrachloride	7.591	117	164536	37.81	ug/L	99
41) 1,1,1-Trichloroethane	7.659	97	191217	38.18	ug/L	98
42) 2-Butanone	7.732	43	639939	373.83	ug/L	98
43) 1,1-Dichloropropene	7.787	75	156528	38.33	ug/L	94
44) tert-Butyl formate	7.878	59	785803	473.95	ug/L	98
45) Propionitrile	8.061	54	436905	722.47	ug/L	90
46) Methacrylonitrile	8.079	41	1385668	584.34	ug/L	98
47) Benzene	8.049	78	475770	39.50	ug/L	92
48) TAME	8.122	73	373815	40.00	ug/L	97
50) 1,2-Dichloroethane	8.256	62	191553	37.95	ug/L	96
51) tert Amyl alcohol	8.299	59	346301	1012.14	ug/L	93
52) Trichloroethene	8.646	95	133598	39.63	ug/L	99
53) Methylcyclohexane	8.646	83	202312	39.28	ug/L	95
54) Dibromomethane	9.085	93	93431	42.85	ug/L	98
55) 1,2-Dichloropropane	9.177	63	147991	43.77	ug/L	95
56) Bromodichloromethane	9.225	83	185306	40.87	ug/L	96
57) Methyl methacrylate	9.335	41	183439	54.88	ug/L	91
58) 1,4-Dioxane	9.420	88	68624	2002.62	ug/L	97
59) 2-Chloroethyl vinyl ether	9.756	63	479557	203.92	ug/L	99
60) cis-1,3-Dichloropropene	9.853	75	197401	41.16	ug/L	95
63) Toluene	10.091	91	517301	36.42	ug/L	100
64) Isobutyl alcohol	8.183	43	320854	1660.24	ug/L	96
65) 2-Nitropropane	10.323	41	304489	236.68	ug/L	98
66) 4-Methyl-2-pentanone	10.432	43	1255377	277.22	ug/L	98
67) trans-1,3-Dichloropropene	10.493	75	185326	34.95	ug/L	95
68) Tetrachloroethene	10.493	166	158647	37.69	ug/L	97
69) Ethyl methacrylate	10.591	69	197953	44.55	ug/L	96
70) 1,1,2-Trichloroethane	10.658	83	112487	37.18	ug/L	98
71) Dibromochloromethane	10.853	129	162485	39.01	ug/L	99
72) 1,3-Dichloropropane	10.945	76	212355	36.83	ug/L	95
73) 1,2-Dibromoethane	11.121	107	157952	40.69	ug/L	98
74) 3,3-Dimethyl-1-butanol	11.194	57	1943818	5051.09	ug/L	96
75) 2-hexanone	11.255	43	933259	310.14	ug/L	97
76) 1-Chlorohexane	11.548	91	168654	34.71	ug/L	96
77) Ethylbenzene	11.615	91	577045	35.99	ug/L	99
78) Chlorobenzene	11.621	112	353190	37.09	ug/L	95
79) 1,1,1,2-Tetrachloroethane	11.670	131	140021	37.18	ug/L	97
80) m,p-Xylene	11.755	91	911181	67.77	ug/L	99
81) o-Xylene	12.194	91	478044	34.70	ug/L	98
82) Styrene	12.249	104	376011	37.42	ug/L	97
83) Bromoform	12.310	173	127733	46.68	ug/L	97
84) Isopropylbenzene	12.499	105	589510	34.89	ug/L	100
87) cis-1,4-Dichloro-2-butene	12.859	53	36484	32.57	ug/L	93
88) n-Propylbenzene	12.920	91	712270	32.25	ug/L	98
89) Bromobenzene	12.950	156	160332	35.47	ug/L	91
90) 1,1,2,2-Tetrachloroethane	12.987	83	229343	42.20	ug/L	96
91) 1,3,5-Trimethylbenzene	13.103	105	514950	32.92	ug/L	99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-01-2023\
Data File : 5E39338.D
Acq On : 1 May 2023 5:46 pm
Operator : joannel
Sample : ICC1761-5
Misc : MS53796,V5E1761,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 02 06:43:38 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon May 01 15:05:21 2023
Response via : Initial Calibration

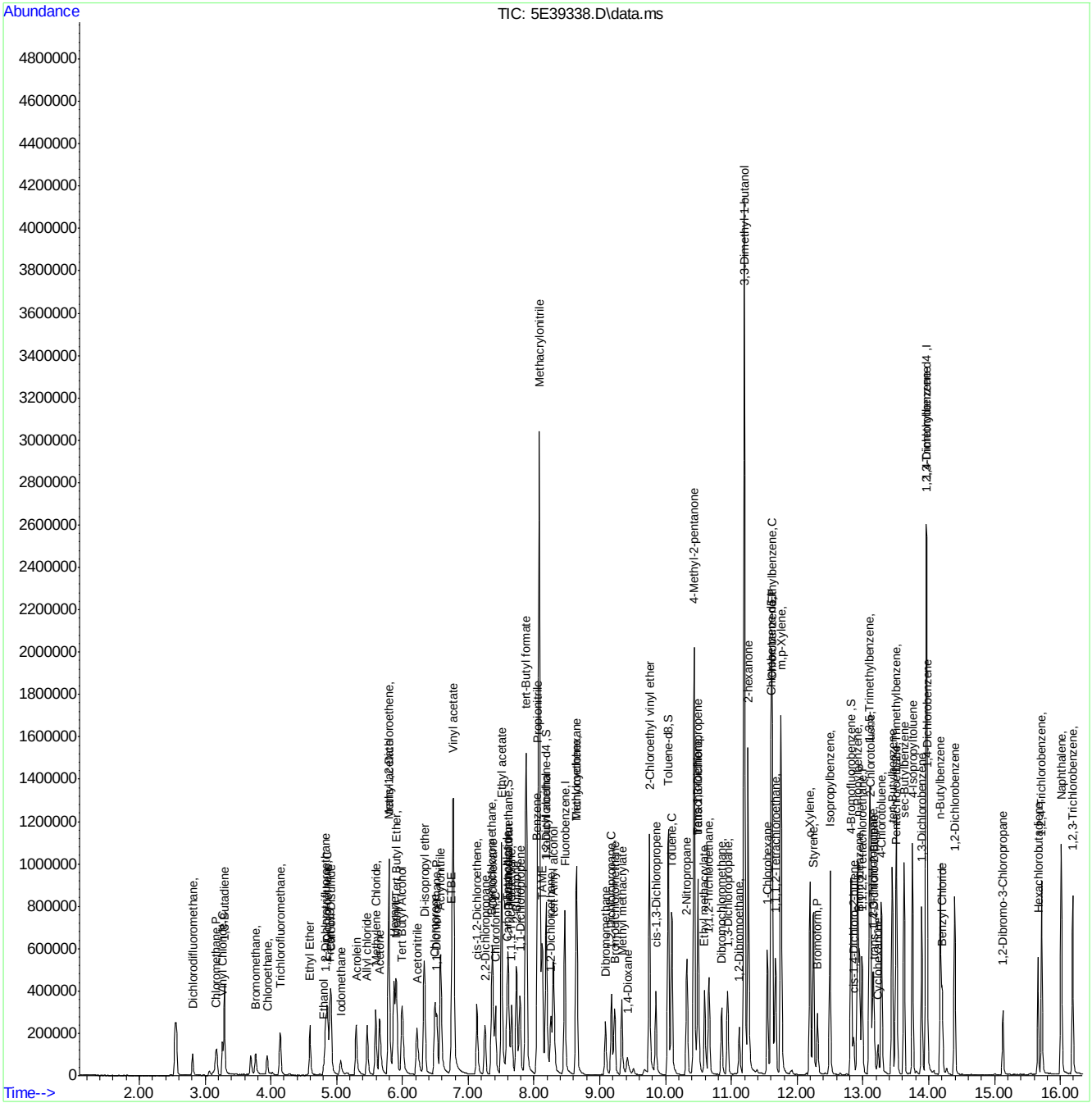
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	13.115	91	465134	32.19	ug/L		97
93)	trans-1,4-Dichloro-2-B...	13.170	53	51102	37.65	ug/L	#	47
94)	1,2,3-Trichloropropane	13.151	110	66798	43.10	ug/L		97
95)	Cyclohexanone	13.231	55	65360	416.78	ug/L		91
96)	4-Chlorotoluene	13.279	91	437767	34.52	ug/L		99
98)	tert-Butylbenzene	13.444	91	280439	32.25	ug/L		95
99)	1,2,4-Trimethylbenzene	13.511	105	515255	33.55	ug/L		99
100)	Pentachloroethane	13.499	167	85686	36.67	ug/L		96
101)	sec-Butylbenzene	13.627	105	644169	33.27	ug/L		97
102)	4-Isopropyltoluene	13.755	119	572260	34.32	ug/L		98
103)	1,3-Dichlorobenzene	13.895	146	311498	34.87	ug/L		97
104)	1,2,3-Trimethylbenzene	13.968	105	529213	33.16	ug/L		98
105)	1,4-Dichlorobenzene	13.980	146	317186	33.23	ug/L		97
106)	n-Butylbenzene	14.176	92	287104	33.33	ug/L		98
107)	Benzyl Chloride	14.206	126	54042	30.16	ug/L		99
108)	1,2-Dichlorobenzene	14.395	146	308576	35.61	ug/L		98
109)	1,2-Dibromo-3-Chloropr...	15.127	75	51916	50.56	ug/L		86
110)	Hexachlorobutadiene	15.663	225	86761	42.52	ug/L		93
111)	1,2,4-Trichlorobenzene	15.718	180	249509	43.68	ug/L		97
112)	Naphthalene	16.017	128	764093	48.36	ug/L		99
113)	1,2,3-Trichlorobenzene	16.187	180	236640	46.64	ug/L		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-01-2023\
Data File : 5E39338.D
Acq On : 1 May 2023 5:46 pm
Operator : joannel
Sample : ICC1761-5
Misc : MS53796,V5E1761,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 02 06:43:38 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon May 01 15:05:21 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-01-2023\
Data File : 5E39339.D
Acq On : 1 May 2023 6:13 pm
Operator : joannel
Sample : IC1761-6
Misc : MS53796,V5E1761,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 02 06:43:40 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon May 01 15:05:21 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.470	96	654409	50.00	ug/L	0.00
61) Chlorobenzene-d5	11.603	117	568214	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.962	152	345848	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.610	113	199764	53.36	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 106.72%			
49) 1,2-Dichloroethane-d4	8.189	65	200048	44.01	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 88.02%			
62) Toluene-d8	10.042	98	720421	46.30	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 92.60%			
86) 4-Bromofluorobenzene	12.816	95	307235	48.38	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 96.76%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.806	85	152598	54.83	ug/L	99
3) Chloromethane	3.166	50	269639	74.14	ug/L	98
4) Vinyl Chloride	3.263	62	246164	71.77	ug/L	98
5) 1,3-Butadiene	3.294	39	208887	61.22	ug/L	93
6) Bromomethane	3.769	94	104720	69.92	ug/L	93
7) Chloroethane	3.940	64	103896	54.24	ug/L	97
8) Trichlorofluoromethane	4.135	101	293170	65.99	ug/L	99
9) Ethyl Ether	4.598	59	231787	78.69	ug/L	98
10) Ethanol	4.824	45	133227	3726.83	ug/L	84
11) 1,2-Dichlorotrifluoroe...	4.830	67	246074	69.96	ug/L	98
12) 1,1-Dichloroethene	4.854	61	344870	68.89	ug/L	95
13) Freon 113	4.891	101	213897	73.23	ug/L	98
14) Carbon Disulfide	4.909	76	611085	73.92	ug/L	96
15) Iodomethane	5.056	142	203641	88.77	ug/L	96
16) Acrolein	5.300	56	366129	600.28	ug/L	99
17) Allyl chloride	5.464	41	267100	62.46	ug/L	93
18) Methylene Chloride	5.592	49	363065	77.84	ug/L	99
19) Acetone	5.659	43	656818	586.28	ug/L	98
20) Methyl acetate	5.793	43	1657984	599.72	ug/L	99
21) trans-1,2-Dichloroethene	5.793	61	345830	69.02	ug/L	98
22) Hexane	5.866	56	231108	71.66	ug/L	96
23) Methyl Tert Butyl Ether	5.909	73	719141	74.80	ug/L	94
24) Acetonitrile	6.226	41	504641	1128.60	ug/L	99
25) Di-isopropyl ether	6.336	45	882981	74.37	ug/L	97
26) Chloroprene	6.494	53	328810	70.06	ug/L	97
27) 1,1-Dichloroethane	6.525	63	455696	70.54	ug/L	99
28) Acrylonitrile	6.580	53	757548	530.00	ug/L	99
29) ETBE	6.750	59	832376	72.33	ug/L	99
30) Tert Butyl Alcohol	6.007	59	751947	1628.45	ug/L	94
31) Vinyl acetate	6.775	43	2926578	356.63	ug/L	99
32) cis-1,2-Dichloroethene	7.135	96	248352	72.49	ug/L	96
33) 2,2-Dichloropropane	7.256	77	243755	53.66	ug/L	98
34) Bromochloromethane	7.354	128	123847	72.77	ug/L	95
35) Cyclohexane	7.372	56	454864	72.55	ug/L	97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-01-2023\
Data File : 5E39339.D
Acq On : 1 May 2023 6:13 pm
Operator : joannel
Sample : IC1761-6
Misc : MS53796,V5E1761,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 02 06:43:40 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon May 01 15:05:21 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
36) Chloroform	7.415	83	425007	73.81	ug/L	99
37) Ethyl acetate	7.506	43	2046362	531.54	ug/L	99
38) Tetrahydrofuran	7.604	42	154134	117.10	ug/L	95
40) Carbon Tetrachloride	7.592	117	307689	70.12	ug/L	98
41) 1,1,1-Trichloroethane	7.659	97	348442	68.99	ug/L	97
42) 2-Butanone	7.732	43	1143244	662.31	ug/L	99
43) 1,1-Dichloropropene	7.787	75	285570	69.36	ug/L	94
44) tert-Butyl formate	7.878	59	1340941	802.08	ug/L	97
45) Propionitrile	8.061	54	702180	1104.67	ug/L	88
46) Methacrylonitrile	8.079	41	2220506	928.65	ug/L	97
47) Benzene	8.049	78	847587	69.79	ug/L	97
48) TAME	8.122	73	673256	71.45	ug/L	97
50) 1,2-Dichloroethane	8.256	62	340611	66.91	ug/L	97
51) tert Amyl alcohol	8.299	59	598272	1734.11	ug/L	94
52) Trichloroethene	8.646	95	238222	70.09	ug/L	97
53) Methylcyclohexane	8.646	83	384597	70.74	ug/L	98
54) Dibromomethane	9.085	93	166416	75.69	ug/L	93
55) 1,2-Dichloropropane	9.177	63	265471	77.87	ug/L	95
56) Bromodichloromethane	9.226	83	334913	73.26	ug/L	97
57) Methyl methacrylate	9.329	41	299916	85.30	ug/L	95
58) 1,4-Dioxane	9.427	88	121002	3501.92	ug/L	91
59) 2-Chloroethyl vinyl ether	9.756	63	893534	376.80	ug/L	98
60) cis-1,3-Dichloropropene	9.854	75	364255	75.32	ug/L	95
63) Toluene	10.091	91	929031	64.35	ug/L	99
64) Isobutyl alcohol	8.189	43	511537	2492.71	ug/L	95
65) 2-Nitropropane	10.323	41	539999	415.03	ug/L	99
66) 4-Methyl-2-pentanone	10.433	43	2174618	474.81	ug/L	96
67) trans-1,3-Dichloropropene	10.494	75	331876	61.88	ug/L	94
68) Tetrachloroethene	10.494	166	283680	66.63	ug/L	98
69) Ethyl methacrylate	10.591	69	321813	69.49	ug/L	95
70) 1,1,2-Trichloroethane	10.658	83	201811	65.95	ug/L	97
71) Dibromochloromethane	10.853	129	290758	69.02	ug/L	96
72) 1,3-Dichloropropane	10.945	76	381494	65.42	ug/L	94
73) 1,2-Dibromoethane	11.115	107	274416	69.89	ug/L	99
74) 3,3-Dimethyl-1-butanol	11.201	57	3361542	8636.84	ug/L	97
75) 2-hexanone	11.256	43	1640348	538.98	ug/L	96
76) 1-Chlorohexane	11.548	91	313026	63.70	ug/L	97
77) Ethylbenzene	11.615	91	1032497	62.69	ug/L	99
78) Chlorobenzene	11.621	112	633815	65.47	ug/L	96
79) 1,1,1,2-Tetrachloroethane	11.670	131	246684	64.77	ug/L	99
80) m,p-Xylene	11.756	91	1629447	119.83	ug/L	99
81) o-Xylene	12.195	91	854482	61.32	ug/L	98
82) Styrene	12.249	104	679327	66.85	ug/L	98
83) Bromoform	12.310	173	228520	82.58	ug/L	99
84) Isopropylbenzene	12.499	105	1062529	62.18	ug/L	99
87) cis-1,4-Dichloro-2-butene	12.859	53	77443	64.82	ug/L	92
88) n-Propylbenzene	12.920	91	1282474	57.30	ug/L	97
89) Bromobenzene	12.950	156	282529	61.67	ug/L	93
90) 1,1,2,2-Tetrachloroethane	12.987	83	400001	72.62	ug/L	99
91) 1,3,5-Trimethylbenzene	13.103	105	910005	57.40	ug/L	100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-01-2023\
Data File : 5E39339.D
Acq On : 1 May 2023 6:13 pm
Operator : joannel
Sample : IC1761-6
Misc : MS53796,V5E1761,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 02 06:43:40 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon May 01 15:05:21 2023
Response via : Initial Calibration

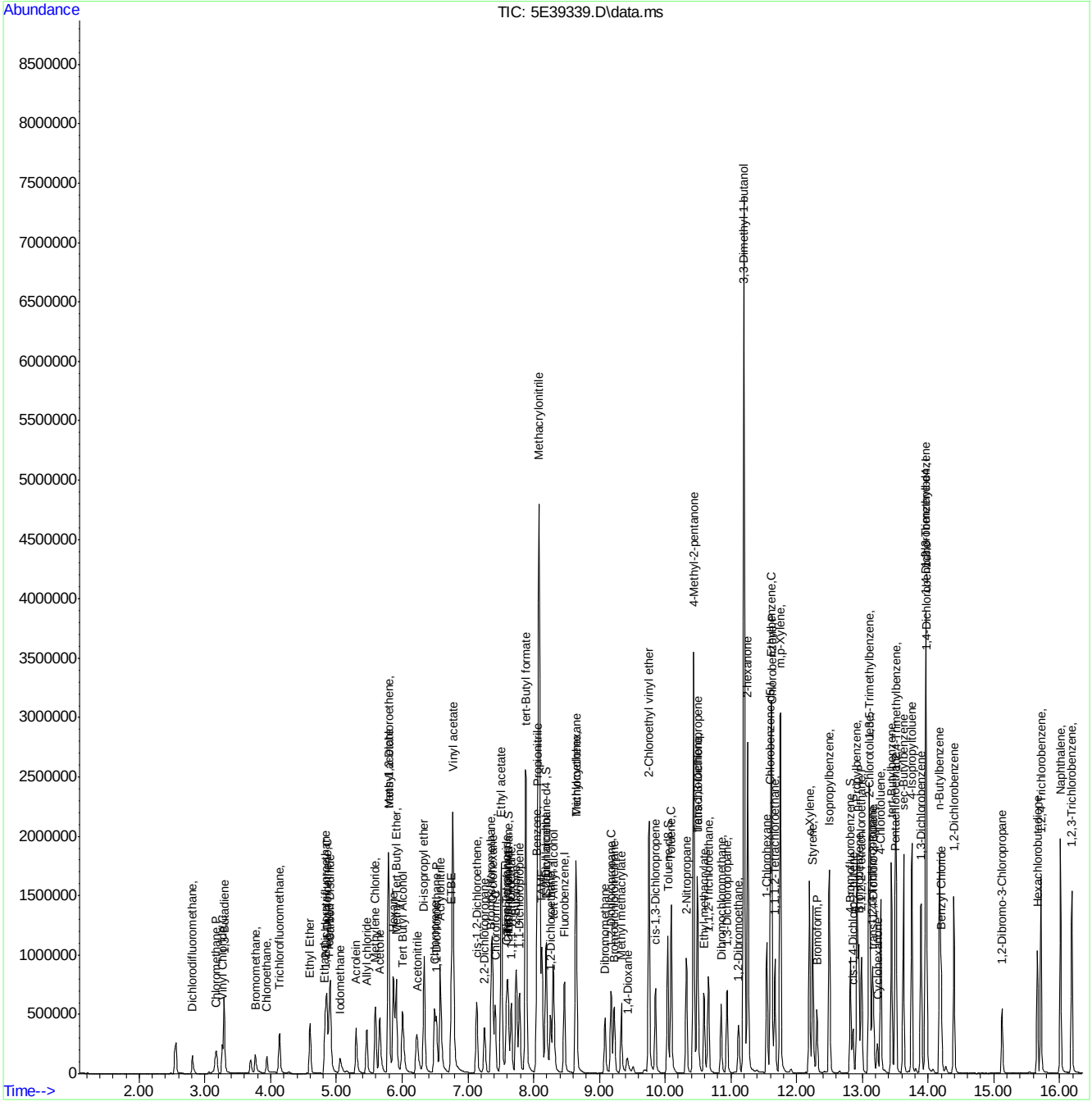
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92) 2-Chlorotoluene	13.115	91	826718	56.45	ug/L		97
93) trans-1,4-Dichloro-2-B...	13.170	53	102004	71.34	ug/L	#	59
94) 1,2,3-Trichloropropane	13.152	110	119985	76.39	ug/L		98
95) Cyclohexanone	13.231	55	106995	694.68	ug/L		93
96) 4-Chlorotoluene	13.280	91	775827	60.17	ug/L		100
98) tert-Butylbenzene	13.444	91	504830	57.28	ug/L		96
99) 1,2,4-Trimethylbenzene	13.511	105	919102	59.05	ug/L		96
100) Pentachloroethane	13.499	167	136478	56.67	ug/L		94
101) sec-Butylbenzene	13.627	105	1165130	59.37	ug/L		98
102) 4-Isopropyltoluene	13.755	119	1027148	60.77	ug/L		97
103) 1,3-Dichlorobenzene	13.895	146	560707	61.94	ug/L		97
104) 1,2,3-Trimethylbenzene	13.969	105	960982	59.41	ug/L		98
105) 1,4-Dichlorobenzene	13.975	146	567079	58.62	ug/L		98
106) n-Butylbenzene	14.176	92	526125	60.27	ug/L		99
107) Benzyl Chloride	14.200	126	106095	55.13	ug/L		99
108) 1,2-Dichlorobenzene	14.395	146	547599	62.35	ug/L		96
109) 1,2-Dibromo-3-Chloropr...	15.127	75	95445	91.71	ug/L		83
110) Hexachlorobutadiene	15.663	225	160104	75.16	ug/L		93
111) 1,2,4-Trichlorobenzene	15.718	180	449255	77.61	ug/L		97
112) Naphthalene	16.017	128	1369758	85.55	ug/L		100
113) 1,2,3-Trichlorobenzene	16.188	180	425165	82.69	ug/L		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-01-2023\
Data File : 5E39339.D
Acq On : 1 May 2023 6:13 pm
Operator : joannel
Sample : IC1761-6
Misc : MS53796,V5E1761,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 02 06:43:40 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon May 01 15:05:21 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-01-2023\
Data File : 5E39340.D
Acq On : 1 May 2023 6:40 pm
Operator : joannel
Sample : IC1761-7
Misc : MS53796,V5E1761,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 02 06:43:42 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon May 01 15:05:21 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.469	96	637429	50.00	ug/L	0.00
61) Chlorobenzene-d5	11.603	117	560508	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.962	152	343677	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.610	113	193889	53.17	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 106.34%			
49) 1,2-Dichloroethane-d4	8.189	65	197800	44.67	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 89.34%			
62) Toluene-d8	10.042	98	709860	46.24	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 92.48%			
86) 4-Bromofluorobenzene	12.816	95	306072	48.50	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 97.00%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.806	85	223346	82.39	ug/L	99
3) Chloromethane	3.172	50	356043	100.51	ug/L	98
4) Vinyl Chloride	3.263	62	363173	108.71	ug/L	100
5) 1,3-Butadiene	3.294	39	320800	96.52	ug/L	90
6) Bromomethane	3.769	94	158043	103.34	ug/L	97
7) Chloroethane	3.940	64	154300	87.08	ug/L	99
8) Trichlorofluoromethane	4.129	101	364808	84.31	ug/L	99
9) Ethyl Ether	4.604	59	320798	111.82	ug/L	100
10) Ethanol	4.842	45	196765	5650.84	ug/L	78
11) 1,2-Dichlorotrifluoroe...	4.830	67	327301	92.93	ug/L	99
12) 1,1-Dichloroethene	4.854	61	462868	94.92	ug/L	96
13) Freon 113	4.891	101	289664	99.09	ug/L	94
14) Carbon Disulfide	4.903	76	829057	100.27	ug/L	96
15) Iodomethane	5.056	142	299074	120.69	ug/L	96
16) Acrolein	5.305	56	527941	888.63	ug/L	99
17) Allyl chloride	5.458	41	403149	94.93	ug/L	93
18) Methylene Chloride	5.592	49	487820	109.19	ug/L	99
19) Acetone	5.665	43	907599	831.71	ug/L	98
20) Methyl acetate	5.793	43	2300622	854.33	ug/L	99
21) trans-1,2-Dichloroethene	5.793	61	469178	96.13	ug/L	98
22) Hexane	5.866	56	298711	95.09	ug/L	94
23) Methyl Tert Butyl Ether	5.909	73	979620	104.60	ug/L	92
24) Acetonitrile	6.226	41	748333	1631.73	ug/L	98
25) Di-isopropyl ether	6.336	45	1196825	103.49	ug/L	99
26) Chloroprene	6.488	53	507998	111.13	ug/L	98
27) 1,1-Dichloroethane	6.525	63	617379	98.12	ug/L	97
28) Acrylonitrile	6.586	53	1131217	812.52	ug/L	98
29) ETBE	6.756	59	1131300	100.92	ug/L	100
30) Tert Butyl Alcohol	6.019	59	1045332	2324.13	ug/L	94
31) Vinyl acetate	6.775	43	4232107	517.25	ug/L	99
32) cis-1,2-Dichloroethene	7.134	96	345903	103.66	ug/L	96
33) 2,2-Dichloropropane	7.250	77	308834	69.80	ug/L	99
34) Bromochloromethane	7.354	128	167482	101.02	ug/L	95
35) Cyclohexane	7.372	56	601005	95.45	ug/L	96

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-01-2023\
Data File : 5E39340.D
Acq On : 1 May 2023 6:40 pm
Operator : joannel
Sample : IC1761-7
Misc : MS53796,V5E1761,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 02 06:43:42 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon May 01 15:05:21 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
36) Chloroform	7.415	83	577701	103.00	ug/L	98
37) Ethyl acetate	7.506	43	2914643	777.24	ug/L	98
38) Tetrahydrofuran	7.610	42	215322	167.95	ug/L	97
40) Carbon Tetrachloride	7.592	117	413538	96.75	ug/L	98
41) 1,1,1-Trichloroethane	7.659	97	464761	94.47	ug/L	97
42) 2-Butanone	7.738	43	1565184	930.91	ug/L	99
43) 1,1-Dichloropropene	7.787	75	382900	95.48	ug/L	93
44) tert-Butyl formate	7.884	59	1789142	1098.68	ug/L	98
45) Propionitrile	8.067	54	1025927	1577.55	ug/L	94
46) Methacrylonitrile	8.085	41	3224606	1384.50	ug/L	98
47) Benzene	8.049	78	1159971	98.06	ug/L	99
48) TAME	8.128	73	920100	100.25	ug/L	97
50) 1,2-Dichloroethane	8.256	62	461038	92.99	ug/L	98
51) tert Amyl alcohol	8.305	59	837386	2491.84	ug/L	92
52) Trichloroethene	8.646	95	318802	96.29	ug/L	95
53) Methylcyclohexane	8.646	83	503415	92.23	ug/L	98
54) Dibromomethane	9.085	93	227213	106.10	ug/L	95
55) 1,2-Dichloropropane	9.177	63	366518	110.37	ug/L	94
56) Bromodichloromethane	9.225	83	463244	104.03	ug/L	97
57) Methyl methacrylate	9.335	41	445095	123.52	ug/L	91
58) 1,4-Dioxane	9.427	88	169121	5024.91	ug/L	90
59) 2-Chloroethyl vinyl ether	9.756	63	1115136	482.78	ug/L	97
60) cis-1,3-Dichloropropene	9.853	75	489507	103.92	ug/L	95
63) Toluene	10.091	91	1267245	88.61	ug/L	100
64) Isobutyl alcohol	8.195	43	768803	3576.49	ug/L	95
65) 2-Nitropropane	10.323	41	731250	569.75	ug/L	97
66) 4-Methyl-2-pentanone	10.433	43	2992640	662.40	ug/L	97
67) trans-1,3-Dichloropropene	10.493	75	446075	84.32	ug/L	94
68) Tetrachloroethene	10.493	166	392793	93.52	ug/L	98
69) Ethyl methacrylate	10.591	69	477029	100.69	ug/L	95
70) 1,1,2-Trichloroethane	10.658	83	272907	90.41	ug/L	97
71) Dibromochloromethane	10.853	129	404408	97.32	ug/L	97
72) 1,3-Dichloropropane	10.945	76	524047	91.11	ug/L	93
73) 1,2-Dibromoethane	11.115	107	383816	99.09	ug/L	98
74) 3,3-Dimethyl-1-butanol	11.201	57	4587084	11947.66	ug/L	97
75) 2-hexanone	11.256	43	2238067	745.49	ug/L	96
76) 1-Chlorohexane	11.548	91	416197	85.86	ug/L	96
77) Ethylbenzene	11.615	91	1401070	85.14	ug/L	98
78) Chlorobenzene	11.621	112	863813	90.06	ug/L	95
79) 1,1,1,2-Tetrachloroethane	11.670	131	342196	91.08	ug/L	98
80) m,p-Xylene	11.755	91	2223391	165.76	ug/L	99
81) o-Xylene	12.194	91	1174914	85.47	ug/L	99
82) Styrene	12.249	104	922409	92.02	ug/L	98
83) Bromoform	12.310	173	316263	115.86	ug/L	99
84) Isopropylbenzene	12.499	105	1434082	85.08	ug/L	99
87) cis-1,4-Dichloro-2-butene	12.859	53	113380	91.69	ug/L	91
88) n-Propylbenzene	12.920	91	1734434	77.98	ug/L	98
89) Bromobenzene	12.950	156	389988	85.67	ug/L	93
90) 1,1,2,2-Tetrachloroethane	12.987	83	544080	99.40	ug/L	99
91) 1,3,5-Trimethylbenzene	13.103	105	1256874	79.78	ug/L	100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-01-2023\
Data File : 5E39340.D
Acq On : 1 May 2023 6:40 pm
Operator : joannel
Sample : IC1761-7
Misc : MS53796,V5E1761,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 02 06:43:42 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon May 01 15:05:21 2023
Response via : Initial Calibration

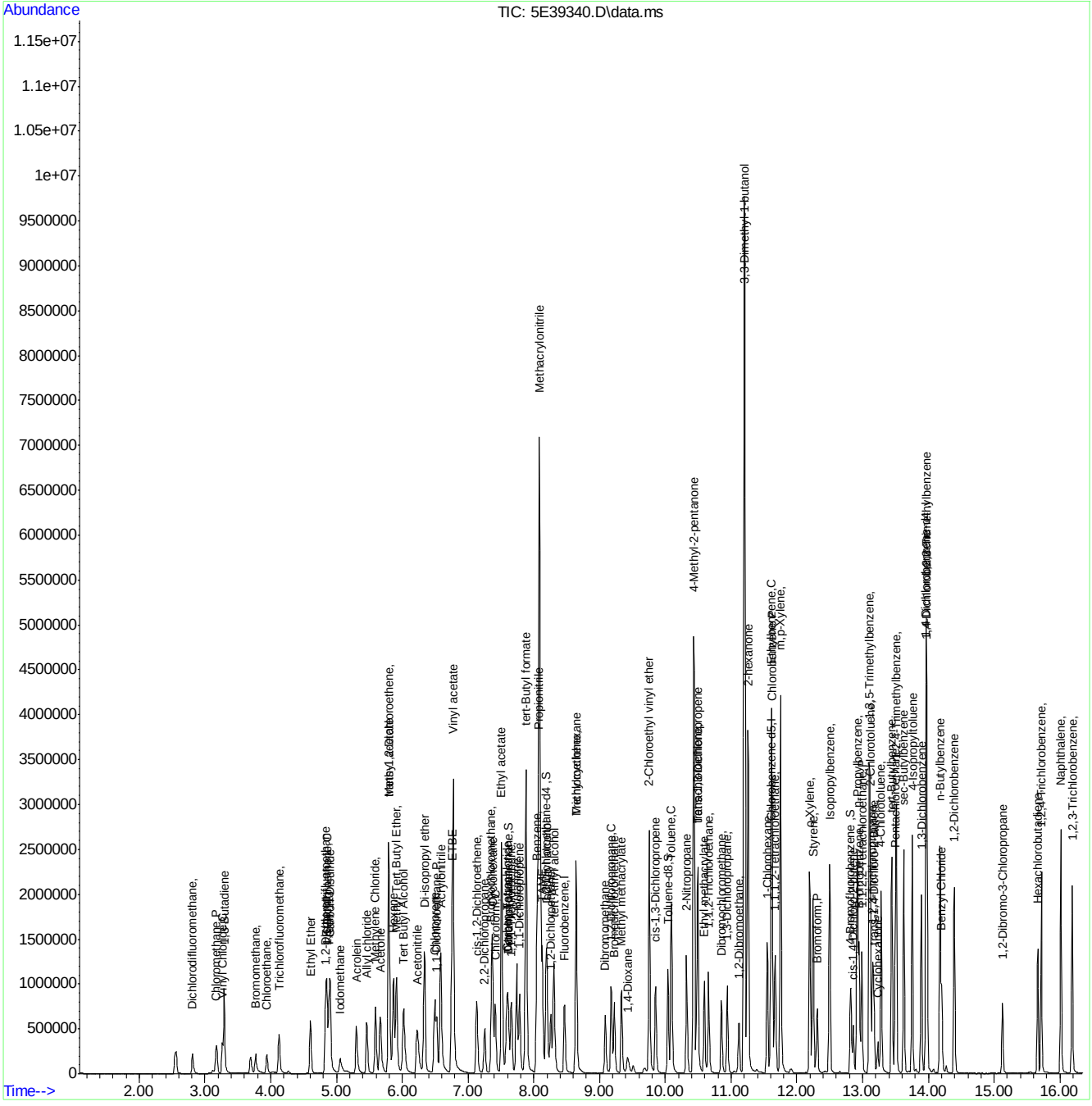
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	13.115	91	1135210	78.00	ug/L		96
93)	trans-1,4-Dichloro-2-B...	13.170	53	133339	91.74	ug/L	#	57
94)	1,2,3-Trichloropropane	13.152	110	163768	104.92	ug/L		97
95)	Cyclohexanone	13.231	55	160783	1102.00	ug/L		94
96)	4-Chlorotoluene	13.280	91	1072257	83.45	ug/L		100
98)	tert-Butylbenzene	13.444	91	686412	78.38	ug/L		95
99)	1,2,4-Trimethylbenzene	13.511	105	1253334	81.04	ug/L		97
100)	Pentachloroethane	13.499	167	201595	82.48	ug/L		97
101)	sec-Butylbenzene	13.627	105	1571384	80.58	ug/L		99
102)	4-Isopropyltoluene	13.755	119	1404104	83.60	ug/L		98
103)	1,3-Dichlorobenzene	13.895	146	769417	85.53	ug/L		98
104)	1,2,3-Trimethylbenzene	13.968	105	1313185	81.70	ug/L		99
105)	1,4-Dichlorobenzene	13.975	146	782792	81.43	ug/L		100
106)	n-Butylbenzene	14.176	92	700501	80.75	ug/L		98
107)	Benzyl Chloride	14.200	126	137515	69.63	ug/L		97
108)	1,2-Dichlorobenzene	14.395	146	749444	85.87	ug/L		98
109)	1,2-Dibromo-3-Chloropr...	15.127	75	133964	129.54	ug/L		82
110)	Hexachlorobutadiene	15.663	225	218898	101.07	ug/L		95
111)	1,2,4-Trichlorobenzene	15.718	180	616177	107.11	ug/L		97
112)	Naphthalene	16.017	128	1891790	118.90	ug/L		100
113)	1,2,3-Trichlorobenzene	16.188	180	584167	114.33	ug/L		96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-01-2023\
Data File : 5E39340.D
Acq On : 1 May 2023 6:40 pm
Operator : joannel
Sample : IC1761-7
Misc : MS53796,V5E1761,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 02 06:43:42 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon May 01 15:05:21 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-01-2023\
Data File : 5E39342.D
Acq On : 1 May 2023 7:33 pm
Operator : joannel
Sample : ICV1761-5
Misc : MS53796,V5E1761,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 02 08:25:49 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.470	96	663202	50.00	ug/L	0.00
61) Chlorobenzene-d5	11.603	117	577565	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.962	152	348580	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.610	113	199767	50.06	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.12%			
49) 1,2-Dichloroethane-d4	8.183	65	200435	47.85	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 95.70%			
62) Toluene-d8	10.042	98	731910	50.58	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 101.16%			
86) 4-Bromofluorobenzene	12.816	95	308248	50.29	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.58%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.806	85	138032	60.76	ug/L	100
3) Chloromethane	3.166	50	190003	47.19	ug/L	97
4) Vinyl Chloride	3.263	62	170924	46.59	ug/L	100
5) 1,3-Butadiene	3.294	39	155851	43.88	ug/L	92
6) Bromomethane	3.763	94	79104	46.31	ug/L	98
7) Chloroethane	3.946	64	69280	43.73	ug/L	98
8) Trichlorofluoromethane	4.141	101	203788	47.90	ug/L	99
9) Ethyl Ether	4.592	59	149681	47.12	ug/L	98
10) Ethanol	4.800	45	78924	784.94	ug/L	79
11) 1,2-Dichlorotrifluoroe...	4.836	67	170614	47.85	ug/L	97
12) 1,1-Dichloroethene	4.860	61	216101	43.57	ug/L	97
13) Freon 113	4.897	101	150300	48.82	ug/L	98
14) Carbon Disulfide	4.915	76	396748	44.06	ug/L	94
15) Iodomethane	5.062	142	106190	42.03	ug/L	99
16) Acrolein	5.293	56	243443	222.89	ug/L	99
17) Allyl chloride	5.464	41	183547	41.78	ug/L	95
18) Methylene Chloride	5.592	49	221134	40.29	ug/L	99
19) Acetone	5.653	43	357186	201.69	ug/L	97
20) Methyl acetate	5.787	43	897197	201.91	ug/L	99
21) trans-1,2-Dichloroethene	5.793	61	215998	43.22	ug/L	98
22) Hexane	5.872	56	151569	44.97	ug/L	95
23) Methyl Tert Butyl Ether	5.903	73	442003	44.55	ug/L	97
24) Acetonitrile	6.220	41	318048	407.77	ug/L	99
25) Di-isopropyl ether	6.330	45	525154	41.23	ug/L	96
26) Chloroprene	6.494	53	204038	39.29	ug/L	97
27) 1,1-Dichloroethane	6.525	63	271913	41.18	ug/L	100
28) Acrylonitrile	6.580	53	442912	188.58	ug/L	97
29) ETBE	6.750	59	521738	44.56	ug/L	99
30) Tert Butyl Alcohol	5.994	59	443026	422.53	ug/L	95
31) Vinyl acetate	6.775	43	1787060	193.90	ug/L	99
32) cis-1,2-Dichloroethene	7.134	96	151488	41.64	ug/L	96
33) 2,2-Dichloropropane	7.256	77	134648	34.50	ug/L	99
34) Bromochloromethane	7.354	128	72507	41.35	ug/L	93
35) Cyclohexane	7.372	56	296293	44.92	ug/L	97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-01-2023\
Data File : 5E39342.D
Acq On : 1 May 2023 7:33 pm
Operator : joannel
Sample : ICV1761-5
Misc : MS53796,V5E1761,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 02 08:25:49 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
36) Chloroform	7.415	83	259410	43.01	ug/L	99
37) Ethyl acetate	7.506	43	1183293	178.97	ug/L	98
38) Tetrahydrofuran	7.604	42	89575	39.25	ug/L	93
40) Carbon Tetrachloride	7.592	117	193014	43.75	ug/L	99
41) 1,1,1-Trichloroethane	7.659	97	216530	43.38	ug/L	99
42) 2-Butanone	7.732	43	651435	218.63	ug/L	99
43) 1,1-Dichloropropene	7.787	75	185550	45.22	ug/L	93
44) tert-Butyl formate	7.878	59	871901	444.96	ug/L	98
45) Propionitrile	8.061	54	430680	392.38	ug/L	95
46) Methacrylonitrile	8.079	41	1402756	393.99	ug/L	98
47) Benzene	8.049	78	528035	42.83	ug/L	93
48) TAME	8.122	73	405409	42.16	ug/L	98
50) 1,2-Dichloroethane	8.256	62	204020	42.18	ug/L	97
51) tert Amyl alcohol	8.293	59	345816	393.02	ug/L	94
52) Trichloroethene	8.646	95	145189	42.35	ug/L	97
53) Methylcyclohexane	8.646	83	247940	44.34	ug/L	98
54) Dibromomethane	9.085	93	100723	41.92	ug/L	97
55) 1,2-Dichloropropane	9.177	63	165363	44.72	ug/L	92
56) Bromodichloromethane	9.225	83	189251	40.56	ug/L	97
57) Methyl methacrylate	9.329	41	179816	38.83	ug/L	95
58) 1,4-Dioxane	9.421	88	65625	747.56	ug/L	88
59) 2-Chloroethyl vinyl ether	9.756	63	506075	204.56	ug/L	98
60) cis-1,3-Dichloropropene	9.853	75	209060	40.40	ug/L	93
63) Toluene	10.091	91	568108	41.21	ug/L	100
64) Isobutyl alcohol	8.183	43	318397	789.09	ug/L	96
65) 2-Nitropropane	10.323	41	303384	195.65	ug/L	98
66) 4-Methyl-2-pentanone	10.433	43	1309685	213.72	ug/L	97
67) trans-1,3-Dichloropropene	10.494	75	173394	36.56	ug/L	94
68) Tetrachloroethene	10.494	166	192639	46.61	ug/L	97
69) Ethyl methacrylate	10.591	69	213157	42.82	ug/L	95
70) 1,1,2-Trichloroethane	10.658	83	116814	41.28	ug/L	95
71) Dibromochloromethane	10.853	129	172447	42.89	ug/L	98
72) 1,3-Dichloropropane	10.945	76	237583	44.03	ug/L	95
73) 1,2-Dibromoethane	11.115	107	159445	39.73	ug/L	99
74) 3,3-Dimethyl-1-butanol	11.195	57	1906955	2006.89	ug/L	97
75) 2-hexanone	11.256	43	967500	219.08	ug/L	95
76) 1-Chlorohexane	11.548	91	193605	43.40	ug/L	95
77) Ethylbenzene	11.615	91	620513	40.15	ug/L	98
78) Chlorobenzene	11.621	112	374861	39.71	ug/L	96
79) 1,1,1,2-Tetrachloroethane	11.670	131	144605	40.15	ug/L	97
80) m,p-Xylene	11.755	91	985159	83.37	ug/L	98
81) o-Xylene	12.194	91	499307	40.26	ug/L	97
82) Styrene	12.249	104	400754	41.15	ug/L	98
83) Bromoform	12.310	173	127295	40.69	ug/L	98
84) Isopropylbenzene	12.499	105	638729	41.69	ug/L	99
87) cis-1,4-Dichloro-2-butene	12.859	53	41290	40.01	ug/L	94
88) n-Propylbenzene	12.920	91	762237	41.63	ug/L	97
89) Bromobenzene	12.950	156	174235	42.71	ug/L	87
90) 1,1,2,2-Tetrachloroethane	12.987	83	228358	39.72	ug/L	99
91) 1,3,5-Trimethylbenzene	13.103	105	557601	42.41	ug/L	98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-01-2023\
Data File : 5E39342.D
Acq On : 1 May 2023 7:33 pm
Operator : joannel
Sample : ICV1761-5
Misc : MS53796,V5E1761,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 02 08:25:49 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

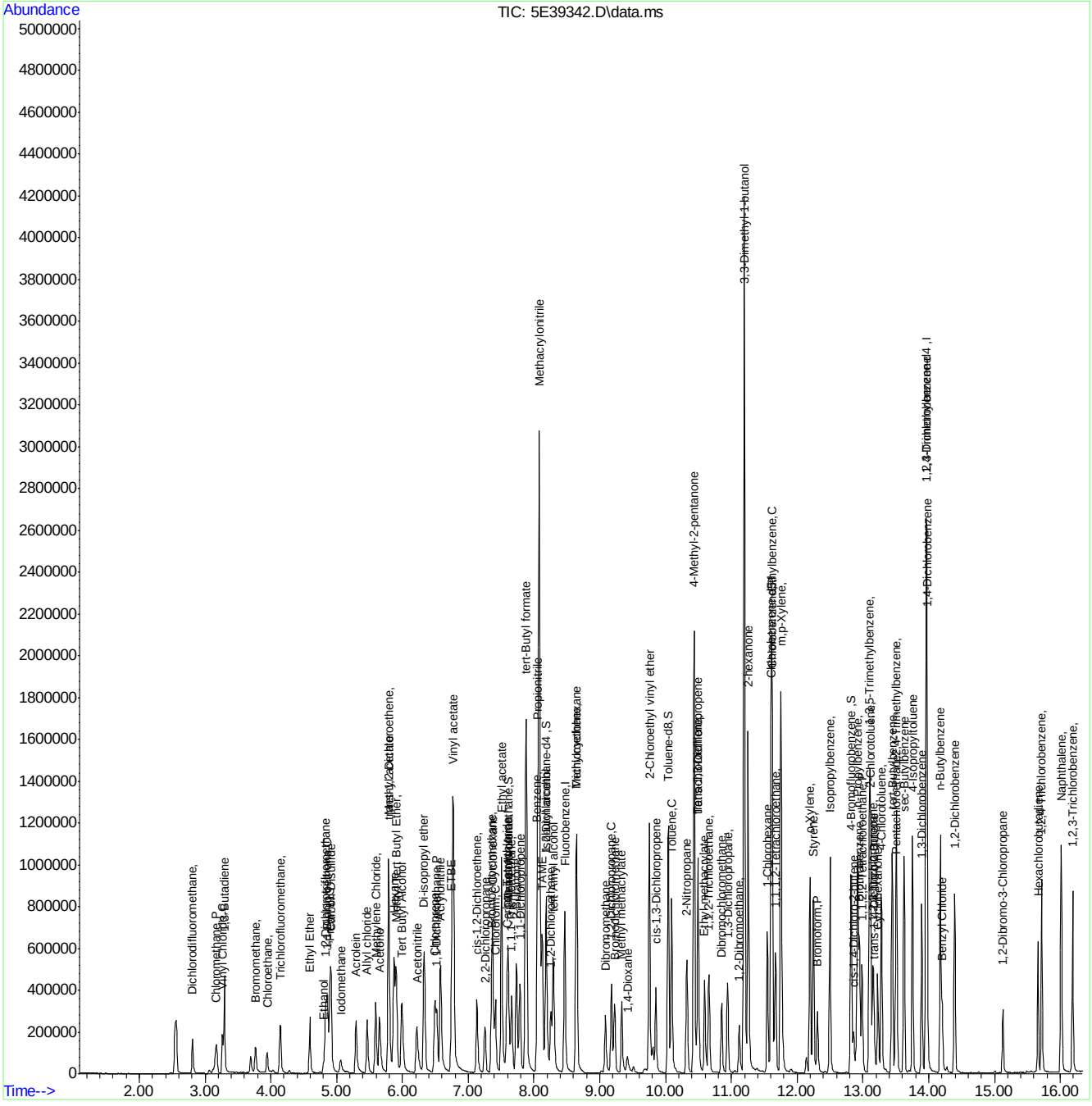
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	13.115	91	490868	40.96	ug/L		97
93)	trans-1,4-Dichloro-2-B...	13.170	53	46083	32.67	ug/L	#	45
94)	1,2,3-Trichloropropane	13.152	110	72103	42.04	ug/L		96
95)	Cyclohexanone	13.225	55	212991	732.44	ug/L		93
96)	4-Chlorotoluene	13.280	91	458244	39.63	ug/L		99
98)	tert-Butylbenzene	13.444	91	304366	42.06	ug/L		95
99)	1,2,4-Trimethylbenzene	13.511	105	547939	41.65	ug/L		96
100)	Pentachloroethane	13.499	167	76263	33.96	ug/L		94
101)	sec-Butylbenzene	13.627	105	663827	39.87	ug/L		98
102)	4-Isopropyltoluene	13.755	119	600419	40.73	ug/L		97
103)	1,3-Dichlorobenzene	13.895	146	320824	40.44	ug/L		97
104)	1,2,3-Trimethylbenzene	13.968	105	546983	39.85	ug/L		99
105)	1,4-Dichlorobenzene	13.975	146	330448	40.00	ug/L		98
106)	n-Butylbenzene	14.176	92	316939	42.70	ug/L		98
107)	Benzyl Chloride	14.206	126	44711	30.35	ug/L		94
108)	1,2-Dichlorobenzene	14.395	146	316607	40.34	ug/L		98
109)	1,2-Dibromo-3-Chloropr...	15.127	75	55003	42.75	ug/L		80
110)	Hexachlorobutadiene	15.663	225	98309	42.21	ug/L		95
111)	1,2,4-Trichlorobenzene	15.718	180	257718	41.65	ug/L		98
112)	Naphthalene	16.017	128	768740	40.10	ug/L		100
113)	1,2,3-Trichlorobenzene	16.188	180	246252	41.09	ug/L		96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-01-2023\
Data File : 5E39342.D
Acq On : 1 May 2023 7:33 pm
Operator : joannel
Sample : ICV1761-5
Misc : MS53796,V5E1761,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 02 08:25:49 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-04-2023\
Data File : 5E39457.D
Acq On : 4 May 2023 11:32 am
Operator : joannel
Sample : CC1761-5
Misc : MS53926,V5E1766,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 04 11:53:26 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.469	96	433847	50.00	ug/L	0.00
61) Chlorobenzene-d5	11.603	117	329858	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.962	152	198756	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.610	113	133015	50.95	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.90%			
49) 1,2-Dichloroethane-d4	8.183	65	158617	57.89	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 115.78%			
62) Toluene-d8	10.042	98	444152	53.74	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 107.48%			
86) 4-Bromofluorobenzene	12.816	95	166008	47.50	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 95.00%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.812	85	52410	35.26	ug/L	97
3) Chloromethane	3.153	50	97921	36.60	ug/L	97
4) Vinyl Chloride	3.269	62	91875	38.37	ug/L	98
5) 1,3-Butadiene	3.294	39	119180	55.13	ug/L	94
6) Bromomethane	3.769	94	44156	39.06	ug/L	99
7) Chloroethane	3.946	64	38478	37.13	ug/L	92
8) Trichlorofluoromethane	4.153	101	119852	42.68	ug/L	99
9) Ethyl Ether	4.586	59	78567	37.81	ug/L	98
10) Ethanol	4.799	45	35704	542.82	ug/L	97
11) 1,2-Dichlorotrifluoroe...	4.830	67	78767	33.39	ug/L	98
12) 1,1-Dichloroethene	4.860	61	120028	37.00	ug/L	98
13) Freon 113	4.903	101	71680	35.41	ug/L	94
14) Carbon Disulfide	4.921	76	192990	32.47	ug/L	97
15) Iodomethane	5.061	142	67090	40.82	ug/L	94
16) Acrolein	5.293	56	115466	161.61	ug/L	99
17) Allyl chloride	5.464	41	99992	34.41	ug/L	100
18) Methylene Chloride	5.598	49	130646	36.18	ug/L	94
19) Acetone	5.647	43	186334	160.84	ug/L	97
20) Methyl acetate	5.787	43	482852	166.11	ug/L	98
21) trans-1,2-Dichloroethene	5.793	61	120327	36.81	ug/L	96
22) Hexane	5.872	56	80366	36.45	ug/L	94
23) Methyl Tert Butyl Ether	5.903	73	240799	37.10	ug/L	98
24) Acetonitrile	6.214	41	149535	291.66	ug/L	98
25) Di-isopropyl ether	6.330	45	306407	36.78	ug/L	99
26) Chloroprene	6.494	53	132256	38.94	ug/L	97
27) 1,1-Dichloroethane	6.525	63	155717	36.05	ug/L	96
28) Acrylonitrile	6.573	53	237418	154.52	ug/L	99
29) ETBE	6.750	59	290646	37.95	ug/L	98
30) Tert Butyl Alcohol	5.982	59	192859	281.18	ug/L	98
31) Vinyl acetate	6.768	43	1061752	175.41	ug/L	99
32) cis-1,2-Dichloroethene	7.134	96	79359	33.35	ug/L	99
33) 2,2-Dichloropropane	7.256	77	106311	42.59	ug/L	98
34) Bromochloromethane	7.354	128	40003	34.87	ug/L	96
35) Cyclohexane	7.372	56	153047	35.17	ug/L	95

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-04-2023\
Data File : 5E39457.D
Acq On : 4 May 2023 11:32 am
Operator : joannel
Sample : CC1761-5
Misc : MS53926,V5E1766,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 04 11:53:26 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
36) Chloroform	7.415	83	146370	37.10	ug/L	98
37) Ethyl acetate	7.506	43	639872	147.94	ug/L	99
38) Tetrahydrofuran	7.604	42	43496	29.14	ug/L	93
40) Carbon Tetrachloride	7.591	117	115544	40.03	ug/L	98
41) 1,1,1-Trichloroethane	7.659	97	131620	40.31	ug/L	98
42) 2-Butanone	7.732	43	316554	162.40	ug/L	94
43) 1,1-Dichloropropene	7.787	75	96482	35.94	ug/L	96
44) tert-Butyl formate	7.878	59	409185	319.22	ug/L	99
45) Propionitrile	8.061	54	199128	274.73	ug/L	91
46) Methacrylonitrile	8.079	41	711353	305.42	ug/L	98
47) Benzene	8.049	78	268850	33.33	ug/L	89
48) TAME	8.122	73	220538	35.06	ug/L	95
50) 1,2-Dichloroethane	8.256	62	131888	41.68	ug/L	100
51) tert Amyl alcohol	8.293	59	141345	245.56	ug/L	95
52) Trichloroethene	8.646	95	82682	36.86	ug/L	94
53) Methylcyclohexane	8.646	83	124305	33.60	ug/L	95
54) Dibromomethane	9.085	93	56802	36.14	ug/L	96
55) 1,2-Dichloropropane	9.177	63	84670	35.00	ug/L	96
56) Bromodichloromethane	9.225	83	115718	37.91	ug/L	99
57) Methyl methacrylate	9.329	41	101037	33.28	ug/L	96
58) 1,4-Dioxane	9.414	88	29611	515.63	ug/L	98
59) 2-Chloroethyl vinyl ether	9.756	63	189202	116.91	ug/L	94
60) cis-1,3-Dichloropropene	9.853	75	112364	33.19	ug/L	96
63) Toluene	10.091	91	295113	37.36	ug/L	99
64) Isobutyl alcohol	8.177	43	124101	533.71	ug/L	97
65) 2-Nitropropane	10.323	41	178646	201.72	ug/L	99
66) 4-Methyl-2-pentanone	10.432	43	653503	186.72	ug/L	99
67) trans-1,3-Dichloropropene	10.493	75	101437	37.45	ug/L	89
68) Tetrachloroethene	10.493	166	93036	39.41	ug/L	96
69) Ethyl methacrylate	10.591	69	98719	34.56	ug/L	92
70) 1,1,2-Trichloroethane	10.658	83	64503	39.91	ug/L	94
71) Dibromochloromethane	10.853	129	99603	43.37	ug/L	92
72) 1,3-Dichloropropane	10.944	76	124031	40.24	ug/L	99
73) 1,2-Dibromoethane	11.121	107	90306	39.40	ug/L	100
74) 3,3-Dimethyl-1-butanol	11.194	57	704196	1297.63	ug/L	95
75) 2-hexanone	11.255	43	470293	186.46	ug/L	100
76) 1-Chlorohexane	11.548	91	101893	40.00	ug/L	92
77) Ethylbenzene	11.615	91	347293	39.31	ug/L	97
78) Chlorobenzene	11.621	112	212591	39.42	ug/L	93
79) 1,1,1,2-Tetrachloroethane	11.670	131	86224	41.92	ug/L	97
80) m,p-Xylene	11.755	91	557530	82.61	ug/L	99
81) o-Xylene	12.194	91	288299	40.70	ug/L	99
82) Styrene	12.249	104	220945	39.72	ug/L	99
83) Bromoform	12.310	173	71234	39.87	ug/L	99
84) Isopropylbenzene	12.499	105	366579	41.89	ug/L	99
87) cis-1,4-Dichloro-2-butene	12.859	53	11306	19.99	ug/L	84
88) n-Propylbenzene	12.920	91	431335	41.31	ug/L	98
89) Bromobenzene	12.944	156	95850	41.21	ug/L	97
90) 1,1,2,2-Tetrachloroethane	12.987	83	119941	36.59	ug/L	97
91) 1,3,5-Trimethylbenzene	13.103	105	320247	42.72	ug/L	97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-04-2023\
Data File : 5E39457.D
Acq On : 4 May 2023 11:32 am
Operator : joannel
Sample : CC1761-5
Misc : MS53926,V5E1766,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 04 11:53:26 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

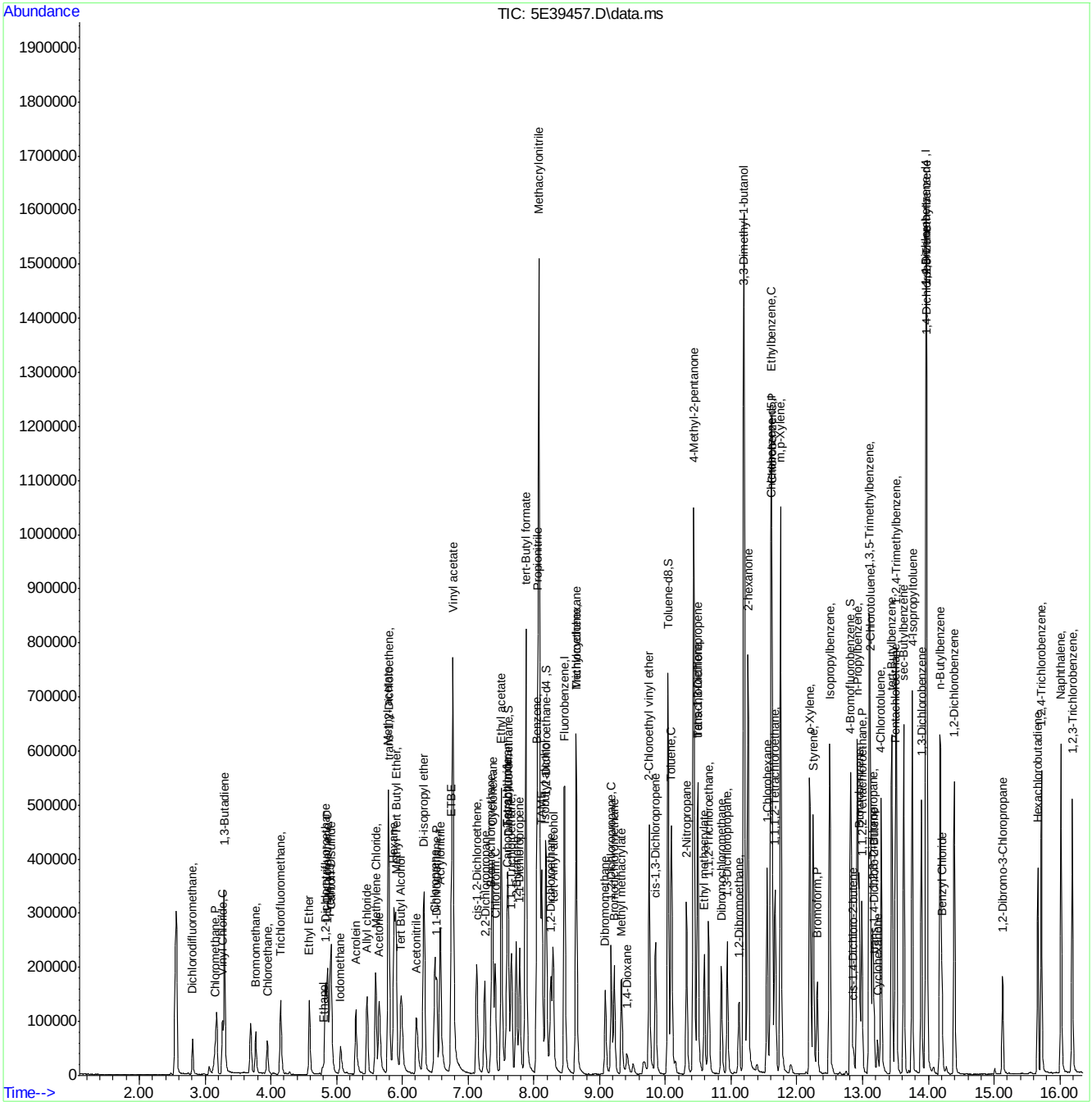
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	13.115	91	286588	41.94	ug/L		96
93)	trans-1,4-Dichloro-2-B...	13.170	53	18645	23.11	ug/L	#	39
94)	1,2,3-Trichloropropane	13.157	110	38512	39.38	ug/L		96
95)	Cyclohexanone	13.225	55	30097	151.45	ug/L		96
96)	4-Chlorotoluene	13.279	91	270886	41.15	ug/L		99
98)	tert-Butylbenzene	13.444	91	184814	44.79	ug/L		96
99)	1,2,4-Trimethylbenzene	13.511	105	321913	42.91	ug/L		97
100)	Pentachloroethane	13.499	167	54002	42.87	ug/L		94
101)	sec-Butylbenzene	13.627	105	404800	42.64	ug/L		99
102)	4-Isopropyltoluene	13.755	119	359386	42.76	ug/L		99
103)	1,3-Dichlorobenzene	13.895	146	194900	43.09	ug/L		97
104)	1,2,3-Trimethylbenzene	13.968	105	336506	42.99	ug/L		99
105)	1,4-Dichlorobenzene	13.974	146	201380	42.76	ug/L		97
106)	n-Butylbenzene	14.176	92	174888	41.32	ug/L		98
107)	Benzyl Chloride	14.206	126	27287	32.52	ug/L		94
108)	1,2-Dichlorobenzene	14.395	146	191425	42.78	ug/L		98
109)	1,2-Dibromo-3-Chloropr...	15.127	75	27976	38.13	ug/L		96
110)	Hexachlorobutadiene	15.663	225	55995	42.17	ug/L		98
111)	1,2,4-Trichlorobenzene	15.718	180	150173	42.57	ug/L		99
112)	Naphthalene	16.017	128	412762	37.76	ug/L		99
113)	1,2,3-Trichlorobenzene	16.187	180	139177	40.73	ug/L		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\05-04-2023\
Data File : 5E39457.D
Acq On : 4 May 2023 11:32 am
Operator : joannel
Sample : CC1761-5
Misc : MS53926,V5E1766,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 04 11:53:26 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-05-2023\V5E1766\
Data File : 5E39484.d
Acq On : 4 May 2023 11:02 pm
Operator : joannel
Sample : ECC1761-5
Misc : MS53934,V5E1766,,,,,
ALS Vial : 29 Sample Multiplier: 1

Quant Time: May 04 23:37:17 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.470	96	456391	50.00	ug/L	0.00
61) Chlorobenzene-d5	11.603	117	349279	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.962	152	205961	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.610	113	140885	51.30	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery =	102.60%		
49) 1,2-Dichloroethane-d4	8.183	65	172549	59.86	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery =	119.72%		
62) Toluene-d8	10.043	98	467783	53.45	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery =	106.90%		
86) 4-Bromofluorobenzene	12.816	95	181117	50.01	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery =	100.02%		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.812	85	41467	26.52	ug/L	96
3) Chloromethane	3.160	50	76289	26.72	ug/L	99
4) Vinyl Chloride	3.263	62	68960	27.47	ug/L	97
5) 1,3-Butadiene	3.294	39	89025	34.40	ug/L	93
6) Bromomethane	3.769	94	28419	23.32	ug/L	98
7) Chloroethane	3.946	64	34744	31.87	ug/L	99
8) Trichlorofluoromethane	4.147	101	106368	35.57	ug/L	100
9) Ethyl Ether	4.592	59	64489	29.50	ug/L	97
10) Ethanol	4.794	45	29726	429.61	ug/L	86
11) 1,2-Dichlorotrifluoroe...	4.836	67	56901	22.74	ug/L	91
12) 1,1-Dichloroethene	4.861	61	92004	26.96	ug/L	98
13) Freon 113	4.903	101	50984	23.83	ug/L	94
14) Carbon Disulfide	4.922	76	121436	19.22	ug/L	100
15) Iodomethane	5.062	142	56426	33.74	ug/L	91
16) Acrolein	5.293	56	68863	91.62	ug/L	100
17) Allyl chloride	5.464	41	58570	18.73	ug/L	92
18) Methylene Chloride	5.598	49	77538	19.97	ug/L	99
19) Acetone	5.653	43	142448	116.89	ug/L	92
20) Methyl acetate	5.787	43	306331	100.18	ug/L	99
21) trans-1,2-Dichloroethene	5.793	61	75832	22.05	ug/L	96
22) Hexane	5.873	56	44298	19.10	ug/L	94
23) Methyl Tert Butyl Ether	5.903	73	166662	24.41	ug/L	98
24) Acetonitrile	6.220	41	96002	177.16	ug/L	96
25) Di-isopropyl ether	6.330	45	179787	20.51	ug/L	99
26) Chloroprene	6.494	53	91451	25.59	ug/L	96
27) 1,1-Dichloroethane	6.525	63	99245	21.84	ug/L	98
28) Acrylonitrile	6.580	53	166234	102.85	ug/L	100
29) ETBE	6.750	59	249810	31.00	ug/L	100
30) Tert Butyl Alcohol	5.988	59	150817	209.02	ug/L	96
31) Vinyl acetate	6.775	43	904504	141.01	ug/L	99
32) cis-1,2-Dichloroethene	7.135	96	80583	32.19	ug/L	99
33) 2,2-Dichloropropane	7.256	77	53801	19.23	ug/L	97
34) Bromochloromethane	7.360	128	40798	33.81	ug/L	98
35) Cyclohexane	7.372	56	148757	32.42	ug/L	96
36) Chloroform	7.415	83	139269	33.55	ug/L	98
37) Ethyl acetate	7.506	43	721205	158.51	ug/L	99
38) Tetrahydrofuran	7.604	42	49852	31.75	ug/L	93
40) Carbon Tetrachloride	7.592	117	109766	36.15	ug/L	97
41) 1,1,1-Trichloroethane	7.659	97	122584	35.69	ug/L	100
42) 2-Butanone	7.732	43	365795	178.39	ug/L	95
43) 1,1-Dichloropropene	7.787	75	90261	31.96	ug/L	95
44) tert-Butyl formate	7.878	59	435176	322.72	ug/L	97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-05-2023\V5E1766\
Data File : 5E39484.d
Acq On : 4 May 2023 11:02 pm
Operator : joannel
Sample : ECC1761-5
Misc : MS53934,V5E1766,,,,,
ALS Vial : 29 Sample Multiplier: 1

Quant Time: May 04 23:37:17 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45)	Propionitrile	8.061	54	222601	292.35	ug/L		97
46)	Methacrylonitrile	8.079	41	760323	310.32	ug/L		98
47)	Benzene	8.049	78	256084	30.18	ug/L		87
48)	TAME	8.122	73	212311	32.08	ug/L		95
50)	1,2-Dichloroethane	8.256	62	124421	37.38	ug/L		97
51)	tert Amyl alcohol	8.293	59	161513	266.74	ug/L		96
52)	Trichloroethene	8.646	95	76321	32.35	ug/L		93
53)	Methylcyclohexane	8.646	83	116667	29.87	ug/L		94
54)	Dibromomethane	9.085	93	55145	33.35	ug/L		96
55)	1,2-Dichloropropane	9.177	63	82967	32.60	ug/L		98
56)	Bromodichloromethane	9.226	83	109503	34.10	ug/L		97
57)	Methyl methacrylate	9.335	41	103695	32.46	ug/L		97
58)	1,4-Dioxane	9.421	88	33308	551.36	ug/L		98
59)	2-Chloroethyl vinyl ether	9.756	63	176410	103.62	ug/L		97
60)	cis-1,3-Dichloropropene	9.854	75	104484	29.34	ug/L		95
63)	Toluene	10.091	91	282812	33.70	ug/L		100
64)	Isobutyl alcohol	8.183	43	148465	604.49	ug/L		97
65)	2-Nitropropane	10.323	41	183320	195.49	ug/L		96
66)	4-Methyl-2-pentanone	10.433	43	726233	195.97	ug/L		99
67)	trans-1,3-Dichloropropene	10.494	75	96025	33.48	ug/L		96
68)	Tetrachloroethene	10.494	166	101027	40.42	ug/L		98
69)	Ethyl methacrylate	10.591	69	103363	34.17	ug/L		97
70)	1,1,2-Trichloroethane	10.658	83	63626	37.18	ug/L		97
71)	Dibromochloromethane	10.853	129	97420	40.06	ug/L		95
72)	1,3-Dichloropropane	10.945	76	120636	36.97	ug/L		99
73)	1,2-Dibromoethane	11.115	107	89802	37.00	ug/L		99
74)	3,3-Dimethyl-1-butanol	11.195	57	873989	1520.96	ug/L		96
75)	2-hexanone	11.256	43	532824	199.51	ug/L		100
76)	1-Chlorohexane	11.548	91	95666	35.47	ug/L		96
77)	Ethylbenzene	11.615	91	324022	34.45	ug/L		96
78)	Chlorobenzene	11.621	112	201109	35.07	ug/L		95
79)	1,1,1,2-Tetrachloroethane	11.670	131	82715	37.98	ug/L		99
80)	m,p-Xylene	11.756	91	518888	72.61	ug/L		99
81)	o-Xylene	12.195	91	275725	36.76	ug/L		99
82)	Styrene	12.249	104	209156	35.51	ug/L		98
83)	Bromoform	12.310	173	72624	38.39	ug/L		98
84)	Isopropylbenzene	12.499	105	347467	37.50	ug/L		100
87)	cis-1,4-Dichloro-2-butene	12.859	53	14970	25.27	ug/L		92
88)	n-Propylbenzene	12.920	91	403864	37.33	ug/L		98
89)	Bromobenzene	12.950	156	91026	37.77	ug/L		94
90)	1,1,2,2-Tetrachloroethane	12.987	83	118872	34.99	ug/L		97
91)	1,3,5-Trimethylbenzene	13.103	105	298114	38.38	ug/L		99
92)	2-Chlorotoluene	13.115	91	267199	37.74	ug/L		93
93)	trans-1,4-Dichloro-2-B...	13.170	53	19543	23.38	ug/L	#	46
94)	1,2,3-Trichloropropane	13.158	110	38058	37.55	ug/L		92
95)	Cyclohexanone	13.231	55	36420	178.21	ug/L		92
96)	4-Chlorotoluene	13.280	91	248571	36.26	ug/L		99
98)	tert-Butylbenzene	13.444	91	169328	39.60	ug/L		96
99)	1,2,4-Trimethylbenzene	13.511	105	302003	38.85	ug/L		96
100)	Pentachloroethane	13.499	167	40770	30.54	ug/L		96
101)	sec-Butylbenzene	13.627	105	373151	37.93	ug/L		98
102)	4-Isopropyltoluene	13.755	119	333641	38.30	ug/L		99
103)	1,3-Dichlorobenzene	13.895	146	182190	38.87	ug/L		97
104)	1,2,3-Trimethylbenzene	13.969	105	313681	38.68	ug/L		99
105)	1,4-Dichlorobenzene	13.975	146	187176	38.35	ug/L		98
106)	n-Butylbenzene	14.176	92	153170	34.93	ug/L		95
107)	Benzyl Chloride	14.206	126	14915	17.04	ug/L	#	72
108)	1,2-Dichlorobenzene	14.395	146	180590	38.95	ug/L		97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-05-2023\V5E1766\
Data File : 5E39484.d
Acq On : 4 May 2023 11:02 pm
Operator : joannel
Sample : ECC1761-5
Misc : MS53934,V5E1766,,,,,
ALS Vial : 29 Sample Multiplier: 1

Quant Time: May 04 23:37:17 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration

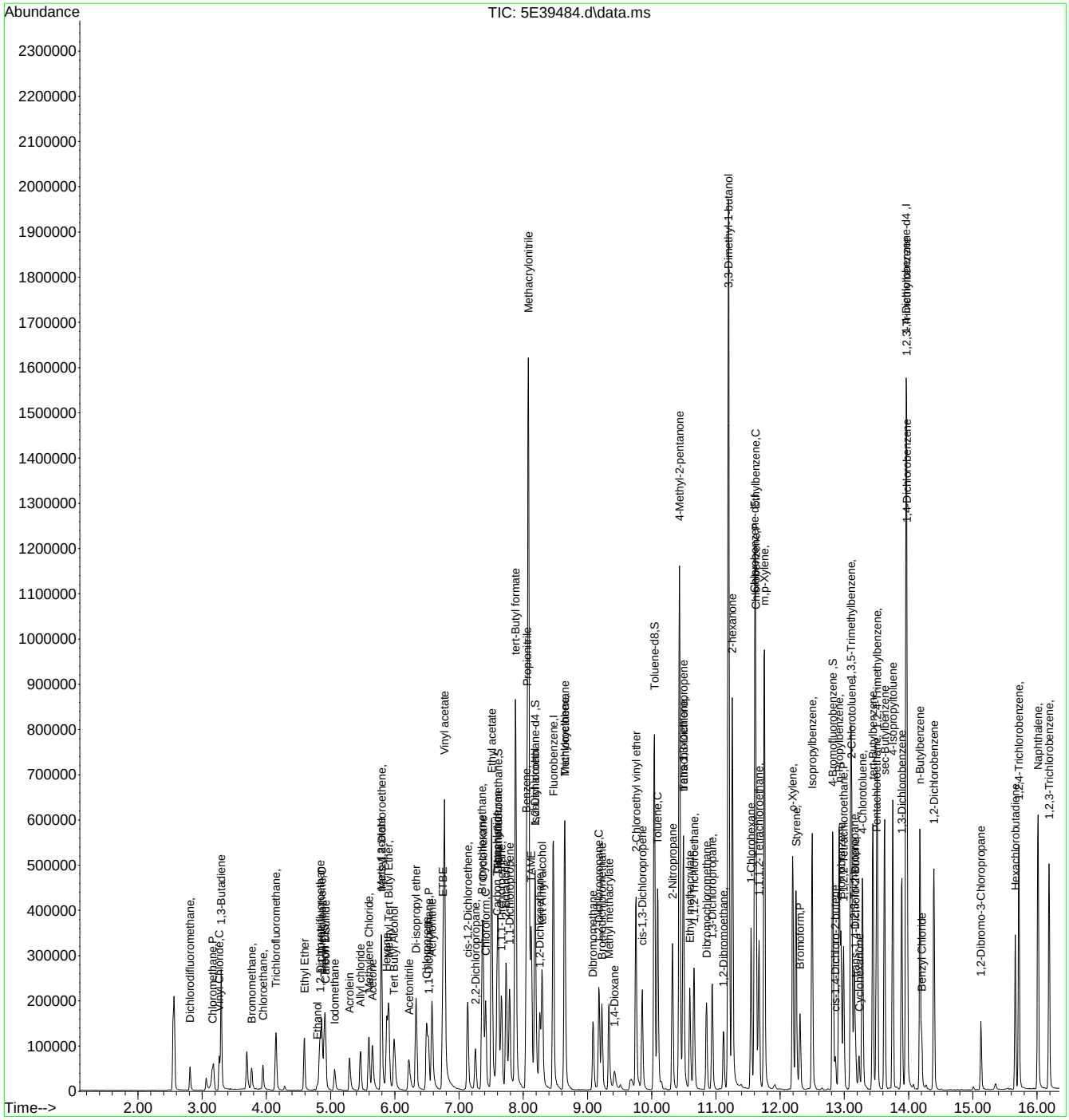
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
109) 1,2-Dibromo-3-Chloropr...	15.127	75	28754	37.82	ug/L	89
110) Hexachlorobutadiene	15.663	225	51891	37.57	ug/L	97
111) 1,2,4-Trichlorobenzene	15.718	180	143397	39.23	ug/L	97
112) Naphthalene	16.017	128	416592	36.78	ug/L	100
113) 1,2,3-Trichlorobenzene	16.188	180	137490	38.83	ug/L	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\celinec\2023\May 2023\05-05-2023\V5E1766\
Data File : 5E39484.d
Acq On : 4 May 2023 11:02 pm
Operator : joannel
Sample : ECC1761-5
Misc : MS53934,V5E1766,,,,,
ALS Vial : 29 Sample Multiplier: 1

Quant Time: May 04 23:37:17 2023
Quant Method : C:\msdchem\1\methods\appIX05-01-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue May 02 08:25:38 2023
Response via : Initial Calibration



Manual Integrations APPROVED (compounds with "m" flag)
Karen Watson
05/04/23 10:19

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-02\
Data File : I756322.D
Acq On : 2 May 2023 9:04 am
Operator : jeniferw
Sample : IC2910-1
Misc : MS53904,VI2910,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 02 11:32:26 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 11:25:12 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorobenzene	7.854	96	574912	50.00	ug/L		0.00
62) Chlorobenzene-d5	11.006	117	410603	50.00	ug/L		0.00
85) 1,4-Dichlorobenzene-d4	13.371	152	199964	50.00	ug/L		0.00
System Monitoring Compounds							
39) Dibromofluoromethane	6.988	113	160953	52.13	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 104.26%				
49) 1,2-Dichloroethane-d4	7.561	65	178422	52.71	ug/L		0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 105.42%				
63) Toluene-d8	9.445	98	564046	47.05	ug/L		0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 94.10%				
86) 4-Bromofluorobenzene	12.225	174	155894	50.39	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.78%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	2.349	85	2175	1.24	ug/L		96
3) Chloromethane	2.641	50	4183	1.72	ug/L		92
4) Vinyl Chloride	2.757	62	3329	1.45	ug/L		97
5) 1,3-Butadiene	2.788	39	3786	1.70	ug/L		99
6) Bromomethane	3.227	94	2736	2.32	ug/L		86
7) Chloroethane	3.391	64	2708	1.44	ug/L		86
8) Trichlorofluoromethane	3.592	101	5268	1.30	ug/L		88
9) Ethyl Ether	4.013	59	2839	1.49	ug/L		89
10) 1,2-Dichlorotrifluoroe...	4.233	67	3033	1.30	ug/L		92
11) 1,1-Dichloroethene	4.263	61	3849	1.22	ug/L		95
12) Ethanol	4.190	45	3317	34.21	ug/L		76
13) Freon 113	4.306	101	2209	1.17	ug/L		94
14) Carbon Disulfide	4.318	76	7969	1.36	ug/L		79
15) Iodomethane	4.440	142	1336	0.81	ug/L		66
16) Acrolein	4.690	56	4589	5.82	ug/L		96
17) Allyl chloride	4.848	41	4292	1.51	ug/L		78
18) Methylene Chloride	4.976	49	5763	1.87	ug/L		85
19) Acetone	5.037	43	12295	7.26	ug/L		99
20) Methyl acetate	5.184	43	18750	5.67	ug/L		99
21) trans-1,2-Dichloroethene	5.190	61	4009	1.24	ug/L		91
22) Hexane	5.275	56	2044	1.31	ug/L	#	57
23) Methyl Tert Butyl Ether	5.299	73	7678	1.16	ug/L		95
24) Tert butyl alcohol	5.397	59	11622	11.70	ug/L		86
25) Acetonitrile	5.604	41	8444	12.92	ug/L		79
26) Di-isopropyl ether	5.732	45	8548	1.10	ug/L		97
27) Chloroprene	5.866	53	3468	1.07	ug/L		72
28) 1,1-Dichloroethane	5.891	63	5292	1.26	ug/L		96
29) Acrylonitrile	5.982	53	6643	4.20	ug/L		98
30) ETBE	6.141	59	7761	1.10	ug/L		96
31) Vinyl acetate	6.141	43	962	0.20	ug/L		59
32) cis-1,2-Dichloroethene	6.519	96	2215	0.94	ug/L		90
33) 2,2-Dichloropropane	6.616	77	3271	0.98	ug/L		90
34) Bromochloromethane	6.750	128	1302	1.14	ug/L	#	79
35) Cyclohexane	6.756	56	3453	0.96	ug/L		85
36) Chloroform	6.799	83	5199	1.35	ug/L		95
37) Ethyl acetate	6.921	43	28298m	6.41	ug/L		
38) Tetrahydrofuran	7.000	42	2934	1.57	ug/L		78
40) Carbon Tetrachloride	6.976	117	3590	1.23	ug/L	#	76
41) 1,1,1-Trichloroethane	7.031	97	3732	1.02	ug/L		88
42) 2-Butanone	7.147	43	11678	4.49	ug/L		80
43) 1,1-Dichloropropene	7.183	75	2806	0.96	ug/L		98
44) tert-Butyl Formate	7.262	59	13208	5.99	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-02\
Data File : I756322.D
Acq On : 2 May 2023 9:04 am
Operator : jeniferw
Sample : IC2910-1
Misc : MS53904,VI2910,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 02 11:32:26 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 11:25:12 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45) Propionitrile	7.439	54	9417	11.32	ug/L	#	42
46) Methacrylonitrile	7.458	41	32906	12.79	ug/L		94
47) Benzene	7.445	78	10189	1.11	ug/L	#	60
48) TAME	7.531	73	7943	1.33	ug/L		93
50) Isobutyl alcohol	7.604	42	6017	26.21	ug/L	#	74
51) 1,2-Dichloroethane	7.659	62	4376	1.39	ug/L		90
52) Tert Amyl Alcohol	7.707	59	10065	11.42	ug/L		94
53) Trichloroethene	8.067	95	3052	1.35	ug/L		90
54) Methylcyclohexane	8.055	83	3032	1.01	ug/L		87
55) Dibromomethane	8.512	93	1842	1.18	ug/L		89
56) 1,2-Dichloropropane	8.573	63	2687	1.11	ug/L		90
57) Bromodichloromethane	8.634	83	3773	1.18	ug/L		96
58) Methyl methacrylate	8.823	41	792	0.30	ug/L	#	76
59) 1,4-Dioxane	8.841	88	653	10.17	ug/L	#	60
60) 2-Chloroethyl vinyl ether	9.201	63	7480	4.24	ug/L		83
61) cis-1,3-Dichloropropene	9.268	75	3760	1.09	ug/L		98
64) Toluene	9.512	91	10964	1.09	ug/L		89
65) 2-Nitropropane	9.707	41	7055	5.30	ug/L		91
66) 4-Methyl-2-pentanone	9.841	43	30730	5.82	ug/L		97
67) trans-1,3-Dichloropropene	9.939	75	2944	0.86	ug/L		93
68) Tetrachloroethene	9.920	166	2629	1.04	ug/L		94
69) Ethyl methacrylate	10.067	69	2310	0.74	ug/L	#	58
70) 1,1,2-Trichloroethane	10.067	83	2359	1.12	ug/L		87
71) Dibromochloromethane	10.268	129	2901	1.09	ug/L		94
72) 1,3-Dichloropropane	10.359	76	3473	0.94	ug/L		81
73) 1,2-Dibromoethane	10.542	107	2246	0.88	ug/L		86
74) 3,3-dimethyl-1-butanol	10.615	57	60303	55.55	ug/L		94
75) 2-hexanone	10.682	43	19882	4.77	ug/L		94
76) 1-Chlorohexane	10.969	91	2300	0.83	ug/L		90
77) Ethylbenzene	11.036	91	11751	1.06	ug/L		90
78) Chlorobenzene	11.024	112	7112	1.09	ug/L		91
79) 1,1,1,2-Tetrachloroethane	11.079	131	2478	1.01	ug/L	#	47
80) m,p-Xylene	11.182	91	14732	1.83	ug/L		98
81) o-Xylene	11.621	91	7813	0.94	ug/L		98
82) Styrene	11.719	104	4510	0.80	ug/L		94
83) Bromoform	11.725	173	1955	0.98	ug/L		82
84) Isopropylbenzene	11.926	105	8741	0.91	ug/L		89
87) cis-1,4-Dichloro-2-butene	12.298	53	591m	0.68	ug/L		
88) n-Propylbenzene	12.359	91	11449	1.01	ug/L		100
89) Bromobenzene	12.365	156	2907	1.29	ug/L		89
90) 1,1,2,2-Tetrachloroethane	12.396	83	4754	1.30	ug/L		82
91) 1,3,5-Trimethylbenzene	12.524	105	7001	0.93	ug/L		89
92) 2-Chlorotoluene	12.536	91	8944	1.15	ug/L		95
93) trans-1,4-Dichloro-2-B...	12.609	53	469	0.48	ug/L	#	29
94) 1,2,3-Trichloropropane	12.554	110	1168	0.96	ug/L		85
95) Cyclohexanone	12.621	55	1606	5.75	ug/L		85
96) 4-Chlorotoluene	12.707	91	6830	1.07	ug/L		95
97) tert-Butylbenzene	12.865	91	4589	1.11	ug/L		85
98) 1,2,4-Trimethylbenzene	12.944	105	6811	0.93	ug/L		97
99) Pentachloroethane	12.908	167	1604	1.15	ug/L		90
100) sec-Butylbenzene	13.048	105	8529	0.96	ug/L		92
101) 4-Isopropyltoluene	13.176	119	6446	0.87	ug/L		99
102) 1,3-Dichlorobenzene	13.328	146	4791	1.09	ug/L		91
103) 1,2,3-Trimethylbenzene	13.395	105	8580	1.14	ug/L		88
104) 1,4-Dichlorobenzene	13.389	146	5984	1.40	ug/L		88
105) n-Butylbenzene	13.645	92	3292	0.88	ug/L	#	57
106) Benzyl Chloride	13.651	126	642	0.51	ug/L	#	1
107) 1,2-Dichlorobenzene	13.847	146	4259	0.99	ug/L		95

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-02\
Data File : I756322.D
Acq On : 2 May 2023 9:04 am
Operator : jeniferw
Sample : IC2910-1
Misc : MS53904,VI2910,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 02 11:32:26 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 11:25:12 2023
Response via : Initial Calibration

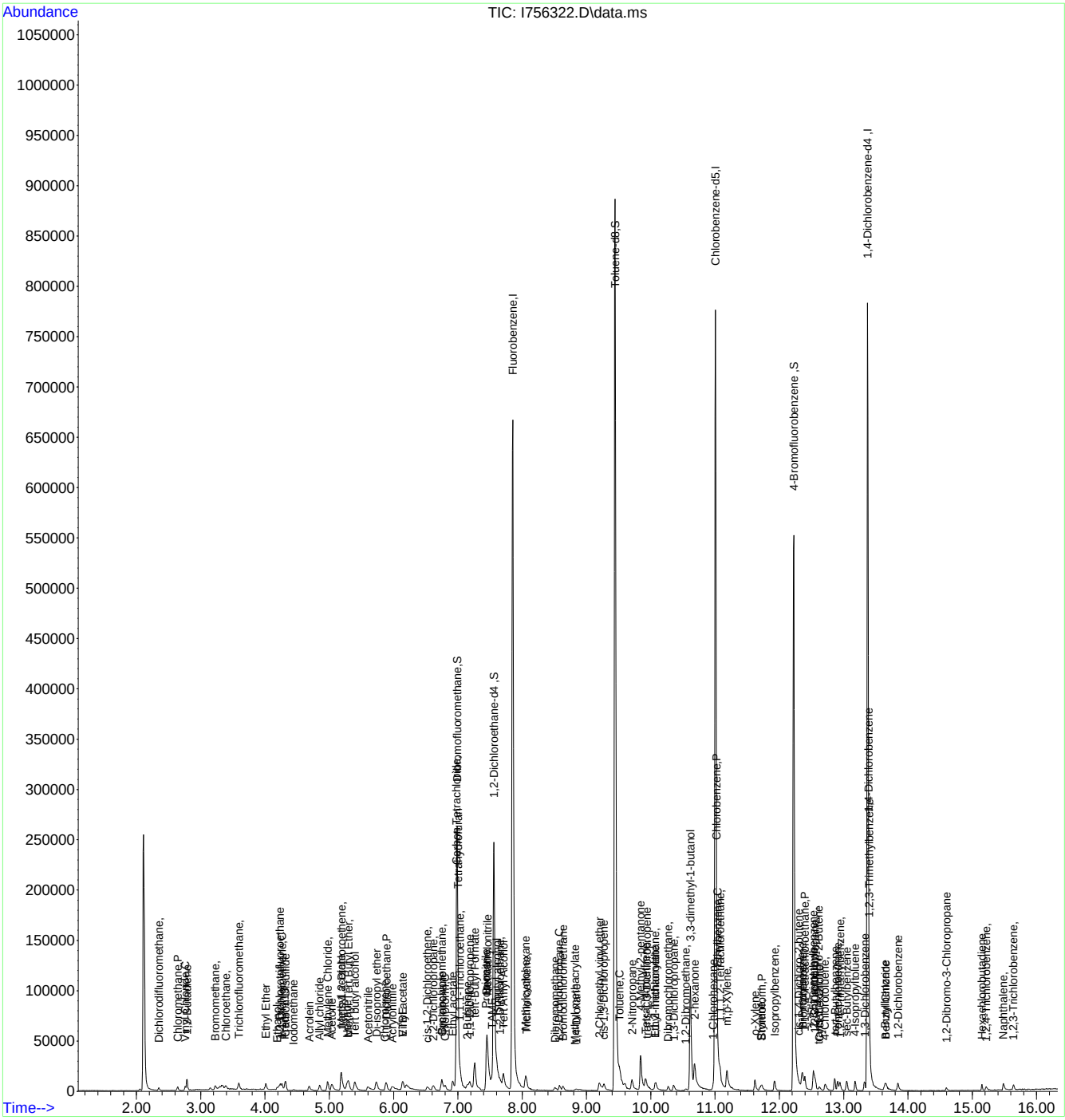
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
108) 1,2-Dibromo-3-Chloropr...	14.596	75	858	0.84	ug/L	82
109) Hexachlorobutadiene	15.151	225	1069	1.14	ug/L	87
110) 1,2,4-Trichlorobenzene	15.218	180	1885	0.78	ug/L	93
111) Naphthalene	15.480	128	8097	0.86	ug/L	92
112) 1,2,3-Trichlorobenzene	15.639	180	2566	1.07	ug/L	85

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-02\
Data File : I756322.D
Acq On : 2 May 2023 9:04 am
Operator : jeniferw
Sample : IC2910-1
Misc : MS53904,VI2910,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 02 11:32:26 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 11:25:12 2023
Response via : Initial Calibration



Manual Integration Approval Summary

Sample Number: VI2910-IC2910
Lab FileID: I756322.D
Injection Time: 05/02/23 09:04

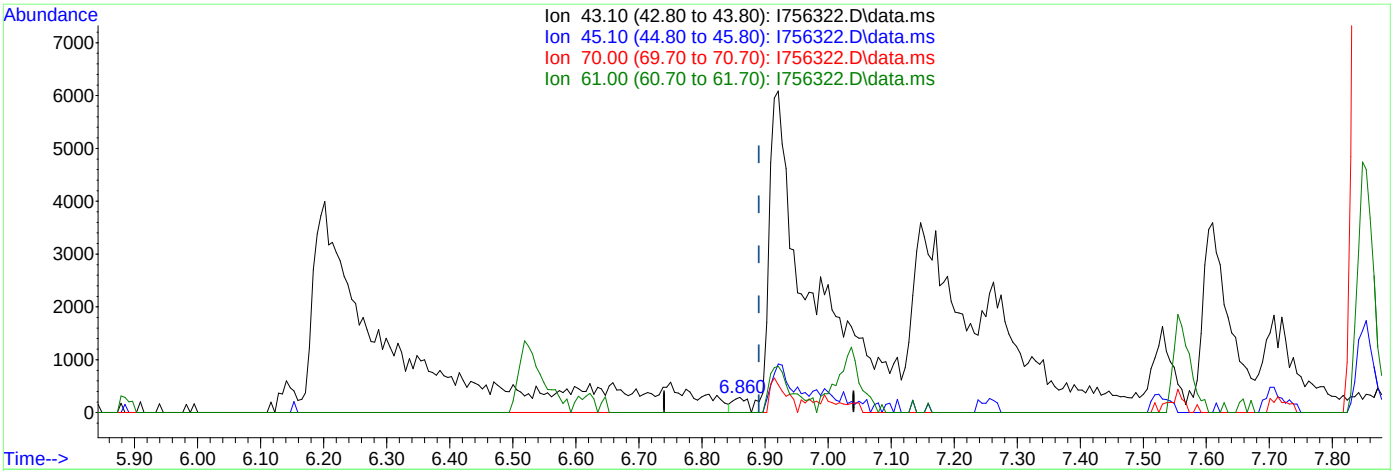
Method: SW846 8260D
Analyst approved: 05/02/23 13:46 Jenifer Willis
Supervisor approved: 05/04/23 10:19 Karen Watson

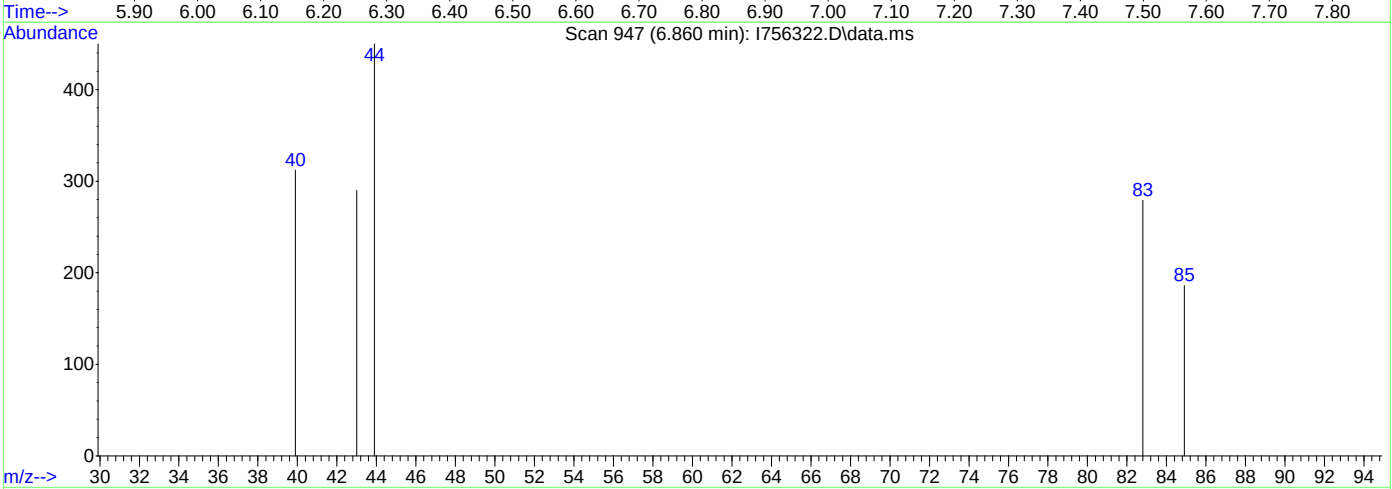
Parameter	CAS	Sig#	R.T. (min.)	Reason
Ethyl Acetate	141-78-6		6.92	Missed peak
cis-1,4-Dichloro-2-Butene	1476-11-5		12.30	Missed peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\2023-05-02\
Data File : I756322.D
Acq On : 2 May 2023 9:04 am
Operator : jeniferw
Sample : IC2910-1
Misc : MS53904,VI2910,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 02 11:31:21 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 11:25:12 2023
Response via : Initial Calibration





TIC: I756322.D\data.ms

(37) Ethyl acetate

6.860min (-0.030) 0.10ug/L

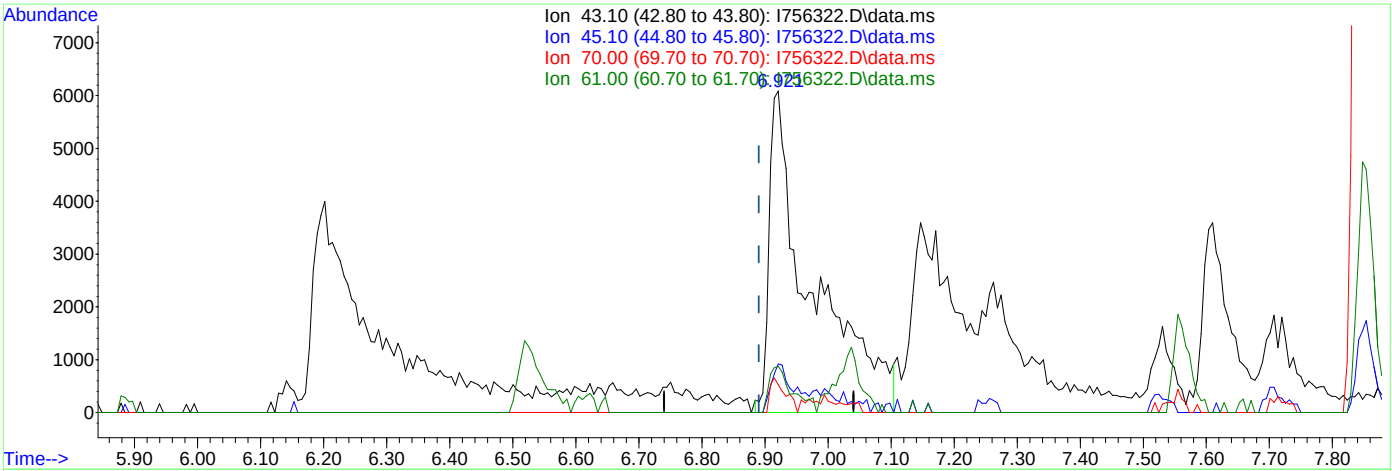
response 451

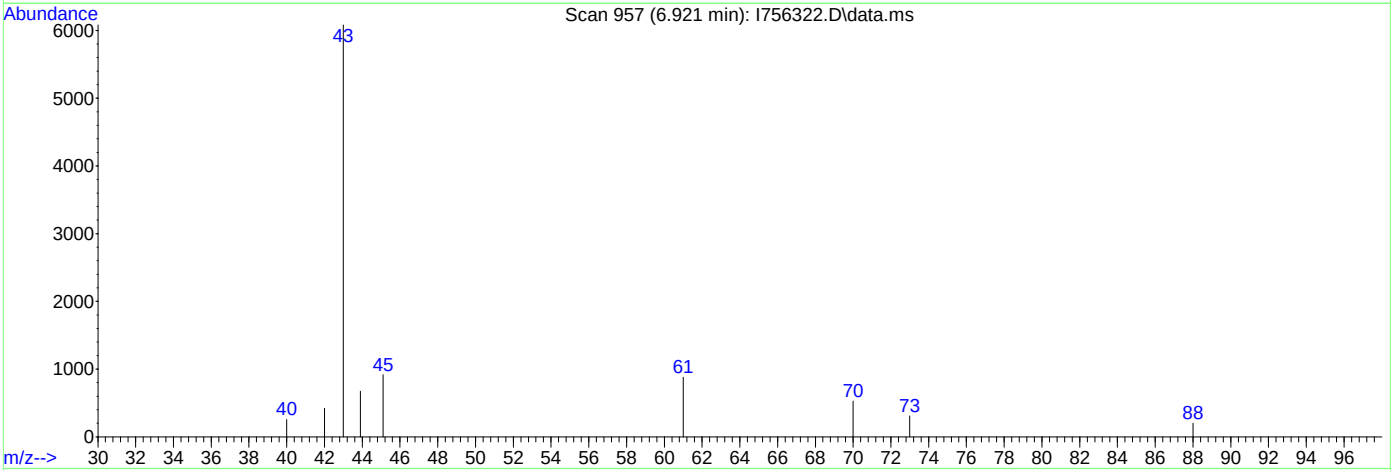
Ion	Exp%	Act%
43.10	100	100
45.10	14.30	0.00
70.00	10.70	0.00
61.00	15.40	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\2023-05-02\
Data File : I756322.D
Acq On : 2 May 2023 9:04 am
Operator : jeniferw
Sample : IC2910-1
Misc : MS53904,VI2910,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 02 11:31:21 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 11:25:12 2023
Response via : Initial Calibration





TIC: I756322.D\data.ms

(37) Ethyl acetate

6.921min (+0.031) 6.41ug/L m

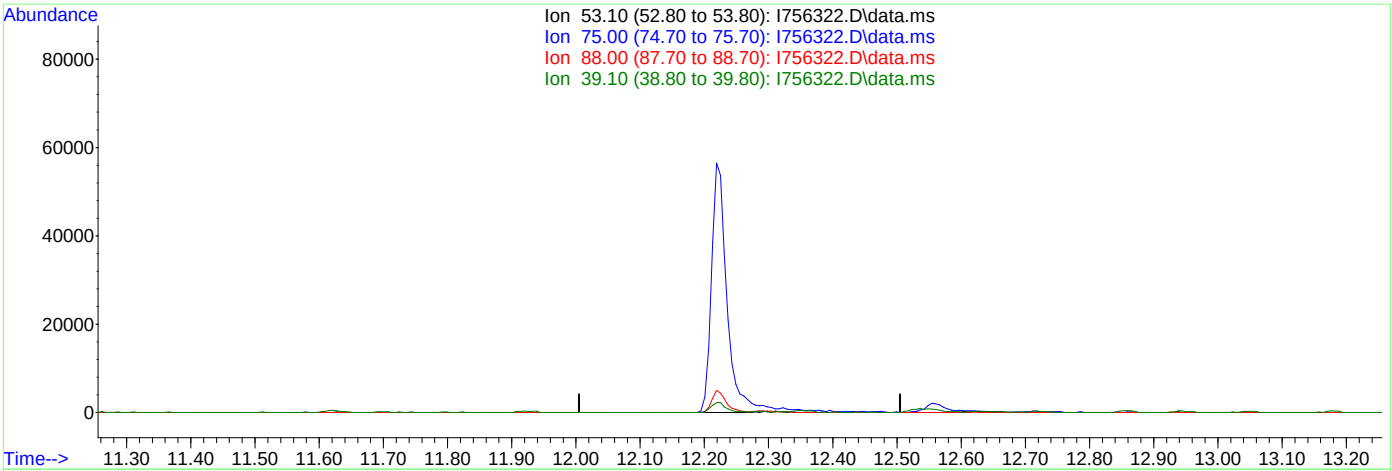
response 28298

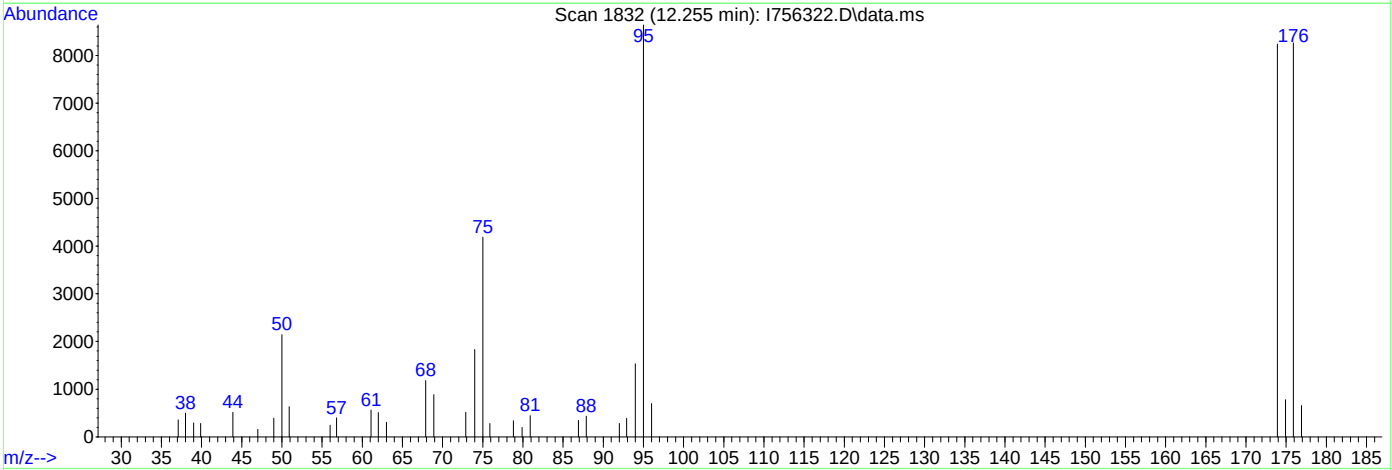
Ion	Exp%	Act%
43.10	100	100
45.10	14.30	15.09
70.00	10.70	8.66
61.00	15.40	14.45

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\2023-05-02\
Data File : I756322.D
Acq On : 2 May 2023 9:04 am
Operator : jeniferw
Sample : IC2910-1
Misc : MS53904,VI2910,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 02 11:31:21 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 11:25:12 2023
Response via : Initial Calibration





TIC: I756322.D\data.ms

(87) cis-1,4-Dichloro-2-butene

12.255min (-12.255) 0.00ug/L

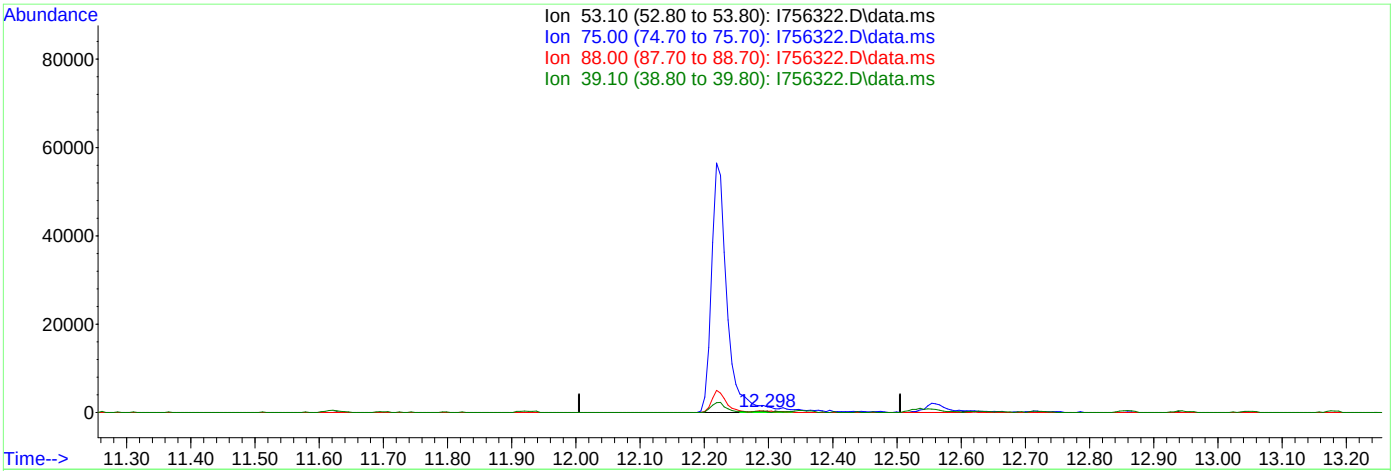
response 0

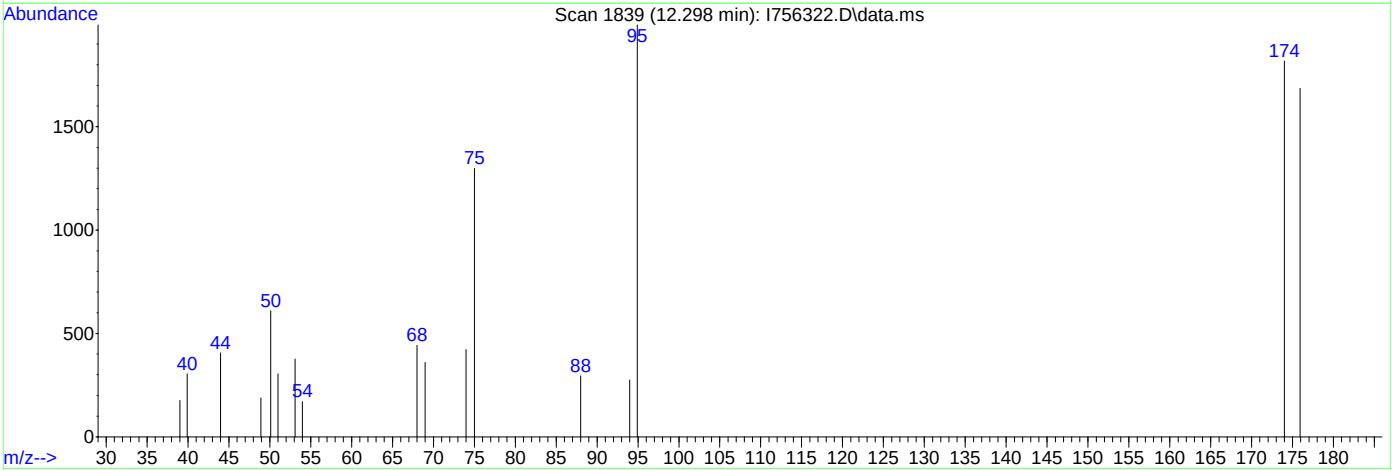
Ion	Exp%	Act%
53.10	100	0.00
75.00	117.90	0.00#
88.00	109.50	0.00#
39.10	38.90	0.00#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\2023-05-02\
Data File : I756322.D
Acq On : 2 May 2023 9:04 am
Operator : jeniferw
Sample : IC2910-1
Misc : MS53904,VI2910,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 02 11:31:21 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 11:25:12 2023
Response via : Initial Calibration





TIC: I756322.D\data.ms

(87) cis-1,4-Dichloro-2-butene

12.298min (+0.043) 0.68ug/L m

response 591

Ion	Exp%	Act%
53.10	100	100
75.00	117.90	345.21#
88.00	109.50	78.46#
39.10	38.90	46.81

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-02\
Data File : I756323.D
Acq On : 2 May 2023 9:29 am
Operator : jeniferw
Sample : IC2910-2
Misc : MS53904,VI2910,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 02 11:31:23 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 11:25:12 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.854	96	579232	50.00	ug/L	0.00
62) Chlorobenzene-d5	11.006	117	421204	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.371	152	197627	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	6.988	113	159190	51.17	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 102.34%			
49) 1,2-Dichloroethane-d4	7.561	65	178715	52.40	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 104.80%			
63) Toluene-d8	9.445	98	573953	46.67	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 93.34%			
86) 4-Bromofluorobenzene	12.225	174	157366	51.47	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 102.94%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.355	85	7492	4.24	ug/L	96
3) Chloromethane	2.647	50	12256	5.00	ug/L	94
4) Vinyl Chloride	2.763	62	11146	4.82	ug/L	97
5) 1,3-Butadiene	2.794	39	13152	5.87	ug/L	95
6) Bromomethane	3.233	94	6393	5.38	ug/L	95
7) Chloroethane	3.397	64	8080	4.29	ug/L	86
8) Trichlorofluoromethane	3.598	101	17251	4.23	ug/L	94
9) Ethyl Ether	4.019	59	11184	5.81	ug/L	92
10) 1,2-Dichlorotrifluoroe...	4.239	67	11526	4.91	ug/L	88
11) 1,1-Dichloroethene	4.269	61	14633	4.62	ug/L	92
12) Ethanol	4.208	45	8945	92.14	ug/L	74
13) Freon 113	4.318	101	9100	4.78	ug/L	92
14) Carbon Disulfide	4.324	76	27941	4.74	ug/L	100
15) Iodomethane	4.458	142	6042	3.64	ug/L	90
16) Acrolein	4.690	56	17505	22.03	ug/L	97
17) Allyl chloride	4.854	41	13376	4.66	ug/L	89
18) Methylene Chloride	4.982	49	17512	5.63	ug/L	88
19) Acetone	5.037	43	38926	22.83	ug/L	94
20) Methyl acetate	5.177	43	80788	24.23	ug/L	93
21) trans-1,2-Dichloroethene	5.190	61	14323	4.39	ug/L	96
22) Hexane	5.275	56	7514	4.76	ug/L #	76
23) Methyl Tert Butyl Ether	5.305	73	30475	4.58	ug/L	83
24) Tert butyl alcohol	5.397	59	47698	47.64	ug/L	94
25) Acetonitrile	5.586	41	27821	42.26	ug/L	92
26) Di-isopropyl ether	5.732	45	35584	4.56	ug/L	95
27) Chloroprene	5.872	53	13216	4.06	ug/L	91
28) 1,1-Dichloroethane	5.891	63	20713	4.91	ug/L	96
29) Acrylonitrile	5.952	53	35550	22.31	ug/L	93
30) ETBE	6.141	59	32049	4.52	ug/L	95
31) Vinyl acetate	6.165	43	96114	20.05	ug/L	97
32) cis-1,2-Dichloroethene	6.519	96	10686	4.52	ug/L	94
33) 2,2-Dichloropropane	6.622	77	12670	3.78	ug/L	95
34) Bromochloromethane	6.750	128	5119	4.45	ug/L #	70
35) Cyclohexane	6.756	56	14235	3.94	ug/L	94
36) Chloroform	6.799	83	20246	5.23	ug/L	96
37) Ethyl acetate	6.903	43	100602	22.61	ug/L	95
38) Tetrahydrofuran	6.994	42	9447	5.01	ug/L	85
40) Carbon Tetrachloride	6.976	117	14224	4.83	ug/L	96
41) 1,1,1-Trichloroethane	7.037	97	15727	4.28	ug/L	95
42) 2-Butanone	7.122	43	54580	20.85	ug/L	86
43) 1,1-Dichloropropene	7.177	75	12441	4.21	ug/L	92
44) tert-Butyl Formate	7.262	59	47660	21.44	ug/L	98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-02\
Data File : I756323.D
Acq On : 2 May 2023 9:29 am
Operator : jeniferw
Sample : IC2910-2
Misc : MS53904,VI2910,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 02 11:31:23 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 11:25:12 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45) Propionitrile	7.427	54	37866	45.19	ug/L		84
46) Methacrylonitrile	7.445	41	120669	46.57	ug/L		98
47) Benzene	7.439	78	40115	4.33	ug/L	#	64
48) TAME	7.531	73	31064	5.15	ug/L		98
50) Isobutyl alcohol	7.598	42	20955	90.59	ug/L		95
51) 1,2-Dichloroethane	7.646	62	16638	5.24	ug/L		89
52) Tert Amyl Alcohol	7.707	59	42523	47.87	ug/L		94
53) Trichloroethene	8.055	95	11065	4.84	ug/L		96
54) Methylcyclohexane	8.055	83	12104	4.02	ug/L		80
55) Dibromomethane	8.500	93	7276	4.64	ug/L		90
56) 1,2-Dichloropropane	8.573	63	10872	4.47	ug/L		97
57) Bromodichloromethane	8.634	83	14992	4.65	ug/L		98
58) Methyl methacrylate	8.780	41	9157	3.46	ug/L		84
59) 1,4-Dioxane	8.939	88	657	10.16	ug/L		77
60) 2-Chloroethyl vinyl ether	9.171	63	34159	19.21	ug/L		89
61) cis-1,3-Dichloropropene	9.262	75	15760	4.55	ug/L		98
64) Toluene	9.512	91	42252	4.09	ug/L		93
65) 2-Nitropropane	9.701	41	28449	20.83	ug/L		96
66) 4-Methyl-2-pentanone	9.835	43	116011	21.43	ug/L		93
67) trans-1,3-Dichloropropene	9.914	75	13664	3.87	ug/L		91
68) Tetrachloroethene	9.914	166	10942	4.22	ug/L		95
69) Ethyl methacrylate	10.030	69	10382	3.25	ug/L		88
70) 1,1,2-Trichloroethane	10.067	83	9492	4.38	ug/L		95
71) Dibromochloromethane	10.262	129	11644	4.26	ug/L		92
72) 1,3-Dichloropropane	10.347	76	15610	4.14	ug/L		98
73) 1,2-Dibromoethane	10.530	107	11086	4.25	ug/L		91
74) 3,3-dimethyl-1-butanol	10.615	57	222808	200.06	ug/L		97
75) 2-hexanone	10.664	43	90178	21.11	ug/L		94
76) 1-Chlorohexane	10.969	91	10609	3.72	ug/L		79
77) Ethylbenzene	11.036	91	45555	4.00	ug/L		97
78) Chlorobenzene	11.030	112	28288	4.21	ug/L		97
79) 1,1,1,2-Tetrachloroethane	11.079	131	11109	4.42	ug/L		84
80) m,p-Xylene	11.176	91	64012	7.75	ug/L		97
81) o-Xylene	11.615	91	31905	3.75	ug/L		99
82) Styrene	11.676	104	22505	3.88	ug/L		93
83) Bromoform	11.719	173	8347	4.09	ug/L		94
84) Isopropylbenzene	11.920	105	37568	3.79	ug/L		98
87) cis-1,4-Dichloro-2-butene	12.274	53	3772	4.36	ug/L		78
88) n-Propylbenzene	12.341	91	47647	4.25	ug/L		96
89) Bromobenzene	12.359	156	11003	4.96	ug/L		95
90) 1,1,2,2-Tetrachloroethane	12.396	83	19004	5.27	ug/L		95
91) 1,3,5-Trimethylbenzene	12.524	105	30336	4.08	ug/L		97
92) 2-Chlorotoluene	12.530	91	34260	4.47	ug/L		95
93) trans-1,4-Dichloro-2-B...	12.591	53	3574	3.68	ug/L	#	64
94) 1,2,3-Trichloropropane	12.554	110	5482	4.58	ug/L		88
95) Cyclohexanone	12.615	55	6751	24.46	ug/L		91
96) 4-Chlorotoluene	12.694	91	26202	4.14	ug/L		98
97) tert-Butylbenzene	12.859	91	14982	3.66	ug/L		89
98) 1,2,4-Trimethylbenzene	12.932	105	28846	3.97	ug/L		96
99) Pentachloroethane	12.902	167	5872	4.26	ug/L		89
100) sec-Butylbenzene	13.042	105	35429	4.03	ug/L		98
101) 4-Isopropyltoluene	13.176	119	27993	3.82	ug/L		98
102) 1,3-Dichlorobenzene	13.316	146	19029	4.39	ug/L		93
103) 1,2,3-Trimethylbenzene	13.389	105	34349	4.61	ug/L		96
104) 1,4-Dichlorobenzene	13.389	146	22123	5.23	ug/L		96
105) n-Butylbenzene	13.627	92	14494	3.93	ug/L	#	77
106) Benzyl Chloride	13.645	126	4136	3.31	ug/L	#	29
107) 1,2-Dichlorobenzene	13.834	146	18727	4.40	ug/L		95

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-02\
Data File : I756323.D
Acq On : 2 May 2023 9:29 am
Operator : jeniferw
Sample : IC2910-2
Misc : MS53904,VI2910,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 02 11:31:23 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 11:25:12 2023
Response via : Initial Calibration

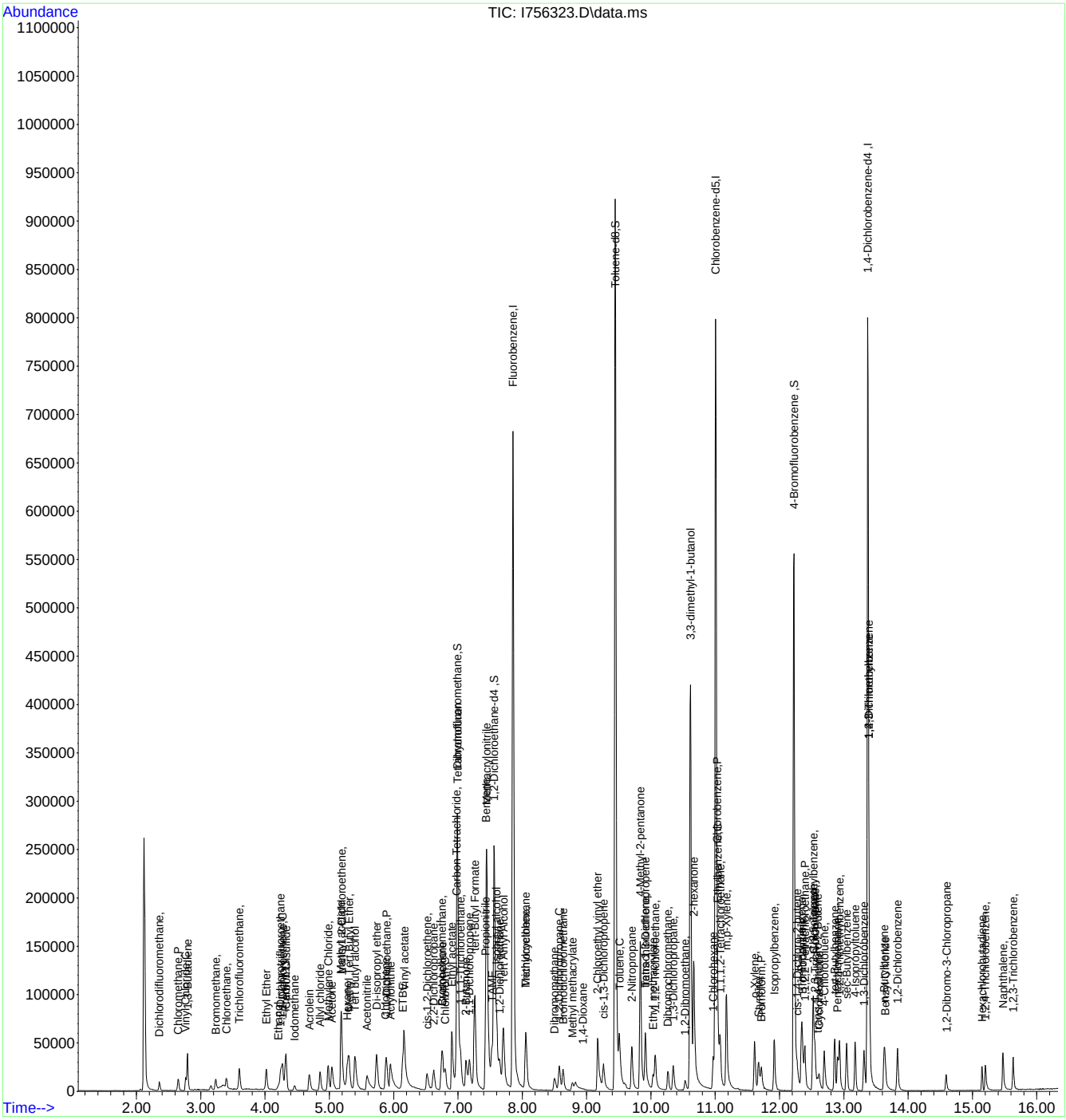
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
108) 1,2-Dibromo-3-Chloropr...	14.596	75	4178	4.16	ug/L	93
109) Hexachlorobutadiene	15.151	225	3726	4.01	ug/L	87
110) 1,2,4-Trichlorobenzene	15.200	180	9389	3.92	ug/L	92
111) Naphthalene	15.474	128	32892	3.55	ug/L	98
112) 1,2,3-Trichlorobenzene	15.633	180	10221	4.30	ug/L	90

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-02\
Data File : I756323.D
Acq On : 2 May 2023 9:29 am
Operator : jeniferw
Sample : IC2910-2
Misc : MS53904,VI2910,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 02 11:31:23 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 11:25:12 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-02\
Data File : I756325.D
Acq On : 2 May 2023 10:18 am
Operator : jeniferw
Sample : IC2910-4
Misc : MS53904,VI2910,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 02 11:31:27 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 11:25:12 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.854	96	595675	50.00	ug/L	0.00
62) Chlorobenzene-d5	11.006	117	423857	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.371	152	225978	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	6.988	113	167173	52.26	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 104.52%			
49) 1,2-Dichloroethane-d4	7.561	65	183429	52.30	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 104.60%			
63) Toluene-d8	9.445	98	596064	48.16	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 96.32%			
86) 4-Bromofluorobenzene	12.225	174	169750	48.55	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 97.10%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.355	85	48803	26.88	ug/L	94
3) Chloromethane	2.647	50	68892	27.35	ug/L	99
4) Vinyl Chloride	2.763	62	67284	28.26	ug/L	100
5) 1,3-Butadiene	2.788	39	72714	31.54	ug/L	98
6) Bromomethane	3.227	94	31788	26.00	ug/L	97
7) Chloroethane	3.391	64	39858	21.55	ug/L	95
8) Trichlorofluoromethane	3.586	101	104861	25.00	ug/L	98
9) Ethyl Ether	4.013	59	56162	28.38	ug/L	91
10) 1,2-Dichlorotrifluoroe...	4.239	67	63778	26.41	ug/L	91
11) 1,1-Dichloroethene	4.263	61	85761	26.34	ug/L	96
12) Ethanol	4.220	45	46955	491.18	ug/L	86
13) Freon 113	4.306	101	53627	27.41	ug/L	96
14) Carbon Disulfide	4.318	76	155058	25.59	ug/L	100
15) Iodomethane	4.452	142	49244	28.82	ug/L	98
16) Acrolein	4.678	56	107960	132.14	ug/L	94
17) Allyl chloride	4.848	41	79538	26.92	ug/L	89
18) Methylene Chloride	4.976	49	89238	27.88	ug/L	89
19) Acetone	5.031	43	231586	132.06	ug/L	97
20) Methyl acetate	5.171	43	482873	140.85	ug/L	95
21) trans-1,2-Dichloroethene	5.177	61	80871	24.13	ug/L	92
22) Hexane	5.269	56	45368	27.96	ug/L #	78
23) Methyl Tert Butyl Ether	5.299	73	167334	24.44	ug/L	76
24) Tert butyl alcohol	5.397	59	268914	261.17	ug/L	94
25) Acetonitrile	5.568	41	164687	243.24	ug/L	96
26) Di-isopropyl ether	5.732	45	198707	24.73	ug/L	94
27) Chloroprene	5.860	53	86626	25.87	ug/L	94
28) 1,1-Dichloroethane	5.885	63	114307	26.34	ug/L	97
29) Acrylonitrile	5.927	53	228790	139.63	ug/L	99
30) ETBE	6.141	59	185701	25.46	ug/L	95
31) Vinyl acetate	6.141	43	711123	138.27	ug/L	95
32) cis-1,2-Dichloroethene	6.500	96	59741	24.56	ug/L	96
33) 2,2-Dichloropropane	6.616	77	80646	23.41	ug/L	96
34) Bromochloromethane	6.732	128	29467	24.94	ug/L #	78
35) Cyclohexane	6.750	56	91353	24.56	ug/L	94
36) Chloroform	6.793	83	111676	28.05	ug/L	98
37) Ethyl acetate	6.891	43	622096	135.98	ug/L	97
38) Tetrahydrofuran	6.982	42	53181	27.41	ug/L	92
40) Carbon Tetrachloride	6.970	117	81217	26.81	ug/L	99
41) 1,1,1-Trichloroethane	7.037	97	90343	23.90	ug/L	97
42) 2-Butanone	7.104	43	374904	139.24	ug/L	90
43) 1,1-Dichloropropene	7.171	75	73970	24.34	ug/L	98
44) tert-Butyl Formate	7.256	59	286120	125.16	ug/L	94

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-02\
Data File : I756325.D
Acq On : 2 May 2023 10:18 am
Operator : jeniferw
Sample : IC2910-4
Misc : MS53904,VI2910,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 02 11:31:27 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 11:25:12 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45) Propionitrile	7.415	54	229704	266.54	ug/L		97
46) Methacrylonitrile	7.439	41	674686	253.20	ug/L		94
47) Benzene	7.433	78	229062	24.06	ug/L	#	52
48) TAME	7.525	73	167217	26.98	ug/L		99
50) Isobutyl alcohol	7.592	42	127501	535.99	ug/L		86
51) 1,2-Dichloroethane	7.634	62	84772	25.97	ug/L		97
52) Tert Amyl Alcohol	7.701	59	230170	251.95	ug/L		89
53) Trichloroethene	8.043	95	59447	25.31	ug/L		91
54) Methylcyclohexane	8.049	83	74038	23.91	ug/L		94
55) Dibromomethane	8.482	93	39264	24.35	ug/L		91
56) 1,2-Dichloropropane	8.567	63	61119	24.45	ug/L		97
57) Bromodichloromethane	8.628	83	82748	24.95	ug/L		97
58) Methyl methacrylate	8.750	41	68585	25.18	ug/L		91
59) 1,4-Dioxane	8.817	88	32935	495.14	ug/L		74
60) 2-Chloroethyl vinyl ether	9.158	63	234941	128.45	ug/L		90
61) cis-1,3-Dichloropropene	9.256	75	91692	25.76	ug/L		98
64) Toluene	9.500	91	231501	22.29	ug/L		99
65) 2-Nitropropane	9.701	41	160403	116.70	ug/L		94
66) 4-Methyl-2-pentanone	9.829	43	688607	126.39	ug/L		96
67) trans-1,3-Dichloropropene	9.896	75	85817	24.18	ug/L		90
68) Tetrachloroethene	9.908	166	60403	23.16	ug/L		98
69) Ethyl methacrylate	10.012	69	80785	25.16	ug/L		90
70) 1,1,2-Trichloroethane	10.061	83	50900	23.33	ug/L		97
71) Dibromochloromethane	10.262	129	64621	23.47	ug/L		98
72) 1,3-Dichloropropane	10.341	76	90715	23.91	ug/L		95
73) 1,2-Dibromoethane	10.518	107	61913	23.59	ug/L		96
74) 3,3-dimethyl-1-butanol	10.615	57	1346962	1201.90	ug/L		97
75) 2-hexanone	10.658	43	573364	133.35	ug/L		97
76) 1-Chlorohexane	10.963	91	65213	22.74	ug/L		84
77) Ethylbenzene	11.030	91	258645	22.58	ug/L		97
78) Chlorobenzene	11.024	112	153841	22.75	ug/L		93
79) 1,1,1,2-Tetrachloroethane	11.073	131	57991	22.92	ug/L		97
80) m,p-Xylene	11.164	91	390154	46.91	ug/L		98
81) o-Xylene	11.609	91	200794	23.46	ug/L		97
82) Styrene	11.658	104	145897	24.97	ug/L		96
83) Bromoform	11.713	173	49571	24.16	ug/L		96
84) Isopropylbenzene	11.914	105	233500	23.44	ug/L		98
87) cis-1,4-Dichloro-2-butene	12.261	53	24350	24.63	ug/L		92
88) n-Propylbenzene	12.335	91	281202	21.93	ug/L		97
89) Bromobenzene	12.353	156	63295	24.95	ug/L		98
90) 1,1,2,2-Tetrachloroethane	12.389	83	101624	24.67	ug/L		97
91) 1,3,5-Trimethylbenzene	12.517	105	192587	22.64	ug/L		99
92) 2-Chlorotoluene	12.517	91	196979	22.47	ug/L		99
93) trans-1,4-Dichloro-2-B...	12.572	53	25081	22.61	ug/L		95
94) 1,2,3-Trichloropropane	12.548	110	31012	22.67	ug/L		97
95) Cyclohexanone	12.609	55	36613	116.00	ug/L		93
96) 4-Chlorotoluene	12.688	91	172516	23.83	ug/L		97
97) tert-Butylbenzene	12.853	91	102537	21.89	ug/L		96
98) 1,2,4-Trimethylbenzene	12.926	105	194683	23.43	ug/L		97
99) Pentachloroethane	12.902	167	36697	23.28	ug/L		94
100) sec-Butylbenzene	13.042	105	221408	22.01	ug/L		98
101) 4-Isopropyltoluene	13.176	119	189987	22.66	ug/L		99
102) 1,3-Dichlorobenzene	13.304	146	111814	22.54	ug/L		97
103) 1,2,3-Trimethylbenzene	13.383	105	210065	24.68	ug/L		96
104) 1,4-Dichlorobenzene	13.389	146	120390	24.88	ug/L		98
105) n-Butylbenzene	13.621	92	100103	23.72	ug/L	#	49
106) Benzyl Chloride	13.627	126	33095	23.14	ug/L	#	71
107) 1,2-Dichlorobenzene	13.828	146	110309	22.65	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-02\
Data File : I756325.D
Acq On : 2 May 2023 10:18 am
Operator : jeniferw
Sample : IC2910-4
Misc : MS53904,VI2910,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 02 11:31:27 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 11:25:12 2023
Response via : Initial Calibration

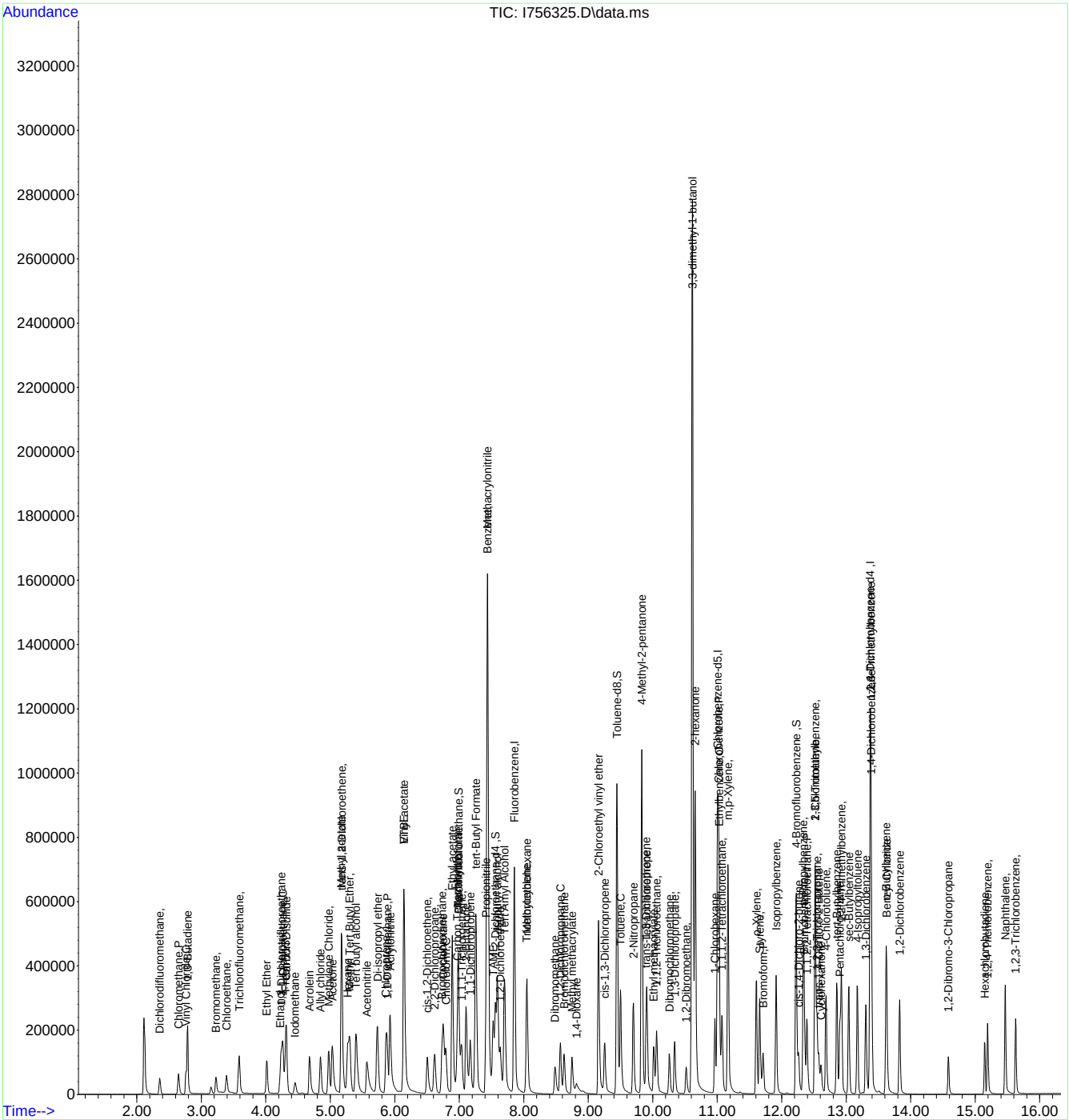
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
108) 1,2-Dibromo-3-Chloropr...	14.584	75	26325	22.94	ug/L	96
109) Hexachlorobutadiene	15.151	225	24028	22.64	ug/L	93
110) 1,2,4-Trichlorobenzene	15.194	180	62022	22.64	ug/L	98
111) Naphthalene	15.468	128	229589	21.65	ug/L	99
112) 1,2,3-Trichlorobenzene	15.627	180	59803	22.01	ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-02\
Data File : I756325.D
Acq On : 2 May 2023 10:18 am
Operator : jeniferw
Sample : IC2910-4
Misc : MS53904,VI2910,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 02 11:31:27 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 11:25:12 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-02\
Data File : I756326.D
Acq On : 2 May 2023 10:42 am
Operator : jeniferw
Sample : ICC2910-5
Misc : MS53904,VI2910,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 02 11:25:20 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 11:25:12 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorobenzene	7.854	96	621830	50.00	ug/L		0.00
62) Chlorobenzene-d5	11.005	117	449216	50.00	ug/L		0.00
85) 1,4-Dichlorobenzene-d4	13.371	152	237042	50.00	ug/L		0.00
System Monitoring Compounds							
39) Dibromofluoromethane	6.988	113	178522	53.46	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 106.92%				
49) 1,2-Dichloroethane-d4	7.561	65	191077	52.19	ug/L		0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 104.38%				
63) Toluene-d8	9.445	98	624860	47.64	ug/L		0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 95.28%				
86) 4-Bromofluorobenzene	12.225	174	183758	50.11	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.22%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	2.355	85	73792	38.93	ug/L		99
3) Chloromethane	2.647	50	108413	41.22	ug/L		97
4) Vinyl Chloride	2.763	62	106374	42.81	ug/L		95
5) 1,3-Butadiene	2.788	39	107437	44.64	ug/L		100
6) Bromomethane	3.226	94	51942	40.70	ug/L		98
7) Chloroethane	3.385	64	64197	34.46	ug/L		95
8) Trichlorofluoromethane	3.574	101	173397	39.59	ug/L		98
9) Ethyl Ether	4.019	59	95866	46.40	ug/L		93
10) 1,2-Dichlorotrifluoroe...	4.238	67	109833	43.57	ug/L		89
11) 1,1-Dichloroethene	4.257	61	146054	42.97	ug/L		96
12) Ethanol	4.238	45	86254	906.12	ug/L		83
13) Freon 113	4.306	101	90445	44.28	ug/L		95
14) Carbon Disulfide	4.312	76	263800	41.70	ug/L		98
15) Iodomethane	4.452	142	85993	48.21	ug/L		99
16) Acrolein	4.677	56	180469	211.60	ug/L		100
17) Allyl chloride	4.842	41	129529	42.00	ug/L		90
18) Methylene Chloride	4.976	49	147643	44.19	ug/L		92
19) Acetone	5.031	43	373520	204.05	ug/L		99
20) Methyl acetate	5.171	43	827023	231.09	ug/L		94
21) trans-1,2-Dichloroethene	5.177	61	141084	40.33	ug/L		91
22) Hexane	5.263	56	75029	44.29	ug/L	#	74
23) Methyl Tert Butyl Ether	5.299	73	294849	41.26	ug/L		73
24) Tert butyl alcohol	5.403	59	455790	424.05	ug/L		94
25) Acetonitrile	5.567	41	266029	376.40	ug/L		96
26) Di-isopropyl ether	5.726	45	350737	41.82	ug/L		93
27) Chloroprene	5.860	53	142359	40.72	ug/L		96
28) 1,1-Dichloroethane	5.878	63	193102	42.62	ug/L		99
29) Acrylonitrile	5.921	53	389228	227.55	ug/L		100
30) ETBE	6.141	59	319301	41.94	ug/L		98
31) Vinyl acetate	6.141	43	1249388	225.78	ug/L		95
32) cis-1,2-Dichloroethene	6.500	96	103166	40.63	ug/L		93
33) 2,2-Dichloropropane	6.616	77	133550	37.14	ug/L		98
34) Bromochloromethane	6.726	128	50060	40.58	ug/L	#	81
35) Cyclohexane	6.750	56	155818	40.13	ug/L		94
36) Chloroform	6.793	83	187369	45.09	ug/L		98
37) Ethyl acetate	6.890	43	1049774	219.80	ug/L		97
38) Tetrahydrofuran	6.982	42	87515	43.21	ug/L		96
40) Carbon Tetrachloride	6.970	117	136701	43.23	ug/L		98
41) 1,1,1-Trichloroethane	7.031	97	153646	38.94	ug/L		94
42) 2-Butanone	7.104	43	620529	220.78	ug/L		90
43) 1,1-Dichloropropene	7.171	75	125894	39.69	ug/L		97
44) tert-Butyl Formate	7.256	59	499592	209.35	ug/L		92

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-02\
Data File : I756326.D
Acq On : 2 May 2023 10:42 am
Operator : jeniferw
Sample : ICC2910-5
Misc : MS53904,VI2910,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 02 11:25:20 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 11:25:12 2023
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45)	Propionitrile	7.415	54	369446	410.67	ug/L		98
46)	Methacrylonitrile	7.439	41	1089316	391.60	ug/L		92
47)	Benzene	7.427	78	386149	38.86	ug/L		72
48)	TAME	7.524	73	274269	42.39	ug/L		98
50)	Isobutyl alcohol	7.591	42	209605	844.08	ug/L		85
51)	1,2-Dichloroethane	7.634	62	146756	43.07	ug/L		95
52)	Tert Amyl Alcohol	7.701	59	388473	407.34	ug/L		91
53)	Trichloroethene	8.043	95	103112	42.05	ug/L		93
54)	Methylcyclohexane	8.049	83	126661	39.19	ug/L		92
55)	Dibromomethane	8.482	93	69109	41.06	ug/L		96
56)	1,2-Dichloropropane	8.567	63	102973	39.47	ug/L		95
57)	Bromodichloromethane	8.622	83	138427	39.99	ug/L		99
58)	Methyl methacrylate	8.744	41	120173	42.26	ug/L		89
59)	1,4-Dioxane	8.823	88	63709	917.51	ug/L		78
60)	2-Chloroethyl vinyl ether	9.158	63	413592	216.61	ug/L		92
61)	cis-1,3-Dichloropropene	9.250	75	156885	42.23	ug/L		96
64)	Toluene	9.500	91	393755	35.77	ug/L		99
65)	2-Nitropropane	9.701	41	276983	190.14	ug/L		96
66)	4-Methyl-2-pentanone	9.829	43	1125932	195.00	ug/L		95
67)	trans-1,3-Dichloropropene	9.896	75	149065	39.62	ug/L		93
68)	Tetrachloroethene	9.908	166	101774	36.82	ug/L		96
69)	Ethyl methacrylate	10.012	69	135749	39.90	ug/L		92
70)	1,1,2-Trichloroethane	10.061	83	85831	37.12	ug/L		97
71)	Dibromochloromethane	10.256	129	112398	38.51	ug/L		95
72)	1,3-Dichloropropane	10.341	76	154082	38.32	ug/L		95
73)	1,2-Dibromoethane	10.518	107	106864	38.42	ug/L		98
74)	3,3-dimethyl-1-butanol	10.615	57	2260535	1903.21	ug/L		97
75)	2-hexanone	10.658	43	922592	202.46	ug/L		98
76)	1-Chlorohexane	10.963	91	113825	37.46	ug/L		85
77)	Ethylbenzene	11.030	91	443683	36.55	ug/L		97
78)	Chlorobenzene	11.024	112	265966	37.10	ug/L		95
79)	1,1,1,2-Tetrachloroethane	11.073	131	101755	37.94	ug/L		98
80)	m,p-Xylene	11.164	91	676968	76.80	ug/L		99
81)	o-Xylene	11.603	91	345599	38.09	ug/L		97
82)	Styrene	11.658	104	259787	41.96	ug/L		97
83)	Bromoform	11.713	173	85636	39.38	ug/L		95
84)	Isopropylbenzene	11.914	105	400959	37.97	ug/L		99
87)	cis-1,4-Dichloro-2-butene	12.255	53	41339	39.87	ug/L		89
88)	n-Propylbenzene	12.334	91	487611	36.25	ug/L		99
89)	Bromobenzene	12.347	156	107266	40.31	ug/L		93
90)	1,1,2,2-Tetrachloroethane	12.389	83	172163	39.84	ug/L		99
91)	1,3,5-Trimethylbenzene	12.517	105	333270	37.36	ug/L		100
92)	2-Chlorotoluene	12.517	91	339127	36.88	ug/L		99
93)	trans-1,4-Dichloro-2-B...	12.572	53	43961	37.77	ug/L		81
94)	1,2,3-Trichloropropane	12.548	110	51611	35.96	ug/L		98
95)	Cyclohexanone	12.609	55	64127	193.69	ug/L		93
96)	4-Chlorotoluene	12.688	91	300524	39.58	ug/L		99
97)	tert-Butylbenzene	12.853	91	180999	36.84	ug/L		95
98)	1,2,4-Trimethylbenzene	12.926	105	331149	37.99	ug/L		98
99)	Pentachloroethane	12.901	167	59750	36.14	ug/L		95
100)	sec-Butylbenzene	13.042	105	383797	36.37	ug/L		99
101)	4-Isopropyltoluene	13.176	119	327978	37.29	ug/L		99
102)	1,3-Dichlorobenzene	13.304	146	192595	37.01	ug/L		99
103)	1,2,3-Trimethylbenzene	13.383	105	354525	39.70	ug/L		97
104)	1,4-Dichlorobenzene	13.389	146	203728	40.14	ug/L		98
105)	n-Butylbenzene	13.615	92	170770	38.57	ug/L	#	79
106)	Benzyl Chloride	13.627	126	57700	38.45	ug/L	#	62
107)	1,2-Dichlorobenzene	13.828	146	189002	37.00	ug/L		97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-02\
Data File : I756326.D
Acq On : 2 May 2023 10:42 am
Operator : jeniferw
Sample : ICC2910-5
Misc : MS53904,VI2910,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 02 11:25:20 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 11:25:12 2023
Response via : Initial Calibration

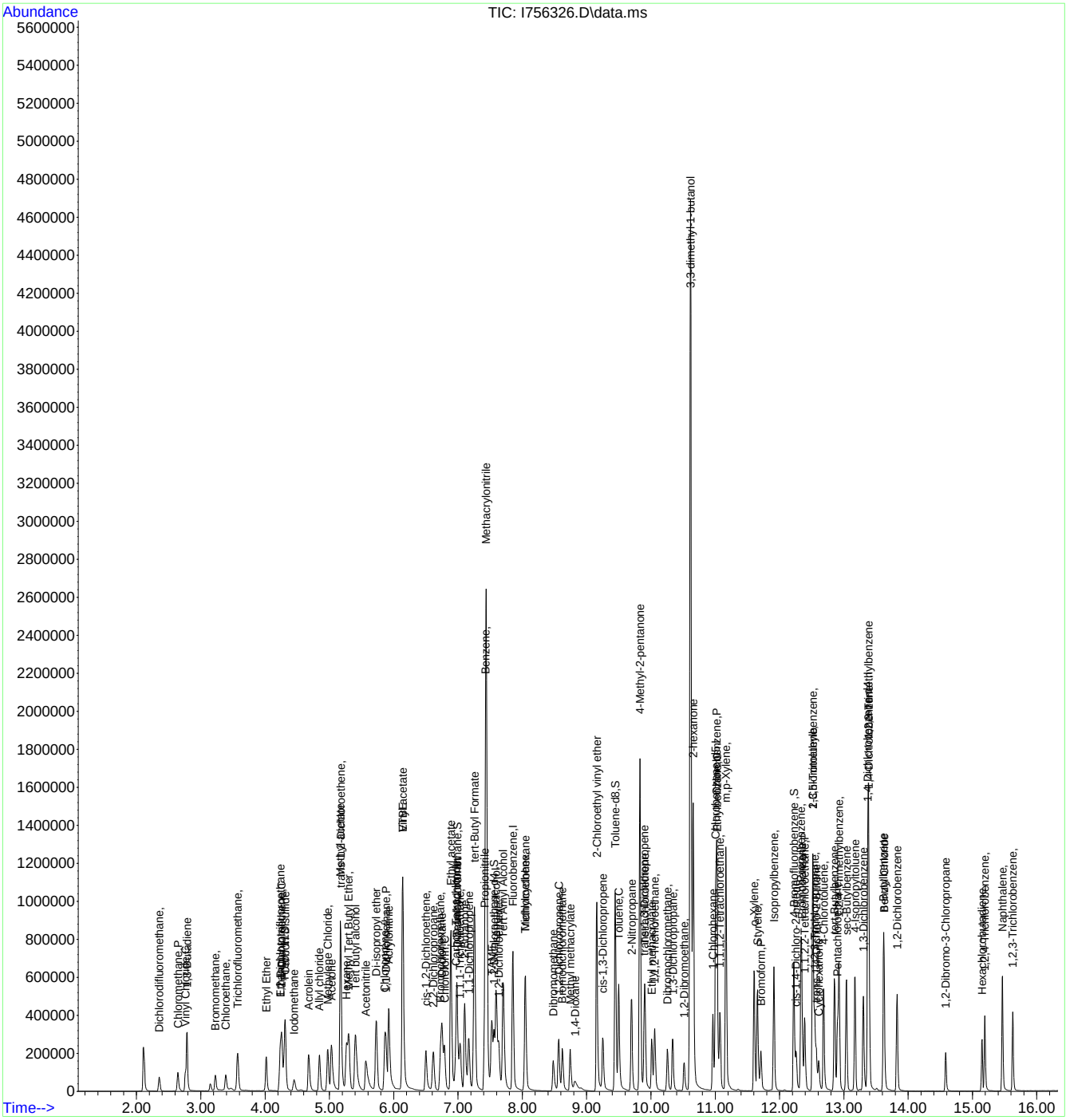
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
108) 1,2-Dibromo-3-Chloropr...	14.584	75	43959	36.51	ug/L	93
109) Hexachlorobutadiene	15.151	225	40157	36.06	ug/L	96
110) 1,2,4-Trichlorobenzene	15.194	180	103403	35.98	ug/L	98
111) Naphthalene	15.468	128	393187	35.35	ug/L	98
112) 1,2,3-Trichlorobenzene	15.627	180	102463	35.95	ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-02\
Data File : I756326.D
Acq On : 2 May 2023 10:42 am
Operator : jeniferw
Sample : ICC2910-5
Misc : MS53904,VI2910,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 02 11:25:20 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 11:25:12 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-02\
Data File : I756327.D
Acq On : 2 May 2023 11:07 am
Operator : jeniferw
Sample : IC2910-6
Misc : MS53904,VI2910,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 02 11:31:29 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 11:25:12 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.854	96	641207	50.00	ug/L	0.00
62) Chlorobenzene-d5	11.006	117	466178	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.371	152	250661	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	6.988	113	183945	53.42	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery =	106.84%		
49) 1,2-Dichloroethane-d4	7.561	65	198726	52.63	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery =	105.26%		
63) Toluene-d8	9.445	98	645844	47.45	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery =	94.90%		
86) 4-Bromofluorobenzene	12.225	174	194415	50.13	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery =	100.26%		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.361	85	143407	73.38	ug/L	96
3) Chloromethane	2.654	50	198752	73.29	ug/L	98
4) Vinyl Chloride	2.769	62	202074	78.86	ug/L	100
5) 1,3-Butadiene	2.788	39	207499	83.60	ug/L	99
6) Bromomethane	3.233	94	94113	71.51	ug/L	97
7) Chloroethane	3.391	64	116509	66.74	ug/L	97
8) Trichlorofluoromethane	3.568	101	341331	75.59	ug/L	97
9) Ethyl Ether	4.031	59	181601	85.24	ug/L	93
10) 1,2-Dichlorotrifluoroe...	4.239	67	206523	79.45	ug/L	90
11) 1,1-Dichloroethene	4.257	61	276698	78.95	ug/L	96
12) Ethanol	4.263	45	155867	1764.40	ug/L	70
13) Freon 113	4.306	101	170859	81.12	ug/L	94
14) Carbon Disulfide	4.312	76	504719	77.37	ug/L	98
15) Iodomethane	4.452	142	156830	85.27	ug/L	98
16) Acrolein	4.684	56	347145	394.73	ug/L	98
17) Allyl chloride	4.848	41	243735	76.64	ug/L	89
18) Methylene Chloride	4.976	49	273882	79.51	ug/L	90
19) Acetone	5.043	43	678138	359.26	ug/L	99
20) Methyl acetate	5.177	43	1602679	434.29	ug/L	94
21) trans-1,2-Dichloroethene	5.177	61	265199	73.51	ug/L	94
22) Hexane	5.263	56	141588	81.06	ug/L #	75
23) Methyl Tert Butyl Ether	5.306	73	559471	75.92	ug/L	61
24) Tert butyl alcohol	5.421	59	830319	749.15	ug/L	92
25) Acetonitrile	5.574	41	483962	664.06	ug/L	97
26) Di-isopropyl ether	5.732	45	660704	76.40	ug/L	93
27) Chloroprene	5.860	53	281324	78.04	ug/L	96
28) 1,1-Dichloroethane	5.879	63	361931	77.46	ug/L	98
29) Acrylonitrile	5.927	53	722336	409.52	ug/L	97
30) ETBE	6.141	59	605966	77.19	ug/L	95
31) Vinyl acetate	6.141	43	2420306	400.38	ug/L	95
32) cis-1,2-Dichloroethene	6.500	96	193379	73.86	ug/L	95
33) 2,2-Dichloropropane	6.616	77	246975	66.61	ug/L	99
34) Bromochloromethane	6.726	128	91069	71.59	ug/L #	75
35) Cyclohexane	6.750	56	301233	75.24	ug/L	96
36) Chloroform	6.787	83	348574	81.34	ug/L	98
37) Ethyl acetate	6.891	43	1971570	400.34	ug/L	97
38) Tetrahydrofuran	6.988	42	162803	77.95	ug/L	92
40) Carbon Tetrachloride	6.970	117	257832	79.07	ug/L	99
41) 1,1,1-Trichloroethane	7.037	97	289186	71.07	ug/L	97
42) 2-Butanone	7.104	43	1141113	393.72	ug/L	90
43) 1,1-Dichloropropene	7.165	75	238176	72.82	ug/L	98
44) tert-Butyl Formate	7.256	59	942335	382.94	ug/L	89

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-02\
Data File : I756327.D
Acq On : 2 May 2023 11:07 am
Operator : jeniferw
Sample : IC2910-6
Misc : MS53904,VI2910,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 02 11:31:29 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 11:25:12 2023
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45)	Propionitrile	7.421	54	665451	717.35	ug/L		76
46)	Methacrylonitrile	7.445	41	2006019	699.36	ug/L		92
47)	Benzene	7.427	78	720059	70.27	ug/L		81
48)	TAME	7.531	73	524151	78.57	ug/L		97
50)	Isobutyl alcohol	7.604	42	369666	1443.66	ug/L		87
51)	1,2-Dichloroethane	7.634	62	276671	78.74	ug/L		95
52)	Tert Amyl Alcohol	7.714	59	700918	712.75	ug/L		92
53)	Trichloroethene	8.043	95	194629	76.97	ug/L		95
54)	Methylcyclohexane	8.049	83	248902	74.68	ug/L		93
55)	Dibromomethane	8.476	93	132318	76.24	ug/L		93
56)	1,2-Dichloropropane	8.567	63	194770	72.39	ug/L		97
57)	Bromodichloromethane	8.622	83	268721	75.28	ug/L		99
58)	Methyl methacrylate	8.744	41	235608	80.35	ug/L		89
59)	1,4-Dioxane	8.835	88	118711	1657.96	ug/L		80
60)	2-Chloroethyl vinyl ether	9.158	63	777096	394.70	ug/L		92
61)	cis-1,3-Dichloropropene	9.250	75	299919	78.29	ug/L		96
64)	Toluene	9.500	91	744400	65.16	ug/L		99
65)	2-Nitropropane	9.701	41	526137	348.03	ug/L		95
66)	4-Methyl-2-pentanone	9.829	43	2005688	334.73	ug/L		96
67)	trans-1,3-Dichloropropene	9.896	75	291220	74.60	ug/L		90
68)	Tetrachloroethene	9.908	166	196238	68.42	ug/L		99
69)	Ethyl methacrylate	10.012	69	260522	73.78	ug/L		93
70)	1,1,2-Trichloroethane	10.061	83	161418	67.26	ug/L		94
71)	Dibromochloromethane	10.256	129	216484	71.48	ug/L		96
72)	1,3-Dichloropropane	10.335	76	296991	71.17	ug/L		95
73)	1,2-Dibromoethane	10.512	107	207099	71.75	ug/L		99
74)	3,3-dimethyl-1-butanol	10.622	57	4005675	3249.79	ug/L		97
75)	2-hexanone	10.658	43	1647404	348.36	ug/L		98
76)	1-Chlorohexane	10.963	91	225957	71.65	ug/L		86
77)	Ethylbenzene	11.024	91	839205	66.63	ug/L		95
78)	Chlorobenzene	11.024	112	498995	67.08	ug/L		96
79)	1,1,1,2-Tetrachloroethane	11.073	131	195117	70.10	ug/L		98
80)	m,p-Xylene	11.164	91	1308605	143.06	ug/L		99
81)	o-Xylene	11.603	91	672772	71.46	ug/L		97
82)	Styrene	11.652	104	503957	78.44	ug/L		95
83)	Bromoform	11.713	173	166224	73.65	ug/L		95
84)	Isopropylbenzene	11.914	105	781032	71.28	ug/L		99
87)	cis-1,4-Dichloro-2-butene	12.255	53	80424	73.35	ug/L		93
88)	n-Propylbenzene	12.335	91	951850	66.92	ug/L		98
89)	Bromobenzene	12.347	156	207039	73.58	ug/L		96
90)	1,1,2,2-Tetrachloroethane	12.389	83	325443	71.22	ug/L		99
91)	1,3,5-Trimethylbenzene	12.518	105	654674	69.39	ug/L		100
92)	2-Chlorotoluene	12.518	91	637915	65.60	ug/L		99
93)	trans-1,4-Dichloro-2-B...	12.572	53	87969	71.48	ug/L		88
94)	1,2,3-Trichloropropane	12.548	110	97616	64.32	ug/L		97
95)	Cyclohexanone	12.609	55	117817	336.52	ug/L		95
96)	4-Chlorotoluene	12.682	91	580837	72.34	ug/L		96
97)	tert-Butylbenzene	12.853	91	355759	68.48	ug/L		96
98)	1,2,4-Trimethylbenzene	12.926	105	647985	70.30	ug/L		97
99)	Pentachloroethane	12.902	167	113405	64.87	ug/L		94
100)	sec-Butylbenzene	13.042	105	752454	67.42	ug/L		99
101)	4-Isopropyltoluene	13.170	119	643133	69.16	ug/L		97
102)	1,3-Dichlorobenzene	13.304	146	374198	68.00	ug/L		98
103)	1,2,3-Trimethylbenzene	13.383	105	682435	72.28	ug/L		97
104)	1,4-Dichlorobenzene	13.389	146	387217	72.14	ug/L		98
105)	n-Butylbenzene	13.615	92	340415	72.71	ug/L	#	75
106)	Benzyl Chloride	13.627	126	108341	68.28	ug/L	#	58
107)	1,2-Dichlorobenzene	13.828	146	359670	66.59	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-02\
Data File : I756327.D
Acq On : 2 May 2023 11:07 am
Operator : jeniferw
Sample : IC2910-6
Misc : MS53904,VI2910,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 02 11:31:29 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 11:25:12 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
108) 1,2-Dibromo-3-Chloropr...	14.584	75	84639	66.48	ug/L	96
109) Hexachlorobutadiene	15.151	225	77272	65.63	ug/L	95
110) 1,2,4-Trichlorobenzene	15.194	180	204936	67.44	ug/L	99
111) Naphthalene	15.462	128	789478	67.12	ug/L	100
112) 1,2,3-Trichlorobenzene	15.627	180	200193	66.42	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

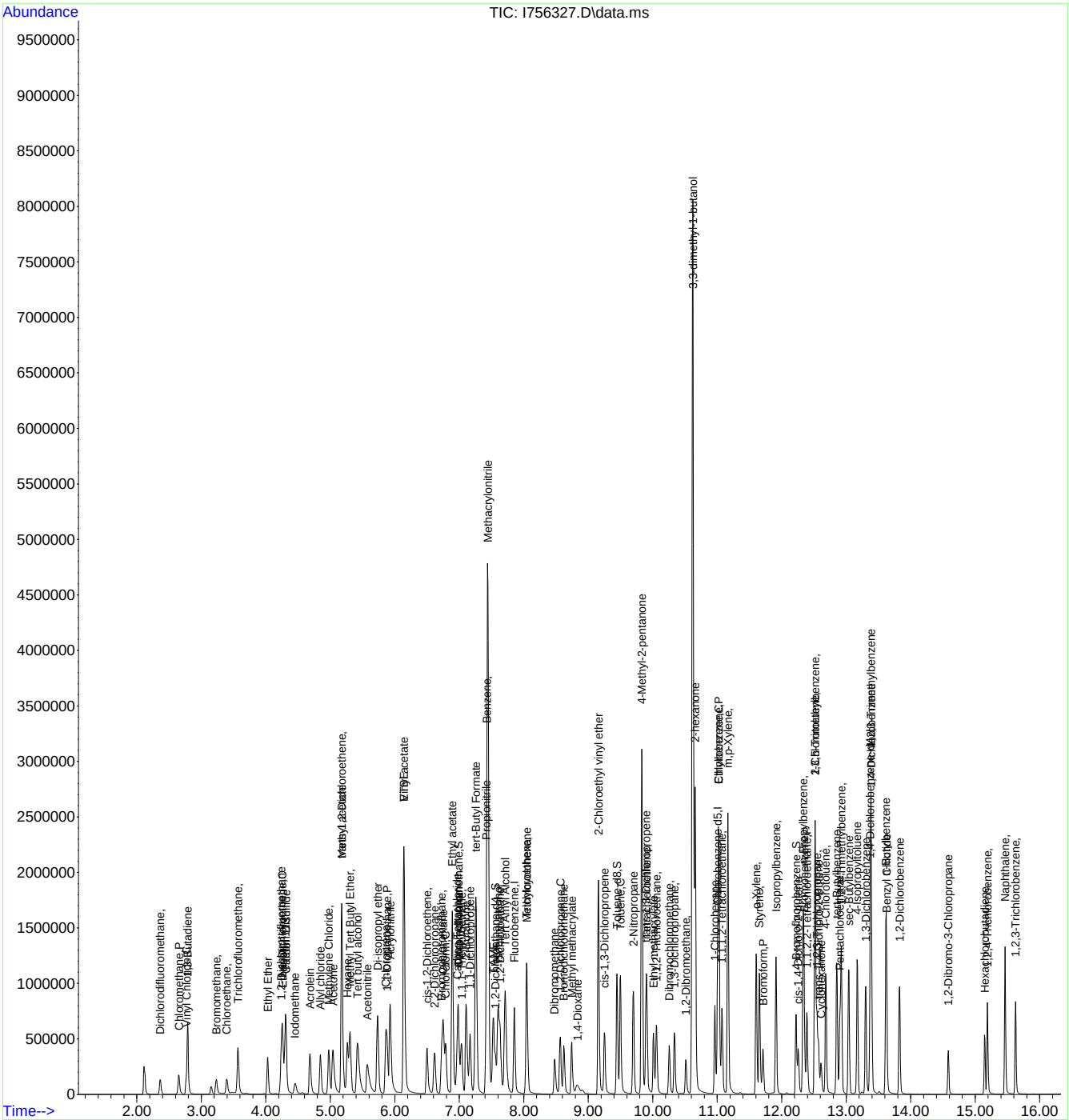
7.6.28

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-02\
Data File : I756327.D
Acq On : 2 May 2023 11:07 am
Operator : jeniferw
Sample : IC2910-6
Misc : MS53904,VI2910,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 02 11:31:29 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 11:25:12 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-02\
Data File : I756328.D
Acq On : 2 May 2023 11:32 am
Operator : jeniferw
Sample : IC2910-7
Misc : MS53904,VI2910,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 02 11:50:41 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 11:25:12 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.854	96	665250	50.00	ug/L	0.00
62) Chlorobenzene-d5	11.006	117	486832	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.371	152	256217	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	6.988	113	191932	53.72	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery =	107.44%		
49) 1,2-Dichloroethane-d4	7.561	65	207717	53.03	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery =	106.06%		
63) Toluene-d8	9.445	98	671191	47.22	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery =	94.44%		
86) 4-Bromofluorobenzene	12.225	174	203963	51.45	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery =	102.90%		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.361	85	190714	94.06	ug/L	98
3) Chloromethane	2.647	50	263884	93.79	ug/L	97
4) Vinyl Chloride	2.769	62	268915	101.15	ug/L	99
5) 1,3-Butadiene	2.782	39	265875	103.25	ug/L	97
6) Bromomethane	3.233	94	121224	88.78	ug/L	94
7) Chloroethane	3.391	64	148433	87.66	ug/L	95
8) Trichlorofluoromethane	3.562	101	433702	92.57	ug/L	98
9) Ethyl Ether	4.031	59	247396	111.93	ug/L	91
10) 1,2-Dichlorotrifluoroe...	4.239	67	273786	101.51	ug/L	90
11) 1,1-Dichloroethene	4.251	61	365206	100.43	ug/L	97
12) Ethanol	4.293	45	214934	2648.10	ug/L	68
13) Freon 113	4.293	101	225658	103.27	ug/L	94
14) Carbon Disulfide	4.300	76	667878	98.68	ug/L	98
15) Iodomethane	4.452	142	199956	104.79	ug/L	98
16) Acrolein	4.684	56	473481	518.93	ug/L	98
17) Allyl chloride	4.842	41	326262	98.88	ug/L	87
18) Methylene Chloride	4.970	49	365377	102.23	ug/L	91
19) Acetone	5.043	43	968038	494.30	ug/L	100
20) Methyl acetate	5.177	43	2199273	574.41	ug/L	95
21) trans-1,2-Dichloroethene	5.171	61	352279	94.12	ug/L	93
22) Hexane	5.257	56	180062	99.36	ug/L #	75
23) Methyl Tert Butyl Ether	5.305	73	760728	99.50	ug/L	57
24) Tert butyl alcohol	5.434	59	1151133	1001.06	ug/L	92
25) Acetonitrile	5.574	41	676369	894.52	ug/L	98
26) Di-isopropyl ether	5.732	45	895720	99.83	ug/L	92
27) Chloroprene	5.854	53	376307	100.61	ug/L	95
28) 1,1-Dichloroethane	5.879	63	483350	99.71	ug/L	99
29) Acrylonitrile	5.927	53	1038255	567.36	ug/L	98
30) ETBE	6.147	59	818681	100.52	ug/L	97
31) Vinyl acetate	6.141	43	3433914	526.25	ug/L	95
32) cis-1,2-Dichloroethene	6.494	96	261986	96.45	ug/L	93
33) 2,2-Dichloropropane	6.616	77	320610	83.35	ug/L	97
34) Bromochloromethane	6.726	128	123107	93.28	ug/L #	80
35) Cyclohexane	6.750	56	397043	95.59	ug/L	95
36) Chloroform	6.787	83	472838	106.35	ug/L	98
37) Ethyl acetate	6.891	43	2763200	540.80	ug/L	97
38) Tetrahydrofuran	6.982	42	219793	101.43	ug/L	90
40) Carbon Tetrachloride	6.970	117	341816	101.03	ug/L	99
41) 1,1,1-Trichloroethane	7.031	97	385757	91.37	ug/L	96
42) 2-Butanone	7.104	43	1625598	540.62	ug/L	90
43) 1,1-Dichloropropene	7.165	75	313772	92.46	ug/L	98
44) tert-Butyl Formate	7.256	59	1330899	521.29	ug/L	89

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-02\
Data File : I756328.D
Acq On : 2 May 2023 11:32 am
Operator : jeniferw
Sample : IC2910-7
Misc : MS53904,VI2910,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 02 11:50:41 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 11:25:12 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45) Propionitrile	7.421	54	944482	981.34	ug/L		77
46) Methacrylonitrile	7.445	41	2771022	931.15	ug/L		92
47) Benzene	7.427	78	955123	89.85	ug/L		83
48) TAME	7.531	73	708399	102.35	ug/L		98
50) Isobutyl alcohol	7.610	42	517989	1949.80	ug/L		89
51) 1,2-Dichloroethane	7.634	62	372922	102.30	ug/L		97
52) Tert Amyl Alcohol	7.720	59	957236	938.22	ug/L		92
53) Trichloroethene	8.043	95	260949	99.47	ug/L		94
54) Methylcyclohexane	8.049	83	329336	95.24	ug/L		92
55) Dibromomethane	8.476	93	179172	99.51	ug/L		94
56) 1,2-Dichloropropane	8.561	63	264689	94.83	ug/L		97
57) Bromodichloromethane	8.622	83	366728	99.02	ug/L		99
58) Methyl methacrylate	8.738	41	340153	111.82	ug/L		87
59) 1,4-Dioxane	8.835	88	167113	2249.61	ug/L		78
60) 2-Chloroethyl vinyl ether	9.158	63	1094023	535.59	ug/L		92
61) cis-1,3-Dichloropropene	9.250	75	410730	103.33	ug/L		98
64) Toluene	9.500	91	995607	83.46	ug/L		100
65) 2-Nitropropane	9.701	41	712475	451.29	ug/L		94
66) 4-Methyl-2-pentanone	9.829	43	2784198	444.94	ug/L		96
67) trans-1,3-Dichloropropene	9.890	75	393124	96.43	ug/L		92
68) Tetrachloroethene	9.908	166	259391	86.60	ug/L		97
69) Ethyl methacrylate	10.012	69	369893	100.32	ug/L		93
70) 1,1,2-Trichloroethane	10.055	83	218918	87.35	ug/L		95
71) Dibromochloromethane	10.256	129	297391	94.03	ug/L		95
72) 1,3-Dichloropropane	10.335	76	409521	93.98	ug/L		95
73) 1,2-Dibromoethane	10.512	107	284361	94.34	ug/L		100
74) 3,3-dimethyl-1-butanol	10.622	57	5480916	4258.00	ug/L		97
75) 2-hexanone	10.658	43	2104750	426.19	ug/L		98
76) 1-Chlorohexane	10.963	91	299744	91.01	ug/L		89
77) Ethylbenzene	11.024	91	1125450	85.56	ug/L		95
78) Chlorobenzene	11.024	112	666884	85.85	ug/L		96
79) 1,1,1,2-Tetrachloroethane	11.073	131	261801	90.07	ug/L		97
80) m,p-Xylene	11.164	91	1733967	181.52	ug/L		99
81) o-Xylene	11.603	91	913496	92.91	ug/L		97
82) Styrene	11.652	104	689345	102.74	ug/L		96
83) Bromoform	11.713	173	226367	96.04	ug/L		95
84) Isopropylbenzene	11.914	105	1045468	91.36	ug/L		99
87) cis-1,4-Dichloro-2-butene	12.255	53	114222	101.92	ug/L		91
88) n-Propylbenzene	12.335	91	1261368	86.75	ug/L		99
89) Bromobenzene	12.347	156	277574	96.50	ug/L		96
90) 1,1,2,2-Tetrachloroethane	12.389	83	425652	91.13	ug/L		98
91) 1,3,5-Trimethylbenzene	12.517	105	873530	90.59	ug/L		99
92) 2-Chlorotoluene	12.517	91	850187	85.54	ug/L		99
93) trans-1,4-Dichloro-2-B...	12.572	53	123863	98.47	ug/L		86
94) 1,2,3-Trichloropropane	12.548	110	128694	82.96	ug/L		96
95) Cyclohexanone	12.609	55	166907	466.40	ug/L		95
96) 4-Chlorotoluene	12.682	91	780057	95.05	ug/L		98
97) tert-Butylbenzene	12.853	91	476599	89.76	ug/L		97
98) 1,2,4-Trimethylbenzene	12.926	105	875122	92.89	ug/L		96
99) Pentachloroethane	12.902	167	154587	86.51	ug/L		95
100) sec-Butylbenzene	13.036	105	994283	87.16	ug/L		97
101) 4-Isopropyltoluene	13.170	119	859975	90.47	ug/L		97
102) 1,3-Dichlorobenzene	13.304	146	500424	88.97	ug/L		97
103) 1,2,3-Trimethylbenzene	13.383	105	906978	93.97	ug/L		98
104) 1,4-Dichlorobenzene	13.389	146	510751	93.10	ug/L		98
105) n-Butylbenzene	13.615	92	445260	93.05	ug/L	#	72
106) Benzyl Chloride	13.627	126	140641	86.71	ug/L	#	55
107) 1,2-Dichlorobenzene	13.828	146	479425	86.84	ug/L		97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-02\
Data File : I756328.D
Acq On : 2 May 2023 11:32 am
Operator : jeniferw
Sample : IC2910-7
Misc : MS53904,VI2910,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 02 11:50:41 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 11:25:12 2023
Response via : Initial Calibration

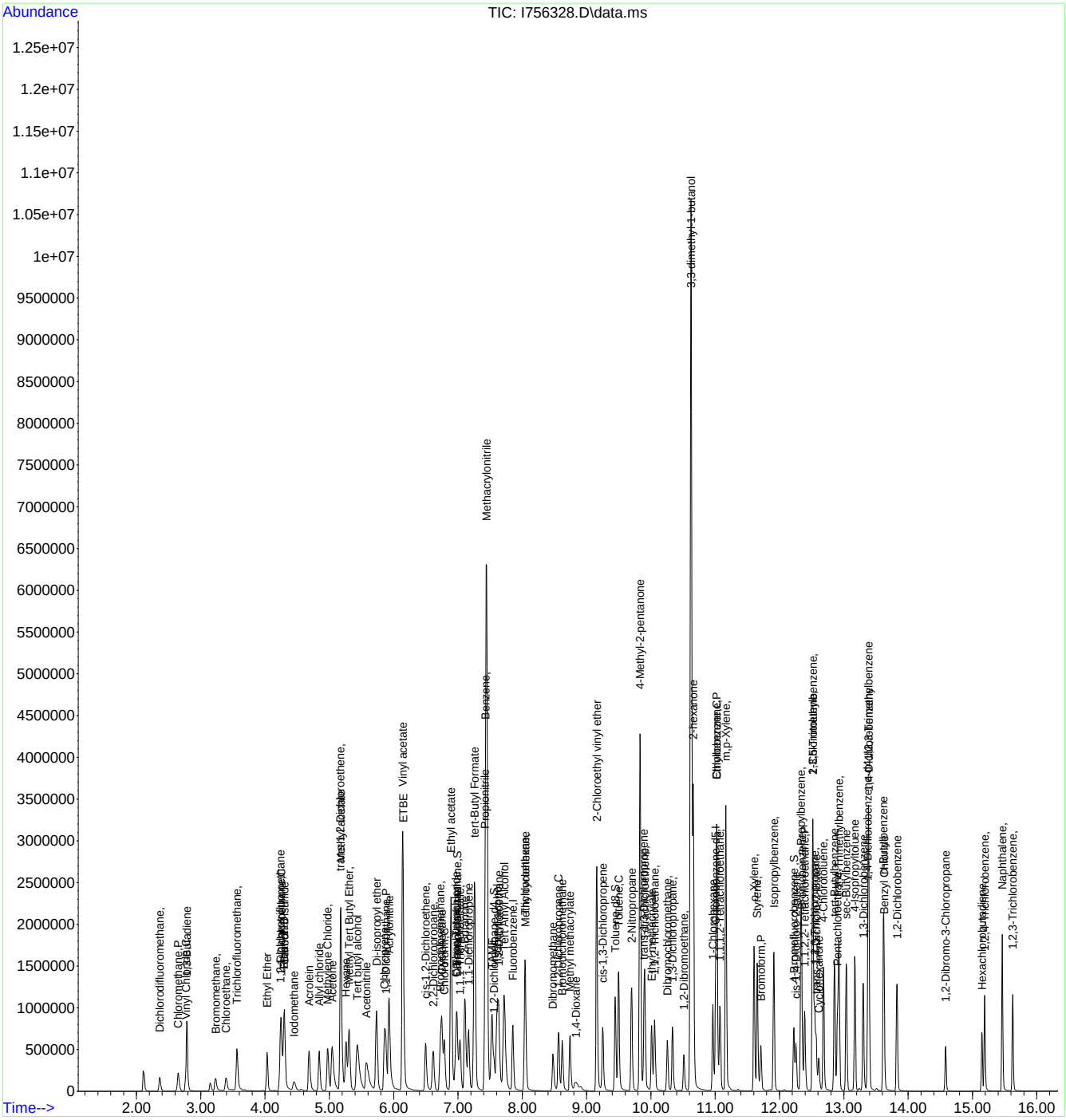
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
108) 1,2-Dibromo-3-Chloropr...	14.584	75	116479	89.51	ug/L	97
109) Hexachlorobutadiene	15.151	225	101968	84.72	ug/L	93
110) 1,2,4-Trichlorobenzene	15.188	180	281709	90.69	ug/L	97
111) Naphthalene	15.462	128	1102598	91.71	ug/L	100
112) 1,2,3-Trichlorobenzene	15.627	180	274108	88.97	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-02\
Data File : I756328.D
Acq On : 2 May 2023 11:32 am
Operator : jeniferw
Sample : IC2910-7
Misc : MS53904,VI2910,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 02 11:50:41 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 11:25:12 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-02\
Data File : I756330.D
Acq On : 2 May 2023 12:21 pm
Operator : jeniferw
Sample : IC2910-3
Misc : MS53904,VI2910,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 02 12:41:40 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 11:52:04 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.854	96	630611	50.00	ug/L	0.00
62) Chlorobenzene-d5	11.006	117	443299	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.371	152	232098	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	6.988	113	178139	50.01	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery =	100.02%		
49) 1,2-Dichloroethane-d4	7.561	65	195111	50.09	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery =	100.18%		
63) Toluene-d8	9.445	98	623254	50.77	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery =	101.54%		
86) 4-Bromofluorobenzene	12.225	174	179922	49.95	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery =	99.90%		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.361	85	18247	8.93	ug/L	98
3) Chloromethane	2.654	50	32342	11.21	ug/L	96
4) Vinyl Chloride	2.763	62	28254	9.82	ug/L	97
5) 1,3-Butadiene	2.788	39	28653	9.78	ug/L	99
6) Bromomethane	3.233	94	16219	13.15	ug/L	99
7) Chloroethane	3.397	64	19048	8.24	ug/L	89
8) Trichlorofluoromethane	3.599	101	41010	7.30	ug/L	98
9) Ethyl Ether	4.019	59	25129	9.74	ug/L	93
10) 1,2-Dichlorotrifluoroe...	4.245	67	27722	9.54	ug/L	91
11) 1,1-Dichloroethene	4.269	61	36878	9.52	ug/L	99
12) Ethanol	4.220	45	21556	152.84	ug/L	78
13) Freon 113	4.312	101	23024	9.59	ug/L	95
14) Carbon Disulfide	4.324	76	69101	9.77	ug/L	97
15) Iodomethane	4.458	142	14508	6.06	ug/L	91
16) Acrolein	4.684	56	47239	42.53	ug/L	96
17) Allyl chloride	4.848	41	34868	10.10	ug/L	85
18) Methylene Chloride	4.982	49	38989	9.96	ug/L	89
19) Acetone	5.037	43	99579	41.19	ug/L	100
20) Methyl acetate	5.178	43	195870	38.97	ug/L	96
21) trans-1,2-Dichloroethene	5.184	61	35620	8.09	ug/L	91
22) Hexane	5.275	56	19159	9.71	ug/L #	78
23) Methyl Tert Butyl Ether	5.306	73	75325	8.30	ug/L	72
24) Tert butyl alcohol	5.403	59	121034	86.70	ug/L	94
25) Acetonitrile	5.580	41	70554	82.40	ug/L	94
26) Di-isopropyl ether	5.732	45	86108	8.12	ug/L	97
27) Chloroprene	5.866	53	34528	7.93	ug/L	95
28) 1,1-Dichloroethane	5.885	63	49542	9.67	ug/L	98
29) Acrylonitrile	5.933	53	94724	42.15	ug/L	98
30) ETBE	6.147	59	80448	8.29	ug/L	97
31) Vinyl acetate	6.153	43	282019	37.05	ug/L	95
32) cis-1,2-Dichloroethene	6.513	96	25837	8.31	ug/L	94
33) 2,2-Dichloropropane	6.622	77	34957	8.57	ug/L	99
34) Bromochloromethane	6.738	128	13261	8.68	ug/L #	84
35) Cyclohexane	6.757	56	38496	8.15	ug/L	93
36) Chloroform	6.799	83	47996	9.64	ug/L	98
37) Ethyl acetate	6.897	43	260397	40.45	ug/L	97
38) Tetrahydrofuran	6.988	42	23557	10.10	ug/L	95
40) Carbon Tetrachloride	6.976	117	35032	9.64	ug/L	97
41) 1,1,1-Trichloroethane	7.037	97	38801	8.19	ug/L	97
42) 2-Butanone	7.110	43	146317	44.10	ug/L	90
43) 1,1-Dichloropropene	7.177	75	31720	8.31	ug/L	98
44) tert-Butyl Formate	7.256	59	123488	40.81	ug/L	96

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-02\
Data File : I756330.D
Acq On : 2 May 2023 12:21 pm
Operator : jeniferw
Sample : IC2910-3
Misc : MS53904,VI2910,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 02 12:41:40 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 11:52:04 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45) Propionitrile	7.421	54	94950	82.73	ug/L		96
46) Methacrylonitrile	7.445	41	297121	84.77	ug/L		94
47) Benzene	7.433	78	99343	8.26	ug/L	#	68
48) TAME	7.531	73	74604	10.06	ug/L		98
50) Isobutyl alcohol	7.598	42	51347	158.32	ug/L		84
51) 1,2-Dichloroethane	7.640	62	38781	9.90	ug/L		97
52) Tert Amyl Alcohol	7.701	59	101584	84.51	ug/L		92
53) Trichloroethene	8.055	95	26800	9.75	ug/L		94
54) Methylcyclohexane	8.055	83	32510	8.28	ug/L		89
55) Dibromomethane	8.494	93	18381	8.56	ug/L		90
56) 1,2-Dichloropropane	8.573	63	26856	8.36	ug/L		95
57) Bromodichloromethane	8.628	83	36418	8.25	ug/L		97
58) Methyl methacrylate	8.762	41	26686	8.04	ug/L		88
59) 1,4-Dioxane	8.823	88	13874	179.78	ug/L		74
60) 2-Chloroethyl vinyl ether	9.165	63	95514	43.37	ug/L		93
61) cis-1,3-Dichloropropene	9.256	75	39340	9.30	ug/L		99
64) Toluene	9.506	91	99859	8.26	ug/L		100
65) 2-Nitropropane	9.701	41	68389	40.70	ug/L		99
66) 4-Methyl-2-pentanone	9.835	43	293885	42.92	ug/L		95
67) trans-1,3-Dichloropropene	9.908	75	35984	8.34	ug/L		88
68) Tetrachloroethene	9.914	166	26372	8.36	ug/L		96
69) Ethyl methacrylate	10.024	69	30761	8.56	ug/L		92
70) 1,1,2-Trichloroethane	10.067	83	22463	8.46	ug/L		96
71) Dibromochloromethane	10.262	129	28813	8.47	ug/L		100
72) 1,3-Dichloropropane	10.341	76	38421	8.37	ug/L		92
73) 1,2-Dibromoethane	10.524	107	27201	8.63	ug/L		96
74) 3,3-dimethyl-1-butanol	10.616	57	583693	436.14	ug/L		98
75) 2-hexanone	10.658	43	239444	44.18	ug/L		93
76) 1-Chlorohexane	10.969	91	28357	8.42	ug/L		90
77) Ethylbenzene	11.030	91	113030	8.38	ug/L		97
78) Chlorobenzene	11.030	112	68632	8.50	ug/L		96
79) 1,1,1,2-Tetrachloroethane	11.079	131	25880	8.42	ug/L		93
80) m,p-Xylene	11.170	91	163576	16.39	ug/L		99
81) o-Xylene	11.609	91	84291	8.29	ug/L		96
82) Styrene	11.664	104	58837	8.02	ug/L		91
83) Bromoform	11.713	173	21177	8.33	ug/L		95
84) Isopropylbenzene	11.914	105	97855	8.25	ug/L		98
87) cis-1,4-Dichloro-2-butene	12.268	53	9867	8.51	ug/L		87
88) n-Propylbenzene	12.335	91	119420	8.10	ug/L		95
89) Bromobenzene	12.359	156	27728	9.98	ug/L		88
90) 1,1,2,2-Tetrachloroethane	12.396	83	44998	10.26	ug/L		96
91) 1,3,5-Trimethylbenzene	12.518	105	81648	8.25	ug/L		97
92) 2-Chlorotoluene	12.524	91	84457	8.15	ug/L		98
93) trans-1,4-Dichloro-2-B...	12.585	53	12464	10.30	ug/L	#	64
94) 1,2,3-Trichloropropane	12.548	110	13423	8.60	ug/L		92
95) Cyclohexanone	12.615	55	17255	44.89	ug/L		92
96) 4-Chlorotoluene	12.688	91	72831	9.42	ug/L		97
97) tert-Butylbenzene	12.859	91	43622	8.07	ug/L		98
98) 1,2,4-Trimethylbenzene	12.926	105	79838	8.18	ug/L		92
99) Pentachloroethane	12.908	167	15237	8.31	ug/L		95
100) sec-Butylbenzene	13.042	105	92777	8.10	ug/L		98
101) 4-Isopropyltoluene	13.176	119	78129	8.18	ug/L		98
102) 1,3-Dichlorobenzene	13.310	146	48418	8.21	ug/L		98
103) 1,2,3-Trimethylbenzene	13.389	105	89082	9.74	ug/L		98
104) 1,4-Dichlorobenzene	13.389	146	53068	10.18	ug/L		96
105) n-Butylbenzene	13.621	92	41019	8.15	ug/L	#	79
106) Benzyl Chloride	13.633	126	13963	9.10	ug/L	#	34
107) 1,2-Dichlorobenzene	13.828	146	47373	8.41	ug/L		97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-02\
Data File : I756330.D
Acq On : 2 May 2023 12:21 pm
Operator : jeniferw
Sample : IC2910-3
Misc : MS53904,VI2910,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 02 12:41:40 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 11:52:04 2023
Response via : Initial Calibration

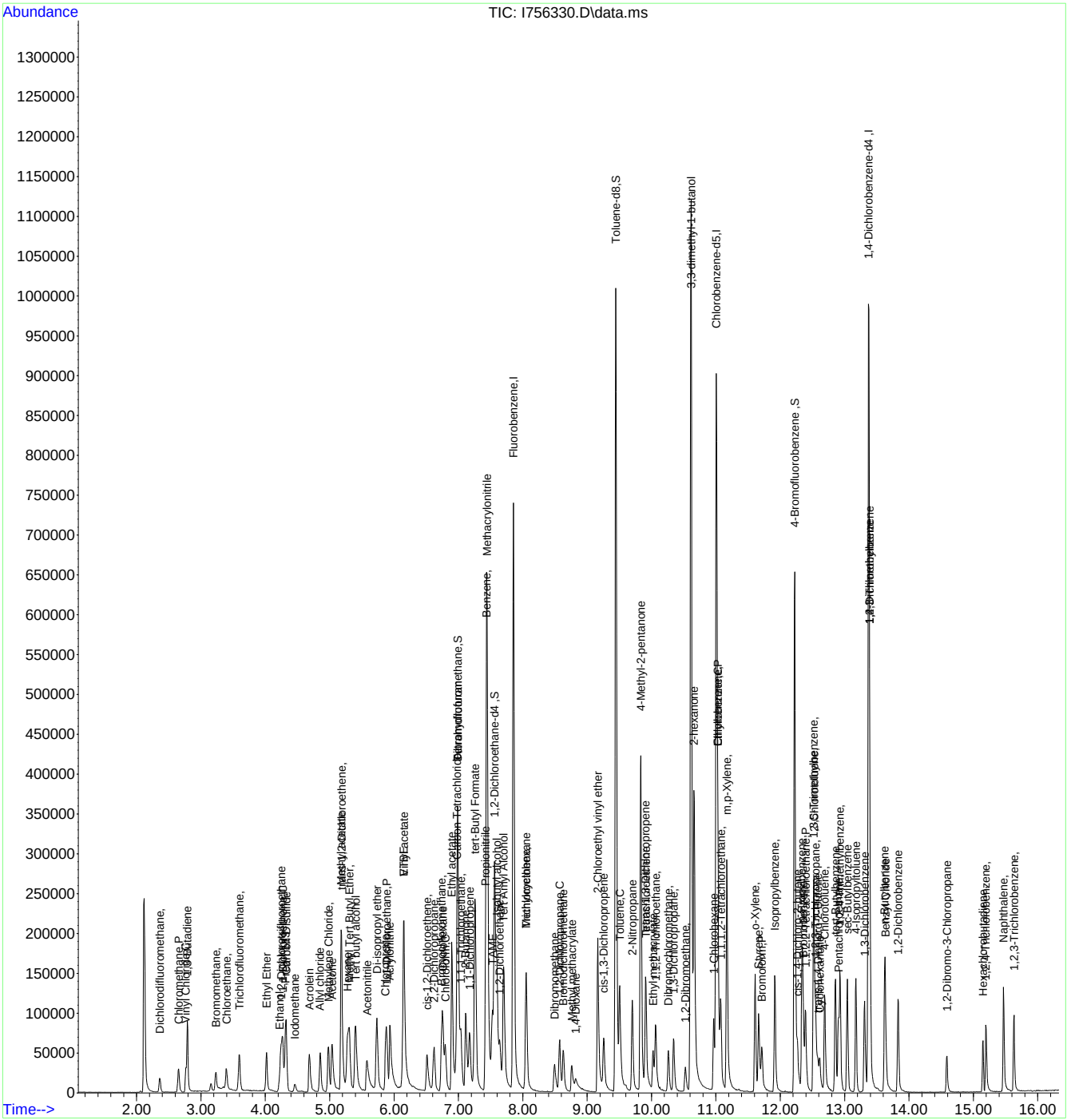
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
108) 1,2-Dibromo-3-Chloropr...	14.590	75	11318	8.68	ug/L	97
109) Hexachlorobutadiene	15.151	225	9648	9.31	ug/L	90
110) 1,2,4-Trichlorobenzene	15.194	180	25918	8.50	ug/L	97
111) Naphthalene	15.468	128	93958	8.10	ug/L	99
112) 1,2,3-Trichlorobenzene	15.633	180	26763	9.93	ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-02\
Data File : I756330.D
Acq On : 2 May 2023 12:21 pm
Operator : jeniferw
Sample : IC2910-3
Misc : MS53904,VI2910,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 02 12:41:40 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 11:52:04 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-02\
Data File : I756331.D
Acq On : 2 May 2023 1:02 pm
Operator : jeniferw
Sample : ICV2910-5
Misc : MS53904,VI2910,,,,,
ALS Vial : 11 Sample Multiplier: 1

Quant Time: May 02 13:32:56 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorobenzene	7.848	96	639680	50.00	ug/L		0.00
62) Chlorobenzene-d5	11.006	117	455032	50.00	ug/L		0.00
85) 1,4-Dichlorobenzene-d4	13.371	152	246228	50.00	ug/L		0.00
System Monitoring Compounds							
39) Dibromofluoromethane	6.982	113	182572	50.44	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.88%				
49) 1,2-Dichloroethane-d4	7.555	65	195047	49.28	ug/L		0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 98.56%				
63) Toluene-d8	9.445	98	642757	50.95	ug/L		0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 101.90%				
86) 4-Bromofluorobenzene	12.225	174	190091	49.59	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.18%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	2.355	85	120264	61.01	ug/L		97
3) Chloromethane	2.647	50	134246	48.94	ug/L		96
4) Vinyl Chloride	2.763	62	128812	44.81	ug/L		98
5) 1,3-Butadiene	2.788	39	120857	43.39	ug/L		98
6) Bromomethane	3.227	94	55216	44.46	ug/L		99
7) Chloroethane	3.391	64	71089	41.53	ug/L		97
8) Trichlorofluoromethane	3.580	101	200911	44.18	ug/L		100
9) Ethyl Ether	4.013	59	108540	42.16	ug/L		91
10) 1,2-Dichlorotrifluoroe...	4.232	67	133706	47.10	ug/L		90
11) 1,1-Dichloroethene	4.257	61	161798	43.31	ug/L		95
12) Ethanol	4.226	45	89218	834.41	ug/L		75
13) Freon 113	4.306	101	112230	48.99	ug/L		97
14) Carbon Disulfide	4.318	76	305557	43.56	ug/L		97
15) Iodomethane	4.452	142	85454	41.27	ug/L		98
16) Acrolein	4.678	56	196602	211.45	ug/L		100
17) Allyl chloride	4.842	41	146527	44.29	ug/L		89
18) Methylene Chloride	4.970	49	161747	43.30	ug/L		91
19) Acetone	5.025	43	386746	202.41	ug/L		100
20) Methyl acetate	5.165	43	838263	202.94	ug/L		95
21) trans-1,2-Dichloroethene	5.171	61	152780	41.93	ug/L		93
22) Hexane	5.269	56	87337	45.27	ug/L	#	77
23) Methyl Tert Butyl Ether	5.293	73	329103	43.49	ug/L		78
24) Tert butyl alcohol	5.397	59	485207	414.61	ug/L		94
25) Acetonitrile	5.561	41	288288	403.49	ug/L		97
26) Di-isopropyl ether	5.726	45	372125	42.23	ug/L		94
27) Chloroprene	5.860	53	144184	39.91	ug/L		95
28) 1,1-Dichloroethane	5.878	63	202099	40.22	ug/L		99
29) Acrylonitrile	5.921	53	399065	214.99	ug/L		99
30) ETBE	6.135	59	356941	44.17	ug/L		96
31) Vinyl acetate	6.135	43	1378762	220.76	ug/L		95
32) cis-1,2-Dichloroethene	6.494	96	109553	42.75	ug/L		94
33) 2,2-Dichloropropane	6.610	77	150743	44.93	ug/L		97
34) Bromochloromethane	6.726	128	52463	40.99	ug/L	#	82
35) Cyclohexane	6.750	56	177172	46.05	ug/L		95
36) Chloroform	6.787	83	203832	41.65	ug/L		99
37) Ethyl acetate	6.884	43	1098380	203.93	ug/L		97
38) Tetrahydrofuran	6.976	42	90620	40.73	ug/L		92
40) Carbon Tetrachloride	6.970	117	149817	42.54	ug/L		97
41) 1,1,1-Trichloroethane	7.031	97	168038	43.21	ug/L		95
42) 2-Butanone	7.098	43	637425	214.83	ug/L		90
43) 1,1-Dichloropropene	7.165	75	143181	45.74	ug/L		96
44) tert-Butyl Formate	7.250	59	569207	223.56	ug/L		91

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-02\
Data File : I756331.D
Acq On : 2 May 2023 1:02 pm
Operator : jeniferw
Sample : ICV2910-5
Misc : MS53904,VI2910,,,,,
ALS Vial : 11 Sample Multiplier: 1

Quant Time: May 02 13:32:56 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45) Propionitrile	7.409	54	382800	403.51	ug/L		94
46) Methacrylonitrile	7.433	41	1175127	400.02	ug/L		94
47) Benzene	7.427	78	417594	42.07	ug/L	#	62
48) TAME	7.525	73	312659	42.26	ug/L		98
50) Isobutyl alcohol	7.585	42	221159	822.41	ug/L		89
51) 1,2-Dichloroethane	7.634	62	155716	39.75	ug/L		96
52) Tert Amyl Alcohol	7.695	59	411674	411.87	ug/L		89
53) Trichloroethene	8.043	95	110564	40.63	ug/L		98
54) Methylcyclohexane	8.049	83	143709	44.72	ug/L		92
55) Dibromomethane	8.476	93	75145	41.77	ug/L		92
56) 1,2-Dichloropropane	8.561	63	116143	43.45	ug/L		95
57) Bromodichloromethane	8.622	83	147580	40.24	ug/L		96
58) Methyl methacrylate	8.744	41	124186	39.09	ug/L		89
59) 1,4-Dioxane	8.817	88	62994	775.95	ug/L		82
60) 2-Chloroethyl vinyl ether	9.152	63	423180	218.20	ug/L		92
61) cis-1,3-Dichloropropene	9.250	75	167884	42.19	ug/L		95
64) Toluene	9.500	91	424242	41.75	ug/L		99
65) 2-Nitropropane	9.695	41	288466	206.54	ug/L		95
66) 4-Methyl-2-pentanone	9.829	43	1163752	202.28	ug/L		96
67) trans-1,3-Dichloropropene	9.896	75	146464	40.84	ug/L		95
68) Tetrachloroethene	9.908	166	112077	42.83	ug/L		97
69) Ethyl methacrylate	10.012	69	154231	44.52	ug/L		93
70) 1,1,2-Trichloroethane	10.055	83	91156	40.83	ug/L		96
71) Dibromochloromethane	10.256	129	121469	42.29	ug/L		94
72) 1,3-Dichloropropane	10.335	76	175294	45.56	ug/L		96
73) 1,2-Dibromoethane	10.512	107	114688	43.19	ug/L		98
74) 3,3-dimethyl-1-butanol	10.615	57	2284225	2013.53	ug/L		98
75) 2-hexanone	10.652	43	942591	210.50	ug/L		97
76) 1-Chlorohexane	10.963	91	126983	45.85	ug/L		92
77) Ethylbenzene	11.024	91	471588	41.77	ug/L		96
78) Chlorobenzene	11.024	112	275399	40.52	ug/L		95
79) 1,1,1,2-Tetrachloroethane	11.073	131	105280	40.86	ug/L		97
80) m,p-Xylene	11.164	91	720562	87.49	ug/L		98
81) o-Xylene	11.603	91	366746	43.15	ug/L		98
82) Styrene	11.652	104	277476	46.01	ug/L		96
83) Bromoform	11.707	173	89022	41.89	ug/L		98
84) Isopropylbenzene	11.914	105	424378	43.25	ug/L		99
87) cis-1,4-Dichloro-2-butene	12.261	53	47148	46.64	ug/L		84
88) n-Propylbenzene	12.335	91	518858	40.79	ug/L		99
89) Bromobenzene	12.347	156	116604	40.05	ug/L		94
90) 1,1,2,2-Tetrachloroethane	12.389	83	182419	38.79	ug/L		99
91) 1,3,5-Trimethylbenzene	12.517	105	361566	42.56	ug/L		98
92) 2-Chlorotoluene	12.517	91	347676	38.62	ug/L		99
93) trans-1,4-Dichloro-2-B...	12.572	53	49651	41.54	ug/L		86
94) 1,2,3-Trichloropropane	12.548	110	58070	42.67	ug/L		97
95) Cyclohexanone	12.603	55	228902	667.14	ug/L		94
96) 4-Chlorotoluene	12.682	91	318706	41.59	ug/L		97
97) tert-Butylbenzene	12.853	91	192935	41.23	ug/L		97
98) 1,2,4-Trimethylbenzene	12.926	105	357717	42.71	ug/L		97
99) Pentachloroethane	12.902	167	64397	39.95	ug/L		98
100) sec-Butylbenzene	13.036	105	397037	40.34	ug/L		97
101) 4-Isopropyltoluene	13.170	119	348607	42.60	ug/L		97
102) 1,3-Dichlorobenzene	13.304	146	200615	39.32	ug/L		96
103) 1,2,3-Trimethylbenzene	13.383	105	359725	38.60	ug/L		98
104) 1,4-Dichlorobenzene	13.389	146	215412	38.28	ug/L		99
105) n-Butylbenzene	13.615	92	193666	45.38	ug/L	#	80
106) Benzyl Chloride	13.627	126	58831	41.21	ug/L	#	69
107) 1,2-Dichlorobenzene	13.828	146	196820	40.16	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-02\
Data File : I756331.D
Acq On : 2 May 2023 1:02 pm
Operator : jeniferw
Sample : ICV2910-5
Misc : MS53904,VI2910,,,,,
ALS Vial : 11 Sample Multiplier: 1

Quant Time: May 02 13:32:56 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
108) 1,2-Dibromo-3-Chloropr...	14.584	75	48631	43.12	ug/L	98
109) Hexachlorobutadiene	15.151	225	44750	42.20	ug/L	93
110) 1,2,4-Trichlorobenzene	15.194	180	111454	42.44	ug/L	97
111) Naphthalene	15.462	128	418842	41.87	ug/L	99
112) 1,2,3-Trichlorobenzene	15.627	180	108188	39.33	ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

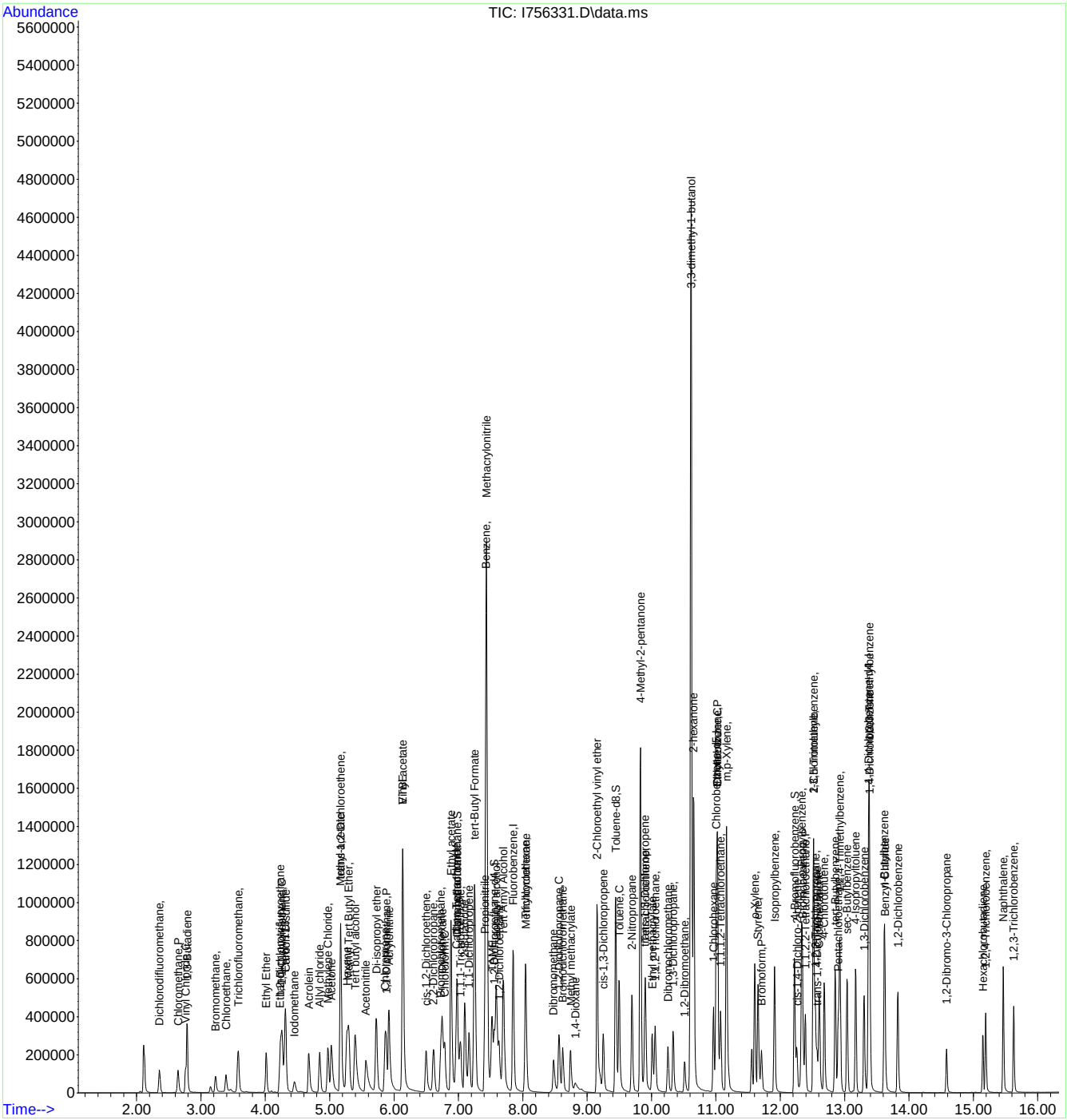
7.6.31

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-02\
Data File : I756331.D
Acq On : 2 May 2023 1:02 pm
Operator : jeniferw
Sample : ICV2910-5
Misc : MS53904,VI2910,,,,,
ALS Vial : 11 Sample Multiplier: 1

Quant Time: May 02 13:32:56 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\Users\Organics\Desktop\Manila Files\
Data File : I756403.d
Acq On : 3 May 2023 9:26 pm
Operator : jeniferw
Sample : CC2910-5
Misc : MS53924,VI2913,,,,,
ALS Vial : 30 Sample Multiplier: 1

Quant Time: May 04 07:08:10 2023
Quant Method : C:\msdchem\2\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorobenzene	7.854	96	589250	50.00	ug/L		0.00
62) Chlorobenzene-d5	11.006	117	430300	50.00	ug/L		0.00
85) 1,4-Dichlorobenzene-d4	13.371	152	228595	50.00	ug/L		0.00
System Monitoring Compounds							
39) Dibromofluoromethane	6.988	113	169581	50.86	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.72%				
49) 1,2-Dichloroethane-d4	7.561	65	183445	50.31	ug/L		0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 100.62%				
63) Toluene-d8	9.445	98	596041	49.96	ug/L		0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 99.92%				
86) 4-Bromofluorobenzene	12.225	174	177389	49.84	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.68%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	2.361	85	54779	30.17	ug/L		93
3) Chloromethane	2.654	50	85535	33.85	ug/L		97
4) Vinyl Chloride	2.769	62	83301	31.46	ug/L		100
5) 1,3-Butadiene	2.794	39	92167	35.92	ug/L		99
6) Bromomethane	3.233	94	37307	32.61	ug/L		96
7) Chloroethane	3.391	64	52721	32.68	ug/L		93
8) Trichlorofluoromethane	3.580	101	140398	33.52	ug/L		94
9) Ethyl Ether	4.019	59	82485	34.78	ug/L		90
10) 1,2-Dichlorotrifluoroe...	4.239	67	95045	36.34	ug/L		86
11) 1,1-Dichloroethene	4.263	61	120969	35.15	ug/L		95
12) Ethanol	4.226	45	85042	863.42	ug/L		79
13) Freon 113	4.312	101	71436	33.85	ug/L		97
14) Carbon Disulfide	4.318	76	217258	33.62	ug/L		97
15) Iodomethane	4.458	142	47769	26.53	ug/L		96
16) Acrolein	4.684	56	131527	153.56	ug/L		97
17) Allyl chloride	4.848	41	101712	33.37	ug/L		88
18) Methylene Chloride	4.976	49	131908	38.34	ug/L		90
19) Acetone	5.037	43	346540	196.89	ug/L		100
20) Methyl acetate	5.171	43	746164	196.10	ug/L		94
21) trans-1,2-Dichloroethene	5.177	61	118503	35.31	ug/L		92
22) Hexane	5.269	56	55185	31.05	ug/L	#	73
23) Methyl Tert Butyl Ether	5.305	73	254844	36.56	ug/L		72
24) Tert butyl alcohol	5.409	59	413064	383.17	ug/L		92
25) Acetonitrile	5.574	41	243321	369.70	ug/L		95
26) Di-isopropyl ether	5.732	45	300069	36.96	ug/L		93
27) Chloroprene	5.866	53	120234	36.13	ug/L		96
28) 1,1-Dichloroethane	5.885	63	169193	36.56	ug/L		99
29) Acrylonitrile	5.927	53	340518	199.15	ug/L		96
30) ETBE	6.141	59	276100	37.09	ug/L		95
31) Vinyl acetate	6.141	43	992985	175.25	ug/L		95
32) cis-1,2-Dichloroethene	6.506	96	89134	37.76	ug/L		97
33) 2,2-Dichloropropane	6.616	77	57695	18.67	ug/L		94
34) Bromochloromethane	6.732	128	44059	37.37	ug/L	#	84
35) Cyclohexane	6.750	56	121273	34.22	ug/L		94
36) Chloroform	6.793	83	163284	36.22	ug/L		95
37) Ethyl acetate	6.890	43	900805	181.56	ug/L		97
38) Tetrahydrofuran	6.988	42	76918	37.53	ug/L		90
40) Carbon Tetrachloride	6.976	117	114757	35.37	ug/L		98
41) 1,1,1-Trichloroethane	7.037	97	130606	36.46	ug/L		94
42) 2-Butanone	7.104	43	556648	203.66	ug/L		89
43) 1,1-Dichloropropene	7.171	75	104579	36.26	ug/L		98
44) tert-Butyl Formate	7.256	59	422733	180.24	ug/L		92

Quantitation Report (QT Reviewed)

Data Path : C:\Users\Organics\Desktop\Manila Files\
Data File : I756403.d
Acq On : 3 May 2023 9:26 pm
Operator : jeniferw
Sample : CC2910-5
Misc : MS53924,VI2913,,,,,
ALS Vial : 30 Sample Multiplier: 1

Quant Time: May 04 07:08:10 2023
Quant Method : C:\msdchem\2\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45) Propionitrile	7.415	54	331078	378.86	ug/L		94
46) Methacrylonitrile	7.439	41	935340	345.65	ug/L		94
47) Benzene	7.433	78	335444	36.68	ug/L	#	60
48) TAME	7.531	73	241077	35.38	ug/L		97
50) Isobutyl alcohol	7.598	42	185601	749.25	ug/L		90
51) 1,2-Dichloroethane	7.634	62	130335	36.12	ug/L		97
52) Tert Amyl Alcohol	7.701	59	337024	366.04	ug/L		91
53) Trichloroethene	8.043	95	87917	35.08	ug/L		93
54) Methylcyclohexane	8.055	83	100572	33.97	ug/L		98
55) Dibromomethane	8.482	93	60781	36.68	ug/L		93
56) 1,2-Dichloropropane	8.567	63	90024	36.56	ug/L		95
57) Bromodichloromethane	8.628	83	122061	36.13	ug/L		99
58) Methyl methacrylate	8.744	41	104379	35.66	ug/L		88
59) 1,4-Dioxane	8.823	88	57258	765.66	ug/L		80
60) 2-Chloroethyl vinyl ether	9.158	63	355069	198.75	ug/L		92
61) cis-1,3-Dichloropropene	9.256	75	125662	34.29	ug/L		98
64) Toluene	9.500	91	341634	35.55	ug/L		100
65) 2-Nitropropane	9.701	41	236410	179.00	ug/L		95
66) 4-Methyl-2-pentanone	9.829	43	992357	182.40	ug/L		96
67) trans-1,3-Dichloropropene	9.896	75	117778	34.73	ug/L		91
68) Tetrachloroethene	9.908	166	108077	43.68	ug/L		100
69) Ethyl methacrylate	10.012	69	119614	36.51	ug/L		93
70) 1,1,2-Trichloroethane	10.061	83	76535	36.25	ug/L		94
71) Dibromochloromethane	10.256	129	99346	36.57	ug/L		94
72) 1,3-Dichloropropane	10.341	76	135511	37.25	ug/L		93
73) 1,2-Dibromoethane	10.518	107	93391	37.19	ug/L		94
74) 3,3-dimethyl-1-butanol	10.615	57	2024421	1887.08	ug/L		97
75) 2-hexanone	10.658	43	812442	191.86	ug/L		99
76) 1-Chlorohexane	10.969	91	91866	35.08	ug/L		93
77) Ethylbenzene	11.030	91	377532	35.36	ug/L		98
78) Chlorobenzene	11.024	112	229740	35.75	ug/L		96
79) 1,1,1,2-Tetrachloroethane	11.073	131	89550	36.75	ug/L		98
80) m,p-Xylene	11.164	91	574415	73.76	ug/L		99
81) o-Xylene	11.603	91	297024	36.95	ug/L		98
82) Styrene	11.658	104	222971	39.10	ug/L		97
83) Bromoform	11.713	173	74314	36.98	ug/L		95
84) Isopropylbenzene	11.914	105	339585	36.59	ug/L		100
87) cis-1,4-Dichloro-2-butene	12.261	53	24168	25.75	ug/L		97
88) n-Propylbenzene	12.335	91	410208	34.74	ug/L		99
89) Bromobenzene	12.347	156	94680	35.03	ug/L		92
90) 1,1,2,2-Tetrachloroethane	12.389	83	149603	34.26	ug/L		98
91) 1,3,5-Trimethylbenzene	12.517	105	286038	36.26	ug/L		99
92) 2-Chlorotoluene	12.517	91	293971	35.17	ug/L		95
93) trans-1,4-Dichloro-2-B...	12.572	53	27757	25.02	ug/L		97
94) 1,2,3-Trichloropropane	12.548	110	45638	36.12	ug/L		97
95) Cyclohexanone	12.609	55	57452	180.36	ug/L		92
96) 4-Chlorotoluene	12.688	91	260345	36.60	ug/L		99
97) tert-Butylbenzene	12.853	91	151956	34.98	ug/L		95
98) 1,2,4-Trimethylbenzene	12.926	105	288255	37.07	ug/L		97
99) Pentachloroethane	12.908	167	35308	23.60	ug/L		95
100) sec-Butylbenzene	13.042	105	319968	35.01	ug/L		99
101) 4-Isopropyltoluene	13.176	119	275293	36.23	ug/L		99
102) 1,3-Dichlorobenzene	13.304	146	170006	35.89	ug/L		98
103) 1,2,3-Trimethylbenzene	13.383	105	310354	35.87	ug/L		97
104) 1,4-Dichlorobenzene	13.389	146	177898	34.05	ug/L		99
105) n-Butylbenzene	13.615	92	129046	32.57	ug/L		93
106) Benzyl Chloride	13.633	126	21908	16.53	ug/L	#	69
107) 1,2-Dichlorobenzene	13.828	146	167708	36.86	ug/L		96

Quantitation Report (QT Reviewed)

Data Path : C:\Users\Organics\Desktop\Manila Files\
Data File : I756403.d
Acq On : 3 May 2023 9:26 pm
Operator : jeniferw
Sample : CC2910-5
Misc : MS53924,VI2913,,,,,
ALS Vial : 30 Sample Multiplier: 1

Quant Time: May 04 07:08:10 2023
Quant Method : C:\msdchem\2\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

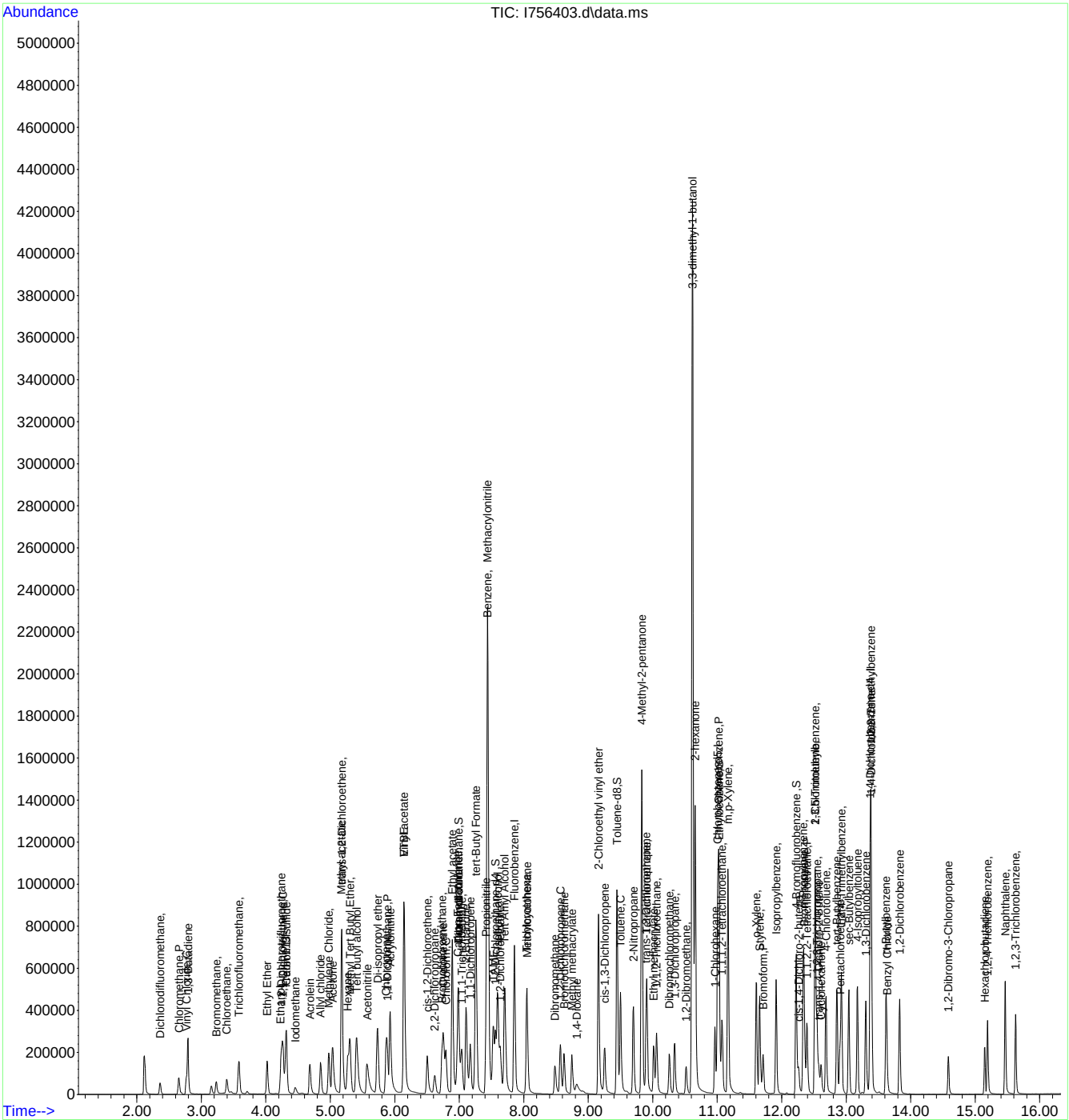
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
108) 1,2-Dibromo-3-Chloropr...	14.584	75	38970	37.22	ug/L	98
109) Hexachlorobutadiene	15.151	225	32857	33.38	ug/L	96
110) 1,2,4-Trichlorobenzene	15.194	180	94764	38.87	ug/L	99
111) Naphthalene	15.468	128	357997	38.55	ug/L	99
112) 1,2,3-Trichlorobenzene	15.627	180	93593	36.65	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\Users\Organics\Desktop\Manila Files\
Data File : I756403.d
Acq On : 3 May 2023 9:26 pm
Operator : jeniferw
Sample : CC2910-5
Misc : MS53924,VI2913,,,,,
ALS Vial : 30 Sample Multiplier: 1

Quant Time: May 04 07:08:10 2023
Quant Method : C:\msdchem\2\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-03\
Data File : I756429.D
Acq On : 4 May 2023 8:09 am
Operator : jeniferw
Sample : ECC2910-5
Misc : MS53924,VI2913,,,,,
ALS Vial : 56 Sample Multiplier: 1

Quant Time: May 04 08:36:07 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorobenzene	7.854	96	561501	50.00	ug/L		0.00
62) Chlorobenzene-d5	11.006	117	402985	50.00	ug/L		0.00
85) 1,4-Dichlorobenzene-d4	13.371	152	211117	50.00	ug/L		0.00
System Monitoring Compounds							
39) Dibromofluoromethane	6.988	113	161683	50.89	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.78%				
49) 1,2-Dichloroethane-d4	7.561	65	171194	49.27	ug/L		0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 98.54%				
63) Toluene-d8	9.445	98	569254	50.95	ug/L		0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 101.90%				
86) 4-Bromofluorobenzene	12.225	174	162994	49.59	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.18%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	2.355	85	48432	27.99	ug/L		97
3) Chloromethane	2.648	50	82837	34.40	ug/L		99
4) Vinyl Chloride	2.763	62	75124	29.77	ug/L		99
5) 1,3-Butadiene	2.794	39	87236	35.68	ug/L		97
6) Bromomethane	3.233	94	24900	22.84	ug/L		96
7) Chloroethane	3.391	64	47731	30.91	ug/L		94
8) Trichlorofluoromethane	3.586	101	125771	31.51	ug/L		98
9) Ethyl Ether	4.019	59	75986	33.62	ug/L		91
10) 1,2-Dichlorotrifluoroe...	4.245	67	82234	33.00	ug/L		90
11) 1,1-Dichloroethene	4.263	61	110883	33.81	ug/L		93
12) Ethanol	4.227	45	70298	749.00	ug/L		71
13) Freon 113	4.312	101	78755	39.16	ug/L		97
14) Carbon Disulfide	4.324	76	196466	31.90	ug/L		97
15) Iodomethane	4.458	142	45461	26.50	ug/L		98
16) Acrolein	4.684	56	103749	127.12	ug/L		98
17) Allyl chloride	4.848	41	85643	29.49	ug/L		86
18) Methylene Chloride	4.976	49	123071	37.53	ug/L		89
19) Acetone	5.031	43	327450	195.23	ug/L		98
20) Methyl acetate	5.171	43	712194	196.42	ug/L		95
21) trans-1,2-Dichloroethene	5.178	61	111271	34.79	ug/L		92
22) Hexane	5.275	56	46665	27.56	ug/L	#	75
23) Methyl Tert Butyl Ether	5.306	73	239389	36.04	ug/L		74
24) Tert butyl alcohol	5.403	59	381618	371.50	ug/L		92
25) Acetonitrile	5.568	41	224708	358.29	ug/L		97
26) Di-isopropyl ether	5.732	45	278689	36.03	ug/L		94
27) Chloroprene	5.866	53	112021	35.32	ug/L		94
28) 1,1-Dichloroethane	5.885	63	157232	35.65	ug/L		98
29) Acrylonitrile	5.927	53	317811	195.05	ug/L		98
30) ETBE	6.141	59	259195	36.54	ug/L		96
31) Vinyl acetate	6.141	43	845835	157.60	ug/L		95
32) cis-1,2-Dichloroethene	6.507	96	83777	37.24	ug/L		98
33) 2,2-Dichloropropane	6.622	77	22291	7.57	ug/L		93
34) Bromochloromethane	6.732	128	40947	36.45	ug/L	#	84
35) Cyclohexane	6.757	56	109591	32.45	ug/L		96
36) Chloroform	6.793	83	156167	36.36	ug/L		97
37) Ethyl acetate	6.891	43	845613	178.86	ug/L		97
38) Tetrahydrofuran	6.982	42	70279	35.98	ug/L		94
40) Carbon Tetrachloride	6.976	117	106491	34.44	ug/L		98
41) 1,1,1-Trichloroethane	7.037	97	122245	35.81	ug/L		96
42) 2-Butanone	7.104	43	514388	197.50	ug/L		91
43) 1,1-Dichloropropene	7.171	75	98294	35.77	ug/L		98
44) tert-Butyl Formate	7.256	59	372457	166.65	ug/L		93

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-03\
Data File : I756429.D
Acq On : 4 May 2023 8:09 am
Operator : jeniferw
Sample : ECC2910-5
Misc : MS53924,VI2913,,,,,
ALS Vial : 56 Sample Multiplier: 1

Quant Time: May 04 08:36:07 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45)	Propionitrile	7.415	54	299506	359.67	ug/L		94
46)	Methacrylonitrile	7.439	41	877786	340.41	ug/L		94
47)	Benzene	7.433	78	313866	36.02	ug/L	#	59
48)	TAME	7.525	73	235191	36.22	ug/L		97
50)	Isobutyl alcohol	7.592	42	167625	710.12	ug/L		91
51)	1,2-Dichloroethane	7.634	62	122101	35.51	ug/L		97
52)	Tert Amyl Alcohol	7.701	59	310485	353.88	ug/L		92
53)	Trichloroethene	8.049	95	82046	34.35	ug/L		96
54)	Methylcyclohexane	8.049	83	85987	30.48	ug/L		92
55)	Dibromomethane	8.482	93	58200	36.85	ug/L		92
56)	1,2-Dichloropropane	8.567	63	86060	36.68	ug/L		94
57)	Bromodichloromethane	8.628	83	115834	35.98	ug/L		95
58)	Methyl methacrylate	8.744	41	95903	34.39	ug/L		88
59)	1,4-Dioxane	8.817	88	53058	744.56	ug/L		75
60)	2-Chloroethyl vinyl ether	9.158	63	306718	180.17	ug/L		92
61)	cis-1,3-Dichloropropene	9.256	75	104151	29.82	ug/L		98
64)	Toluene	9.500	91	321253	35.70	ug/L		98
65)	2-Nitropropane	9.701	41	221338	178.94	ug/L		96
66)	4-Methyl-2-pentanone	9.829	43	920160	180.60	ug/L		96
67)	trans-1,3-Dichloropropene	9.896	75	97664	30.75	ug/L		90
68)	Tetrachloroethene	9.908	166	117816	50.84	ug/L		98
69)	Ethyl methacrylate	10.012	69	109852	35.80	ug/L		91
70)	1,1,2-Trichloroethane	10.061	83	72289	36.56	ug/L		94
71)	Dibromochloromethane	10.256	129	91117	35.82	ug/L		97
72)	1,3-Dichloropropane	10.341	76	127956	37.55	ug/L		95
73)	1,2-Dibromoethane	10.518	107	88923	37.81	ug/L		96
74)	3,3-dimethyl-1-butanol	10.616	57	1845620	1837.02	ug/L		97
75)	2-hexanone	10.658	43	742568	187.25	ug/L		98
76)	1-Chlorohexane	10.963	91	81321	33.15	ug/L		85
77)	Ethylbenzene	11.030	91	348333	34.84	ug/L		97
78)	Chlorobenzene	11.024	112	214180	35.59	ug/L		95
79)	1,1,1,2-Tetrachloroethane	11.073	131	83895	36.76	ug/L		95
80)	m,p-Xylene	11.164	91	527651	72.34	ug/L		99
81)	o-Xylene	11.603	91	277876	36.91	ug/L		97
82)	Styrene	11.658	104	209881	39.30	ug/L		98
83)	Bromoform	11.713	173	65778	34.95	ug/L		95
84)	Isopropylbenzene	11.914	105	308442	35.49	ug/L		99
87)	cis-1,4-Dichloro-2-butene	12.262	53	11371	13.12	ug/L		94
88)	n-Propylbenzene	12.335	91	367955	33.74	ug/L		98
89)	Bromobenzene	12.347	156	86943	34.83	ug/L		92
90)	1,1,2,2-Tetrachloroethane	12.390	83	137090	34.00	ug/L		99
91)	1,3,5-Trimethylbenzene	12.518	105	259504	35.62	ug/L		99
92)	2-Chlorotoluene	12.518	91	261633	33.89	ug/L		99
93)	trans-1,4-Dichloro-2-B...	12.579	53	14562	14.21	ug/L		79
94)	1,2,3-Trichloropropane	12.548	110	42408	36.34	ug/L		95
95)	Cyclohexanone	12.609	55	52149	177.27	ug/L		97
96)	4-Chlorotoluene	12.688	91	233855	35.60	ug/L		100
97)	tert-Butylbenzene	12.853	91	137494	34.27	ug/L		97
98)	1,2,4-Trimethylbenzene	12.926	105	258893	36.05	ug/L		96
99)	Pentachloroethane	12.902	167	18917	13.69	ug/L		97
100)	sec-Butylbenzene	13.042	105	280356	33.22	ug/L		98
101)	4-Isopropyltoluene	13.176	119	242479	34.56	ug/L		98
102)	1,3-Dichlorobenzene	13.304	146	152051	34.76	ug/L		98
103)	1,2,3-Trimethylbenzene	13.383	105	281777	35.27	ug/L		95
104)	1,4-Dichlorobenzene	13.389	146	159357	33.03	ug/L		96
105)	n-Butylbenzene	13.615	92	106414	29.08	ug/L		86
106)	Benzyl Chloride	13.639	126	6075	4.96	ug/L	#	88
107)	1,2-Dichlorobenzene	13.828	146	149001	35.46	ug/L		96

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-03\
Data File : I756429.D
Acq On : 4 May 2023 8:09 am
Operator : jeniferw
Sample : ECC2910-5
Misc : MS53924,VI2913,,,,,
ALS Vial : 56 Sample Multiplier: 1

Quant Time: May 04 08:36:07 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

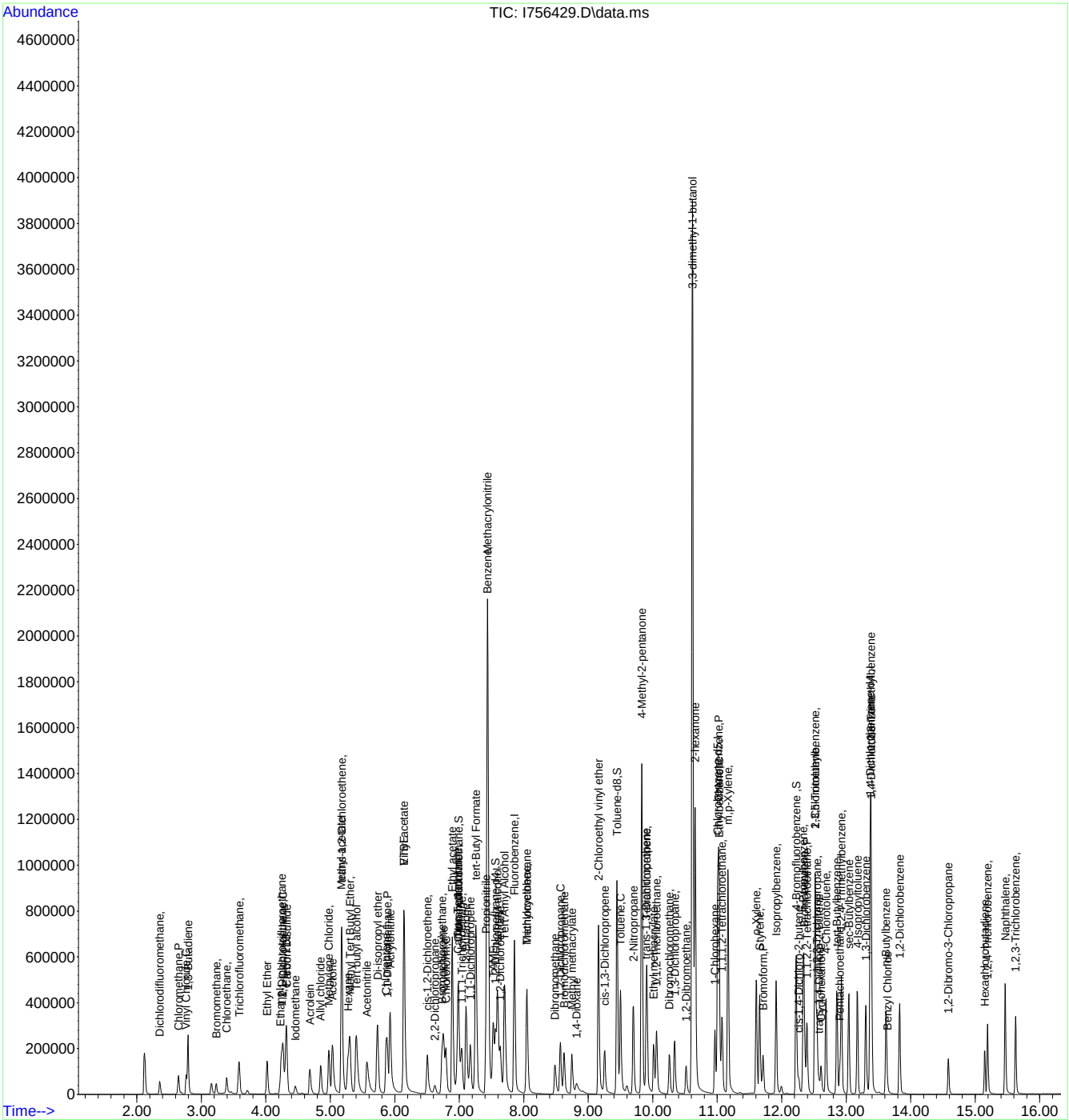
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
108) 1,2-Dibromo-3-Chloropr...	14.584	75	34487	35.67	ug/L	95
109) Hexachlorobutadiene	15.151	225	28861	31.74	ug/L	92
110) 1,2,4-Trichlorobenzene	15.194	180	81541	36.22	ug/L	99
111) Naphthalene	15.468	128	322293	37.58	ug/L	100
112) 1,2,3-Trichlorobenzene	15.627	180	84493	35.82	ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\2023-05-03\
Data File : I756429.D
Acq On : 4 May 2023 8:09 am
Operator : jeniferw
Sample : ECC2910-5
Misc : MS53924,VI2913,,,,,
ALS Vial : 56 Sample Multiplier: 1

Quant Time: May 04 08:36:07 2023
Quant Method : C:\msdchem\1\methods\VI-2023-05-02.m
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration



SGS -ORLANDO

MSVOA13-2P ANALYSIS LOG

Date:	04/11/2023
Column Type:	RTX-VMS
Detector:	5975C-MSD
Instrument:	MSVOA12-1O
Purge Pressure:	10.6 psi
Purge Volume:	5 mL
Analyst:	David B

Method(s):*	8260
Method File:	V2O_04-11-2023.M
Calibration Date:	04/11/2023
Acq. Method:	8260VMS.M
EM Voltage:	1576V
BFB Response:	671302
Run ID:	V2O2924

BFB:	VS3044
ICAL/CC:	VS3027, VS3028, VS3033
VS3037, VS3038, VS3034	
ICV/QC:	VS3009, VS3030, VS3035
VS3036, VS3029, VS3045,	
ISTD/Surr.:	VS3044

(0-3) pH Paper Lot#:	212521
(1-12) pH Paper Lot#:	230320
KI Paper Lot#:	30317
AFA Lot#:	VS2664D
Data processed by:	DB/ABL
Sample ID Ver. by:	DB
Date Verified:	04/11/2023

Data File	Sample ID	Dilution Factor	Vial #	Matrix	A.S. Pos.	Work Group	pH	CI? (Y/N)	RR	Comments / Manual Integrations (Peak# & Justification)
2O75425	BFB	-	-	Water	1	-	-	-	-	Passed Autofind✓
2O75426	IC2924-1	-	-	Water	2	-	-	-	-	1mL(-)100mL
2O75427	IC2924-2	-	-	Water	3	-	-	-	-	5mL(-)100mL
2O75428	IC2924-3	-	-	Water	4	-	-	-	-	10mL(-)100mL
2O75429	IC2924-4	-	-	Water	5	-	-	-	-	25mL(-)100mL
2O75430	ICC2924-5	-	-	Water	6	-	-	-	-	40mL(-)100mL
2O75431	IC2924-6	-	-	Water	7	-	-	-	-	70mL(-)100mL
2O75432	IC2924-7	-	-	Water	8	-	-	-	-	100mL(-)100mL
2O75433	BLANK	-	-	Water	9	-	-	-	-	
2O75434	ICV2924-5	-	-	Water	10	-	-	-	-	40mL(-)100mL
2O75435	ICV2924-4	-	-	Water	11	-	-	-	-	25mL(-)100mL

* For NELAC purposes, Method 8260 includes analytes by SOP MS005 Matrix: Designate "W" for Water "S" for soil, "O" for Oil, "Liq" for Non-aqueous Liquid, and "TCLP" or "SPLP" for Leachate.

SGS -ORLANDO

VOA-GCMS ANALYSIS LOG

Instrument:	MSVOA12-1O
Date:	05/03/2023
Analyst:	David B
Column Type	RTXVMS
Detector	5975C-MSD
Purge Pressure	10.6 psi
Purge Volume	5 mL

Method(s):	8260
Method File:	V2O_04-11-2023.M
Calibration Date:	04/11/2023
Acq. Method:	8260VMS.M
EM Voltage:	1565V
Run ID:	**V2O2949**

BFB:	VS3044
ICAL/CC:	VS3090, VS3088, VS3089
VS3094, VS3095, VS3066	
ICV/BS:	VS3086, VS3096, VS3064
VS3077, VS3079, VS3093,	
ISTD/Surr.:	VS3044

pH Paper Lot#:	212521
KI Paper Lot#:	230320
AFA Lot#:	VS2934
Data processed by:	David B / Celine C.
Sample ID Ver. by:	DB
Date Verified:	5/3/2023 0:00

Data File	Sample ID	Dilution Factor	Vial #	Matrix	A.S. Pos.	Work Group	pH	CI? (Y/N)	RR	Comments and Manually Integrated Peaks (Peak # and Rational)
2O75997	BFB	-	-	Water	1	-	-	-	-	Passed Autofind✓
2O75998	CC2924-5	-	-	Water	2	-	-	-	-	40uL→100mL (OP)40, 49, 76 ✓
2O75999	BS	-	-	Water	3	-	-	-	-	25uL→100mL (OP)40, 49, 76 ✓
2O76000	CC2924-1	-	-	Water	4	-	-	-	-	1mL→100mL ✓
2O76001	MB	-	-	Water	5	-	-	-	-	ND✓
2O76002	FC5659-1	1x	1	Water	6	MS53920	1	N	-	ND✓
2O76003	FC5679-15	1x	1	Water	7	MS53920	1	N	-	ND✓
2O76004	FC5679-16	1x	1	Water	8	MS53920	1	N	-	ND✓
2O76005	FC5659-2	1x	2	Water	9	MS53920	1	N	-	ND✓
2O76006	FC5659-3	1x	2	Water	10	MS53920	1	N	-	ND✓
2O76007	**FC5659-4**	1x	2	Water	11	MS53920	1	N	**1x**	SS1,2 low; SS3 high; IS,1,2,3 low
2O76008	FC5659-5	1x	2	Water	12	MS53920	1	N	-	✓
2O76009	FC5679-1	1x	2	Water	13	MS53920	1	N	-	ND✓
2O76010	FC5679-2	1x	2	Water	14	MS53920	1	N	-	✓
2O76011	FC5679-3	1x	3	Water	15	MS53920	1	N	-	✓
2O76012	FC5679-4	1x	2	Water	16	MS53920	1	N	-	✓
2O76013	**FC5679-5**	1x	3	Water	17	MS53920	1	N	**2x**	cis-1,2-DCE OR
2O76014	**FC5679-6**	1x	2	Water	18	MS53920	1	N	**2x**	cis-1,2-DCE OR
2O76015	FC5679-7	1x	1	Water	19	MS53920	1	N	-	ND✓
2O76016	FC5679-9	1x	1	Water	20	MS53920	1	N	-	✓
2O76017	FC5679-10	1x	2	Water	21	MS53920	1	N	-	✓
2O76018	FC5679-11	1x	2	Water	22	MS53920	1	N	-	✓
2O76019	FC5679-12	1x	2	Water	23	MS53920	1	N	-	✓
2O76020	FC5679-13	1x	2	Water	24	MS53920	1	N	-	#102(OP) ✓
2O76021	FC5679-12MS	1x	3	Water	25	MS53920	-	-	-	spike 25uL→100mL ✓
2O76022	FC5679-12MSD	1x	4	Water	26	MS53920	-	-	-	spike 25uL→100mL ✓
2O76023	ECC2924-5	-	-	Water	27	-	-	-	-	40uL→100mL (OP)40, 49, 76 ✓

Matrix: Designate "W" for Water "S" for soil, "O" for Oil, "Liq" for Non-aquous LIquid, and "TCLP" or "SPLP" for Leachate

Manual Integration Rational SOP QA029: MP Missed Peak, OP Overlapping Peak, SP Split Peak, PDB Poorly Defined Baseline, BR Baseline Ripple, PII Poor Instrument

SGS -ORLANDO

VOA-GCMS ANALYSIS LOG

Instrument:	MSVOA12-1O
Date:	05/05/2023
Analyst:	David B
Column Type	RTXVMS
Detector	5975C-MSD
Purge Pressure	10.6 psi
Purge Volume	5 mL

Method(s):	8260
Method File:	V2O_04-11-2023.M
Calibration Date:	04/11/2023
Acq. Method:	8260VMS.M
EM Voltage:	1565V
Run ID:	**V2O2954-55**

BFB:	VS3044
ICAL/CC:	VS3090, VS3118, VS3116
VS3094, VS3121, VS3117	
ICV/BS:	VS3120, VS3096, VS3101
VS3109, VS3108, VS3114,	
ISTD/Surr.:	VS3044

pH Paper Lot#:	212521
KI Paper Lot#:	230320
AFA Lot#:	VS2934
Data processed by:	David B / Celine C.
Sample ID Ver. by:	DB
Date Verified:	5/5/2023 0:00

Data File	Sample ID	Dilution Factor	Vial #	Matrix	A.S. Pos.	Work Group	pH	CI? (Y/N)	RR	Comments and Manually Integrated Peaks (Peak # and Rational)
2O76099	BFB	-	-	Water	1	-	-	-	-	Passed Autofind✓
2O76100	CC2924-5	-	-	Water	2	-	-	-	-	40uL→100mL (OP)40, 49, 76 ✓
2O76101	BS	-	-	Water	3	-	-	-	-	25uL→100mL (OP)40, 49, 76 ✓
2O76102	CC2924-1	-	-	Water	4	-	-	-	-	1mL→100mL ✓
2O76103	MB	-	-	Water	5	-	-	-	-	ND✓
2O76104	OP96704-LB 10x	10x	1	Water	6	MS53947	-	-	-	5mL -> 50mL; ND ✓
2O76105	FC5689-2L 10x	10x	1	Water	7	MS53947	6	N	-	5mL -> 50mL; ND ✓
2O76106	FC5532-9	1x	2	Water	8	MS53948	1	N	-	✓
2O76107	FC5544-9	1x	2	Water	9	MS53948	1	N	-	✓
2O76108	FC5544-10	1x	2	Water	10	MS53948	1	N	-	✓
2O76109	FC5678-5	1x	2	Water	11	MS53948	1	N	-	✓
2O76110	FC5678-6	1x	2	Water	12	MS53948	1	N	-	ND✓
2O76111	FC5678-7	1x	2	Water	13	MS53948	1	N	-	✓
2O76112	**FC5678-8**	1x	2	Water	14	MS53948	1	N	**2x**	cis-1,2-DCE + 1,2-DCE OR
2O76113	**FC5678-9**	1x	2	Water	15	MS53948	1	N	**1x**	Possible cis-1,2-DCE C/O
2O76114	FC5678-25	1x	2	Water	16	MS53948	1	N	-	ND✓
2O76115	FC5705-2 10x	10x	3	Water	17	MS53947	1	N	-	5mL -> 50mL ✓
2O76116	**FC5659-17 10x**	10x	3	Water	18	MS53947	1	N	**5x**	5mL -> 50mL; Overdiluted
2O76117	FC5694-1 10x	10x	1	Water	19	MS53947	12	N	-	5mL -> 50mL; ND ✓
2O76118	FC5700-8 10x	10x	1	Water	20	MS53947	5	N	-	5mL -> 50mL; ND ✓
2O76119	FC5701-1L 10x	10x	1	Water	21	MS53947	6	N	-	5mL -> 50mL; ND ✓
2O76120	FC5678-10 200x	200x	24	Water	22	MS53948	1	N	-	250uL -> 50mL ✓ CF
2O76121	FC5678-14 500x	500x	6	Water	23	MS53948	1	N	-	100uL -> 50mL ✓
2O76122	FC5689-2LMS 10x	10x	1	Water	24	MS53947	-	-	-	10mL -> 100mL; spike 25uL→100mL ✓
2O76123	FC5689-2LMSD 1(	10x	1	Water	25	MS53947	-	-	-	10mL -> 100mL; spike 25uL→100mL ✓
2O76124	FC5532-9MS	5x	2	Water	26	MS53948	-	-	-	20mL -> 100mL; spike 25uL→100mL ✓
2O76125	FC5532-9MSD	5x	2	Water	27	MS53948	-	-	-	20mL -> 100mL; spike 25uL→100mL ✓
2O76126	ECC2924-5	-	-	Water	28	-	-	-	-	40uL→100mL (OP)40, 49, 76 ✓

Matrix: Designate "W" for Water "S" for soil, "O" for Oil, "Liq" for Non-aquous LIquid, and "TCLP" or "SPLP" for Leachate

Manual Integration Rational SOP QA029: MP Missed Peak, OP Overlapping Peak, SP Split Peak, PDB Poorly Defined Baseline, BR Baseline Ripple, PII Poor Instrument

SGS -ORLANDO

VOA-GCMS ANALYSIS LOG

Instrument:	MSVOA12-1O
Date:	05/05/2023
Analyst:	David B
Column Type	RTXVMS
Detector	5975C-MSD
Purge Pressure	10.6 psi
Purge Volume	5 mL

Method(s):	8260
Method File:	V2O_04-11-2023.M
Calibration Date:	04/11/2023
Acq. Method:	8260VMS.M
EM Voltage:	1565V
Run ID:	**V2O2954-55**

BFB:	VS3044
ICAL/CC:	VS3090, VS3118, VS3116
VS3094, VS3121, VS3117	
ICV/BS:	VS3120, VS3096, VS3101
VS3109, VS3108, VS3114,	
ISTD/Surr.:	VS3044

pH Paper Lot#:	212521
KI Paper Lot#:	230320
AFA Lot#:	VS2934
Data processed by:	David B / Celine C.
Sample ID Ver. by:	DB
Date Verified:	5/5/2023 0:00

Data File	Sample ID	Dilution Factor	Vial #	Matrix	A.S. Pos.	Work Group	pH	CI? (Y/N)	RR	Comments and Manually Integrated Peaks (Peak # and Rational)
2O76099	BFB	-	-	Water	1	-	-	-	-	Passed Autofind✓
2O76100	CC2924-5	-	-	Water	2	-	-	-	-	40uL→100mL (OP)40, 49, 76 ✓
2O76101	BS	-	-	Water	3	-	-	-	-	25uL→100mL (OP)40, 49, 76 ✓
2O76102	CC2924-1	-	-	Water	4	-	-	-	-	1mL→100mL ✓
2O76103	MB	-	-	Water	5	-	-	-	-	ND✓
2O76104	OP96704-LB 10x	10x	1	Water	6	MS53947	-	-	-	5mL -> 50mL; ND ✓
2O76105	FC5689-2L 10x	10x	1	Water	7	MS53947	6	N	-	5mL -> 50mL; ND ✓
2O76106	FC5532-9	1x	2	Water	8	MS53948	1	N	-	✓
2O76107	FC5544-9	1x	2	Water	9	MS53948	1	N	-	✓
2O76108	FC5544-10	1x	2	Water	10	MS53948	1	N	-	✓
2O76109	FC5678-5	1x	2	Water	11	MS53948	1	N	-	✓
2O76110	FC5678-6	1x	2	Water	12	MS53948	1	N	-	ND✓
2O76111	FC5678-7	1x	2	Water	13	MS53948	1	N	-	✓
2O76112	**FC5678-8**	1x	2	Water	14	MS53948	1	N	**2x**	cis-1,2-DCE + 1,2-DCE OR
2O76113	**FC5678-9**	1x	2	Water	15	MS53948	1	N	**1x**	Possible cis-1,2-DCE C/O
2O76114	FC5678-25	1x	2	Water	16	MS53948	1	N	-	ND✓
2O76115	FC5705-2 10x	10x	3	Water	17	MS53947	1	N	-	5mL -> 50mL ✓
2O76116	**FC5659-17 10x**	10x	3	Water	18	MS53947	1	N	**5x**	5mL -> 50mL; Overdiluted
2O76117	FC5694-1 10x	10x	1	Water	19	MS53947	12	N	-	5mL -> 50mL; ND ✓
2O76118	FC5700-8 10x	10x	1	Water	20	MS53947	5	N	-	5mL -> 50mL; ND ✓
2O76119	FC5701-1L 10x	10x	1	Water	21	MS53947	6	N	-	5mL -> 50mL; ND ✓
2O76120	FC5678-10 200x	200x	24	Water	22	MS53948	1	N	-	250uL -> 50mL ✓ CF
2O76121	FC5678-14 500x	500x	6	Water	23	MS53948	1	N	-	100uL -> 50mL ✓
2O76122	FC5689-2LMS 10x	10x	1	Water	24	MS53947	-	-	-	10mL -> 100mL; spike 25uL→100mL ✓
2O76123	FC5689-2LMSD 1(	10x	1	Water	25	MS53947	-	-	-	10mL -> 100mL; spike 25uL→100mL ✓
2O76124	FC5532-9MS	5x	2	Water	26	MS53948	-	-	-	20mL -> 100mL; spike 25uL→100mL ✓
2O76125	FC5532-9MSD	5x	2	Water	27	MS53948	-	-	-	20mL -> 100mL; spike 25uL→100mL ✓
2O76126	ECC2924-5	-	-	Water	28	-	-	-	-	40uL→100mL (OP)40, 49, 76 ✓

Matrix: Designate "W" for Water "S" for soil, "O" for Oil, "Liq" for Non-aquous LIquid, and "TCLP" or "SPLP" for Leachate

Manual Integration Rational SOP QA029: MP Missed Peak, OP Overlapping Peak, SP Split Peak, PDB Poorly Defined Baseline, BR Baseline Ripple, PII Poor Instrument

SGS -ORLANDO **VOA-GCMS ANALYSIS LOG**

Instrument:	MSVOA20-5E
Date:	5/1/2023
Analyst:	JoAnn L
Column Type	RTXVMS
Detector	5975 MSD
Purge Pressure	11 PSI
Purge Volume	5 mL

Method(s):	8260
Method File:	applX05-01-2023.M
Calibration Date:	5/1/2023
Acq. Method:	8260VMSVI
EM Voltage:	1459V
Run ID:	**V5E1761**

BFB:	VS3007
ICAL/CC:	VS3090, VS3088, VS3089
VS3094, VS3095, VS3100	
ICV/BS:	VS3086, VS3096, VS3101
VS3109, VS3108, VS3093,	
ISTD/Surr.:	VS3007

pH Paper Lot#:	206722
KI Paper Lot#:	14-860;05/09/2022
AFA Lot#:	VS2943F
Data processed by:	JoAnn L/
Sample ID Ver. by:	JoAnn L
Date Verified:	5/1/2023

Data File	Sample ID	Dilution Factor	Vial #	Matrix	A.S. Pos.	Work Group	pH	CI? (Y/N)	RR	Comments and Manually Integrated Peaks (Peak # and Rational)
5E39333	BFB	-	-	Water	1	-	-	-	-	Passed autofind✓
5E39334	IC1761-1	-	-	Water	2	-	-	-	-	1uL→ 100mL ✓
5E39335	IC1761-2	-	-	Water	3	-	-	-	-	5uL→ 100mL ✓
5E39336	IC1761-3	-	-	Water	4	-	-	-	-	5uL(-)50mL ✓
5E39337	IC1761-4	-	-	Water	5	-	-	-	-	12.5uL(-)50mL ✓
5E39338	ICC1761-5	-	-	Water	6	-	-	-	-	20uL(-)50mL ✓
5E39339	IC1761-6	-	-	Water	7	-	-	-	-	35uL(-)50mL ✓
5E39340	IC1761-7	-	-	Water	8	-	-	-	-	50uL(-)50mL ✓
5E39341	BLANK	-	-	Water	9	-	-	-	-	
5E39342	ICV1761-5	-	-	Water	10	-	-	-	-	20uL(-)50mL ✓

Matrix: Designate "W" for Water "S" for soil, "O" for Oil, "Liq" for Non-aquous LIquid, and "TCLP" or "SPLP" for Leachate

Manual Integration Rational SOP QA029: MP Missed Peak, OP Overlapping Peak, SP Split Peak, PDB Poorly Defined Baseline, BR Baseline Ripple, PII Poor Instrument

SGS -ORLANDO **VOA-GCMS ANALYSIS LOG**

Instrument:	MSVOA20-5E
Date:	5/4/2023
Analyst:	JoAnn L
Column Type	RTXVMS
Detector	5975 MSD
Purge Pressure	11 PSI
Purge Volume	5 mL

Method(s):	8260
Method File:	applX05-01-2023.M
Calibration Date:	5/1/2023
Acq. Method:	8260VMSVI
EM Voltage:	1459V
Run ID:	**V5E1766**

BFB:	VS3115
ICAL/CC:	VS3090, VS3088, VS3089
VS3094, VS3095, VS3100	
ICV/BS:	VS3086, VS3096, VS3101
VS3109, VS3108, VS3114,	
ISTD/Surr.:	VS3115

pH Paper Lot#:	206722
KI Paper Lot#:	14-860;05/09/2022
AFA Lot#:	VS2943F
Data processed by:	JoAnn L/Celine C.
Sample ID Ver. by:	JoAnn L
Date Verified:	5/4/2023

Data File	Sample ID	Dilution Factor	Vial #	Matrix	A.S. Pos.	Work Group	pH	CI? (Y/N)	RR	Comments and Manually Integrated Peaks (Peak # and Rational)
5E39456	BLANK	-	-	Water	1	-	-	-	-	Passed autofind✓
5E39457	CC1761-5/BFB	-	-	Water	2	-	-	-	-	Passed autofind; 40uL(-)100mL ✓
5E39458	BS	-	-	Water	3	-	-	-	-	12.5uL(-)50mL✓
5E39459	CC1761-1	-	-	Water	4	-	-	-	-	1uL(-)100mL ✓
5E39460	BLANK	-	-	Water	5	-	-	-	-	-
5E39461	MB(AFA)	-	-	Water	6	-	-	-	-	ND ✓
5E39462	FC5540-1	-	3	Water	7	MS53934	1	N	-	Ecombine✓
5E39463	FC5617-5	-	2	Water	8	MS53934	1	N	-	AFA; EB/NPB/IPB only✓
5E39464	FC5663-2	-	1	Water	9	MS53934	1	N	-	AFA: BEN only✓
5E39465	FC5663-5	-	2	Water	10	MS53934	1	N	-	BEN only✓
5E39466	FC5659-4	-	3	Water	11	MS53934	1	N	-	AFA; ND✓
5E39467	FC5659-6	-	3	Water	12	MS53934	1	N	-	VC only✓
5E39468	FC5659-7	-	3	Water	13	MS53934	1	N	-	VC only✓
5E39469	FC5659-8	-	3	Water	14	MS53934	1	N	-	VC only✓
5E39470	FC5659-9	-	3	Water	15	MS53934	1	N	-	VC only✓
5E39471	FC5659-10	-	3	Water	16	MS53934	1	N	-	VC only✓
5E39472	FC5659-11	-	3	Water	17	MS53934	1	N	-	VC only✓
5E39473	FC5659-12	-	3	Water	18	MS53934	1	N	-	VC only✓
5E39474	FC5659-13	-	3	Water	19	MS53934	1	N	-	VC only✓
5E39475	FC5659-14	-	3	Water	20	MS53934	1	N	-	VC only✓
5E39476	FC5659-15	-	3	Water	21	MS53934	1	N	-	VC only✓
5E39477	FC5659-16	-	3	Water	22	MS53934	1	N	-	VC only✓
5E39478	FC5638-30 2500X	2500X	6	Water	23	MS53934	1	N	-	20uL(-)50mL; Ecombine✓
5E39479	FC5638-32 5000X	5000X	6	Water	24	MS53934	1	N	-	10uL(-)50mL; Ecombine✓
5E39480	FC5679-5 2X	2X	1	Water	25	MS53934	1	N	-	25mL(-)50mL; SS3 low; cis12 only✓
5E39481	FC5679-6 2X	2X	3	Water	26	MS53934	1	N	-	25mL(-)50mL; SS1,2,4 high w/ hits: CIS12 only✓
5E39482	FC5617-5MS 5X	5X	2	Water	27	MS53934	1	N	-	20mL(-)100mL; 25uL(-)100mL ✓
5E39483	FC5617-5MSD 5X	5X	2	Water	28	MS53934	1	N	-	20mL(-)100mL; 25uL(-)100mL ✓
5E39484	ECC1761-5	-	-	Water	29	-	-	-	-	40uL(-)100mL ✓

Matrix: Designate "W" for Water "S" for soil, "O" for Oil, "Liq" for Non-aquous LIquid, and "TCLP" or "SPLP" for Leachate

Manual Integration Rational SOP QA029: MP Missed Peak, OP Overlapping Peak, SP Split Peak, PDB Poorly Defined Baseline, BR Baseline Ripple, PII Poor Instrument

SGS -ORLANDO

VOA-GCMS ANALYSIS LOG

Instrument:	MSVOA16-I
Date:	5/2/2023
Analyst:	Jenifer W
Column Type	RTXVMS
Detector	5975C MSD
Purge Pressure	1.3 psi
Purge Volume	5mL

Method(s):	8260VMS40
Method File:	VI-2023-5-02.M
Calibration Date:	05/02/2023
Acq. Method:	RTX-VMS
EM Voltage:	1271V
Run ID:	**VI2910**

BFB:	VS3046
ICAL/CC:	VS3090, VS3088, VS3089
VS3094, VS3095, VS3100,v	
ICV/BS:	VS3086, VS3096, VS3101
VS3109, VS3108, VS3093,	
ISTD/Surr.:	VS3046

pH Paper Lot#:	212521/230320
KI Paper Lot#:	14-860 05/09/2022
AFA Lot#:	VS2943
Data processed by:	Jenifer W./Celine C.
Sample ID Ver. by:	Jenifer W.
Date Verified:	5/2/2023 0:00

Data File	Sample ID	Dilution Factor	Vial #	Matrix	A.S. Pos.	Work Group	pH	CI? (Y/N)	RR	Comments and Manually Integrated Peaks (Peak # and Rational)
I756321	BFB	-	-	Water	1	-	-	-	-	Autotune passes
I756322	IC2910-1	-	-	Water	2	-	-	-	-	1uL→100mL
I756323	IC2910-2	-	-	Water	3	-	-	-	-	5uL→100mL
I756330	IC2910-3	-	-	Water	10	-	-	-	-	5uL→50mL; Re-ran due to poor spiking of original run (File: I756324)
I756325	IC2910-4	-	-	Water	5	-	-	-	-	12.5uL→50mL
I756326	ICC2910-5	-	-	Water	6	-	-	-	-	20uL→50mL
I756327	IC2910-6	-	-	Water	7	-	-	-	-	35uL→50mL
I756328	IC2910-7	-	-	Water	8	-	-	-	-	50uL→50mL
I756329	rinse	-	-	Water	9	-	-	-	-	
I756331	ICV2910-5	-	-	Water	11	-	-	-	-	20uL→50mL ✓
I756331A	CC2910-5	-	-	Water	11	-	-	-	-	20uL→50mL ✓
I756332	BS	-	-	Water	12	-	-	-	-	12.5uL→50mL ✓
I756333	MB	-	-	Water	13	-	-	-	-	AFA; ND ✓
I756334	FC5569-2	1x	1	Water	14	MS53914	1	N	-	PCE OR, Ecombine ✓
I756335	FC5532-1	1000x	4	Water	15	MS53914	1	N	-	50uL→50mL ✓
I756336	FC5532-2	500x	4	Water	16	MS53914	1	N	-	100uL→50mL; Ecombine ✓
I756337	FC5532-3	10x	4	Water	17	MS53914	1	N	-	5mL→50mL ✓
I756338	FC5532-4	1x	4	Water	18	MS53914	1	N	-	✓
I756339	FC5532-5	200x	4	Water	19	MS53914	1	N	-	250uL→50mL ✓
I756340	FC5507-21	1x	5	Water	20	MS53914	1	N	-	✓
I756341	FC5507-22	1x	5	Water	21	MS53914	1	N	-	✓
I756342	FC5507-25	1x	8	Water	22	MS53914	1	N	-	✓
I756343	FC5507-26	1x	3	Water	23	MS53914	1	N	-	✓
I756344	FC5532-2MS	500x	4	Water	24	MS53914	1	N	-	200uL→100mL spike 25uL→100mL ✓
I756345	FC5532-2MSD	500x	4	Water	25	MS53914	1	N	-	200uL→100mL spike 25uL→100mL ✓
I756346	ECC2910-5	-	-	Water	26	-	-	-	-	20uL→50mL ✓

Matrix: Designate "W" for Water "S" for soil, "O" for Oil, "Liq" for Non-aquous LIquid, and "TCLP" or "SPLP" for Leachate

Manual Integration Rational SOP QA029: MP Missed Peak, OP Overlapping Peak, SP Split Peak, PDB Poorly Defined Baseline, BR Baseline Ripple, PII Poor Instrument

SGS -ORLANDO

VOA-GCMS ANALYSIS LOG

Instrument:	MSVOA16-I
Date:	05/03/2023
Analyst:	Jenifer W
Column Type	RTXVMS
Detector	5975C MSD
Purge Pressure	1.3 psi
Purge Volume	5mL

Method(s):	8260VMS40
Method File:	VI-2023-5-02.M
Calibration Date:	05/02/2023
Acq. Method:	RTX-VMS
EM Voltage:	1271V
Run ID:	**VI2913**

BFB:	VS3046
ICAL/CC:	VS3090, VS3088, VS3089
VS3094, VS3095, VS3100,v	
ICV/BS:	VS3086, VS3096, VS3101
VS3109, VS3108, VS3114,	
ISTD/Surr.:	VS3046

pH Paper Lot#:	206722/230320
KI Paper Lot#:	14-860 05/09/2022
AFA Lot#:	VS2934
Data processed by:	Jenifer W./ John M.
Sample ID Ver. by:	Jenifer W
Date Verified:	5/3/2023 0:00

Data File	Sample ID	Dilution Factor	Vial #	Matrix	A.S. Pos.	Work Group	pH	CI? (Y/N)	RR	Comments and Manually Integrated Peaks (Peak # and Rational)
I756402	BFB	-	-	Water	29	-	-	-	-	Autofind passed ✓
I756403	CC2910-5	-	-	Water	30	-	-	-	-	20uL→50mL ✓
I756404	BS	-	-	Water	31	-	-	-	-	12.5uL→50mL ✓
I756405	FC5678-7MS	1x	3	Water	32	MS53924	1	N	-	10.5uL→50mL ✓
I756406	FC5678-7MSD	1x	4	Water	33	MS53924	1	N	-	10.5uL→50mL ✓
I756407	CC2910-1	-	-	Water	34	-	-	-	-	1uL→100mL ✓
I756408	MB	-	-	Water	35	-	-	-	-	AFA ✓
I756409	FC5678-7	1x	2	Water	36	MS53924	1	N	1x	VC (↓CCV)✓
I756410	FC5678-5	1x	2	Water	37	MS53924	1	N	1x	VC (↓CCV)✓
I756411	FC5678-6	1x	2	Water	38	MS53924	1	N	1x	VC (↓CCV)✓
I756412	FC5678-8	2x	2	Water	39	MS53924	1	N	1x	25mL→50mL; overdilute and VC (↓CCV)✓
I756413	FC5678-9	2x	6	Water	40	MS53924	1	N	1x	25mL→50mL AFA; overdilute and VC (↓CCV)✓
I756414	FC5678-25	1x	4	Water	41	MS53924	1	N	1x	VC (↓CCV)✓
I756415	FC5659-6	1x	2	Water	42	MS53924	1	N	1x	VC (↓CCV)✓
I756416	FC5659-7	1x	2	Water	43	MS53924	1	N	1x	VC (↓CCV)✓
I756417	FC5659-8	1x	2	Water	44	MS53924	1	N	1x	VC (↓CCV)✓
I756418	FC5659-9	1x	2	Water	45	MS53924	1	N	1x	VC (↓CCV)✓
I756419	FC5659-10	1x	2	Water	46	MS53924	1	N	1x	VC (↓CCV)✓
I756420	FC5659-11	1x	2	Water	47	MS53924	1	N	1x	VC (↓CCV)✓
I756421	FC5659-12	1x	2	Water	48	MS53924	1	N	1x	VC (↓CCV)✓
I756422	FC5659-13	1x	2	Water	49	MS53924	1	N	1x	VC (↓CCV)✓
I756423	FC5659-14	1x	2	Water	50	MS53924	1	N	1x	VC (↓CCV)✓
I756424	FC5659-15	1x	2	Water	51	MS53924	1	N	1x	VC (↓CCV)✓
I756425	FC5659-16	1x	2	Water	52	MS53924	1	N	1x	AFA; VC (↓CCV) ✓
I756426	FC5659-17	10x	2	Water	53	MS53924	1	N	10x	5mL→50mL; VC (↓CCV) ✓
I756427	FC5660-1	1x	3	Water	54	MS53924	1	N	-	AFA ✓
I756428	FC5660-2	1x	3	Water	55	MS53924	1	N	-	AFA ✓
I756429	ECC2910-5	-	-	Water	56	-	-	-	-	20uL→50mL

Matrix: Designate "W" for Water "S" for soil, "O" for Oil, "Liq" for Non-aquous LIquid, and "TCLP" or "SPLP" for Leachate

Manual Integration Rational SOP QA029: MP Missed Peak, OP Overlapping Peak, SP Split Peak, PDB Poorly Defined Baseline, BR Baseline Ripple, PII Poor Instrument

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Hydrogeologic, Inc.

CCF West NAM; KSC, FL

NS1003.04.06

SGS Job Number: FC5736

Sampling Date: 05/01/23

Report to:

jtracy@hgl.com
drivers@hgl.com

ATTN: Distribution3

Total number of pages in report: **100**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Norm Farmer
Technical Director

Client Service contact: Ariel Hartney 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001) DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), AL, AK, AR, CT, IA, KY, MA, MI. MS, ND, NH, NV, OK, OR, IL, UT, VT, WA, WI, WV

Sections: 1 2 3 4 5 6

Table of Contents

SGS LabLink@10:46 15-May-2023

Sample Summary

Hydrogeologic, Inc.

Job No: FC5736

CCF West NAM; KSC, FL
Project No: NS1003.04.06

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FC5736-1	05/01/23	07:59	PD	05/02/23	AQ	Ground Water	CCF-IW0003IS-030.0-20230501
FC5736-2	05/01/23	08:39	PD	05/02/23	AQ	Ground Water	CCF-IW0003ID-051.0-20230501
FC5736-3	05/01/23	09:35	PD	05/02/23	AQ	Ground Water	CCF-IW0083ID-040.0-20230501
FC5736-4	05/01/23	10:12	PD	05/02/23	AQ	Ground Water	CCF-IW0083IS-030.0-20230501
FC5736-5	05/01/23	10:49	PD	05/02/23	AQ	Ground Water	CCF-IW0083S-020.0-20230501
FC5736-6	05/01/23	11:29	PD	05/02/23	AQ	Ground Water	CCF-IW0029ID-042.5-20230501
FC5736-7	05/01/23	12:11	PD	05/02/23	AQ	Ground Water	CCF-IW0092-045.0-20230501
FC5736-8	05/01/23	07:00	PD	05/02/23	AQ	Trip Blank Water	CCF-TB-20230501-01

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Hydrogeologic, Inc. **Job No:** FC5736

Site: CCF West NAM; KSC, FL **Report Date:** 5/15/2023 10:36:26 AM

On 05/02/2023, 7 Sample(s), 1 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 1.8 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC5736 was assigned to the project.

Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section. Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Volatiles By Method SW846 8260D

Matrix: AQ **Batch ID:** V1A1807

Sample(s) FC5638-13MS, FC5638-13MSD were used as the QC samples indicated.

V1A1807-MB: Sample was treated with an anti-foaming agent.

Matrix: AQ **Batch ID:** V2O2958

Sample(s) FC5788-7MS, FC5788-7MSD were used as the QC samples indicated.

Matrix: AQ **Batch ID:** VI2922

Sample(s) FC5815-70MS, FC5815-70MSD were used as the QC samples indicated.

VI2922-MB: Sample was treated with an anti-foaming agent.

FC5736-4: Sample was treated with an anti-foaming agent.

FC5736-5: Sample was treated with an anti-foaming agent.

FC5736-6: Sample was treated with an anti-foaming agent.

FC5736-7: Sample was treated with an anti-foaming agent.

FC5736-8: Sample was treated with an anti-foaming agent.

SGS North America Inc. - Orlando certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted. Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria. SGS North America Inc.- Orlando is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety.

Narrative prepared by:

_____

Kim Benham, Client Services *(Signature on File)*

Summary of Hits

Job Number: FC5736
Account: Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL
Collected: 05/01/23

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FC5736-1	**CCF-IW0003IS-030.0-20230501**					
cis-1,2-Dichloroethylene		69.5	1.0	0.50	ug/l	SW846 8260D
trans-1,2-Dichloroethylene		1.4	1.0	0.50	ug/l	SW846 8260D
Trichloroethylene		84.5	1.0	0.50	ug/l	SW846 8260D
FC5736-2	**CCF-IW0003ID-051.0-20230501**					
No hits reported in this sample.						
FC5736-3	**CCF-IW0083ID-040.0-20230501**					
cis-1,2-Dichloroethylene		3.5	1.0	0.50	ug/l	SW846 8260D
trans-1,2-Dichloroethylene		1.8	1.0	0.50	ug/l	SW846 8260D
FC5736-4	**CCF-IW0083IS-030.0-20230501**					
cis-1,2-Dichloroethylene		3.1	1.0	0.50	ug/l	SW846 8260D
trans-1,2-Dichloroethylene		0.60 J	1.0	0.50	ug/l	SW846 8260D
FC5736-5	**CCF-IW0083S-020.0-20230501**					
No hits reported in this sample.						
FC5736-6	**CCF-IW0029ID-042.5-20230501**					
cis-1,2-Dichloroethylene		4.1	1.0	0.50	ug/l	SW846 8260D
trans-1,2-Dichloroethylene		1.0	1.0	0.50	ug/l	SW846 8260D
Vinyl Chloride [a]		4.2	1.0	0.50	ug/l	SW846 8260D
FC5736-7	**CCF-IW0092-045.0-20230501**					
No hits reported in this sample.						
FC5736-8	**CCF-TB-20230501-01**					
No hits reported in this sample.						

(a) Sample was treated with an anti-foaming agent.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: CCF-IW0003IS-030.0-20230501
Lab Sample ID: FC5736-1
Matrix: AQ - Ground Water
Method: SW846 8260D
Project: CCF West NAM; KSC, FL

Date Sampled: 05/01/23
Date Received: 05/02/23
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1A45922.D	1	05/05/23 19:31	JW	n/a	n/a	V1A1807
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	69.5	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	1.4	1.0	0.50	0.22	ug/l	
79-01-6	Trichloroethylene	84.5	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	0.50 U	1.0	0.50	0.41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		83-118%
17060-07-0	1,2-Dichloroethane-D4	101%		79-125%
2037-26-5	Toluene-D8	97%		85-112%
460-00-4	4-Bromofluorobenzene	100%		83-118%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: CCF-IW0003ID-051.0-20230501
Lab Sample ID: FC5736-2
Matrix: AQ - Ground Water
Method: SW846 8260D
Project: CCF West NAM; KSC, FL

Date Sampled: 05/01/23
Date Received: 05/02/23
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1A45923.D	1	05/05/23 19:56	JW	n/a	n/a	V1A1807
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	0.50 U	1.0	0.50	0.41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		83-118%
17060-07-0	1,2-Dichloroethane-D4	101%		79-125%
2037-26-5	Toluene-D8	97%		85-112%
460-00-4	4-Bromofluorobenzene	100%		83-118%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CCF-IW0083ID-040.0-20230501		
Lab Sample ID:	FC5736-3	**Date Sampled:**	05/01/23
Matrix:	AQ - Ground Water	**Date Received:**	05/02/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CCF West NAM; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1A45924.D	1	05/05/23 20:21	JW	n/a	n/a	V1A1807
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	3.5	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	1.8	1.0	0.50	0.22	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	0.50 U	1.0	0.50	0.41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		83-118%
17060-07-0	1,2-Dichloroethane-D4	102%		79-125%
2037-26-5	Toluene-D8	97%		85-112%
460-00-4	4-Bromofluorobenzene	99%		83-118%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CCF-IW0083IS-030.0-20230501		
Lab Sample ID:	FC5736-4	**Date Sampled:**	05/01/23
Matrix:	AQ - Ground Water	**Date Received:**	05/02/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CCF West NAM; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2O76187.D	1	05/09/23 00:51	DB	n/a	n/a	V2O2958
Run #2 [a]	I756648.D	1	05/10/23 15:37	JW	n/a	n/a	VI2922

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	3.1	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.60	1.0	0.50	0.22	ug/l	J
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	0.50 U [b]	1.0	0.50	0.41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%	103%	83-118%
17060-07-0	1,2-Dichloroethane-D4	107%	105%	79-125%
2037-26-5	Toluene-D8	100%	98%	85-112%
460-00-4	4-Bromofluorobenzene	96%	101%	83-118%

(a) Sample was treated with an anti-foaming agent.
(b) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CCF-IW0083S-020.0-20230501		
Lab Sample ID:	FC5736-5	**Date Sampled:**	05/01/23
Matrix:	AQ - Ground Water	**Date Received:**	05/02/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CCF West NAM; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2O76188.D	1	05/09/23 01:17	DB	n/a	n/a	V2O2958
Run #2 [a]	I756649.D	1	05/10/23 16:02	JW	n/a	n/a	VI2922

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	0.50 U [b]	1.0	0.50	0.41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	93%	104%	83-118%
17060-07-0	1,2-Dichloroethane-D4	101%	106%	79-125%
2037-26-5	Toluene-D8	100%	98%	85-112%
460-00-4	4-Bromofluorobenzene	98%	101%	83-118%

(a) Sample was treated with an anti-foaming agent.
(b) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CCF-IW0029ID-042.5-20230501		
Lab Sample ID:	FC5736-6	**Date Sampled:**	05/01/23
Matrix:	AQ - Ground Water	**Date Received:**	05/02/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CCF West NAM; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2O76189.D	1	05/09/23 01:43	DB	n/a	n/a	V2O2958
Run #2 [a]	I756650.D	1	05/10/23 16:26	JW	n/a	n/a	VI2922

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	4.1	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	1.0	1.0	0.50	0.22	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	4.2 [b]	1.0	0.50	0.41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%	103%	83-118%
17060-07-0	1,2-Dichloroethane-D4	106%	106%	79-125%
2037-26-5	Toluene-D8	99%	99%	85-112%
460-00-4	4-Bromofluorobenzene	95%	100%	83-118%

(a) Sample was treated with an anti-foaming agent.
(b) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CCF-IW0092-045.0-20230501		
Lab Sample ID:	FC5736-7	**Date Sampled:**	05/01/23
Matrix:	AQ - Ground Water	**Date Received:**	05/02/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CCF West NAM; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2O76190.D	1	05/09/23 02:09	DB	n/a	n/a	V2O2958
Run #2 [a]	I756651.D	1	05/10/23 16:51	JW	n/a	n/a	VI2922

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	0.50 U [b]	1.0	0.50	0.41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	92%	104%	83-118%
17060-07-0	1,2-Dichloroethane-D4	105%	106%	79-125%
2037-26-5	Toluene-D8	100%	100%	85-112%
460-00-4	4-Bromofluorobenzene	97%	102%	83-118%

(a) Sample was treated with an anti-foaming agent.
(b) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CCF-TB-20230501-01		
Lab Sample ID:	FC5736-8	**Date Sampled:**	05/01/23
Matrix:	AQ - Trip Blank Water	**Date Received:**	05/02/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CCF West NAM; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2O76186.D	1	05/09/23 00:25	DB	n/a	n/a	V2O2958
Run #2 [a]	I756652.D	1	05/10/23 17:16	JW	n/a	n/a	VI2922

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	0.50 U [b]	1.0	0.50	0.41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	93%	103%	83-118%
17060-07-0	1,2-Dichloroethane-D4	103%	106%	79-125%
2037-26-5	Toluene-D8	100%	97%	85-112%
460-00-4	4-Bromofluorobenzene	99%	102%	83-118%

(a) Sample was treated with an anti-foaming agent.
(b) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- QC Evaluation: DOD QSM5.x Limits

FC5736

SGS North America Inc - Orlando

Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # : PAGE 1 OF 1

SGS - ORLANDO Quote # | SKIFF #

Client / Reporting Information

Company Name: HGL, Inc.
Address: 2405 N. Courtney Parkway, STE 203
City: Merrit Island State: FL Zip:32937
Project Contact: Denise Rivers Email:drivers@hgl.com
Phone #:910-233-8460
Sampler(s) Name(s) (Printed)
Sampler 1: William Duttenhaver Sampler 2:

Project Information

Project Name: CCF West LTM
Street Kennedy Space Center
City Merritt Island State FL
Project # NS1003.04.06
Fax #
Client Purchase Order #

Analytical Information

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; OI - Oil; LIQ - Other Liquid; AIR - Air

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NaOH+ZnAc	DI WATER	MEOH	(8260B) - TCE, cDCE, tDCE, and VC only	LAB USE ONLY
1	CCF-IW0003IS-030.0-20230501	05/01	07:59	PD	GW	3			X							X	
2	CCF-IW0003ID-051.0-20230501	05/01	08:39	PD	GW	3			X							X	
3	CCF-IW0083ID-040.0-20230501	05/01	09:35	PD	GW	3			X							X	
4	CCF-IW0083IS-030.0-20230501	05/01	10:12	PD	GW	3			X							X	
5	CCF-IW0083S-020.0-20230501	05/01	10:49	PD	GW	3			X							X	
6	CCF-IW0029ID-042.5-20230501	05/01	11:29	PD	GW	3			X							X	
7	CCF-IW0092-045.0-20230501	05/01	12:11	PD	GW	3			X							X	
8	CCF-TB-20230501-01	05/01	07:00	PD	WW	2			X							X	

Turnaround Time (Business days)

X 10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [ ] EDD'S

Comments / Remarks

INITIAL ASSESSMENT SP
LABEL VERIFICATION ZB

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1		05/02/23 14:20	2	3	5/2/23 17:20	4 05/02/23 17:30
	Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
5			6	7		8

Lab Use Only : Cooler Temperature (s) Celsius (corrected): 1.8 TR#

http://www.sgs.com/en/terms-and-conditions

COC CCF Rev 031318

FC5736: Chain of Custody
Page 1 of 2

SGS Sample Receipt Summary

Job Number: FC5736 **Client:** HGL **Project:** CCF WEST LTM

Date / Time Received: 5/2/2023 5:00:00 PM **Delivery Method:** COURIER **Airbill #'s:** N/A

Therm ID: IR 1; **Therm CF:** -0.1; **# of Coolers:** 1

Cooler Temps (Raw Measured) °C: Cooler 1: (1.9);

Cooler Temps (Corrected) °C: Cooler 1: (1.8);

Cooler Information	Y	or	N
1. Custody Seals Present	☑		☐
2. Custody Seals Intact	☑		☐
3. Temp criteria achieved	☑		☐
4. Cooler temp verification	IR Gun		
5. Cooler media	Ice (Bag)		

Trip Blank Information	Y	or	N	N/A
1. Trip Blank present / cooler	☑		☐	☐
2. Trip Blank listed on COC	☑		☐	☐

	W	or	S	N/A
3. Type Of TB Received	☑		☐	☐

Sample Information	Y	or	N	N/A
1. Sample labels present on bottles	☑		☐	
2. Samples preserved properly	☑		☐	
3. Sufficient volume/containers recvd for analysis:	☑		☐	
4. Condition of sample	Intact			
5. Sample recvd within HT	☑		☐	
6. Dates/Times/IDs on COC match Sample Label	☑		☐	
7. VOCs have headspace	☐		☑	☐
8. Bottles received for unspecified tests	☐		☑	
9. Compositing instructions clear	☐		☐	☑
10. Voa Soil Kits/Jars received past 48hrs?	☐		☐	☑
11. % Solids Jar received?	☐		☐	☑
12. Residual Chlorine Present?	☐		☐	☑

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____ Number of 5035 Field Kits: _____ Number of Lab Filtered Metals: _____

Test Strip Lot #s: pH 0-3 230320 pH 10-12 25BDH07 Other: (Specify) pH 1.0 - 12.0 222221

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: SHAYLAP Date: 5/2/2023 5:00:00 PM Reviewer: _____ Date: _____

FC5736: Chain of Custody
Page 2 of 2

QC Evaluation: DOD QSM5.x Limits

Job Number: FC5736
Account: Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL
Collected: 05/01/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1A1807	SW846 8260D						
V1A1807-BS	156-59-2	cis-1,2-Dichloroethylene	BSP	REC	98	%	78-123
V1A1807-BS	156-60-5	trans-1,2-Dichloroethylene	BSP	REC	97	%	75-124
V1A1807-BS	79-01-6	Trichloroethylene	BSP	REC	98	%	79-123
V1A1807-BS	75-01-4	Vinyl Chloride	BSP	REC	104	%	58-137
V1A1807-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	100	%	80-119
V1A1807-BS	17060-07-0	1,2-Dichloroethane-D4	BSP	SURR	100	%	81-118
V1A1807-BS	2037-26-5	Toluene-D8	BSP	SURR	97	%	89-112
V1A1807-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	101	%	85-114
FC5638-13MS*	156-59-2	cis-1,2-Dichloroethylene	MS	REC	98	%	78-123
FC5638-13MS*	156-60-5	trans-1,2-Dichloroethylene	MS	REC	93	%	75-124
FC5638-13MS*	79-01-6	Trichloroethylene	MS	REC	96	%	79-123
FC5638-13MS*	75-01-4	Vinyl Chloride	MS	REC	99	%	58-137
FC5638-13MS*	1868-53-7	Dibromofluoromethane	MS	SURR	101	%	80-119
FC5638-13MS*	17060-07-0	1,2-Dichloroethane-D4	MS	SURR	104	%	81-118
FC5638-13MS*	2037-26-5	Toluene-D8	MS	SURR	96	%	89-112
FC5638-13MS*	460-00-4	4-Bromofluorobenzene	MS	SURR	100	%	85-114
FC5638-13MSD*	156-59-2	cis-1,2-Dichloroethylene	MSD	REC	106	%	78-123
FC5638-13MSD*	156-59-2	cis-1,2-Dichloroethylene	MSD	RPD	8	%	20
FC5638-13MSD*	156-60-5	trans-1,2-Dichloroethylene	MSD	REC	99	%	75-124
FC5638-13MSD*	156-60-5	trans-1,2-Dichloroethylene	MSD	RPD	7	%	20
FC5638-13MSD*	79-01-6	Trichloroethylene	MSD	REC	102	%	79-123
FC5638-13MSD*	79-01-6	Trichloroethylene	MSD	RPD	6	%	20
FC5638-13MSD*	75-01-4	Vinyl Chloride	MSD	REC	115	%	58-137
FC5638-13MSD*	75-01-4	Vinyl Chloride	MSD	RPD	7	%	20
FC5638-13MSD*	1868-53-7	Dibromofluoromethane	MSD	SURR	101	%	80-119
FC5638-13MSD*	17060-07-0	1,2-Dichloroethane-D4	MSD	SURR	104	%	81-118
FC5638-13MSD*	2037-26-5	Toluene-D8	MSD	SURR	96	%	89-112
FC5638-13MSD*	460-00-4	4-Bromofluorobenzene	MSD	SURR	99	%	85-114
V1A1807-MB	1868-53-7	Dibromofluoromethane	MB	SURR	100	%	80-119
V1A1807-MB	17060-07-0	1,2-Dichloroethane-D4	MB	SURR	99	%	81-118
V1A1807-MB	2037-26-5	Toluene-D8	MB	SURR	96	%	89-112
V1A1807-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	100	%	85-114
FC5736-1	1868-53-7	Dibromofluoromethane	SAMP	SURR	97	%	80-119
FC5736-1	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	101	%	81-118
FC5736-1	2037-26-5	Toluene-D8	SAMP	SURR	97	%	89-112
FC5736-1	460-00-4	4-Bromofluorobenzene	SAMP	SURR	100	%	85-114
FC5736-2	1868-53-7	Dibromofluoromethane	SAMP	SURR	102	%	80-119
FC5736-2	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	101	%	81-118
FC5736-2	2037-26-5	Toluene-D8	SAMP	SURR	97	%	89-112
FC5736-2	460-00-4	4-Bromofluorobenzene	SAMP	SURR	100	%	85-114
FC5736-3	1868-53-7	Dibromofluoromethane	SAMP	SURR	103	%	80-119
FC5736-3	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	102	%	81-118

* Sample used for QC is not from job FC5736

QC Evaluation: DOD QSM5.x Limits

Job Number: FC5736
Account: Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL
Collected: 05/01/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
FC5736-3	2037-26-5	Toluene-D8	SAMP	SURR	97	%	89-112
FC5736-3	460-00-4	4-Bromofluorobenzene	SAMP	SURR	99	%	85-114
V2O2958	SW846 8260D						
V2O2958-BS	156-59-2	cis-1,2-Dichloroethylene	BSP	REC	101	%	78-123
V2O2958-BS	156-60-5	trans-1,2-Dichloroethylene	BSP	REC	97	%	75-124
V2O2958-BS	79-01-6	Trichloroethylene	BSP	REC	102	%	79-123
V2O2958-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	95	%	80-119
V2O2958-BS	17060-07-0	1,2-Dichloroethane-D4	BSP	SURR	113	%	81-118
V2O2958-BS	2037-26-5	Toluene-D8	BSP	SURR	98	%	89-112
V2O2958-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	98	%	85-114
FC5788-7MS*	156-59-2	cis-1,2-Dichloroethylene	MS	REC	101	%	78-123
FC5788-7MS*	156-60-5	trans-1,2-Dichloroethylene	MS	REC	95	%	75-124
FC5788-7MS*	79-01-6	Trichloroethylene	MS	REC	98	%	79-123
FC5788-7MS*	1868-53-7	Dibromofluoromethane	MS	SURR	98	%	80-119
FC5788-7MS*	17060-07-0	1,2-Dichloroethane-D4	MS	SURR	114	%	81-118
FC5788-7MS*	2037-26-5	Toluene-D8	MS	SURR	97	%	89-112
FC5788-7MS*	460-00-4	4-Bromofluorobenzene	MS	SURR	97	%	85-114
FC5788-7MSD*	156-59-2	cis-1,2-Dichloroethylene	MSD	REC	97	%	78-123
FC5788-7MSD*	156-59-2	cis-1,2-Dichloroethylene	MSD	RPD	4	%	20
FC5788-7MSD*	156-60-5	trans-1,2-Dichloroethylene	MSD	REC	90	%	75-124
FC5788-7MSD*	156-60-5	trans-1,2-Dichloroethylene	MSD	RPD	6	%	20
FC5788-7MSD*	79-01-6	Trichloroethylene	MSD	REC	92	%	79-123
FC5788-7MSD*	79-01-6	Trichloroethylene	MSD	RPD	6	%	20
FC5788-7MSD*	1868-53-7	Dibromofluoromethane	MSD	SURR	97	%	80-119
FC5788-7MSD*	17060-07-0	1,2-Dichloroethane-D4	MSD	SURR	114	%	81-118
FC5788-7MSD*	2037-26-5	Toluene-D8	MSD	SURR	97	%	89-112
FC5788-7MSD*	460-00-4	4-Bromofluorobenzene	MSD	SURR	96	%	85-114
V2O2958-MB	1868-53-7	Dibromofluoromethane	MB	SURR	95	%	80-119
V2O2958-MB	17060-07-0	1,2-Dichloroethane-D4	MB	SURR	108	%	81-118
V2O2958-MB	2037-26-5	Toluene-D8	MB	SURR	99	%	89-112
V2O2958-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	98	%	85-114
FC5736-4	1868-53-7	Dibromofluoromethane	SAMP	SURR	95	%	80-119
FC5736-4	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	107	%	81-118
FC5736-4	2037-26-5	Toluene-D8	SAMP	SURR	100	%	89-112
FC5736-4	460-00-4	4-Bromofluorobenzene	SAMP	SURR	96	%	85-114
FC5736-5	1868-53-7	Dibromofluoromethane	SAMP	SURR	93	%	80-119
FC5736-5	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	101	%	81-118
FC5736-5	2037-26-5	Toluene-D8	SAMP	SURR	100	%	89-112
FC5736-5	460-00-4	4-Bromofluorobenzene	SAMP	SURR	98	%	85-114
FC5736-6	1868-53-7	Dibromofluoromethane	SAMP	SURR	94	%	80-119
FC5736-6	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	106	%	81-118
FC5736-6	2037-26-5	Toluene-D8	SAMP	SURR	99	%	89-112
FC5736-6	460-00-4	4-Bromofluorobenzene	SAMP	SURR	95	%	85-114

* Sample used for QC is not from job FC5736

QC Evaluation: DOD QSM5.x Limits

Job Number: FC5736
Account: Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL
Collected: 05/01/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
FC5736-7	1868-53-7	Dibromofluoromethane	SAMP	SURR	92	%	80-119
FC5736-7	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	105	%	81-118
FC5736-7	2037-26-5	Toluene-D8	SAMP	SURR	100	%	89-112
FC5736-7	460-00-4	4-Bromofluorobenzene	SAMP	SURR	97	%	85-114
FC5736-8	1868-53-7	Dibromofluoromethane	SAMP	SURR	93	%	80-119
FC5736-8	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	103	%	81-118
FC5736-8	2037-26-5	Toluene-D8	SAMP	SURR	100	%	89-112
FC5736-8	460-00-4	4-Bromofluorobenzene	SAMP	SURR	99	%	85-114
VI2922	SW846 8260D						
VI2922-BS	75-01-4	Vinyl Chloride	BSP	REC	114	%	58-137
VI2922-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	105	%	80-119
VI2922-BS	17060-07-0	1,2-Dichloroethane-D4	BSP	SURR	106	%	81-118
VI2922-BS	2037-26-5	Toluene-D8	BSP	SURR	104	%	89-112
VI2922-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	91	%	85-114
FC5815-70MS*	75-01-4	Vinyl Chloride	MS	REC	102	%	58-137
FC5815-70MS*	1868-53-7	Dibromofluoromethane	MS	SURR	109	%	80-119
FC5815-70MS*	17060-07-0	1,2-Dichloroethane-D4	MS	SURR	109	%	81-118
FC5815-70MS*	2037-26-5	Toluene-D8	MS	SURR	103	%	89-112
FC5815-70MS*	460-00-4	4-Bromofluorobenzene	MS	SURR	101	%	85-114
FC5815-70MSD*	75-01-4	Vinyl Chloride	MSD	REC	115	%	58-137
FC5815-70MSD*	75-01-4	Vinyl Chloride	MSD	RPD	10	%	20
FC5815-70MSD*	1868-53-7	Dibromofluoromethane	MSD	SURR	108	%	80-119
FC5815-70MSD*	17060-07-0	1,2-Dichloroethane-D4	MSD	SURR	112	%	81-118
FC5815-70MSD*	2037-26-5	Toluene-D8	MSD	SURR	104	%	89-112
FC5815-70MSD*	460-00-4	4-Bromofluorobenzene	MSD	SURR	100	%	85-114
VI2922-MB	1868-53-7	Dibromofluoromethane	MB	SURR	103	%	80-119
VI2922-MB	17060-07-0	1,2-Dichloroethane-D4	MB	SURR	105	%	81-118
VI2922-MB	2037-26-5	Toluene-D8	MB	SURR	98	%	89-112
VI2922-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	103	%	85-114
FC5736-4	1868-53-7	Dibromofluoromethane	SAMP	SURR	103	%	80-119
FC5736-4	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	105	%	81-118
FC5736-4	2037-26-5	Toluene-D8	SAMP	SURR	98	%	89-112
FC5736-4	460-00-4	4-Bromofluorobenzene	SAMP	SURR	101	%	85-114
FC5736-5	1868-53-7	Dibromofluoromethane	SAMP	SURR	104	%	80-119
FC5736-5	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	106	%	81-118
FC5736-5	2037-26-5	Toluene-D8	SAMP	SURR	98	%	89-112
FC5736-5	460-00-4	4-Bromofluorobenzene	SAMP	SURR	101	%	85-114
FC5736-6	1868-53-7	Dibromofluoromethane	SAMP	SURR	103	%	80-119
FC5736-6	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	106	%	81-118
FC5736-6	2037-26-5	Toluene-D8	SAMP	SURR	99	%	89-112
FC5736-6	460-00-4	4-Bromofluorobenzene	SAMP	SURR	100	%	85-114
FC5736-7	1868-53-7	Dibromofluoromethane	SAMP	SURR	104	%	80-119
FC5736-7	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	106	%	81-118

* Sample used for QC is not from job FC5736

QC Evaluation: DOD QSM5.x Limits

Job Number: FC5736
Account: Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL
Collected: 05/01/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
FC5736-7	2037-26-5	Toluene-D8	SAMP	SURR	100	%	89-112
FC5736-7	460-00-4	4-Bromofluorobenzene	SAMP	SURR	102	%	85-114
FC5736-8	1868-53-7	Dibromofluoromethane	SAMP	SURR	103	%	80-119
FC5736-8	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	106	%	81-118
FC5736-8	2037-26-5	Toluene-D8	SAMP	SURR	97	%	89-112
FC5736-8	460-00-4	4-Bromofluorobenzene	SAMP	SURR	102	%	85-114

* Sample used for QC is not from job FC5736

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries
- Run Sequence Reports

Method Blank Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1A1807-MB [a]	1A45904.D	1	05/05/23	JW	n/a	n/a	V1A1807

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC5736-1, FC5736-2, FC5736-3

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.35	ug/l	
75-01-4	Vinyl Chloride	ND	1.0	0.41	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	100%	83-118%
17060-07-0	1,2-Dichloroethane-D4	99%	79-125%
2037-26-5	Toluene-D8	96%	85-112%
460-00-4	4-Bromofluorobenzene	100%	83-118%

(a) Sample was treated with an anti-foaming agent.

Method Blank Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2O2958-MB	2O76185.D	1	05/08/23	DB	n/a	n/a	V2O2958

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC5736-4, FC5736-5, FC5736-6, FC5736-7, FC5736-8

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.35	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	95%	83-118%
17060-07-0	1,2-Dichloroethane-D4	108%	79-125%
2037-26-5	Toluene-D8	99%	85-112%
460-00-4	4-Bromofluorobenzene	98%	83-118%

Method Blank Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VI2922-MB [a]	I756634.D	1	05/10/23	JW	n/a	n/a	VI2922

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC5736-4, FC5736-5, FC5736-6, FC5736-7, FC5736-8

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl Chloride	ND	1.0	0.41	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	103%	83-118%
17060-07-0	1,2-Dichloroethane-D4	105%	79-125%
2037-26-5	Toluene-D8	98%	85-112%
460-00-4	4-Bromofluorobenzene	103%	83-118%

(a) Sample was treated with an anti-foaming agent.

Blank Spike Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1A1807-BS	1A45902.D	1	05/05/23	JW	n/a	n/a	V1A1807

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC5736-1, FC5736-2, FC5736-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
156-59-2	cis-1,2-Dichloroethylene	25	24.4	98	78-120
156-60-5	trans-1,2-Dichloroethylene	25	24.3	97	76-127
79-01-6	Trichloroethylene	25	24.6	98	81-126
75-01-4	Vinyl Chloride	25	25.9	104	69-159

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	100%	83-118%
17060-07-0	1,2-Dichloroethane-D4	100%	79-125%
2037-26-5	Toluene-D8	97%	85-112%
460-00-4	4-Bromofluorobenzene	101%	83-118%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2O2958-BS	2O76183.D	1	05/08/23	DB	n/a	n/a	V2O2958

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC5736-4, FC5736-5, FC5736-6, FC5736-7, FC5736-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
156-59-2	cis-1,2-Dichloroethylene	25	25.2	101	78-120
156-60-5	trans-1,2-Dichloroethylene	25	24.2	97	76-127
79-01-6	Trichloroethylene	25	25.5	102	81-126

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	95%	83-118%
17060-07-0	1,2-Dichloroethane-D4	113%	79-125%
2037-26-5	Toluene-D8	98%	85-112%
460-00-4	4-Bromofluorobenzene	98%	83-118%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VI2922-BS	I756632.D	1	05/10/23	JW	n/a	n/a	VI2922

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC5736-4, FC5736-5, FC5736-6, FC5736-7, FC5736-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
75-01-4	Vinyl Chloride	25	28.6	114	69-159

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	105%	83-118%
17060-07-0	1,2-Dichloroethane-D4	106%	79-125%
2037-26-5	Toluene-D8	104%	85-112%
460-00-4	4-Bromofluorobenzene	91%	83-118%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FC5638-13MS	1A45925.D	1000	05/05/23	JW	n/a	n/a	V1A1807
FC5638-13MSD	1A45926.D	1000	05/05/23	JW	n/a	n/a	V1A1807
FC5638-13	1A45906.D	1000	05/05/23	JW	n/a	n/a	V1A1807

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC5736-1, FC5736-2, FC5736-3

CAS No.	Compound	FC5638-13 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
156-59-2	cis-1,2-Dichloroethylene	1000	U	25000	24400	98	25000	26500	106	8	78-120/15
156-60-5	trans-1,2-Dichloroethylene	1000	U	25000	23200	93	25000	24800	99	7	76-127/17
79-01-6	Trichloroethylene	1000	U	25000	24000	96	25000	25600	102	6	81-126/15
75-01-4	Vinyl Chloride	26300		25000	51100	99	25000	55000	115	7	69-159/18

CAS No.	Surrogate Recoveries	MS	MSD	FC5638-13	Limits
1868-53-7	Dibromofluoromethane	101%	101%	101%	83-118%
17060-07-0	1,2-Dichloroethane-D4	104%	104%	101%	79-125%
2037-26-5	Toluene-D8	96%	96%	96%	85-112%
460-00-4	4-Bromofluorobenzene	100%	99%	99%	83-118%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FC5788-7MS	2O76198.D	5	05/09/23	DB	n/a	n/a	V2O2958
FC5788-7MSD	2O76199.D	5	05/09/23	DB	n/a	n/a	V2O2958
FC5788-7	2O76191.D	1	05/09/23	DB	n/a	n/a	V2O2958

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC5736-4, FC5736-5, FC5736-6, FC5736-7, FC5736-8

CAS No.	Compound	FC5788-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
156-59-2	cis-1,2-Dichloroethylene	1.0 U		125	126	101	125	121	97	4	78-120/15
156-60-5	trans-1,2-Dichloroethylene	1.0 U		125	119	95	125	112	90	6	76-127/17
79-01-6	Trichloroethylene	1.0 U		125	122	98	125	115	92	6	81-126/15

CAS No.	Surrogate Recoveries	MS	MSD	FC5788-7	Limits
1868-53-7	Dibromofluoromethane	98%	97%	93%	83-118%
17060-07-0	1,2-Dichloroethane-D4	114%	114%	106%	79-125%
2037-26-5	Toluene-D8	97%	97%	100%	85-112%
460-00-4	4-Bromofluorobenzene	97%	96%	96%	83-118%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FC5815-70MS	I756655.D	10000	05/10/23	JW	n/a	n/a	VI2922
FC5815-70MSD	I756656.D	10000	05/10/23	JW	n/a	n/a	VI2922
FC5815-70	I756636.D	10000	05/10/23	JW	n/a	n/a	VI2922

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC5736-4, FC5736-5, FC5736-6, FC5736-7, FC5736-8

CAS No.	Compound	FC5815-70 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
75-01-4	Vinyl Chloride	24200		250000	280000	102	250000	311000	115	10	69-159/18

CAS No.	Surrogate Recoveries	MS	MSD	FC5815-70	Limits
1868-53-7	Dibromofluoromethane	109%	108%	103%	83-118%
17060-07-0	1,2-Dichloroethane-D4	109%	112%	104%	79-125%
2037-26-5	Toluene-D8	103%	104%	100%	85-112%
460-00-4	4-Bromofluorobenzene	101%	100%	101%	83-118%

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample:	V1A1804-BFB	**Injection Date:**	05/03/23
Lab File ID:	1A45831.D	**Injection Time:**	13:13
Instrument ID:	GCMS1A		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	3867	20.4		Pass
75	30.0 - 60.0% of mass 95	9254	48.9		Pass
95	Base peak, 100% relative abundance	18923	100.0		Pass
96	5.0 - 9.0% of mass 95	1343	7.10		Pass
173	Less than 2.0% of mass 174	134	0.71	(0.80) [a]	Pass
174	50.0 - 100.0% of mass 95	16719	88.4		Pass
175	5.0 - 9.0% of mass 174	1254	6.63	(7.50) [a]	Pass
176	95.0 - 101.0% of mass 174	16332	86.3	(97.7) [a]	Pass
177	5.0 - 9.0% of mass 176	1114	5.89	(6.82) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1A1804-IC1804	1A45832.D	05/03/23	13:48	00:35	Initial cal 1
V1A1804-IC1804	1A45833.D	05/03/23	14:13	01:00	Initial cal 2
V1A1804-IC1804	1A45834.D	05/03/23	14:38	01:25	Initial cal 3
V1A1804-IC1804	1A45835.D	05/03/23	15:03	01:50	Initial cal 4
V1A1804-ICC1804	1A45836.D	05/03/23	15:28	02:15	Initial cal 5
V1A1804-IC1804	1A45837.D	05/03/23	15:53	02:40	Initial cal 6
V1A1804-IC1804	1A45838.D	05/03/23	16:17	03:04	Initial cal 7
V1A1804-ICV1804	1A45840.D	05/03/23	17:08	03:55	Initial cal verification 5

Instrument Performance Check (BFB)

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V1A1807-BFB
Lab File ID: 1A45900.D
Instrument ID: GCMS1A
Injection Date: 05/05/23
Injection Time: 10:22

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	3513	20.5		Pass
75	30.0 - 60.0% of mass 95	8433	49.3		Pass
95	Base peak, 100% relative abundance	17098	100.0		Pass
96	5.0 - 9.0% of mass 95	1182	6.91		Pass
173	Less than 2.0% of mass 174	92	0.54	(0.63) [a]	Pass
174	50.0 - 100.0% of mass 95	14639	85.6		Pass
175	5.0 - 9.0% of mass 174	1085	6.35	(7.41) [a]	Pass
176	95.0 - 101.0% of mass 174	14594	85.4	(99.7) [a]	Pass
177	5.0 - 9.0% of mass 176	1014	5.93	(6.95) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1A1807-CC1804	1A45901.D	05/05/23	10:47	00:25	Continuing cal 5
V1A1807-BS	1A45902.D	05/05/23	11:11	00:49	Blank Spike
V1A1807-MB	1A45904.D	05/05/23	12:01	01:39	Method Blank
ZZZZZZ	1A45905.D	05/05/23	12:26	02:04	(unrelated sample)
FC5638-13	1A45906.D	05/05/23	12:51	02:29	(used for QC only; not part of job FC5736)
ZZZZZZ	1A45907.D	05/05/23	13:16	02:54	(unrelated sample)
ZZZZZZ	1A45908.D	05/05/23	13:41	03:19	(unrelated sample)
ZZZZZZ	1A45909.D	05/05/23	14:06	03:44	(unrelated sample)
ZZZZZZ	1A45910.D	05/05/23	14:31	04:09	(unrelated sample)
ZZZZZZ	1A45911.D	05/05/23	14:56	04:34	(unrelated sample)
ZZZZZZ	1A45912.D	05/05/23	15:21	04:59	(unrelated sample)
ZZZZZZ	1A45913.D	05/05/23	15:46	05:24	(unrelated sample)
ZZZZZZ	1A45914.D	05/05/23	16:11	05:49	(unrelated sample)
ZZZZZZ	1A45915.D	05/05/23	16:36	06:14	(unrelated sample)
ZZZZZZ	1A45916.D	05/05/23	17:01	06:39	(unrelated sample)
ZZZZZZ	1A45917.D	05/05/23	17:26	07:04	(unrelated sample)
ZZZZZZ	1A45918.D	05/05/23	17:51	07:29	(unrelated sample)
ZZZZZZ	1A45919.D	05/05/23	18:16	07:54	(unrelated sample)
ZZZZZZ	1A45920.D	05/05/23	18:41	08:19	(unrelated sample)
ZZZZZZ	1A45921.D	05/05/23	19:06	08:44	(unrelated sample)
FC5736-1	1A45922.D	05/05/23	19:31	09:09	CCF-IW0003IS-030.0-20230501
FC5736-2	1A45923.D	05/05/23	19:56	09:34	CCF-IW0003ID-051.0-20230501
FC5736-3	1A45924.D	05/05/23	20:21	09:59	CCF-IW0083ID-040.0-20230501
FC5638-13MS	1A45925.D	05/05/23	20:46	10:24	Matrix Spike

Instrument Performance Check (BFB)

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample:	V1A1807-BFB	**Injection Date:**	05/05/23
Lab File ID:	1A45900.D	**Injection Time:**	10:22
Instrument ID:	GCMS1A		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
FC5638-13MSD	1A45926.D	05/05/23	21:11	10:49	Matrix Spike Duplicate
V1A1807-ECC1804	1A45927.D	05/05/23	21:36	11:14	Ending cal 5

Instrument Performance Check (BFB)

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample:	V2O2924-BFB	**Injection Date:**	04/11/23
Lab File ID:	2O75425.D	**Injection Time:**	09:39
Instrument ID:	GCMS2O		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	15110	17.2		Pass
75	30.0 - 60.0% of mass 95	42840	48.7		Pass
95	Base peak, 100% relative abundance	87968	100.0		Pass
96	5.0 - 9.0% of mass 95	6005	6.83		Pass
173	Less than 2.0% of mass 174	522	0.59	(0.73) [a]	Pass
174	50.0 - 100.0% of mass 95	71059	80.8		Pass
175	5.0 - 9.0% of mass 174	4935	5.61	(6.94) [a]	Pass
176	95.0 - 101.0% of mass 174	68445	77.8	(96.3) [a]	Pass
177	5.0 - 9.0% of mass 176	4228	4.81	(6.18) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2O2924-IC2924	2O75426.D	04/11/23	10:06	00:27	Initial cal 1
V2O2924-IC2924	2O75427.D	04/11/23	10:38	00:59	Initial cal 2
V2O2924-IC2924	2O75428.D	04/11/23	11:05	01:26	Initial cal 3
V2O2924-IC2924	2O75429.D	04/11/23	11:31	01:52	Initial cal 4
V2O2924-ICC2924	2O75430.D	04/11/23	11:56	02:17	Initial cal 5
V2O2924-IC2924	2O75431.D	04/11/23	12:22	02:43	Initial cal 6
V2O2924-IC2924	2O75432.D	04/11/23	12:48	03:09	Initial cal 7
V2O2924-ICV2924	2O75434.D	04/11/23	13:39	04:00	Initial cal verification 5
V2O2924-ICV2924	2O75435.D	04/11/23	14:04	04:25	Initial cal verification 4

Instrument Performance Check (BFB)

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample:	V2O2958-BFB	**Injection Date:**	05/08/23
Lab File ID:	2O76181.D	**Injection Time:**	22:15
Instrument ID:	GCMS2O		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	14848	16.8		Pass
75	30.0 - 60.0% of mass 95	43109	48.8		Pass
95	Base peak, 100% relative abundance	88339	100.0		Pass
96	5.0 - 9.0% of mass 95	6007	6.80		Pass
173	Less than 2.0% of mass 174	449	0.51	(0.62) [a]	Pass
174	50.0 - 100.0% of mass 95	72171	81.7		Pass
175	5.0 - 9.0% of mass 174	5186	5.87	(7.19) [a]	Pass
176	95.0 - 101.0% of mass 174	70224	79.5	(97.3) [a]	Pass
177	5.0 - 9.0% of mass 176	4722	5.35	(6.72) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2O2958-CC2924	2O76182.D	05/08/23	22:41	00:26	Continuing cal 5
V2O2958-BS	2O76183.D	05/08/23	23:07	00:52	Blank Spike
V2O2958-MB	2O76185.D	05/08/23	23:59	01:44	Method Blank
FC5736-8	2O76186.D	05/09/23	00:25	02:10	CCF-TB-20230501-01
FC5736-4	2O76187.D	05/09/23	00:51	02:36	CCF-IW0083IS-030.0-20230501
FC5736-5	2O76188.D	05/09/23	01:17	03:02	CCF-IW0083S-020.0-20230501
FC5736-6	2O76189.D	05/09/23	01:43	03:28	CCF-IW0029ID-042.5-20230501
FC5736-7	2O76190.D	05/09/23	02:09	03:54	CCF-IW0092-045.0-20230501
FC5788-7	2O76191.D	05/09/23	02:35	04:20	(used for QC only; not part of job FC5736)
ZZZZZZ	2O76192.D	05/09/23	03:01	04:46	(unrelated sample)
ZZZZZZ	2O76193.D	05/09/23	03:27	05:12	(unrelated sample)
ZZZZZZ	2O76194.D	05/09/23	03:52	05:37	(unrelated sample)
ZZZZZZ	2O76195.D	05/09/23	04:18	06:03	(unrelated sample)
ZZZZZZ	2O76196.D	05/09/23	04:44	06:29	(unrelated sample)
ZZZZZZ	2O76197.D	05/09/23	05:10	06:55	(unrelated sample)
FC5788-7MS	2O76198.D	05/09/23	05:36	07:21	Matrix Spike
FC5788-7MSD	2O76199.D	05/09/23	06:02	07:47	Matrix Spike Duplicate
V2O2958-ECC2924	2O76200.D	05/09/23	06:28	08:13	Ending cal 5

Instrument Performance Check (BFB)

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2910-BFB
Lab File ID: I756321.D
Instrument ID: GCMSI
Injection Date: 05/02/23
Injection Time: 08:34

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	21651	22.8		Pass
75	30.0 - 60.0% of mass 95	50141	52.9		Pass
95	Base peak, 100% relative abundance	94821	100.0		Pass
96	5.0 - 9.0% of mass 95	6547	6.90		Pass
173	Less than 2.0% of mass 174	949	1.00	(1.23) [a]	Pass
174	50.0 - 100.0% of mass 95	77384	81.6		Pass
175	5.0 - 9.0% of mass 174	6046	6.38	(7.81) [a]	Pass
176	95.0 - 101.0% of mass 174	73883	77.9	(95.5) [a]	Pass
177	5.0 - 9.0% of mass 176	4942	5.21	(6.69) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VI2910-IC2910	I756322.D	05/02/23	09:04	00:30	Initial cal 1
VI2910-IC2910	I756323.D	05/02/23	09:29	00:55	Initial cal 2
VI2910-IC2910	I756325.D	05/02/23	10:18	01:44	Initial cal 4
VI2910-ICC2910	I756326.D	05/02/23	10:42	02:08	Initial cal 5
VI2910-IC2910	I756327.D	05/02/23	11:07	02:33	Initial cal 6
VI2910-IC2910	I756328.D	05/02/23	11:32	02:58	Initial cal 7
VI2910-IC2910	I756330.D	05/02/23	12:21	03:47	Initial cal 3
VI2910-ICV2910	I756331.D	05/02/23	13:02	04:28	Initial cal verification 5
VI2910-CC2910	I756331A.D	05/02/23	13:02	04:28	Continuing cal 5
VI2910-BS	I756332.D	05/02/23	13:26	04:52	Blank Spike
VI2910-MB	I756333.D	05/02/23	13:51	05:17	Method Blank
ZZZZZZ	I756334.D	05/02/23	14:19	05:45	(unrelated sample)
ZZZZZZ	I756335.D	05/02/23	14:44	06:10	(unrelated sample)
FC5532-2	I756336.D	05/02/23	15:09	06:35	(used for QC only; not part of job FC5736)
ZZZZZZ	I756337.D	05/02/23	15:34	07:00	(unrelated sample)
ZZZZZZ	I756338.D	05/02/23	15:59	07:25	(unrelated sample)
ZZZZZZ	I756339.D	05/02/23	16:25	07:51	(unrelated sample)
ZZZZZZ	I756340.D	05/02/23	16:50	08:16	(unrelated sample)
ZZZZZZ	I756341.D	05/02/23	17:15	08:41	(unrelated sample)
ZZZZZZ	I756342.D	05/02/23	17:40	09:06	(unrelated sample)
ZZZZZZ	I756343.D	05/02/23	18:05	09:31	(unrelated sample)
FC5532-2MS	I756344.D	05/02/23	18:30	09:56	Matrix Spike
FC5532-2MSD	I756345.D	05/02/23	18:55	10:21	Matrix Spike Duplicate
VI2910-ECC2910	I756346.D	05/02/23	19:20	10:46	Ending cal 5

Instrument Performance Check (BFB)

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2922-BFB
Lab File ID: I756630.D
Instrument ID: GCMSI
Injection Date: 05/10/23
Injection Time: 07:58

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	15768	20.6		Pass
75	30.0 - 60.0% of mass 95	39800	52.1		Pass
95	Base peak, 100% relative abundance	76395	100.0		Pass
96	5.0 - 9.0% of mass 95	4950	6.48		Pass
173	Less than 2.0% of mass 174	640	0.84	(0.95) [a]	Pass
174	50.0 - 100.0% of mass 95	67656	88.6		Pass
175	5.0 - 9.0% of mass 174	5114	6.69	(7.56) [a]	Pass
176	95.0 - 101.0% of mass 174	65133	85.3	(96.3) [a]	Pass
177	5.0 - 9.0% of mass 176	4376	5.73	(6.72) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VI2922-CC2910	I756631.D	05/10/23	08:27	00:29	Continuing cal 4
VI2922-BS	I756632.D	05/10/23	09:03	01:05	Blank Spike
VI2922-MB	I756634.D	05/10/23	09:52	01:54	Method Blank
ZZZZZZ	I756635.D	05/10/23	10:16	02:18	(unrelated sample)
FC5815-70	I756636.D	05/10/23	10:42	02:44	(used for QC only; not part of job FC5736)
ZZZZZZ	I756637.D	05/10/23	11:07	03:09	(unrelated sample)
ZZZZZZ	I756638.D	05/10/23	11:31	03:33	(unrelated sample)
ZZZZZZ	I756641.D	05/10/23	12:44	04:46	(unrelated sample)
ZZZZZZ	I756642.D	05/10/23	13:09	05:11	(unrelated sample)
ZZZZZZ	I756643.D	05/10/23	13:33	05:35	(unrelated sample)
ZZZZZZ	I756644.D	05/10/23	13:58	06:00	(unrelated sample)
ZZZZZZ	I756645.D	05/10/23	14:23	06:25	(unrelated sample)
ZZZZZZ	I756646.D	05/10/23	14:47	06:49	(unrelated sample)
ZZZZZZ	I756647.D	05/10/23	15:12	07:14	(unrelated sample)
FC5736-4	I756648.D	05/10/23	15:37	07:39	CCF-IW0083IS-030.0-20230501
FC5736-5	I756649.D	05/10/23	16:02	08:04	CCF-IW0083S-020.0-20230501
FC5736-6	I756650.D	05/10/23	16:26	08:28	CCF-IW0029ID-042.5-20230501
FC5736-7	I756651.D	05/10/23	16:51	08:53	CCF-IW0092-045.0-20230501
FC5736-8	I756652.D	05/10/23	17:16	09:18	CCF-TB-20230501-01
ZZZZZZ	I756653.D	05/10/23	17:41	09:43	(unrelated sample)
ZZZZZZ	I756654.D	05/10/23	18:05	10:07	(unrelated sample)
FC5815-70MS	I756655.D	05/10/23	18:30	10:32	Matrix Spike
FC5815-70MSD	I756656.D	05/10/23	18:55	10:57	Matrix Spike Duplicate
VI2922-ECC2910	I756657.D	05/10/23	19:20	11:22	Ending cal 4

Internal Standard Area Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Check Std:	V1A1807-CC1804	**Injection Date:**	05/05/23
Lab File ID:	1A45901.D	**Injection Time:**	10:47
Instrument ID:	GCMS1A	**Method:**	SW846 8260D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
Initial Cal [a]	72612	3.40	54290	5.36	28883	7.10
Check Std [b]	64097	3.41	50028	5.36	26738	7.10
Upper Limit [c]	128194	3.58	100056	5.53	53476	7.27
Lower Limit [d]	32049	3.24	25014	5.19	13369	6.93

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
V1A1807-BS	64348	3.41	49732	5.36	27256	7.10
V1A1807-MB [e]	62131	3.41	47952	5.36	26918	7.10
ZZZZZZ	60610	3.41	46871	5.36	26059	7.10
FC5638-13	60632	3.41	47216	5.36	26358	7.10
ZZZZZZ	60645	3.41	46981	5.36	26048	7.10
ZZZZZZ	60471	3.41	46686	5.36	26098	7.10
ZZZZZZ	59329	3.41	45513	5.36	25644	7.10
ZZZZZZ	60312	3.41	46641	5.36	26030	7.10
ZZZZZZ	59484	3.41	45826	5.36	25648	7.10
ZZZZZZ	58368	3.41	45702	5.36	25319	7.10
ZZZZZZ	58019	3.41	45014	5.36	25069	7.10
ZZZZZZ	59487	3.41	46485	5.36	25636	7.10
ZZZZZZ	59347	3.41	45660	5.36	25466	7.10
ZZZZZZ	59261	3.41	45619	5.36	25625	7.10
ZZZZZZ	58722	3.41	45010	5.36	25402	7.10
ZZZZZZ	57939	3.41	45058	5.36	25073	7.10
ZZZZZZ	57979	3.41	44954	5.36	25366	7.10
ZZZZZZ	59053	3.41	46699	5.36	25815	7.10
ZZZZZZ	57366	3.41	44345	5.36	24795	7.10
FC5736-1	61334	3.41	46858	5.36	25816	7.10
FC5736-2	56988	3.41	44014	5.36	24771	7.10
FC5736-3	57703	3.41	44752	5.36	25163	7.10

IS 1 = Fluorobenzene
IS 2 = Chlorobenzene-D5
IS 3 = 1,4-Dichlorobenzene-d4

(a) Initial Cal is: V1A1804-ICC1804 1A45836.D 05/03/23 15:28
(b) Check Std Limit = -50 to + 100% of initial cal area.
(c) Upper Limit = + 100% of check standard area; Retention time + 0.167 minutes.
(d) Lower Limit = -50% of check standard area; Retention time -0.167 minutes.
(e) Sample was treated with an anti-foaming agent.

Internal Standard Area Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Check Std:	V2O2958-CC2924	**Injection Date:**	05/08/23
Lab File ID:	2O76182.D	**Injection Time:**	22:41
Instrument ID:	GCMS2O	**Method:**	SW846 8260D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
Initial Cal [a]	437363	4.03	318093	6.04	172809	7.80
Check Std [b]	439466	4.02	318560	6.03	168074	7.79
Upper Limit [c]	878932	4.19	637120	6.20	336148	7.96
Lower Limit [d]	219733	3.85	159280	5.86	84037	7.62

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
V2O2958-BS	448285	4.02	324755	6.03	169806	7.79
V2O2958-MB	426529	4.02	302901	6.03	154675	7.79
FC5736-8	426833	4.02	297529	6.03	149612	7.79
FC5736-4	403227	4.02	282543	6.03	145033	7.79
FC5736-5	406325	4.02	283729	6.03	139768	7.79
FC5736-6	396207	4.02	278333	6.03	143282	7.79
FC5736-7	396215	4.03	277213	6.03	140687	7.79
FC5788-7	406900	4.03	281542	6.03	145071	7.79
ZZZZZZ	409777	4.03	285855	6.03	146068	7.79
ZZZZZZ	400094	4.03	278129	6.03	142418	7.79
ZZZZZZ	396774	4.03	273719	6.03	139136	7.79
ZZZZZZ	384737	4.03	268912	6.03	137343	7.79
ZZZZZZ	391307	4.03	273741	6.03	140785	7.79
ZZZZZZ	390156	4.03	274694	6.03	143925	7.79
FC5788-7MS	403493	4.02	294815	6.03	153296	7.79
FC5788-7MSD	419169	4.02	304615	6.03	158867	7.79
V2O2958-ECC2924	425285	4.02	312256	6.03	161813	7.79

IS 1 = Fluorobenzene
IS 2 = Chlorobenzene-D5
IS 3 = 1,4-Dichlorobenzene-d4

(a) Initial Cal is: V2O2924-ICC2924 2O75430.D 04/11/23 11:56
(b) Check Std Limit = -50 to + 100% of initial cal area.
(c) Upper Limit = + 100% of check standard area; Retention time + 0.167 minutes.
(d) Lower Limit = -50% of check standard area; Retention time -0.167 minutes.

Internal Standard Area Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Check Std:	VI2922-CC2910	**Injection Date:**	05/10/23
Lab File ID:	I756631.D	**Injection Time:**	08:27
Instrument ID:	GCMSI	**Method:**	SW846 8260D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
Initial Cal [a]	621830	7.85	449216	11.01	237042	13.37
Check Std [b]	468503	7.85	331753	11.01	209864	13.37
Upper Limit [c]	937006	8.02	663506	11.18	419728	13.54
Lower Limit [d]	234252	7.68	165877	10.84	104932	13.20

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
VI2922-BS	461869	7.85	323751	11.01	193377	13.37
VI2922-MB [e]	457706	7.86	332311	11.01	161600	13.38
ZZZZZZ	468956	7.85	335323	11.01	167512	13.38
FC5815-70	467830	7.85	333250	11.01	168479	13.38
ZZZZZZ	460418	7.86	330311	11.01	170362	13.38
ZZZZZZ	478123	7.86	344256	11.01	176594	13.38
ZZZZZZ	421554	7.86	313222	11.01	163814	13.37
ZZZZZZ	452994	7.85	330269	11.01	163723	13.38
ZZZZZZ	464903	7.86	337289	11.01	168979	13.38
ZZZZZZ	465633	7.85	339315	11.01	174823	13.38
ZZZZZZ	460524	7.85	329096	11.01	165074	13.38
ZZZZZZ	432491	7.86	313885	11.01	162410	13.38
ZZZZZZ	448575	7.85	326060	11.01	161838	13.38
FC5736-4 [e]	443989	7.86	322311	11.01	161752	13.38
FC5736-5 [e]	437655	7.85	317894	11.01	159642	13.38
FC5736-6 [e]	430203	7.86	309939	11.01	160154	13.38
FC5736-7 [e]	439530	7.85	315179	11.01	161428	13.38
FC5736-8 [e]	443763	7.85	322522	11.01	161614	13.38
ZZZZZZ	448637	7.85	325274	11.01	163877	13.38
ZZZZZZ	420535	7.86	302965	11.01	158194	13.38
FC5815-70MS	447383	7.85	319303	11.01	180198	13.37
FC5815-70MSD	440184	7.85	313736	11.01	177328	13.37
VI2922-ECC2910	445051	7.85	317298	11.01	179345	13.37

IS 1 = Fluorobenzene
IS 2 = Chlorobenzene-D5
IS 3 = 1,4-Dichlorobenzene-d4

(a) Initial Cal is: VI2910-ICC2910 I756326.D 05/02/23 10:42
(b) Check Std Limit = -50 to + 100% of initial cal area.
(c) Upper Limit = + 100% of check standard area; Retention time + 0.167 minutes.
(d) Lower Limit = -50% of check standard area; Retention time -0.167 minutes.
(e) Sample was treated with an anti-foaming agent.

Surrogate Recovery Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Method: SW846 8260D **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
FC5736-1	1A45922.D	97	101	97	100
FC5736-2	1A45923.D	102	101	97	100
FC5736-3	1A45924.D	103	102	97	99
FC5736-4	I756648.D	103	105	98	101
FC5736-4	2O76187.D	95	107	100	96
FC5736-5	I756649.D	104	106	98	101
FC5736-5	2O76188.D	93	101	100	98
FC5736-6	I756650.D	103	106	99	100
FC5736-6	2O76189.D	94	106	99	95
FC5736-7	I756651.D	104	106	100	102
FC5736-7	2O76190.D	92	105	100	97
FC5736-8	I756652.D	103	106	97	102
FC5736-8	2O76186.D	93	103	100	99
FC5638-13MS	1A45925.D	101	104	96	100
FC5638-13MSD	1A45926.D	101	104	96	99
FC5788-7MS	2O76198.D	98	114	97	97
FC5788-7MSD	2O76199.D	97	114	97	96
FC5815-70MS	I756655.D	109	109	103	101
FC5815-70MSD	I756656.D	108	112	104	100
V1A1807-BS	1A45902.D	100	100	97	101
V1A1807-MB	1A45904.D	100	99	96	100
V2O2958-BS	2O76183.D	95	113	98	98
V2O2958-MB	2O76185.D	95	108	99	98
VI2922-BS	I756632.D	105	106	104	91
VI2922-MB	I756634.D	103	105	98	103

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	83-118%
S2 = 1,2-Dichloroethane-D4	79-125%
S3 = Toluene-D8	85-112%
S4 = 4-Bromofluorobenzene	83-118%

Initial Calibration Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V1A1804-ICC1804
Lab FileID: 1A45836.D

Response Factor Report MSVOA17

Method : C:\msdchem\1\MET...V1A_05-03-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Thu May 04 06:46:12 2023
Response via : Initial Calibration

Calibration Files
1 =1A45832.D 2 =1A45833.D 3 =1A45834.D 4 =1A45835.D
5 =1A45836.D 6 =1A45837.D 7 =1A45838.D

Compound	1	2	3	4	5	6	7	Avg	%RSD
1) I Fluorobenzene	----------ISTD----------								
2) Dichlorodifluorom	0.202	0.206	0.164	0.170	0.148	0.167	0.168	0.175	12.19
3)P Chloromethane	0.435	0.280	0.251	0.229	0.213	0.223	0.227	0.265	29.38
---- Linear regr., Force(0,0) ---- Coefficient = 0.9990									
Response Ratio = 0.00000 + 0.22668 *A									
4) 1,3-butadiene	1.039	0.403	0.283	0.304	0.223	0.236	0.232	0.388	75.55
---- Linear regr., Force(0,0) ---- Coefficient = 0.9927									
Response Ratio = 0.00000 + 0.24738 *A									
5)C Vinyl Chloride	0.357	0.310	0.280	0.263	0.244	0.255	0.258	0.281	14.15
---- Linear regr., Force(0,0) ---- Coefficient = 0.9989									
Response Ratio = 0.00000 + 0.25782 *A									
6) Bromomethane	0.190	0.121	0.124	0.105	0.099	0.100	0.099	0.120	27.15
---- Linear regr., Force(0,0) ---- Coefficient = 0.9987									
Response Ratio = 0.00000 + 0.10179 *A									
7) Chloroethane	0.210	0.182	0.168	0.148	0.132	0.125	0.112	0.154	22.65
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9984									
Response Ratio = 0.00000 + 0.16195 *A + -0.02604 *A^2									
8) Trichlorofluorome	0.520	0.411	0.361	0.351	0.299	0.300	0.288	0.362	22.88
---- Linear regr., Force(0,0) ---- Coefficient = 0.9951									
Response Ratio = 0.00000 + 0.30542 *A									
9) Ethyl Ether	0.442	0.306	0.282	0.260	0.253	0.256	0.253	0.293	23.42
---- Linear regr., Force(0,0) ---- Coefficient = 0.9998									
Response Ratio = 0.00000 + 0.25735 *A									
10) Ethanol	0.008	0.005	0.005	0.004	0.004	0.004	0.005	36.93	
---- Linear regr., Force(0,0) ---- Coefficient = 0.9974									
Response Ratio = 0.00000 + 0.00388 *A									
11) 1,2-Dichlorotrifl	0.876	0.410	0.353	0.335	0.305	0.314	0.323	0.417	49.33
---- Linear regr., Force(0,0) ---- Coefficient = 0.9989									
Response Ratio = 0.00000 + 0.32401 *A									
12)C 1,1-Dichloroethen	0.675	0.500	0.448	0.429	0.407	0.414	0.416	0.470	20.42
---- Linear regr., Force(0,0) ---- Coefficient = 0.9997									
Response Ratio = 0.00000 + 0.41911 *A									
13) Freon 113	0.351	0.298	0.281	0.268	0.248	0.267	0.270	0.283	11.85
14) Carbon Disulfide	1.347	0.896	0.823	0.769	0.722	0.736	0.760	0.865	25.53
---- Linear regr., Force(0,0) ---- Coefficient = 0.9993									
Response Ratio = 0.00000 + 0.75560 *A									

Job Number: FC5736 **Sample:** V1A1804-ICC1804
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 1A45836.D
Project: CCF West NAM; KSC, FL

```
15)  Iodomethane       0.045 0.098 0.118 0.153 0.169 0.198 0.210 0.141  41.31
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9982
              Response Ratio = 0.00000 + 0.12753 *A + 0.04368 *A^2

16)  Acrolein          0.132 0.102 0.077 0.067 0.063 0.060 0.059 0.080  34.13
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9942
              Response Ratio = 0.00000 + 0.06258 *A

17)  Allyl chloride    0.768 0.506 0.428 0.403 0.395 0.410 0.379 0.470  29.36
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9987
              Response Ratio = 0.00000 + 0.39865 *A

18)  Methylene Chlorid 0.782 0.456 0.417 0.379 0.357 0.356 0.359 0.444  34.69
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9996
              Response Ratio = 0.00000 + 0.36555 *A

19)  Acetone           0.188 0.116 0.101 0.095 0.087 0.082 0.078 0.107  35.83
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9961
              Response Ratio = 0.00000 + 0.08424 *A

20)  Methyl acetate    0.462 0.317 0.291 0.279 0.264 0.257 0.252 0.303  24.28
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9991
              Response Ratio = 0.00000 + 0.26157 *A

21)  trans-1,2-Dichlor 0.734 0.489 0.460 0.435 0.413 0.428 0.443 0.486  23.08
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9991
              Response Ratio = 0.00000 + 0.43605 *A

22)  Hexane            0.692 0.384 0.345 0.308 0.275 0.292 0.299 0.371  39.50
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9983
              Response Ratio = 0.00000 + 0.29921 *A

23)  Methyl Tert Butyl 1.573 1.059 0.956 0.898 0.865 0.876 0.884 1.016  25.07
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9998
              Response Ratio = 0.00000 + 0.88928 *A

24)  Acetonitrile      0.109 0.071 0.068 0.064 0.059 0.060 0.060 0.070  25.20
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9995
              Response Ratio = 0.00000 + 0.06081 *A

25)  Tert Butyl Alcoho 0.077 0.051 0.047 0.046 0.045 0.043 0.043 0.050  24.17
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9995
              Response Ratio = 0.00000 + 0.04378 *A

26)  Di-isopropyl ethe 1.979 1.230 1.157 1.076 1.021 1.035 1.050 1.221  28.05
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9997
              Response Ratio = 0.00000 + 1.05536 *A

27)  Chloroprene       2.041 1.421 1.209 1.107 1.100 1.107 1.089 1.296  26.93
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9996
              Response Ratio = 0.00000 + 1.11277 *A

28)P 1,1-Dichloroethan 0.917 0.657 0.612 0.568 0.545 0.563 0.580 0.635  20.49
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9992
              Response Ratio = 0.00000 + 0.57264 *A

29)  Acrylonitrile     0.226 0.157 0.141 0.127 0.128 0.126 0.123 0.147  24.99
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9995
              Response Ratio = 0.00000 + 0.12693 *A
```

Initial Calibration Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V1A1804-ICC1804
Lab FileID: 1A45836.D

30) ETBE 1.774 1.191 1.120 1.053 1.020 1.034 1.040 1.176 23.01
---- Linear regr., Force(0,0) ---- Coefficient = 0.9999
Response Ratio = 0.00000 + 1.04552 *A

31) Vinyl acetate 1.217 0.875 0.786 0.689 0.705 0.681 0.662 0.802 24.62
---- Linear regr., Force(0,0) ---- Coefficient = 0.9989
Response Ratio = 0.00000 + 0.68800 *A

32) cis-1,2-Dichloroe 0.639 0.384 0.340 0.316 0.300 0.306 0.312 0.371 32.73
---- Linear regr., Force(0,0) ---- Coefficient = 0.9996
Response Ratio = 0.00000 + 0.31272 *A

33) 2,2-Dichloropropa 0.741 0.508 0.444 0.413 0.390 0.397 0.398 0.470 26.82
---- Linear regr., Force(0,0) ---- Coefficient = 0.9995
Response Ratio = 0.00000 + 0.40342 *A

34) Bromochloromethan 0.263 0.176 0.164 0.145 0.139 0.136 0.137 0.166 27.45
---- Linear regr., Force(0,0) ---- Coefficient = 0.9992
Response Ratio = 0.00000 + 0.14031 *A

35) Cyclohexane 1.012 0.791 0.634 0.587 0.539 0.567 0.588 0.674 25.29
---- Linear regr., Force(0,0) ---- Coefficient = 0.9975
Response Ratio = 0.00000 + 0.58170 *A

36)C Chloroform 1.076 0.665 0.608 0.557 0.532 0.546 0.557 0.649 29.84
---- Linear regr., Force(0,0) ---- Coefficient = 0.9994
Response Ratio = 0.00000 + 0.55652 *A

37) Ethyl acetate 0.621 0.431 0.391 0.349 0.363 0.349 0.336 0.406 24.70
---- Linear regr., Force(0,0) ---- Coefficient = 0.9991
Response Ratio = 0.00000 + 0.35041 *A

38) Tetrahydrofuran 0.173 0.121 0.126 0.108 0.110 0.109 0.125 19.65
---- Linear regr., Force(0,0) ---- Coefficient = 0.9987
Response Ratio = 0.00000 + 0.11038 *A

39)S Dibromofluorometh 0.285 0.283 0.282 0.279 0.278 0.277 0.281 0.281 1.05
40) Carbon Tetrachlor 0.679 0.471 0.434 0.418 0.394 0.410 0.418 0.461 21.52
---- Linear regr., Force(0,0) ---- Coefficient = 0.9994
Response Ratio = 0.00000 + 0.41466 *A

41) 1,1,1-Trichloroet 0.849 0.531 0.469 0.455 0.436 0.454 0.460 0.522 28.19
---- Linear regr., Force(0,0) ---- Coefficient = 0.9993
Response Ratio = 0.00000 + 0.45710 *A

42) 2-Butanone 0.282 0.189 0.185 0.172 0.166 0.160 0.152 0.187 23.56
---- Linear regr., Force(0,0) ---- Coefficient = 0.9983
Response Ratio = 0.00000 + 0.16118 *A

43) 1,1-Dichloroprope 0.695 0.453 0.405 0.390 0.364 0.387 0.396 0.441 26.10
---- Linear regr., Force(0,0) ---- Coefficient = 0.9987
Response Ratio = 0.00000 + 0.39025 *A

44) tert-Butyl format 0.599 0.380 0.344 0.324 0.313 0.314 0.304 0.369 28.47
---- Linear regr., Force(0,0) ---- Coefficient = 0.9997
Response Ratio = 0.00000 + 0.30904 *A

45) Propionitrile 0.094 0.058 0.050 0.047 0.046 0.044 0.042 0.054 33.51
---- Linear regr., Force(0,0) ---- Coefficient = 0.9988

Job Number: FC5736 **Sample:** V1A1804-ICC1804
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 1A45836.D
Project: CCF West NAM; KSC, FL

```
              Response Ratio = 0.00000 + 0.04452 *A

46)  Methacrylonitrile 0.384 0.252 0.223 0.210 0.208 0.203 0.194 0.239  27.80
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9993
              Response Ratio = 0.00000 + 0.20365 *A

47)  Benzene           2.007 1.353 1.236 1.176 1.134 1.159 1.184 1.321  23.53
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9996
              Response Ratio = 0.00000 + 1.17705 *A

48)  TAME              1.550 1.073 0.974 0.926 0.892 0.896 0.895 1.029  23.17
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9999
              Response Ratio = 0.00000 + 0.90699 *A

49)S 1,2-Dichloroethan 0.335 0.334 0.342 0.344 0.349 0.356 0.373 0.347   3.89
50)  1,2-Dichloroethan 0.796 0.506 0.479 0.452 0.433 0.434 0.436 0.505  25.91
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9999
              Response Ratio = 0.00000 + 0.44138 *A

51)  Isobutyl Alcohol  0.057 0.037 0.034 0.032 0.030 0.029 0.027 0.035  29.33
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9969
              Response Ratio = 0.00000 + 0.02916 *A

52)  Tert Amyl Alcohol 0.058 0.042 0.039 0.038 0.037 0.035 0.036 0.041  19.68
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9997
              Response Ratio = 0.00000 + 0.03627 *A

53)  Trichloroethene   0.605 0.368 0.332 0.308 0.293 0.301 0.311 0.360  30.88
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9992
              Response Ratio = 0.00000 + 0.30823 *A

54)  Methylcyclohexane 0.997 0.663 0.580 0.565 0.520 0.554 0.568 0.635  26.00
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9986
              Response Ratio = 0.00000 + 0.56038 *A

55)  Dibromomethane    0.366 0.234 0.215 0.200 0.192 0.191 0.189 0.227  27.91
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9998
              Response Ratio = 0.00000 + 0.19403 *A

56)C 1,2-Dichloropropa 0.550 0.389 0.352 0.328 0.313 0.318 0.324 0.368  23.01
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9996
              Response Ratio = 0.00000 + 0.32426 *A

57)  Bromodichlorometh 0.859 0.524 0.475 0.442 0.424 0.432 0.429 0.512  30.69
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9998
              Response Ratio = 0.00000 + 0.43570 *A

58)  Methyl methacryla 0.642 0.400 0.353 0.326 0.320 0.321 0.311 0.382  31.05
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9997
              Response Ratio = 0.00000 + 0.32166 *A

59)  1,4-Dioxane             0.002 0.003 0.003 0.003 0.003 0.003 0.003  19.42
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9993
              Response Ratio = 0.00000 + 0.00296 *A

60)  2-Chloroethyl vin 0.454 0.274 0.251 0.235 0.224 0.222 0.212 0.267  31.67
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9992
              Response Ratio = 0.00000 + 0.22280 *A

61)  cis-1,3-Dichlorop 1.003 0.605 0.539 0.510 0.495 0.490 0.496 0.591  31.46
```

Job Number: FC5736 **Sample:** V1A1804-ICC1804
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 1A45836.D
Project: CCF West NAM; KSC, FL

```
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9999
              Response Ratio = 0.00000 + 0.50148 *A


62) I   Chlorobenzene-d5      ----------------ISTD--------------------
63)S Toluene-d8         1.362 1.354 1.371 1.360 1.367 1.376 1.405 1.371   1.23
64)C Toluene            3.261 1.981 1.785 1.667 1.606 1.653 1.704 1.951  30.29#
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9992
              Response Ratio = 0.00000 + 1.68520 *A

65)  2-Nitropropane     0.270 0.169 0.156 0.144 0.139 0.136 0.135 0.164  29.28
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9997
              Response Ratio = 0.00000 + 0.13905 *A

66)  4-Methyl-2-pentan 0.852 0.580 0.530 0.505 0.492 0.493 0.484 0.562  23.47
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9999
              Response Ratio = 0.00000 + 0.49494 *A

67)  trans-1,3-Dichlor 1.276 0.737 0.681 0.627 0.623 0.621 0.627 0.742  32.30
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9999
              Response Ratio = 0.00000 + 0.63161 *A

68)  Tetrachloroethene 0.766 0.546 0.475 0.480 0.453 0.485 0.502 0.529  20.42
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9980
              Response Ratio = 0.00000 + 0.48812 *A

69)  Ethyl methacrylat 1.266 0.663 0.562 0.524 0.517 0.534 0.524 0.656  41.78
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9994
              Response Ratio = 0.00000 + 0.53276 *A

70)  1,1,2-Trichloroet 0.752 0.397 0.354 0.334 0.321 0.323 0.322 0.400  39.28
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9999
              Response Ratio = 0.00000 + 0.32802 *A

71)  Dibromochlorometh 0.826 0.516 0.484 0.444 0.434 0.439 0.444 0.512  27.63
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9998
              Response Ratio = 0.00000 + 0.44556 *A

72)  1,3-Dichloropropa 1.104 0.725 0.668 0.612 0.599 0.600 0.608 0.702  26.08
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9998
              Response Ratio = 0.00000 + 0.61149 *A

73)  1,2-Dibromoethane 0.788 0.478 0.432 0.402 0.387 0.393 0.389 0.467  31.12
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9999
              Response Ratio = 0.00000 + 0.39612 *A

74)  3,3-Dimethyl-1-Bu 0.119 0.065 0.062 0.057 0.056 0.061 0.062 0.069  32.20
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9984
              Response Ratio = 0.00000 + 0.05844 *A + 0.00003 *A^2

75)  2-hexanone         0.833 0.517 0.481 0.447 0.434 0.446 0.437 0.514  28.04
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9998
              Response Ratio = 0.00000 + 0.44500 *A

76)  1-Chlorohexane     1.220 0.713 0.608 0.564 0.532 0.548 0.556 0.677  36.44
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9994
              Response Ratio = 0.00000 + 0.55876 *A

77)C Ethylbenzene       3.474 2.187 1.958 1.847 1.762 1.791 1.847 2.124  28.82
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9994
```

Job Number: FC5736 **Sample:** V1A1804-ICC1804
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 1A45836.D
Project: CCF West NAM; KSC, FL

```
              Response Ratio = 0.00000 + 1.83585 *A

78)P Chlorobenzene     1.979 1.261 1.139 1.079 1.049 1.061 1.080 1.236  27.17
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9997
              Response Ratio = 0.00000 + 1.07947 *A

79)  1,1,1,2-Tetrachlo 0.788 0.479 0.446 0.414 0.401 0.402 0.405 0.476  29.49
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9999
              Response Ratio = 0.00000 + 0.40902 *A

80)  m,p-Xylene        2.737 1.758 1.548 1.465 1.402 1.425 1.448 1.683  28.53
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9996
              Response Ratio = 0.00000 + 1.45097 *A

81)  o-Xylene          3.041 1.878 1.717 1.572 1.498 1.502 1.539 1.821  30.50
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9996
              Response Ratio = 0.00000 + 1.54525 *A

82)  Styrene           2.059 1.402 1.289 1.192 1.163 1.163 1.183 1.350  24.03
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9998
              Response Ratio = 0.00000 + 1.18721 *A

83)P Bromoform         0.559 0.374 0.343 0.325 0.312 0.311 0.311 0.362  24.84
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9999
              Response Ratio = 0.00000 + 0.31608 *A

84)  Isopropylbenzene  3.327 2.210 1.942 1.821 1.717 1.742 1.778 2.077  27.76
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9994
              Response Ratio = 0.00000 + 1.78392 *A


85) I   1,4-Dichlorobenzene-d ----------------ISTD----------------------
86)S 4-Bromofluorobenz 0.825 0.817 0.839 0.840 0.856 0.849 0.844 0.839   1.61
87)  cis-1,4-Dichloro- 0.621 0.353 0.326 0.303 0.302 0.293 0.279 0.354  33.97
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9993
              Response Ratio = 0.00000 + 0.29384 *A

88)  n-Propylbenzene   7.086 4.647 4.128 3.956 3.813 3.868 3.901 4.486  26.34
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9998
              Response Ratio = 0.00000 + 3.91989 *A

89)  Bromobenzene      1.479 0.953 0.878 0.832 0.830 0.832 0.848 0.950  24.95
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9997
              Response Ratio = 0.00000 + 0.84504 *A

90)P 1,1,2,2-Tetrachlo 1.934 1.098 0.984 0.945 0.936 0.918 0.911 1.104  33.68
            ---- Linear regr., Force(0,0) ----  Coefficient =  1.0000
              Response Ratio = 0.00000 + 0.93095 *A

91)  1,3,5-Trimethylbe 4.982 3.255 2.945 2.785 2.692 2.718 2.774 3.165  26.05
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9997
              Response Ratio = 0.00000 + 2.77174 *A

92)  2-Chlorotoluene   4.449 2.829 2.455 2.320 2.262 2.243 2.277 2.691  29.80
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9998
              Response Ratio = 0.00000 + 2.29636 *A

93)  trans-1,4-Dichlor 0.824 0.476 0.416 0.382 0.379 0.369 0.360 0.458  36.22
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9997
              Response Ratio = 0.00000 + 0.37444 *A
```

94) 1,2,3-Trichloropr 0.410 0.275 0.266 0.255 0.252 0.247 0.245 0.279 21.18
---- Linear regr., Force(0,0) ---- Coefficient = 0.9999
Response Ratio = 0.00000 + 0.24987 *A

95) Cyclohexanone 0.047 0.038 0.030 0.032 0.031 0.031 0.035 18.82
---- Linear regr., Force(0,0) ---- Coefficient = 0.9985
Response Ratio = 0.00000 + 0.03166 *A

96) 4-Chlorotoluene 4.711 2.892 2.528 2.423 2.349 2.348 2.381 2.805 30.74
---- Linear regr., Force(0,0) ---- Coefficient = 0.9998
Response Ratio = 0.00000 + 2.39614 *A

97) tert-Butylbenzene 2.988 1.902 1.672 1.585 1.519 1.538 1.566 1.824 29.03
---- Linear regr., Force(0,0) ---- Coefficient = 0.9996
Response Ratio = 0.00000 + 1.56934 *A

98) 1,2,4-Trimethylbe 4.893 3.214 2.842 2.707 2.628 2.665 2.692 3.092 26.50
---- Linear regr., Force(0,0) ---- Coefficient = 0.9998
Response Ratio = 0.00000 + 2.70095 *A

99) Pentachloroethane 0.822 0.600 0.513 0.487 0.495 0.486 0.471 0.554 22.74
---- Linear regr., Force(0,0) ---- Coefficient = 0.9995
Response Ratio = 0.00000 + 0.48648 *A

100) sec-Butylbenzene 6.174 4.169 3.636 3.492 3.345 3.396 3.477 3.956 25.70
---- Linear regr., Force(0,0) ---- Coefficient = 0.9995
Response Ratio = 0.00000 + 3.46572 *A

101) 4-Isopropyltoluen 5.028 3.424 3.051 2.877 2.794 2.823 2.861 3.265 24.73
---- Linear regr., Force(0,0) ---- Coefficient = 0.9997
Response Ratio = 0.00000 + 2.86871 *A

102) 1,3-Dichlorobenze 2.838 1.838 1.665 1.555 1.527 1.526 1.542 1.784 26.80
---- Linear regr., Force(0,0) ---- Coefficient = 0.9999
Response Ratio = 0.00000 + 1.55245 *A

103) 1,2,3-Trimethylbe 5.011 3.185 2.856 2.696 2.629 2.643 2.674 3.099 27.92
---- Linear regr., Force(0,0) ---- Coefficient = 0.9998
Response Ratio = 0.00000 + 2.68739 *A

104) 1,4-Dichlorobenze 2.883 1.843 1.660 1.563 1.528 1.537 1.544 1.794 27.49
---- Linear regr., Force(0,0) ---- Coefficient = 0.9999
Response Ratio = 0.00000 + 1.55735 *A

105) n-Butylbenzene 2.393 1.572 1.397 1.348 1.303 1.322 1.370 1.529 25.56
---- Linear regr., Force(0,0) ---- Coefficient = 0.9993
Response Ratio = 0.00000 + 1.35298 *A

106) Benzyl Chloride 0.663 0.415 0.361 0.332 0.333 0.324 0.315 0.392 31.68
---- Linear regr., Force(0,0) ---- Coefficient = 0.9996
Response Ratio = 0.00000 + 0.32738 *A

107) 1,2-Dichlorobenze 2.541 1.666 1.506 1.434 1.391 1.393 1.416 1.621 25.72
---- Linear regr., Force(0,0) ---- Coefficient = 0.9998
Response Ratio = 0.00000 + 1.42040 *A

108) 1,2-Dibromo-3-Chl 0.193 0.175 0.162 0.150 0.147 0.145 0.148 0.160 11.35
---- Linear regr., Force(0,0) ---- Coefficient = 0.9994
Response Ratio = 0.00000 + 0.14835 *A

Initial Calibration Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V1A1804-ICC1804
Lab FileID: 1A45836.D

```
109)  Hexachlorobutadie 0.500 0.334 0.342 0.309 0.314 0.325 0.342 0.353  18.84
             ---- Linear regr., Force(0,0) ----  Coefficient =  0.9979
               Response Ratio = 0.00000 + 0.33032 *A

110)  1,2,4-Trichlorobe 1.295 0.953 0.837 0.793 0.804 0.805 0.831 0.903  20.10
             ---- Linear regr., Force(0,0) ----  Coefficient =  0.9993
               Response Ratio = 0.00000 + 0.82017 *A

111)  Naphthalene       2.533 1.741 1.589 1.574 1.595 1.606 1.676 1.759  19.68
             ---- Linear regr., Force(0,0) ----  Coefficient =  0.9989
               Response Ratio = 0.00000 + 1.63473 *A

112)  1,2,3-Trichlorobe 0.959 0.669 0.615 0.590 0.603 0.604 0.632 0.667  19.65
             ---- Linear regr., Force(0,0) ----  Coefficient =  0.9989
               Response Ratio = 0.00000 + 0.61688 *A

 ---------------------------------------------------------------------------
 (#) = Out of Range

          V1A_05-03-2023.M        Thu May 04 06:58:46 2023
```

Initial Calibration Verification

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V1A1804-ICV1804
Lab FileID: 1A45840.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\05-03-2023\1A45840.D Vial: 10
Acq On : 3 May 2023 5:08 pm Operator: jeniferw
Sample : ICV1804-5 Inst : MSVOA17
Misc : MS53911,V1A1804,,,,, Multiplr: 1.00
MS Integration Params: big.p

Method : C:\msdchem\1\MET...V1A_05-03-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Thu May 04 06:46:12 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Fluorobenzene	1.000	1.000	0.0	99	0.00	3.40
2		Dichlorodifluoromethane	0.175	0.241	-37.7#	161	0.00	1.02
			Amount	Calc.	%Drift			
3	P	Chloromethane	40.000	43.902	-9.8	115	0.00	1.13
4		1,3-butadiene	40.000	40.655	-1.6	111	0.00	1.18
5	C	Vinyl Chloride	40.000	45.282	-13.2	118	0.00	1.16
6		Bromomethane	40.000	46.880	-17.2	118	0.00	1.34
7		Chloroethane	40.000	44.008	-10.0	114	0.00	1.41
8		Trichlorofluoromethane	40.000	47.421	-18.6	119	0.00	1.50
9		Ethyl Ether	40.000	44.336	-10.8	111	0.00	1.66
10		Ethanol	800.000	833.619	-4.2	101	0.00	1.71
11		1,2-Dichlorotrifluoroetha	40.000	44.271	-10.7	116	0.00	1.74
12	C	1,1-Dichloroethene	40.000	41.964	-4.9	107	0.00	1.76
			AvgRF	CCRF	%Dev			
13		Freon 113	0.283	0.305	-7.8	121	0.00	1.78
			Amount	Calc.	%Drift			
14		Carbon Disulfide	40.000	41.785	-4.5	108	0.00	1.78
15		Iodomethane	40.000	44.315	-10.8	107	0.00	1.83
16		Acrolein	200.000	200.670	-0.3	99	0.00	1.91
17		Allyl chloride	40.000	43.522	-8.8	108	0.00	2.00
18		Methylene Chloride	40.000	41.926	-4.8	106	0.00	2.04
19		Acetone	200.000	208.736	-4.4	100	0.00	2.06
20		Methyl acetate	200.000	196.222	1.9	96	0.00	2.13
21		trans-1,2-Dichloroethene	40.000	40.140	-0.4	104	0.00	2.13
22		Hexane	40.000	43.411	-8.5	116	0.00	2.20
23		Methyl Tert Butyl Ether	40.000	42.430	-6.1	108	0.00	2.20
24		Acetonitrile	400.000	436.214	-9.1	110	0.00	2.20
25		Tert Butyl Alcohol	400.000	432.784	-8.2	105	0.00	2.22
26		Di-isopropyl ether	40.000	40.002	-0.0	102	0.00	2.40
27		Chloroprene	40.000	38.056	4.9	95	0.00	2.44
28	P	1,1-Dichloroethane	40.000	38.756	3.1	100	0.00	2.44
29		Acrylonitrile	200.000	192.557	3.7	94	0.00	2.44
30		ETBE	40.000	41.842	-4.6	106	0.00	2.58
31		Vinyl acetate	200.000	201.810	-0.9	97	0.00	2.57
32		cis-1,2-Dichloroethene	40.000	39.178	2.1	101	0.00	2.72
33		2,2-Dichloropropane	40.000	40.575	-1.4	104	0.00	2.79
34		Bromochloromethane	40.000	40.385	-1.0	101	0.00	2.83
35		Cyclohexane	40.000	41.075	-2.7	109	0.00	2.86
36	C	Chloroform	40.000	40.016	-0.0	103	0.00	2.87

Initial Calibration Verification

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V1A1804-ICV1804
Lab FileID: 1A45840.D

37		Ethyl acetate	200.000	193.469	3.3	92	0.00	2.92
38		Tetrahydrofuran	40.000	41.206	-3.0	103	0.00	2.95
			AvgRF	CCRF	%Dev			
39	S	Dibromofluoromethane	0.281	0.277	1.4	98	0.00	2.96
			Amount	Calc.	%Drift			
40		Carbon Tetrachloride	40.000	41.298	-3.2	107	0.00	2.97
41		1,1,1-Trichloroethane	40.000	40.172	-0.4	104	0.00	2.99
42		2-Butanone	200.000	205.263	-2.6	98	0.00	3.00
43		1,1-Dichloropropene	40.000	41.611	-4.0	110	0.00	3.06
44		tert-Butyl formate	200.000	217.268	-8.6	106	0.00	3.10
45		Propionitrile	400.000	426.463	-6.6	102	0.00	3.15
46		Methacrylonitrile	400.000	432.214	-8.1	104	0.00	3.17
47		Benzene	40.000	41.117	-2.8	105	0.00	3.18
48		TAME	40.000	41.457	-3.6	104	0.00	3.25
			AvgRF	CCRF	%Dev			
49	S	1,2-Dichloroethane-d4	0.347	0.351	-1.2	99	0.00	3.24
			Amount	Calc.	%Drift			
50		1,2-Dichloroethane	40.000	41.480	-3.7	104	0.00	3.28
51		Isobutyl Alcohol	800.000	882.747	-10.3	104	0.00	3.26
52		Tert Amyl Alcohol	400.000	422.639	-5.7	103	0.00	3.33
53		Trichloroethene	40.000	40.591	-1.5	105	0.00	3.51
54		Methylcyclohexane	40.000	41.020	-2.6	109	0.00	3.54
55		Dibromomethane	40.000	42.235	-5.6	105	0.00	3.74
56	C	1,2-Dichloropropane	40.000	42.212	-5.5	108	0.00	3.80
57		Bromodichloromethane	40.000	39.286	1.8	100	0.00	3.84
58		Methyl methacrylate	40.000	39.417	1.5	98	0.00	3.92
59		1,4-Dioxane	800.000	754.476	5.7	93	0.00	3.95
60		2-Chloroethyl vinyl ether	200.000	200.194	-0.1	98	0.00	4.17
61		cis-1,3-Dichloropropene	40.000	40.843	-2.1	102	0.00	4.21
			AvgRF	CCRF	%Dev			
62	I	Chlorobenzene-d5	1.000	1.000	0.0	99	0.00	5.36
63	S	Toluene-d8	1.371	1.369	0.1	99	0.00	4.34
			Amount	Calc.	%Drift			
64	C	Toluene	40.000	40.462	-1.2	105	0.00	4.37
65		2-Nitropropane	200.000	202.829	-1.4	100	0.00	4.47
66		4-Methyl-2-pentanone	200.000	203.247	-1.6	101	0.00	4.59
67		trans-1,3-Dichloropropene	40.000	37.583	6.0	94	0.00	4.62
68		Tetrachloroethene	40.000	42.095	-5.2	112	0.00	4.64
69		Ethyl methacrylate	40.000	44.123	-10.3	112	0.00	4.74
70		1,1,2-Trichloroethane	40.000	39.840	0.4	100	0.00	4.72
71		Dibromochloromethane	40.000	41.450	-3.6	105	0.00	4.84
72		1,3-Dichloropropane	40.000	43.783	-9.5	110	0.00	4.90
73		1,2-Dibromoethane	40.000	41.247	-3.1	104	0.00	5.00
74		3,3-Dimethyl-1-Butanol	2000.000	1924.254	3.8	101	0.00	5.13
75		2-hexanone	200.000	200.294	-0.1	101	0.00	5.14
76		1-Chlorohexane	40.000	40.962	-2.4	106	0.00	5.37
77	C	Ethylbenzene	40.000	40.259	-0.6	103	0.00	5.40
78	P	Chlorobenzene	40.000	39.884	0.3	101	0.00	5.37
79		1,1,1,2-Tetrachloroethane	40.000	40.427	-1.1	102	0.00	5.41
80		m,p-Xylene	80.000	80.785	-1.0	103	0.00	5.51
81		o-Xylene	40.000	39.514	1.2	100	0.00	5.81
82		Styrene	40.000	40.807	-2.0	103	0.00	5.84
83	P	Bromoform	40.000	40.266	-0.7	100	0.00	5.84

Initial Calibration Verification

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V1A1804-ICV1804
Lab FileID: 1A45840.D

84		Isopropylbenzene	40.000	40.563	-1.4	104	0.00	6.04
		----------	AvgRF	CCRF	%Dev	----------		
85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	101	0.00	7.10
86	S	4-Bromofluorobenzene	0.839	0.849	-1.2	100	0.00	6.24
		----------	Amount	Calc.	%Drift	----------		
87		cis-1,4-Dichloro-2-butene	40.000	46.137	-15.3	113	0.00	6.27
88		n-Propylbenzene	40.000	39.213	2.0	101	0.00	6.35
89		Bromobenzene	40.000	41.809	-4.5	107	0.00	6.31
90	P	1,1,2,2-Tetrachloroethane	40.000	40.507	-1.3	101	0.00	6.38
91		1,3,5-Trimethylbenzene	40.000	40.420	-1.1	105	0.00	6.51
92		2-Chlorotoluene	40.000	39.053	2.4	100	0.00	6.46
93		trans-1,4-Dichloro-2-Bute	40.000	39.848	0.4	99	0.00	6.51
94		1,2,3-Trichloropropane	40.000	43.453	-8.6	109	0.00	6.48
95		Cyclohexanone	200.000	443.847	-121.9#	224	0.00	6.49
96		4-Chlorotoluene	40.000	39.004	2.5	100	0.00	6.58
97		tert-Butylbenzene	40.000	40.081	-0.2	104	0.00	6.75
98		1,2,4-Trimethylbenzene	40.000	40.016	-0.0	103	0.00	6.81
99		Pentachloroethane	40.000	41.222	-3.1	102	0.00	6.75
100		sec-Butylbenzene	40.000	38.030	4.9	99	0.00	6.90
101		4-Isopropyltoluene	40.000	38.872	2.8	100	0.00	7.01
102		1,3-Dichlorobenzene	40.000	39.142	2.1	100	0.00	7.04
103		1,2,3-Trimethylbenzene	40.000	38.239	4.4	98	0.00	7.14
104		1,4-Dichlorobenzene	40.000	39.462	1.3	101	0.00	7.11
105		n-Butylbenzene	40.000	41.047	-2.6	107	0.00	7.34
106		Benzyl Chloride	40.000	36.192	9.5	89	0.00	7.30
107		1,2-Dichlorobenzene	40.000	39.015	2.5	100	0.00	7.43
108		1,2-Dibromo-3-Chloropropa	40.000	40.420	-1.1	103	0.00	8.01
109		Hexachlorobutadiene	40.000	39.895	0.3	105	0.00	8.51
110		1,2,4-Trichlorobenzene	40.000	39.279	1.8	101	0.00	8.51
111		Naphthalene	40.000	38.982	2.5	101	0.00	8.71
112		1,2,3-Trichlorobenzene	40.000	39.385	1.5	101	0.00	8.85

(#) = Out of Range SPCC's out = 0 CCC's out = 0
1A45836.D V1A_05-03-2023.M Thu May 04 06:58:21 2023

Continuing Calibration Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V1A1807-CC1804
Lab FileID: 1A45901.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\05-05-2023\1A45901.D Vial: 2
Acq On : 5 May 2023 10:47 am Operator: jeniferw
Sample : CC1804-5 Inst : MSVOA17
Misc : MS53933,V1A1807,,,,, Multiplr: 1.00
MS Integration Params: big.p

Method : C:\msdchem\1\MET...V1A_05-03-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Thu May 04 06:46:12 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Fluorobenzene	1.000	1.000	0.0	88	0.00	3.41
2		Dichlorodifluoromethane	0.175	0.177	-1.1	106	0.00	1.02
			Amount	Calc.	%Drift			
3	P	Chloromethane	40.000	39.340	1.6	92	0.00	1.13
4		1,3-butadiene	40.000	46.774	-16.9	114	0.00	1.18
5	C	Vinyl Chloride	40.000	41.464	-3.7	97	0.00	1.17
6		Bromomethane	40.000	41.454	-3.6	94	0.00	1.35
7		Chloroethane	40.000	48.114	-20.3#	110	0.00	1.42
8		Trichlorofluoromethane	40.000	50.706	-26.8#	114	0.00	1.50
9		Ethyl Ether	40.000	37.256	6.9	83	0.00	1.66
10		Ethanol	800.000	147.032	81.6#	16	0.00	1.71
11		1,2-Dichlorotrifluoroetha	40.000	41.460	-3.7	97	0.00	1.75
12	C	1,1-Dichloroethene	40.000	41.567	-3.9	94	0.00	1.76
			AvgRF	CCRF	%Dev			
13		Freon 113	0.283	0.273	3.5	97	0.00	1.79
			Amount	Calc.	%Drift			
14		Carbon Disulfide	40.000	40.102	-0.3	93	0.00	1.78
15		Iodomethane	40.000	41.487	-3.7	89	0.00	1.83
16		Acrolein	200.000	162.808	18.6	72	0.00	1.91
17		Allyl chloride	40.000	38.589	3.5	86	0.00	2.00
18		Methylene Chloride	40.000	41.472	-3.7	94	0.00	2.05
19		Acetone	200.000	168.367	15.8	72	0.00	2.06
20		Methyl acetate	200.000	179.329	10.3	78	0.00	2.13
21		trans-1,2-Dichloroethene	40.000	39.387	1.5	92	0.00	2.14
22		Hexane	40.000	38.168	4.6	92	0.00	2.20
23		Methyl Tert Butyl Ether	40.000	37.782	5.5	86	0.00	2.20
24		Acetonitrile	400.000	388.963	2.8	88	0.00	2.20
25		Tert Butyl Alcohol	400.000	224.222	43.9#	48	0.00	2.22
26		Di-isopropyl ether	40.000	36.806	8.0	84	0.00	2.40
27		Chloroprene	40.000	37.321	6.7	83	0.00	2.44
28	P	1,1-Dichloroethane	40.000	39.889	0.3	92	0.00	2.44
29		Acrylonitrile	200.000	183.209	8.4	80	0.00	2.44
30		ETBE	40.000	37.965	5.1	86	0.00	2.59
31		Vinyl acetate	200.000	193.355	3.3	83	0.00	2.57
32		cis-1,2-Dichloroethene	40.000	39.647	0.9	91	0.00	2.73
33		2,2-Dichloropropane	40.000	42.919	-7.3	98	0.00	2.79
34		Bromochloromethane	40.000	40.439	-1.1	90	0.00	2.83
35		Cyclohexane	40.000	37.642	5.9	90	0.00	2.87
36	C	Chloroform	40.000	39.939	0.2	92	0.00	2.87

Continuing Calibration Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V1A1807-CC1804
Lab FileID: 1A45901.D

37		Ethyl acetate	200.000	186.239	6.9	79	0.00	2.92
38		Tetrahydrofuran	40.000	36.162	9.6	81	0.00	2.95
			AvgRF	CCRF	%Dev			
39	S	Dibromofluoromethane	0.281	0.282	-0.4	90	0.00	2.96
			Amount	Calc.	%Drift			
40		Carbon Tetrachloride	40.000	40.640	-1.6	94	0.00	2.97
41		1,1,1-Trichloroethane	40.000	40.466	-1.2	94	0.00	2.99
42		2-Butanone	200.000	170.069	15.0	73	0.00	3.00
43		1,1-Dichloropropene	40.000	40.583	-1.5	96	0.00	3.06
44		tert-Butyl formate	200.000	183.587	8.2	80	0.00	3.10
45		Propionitrile	400.000	306.711	23.3#	66	0.00	3.15
46		Methacrylonitrile	400.000	377.018	5.7	82	0.00	3.17
47		Benzene	40.000	40.051	-0.1	92	0.00	3.19
48		TAME	40.000	38.668	3.3	87	0.00	3.26
			AvgRF	CCRF	%Dev			
49	S	1,2-Dichloroethane-d4	0.347	0.361	-4.0	91	0.00	3.24
			Amount	Calc.	%Drift			
50		1,2-Dichloroethane	40.000	41.979	-4.9	94	0.00	3.28
51		Isobutyl Alcohol	800.000	644.035	19.5	68	0.00	3.26
52		Tert Amyl Alcohol	400.000	230.168	42.5#	50	0.00	3.33
53		Trichloroethene	40.000	41.154	-2.9	96	0.00	3.51
54		Methylcyclohexane	40.000	38.905	2.7	93	0.00	3.54
55		Dibromomethane	40.000	40.952	-2.4	91	0.00	3.74
56	C	1,2-Dichloropropane	40.000	39.167	2.1	89	0.00	3.80
57		Bromodichloromethane	40.000	38.393	4.0	87	0.00	3.84
58		Methyl methacrylate	40.000	37.267	6.8	83	0.00	3.93
59		1,4-Dioxane		----------NA----------				
60		2-Chloroethyl vinyl ether	200.000	170.416	14.8	75	0.00	4.17
61		cis-1,3-Dichloropropene	40.000	38.858	2.9	87	0.00	4.21
			AvgRF	CCRF	%Dev			
62	I	Chlorobenzene-d5	1.000	1.000	0.0	92	0.00	5.36
63	S	Toluene-d8	1.371	1.330	3.0	90	0.00	4.34
			Amount	Calc.	%Drift			
64	C	Toluene	40.000	38.154	4.6	92	0.00	4.37
65		2-Nitropropane	200.000	179.752	10.1	83	0.00	4.47
66		4-Methyl-2-pentanone	200.000	179.495	10.3	83	0.00	4.59
67		trans-1,3-Dichloropropene	40.000	37.263	6.8	87	0.00	4.62
68		Tetrachloroethene	40.000	37.992	5.0	94	0.00	4.64
69		Ethyl methacrylate	40.000	34.976	12.6	83	0.00	4.74
70		1,1,2-Trichloroethane	40.000	36.624	8.4	86	0.00	4.72
71		Dibromochloromethane	40.000	35.836	10.4	85	0.00	4.84
72		1,3-Dichloropropane	40.000	38.148	4.6	90	0.00	4.90
73		1,2-Dibromoethane	40.000	38.166	4.6	90	0.00	5.00
74		3,3-Dimethyl-1-Butanol	2000.000	1232.764	38.4#	60	0.00	5.13
75		2-hexanone	200.000	163.941	18.0	77	0.00	5.14
76		1-Chlorohexane	40.000	38.376	4.1	93	0.00	5.37
77	C	Ethylbenzene	40.000	39.033	2.4	94	0.00	5.40
78	P	Chlorobenzene	40.000	39.396	1.5	93	0.00	5.37
79		1,1,1,2-Tetrachloroethane	40.000	38.835	2.9	91	0.00	5.41
80		m,p-Xylene	80.000	78.169	2.3	93	0.00	5.51
81		o-Xylene	40.000	38.473	3.8	91	0.00	5.81
82		Styrene	40.000	38.552	3.6	91	0.00	5.84
83	P	Bromoform	40.000	34.371	14.1	80	0.00	5.84

Continuing Calibration Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V1A1807-CC1804
Lab FileID: 1A45901.D

84		Isopropylbenzene	40.000	38.846	2.9	93	0.00	6.04
			AvgRF	CCRF	%Dev			
85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	93	0.00	7.10
86	S	4-Bromofluorobenzene	0.839	0.848	-1.1	92	0.00	6.24
			Amount	Calc.	%Drift			
87		cis-1,4-Dichloro-2-butene	40.000	26.106	34.7#	59	0.00	6.28
88		n-Propylbenzene	40.000	38.913	2.7	93	0.00	6.36
89		Bromobenzene	40.000	39.126	2.2	92	0.00	6.31
90	P	1,1,2,2-Tetrachloroethane	40.000	37.995	5.0	87	0.00	6.38
91		1,3,5-Trimethylbenzene	40.000	38.727	3.2	92	0.00	6.51
92		2-Chlorotoluene	40.000	38.631	3.4	91	0.00	6.46
93		trans-1,4-Dichloro-2-Bute	40.000	29.710	25.7#	68	0.00	6.51
94		1,2,3-Trichloropropane	40.000	38.085	4.8	88	0.00	6.48
95		Cyclohexanone	200.000	113.656	43.2#	53	-0.07	6.42
96		4-Chlorotoluene	40.000	38.772	3.1	92	0.00	6.58
97		tert-Butylbenzene	40.000	38.553	3.6	92	0.00	6.75
98		1,2,4-Trimethylbenzene	40.000	38.569	3.6	92	0.00	6.81
99		Pentachloroethane	40.000	37.905	5.2	86	0.00	6.75
100		sec-Butylbenzene	40.000	38.309	4.2	92	0.00	6.90
101		4-Isopropyltoluene	40.000	38.708	3.2	92	0.00	7.01
102		1,3-Dichlorobenzene	40.000	39.254	1.9	92	0.00	7.04
103		1,2,3-Trimethylbenzene	40.000	37.353	6.6	88	0.00	7.14
104		1,4-Dichlorobenzene	40.000	39.169	2.1	92	0.00	7.11
105		n-Butylbenzene	40.000	37.555	6.1	90	0.00	7.34
106		Benzyl Chloride	40.000	37.893	5.3	86	0.00	7.30
107		1,2-Dichlorobenzene	40.000	38.261	4.3	90	0.00	7.44
108		1,2-Dibromo-3-Chloropropa	40.000	32.458	18.9	76	0.00	8.01
109		Hexachlorobutadiene	40.000	36.565	8.6	89	0.00	8.51
110		1,2,4-Trichlorobenzene	40.000	36.553	8.6	86	0.00	8.51
111		Naphthalene	40.000	33.863	15.3	80	0.00	8.71
112		1,2,3-Trichlorobenzene	40.000	35.952	10.1	85	0.00	8.85

(#) = Out of Range SPCC's out = 0 CCC's out = 0
1A45836.D V1A_05-03-2023.M Fri May 05 11:21:18 2023

Continuing Calibration Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V1A1807-ECC1804
Lab FileID: 1A45927.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\ce...023\V1A1807\1A45927.d Vial: 28
Acq On : 5 May 2023 9:36 pm Operator: jeniferw
Sample : ECC1804-5 Inst : MSVOA17
Misc : MS53944,V1A1807,,,,, Multiplr: 1.00
MS Integration Params: big.p

Method : C:\msdchem\1\met...V1A_05-03-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Thu May 04 06:42:05 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 50% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Fluorobenzene	1.000	1.000	0.0	83	0.00	3.41
2		Dichlorodifluoromethane	0.175	0.181	-3.4	102	0.00	1.02
			True	Calc.	% Drift			
3	P	Chloromethane	40.000	42.280	-5.7	93	0.00	1.13
4		1,3-butadiene	40.000	48.376	-20.9	111	0.00	1.18
5	C	Vinyl Chloride	40.000	43.230	-8.1	95	0.00	1.17
6		Bromomethane	40.000	50.786	-27.0	108	0.00	1.35
7		Chloroethane	40.000	47.549	-18.9	103	0.00	1.41
8		Trichlorofluoromethane	40.000	53.827	-34.6	114	0.00	1.50
9		Ethyl Ether	40.000	38.413	4.0	81	0.00	1.66
10		Ethanol	800.000	495.018	38.1	51	0.00	1.72
11		1,2-Dichlorotrifluoroetha	40.000	42.233	-5.6	93	0.00	1.75
12	C	1,1-Dichloroethene	40.000	41.522	-3.8	89	0.00	1.76
			AvgRF	CCRF	% Dev			
13		Freon 113	0.283	0.277	2.1	93	0.00	1.79
			True	Calc.	% Drift			
14		Carbon Disulfide	40.000	39.347	1.6	86	0.00	1.78
15		Iodomethane	40.000	48.010	-20.0	100	0.00	1.83
16		Acrolein	200.000	160.549	19.7	67	0.00	1.91
17		Allyl chloride	40.000	36.079	9.8	76	0.00	2.00
18		Methylene Chloride	40.000	42.365	-5.9	90	0.00	2.05
19		Acetone	200.000	203.600	-1.8	82	0.00	2.06
20		Methyl acetate	200.000	217.969	-9.0	90	0.00	2.13
21		trans-1,2-Dichloroethene	40.000	38.805	3.0	85	0.00	2.14
22		Hexane	40.000	36.771	8.1	83	0.00	2.20
23		Methyl Tert Butyl Ether	40.000	39.381	1.5	84	0.00	2.20
24		Acetonitrile	400.000	393.620	1.6	84	0.00	2.20
25		Tert Butyl Alcohol	400.000	339.117	15.2	69	0.00	2.22
26		Di-isopropyl ether	40.000	37.374	6.6	80	0.00	2.40
27		Chloroprene	40.000	39.204	2.0	82	0.00	2.44
28	P	1,1-Dichloroethane	40.000	39.875	0.3	87	0.00	2.44
29		Acrylonitrile	200.000	194.702	2.6	80	0.00	2.44
30		ETBE	40.000	38.842	2.9	83	0.00	2.59
31		Vinyl acetate	200.000	161.788	19.1	66	0.00	2.57
32		cis-1,2-Dichloroethene	40.000	39.722	0.7	86	0.00	2.73
33		2,2-Dichloropropane	40.000	21.396	46.5	46	0.00	2.79
34		Bromochloromethane	40.000	41.286	-3.2	87	0.00	2.83
35		Cyclohexane	40.000	37.577	6.1	84	0.00	2.87
36	C	Chloroform	40.000	39.987	0.0	87	0.00	2.87

Continuing Calibration Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V1A1807-ECC1804
Lab FileID: 1A45927.D

37		Ethyl acetate	200.000	186.214	6.9	75	0.00	2.92
38		Tetrahydrofuran	40.000	39.208	2.0	83	0.00	2.95
			AvgRF	CCRF	% Dev			
39	S	Dibromofluoromethane	0.281	0.282	-0.4	84	0.00	2.96
			True	Calc.	% Drift			
40		Carbon Tetrachloride	40.000	40.420	-1.1	88	0.00	2.97
41		1,1,1-Trichloroethane	40.000	40.934	-2.3	89	0.00	2.99
42		2-Butanone	200.000	190.005	5.0	77	0.00	3.00
43		1,1-Dichloropropene	40.000	39.795	0.5	89	0.00	3.06
44		tert-Butyl formate	200.000	180.957	9.5	74	0.00	3.10
45		Propionitrile	400.000	382.879	4.3	77	0.00	3.15
46		Methacrylonitrile	400.000	408.470	-2.1	83	0.00	3.17
47		Benzene	40.000	39.918	0.2	86	0.00	3.19
48		TAME	40.000	39.647	0.9	84	0.00	3.26
			AvgRF	CCRF	% Dev			
49	S	1,2-Dichloroethane-d4	0.347	0.367	-5.8	87	0.00	3.24
			True	Calc.	% Drift			
50		1,2-Dichloroethane	40.000	42.992	-7.5	91	0.00	3.28
51		Isobutyl Alcohol	800.000	782.839	2.1	78	0.00	3.26
52		Tert Amyl Alcohol	400.000	328.638	17.8	68	0.00	3.33
53		Trichloroethene	40.000	40.709	-1.8	89	0.00	3.51
54		Methylcyclohexane	40.000	39.607	1.0	89	0.00	3.54
55		Dibromomethane	40.000	42.796	-7.0	90	0.00	3.74
56	C	1,2-Dichloropropane	40.000	39.399	1.5	85	0.00	3.80
57		Bromodichloromethane	40.000	39.255	1.9	84	0.00	3.84
58		Methyl methacrylate	40.000	40.456	-1.1	84	0.00	3.93
59		1,4-Dioxane	800.000	529.785	33.8	55	0.00	3.94
60		2-Chloroethyl vinyl ether	200.000	175.387	12.3	72	0.00	4.17
61		cis-1,3-Dichloropropene	40.000	35.620	11.0	75	0.00	4.21
			AvgRF	CCRF	% Dev			
62	I	Chlorobenzene-d5	1.000	1.000	0.0	87	0.00	5.36
63	S	Toluene-d8	1.371	1.315	4.1	84	0.00	4.34
			True	Calc.	% Drift			
64	C	Toluene	40.000	37.894	5.3	87	0.00	4.37
65		2-Nitropropane	200.000	189.091	5.5	82	0.00	4.47
66		4-Methyl-2-pentanone	200.000	186.164	6.9	82	0.00	4.59
67		trans-1,3-Dichloropropene	40.000	34.084	14.8	75	0.00	4.62
68		Tetrachloroethene	40.000	44.445	-11.1	105	0.00	4.64
69		Ethyl methacrylate	40.000	37.165	7.1	84	0.00	4.74
70		1,1,2-Trichloroethane	40.000	38.093	4.8	85	0.00	4.72
71		Dibromochloromethane	40.000	37.214	7.0	83	0.00	4.84
72		1,3-Dichloropropane	40.000	38.896	2.8	87	0.00	4.90
73		1,2-Dibromoethane	40.000	39.454	1.4	88	0.00	5.00
74		3,3-Dimethyl-1-Butanol	2000.000	1596.518	20.2	74	0.00	5.13
75		2-hexanone	200.000	180.238	9.9	81	0.00	5.14
76		1-Chlorohexane	40.000	38.046	4.9	87	0.00	5.37
77	C	Ethylbenzene	40.000	38.919	2.7	88	0.00	5.40
78	P	Chlorobenzene	40.000	39.580	1.1	89	0.00	5.37
79		1,1,1,2-Tetrachloroethane	40.000	39.545	1.1	88	0.00	5.41
80		m,p-Xylene	80.000	78.219	2.2	88	0.00	5.51
81		o-Xylene	40.000	38.635	3.4	87	0.00	5.81
82		Styrene	40.000	38.590	3.5	86	0.00	5.84
83	P	Bromoform	40.000	37.431	6.4	83	0.00	5.84

Continuing Calibration Summary

Job Number: FC5736 **Sample:** V1A1807-ECC1804
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 1A45927.D
Project: CCF West NAM; KSC, FL

84		Isopropylbenzene	40.000	39.895	0.3	90	0.00	6.04
			AvgRF	CCRF	% Dev			
85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	91	0.00	7.10
86	S	4-Bromofluorobenzene	0.839	0.829	1.2	88	0.00	6.24
			True	Calc.	% Drift			
87		cis-1,4-Dichloro-2-butene	40.000	21.896	45.3	49	0.00	6.27
88		n-Propylbenzene	40.000	38.062	4.8	89	0.00	6.36
89		Bromobenzene	40.000	38.577	3.6	90	0.00	6.31
90	P	1,1,2,2-Tetrachloroethane	40.000	37.691	5.8	86	0.00	6.38
91		1,3,5-Trimethylbenzene	40.000	38.116	4.7	90	0.00	6.51
92		2-Chlorotoluene	40.000	37.837	5.4	88	0.00	6.46
93		trans-1,4-Dichloro-2-Bute	40.000	25.632	35.9	58	0.00	6.51
94		1,2,3-Trichloropropane	40.000	38.342	4.1	87	0.00	6.48
95		Cyclohexanone	200.000	133.280	33.4	61	0.00	6.49
96		4-Chlorotoluene	40.000	37.588	6.0	88	0.00	6.58
97		tert-Butylbenzene	40.000	38.937	2.7	92	0.00	6.75
98		1,2,4-Trimethylbenzene	40.000	38.209	4.5	90	0.00	6.81
99		Pentachloroethane	40.000	30.532	23.7	68	0.00	6.75
100		sec-Butylbenzene	40.000	39.246	1.9	93	0.00	6.90
101		4-Isopropyltoluene	40.000	38.984	2.5	91	0.00	7.01
102		1,3-Dichlorobenzene	40.000	38.991	2.5	91	0.00	7.04
103		1,2,3-Trimethylbenzene	40.000	37.627	5.9	88	0.00	7.14
104		1,4-Dichlorobenzene	40.000	38.609	3.5	90	0.00	7.11
105		n-Butylbenzene	40.000	38.424	3.9	91	0.00	7.35
106		Benzyl Chloride	40.000	15.335	61.7#	34	0.00	7.30
107		1,2-Dichlorobenzene	40.000	39.228	1.9	91	0.00	7.43
108		1,2-Dibromo-3-Chloropropa	40.000	34.199	14.5	79	0.00	8.01
109		Hexachlorobutadiene	40.000	41.558	-3.9	100	0.00	8.51
110		1,2,4-Trichlorobenzene	40.000	39.044	2.4	91	0.00	8.51
111		Naphthalene	40.000	37.274	6.8	87	0.00	8.71
112		1,2,3-Trichlorobenzene	40.000	40.057	-0.1	94	0.00	8.84

(#) = Out of Range SPCC's out = 0 CCC's out = 0
1A45836.D V1A_05-03-2023.M Mon May 08 02:45:10 2023

Initial Calibration Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2924-ICC2924
Lab FileID: 2O75430.D

Response Factor Report MSVOA12

Method : C:\msdchem\2\met...V2O_04-11-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Tue Apr 11 14:22:12 2023
Response via : Initial Calibration

Calibration Files
1 =2O75426.D 2 =2O75427.D 3 =2O75428.D 4 =2O75429.D
5 =2O75430.D 6 =2O75431.D 7 =2O75432.D

Compound	1	2	3	4	5	6	7	Avg	%RSD
1) I Fluorobenzene	----------ISTD----------								
2) Dichlorodifluorom	0.174	0.192	0.204	0.214	0.204	0.217	0.221	0.204	8.12
3)P Chloromethane	0.206	0.214	0.217	0.228	0.217	0.229	0.230	0.220	4.15
4) 1,3-butadiene	0.333	0.250	0.237	0.228	0.218	0.224	0.219	0.244	16.65
---- Linear regr., Force(0,0) ---- Coefficient = 0.9997									
Response Ratio = 0.00000 + 0.22082 *A									
5)C Vinyl Chloride	0.168	0.218	0.217	0.238	0.224	0.232	0.233	0.219	10.80
6) Bromomethane	0.162	0.169	0.157	0.168	0.163	0.174	0.178	0.167	4.30
7) Chloroethane	0.139	0.156	0.151	0.128	0.072	0.042		0.115	40.75
---- Quadratic regression ---- Coefficient = 0.9902									
Response Ratio = -0.00057 + 0.17007 *A + -0.09694 *A^2									
8) Trichlorofluorome	0.343	0.407	0.411	0.437	0.414	0.392	0.314	0.388	11.23
9) Ethyl Ether	0.151	0.177	0.171	0.172	0.176	0.181	0.178	0.172	5.72
10) Ethanol	0.001	0.004	0.004	0.004	0.004	0.005	0.004	0.004	29.64
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9997									
Response Ratio = 0.00000 + 0.00453 *A + -0.00000 *A^2									
11) 1,2-Dichlorotrifl	0.223	0.254	0.262	0.267	0.249	0.272	0.268	0.256	6.63
12)C 1,1-Dichloroethen	0.319	0.321	0.323	0.333	0.323	0.342	0.346	0.329	3.30
13) Freon 113	0.178	0.200	0.230	0.232	0.219	0.237	0.238	0.219	10.15
14) Carbon Disulfide	0.623	0.646	0.653	0.646	0.620	0.644	0.645	0.640	1.97
15) Iodomethane	0.261	0.299	0.344	0.368	0.363	0.379	0.382	0.342	13.34
16) Acrolein	0.046	0.061	0.062	0.066	0.066	0.069	0.069	0.063	12.53
17) Allyl chloride	0.251	0.258	0.253	0.250	0.256	0.264	0.255	0.255	1.83
18) Methylene Chlorid	0.818	0.396	0.357	0.318	0.288	0.292	0.288	0.394	48.66
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9991									
Response Ratio = 0.00000 + 0.30830 *A + -0.01070 *A^2									
19) Acetone	0.153	0.129	0.120	0.119	0.118	0.121	0.120	0.126	9.88
20) Methyl acetate	0.277	0.297	0.288	0.291	0.287	0.294	0.291	0.289	2.24
21) trans-1,2-Dichlor	0.265	0.310	0.328	0.325	0.318	0.329	0.330	0.315	7.34
22) Hexane	0.157	0.155	0.169	0.173	0.164	0.173	0.174	0.166	4.78
23) Methyl Tert Butyl	0.522	0.596	0.587	0.613	0.619	0.644	0.647	0.604	7.05
24) Tert Butyl Alcoho	0.029	0.041	0.044	0.046	0.049	0.053	0.055	0.045	19.50
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9999									
Response Ratio = 0.00000 + 0.04510 *A + 0.00051 *A^2									
25) Acetonitrile	0.059	0.049	0.047	0.046	0.046	0.045	0.041	0.047	11.73
26) Di-isopropyl ethe	0.566	0.637	0.646	0.649	0.649	0.670	0.670	0.641	5.52
27) Chloroprene	0.281	0.315	0.294	0.295	0.294	0.314	0.317	0.301	4.63
28)P 1,1-Dichloroethan	0.375	0.414	0.410	0.419	0.408	0.419	0.418	0.409	3.84
29) Acrylonitrile	0.120	0.124	0.122	0.121	0.119	0.124	0.122	0.122	1.59
30) ETBE	0.447	0.568	0.579	0.600	0.602	0.631	0.642	0.581	11.15
31) Vinyl acetate	0.404	0.451	0.458	0.474	0.473	0.507	0.505	0.467	7.48

Initial Calibration Summary

Job Number: FC5736 **Sample:** V2O2924-ICC2924
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 2O75430.D
Project: CCF West NAM; KSC, FL

32)	cis-1,2-Dichloroe	0.234	0.256	0.259	0.257	0.256	0.260	0.256	0.254	3.63
33)	2,2-Dichloropropa	0.232	0.254	0.270	0.276	0.279	0.304	0.307	0.275	9.64
34)	Bromochloromethan	0.131	0.138	0.139	0.139	0.135	0.139	0.137	0.137	2.26
35)	Cyclohexane	0.294	0.302	0.356	0.359	0.337	0.358	0.358	0.338	8.32
36)C	Chloroform	0.419	0.441	0.447	0.451	0.444	0.454	0.443	0.443	2.58
37)	Ethyl acetate	0.350	0.360	0.358	0.369	0.366	0.385	0.382	0.367	3.47
38)	Tetrahydrofuran	0.122	0.142	0.146	0.144	0.141	0.147	0.146	0.141	6.23
39)S	Dibromofluorometh	0.273	0.275	0.273	0.274	0.280	0.283	0.282	0.277	1.59
40)	Carbon Tetrachlor	0.230	0.250	0.274	0.281	0.288	0.306	0.312	0.277	10.59
41)	1,1,1-Trichloroet	0.326	0.359	0.349	0.370	0.351	0.377	0.384	0.359	5.47
42)	2-Butanone	0.193	0.209	0.210	0.212	0.207	0.214	0.215	0.209	3.48
43)	1,1-Dichloroprope	0.274	0.292	0.317	0.328	0.314	0.324	0.323	0.310	6.40
44)	tert-Butyl format	0.062	0.068	0.073	0.081	0.087	0.099	0.105	0.082	19.49

---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9996
Response Ratio = 0.00000 + 0.07694 *A + 0.00287 *A^2

45)	Propionitrile	0.057	0.067	0.060	0.062	0.062	0.063	0.062	0.062	4.96
46)	Methacrylonitrile	0.203	0.216	0.209	0.206	0.208	0.216	0.209	0.210	2.32
47)	Benzene	0.862	0.932	0.937	0.932	0.914	0.931	0.913	0.917	2.84
48)	TAME	0.413	0.534	0.540	0.555	0.565	0.599	0.603	0.544	11.69
49)	Isobutyl alcohol	0.013	0.015	0.017	0.018	0.021	0.022	0.022	0.018	18.83

---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9985
Response Ratio = 0.00000 + 0.01766 *A + 0.00012 *A^2

50)S	1,2-Dichloroethan	0.291	0.282	0.289	0.283	0.302	0.319	0.296	0.295	4.40
51)	1,2-Dichloroethan	0.298	0.333	0.329	0.329	0.325	0.335	0.338	0.327	4.04
52)	Tert Amyl Alcohol	0.019	0.030	0.033	0.037	0.039	0.042	0.044	0.035	24.47

---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9998
Response Ratio = 0.00000 + 0.03555 *A + 0.00044 *A^2

53)	Trichloroethene	0.257	0.265	0.271	0.267	0.262	0.266	0.264	0.264	1.68
54)	Methylcyclohexane	0.274	0.319	0.356	0.371	0.353	0.376	0.373	0.346	10.73
55)	Dibromomethane	0.135	0.175	0.171	0.171	0.168	0.173	0.171	0.166	8.34
56)C	1,2-Dichloropropa	0.181	0.218	0.220	0.219	0.217	0.227	0.224	0.215	7.22
57)	Bromodichlorometh	0.269	0.280	0.280	0.296	0.300	0.317	0.320	0.295	6.56
58)	Methyl methacryla	0.219	0.243	0.232	0.231	0.241	0.257	0.261	0.241	6.09
59)	1,4-Dioxane	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.004	22.66

---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9999
Response Ratio = 0.00000 + 0.00443 *A + 0.00002 *A^2

60)	2-Chloroethyl vin	0.166	0.181	0.185	0.191	0.191	0.197	0.196	0.187	5.85
61)	cis-1,3-Dichlorop	0.227	0.290	0.307	0.335	0.341	0.362	0.368	0.319	15.42

---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9998
Response Ratio = 0.00000 + 0.32685 *A + 0.02145 *A^2

62) I	Chlorobenzene-d5	----------	----------	----------	ISTD	----------	----------	----------	----------	
63)S	Toluene-d8	1.387	1.381	1.364	1.362	1.349	1.346	1.356	1.364	1.13
64)C	Toluene	1.339	1.403	1.390	1.389	1.337	1.363	1.369	1.370	1.86
65)	2-Nitropropane	0.050	0.064	0.067	0.085	0.090	0.107	0.115	0.083	28.43

---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9993
Response Ratio = 0.00000 + 0.07655 *A + 0.00390 *A^2

66)	4-Methyl-2-pentan	0.430	0.507	0.494	0.502	0.489	0.500	0.505	0.490	5.50
67)	trans-1,3-Dichlor	0.284	0.399	0.420	0.454	0.454	0.476	0.486	0.425	16.20

---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9999
Response Ratio = 0.00000 + 0.43842 *A + 0.02413 *A^2

68)	Tetrachloroethene	0.376	0.389	0.389	0.398	0.384	0.395	0.388	0.388	1.88
69)	Ethyl methacrylat	0.252	0.358	0.370	0.392	0.402	0.428	0.435	0.377	16.40

Initial Calibration Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2924-ICC2924
Lab FileID: 2O75430.D

```
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9998
               Response Ratio = 0.00000 + 0.38569 *A + 0.02547 *A^2

 70)  1,1,2-Trichloroet 0.272 0.278 0.281 0.281 0.272 0.275 0.277 0.276   1.33
 71)  Dibromochlorometh 0.206 0.286 0.304 0.328 0.332 0.357 0.361 0.311  17.09
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9997
               Response Ratio = 0.00000 + 0.30822 *A + 0.02850 *A^2

 72)  1,3-Dichloropropa 0.443 0.526 0.526 0.522 0.507 0.513 0.510 0.506   5.75
 73)  1,2-Dibromoethane 0.263 0.349 0.349 0.368 0.357 0.368 0.368 0.346  10.85
 74)  3,3-dimethyl-1-bu 0.037 0.050 0.056 0.065 0.069 0.074 0.076 0.061  22.93
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9997
               Response Ratio = 0.00000 + 0.06306 *A + 0.00014 *A^2

 75)  2-hexanone        0.394 0.486 0.487 0.502 0.491 0.516 0.528 0.486   8.94
 76)  1-Chlorohexane    0.478 0.412 0.431 0.431 0.414 0.425 0.428 0.431   5.09
 77)C Ethylbenzene      1.373 1.511 1.518 1.516 1.446 1.490 1.491 1.478   3.56
 78)P Chlorobenzene     0.877 0.946 0.948 0.939 0.913 0.928 0.931 0.926   2.66
 79)  1,1,1,2-Tetrachlo 0.205 0.272 0.294 0.309 0.303 0.321 0.326 0.290  14.39
 80)  m,p-Xylene        1.031 1.169 1.187 1.185 1.143 1.164 1.172 1.150   4.72
 81)  o-Xylene          1.088 1.157 1.176 1.189 1.160 1.173 1.186 1.161   2.96
 82)  Styrene           0.725 0.894 0.925 0.961 0.937 0.973 0.972 0.912   9.58
 83)P Bromoform         0.107 0.175 0.184 0.201 0.212 0.237 0.249 0.195  24.17
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9997
               Response Ratio = 0.00000 + 0.19140 *A + 0.02968 *A^2

 84)  Isopropylbenzene  1.180 1.406 1.431 1.461 1.417 1.449 1.457 1.400   7.09

 85) I   1,4-Dichlorobenzene-d ----------------ISTD---------------------
 86)S 4-Bromofluorobenz 0.766 0.771 0.764 0.775 0.745 0.753 0.765 0.763   1.35
 87)  cis-1,4-Dichloro- 0.166 0.219 0.221 0.235 0.231 0.253 0.260 0.226  13.51
 88)  n-Propylbenzene   2.786 3.132 3.218 3.249 3.018 3.135 3.159 3.100   5.05
 89)  Bromobenzene      0.594 0.727 0.700 0.724 0.674 0.695 0.701 0.688   6.55
 90)P 1,1,2,2-Tetrachlo 0.787 0.981 0.950 0.980 0.931 0.985 0.993 0.944   7.70
 91)  1,3,5-Trimethylbe 1.827 2.191 2.269 2.314 2.186 2.258 2.274 2.188   7.58
 92)  2-Chlorotoluene   1.944 2.226 2.119 2.202 2.000 2.056 2.085 2.090   4.88
 93)  trans-1,4-Dichlor 0.130 0.211 0.205 0.204 0.198 0.221 0.230 0.200  16.35
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9996
               Response Ratio = 0.00000 + 0.18954 *A + 0.02047 *A^2

 94)  1,2,3-Trichloropr 0.300 0.326 0.307 0.312 0.299 0.308 0.322 0.311   3.32
 95)  Cyclohexanone     0.025 0.032 0.036 0.039 0.039 0.042 0.044 0.037  18.35
             ---- Linear regr., Force(0,0) ----  Coefficient =  0.9982
               Response Ratio = 0.00000 + 0.04307 *A

 96)  4-Chlorotoluene   1.649 2.024 1.988 2.024 1.897 1.934 1.949 1.924   6.74
 97)  tert-Butylbenzene 1.044 1.209 1.199 1.237 1.174 1.198 1.215 1.182   5.39
 98)  a-Methyl styrene                                              0.000  -1.00
 99)  1,2,4-Trimethylbe 1.673 2.220 2.224 2.313 2.170 2.275 2.261 2.162  10.20
100)  Pentachloroethane 0.171 0.251 0.256 0.295 0.305 0.339 0.357 0.282  22.25
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9998
               Response Ratio = 0.00000 + 0.27629 *A + 0.04099 *A^2

101)  sec-Butylbenzene  2.294 2.595 2.705 2.748 2.572 2.708 2.715 2.620   6.03
102)  4-Isopropyltoluen 1.938 2.236 2.340 2.419 2.282 2.399 2.386 2.286   7.30
103)  1,3-Dichlorobenze 1.212 1.444 1.391 1.387 1.336 1.367 1.377 1.359   5.32
104)  1,2,3-Trimethylbe 1.971 2.333 2.273 2.376 2.255 2.319 2.316 2.263   5.96
105)  1,4-Dichlorobenze 1.212 1.464 1.418 1.420 1.334 1.390 1.401 1.377   5.98
106)  n-Butylbenzene    0.728 1.054 1.123 1.188 1.132 1.193 1.204 1.089  15.37
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9998
```

Initial Calibration Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2924-ICC2924
Lab FileID: 2O75430.D

```
               Response Ratio = 0.00000 + 1.13062 *A + 0.03768 *A^2

107)  Benzyl Chloride   0.090 0.176 0.197 0.254 0.277 0.326 0.353 0.239  38.28
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9995
               Response Ratio = 0.00000 + 0.23003 *A + 0.06278 *A^2

108)  1,2-Dichlorobenze 1.200 1.301 1.291 1.311 1.254 1.309 1.312 1.283   3.24
109)  1,2-Dibromo-3-Chl 0.099 0.170 0.179 0.197 0.196 0.221 0.227 0.184  23.21
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9995
               Response Ratio = 0.00000 + 0.18522 *A + 0.02158 *A^2

110)  Hexachlorobutadie 0.179 0.276 0.302 0.297 0.269 0.291 0.297 0.273  15.83
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9992
               Response Ratio = 0.00000 + 0.27210 *A + 0.01263 *A^2

111)  1,2,4-Trichlorobe 0.602 0.777 0.781 0.842 0.805 0.823 0.820 0.779  10.42
112)  Naphthalene       2.009 2.678 2.719 2.964 2.863 3.017 3.035 2.755  12.97
113)  1,2,3-Trichlorobe 0.596 0.741 0.747 0.784 0.758 0.776 0.774 0.739   8.81
 ----------------------------------------------------------------------------
 (#) = Out of Range

          V2O_04-11-2023.M        Tue Apr 11 14:43:59 2023
```

Initial Calibration Verification

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2924-ICV2924
Lab FileID: 2O75434.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\2\data\2023-04-11\2O75434.D Vial: 10
Acq On : 11 Apr 2023 1:39 pm Operator: davidb2
Sample : ICV2924-5 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,, Multiplr: 1.00
MS Integration Params: big.p

Method : C:\msdchem\2\met...V2O_04-11-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Tue Apr 11 14:22:12 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	103	0.00	4.03
2	Dichlorodifluoromethane	0.204	0.239	-17.2	121	0.00	1.23
3 P	Chloromethane	0.220	0.230	-4.5	109	0.00	1.38
	----------	Amount	Calc.	%Drift	----------		
4	1,3-butadiene		----------NA----------				
	----------	AvgRF	CCRF	%Dev	----------		
5 C	Vinyl Chloride	0.219	0.230	-5.0	106	0.00	1.44
6	Bromomethane	0.167	0.173	-3.6	109	0.00	1.67
	----------	Amount	Calc.	%Drift	----------		
7	Chloroethane	40.000	30.661	23.3#	121	0.00	1.76
	----------	AvgRF	CCRF	%Dev	----------		
8	Trichlorofluoromethane	0.388	0.404	-4.1	101	0.00	1.85
9	Ethyl Ether	0.172	0.198	-15.1	116	0.00	2.07
	----------	Amount	Calc.	%Drift	----------		
10	Ethanol	800.000	786.589	1.7	102	0.00	2.17
	----------	AvgRF	CCRF	%Dev	----------		
11	1,2-Dichlorotrifluoroetha	0.256	0.289	-12.9	120	0.00	2.19
12 C	1,1-Dichloroethene	0.329	0.340	-3.3	109	0.00	2.19
13	Freon 113		----------NA----------				
14	Carbon Disulfide	0.640	0.673	-5.2	112	0.00	2.21
15	Iodomethane	0.342	0.389	-13.7	111	0.00	2.28
16	Acrolein	0.063	0.075	-19.0	119	0.00	2.39
17	Allyl chloride	0.255	0.284	-11.4	115	0.00	2.48
	----------	Amount	Calc.	%Drift	----------		
18	Methylene Chloride	40.000	41.309	-3.3	111	0.00	2.54
	----------	AvgRF	CCRF	%Dev	----------		
19	Acetone	0.126	0.106	15.9	93	0.00	2.57
20	Methyl acetate	0.289	0.294	-1.7	106	0.00	2.64
21	trans-1,2-Dichloroethene	0.315	0.335	-6.3	109	0.00	2.64
22	Hexane	0.166	0.183	-10.2	115	0.00	2.69
23	Methyl Tert Butyl Ether	0.604	0.679	-12.4	113	0.00	2.70
	----------	Amount	Calc.	%Drift	----------		
24	Tert Butyl Alcohol	400.000	397.040	0.7	103	0.00	2.75

Initial Calibration Verification

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2924-ICV2924
Lab FileID: 2O75434.D

			AvgRF	CCRF	%Dev			
25		Acetonitrile	0.047	0.046	2.1	105	0.00	2.84
26		Di-isopropyl ether	0.641	0.693	-8.1	110	0.00	2.92
27		Chloroprene	0.301	0.276	8.3	97	0.00	2.98
28	P	1,1-Dichloroethane	0.409	0.413	-1.0	104	0.00	2.99
29		Acrylonitrile	0.122	0.120	1.6	104	0.00	3.02
30		ETBE	0.581	0.665	-14.5	114	0.00	3.13
31		Vinyl acetate	0.467	0.467	0.0	102	0.00	3.13
32		cis-1,2-Dichloroethene	0.254	0.259	-2.0	104	0.00	3.30
33		2,2-Dichloropropane	0.275	0.329	-19.6	122	0.00	3.37
34		Bromochloromethane	0.137	0.145	-5.8	111	0.00	3.42
35		Cyclohexane	0.338	0.375	-10.9	115	0.00	3.42
36	C	Chloroform	0.443	0.456	-2.9	106	0.00	3.45
37		Ethyl acetate	0.367	0.354	3.5	100	0.00	3.51
38		Tetrahydrofuran	0.141	0.143	-1.4	105	0.00	3.54
39	S	Dibromofluoromethane	0.277	0.277	0.0	102	0.00	3.56
40		Carbon Tetrachloride	0.277	0.302	-9.0	108	0.00	3.54
41		1,1,1-Trichloroethane	0.359	0.381	-6.1	112	0.00	3.58
42		2-Butanone	0.209	0.219	-4.8	109	0.00	3.62
43		1,1-Dichloropropene	0.310	0.337	-8.7	111	0.00	3.65

			Amount	Calc.	%Drift			
44		tert-Butyl formate	200.000	225.841	-12.9	120	0.00	3.71

			AvgRF	CCRF	%Dev			
45		Propionitrile	0.062	0.061	1.6	101	0.00	3.79
46		Methacrylonitrile	0.210	0.215	-2.4	107	0.00	3.81
47		Benzene	0.917	0.953	-3.9	108	0.00	3.79
48		TAME	0.544	0.605	-11.2	111	0.00	3.85

			Amount	Calc.	%Drift			
49		Isobutyl alcohol	800.000	804.276	-0.5	99	0.00	3.89

			AvgRF	CCRF	%Dev			
50	S	1,2-Dichloroethane-d4	0.295	0.300	-1.7	103	0.00	3.87
51		1,2-Dichloroethane	0.327	0.339	-3.7	108	0.00	3.90

			Amount	Calc.	%Drift			
52		Tert Amyl Alcohol	400.000	394.822	1.3	102	0.00	3.95

			AvgRF	CCRF	%Dev			
53		Trichloroethene	0.264	0.274	-3.8	108	0.00	4.13
54		Methylcyclohexane	0.346	0.377	-9.0	110	0.00	4.13
55		Dibromomethane	0.166	0.178	-7.2	109	0.00	4.38
56	C	1,2-Dichloropropane	0.215	0.237	-10.2	113	0.00	4.45
57		Bromodichloromethane	0.295	0.307	-4.1	105	0.00	4.48
58		Methyl methacrylate	0.241	0.254	-5.4	109	0.00	4.56

			Amount	Calc.	%Drift			
59		1,4-Dioxane	800.000	821.914	-2.7	105	0.00	4.60

			AvgRF	CCRF	%Dev			
60		2-Chloroethyl vinyl ether	0.187	0.192	-2.7	103	0.00	4.82

			Amount	Calc.	%Drift			
61		cis-1,3-Dichloropropene	40.000	42.325	-5.8	111	0.00	4.87

			AvgRF	CCRF	%Dev			

Initial Calibration Verification

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2924-ICV2924
Lab FileID: 2O75434.D

62	I	Chlorobenzene-d5	1.000	1.000	0.0	102	0.00	6.04
63	S	Toluene-d8	1.364	1.353	0.8	102	0.00	4.99
64	C	Toluene	1.370	1.419	-3.6	108	0.00	5.02
			Amount	Calc.	%Drift			
65		2-Nitropropane	200.000	192.748	3.6	100	0.00	5.17
			AvgRF	CCRF	%Dev			
66		4-Methyl-2-pentanone	0.490	0.515	-5.1	108	0.00	5.26
			Amount	Calc.	%Drift			
67		trans-1,3-Dichloropropene	40.000	40.195	-0.5	103	0.00	5.29
			AvgRF	CCRF	%Dev			
68		Tetrachloroethene	0.388	0.400	-3.1	106	0.00	5.28
			Amount	Calc.	%Drift			
69		Ethyl methacrylate	40.000	43.316	-8.3	112	0.00	5.38
			AvgRF	CCRF	%Dev			
70		1,1,2-Trichloroethane	0.276	0.283	-2.5	106	0.00	5.40
			Amount	Calc.	%Drift			
71		Dibromochloromethane	40.000	43.213	-8.0	110	0.00	5.52
			AvgRF	CCRF	%Dev			
72		1,3-Dichloropropane	0.506	0.574	-13.4	116	0.00	5.59
73		1,2-Dibromoethane	0.346	0.379	-9.5	108	0.00	5.69
			Amount	Calc.	%Drift			
74		3,3-dimethyl-1-butanol	2000.000	2037.047	-1.9	104	0.00	5.81
			AvgRF	CCRF	%Dev			
75		2-hexanone	0.486	0.481	1.0	100	0.00	5.83
76		1-Chlorohexane	0.431	0.436	-1.2	108	0.00	6.03
77	C	Ethylbenzene	1.478	1.527	-3.3	108	0.00	6.07
78	P	Chlorobenzene	0.926	0.952	-2.8	106	0.00	6.06
79		1,1,1,2-Tetrachloroethane	0.290	0.321	-10.7	108	0.00	6.10
80		m,p-Xylene	1.150	1.205	-4.8	107	0.00	6.18
81		o-Xylene	1.161	1.194	-2.8	105	0.00	6.49
82		Styrene	0.912	0.990	-8.6	108	0.00	6.53
			Amount	Calc.	%Drift			
83	P	Bromoform	40.000	40.305	-0.8	104	0.00	6.55
			AvgRF	CCRF	%Dev			
84		Isopropylbenzene	1.400	1.465	-4.6	105	0.00	6.73
85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	100	0.00	7.80
86	S	4-Bromofluorobenzene	0.763	0.758	0.7	102	0.00	6.95
87		cis-1,4-Dichloro-2-butene		----------NA----------				
88		n-Propylbenzene	3.100	3.194	-3.0	106	0.00	7.05
89		Bromobenzene	0.688	0.745	-8.3	111	0.00	7.02
90	P	1,1,2,2-Tetrachloroethane	0.944	1.002	-6.1	108	0.00	7.09
91		1,3,5-Trimethylbenzene	2.188	2.353	-7.5	108	0.00	7.20
92		2-Chlorotoluene	2.090	2.162	-3.4	108	0.00	7.17
			Amount	Calc.	%Drift			
93		trans-1,4-Dichloro-2-Bute	40.000	41.719	-4.3	109	0.00	7.23

Initial Calibration Verification

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2924-ICV2924
Lab FileID: 2O75434.D

		AvgRF	CCRF	%Dev			
94	1,2,3-Trichloropropane	0.311	0.334	-7.4	112	0.00	7.20

		Amount	Calc.	%Drift			
95	Cyclohexanone	200.000	245.805	-22.9#	135	0.00	7.24

		AvgRF	CCRF	%Dev			
96	4-Chlorotoluene	1.924	1.989	-3.4	105	0.00	7.30
97	tert-Butylbenzene	1.182	1.253	-6.0	107	0.00	7.45
98	a-Methyl styrene		----------NA----------				
99	1,2,4-Trimethylbenzene	2.162	2.387	-10.4	110	0.00	7.50

		Amount	Calc.	%Drift			
100	Pentachloroethane	40.000	42.658	-6.6	109	0.00	7.46

		AvgRF	CCRF	%Dev			
101	sec-Butylbenzene	2.620	2.623	-0.1	102	0.00	7.59
102	4-Isopropyltoluene	2.286	2.395	-4.8	105	0.00	7.70
103	1,3-Dichlorobenzene	1.359	1.376	-1.3	103	0.00	7.75
104	1,2,3-Trimethylbenzene	2.263	2.367	-4.6	105	0.00	7.84
105	1,4-Dichlorobenzene	1.377	1.429	-3.8	107	0.00	7.82

		Amount	Calc.	%Drift			
106	n-Butylbenzene	40.000	43.698	-9.2	113	0.00	8.01
107	Benzyl Chloride	40.000	43.475	-8.7	112	0.00	8.00

		AvgRF	CCRF	%Dev			
108	1,2-Dichlorobenzene	1.283	1.332	-3.8	106	0.00	8.13

		Amount	Calc.	%Drift			
109	1,2-Dibromo-3-Chloropropa	40.000	43.105	-7.8	112	0.00	8.70
110	Hexachlorobutadiene	40.000	44.392	-11.0	117	0.00	9.16

		AvgRF	CCRF	%Dev			
111	1,2,4-Trichlorobenzene	0.779	0.853	-9.5	106	0.00	9.18
112	Naphthalene	2.755	3.046	-10.6	107	0.00	9.40
113	1,2,3-Trichlorobenzene	0.739	0.830	-12.3	110	0.00	9.53

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2O75430.D V2O_04-11-2023.M Tue Apr 11 14:43:02 2023

Initial Calibration Verification

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2924-ICV2924
Lab FileID: 2O75435.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\2\data\2023-04-11\2O75435.D Vial: 11
Acq On : 11 Apr 2023 2:04 pm Operator: davidb2
Sample : ICV2924-4 Inst : MSVOA12
Misc : MS53635,V2O2924,,,,, Multiplr: 1.00
MS Integration Params: big.p

Method : C:\msdchem\2\met...V2O_04-11-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Tue Apr 11 14:22:12 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	106	0.00	4.03
2	Dichlorodifluoromethane		----------	NA	----------		
3 P	Chloromethane		----------	NA	----------		
	----------	Amount	Calc.	%Drift	----------		
4	1,3-butadiene	25.000	20.332	18.7	83	0.00	1.45
	----------	AvgRF	CCRF	%Dev	----------		
5 C	Vinyl Chloride		----------	NA	----------		
6	Bromomethane		----------	NA	----------		
	----------	Amount	Calc.	%Drift	----------		
7	Chloroethane		----------	NA	----------		
	----------	AvgRF	CCRF	%Dev	----------		
8	Trichlorofluoromethane		----------	NA	----------		
9	Ethyl Ether		----------	NA	----------		
	----------	Amount	Calc.	%Drift	----------		
10	Ethanol		----------	NA	----------		
	----------	AvgRF	CCRF	%Dev	----------		
11	1,2-Dichlorotrifluoroetha		----------	NA	----------		
12 C	1,1-Dichloroethene		----------	NA	----------		
13	Freon 113	0.219	0.225	-2.7	103	0.00	2.21
14	Carbon Disulfide		----------	NA	----------		
15	Iodomethane		----------	NA	----------		
16	Acrolein		----------	NA	----------		
17	Allyl chloride		----------	NA	----------		
	----------	Amount	Calc.	%Drift	----------		
18	Methylene Chloride		----------	NA	----------		
	----------	AvgRF	CCRF	%Dev	----------		
19	Acetone		----------	NA	----------		
20	Methyl acetate		----------	NA	----------		
21	trans-1,2-Dichloroethene		----------	NA	----------		
22	Hexane		----------	NA	----------		
23	Methyl Tert Butyl Ether		----------	NA	----------		
	----------	Amount	Calc.	%Drift	----------		
24	Tert Butyl Alcohol		----------	NA	----------		

Initial Calibration Verification

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2924-ICV2924
Lab FileID: 2O75435.D

			AvgRF	CCRF	%Dev			
25		Acetonitrile		NA				
26		Di-isopropyl ether		NA				
27		Chloroprene		NA				
28	P	1,1-Dichloroethane		NA				
29		Acrylonitrile		NA				
30		ETBE		NA				
31		Vinyl acetate		NA				
32		cis-1,2-Dichloroethene		NA				
33		2,2-Dichloropropane		NA				
34		Bromochloromethane		NA				
35		Cyclohexane		NA				
36	C	Chloroform		NA				
37		Ethyl acetate		NA				
38		Tetrahydrofuran		NA				
39	S	Dibromofluoromethane	0.277	0.277	0.0	107	0.00	3.56
40		Carbon Tetrachloride		NA				
41		1,1,1-Trichloroethane		NA				
42		2-Butanone		NA				
43		1,1-Dichloropropene		NA				

			Amount	Calc.	%Drift			
44		tert-Butyl formate		NA				

			AvgRF	CCRF	%Dev			
45		Propionitrile		NA				
46		Methacrylonitrile		NA				
47		Benzene		NA				
48		TAME		NA				

			Amount	Calc.	%Drift			
49		Isobutyl alcohol		NA				

			AvgRF	CCRF	%Dev			
50	S	1,2-Dichloroethane-d4	0.295	0.292	1.0	109	0.00	3.87
51		1,2-Dichloroethane		NA				

			Amount	Calc.	%Drift			
52		Tert Amyl Alcohol		NA				

			AvgRF	CCRF	%Dev			
53		Trichloroethene		NA				
54		Methylcyclohexane		NA				
55		Dibromomethane		NA				
56	C	1,2-Dichloropropane		NA				
57		Bromodichloromethane		NA				
58		Methyl methacrylate		NA				

			Amount	Calc.	%Drift			
59		1,4-Dioxane		NA				

			AvgRF	CCRF	%Dev			
60		2-Chloroethyl vinyl ether		NA				

			Amount	Calc.	%Drift			
61		cis-1,3-Dichloropropene		NA				

			AvgRF	CCRF	%Dev			

Initial Calibration Verification

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2924-ICV2924
Lab FileID: 2O75435.D

62	I	Chlorobenzene-d5	1.000	1.000	0.0	106	0.00	6.04
63	S	Toluene-d8	1.364	1.362	0.1	106	0.00	4.99
64	C	Toluene		----------NA----------				
		---------- Amount Calc. %Drift ----------						
65		2-Nitropropane		----------NA----------				
		---------- AvgRF CCRF %Dev ----------						
66		4-Methyl-2-pentanone		----------NA----------				
		---------- Amount Calc. %Drift ----------						
67		trans-1,3-Dichloropropene		----------NA----------				
		---------- AvgRF CCRF %Dev ----------						
68		Tetrachloroethene		----------NA----------				
		---------- Amount Calc. %Drift ----------						
69		Ethyl methacrylate		----------NA----------				
		---------- AvgRF CCRF %Dev ----------						
70		1,1,2-Trichloroethane		----------NA----------				
		---------- Amount Calc. %Drift ----------						
71		Dibromochloromethane		----------NA----------				
		---------- AvgRF CCRF %Dev ----------						
72		1,3-Dichloropropane		----------NA----------				
73		1,2-Dibromoethane		----------NA----------				
		---------- Amount Calc. %Drift ----------						
74		3,3-dimethyl-1-butanol		----------NA----------				
		---------- AvgRF CCRF %Dev ----------						
75		2-hexanone		----------NA----------				
76		1-Chlorohexane		----------NA----------				
77	C	Ethylbenzene		----------NA----------				
78	P	Chlorobenzene		----------NA----------				
79		1,1,1,2-Tetrachloroethane		----------NA----------				
80		m,p-Xylene		----------NA----------				
81		o-Xylene		----------NA----------				
82		Styrene		----------NA----------				
		---------- Amount Calc. %Drift ----------						
83	P	Bromoform		----------NA----------				
		---------- AvgRF CCRF %Dev ----------						
84		Isopropylbenzene		----------NA----------				
85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	109	0.00	7.80
86	S	4-Bromofluorobenzene	0.763	0.765	-0.3	107	0.00	6.95
87		cis-1,4-Dichloro-2-butene	0.226	0.267	-18.1	123	0.00	6.99
88		n-Propylbenzene		----------NA----------				
89		Bromobenzene		----------NA----------				
90	P	1,1,2,2-Tetrachloroethane		----------NA----------				
91		1,3,5-Trimethylbenzene		----------NA----------				
92		2-Chlorotoluene		----------NA----------				
		---------- Amount Calc. %Drift ----------						
93		trans-1,4-Dichloro-2-Bute		----------NA----------				

Initial Calibration Verification

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2924-ICV2924
Lab FileID: 2O75435.D

	----------	AvgRF	CCRF	%Dev	----------
94	1,2,3-Trichloropropane		----------NA----------		
	----------	Amount	Calc.	%Drift	----------
95	Cyclohexanone		----------NA----------		
	----------	AvgRF	CCRF	%Dev	----------
96	4-Chlorotoluene		----------NA----------		
97	tert-Butylbenzene		----------NA----------		
98	a-Methyl styrene		----------NA----------		
99	1,2,4-Trimethylbenzene		----------NA----------		
	----------	Amount	Calc.	%Drift	----------
100	Pentachloroethane		----------NA----------		
	----------	AvgRF	CCRF	%Dev	----------
101	sec-Butylbenzene		----------NA----------		
102	4-Isopropyltoluene		----------NA----------		
103	1,3-Dichlorobenzene		----------NA----------		
104	1,2,3-Trimethylbenzene		----------NA----------		
105	1,4-Dichlorobenzene		----------NA----------		
	----------	Amount	Calc.	%Drift	----------
106	n-Butylbenzene		----------NA----------		
107	Benzyl Chloride		----------NA----------		
	----------	AvgRF	CCRF	%Dev	----------
108	1,2-Dichlorobenzene		----------NA----------		
	----------	Amount	Calc.	%Drift	----------
109	1,2-Dibromo-3-Chloropropa		----------NA----------		
110	Hexachlorobutadiene		----------NA----------		
	----------	AvgRF	CCRF	%Dev	----------
111	1,2,4-Trichlorobenzene		----------NA----------		
112	Naphthalene		----------NA----------		
113	1,2,3-Trichlorobenzene		----------NA----------		

(#) = Out of Range SPCC's out = 4 CCC's out = 6
2O75429.D V2O_04-11-2023.M Tue Apr 11 14:43:50 2023

Continuing Calibration Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2958-CC2924
Lab FileID: 2O76182.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\An...023\V2O2958\2O76182.d Vial: 30
Acq On : 8 May 2023 10:41 pm Operator: davidb2
Sample : CC2924-5 Inst : MSVOA12
Misc : MS53960,V2O2958,,,,, Multiplr: 1.00
MS Integration Params: big.p

Method : C:\msdchem\1\met...V2O_04-11-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Tue Apr 11 14:22:12 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	100	0.00	4.02
2	Dichlorodifluoromethane	0.204	0.123	39.7#	61	0.00	1.22
3 P	Chloromethane	0.220	0.158	28.2#	73	0.00	1.39
	----------	True	Calc.	% Drift	----------		
4	1,3-butadiene	40.000	31.980	20.0#	82	0.00	1.45
	----------	AvgRF	CCRF	% Dev	----------		
5 C	Vinyl Chloride	0.219	0.171	21.9#	77	0.00	1.43
6	Bromomethane	0.167	0.099	40.7#	61	0.00	1.67
	----------	True	Calc.	% Drift	----------		
7	Chloroethane	40.000	12.734	68.2#	64	0.00	1.75
	----------	AvgRF	CCRF	% Dev	----------		
8	Trichlorofluoromethane	0.388	0.313	19.3	76	-0.01	1.84
9	Ethyl Ether	0.172	0.160	7.0	92	0.00	2.06
	----------	True	Calc.	% Drift	----------		
10	Ethanol	800.000	1104.227	-38.0#	139	0.00	2.17
	----------	AvgRF	CCRF	% Dev	----------		
11	1,2-Dichlorotrifluoroetha	0.256	0.201	21.5#	81	0.00	2.18
12 C	1,1-Dichloroethene	0.329	0.241	26.7#	75	0.00	2.18
13	Freon 113	0.219	0.170	22.4#	78	0.00	2.21
14	Carbon Disulfide	0.640	0.417	34.8#	68	0.00	2.20
15	Iodomethane	0.342	0.141	58.8#	39#	0.00	2.27
16	Acrolein	0.063	0.062	1.6	95	0.00	2.39
17	Allyl chloride	0.255	0.184	27.8#	72	0.00	2.47
	----------	True	Calc.	% Drift	----------		
18	Methylene Chloride	40.000	33.713	15.7	89	0.00	2.53
	----------	AvgRF	CCRF	% Dev	----------		
19	Acetone	0.126	0.143	-13.5	122	0.00	2.56
20	Methyl acetate	0.289	0.299	-3.5	105	0.00	2.64
21	trans-1,2-Dichloroethene	0.315	0.253	19.7	80	0.00	2.63
22	Hexane	0.166	0.121	27.1#	74	0.00	2.68
23	Methyl Tert Butyl Ether	0.604	0.557	7.8	90	0.00	2.70
	----------	True	Calc.	% Drift	----------		
24	Tert Butyl Alcohol	400.000	479.818	-20.0	123	0.00	2.75

Continuing Calibration Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2958-CC2924
Lab FileID: 2O76182.D

			AvgRF	CCRF	% Dev			
25		Acetonitrile	0.047	0.053	-12.8	116	0.00	2.84
26		Di-isopropyl ether	0.641	0.590	8.0	91	0.00	2.92
27		Chloroprene	0.301	0.242	19.6	83	0.00	2.98
28	P	1,1-Dichloroethane	0.409	0.358	12.5	88	0.00	2.99
29		Acrylonitrile	0.122	0.120	1.6	101	0.00	3.01
30		ETBE	0.581	0.559	3.8	93	0.00	3.12
31		Vinyl acetate	0.467	0.431	7.7	92	0.00	3.12
32		cis-1,2-Dichloroethene	0.254	0.226	11.0	89	0.00	3.29
33		2,2-Dichloropropane	0.275	0.128	53.5#	46#	0.00	3.36
34		Bromochloromethane	0.137	0.115	16.1	86	0.00	3.41
35		Cyclohexane	0.338	0.260	23.1#	77	0.00	3.42
36	C	Chloroform	0.443	0.396	10.6	90	0.00	3.45
37		Ethyl acetate	0.367	0.371	-1.1	102	0.00	3.51
38		Tetrahydrofuran	0.141	0.133	5.7	95	0.00	3.54
39	S	Dibromofluoromethane	0.277	0.269	2.9	97	0.00	3.55
40		Carbon Tetrachloride	0.277	0.226	18.4	79	0.00	3.53
41		1,1,1-Trichloroethane	0.359	0.298	17.0	85	0.00	3.57
42		2-Butanone	0.209	0.223	-6.7	108	0.00	3.62
43		1,1-Dichloropropene	0.310	0.249	19.7	80	0.00	3.64

			True	Calc.	% Drift			
44		tert-Butyl formate	200.000	185.399	7.3	93	0.00	3.70

			AvgRF	CCRF	% Dev			
45		Propionitrile	0.062	0.072	-16.1	117	0.00	3.79
46		Methacrylonitrile	0.210	0.216	-2.9	105	0.00	3.80
47		Benzene	0.917	0.812	11.5	89	0.00	3.78
48		TAME	0.544	0.531	2.4	94	0.00	3.84

			True	Calc.	% Drift			
49		Isobutyl alcohol	800.000	1112.233	-39.0#	138	0.00	3.89

			AvgRF	CCRF	% Dev			
50	S	1,2-Dichloroethane-d4	0.295	0.340	-15.3	113	0.00	3.86
51		1,2-Dichloroethane	0.327	0.332	-1.5	103	0.00	3.90

			True	Calc.	% Drift			
52		Tert Amyl Alcohol	400.000	481.991	-20.5#	124	0.00	3.95

			AvgRF	CCRF	% Dev			
53		Trichloroethene	0.264	0.226	14.4	87	0.00	4.12
54		Methylcyclohexane	0.346	0.268	22.5#	76	0.00	4.12
55		Dibromomethane	0.166	0.157	5.4	93	0.00	4.37
56	C	1,2-Dichloropropane	0.215	0.200	7.0	92	0.00	4.43
57		Bromodichloromethane	0.295	0.273	7.5	91	0.00	4.47
58		Methyl methacrylate	0.241	0.253	-5.0	106	0.00	4.56

			True	Calc.	% Drift			
59		1,4-Dioxane	800.000	1092.741	-36.6#	138	0.00	4.59

			AvgRF	CCRF	% Dev			
60		2-Chloroethyl vinyl ether	0.187	0.174	7.0	92	-0.01	4.81

			True	Calc.	% Drift			
61		cis-1,3-Dichloropropene	40.000	32.859	17.9	83	0.00	4.86

			AvgRF	CCRF	% Dev			

Continuing Calibration Summary

Job Number: FC5736 **Sample:** V2O2958-CC2924
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 2O76182.D
Project: CCF West NAM; KSC, FL

62	I	Chlorobenzene-d5	1.000	1.000	0.0	100	-0.01	6.03
63	S	Toluene-d8	1.364	1.344	1.5	100	0.00	4.98
64	C	Toluene	1.370	1.207	11.9	90	0.00	5.02
			True	Calc.	% Drift			
65		2-Nitropropane	200.000	216.397	-8.2	113	0.00	5.16
			AvgRF	CCRF	% Dev			
66		4-Methyl-2-pentanone	0.490	0.515	-5.1	106	0.00	5.25
			True	Calc.	% Drift			
67		trans-1,3-Dichloropropene	40.000	34.916	12.7	88	0.00	5.28
			AvgRF	CCRF	% Dev			
68		Tetrachloroethene	0.388	0.322	17.0	84	0.00	5.28
			True	Calc.	% Drift			
69		Ethyl methacrylate	40.000	42.344	-5.9	107	0.00	5.38
			AvgRF	CCRF	% Dev			
70		1,1,2-Trichloroethane	0.276	0.269	2.5	99	0.00	5.39
			True	Calc.	% Drift			
71		Dibromochloromethane	40.000	36.076	9.8	89	0.00	5.51
			AvgRF	CCRF	% Dev			
72		1,3-Dichloropropane	0.506	0.477	5.7	94	-0.01	5.57
73		1,2-Dibromoethane	0.346	0.337	2.6	94	-0.01	5.68
			True	Calc.	% Drift			
74		3,3-dimethyl-1-butanol	2000.000	2500.297	-25.0#	128	-0.01	5.79
			AvgRF	CCRF	% Dev			
75		2-hexanone	0.486	0.561	-15.4	114	0.00	5.82
76		1-Chlorohexane	0.431	0.316	26.7#	76	0.00	6.02
77	C	Ethylbenzene	1.478	1.317	10.9	91	-0.01	6.06
78	P	Chlorobenzene	0.926	0.816	11.9	89	-0.01	6.04
79		1,1,1,2-Tetrachloroethane	0.290	0.276	4.8	91	-0.01	6.09
80		m,p-Xylene	1.150	1.027	10.7	90	-0.01	6.17
81		o-Xylene	1.161	1.050	9.6	91	-0.01	6.48
82		Styrene	0.912	0.847	7.1	91	-0.01	6.52
			True	Calc.	% Drift			
83	P	Bromoform	40.000	34.626	13.4	87	0.00	6.54
			AvgRF	CCRF	% Dev			
84		Isopropylbenzene	1.400	1.202	14.1	85	-0.01	6.71
85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	97	-0.01	7.79
86	S	4-Bromofluorobenzene	0.763	0.741	2.9	97	-0.01	6.93
87		cis-1,4-Dichloro-2-butene	0.226	0.149	34.1#	63	-0.01	6.98
88		n-Propylbenzene	3.100	2.737	11.7	88	-0.01	7.03
89		Bromobenzene	0.688	0.626	9.0	90	-0.01	7.01
90	P	1,1,2,2-Tetrachloroethane	0.944	0.977	-3.5	102	-0.01	7.08
91		1,3,5-Trimethylbenzene	2.188	1.952	10.8	87	-0.02	7.18
92		2-Chlorotoluene	2.090	1.912	8.5	93	-0.02	7.15
			True	Calc.	% Drift			
93		trans-1,4-Dichloro-2-Bute	40.000	28.655	28.4#	71	-0.01	7.22

Continuing Calibration Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2958-CC2924
Lab FileID: 2O76182.D

		AvgRF	CCRF	% Dev			
94	1,2,3-Trichloropropane	0.311	0.305	1.9	99	-0.01	7.19
		True	Calc.	% Drift			
95	Cyclohexanone	200.000	256.625	-28.3#	136	-0.01	7.23
		AvgRF	CCRF	% Dev			
96	4-Chlorotoluene	1.924	1.796	6.7	92	-0.01	7.29
97	tert-Butylbenzene	1.182	1.061	10.2	88	-0.02	7.43
98	a-Methyl styrene		----------NA----------				
99	1,2,4-Trimethylbenzene	2.162	1.993	7.8	89	-0.01	7.49
		True	Calc.	% Drift			
100	Pentachloroethane	40.000	32.939	17.7	80	-0.01	7.45
		AvgRF	CCRF	% Dev			
101	sec-Butylbenzene	2.620	2.231	14.8	84	-0.01	7.57
102	4-Isopropyltoluene	2.286	1.928	15.7	82	-0.01	7.68
103	1,3-Dichlorobenzene	1.359	1.208	11.1	88	-0.01	7.74
104	1,2,3-Trimethylbenzene	2.263	2.141	5.4	92	-0.01	7.82
105	1,4-Dichlorobenzene	1.377	1.235	10.3	90	-0.01	7.80
		True	Calc.	% Drift			
106	n-Butylbenzene	40.000	32.035	19.9	79	-0.01	8.00
107	Benzyl Chloride	40.000	16.711	58.2#	37	-0.01	7.99
		AvgRF	CCRF	% Dev			
108	1,2-Dichlorobenzene	1.283	1.182	7.9	92	-0.01	8.12
		True	Calc.	% Drift			
109	1,2-Dibromo-3-Chloropropa	40.000	41.436	-3.6	105	-0.02	8.69
110	Hexachlorobutadiene	40.000	29.973	25.1#	76	-0.02	9.15
		AvgRF	CCRF	% Dev			
111	1,2,4-Trichlorobenzene	0.779	0.750	3.7	91	-0.02	9.16
112	Naphthalene	2.755	2.945	-6.9	100	-0.02	9.38
113	1,2,3-Trichlorobenzene	0.739	0.735	0.5	94	-0.02	9.51

(#) = Out of Range SPCC's out = 0 CCC's out = 2
2O75430.D V2O_04-11-2023.M Tue May 09 03:52:30 2023

Continuing Calibration Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2958-ECC2924
Lab FileID: 2O76200.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\2\data\2023-05-08\2O76200.D Vial: 48
Acq On : 9 May 2023 6:28 am Operator: davidb2
Sample : ECC2924-5 Inst : MSVOA12
Misc : MS53960,V2O2958,,,,, Multiplr: 1.00
MS Integration Params: big.p

Method : C:\msdchem\2\met...V2O_04-11-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Tue Apr 11 14:22:12 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 50% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	97	0.00	4.02
2	Dichlorodifluoromethane	0.204	0.125	38.7	59	0.00	1.23
3 P	Chloromethane	0.220	0.159	27.7	71	0.00	1.39
	----------	Amount	Calc.	%Drift	----------		
4	1,3-butadiene	40.000	32.140	19.6	79	0.00	1.45
	----------	AvgRF	CCRF	%Dev	----------		
5 C	Vinyl Chloride	0.219	0.172	21.5#	75	0.00	1.43
6	Bromomethane	0.167	0.077	53.9#	46#	0.00	1.67
	----------	Amount	Calc.	%Drift	----------		
7	Chloroethane	40.000	13.166	67.1#	63	0.00	1.75
	----------	AvgRF	CCRF	%Dev	----------		
8	Trichlorofluoromethane	0.388	0.322	17.0	76	-0.01	1.84
9	Ethyl Ether	0.172	0.161	6.4	89	0.00	2.06
	----------	Amount	Calc.	%Drift	----------		
10	Ethanol	800.000	1084.411	-35.6	132	0.00	2.17
	----------	AvgRF	CCRF	%Dev	----------		
11	1,2-Dichlorotrifluoroetha	0.256	0.203	20.7	79	0.00	2.18
12 C	1,1-Dichloroethene	0.329	0.247	24.9#	75	0.00	2.18
13	Freon 113	0.219	0.170	22.4	76	0.00	2.21
14	Carbon Disulfide	0.640	0.432	32.5	68	0.00	2.20
15	Iodomethane	0.342	0.143	58.2#	38#	0.00	2.27
16	Acrolein	0.063	0.055	12.7	81	0.00	2.39
17	Allyl chloride	0.255	0.179	29.8	68	0.00	2.48
	----------	Amount	Calc.	%Drift	----------		
18	Methylene Chloride	40.000	34.178	14.6	87	0.00	2.54
	----------	AvgRF	CCRF	%Dev	----------		
19	Acetone	0.126	0.143	-13.5	118	0.00	2.57
20	Methyl acetate	0.289	0.303	-4.8	103	0.00	2.64
21	trans-1,2-Dichloroethene	0.315	0.256	18.7	78	0.00	2.63
22	Hexane	0.166	0.117	29.5	69	0.00	2.68
23	Methyl Tert Butyl Ether	0.604	0.565	6.5	89	0.00	2.70
	----------	Amount	Calc.	%Drift	----------		
24	Tert Butyl Alcohol	400.000	470.039	-17.5	116	0.00	2.75

Continuing Calibration Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2958-ECC2924
Lab FileID: 2O76200.D

			AvgRF	CCRF	%Dev			
25		Acetonitrile	0.047	0.053	-12.8	114	0.00	2.84
26		Di-isopropyl ether	0.641	0.589	8.1	88	0.00	2.92
27		Chloroprene	0.301	0.266	11.6	88	0.00	2.98
28	P	1,1-Dichloroethane	0.409	0.361	11.7	86	0.00	2.99
29		Acrylonitrile	0.122	0.120	1.6	98	0.00	3.01
30		ETBE	0.581	0.564	2.9	91	0.00	3.12
31		Vinyl acetate	0.467	0.424	9.2	87	0.00	3.12
32		cis-1,2-Dichloroethene	0.254	0.237	6.7	90	0.00	3.29
33		2,2-Dichloropropane	0.275	0.080	70.9#	28#	0.00	3.36
34		Bromochloromethane	0.137	0.117	14.6	84	0.00	3.41
35		Cyclohexane	0.338	0.260	23.1	75	0.00	3.42
36	C	Chloroform	0.443	0.397	10.4	87	0.00	3.45
37		Ethyl acetate	0.367	0.369	-0.5	98	0.00	3.51
38		Tetrahydrofuran	0.141	0.135	4.3	94	0.00	3.54
39	S	Dibromofluoromethane	0.277	0.266	4.0	92	0.00	3.55
40		Carbon Tetrachloride	0.277	0.264	4.7	89	0.00	3.53
41		1,1,1-Trichloroethane	0.359	0.299	16.7	83	0.00	3.57
42		2-Butanone	0.209	0.224	-7.2	105	0.00	3.62
43		1,1-Dichloropropene	0.310	0.256	17.4	79	0.00	3.64

			Amount	Calc.	%Drift			
44		tert-Butyl formate	200.000	177.487	11.3	86	0.00	3.70

			AvgRF	CCRF	%Dev			
45		Propionitrile	0.062	0.073	-17.7	114	0.00	3.79
46		Methacrylonitrile	0.210	0.219	-4.3	102	0.00	3.80
47		Benzene	0.917	0.828	9.7	88	0.00	3.78
48		TAME	0.544	0.532	2.2	91	0.00	3.84

			Amount	Calc.	%Drift			
49		Isobutyl alcohol	800.000	938.539	-17.3	111	0.00	3.89

			AvgRF	CCRF	%Dev			
50	S	1,2-Dichloroethane-d4	0.295	0.342	-15.9	110	0.00	3.86
51		1,2-Dichloroethane	0.327	0.342	-4.6	102	0.00	3.90

			Amount	Calc.	%Drift			
52		Tert Amyl Alcohol	400.000	475.471	-18.9	118	0.00	3.95

			AvgRF	CCRF	%Dev			
53		Trichloroethene	0.264	0.225	14.8	84	0.00	4.12
54		Methylcyclohexane	0.346	0.270	22.0	74	0.00	4.12
55		Dibromomethane	0.166	0.158	4.8	91	0.00	4.37
56	C	1,2-Dichloropropane	0.215	0.199	7.4	89	0.00	4.43
57		Bromodichloromethane	0.295	0.276	6.4	89	0.00	4.47
58		Methyl methacrylate	0.241	0.253	-5.0	102	0.00	4.56

			Amount	Calc.	%Drift			
59		1,4-Dioxane	800.000	1101.456	-37.7	135	0.00	4.59

			AvgRF	CCRF	%Dev			
60		2-Chloroethyl vinyl ether	0.187	0.175	6.4	89	-0.01	4.81

			Amount	Calc.	%Drift			
61		cis-1,3-Dichloropropene	40.000	31.027	22.4	75	0.00	4.86

			AvgRF	CCRF	%Dev			

Continuing Calibration Summary

Job Number: FC5736 **Sample:** V2O2958-ECC2924
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 2O76200.D
Project: CCF West NAM; KSC, FL

62	I	Chlorobenzene-d5	1.000	1.000	0.0	98	-0.01	6.03
63	S	Toluene-d8	1.364	1.321	3.2	96	0.00	4.98
64	C	Toluene	1.370	1.189	13.2	87	0.00	5.02
			Amount	Calc.	%Drift			
65		2-Nitropropane	200.000	212.418	-6.2	108	0.00	5.16
			AvgRF	CCRF	%Dev			
66		4-Methyl-2-pentanone	0.490	0.508	-3.7	102	0.00	5.25
			Amount	Calc.	%Drift			
67		trans-1,3-Dichloropropene	40.000	32.637	18.4	80	0.00	5.28
			AvgRF	CCRF	%Dev			
68		Tetrachloroethene	0.388	0.342	11.9	87	0.00	5.27
			Amount	Calc.	%Drift			
69		Ethyl methacrylate	40.000	40.940	-2.3	102	0.00	5.38
			AvgRF	CCRF	%Dev			
70		1,1,2-Trichloroethane	0.276	0.270	2.2	97	0.00	5.39
			Amount	Calc.	%Drift			
71		Dibromochloromethane	40.000	35.383	11.5	86	0.00	5.51
			AvgRF	CCRF	%Dev			
72		1,3-Dichloropropane	0.506	0.496	2.0	96	-0.01	5.57
73		1,2-Dibromoethane	0.346	0.339	2.0	93	-0.01	5.68
			Amount	Calc.	%Drift			
74		3,3-dimethyl-1-butanol	2000.000	2544.269	-27.2	128	-0.01	5.79
			AvgRF	CCRF	%Dev			
75		2-hexanone	0.486	0.572	-17.7	114	0.00	5.82
76		1-Chlorohexane	0.431	0.208	51.7#	49#	0.00	6.02
77	C	Ethylbenzene	1.478	1.338	9.5	91	-0.01	6.06
78	P	Chlorobenzene	0.926	0.824	11.0	89	-0.01	6.04
79		1,1,1,2-Tetrachloroethane	0.290	0.271	6.6	88	0.00	6.09
80		m,p-Xylene	1.150	1.038	9.7	89	-0.01	6.17
81		o-Xylene	1.161	1.060	8.7	90	-0.01	6.48
82		Styrene	0.912	0.855	6.3	90	-0.01	6.52
			Amount	Calc.	%Drift			
83	P	Bromoform	40.000	33.629	15.9	82	0.00	6.54
			AvgRF	CCRF	%Dev			
84		Isopropylbenzene	1.400	1.210	13.6	84	-0.01	6.71
85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	94	-0.01	7.79
86	S	4-Bromofluorobenzene	0.763	0.741	2.9	93	-0.01	6.93
87		cis-1,4-Dichloro-2-butene	0.226	0.131	42.0	53	-0.01	6.98
88		n-Propylbenzene	3.100	2.802	9.6	87	-0.01	7.03
89		Bromobenzene	0.688	0.630	8.4	88	-0.01	7.01
90	P	1,1,2,2-Tetrachloroethane	0.944	0.999	-5.8	100	-0.01	7.08
91		1,3,5-Trimethylbenzene	2.188	2.000	8.6	86	-0.01	7.19
92		2-Chlorotoluene	2.090	1.972	5.6	92	-0.02	7.15
			Amount	Calc.	%Drift			
93		trans-1,4-Dichloro-2-Bute	40.000	25.504	36.2	60	-0.01	7.22

Continuing Calibration Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2O2958-ECC2924
Lab FileID: 2O76200.D

		AvgRF	CCRF	%Dev			
94	1,2,3-Trichloropropane	0.311	0.317	-1.9	99	-0.01	7.19
		Amount	Calc.	%Drift			
95	Cyclohexanone	200.000	264.646	-32.3	135	-0.01	7.23
		AvgRF	CCRF	%Dev			
96	4-Chlorotoluene	1.924	1.853	3.7	91	-0.01	7.29
97	tert-Butylbenzene	1.182	1.084	8.3	86	-0.02	7.43
98	a-Methyl styrene		----------NA----------				
99	1,2,4-Trimethylbenzene	2.162	2.036	5.8	88	-0.01	7.49
		Amount	Calc.	%Drift			
100	Pentachloroethane	40.000	29.525	26.2	68	-0.01	7.45
		AvgRF	CCRF	%Dev			
101	sec-Butylbenzene	2.620	2.265	13.5	82	-0.01	7.57
102	4-Isopropyltoluene	2.286	1.956	14.4	80	-0.01	7.68
103	1,3-Dichlorobenzene	1.359	1.235	9.1	87	-0.01	7.74
104	1,2,3-Trimethylbenzene	2.263	2.171	4.1	90	-0.01	7.82
105	1,4-Dichlorobenzene	1.377	1.259	8.6	88	-0.01	7.80
		Amount	Calc.	%Drift			
106	n-Butylbenzene	40.000	31.506	21.2	75	-0.01	8.00
107	Benzyl Chloride	40.000	9.214	77.0#	19	-0.01	7.99
		AvgRF	CCRF	%Dev			
108	1,2-Dichlorobenzene	1.283	1.205	6.1	90	-0.01	8.12
		Amount	Calc.	%Drift			
109	1,2-Dibromo-3-Chloropropa	40.000	40.618	-1.5	98	-0.02	8.69
110	Hexachlorobutadiene	40.000	29.054	27.4	71	-0.02	9.15
		AvgRF	CCRF	%Dev			
111	1,2,4-Trichlorobenzene	0.779	0.756	3.0	88	-0.02	9.16
112	Naphthalene	2.755	2.972	-7.9	97	-0.01	9.39
113	1,2,3-Trichlorobenzene	0.739	0.756	-2.3	93	-0.02	9.51

(#) = Out of Range SPCC's out = 0 CCC's out = 2
2O75430.D V2O_04-11-2023.M Tue May 09 09:17:31 2023

Initial Calibration Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2910-ICC2910
Lab FileID: I756326.D

Response Factor Report MSVOA16

Method : C:\msdchem\1\met...\VI-2023-05-02.m (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Tue May 02 13:32:44 2023
Response via : Initial Calibration

Calibration Files
1 =I756322.D 2 =I756323.D 3 =I756330.D 4 =I756325.D
5 =I756326.D 6 =I756327.D 7 =I756328.D

Compound	1	2	3	4	5	6	7	Avg	%RSD
1) I Fluorobenzene	----------ISTD----------								
2) Dichlorodifluorom	0.189	0.129	0.145	0.164	0.148	0.160	0.143	0.154	12.45
3)P Chloromethane	0.364	0.212	0.256	0.231	0.218	0.221	0.198	0.243	23.15
---- Linear regr., Force(0,0) ---- Coefficient = 0.9954									
Response Ratio = 0.00000 + 0.21441 *A									
4)C Vinyl Chloride	0.290	0.192	0.224	0.226	0.214	0.225	0.202	0.225	13.92
5) 1,3-Butadiene	0.329	0.227	0.227	0.244	0.216	0.231	0.200	0.239	17.56
---- Linear regr., Force(0,0) ---- Coefficient = 0.9943									
Response Ratio = 0.00000 + 0.21770 *A									
6) Bromomethane	0.238	0.110	0.129	0.107	0.104	0.105	0.091	0.126	39.97
---- Linear regr., Force(0,0) ---- Coefficient = 0.9914									
Response Ratio = 0.00000 + 0.09706 *A									
7) Chloroethane	0.236	0.139	0.151	0.134	0.129	0.130	0.112	0.147	27.68
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9976									
Response Ratio = 0.00000 + 0.14831 *A + -0.01749 *A^2									
8) Trichlorofluorome	0.458	0.298	0.325	0.352	0.349	0.380	0.326	0.355	14.68
9) Ethyl Ether	0.247	0.193	0.199	0.189	0.193	0.202	0.186	0.201	10.39
10) 1,2-Dichlorotrifl	0.264	0.199	0.220	0.214	0.221	0.230	0.206	0.222	9.51
11)C 1,1-Dichloroethen	0.335	0.253	0.292	0.288	0.294	0.308	0.274	0.292	8.81
12) Ethanol	0.014	0.008	0.009	0.008	0.009	0.009	0.008	0.009	25.82
---- Linear regr., Force(0,0) ---- Coefficient = 0.9974									
Response Ratio = 0.00000 + 0.00836 *A									
13) Freon 113	0.192	0.157	0.183	0.180	0.182	0.190	0.170	0.179	6.80
14) Carbon Disulfide	0.693	0.482	0.548	0.521	0.530	0.562	0.502	0.548	12.62
15) Iodomethane	0.116	0.104	0.115	0.165	0.173	0.175		0.141	23.19
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9939									
Response Ratio = 0.00000 + 0.13640 *A + 0.03081 *A^2									
16) Acrolein	0.080	0.060	0.075	0.072	0.073	0.077	0.071	0.073	8.52
17) Allyl chloride	0.373	0.231	0.276	0.267	0.260	0.272	0.245	0.275	16.78
---- Linear regr., Force(0,0) ---- Coefficient = 0.9971									
Response Ratio = 0.00000 + 0.25861 *A									
18) Methylene Chlorid	0.501	0.302	0.309	0.300	0.297	0.305	0.275	0.327	23.74
---- Linear regr., Force(0,0) ---- Coefficient = 0.9977									
Response Ratio = 0.00000 + 0.29197 *A									
19) Acetone	0.214	0.134	0.158	0.156	0.150	0.151	0.146	0.158	16.20
---- Linear regr., Force(0,0) ---- Coefficient = 0.9989									
Response Ratio = 0.00000 + 0.14935 *A									

Initial Calibration Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2910-ICC2910
Lab FileID: I756326.D

20)	Methyl acetate	0.326	0.279	0.311	0.324	0.332	0.357	0.331	0.323	7.39
21)	trans-1,2-Dichlor	0.349	0.247	0.282	0.272	0.284	0.295	0.265	0.285	11.27
22)	Hexane	0.178	0.130	0.152	0.152	0.151	0.158	0.135	0.151	10.35
23)	Methyl Tert Butyl	0.668	0.526	0.597	0.562	0.593	0.623	0.572	0.592	7.69
24)	Tert butyl alcoho	0.101	0.082	0.096	0.090	0.092	0.092	0.087	0.091	6.66
25)	Acetonitrile	0.073	0.048	0.056	0.055	0.053	0.054	0.051	0.056	14.72
26)	Di-isopropyl ethe	0.743	0.614	0.683	0.667	0.705	0.736	0.673	0.689	6.43
27)	Chloroprene	0.302	0.228	0.274	0.291	0.286	0.313	0.283	0.282	9.62
28)P	1,1-Dichloroethan	0.460	0.358	0.393	0.384	0.388	0.403	0.363	0.393	8.62
29)	Acrylonitrile	0.116	0.123	0.150	0.154	0.156	0.161	0.156	0.145	12.50
30)	ETBE	0.675	0.553	0.638	0.623	0.642	0.675	0.615	0.632	6.58
31)	Vinyl acetate	0.017	0.332	0.447	0.478	0.502	0.539	0.516	0.404	45.48

---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9977
Response Ratio = 0.00000 + 0.45233 *A + 0.00812 *A^2

32)	cis-1,2-Dichloroe	0.193	0.184	0.205	0.201	0.207	0.215	0.197	0.200	5.07
33)	2,2-Dichloropropa	0.284	0.219	0.277	0.271	0.268	0.275	0.241	0.262	9.00
34)	Bromochloromethan	0.113	0.088	0.105	0.099	0.101	0.101	0.093	0.100	8.12
35)	Cyclohexane	0.300	0.246	0.305	0.307	0.313	0.336	0.298	0.301	9.06
36)C	Chloroform	0.452	0.350	0.381	0.375	0.377	0.388	0.355	0.383	8.80
37)	Ethyl acetate	0.492	0.347	0.413	0.418	0.422	0.439	0.415	0.421	10.14
38)	Tetrahydrofuran	0.255	0.163	0.187	0.179	0.176	0.181	0.165	0.187	16.83

---- Linear regr., Force(0,0) ---- Coefficient = 0.9977
Response Ratio = 0.00000 + 0.17392 *A

39)S	Dibromofluorometh	0.280	0.275	0.282	0.281	0.287	0.287	0.289	0.283	1.73
40)	Carbon Tetrachlor	0.312	0.246	0.278	0.273	0.275	0.287	0.257	0.275	7.76
41)	1,1,1-Trichloroet	0.325	0.272	0.308	0.303	0.309	0.322	0.290	0.304	6.07
42)	2-Butanone	0.203	0.188	0.232	0.252	0.249	0.254	0.244	0.232	11.23
43)	1,1-Dichloroprope	0.244	0.215	0.252	0.248	0.253	0.265	0.236	0.245	6.52
44)	tert-Butyl Format	0.230	0.165	0.196	0.192	0.201	0.210	0.200	0.199	9.86
45)	Propionitrile	0.082	0.065	0.075	0.077	0.074	0.074	0.071	0.074	6.90
46)	Methacrylonitrile	0.286	0.208	0.236	0.227	0.219	0.223	0.208	0.230	11.67
47)	Benzene	0.886	0.693	0.788	0.769	0.776	0.802	0.718	0.776	8.04
48)	TAME	0.691	0.536	0.592	0.561	0.551	0.584	0.532	0.578	9.40
49)S	1,2-Dichloroethan	0.310	0.309	0.309	0.308	0.307	0.310	0.312	0.309	0.54
50)	Isobutyl alcohol	0.026	0.018	0.020	0.021	0.021	0.021	0.019	0.021	12.01
51)	1,2-Dichloroethan	0.381	0.287	0.307	0.285	0.295	0.308	0.280	0.306	11.28
52)	Tert Amyl Alcohol	0.088	0.073	0.081	0.077	0.078	0.078	0.072	0.078	6.52
53)	Trichloroethene	0.265	0.191	0.212	0.200	0.207	0.217	0.196	0.213	11.74
54)	Methylcyclohexane	0.264	0.209	0.258	0.249	0.255	0.277	0.248	0.251	8.44
55)	Dibromomethane	0.160	0.126	0.146	0.132	0.139	0.147	0.135	0.141	8.19
56)C	1,2-Dichloropropa	0.234	0.188	0.213	0.205	0.207	0.217	0.199	0.209	6.94
57)	Bromodichlorometh	0.328	0.259	0.289	0.278	0.278	0.299	0.276	0.287	7.71
58)	Methyl methacryla	0.069	0.158	0.212	0.230	0.242	0.262	0.256	0.204	33.84

---- Linear regr., Force(0,0) ---- Coefficient = 0.9975
Response Ratio = 0.00000 + 0.24834 *A

59)	1,4-Dioxane	0.003	0.001	0.006	0.006	0.006	0.007	0.006	0.005	47.04

---- Linear regr., Force(0,0) ---- Coefficient = 0.9970
Response Ratio = 0.00000 + 0.00635 *A

60)	2-Chloroethyl vin	0.130	0.118	0.151	0.158	0.166	0.173	0.164	0.152	13.40
61)	cis-1,3-Dichlorop	0.327	0.272	0.312	0.308	0.315	0.334	0.309	0.311	6.35
62)	I Chlorobenzene-d5	----------	----------	----------	ISTD	----------	----------	----------	----------	
63)S	Toluene-d8	1.374	1.363	1.406	1.406	1.391	1.385	1.379	1.386	1.17
64)C	Toluene	1.335	1.003	1.126	1.092	1.096	1.141	1.023	1.117	9.75
65)	2-Nitropropane	0.172	0.135	0.154	0.151	0.154	0.161	0.146	0.153	7.48
66)	4-Methyl-2-pentan	0.748	0.551	0.663	0.650	0.627	0.615	0.572	0.632	10.28

Initial Calibration Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2910-ICC2910
Lab FileID: I756326.D

67)	trans-1,3-Dichlor	0.358	0.324	0.406	0.405	0.415	0.446	0.404	0.394	10.16
68)	Tetrachloroethene	0.320	0.260	0.297	0.285	0.283	0.301	0.266	0.288	7.21
69)	Ethyl methacrylat	0.281	0.246	0.347	0.381	0.378	0.399	0.380	0.345	16.88
	---- Linear regr., Force(0,0) ---- Coefficient = 0.9975									
	Response Ratio = 0.00000 + 0.38070 *A									
70)	1,1,2-Trichloroet	0.287	0.225	0.253	0.240	0.239	0.247	0.225	0.245	8.67
71)	Dibromochlorometh	0.353	0.276	0.325	0.305	0.313	0.332	0.305	0.316	7.68
72)	1,3-Dichloropropa	0.423	0.371	0.433	0.428	0.429	0.455	0.421	0.423	6.06
73)	1,2-Dibromoethane	0.274	0.263	0.307	0.292	0.297	0.317	0.292	0.292	6.35
74)	3,3-dimethyl-1-bu	0.147	0.106	0.132	0.127	0.126	0.123	0.113	0.125	10.64
75)	2-hexanone	0.484	0.428	0.540	0.541	0.513	0.505	0.432	0.492	9.48
76)	1-Chlorohexane	0.280	0.252	0.320	0.308	0.317	0.346	0.308	0.304	9.96
77)C	Ethylbenzene	1.431	1.082	1.275	1.220	1.235	1.286	1.156	1.241	8.85
78)P	Chlorobenzene	0.866	0.672	0.774	0.726	0.740	0.765	0.685	0.747	8.69
79)	1,1,1,2-Tetrachlo	0.302	0.264	0.292	0.274	0.283	0.299	0.269	0.283	5.28
80)	m,p-Xylene	0.897	0.760	0.922	0.920	0.942	1.003	0.890	0.905	8.16
81)	o-Xylene	0.951	0.757	0.951	0.947	0.962	1.031	0.938	0.934	8.97
82)	Styrene	0.549	0.534	0.664	0.688	0.723	0.772	0.708	0.663	13.45
83)P	Bromoform	0.238	0.198	0.239	0.234	0.238	0.255	0.232	0.233	7.36
84)	Isopropylbenzene	1.064	0.892	1.104	1.102	1.116	1.197	1.074	1.078	8.60
85) I	1,4-Dichlorobenzene-d ----------ISTD----------									
86)S	4-Bromofluorobenz	0.780	0.796	0.775	0.751	0.775	0.776	0.796	0.778	1.96
87)	cis-1,4-Dichloro-	0.148	0.191	0.213	0.216	0.218	0.229	0.223	0.205	13.66
88)	n-Propylbenzene	2.863	2.411	2.573	2.489	2.571	2.712	2.462	2.583	6.09
89)	Bromobenzene	0.727	0.557	0.597	0.560	0.566	0.590	0.542	0.591	10.63
90)P	1,1,2,2-Tetrachlo	1.189	0.962	0.969	0.899	0.908	0.927	0.831	0.955	11.82
91)	1,3,5-Trimethylbe	1.751	1.535	1.759	1.704	1.757	1.866	1.705	1.725	5.77
92)	2-Chlorotoluene	2.236	1.734	1.819	1.743	1.788	1.818	1.659	1.828	10.31
93)	trans-1,4-Dichlor	0.117	0.181	0.269	0.222	0.232	0.251	0.242	0.216	23.81
	---- Linear regr., Force(0,0) ---- Coefficient = 0.9983									
	Response Ratio = 0.00000 + 0.24269 *A									
94)	1,2,3-Trichloropr	0.292	0.277	0.289	0.274	0.272	0.278	0.251	0.276	4.84
95)	Cyclohexanone	0.080	0.068	0.074	0.065	0.068	0.067	0.065	0.070	8.11
96)	4-Chlorotoluene	1.708	1.326	1.569	1.527	1.585	1.655	1.522	1.556	7.82
97)	tert-Butylbenzene	1.147	0.758	0.940	0.907	0.954	1.014	0.930	0.950	12.32
98)	1,2,4-Trimethylbe	1.703	1.460	1.720	1.723	1.746	1.847	1.708	1.701	6.89
99)	Pentachloroethane	0.401	0.297	0.328	0.325	0.315	0.323	0.302	0.327	10.57
100)	sec-Butylbenzene	2.133	1.793	1.999	1.960	2.024	2.144	1.940	1.999	6.03
101)	4-Isopropyltoluen	1.612	1.416	1.683	1.681	1.730	1.833	1.678	1.662	7.67
102)	1,3-Dichlorobenze	1.198	0.963	1.043	0.990	1.016	1.066	0.977	1.036	7.75
103)	1,2,3-Trimethylbe	2.145	1.738	1.919	1.859	1.870	1.945	1.770	1.892	7.09
104)	1,4-Dichlorobenze	1.496	1.119	1.143	1.066	1.074	1.103	0.997	1.143	14.25
105)	n-Butylbenzene	0.823	0.733	0.884	0.886	0.901	0.970	0.869	0.867	8.45
106)	Benzyl Chloride	0.161	0.209	0.301	0.293	0.304	0.309	0.274	0.264	21.63
	---- Linear regr., Force(0,0) ---- Coefficient = 0.9957									
	Response Ratio = 0.00000 + 0.28990 *A									
107)	1,2-Dichlorobenze	1.065	0.948	1.021	0.976	0.997	1.025	0.936	0.995	4.60
108)	1,2-Dibromo-3-Chl	0.215	0.211	0.244	0.233	0.232	0.241	0.227	0.229	5.39
109)	Hexachlorobutadie	0.267	0.189	0.208	0.213	0.212	0.220	0.199	0.215	11.66
110)	1,2,4-Trichlorobe	0.471	0.475	0.558	0.549	0.545	0.584	0.550	0.533	8.06
111)	Naphthalene	2.025	1.664	2.024	2.032	2.073	2.250	2.152	2.031	8.96
112)	1,2,3-Trichlorobe	0.642	0.517	0.577	0.529	0.540	0.570	0.535	0.559	7.60

(#) = Out of Range

VI-2023-05-02.m Tue May 02 13:48:56 2023

Initial Calibration Verification

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2910-ICV2910
Lab FileID: I756331.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\2023-05-02\I756331.D Vial: 11
Acq On : 2 May 2023 1:02 pm Operator: jeniferw
Sample : ICV2910-5 Inst : MSVOA16
Misc : MS53904,VI2910,,,,, Multiplr: 1.00
MS Integration Params: tiny.p

Method : C:\msdchem\1\met...\VI-2023-05-02.m (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Tue May 02 13:32:44 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	103	0.00	7.85
2	Dichlorodifluoromethane	0.154	0.235	-52.6#	163	0.00	2.35
		Amount	Calc.	%Drift			
3 P	Chloromethane	40.000	48.939	-22.3#	124	0.00	2.65
		AvgRF	CCRF	%Dev			
4 C	Vinyl Chloride	0.225	0.252	-12.0	121	0.00	2.76
		Amount	Calc.	%Drift			
5	1,3-Butadiene	40.000	43.394	-8.5	112	0.00	2.79
6	Bromomethane	40.000	44.465	-11.2	106	0.00	3.23
7	Chloroethane	40.000	41.534	-3.8	111	0.00	3.39
		AvgRF	CCRF	%Dev			
8	Trichlorofluoromethane	0.355	0.393	-10.7	116	0.00	3.58
9	Ethyl Ether	0.201	0.212	-5.5	113	0.00	4.01
10	1,2-Dichlorotrifluoroetha	0.222	0.261	-17.6	122	0.00	4.23
11 C	1,1-Dichloroethene	0.292	0.316	-8.2	111	0.00	4.26
		Amount	Calc.	%Drift			
12	Ethanol	800.000	834.407	-4.3	103	-0.01	4.23
		AvgRF	CCRF	%Dev			
13	Freon 113	0.179	0.219	-22.3#	124	0.00	4.31
14	Carbon Disulfide	0.548	0.597	-8.9	116	0.00	4.32
		Amount	Calc.	%Drift			
15	Iodomethane	40.000	41.272	-3.2	99	0.00	4.45
		AvgRF	CCRF	%Dev			
16	Acrolein	0.073	0.077	-5.5	109	0.00	4.68
		Amount	Calc.	%Drift			
17	Allyl chloride	40.000	44.287	-10.7	113	0.00	4.84
18	Methylene Chloride	40.000	43.302	-8.3	110	0.00	4.97
19	Acetone	200.000	202.407	-1.2	104	0.00	5.03
		AvgRF	CCRF	%Dev			
20	Methyl acetate	0.323	0.328	-1.5	101	0.00	5.17
21	trans-1,2-Dichloroethene	0.285	0.299	-4.9	108	0.00	5.17
22	Hexane	0.151	0.171	-13.2	116	0.00	5.27

Initial Calibration Verification

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2910-ICV2910
Lab FileID: I756331.D

23		Methyl Tert Butyl Ether	0.592	0.643	-8.6	112	0.00	5.29
24		Tert butyl alcohol	0.091	0.095	-4.4	106	0.00	5.40
25		Acetonitrile	0.056	0.056	0.0	108	0.00	5.56
26		Di-isopropyl ether	0.689	0.727	-5.5	106	0.00	5.73
27		Chloroprene	0.282	0.282	0.0	101	0.00	5.86
28	P	1,1-Dichloroethane	0.393	0.395	-0.5	105	0.00	5.88
29		Acrylonitrile	0.145	0.156	-7.6	103	0.00	5.92
30		ETBE	0.632	0.697	-10.3	112	0.00	6.13
		----------	Amount	Calc.	%Drift	----------		
31		Vinyl acetate	200.000	220.757	-10.4	110	0.00	6.13
		----------	AvgRF	CCRF	%Dev	----------		
32		cis-1,2-Dichloroethene	0.200	0.214	-7.0	106	0.00	6.49
33		2,2-Dichloropropane	0.262	0.295	-12.6	113	0.00	6.61
34		Bromochloromethane	0.100	0.103	-3.0	105	0.00	6.73
35		Cyclohexane	0.301	0.346	-15.0	114	0.00	6.75
36	C	Chloroform	0.383	0.398	-3.9	109	0.00	6.79
37		Ethyl acetate	0.421	0.429	-1.9	105	0.00	6.88
		----------	Amount	Calc.	%Drift	----------		
38		Tetrahydrofuran	40.000	40.727	-1.8	104	0.00	6.98
		----------	AvgRF	CCRF	%Dev	----------		
39	S	Dibromofluoromethane	0.283	0.285	-0.7	102	0.00	6.98
40		Carbon Tetrachloride	0.275	0.293	-6.5	110	0.00	6.97
41		1,1,1-Trichloroethane	0.304	0.328	-7.9	109	0.00	7.03
42		2-Butanone	0.232	0.249	-7.3	103	0.00	7.10
43		1,1-Dichloropropene	0.245	0.280	-14.3	114	0.00	7.16
44		tert-Butyl Formate	0.199	0.222	-11.6	114	0.00	7.25
45		Propionitrile	0.074	0.075	-1.4	104	0.00	7.41
46		Methacrylonitrile	0.230	0.230	0.0	108	0.00	7.43
47		Benzene	0.776	0.816	-5.2	108	0.00	7.43
48		TAME	0.578	0.611	-5.7	114	0.00	7.52
49	S	1,2-Dichloroethane-d4	0.309	0.305	1.3	102	0.00	7.55
50		Isobutyl alcohol	0.021	0.022	-4.8	106	0.00	7.59
51		1,2-Dichloroethane	0.306	0.304	0.7	106	0.00	7.63
52		Tert Amyl Alcohol	0.078	0.080	-2.6	106	0.00	7.70
53		Trichloroethene	0.213	0.216	-1.4	107	0.00	8.04
54		Methylcyclohexane	0.251	0.281	-12.0	113	0.00	8.05
55		Dibromomethane	0.141	0.147	-4.3	109	0.00	8.48
56	C	1,2-Dichloropropane	0.209	0.227	-8.6	113	0.00	8.56
57		Bromodichloromethane	0.287	0.288	-0.3	107	0.00	8.62
		----------	Amount	Calc.	%Drift	----------		
58		Methyl methacrylate	40.000	39.087	2.3	103	0.00	8.74
59		1,4-Dioxane	800.000	775.951	3.0	99	0.00	8.82
		----------	AvgRF	CCRF	%Dev	----------		
60		2-Chloroethyl vinyl ether	0.152	0.165	-8.6	102	0.00	9.15
61		cis-1,3-Dichloropropene	0.311	0.328	-5.5	107	0.00	9.25
62	I	Chlorobenzene-d5	1.000	1.000	0.0	101	0.00	11.01
63	S	Toluene-d8	1.386	1.413	-1.9	103	0.00	9.44
64	C	Toluene	1.117	1.165	-4.3	108	0.00	9.50
65		2-Nitropropane	0.153	0.158	-3.3	104	0.00	9.69
66		4-Methyl-2-pentanone	0.632	0.639	-1.1	103	0.00	9.83
67		trans-1,3-Dichloropropene	0.394	0.402	-2.0	98	0.00	9.90
68		Tetrachloroethene	0.288	0.308	-6.9	110	0.00	9.91

Initial Calibration Verification

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2910-ICV2910
Lab FileID: I756331.D

			Amount	Calc.	%Drift			
69		Ethyl methacrylate	40.000	44.517	-11.3	114	0.00	10.01
			AvgRF	CCRF	%Dev			
70		1,1,2-Trichloroethane	0.245	0.250	-2.0	106	0.00	10.05
71		Dibromochloromethane	0.316	0.334	-5.7	108	0.00	10.26
72		1,3-Dichloropropane	0.423	0.482	-13.9	114	0.00	10.33
73		1,2-Dibromoethane	0.292	0.315	-7.9	107	0.00	10.51
74		3,3-dimethyl-1-butanol	0.125	0.125	0.0	101	0.00	10.62
75		2-hexanone	0.492	0.518	-5.3	102	0.00	10.65
76		1-Chlorohexane	0.304	0.349	-14.8	112	0.00	10.96
77	C	Ethylbenzene	1.241	1.295	-4.4	106	0.00	11.02
78	P	Chlorobenzene	0.747	0.757	-1.3	104	0.00	11.02
79		1,1,1,2-Tetrachloroethane	0.283	0.289	-2.1	103	0.00	11.07
80		m,p-Xylene	0.905	0.990	-9.4	106	0.00	11.16
81		o-Xylene	0.934	1.007	-7.8	106	0.00	11.60
82		Styrene	0.663	0.762	-14.9	107	0.00	11.65
83	P	Bromoform	0.233	0.245	-5.2	104	0.00	11.71
84		Isopropylbenzene	1.078	1.166	-8.2	106	0.00	11.91
85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	104	0.00	13.37
86	S	4-Bromofluorobenzene	0.778	0.772	0.8	103	0.00	12.22
87		cis-1,4-Dichloro-2-butene	0.205	0.239	-16.6	114	0.00	12.26
88		n-Propylbenzene	2.583	2.634	-2.0	106	0.00	12.33
89		Bromobenzene	0.591	0.592	-0.2	109	0.00	12.35
90	P	1,1,2,2-Tetrachloroethane	0.955	0.926	3.0	106	0.00	12.39
91		1,3,5-Trimethylbenzene	1.725	1.836	-6.4	108	0.00	12.52
92		2-Chlorotoluene	1.828	1.765	3.4	103	0.00	12.52
			Amount	Calc.	%Drift			
93		trans-1,4-Dichloro-2-Bute	40.000	41.544	-3.9	113	0.00	12.57
			AvgRF	CCRF	%Dev			
94		1,2,3-Trichloropropane	0.276	0.295	-6.9	113	0.00	12.55
95		Cyclohexanone	0.070	0.232	-231.4#	357#	0.00	12.60
96		4-Chlorotoluene	1.556	1.618	-4.0	106	0.00	12.68
97		tert-Butylbenzene	0.950	0.979	-3.1	107	0.00	12.85
98		1,2,4-Trimethylbenzene	1.701	1.816	-6.8	108	0.00	12.93
99		Pentachloroethane	0.327	0.327	0.0	108	0.00	12.90
100		sec-Butylbenzene	1.999	2.016	-0.9	103	0.00	13.04
101		4-Isopropyltoluene	1.662	1.770	-6.5	106	0.00	13.17
102		1,3-Dichlorobenzene	1.036	1.018	1.7	104	0.00	13.30
103		1,2,3-Trimethylbenzene	1.892	1.826	3.5	101	0.00	13.38
104		1,4-Dichlorobenzene	1.143	1.094	4.3	106	0.00	13.39
105		n-Butylbenzene	0.867	0.983	-13.4	113	0.00	13.61
			Amount	Calc.	%Drift			
106		Benzyl Chloride	40.000	41.209	-3.0	102	0.00	13.63
			AvgRF	CCRF	%Dev			
107		1,2-Dichlorobenzene	0.995	0.999	-0.4	104	0.00	13.83
108		1,2-Dibromo-3-Chloropropa	0.229	0.247	-7.9	111	0.00	14.58
109		Hexachlorobutadiene	0.215	0.227	-5.6	111	0.00	15.15
110		1,2,4-Trichlorobenzene	0.533	0.566	-6.2	108	0.00	15.19
111		Naphthalene	2.031	2.126	-4.7	107	0.00	15.46
112		1,2,3-Trichlorobenzene	0.559	0.549	1.8	106	0.00	15.63

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Initial Calibration Verification

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2910-ICV2910
Lab FileID: I756331.D

I756326.D VI-2023-05-02.m Tue May 02 13:49:14 2023

Continuing Calibration Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2922-CC2910
Lab FileID: I756631.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\2023-05-10\I756631.D Vial: 2
Acq On : 10 May 2023 8:27 am Operator: jeniferw
Sample : CC2910-4 Inst : MSVOA16
Misc : MS53972,VI2922,,,,, Multiplr: 1.00
MS Integration Params: tiny.p

Method : C:\msdchem\1\met...\VI-2023-05-02.m (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Tue May 02 13:32:44 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	79	0.00	7.85
2	Dichlorodifluoromethane	0.154	0.178	-15.6	86	0.00	2.35
		Amount	Calc.	%Drift			
3 P	Chloromethane	25.000	22.798	8.8	66	0.00	2.64
		AvgRF	CCRF	%Dev			
4 C	Vinyl Chloride	0.225	0.187	16.9	65	0.00	2.76
		Amount	Calc.	%Drift			
5	1,3-Butadiene	25.000	23.006	8.0	65	0.00	2.79
6	Bromomethane	25.000	14.236	43.1#	41	0.00	3.23
7	Chloroethane	25.000	16.817	32.7#	56	0.00	3.39
		AvgRF	CCRF	%Dev			
8	Trichlorofluoromethane	0.355	0.318	10.4	71	0.01	3.59
9	Ethyl Ether	0.201	0.168	16.4	70	0.00	4.01
10	1,2-Dichlorotrifluoroetha	0.222	0.206	7.2	76	0.00	4.24
11 C	1,1-Dichloroethene	0.292	0.281	3.8	77	0.00	4.26
		Amount	Calc.	%Drift			
12	Ethanol	500.000	494.335	1.1	82	-0.03	4.21
		AvgRF	CCRF	%Dev			
13	Freon 113	0.179	0.175	2.2	77	0.00	4.31
14	Carbon Disulfide	0.548	0.503	8.2	76	0.00	4.32
		Amount	Calc.	%Drift			
15	Iodomethane	25.000	19.558	21.8#	55	0.00	4.45
		AvgRF	CCRF	%Dev			
16	Acrolein	0.073	0.061	16.4	66	0.00	4.68
		Amount	Calc.	%Drift			
17	Allyl chloride	25.000	22.440	10.2	68	0.00	4.85
18	Methylene Chloride	25.000	25.067	-0.3	77	0.00	4.98
19	Acetone	125.000	112.250	10.2	68	0.00	5.03
		AvgRF	CCRF	%Dev			
20	Methyl acetate	0.323	0.285	11.8	69	0.00	5.17
21	trans-1,2-Dichloroethene	0.285	0.259	9.1	75	0.00	5.18
22	Hexane	0.151	0.134	11.3	69	0.00	5.27

Continuing Calibration Summary

Job Number: FC5736 **Sample:** VI2922-CC2910
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** I756631.D
Project: CCF West NAM; KSC, FL

23		Methyl Tert Butyl Ether	0.592	0.578	2.4	81	0.00	5.29
24		Tert butyl alcohol	0.091	0.084	7.7	73	-0.01	5.39
25		Acetonitrile	0.056	0.047	16.1	67	0.00	5.56
26		Di-isopropyl ether	0.689	0.584	15.2	69	0.00	5.73
27		Chloroprene	0.282	0.273	3.2	74	0.00	5.86
28	P	1,1-Dichloroethane	0.393	0.357	9.2	73	0.00	5.88
29		Acrylonitrile	0.145	0.141	2.8	72	0.00	5.92
30		ETBE	0.632	0.587	7.1	74	0.00	6.13
		----------	Amount	Calc.	%Drift	----------		
31		Vinyl acetate	125.000	111.849	10.5	69	0.00	6.14
		----------	AvgRF	CCRF	%Dev	----------		
32		cis-1,2-Dichloroethene	0.200	0.195	2.5	77	0.00	6.50
33		2,2-Dichloropropane	0.262	0.281	-7.3	82	0.00	6.62
34		Bromochloromethane	0.100	0.101	-1.0	81	0.00	6.73
35		Cyclohexane	0.301	0.275	8.6	70	0.00	6.75
36	C	Chloroform	0.383	0.371	3.1	78	0.00	6.79
37		Ethyl acetate	0.421	0.348	17.3	65	0.00	6.88
		----------	Amount	Calc.	%Drift	----------		
38		Tetrahydrofuran	25.000	21.060	15.8	65	0.00	6.98
		----------	AvgRF	CCRF	%Dev	----------		
39	S	Dibromofluoromethane	0.283	0.299	-5.7	84	0.00	6.99
40		Carbon Tetrachloride	0.275	0.306	-11.3	88	0.00	6.98
41		1,1,1-Trichloroethane	0.304	0.327	-7.6	85	0.00	7.03
42		2-Butanone	0.232	0.200	13.8	62	0.00	7.10
43		1,1-Dichloropropene	0.245	0.239	2.4	76	0.00	7.17
44		tert-Butyl Formate	0.199	0.199	0.0	81	0.00	7.26
45		Propionitrile	0.074	0.063	14.9	65	0.00	7.41
46		Methacrylonitrile	0.230	0.179	22.2#	62	0.00	7.44
47		Benzene	0.776	0.682	12.1	70	0.00	7.43
48		TAME	0.578	0.529	8.5	74	0.00	7.52
49	S	1,2-Dichloroethane-d4	0.309	0.338	-9.4	86	0.00	7.56
50		Isobutyl alcohol	0.021	0.016	23.8#	61	0.00	7.59
51		1,2-Dichloroethane	0.306	0.287	6.2	79	0.00	7.63
52		Tert Amyl Alcohol	0.078	0.066	15.4	67	0.00	7.70
53		Trichloroethene	0.213	0.194	8.9	77	0.00	8.05
54		Methylcyclohexane	0.251	0.235	6.4	74	0.00	8.05
55		Dibromomethane	0.141	0.133	5.7	79	0.00	8.48
56	C	1,2-Dichloropropane	0.209	0.180	13.9	69	0.00	8.57
57		Bromodichloromethane	0.287	0.277	3.5	78	0.00	8.62
		----------	Amount	Calc.	%Drift	----------		
58		Methyl methacrylate	25.000	19.930	20.3#	68	0.00	8.74
59		1,4-Dioxane	500.000	438.658	12.3	79	0.00	8.82
		----------	AvgRF	CCRF	%Dev	----------		
60		2-Chloroethyl vinyl ether	0.152	0.150	1.3	75	0.00	9.16
61		cis-1,3-Dichloropropene	0.311	0.293	5.8	75	0.00	9.25
62	I	Chlorobenzene-d5	1.000	1.000	0.0	78	0.00	11.01
63	S	Toluene-d8	1.386	1.442	-4.0	80	0.00	9.44
64	C	Toluene	1.117	1.038	7.1	74	0.00	9.50
65		2-Nitropropane	0.153	0.142	7.2	74	0.00	9.69
66		4-Methyl-2-pentanone	0.632	0.504	20.3#	61	0.00	9.83
67		trans-1,3-Dichloropropene	0.394	0.392	0.5	76	0.00	9.90
68		Tetrachloroethene	0.288	0.288	0.0	79	0.00	9.91

Continuing Calibration Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2922-CC2910
Lab FileID: I756631.D

			Amount	Calc.	%Drift			
69		Ethyl methacrylate	25.000	22.324	10.7	70	0.00	10.02
			AvgRF	CCRF	%Dev			
70		1,1,2-Trichloroethane	0.245	0.220	10.2	72	0.00	10.06
71		Dibromochloromethane	0.316	0.324	-2.5	83	0.00	10.26
72		1,3-Dichloropropane	0.423	0.397	6.1	73	0.00	10.34
73		1,2-Dibromoethane	0.292	0.285	2.4	76	0.00	10.52
74		3,3-dimethyl-1-butanol	0.125	0.093	25.6#	57	0.00	10.61
75		2-hexanone	0.492	0.398	19.1	58	0.00	10.66
76		1-Chlorohexane	0.304	0.281	7.6	71	0.00	10.96
77	C	Ethylbenzene	1.241	1.152	7.2	74	0.00	11.03
78	P	Chlorobenzene	0.747	0.698	6.6	75	0.00	11.02
79		1,1,1,2-Tetrachloroethane	0.283	0.286	-1.1	82	0.00	11.07
80		m,p-Xylene	0.905	0.883	2.4	75	0.00	11.16
81		o-Xylene	0.934	0.903	3.3	75	0.00	11.60
82		Styrene	0.663	0.667	-0.6	76	0.00	11.66
83	P	Bromoform	0.233	0.244	-4.7	81	0.00	11.71
84		Isopropylbenzene	1.078	1.074	0.4	76	0.00	11.91
85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	93	0.00	13.37
86	S	4-Bromofluorobenzene	0.778	0.676	13.1	84	0.00	12.22
87		cis-1,4-Dichloro-2-butene	0.205	0.172	16.1	74	0.00	12.26
88		n-Propylbenzene	2.583	1.968	23.8#	73	0.00	12.33
89		Bromobenzene	0.591	0.458	22.5#	76	0.00	12.35
90	P	1,1,2,2-Tetrachloroethane	0.955	0.676	29.2#	70	0.00	12.39
91		1,3,5-Trimethylbenzene	1.725	1.424	17.4	78	0.00	12.52
92		2-Chlorotoluene	1.828	1.423	22.2#	76	0.00	12.52
			Amount	Calc.	%Drift			
93		trans-1,4-Dichloro-2-Bute	25.000	18.569	25.7#	75	0.00	12.57
			AvgRF	CCRF	%Dev			
94		1,2,3-Trichloropropane	0.276	0.225	18.5	76	0.00	12.55
95		Cyclohexanone	0.070	0.047	32.9#	67	0.00	12.61
96		4-Chlorotoluene	1.556	1.216	21.9#	74	0.00	12.69
97		tert-Butylbenzene	0.950	0.770	18.9	79	0.00	12.85
98		1,2,4-Trimethylbenzene	1.701	1.416	16.8	76	0.00	12.93
99		Pentachloroethane	0.327	0.271	17.1	77	0.00	12.91
100		sec-Butylbenzene	1.999	1.587	20.6#	75	0.00	13.04
101		4-Isopropyltoluene	1.662	1.418	14.7	78	0.00	13.18
102		1,3-Dichlorobenzene	1.036	0.949	8.4	89	0.00	13.30
103		1,2,3-Trimethylbenzene	1.892	1.684	11.0	84	0.00	13.38
104		1,4-Dichlorobenzene	1.143	1.001	12.4	87	0.00	13.39
105		n-Butylbenzene	0.867	0.800	7.7	84	0.00	13.62
			Amount	Calc.	%Drift			
106		Benzyl Chloride	25.000	24.741	1.0	91	0.00	13.63
			AvgRF	CCRF	%Dev			
107		1,2-Dichlorobenzene	0.995	0.808	18.8	77	0.00	13.83
108		1,2-Dibromo-3-Chloropropa	0.229	0.188	17.9	75	0.00	14.58
109		Hexachlorobutadiene	0.215	0.183	14.9	80	0.00	15.15
110		1,2,4-Trichlorobenzene	0.533	0.454	14.8	77	0.00	15.19
111		Naphthalene	2.031	1.957	3.6	89	0.00	15.47
112		1,2,3-Trichlorobenzene	0.559	0.558	0.2	98	0.00	15.63

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Continuing Calibration Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2922-CC2910
Lab FileID: I756631.D

I756325.D VI-2023-05-02.m Thu May 11 14:24:51 2023

Continuing Calibration Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2922-ECC2910
Lab FileID: I756657.D

Evaluate Continuing Calibration Report

Data File : C:\Users\Organics\De...anila Files\I756657.d Vial: 28
Acq On : 10 May 2023 7:20 pm Operator: jeniferw
Sample : ECC2910-4 Inst : MSVOA16
Misc : MS53982,VI2922,,,,, Multiplr: 1.00
MS Integration Params: tiny.p

Method : C:\msdchem\1\met...\VI-2023-05-02.m (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Tue May 02 13:32:44 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 50% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	75	0.00	7.85
2	Dichlorodifluoromethane	0.154	0.245	-59.1#	112	0.00	2.35
		Amount	Calc.	%Drift			
3 P	Chloromethane	25.000	28.796	-15.2	80	0.00	2.65
		AvgRF	CCRF	%Dev			
4 C	Vinyl Chloride	0.225	0.244	-8.4	81	0.00	2.76
		Amount	Calc.	%Drift			
5	1,3-Butadiene	25.000	27.671	-10.7	74	0.00	2.79
6	Bromomethane	25.000	20.025	19.9	54	0.00	3.23
7	Chloroethane	25.000	20.904	16.4	66	0.00	3.39
		AvgRF	CCRF	%Dev			
8	Trichlorofluoromethane	0.355	0.403	-13.5	86	0.01	3.59
9	Ethyl Ether	0.201	0.173	13.9	69	0.00	4.01
10	1,2-Dichlorotrifluoroetha	0.222	0.243	-9.5	85	0.00	4.24
11 C	1,1-Dichloroethene	0.292	0.327	-12.0	85	0.00	4.26
		Amount	Calc.	%Drift			
12	Ethanol	500.000	530.493	-6.1	84	-0.03	4.21
		AvgRF	CCRF	%Dev			
13	Freon 113	0.179	0.202	-12.8	84	0.00	4.31
14	Carbon Disulfide	0.548	0.557	-1.6	80	0.00	4.32
		Amount	Calc.	%Drift			
15	Iodomethane	25.000	21.931	12.3	59	0.00	4.45
		AvgRF	CCRF	%Dev			
16	Acrolein	0.073	0.065	11.0	67	0.00	4.68
		Amount	Calc.	%Drift			
17	Allyl chloride	25.000	23.069	7.7	67	0.00	4.84
18	Methylene Chloride	25.000	26.662	-6.6	78	0.00	4.97
19	Acetone	125.000	125.116	-0.1	72	0.00	5.03
		AvgRF	CCRF	%Dev			
20	Methyl acetate	0.323	0.324	-0.3	75	0.00	5.17
21	trans-1,2-Dichloroethene	0.285	0.292	-2.5	80	0.00	5.18
22	Hexane	0.151	0.152	-0.7	74	0.00	5.27

Continuing Calibration Summary

Job Number: FC5736 **Sample:** VI2922-ECC2910
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** I756657.D
Project: CCF West NAM; KSC, FL

23		Methyl Tert Butyl Ether	0.592	0.627	-5.9	83	0.00	5.30
24		Tert butyl alcohol	0.091	0.097	-6.6	80	0.00	5.40
25		Acetonitrile	0.056	0.053	5.4	71	0.00	5.56
26		Di-isopropyl ether	0.689	0.655	4.9	73	0.00	5.73
27		Chloroprene	0.282	0.311	-10.3	80	0.00	5.86
28	P	1,1-Dichloroethane	0.393	0.401	-2.0	78	0.00	5.88
29		Acrylonitrile	0.145	0.152	-4.8	74	0.00	5.92
30		ETBE	0.632	0.637	-0.8	76	0.00	6.14
		----------	Amount	Calc.	%Drift	----------		
31		Vinyl acetate	125.000	114.582	8.3	68	0.00	6.14
		----------	AvgRF	CCRF	%Dev	----------		
32		cis-1,2-Dichloroethene	0.200	0.218	-9.0	81	0.00	6.50
33		2,2-Dichloropropane	0.262	0.208	20.6	57	0.00	6.62
34		Bromochloromethane	0.100	0.111	-11.0	84	0.00	6.73
35		Cyclohexane	0.301	0.313	-4.0	76	0.00	6.75
36	C	Chloroform	0.383	0.411	-7.3	82	0.00	6.79
37		Ethyl acetate	0.421	0.373	11.4	67	0.00	6.89
		----------	Amount	Calc.	%Drift	----------		
38		Tetrahydrofuran	25.000	23.034	7.9	67	0.00	6.98
		----------	AvgRF	CCRF	%Dev	----------		
39	S	Dibromofluoromethane	0.283	0.307	-8.5	82	0.00	6.99
40		Carbon Tetrachloride	0.275	0.351	-27.6	96	0.00	6.98
41		1,1,1-Trichloroethane	0.304	0.378	-24.3	93	0.00	7.04
42		2-Butanone	0.232	0.219	5.6	65	0.00	7.10
43		1,1-Dichloropropene	0.245	0.271	-10.6	81	0.00	7.17
44		tert-Butyl Formate	0.199	0.206	-3.5	80	0.00	7.26
45		Propionitrile	0.074	0.069	6.8	67	0.00	7.41
46		Methacrylonitrile	0.230	0.180	21.7	59	0.00	7.44
47		Benzene	0.776	0.742	4.4	72	0.00	7.43
48		TAME	0.578	0.556	3.8	74	0.00	7.52
49	S	1,2-Dichloroethane-d4	0.309	0.347	-12.3	84	0.00	7.56
50		Isobutyl alcohol	0.021	0.018	14.3	62	0.00	7.59
51		1,2-Dichloroethane	0.306	0.310	-1.3	81	0.00	7.63
52		Tert Amyl Alcohol	0.078	0.074	5.1	72	0.00	7.70
53		Trichloroethene	0.213	0.218	-2.3	82	0.00	8.04
54		Methylcyclohexane	0.251	0.268	-6.8	81	0.00	8.06
55		Dibromomethane	0.141	0.145	-2.8	82	0.00	8.49
56	C	1,2-Dichloropropane	0.209	0.198	5.3	72	0.00	8.57
57		Bromodichloromethane	0.287	0.308	-7.3	83	0.00	8.63
		----------	Amount	Calc.	%Drift	----------		
58		Methyl methacrylate	25.000	21.424	14.3	69	0.00	8.75
59		1,4-Dioxane	500.000	481.532	3.7	83	0.00	8.82
		----------	AvgRF	CCRF	%Dev	----------		
60		2-Chloroethyl vinyl ether	0.152	0.151	0.7	72	0.00	9.16
61		cis-1,3-Dichloropropene	0.311	0.307	1.3	75	0.00	9.26
62	I	Chlorobenzene-d5	1.000	1.000	0.0	75	0.00	11.01
63	S	Toluene-d8	1.386	1.437	-3.7	77	0.00	9.45
64	C	Toluene	1.117	1.155	-3.4	79	0.00	9.50
65		2-Nitropropane	0.153	0.150	2.0	74	0.00	9.70
66		4-Methyl-2-pentanone	0.632	0.530	16.1	61	0.00	9.83
67		trans-1,3-Dichloropropene	0.394	0.396	-0.5	73	0.00	9.90
68		Tetrachloroethene	0.288	0.368	-27.8	97	0.00	9.91

Continuing Calibration Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2922-ECC2910
Lab FileID: I756657.D

			Amount	Calc.	%Drift			
69		Ethyl methacrylate	25.000	24.111	3.6	72	0.00	10.02
			AvgRF	CCRF	%Dev			
70		1,1,2-Trichloroethane	0.245	0.241	1.6	75	0.00	10.06
71		Dibromochloromethane	0.316	0.358	-13.3	88	0.00	10.26
72		1,3-Dichloropropane	0.423	0.424	-0.2	74	0.00	10.34
73		1,2-Dibromoethane	0.292	0.314	-7.5	81	0.00	10.52
74		3,3-dimethyl-1-butanol	0.125	0.110	12.0	65	0.00	10.62
75		2-hexanone	0.492	0.413	16.1	57	0.00	10.66
76		1-Chlorohexane	0.304	0.324	-6.6	79	0.00	10.97
77	C	Ethylbenzene	1.241	1.259	-1.5	77	0.00	11.03
78	P	Chlorobenzene	0.747	0.751	-0.5	77	0.00	11.02
79		1,1,1,2-Tetrachloroethane	0.283	0.309	-9.2	85	0.00	11.07
80		m,p-Xylene	0.905	0.975	-7.7	79	0.00	11.17
81		o-Xylene	0.934	1.014	-8.6	80	0.00	11.61
82		Styrene	0.663	0.749	-13.0	81	0.00	11.66
83	P	Bromoform	0.233	0.268	-15.0	86	0.00	11.71
84		Isopropylbenzene	1.078	1.204	-11.7	82	0.00	11.91
85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	79	0.00	13.37
86	S	4-Bromofluorobenzene	0.778	0.778	0.0	82	0.00	12.22
87		cis-1,4-Dichloro-2-butene	0.205	0.166	19.0	61	0.00	12.26
88		n-Propylbenzene	2.583	2.496	3.4	80	0.00	12.33
89		Bromobenzene	0.591	0.588	0.5	83	0.00	12.35
90	P	1,1,2,2-Tetrachloroethane	0.955	0.806	15.6	71	0.00	12.39
91		1,3,5-Trimethylbenzene	1.725	1.818	-5.4	85	0.00	12.52
92		2-Chlorotoluene	1.828	1.771	3.1	81	0.00	12.52
			Amount	Calc.	%Drift			
93		trans-1,4-Dichloro-2-Bute	25.000	17.906	28.4	62	0.00	12.58
			AvgRF	CCRF	%Dev			
94		1,2,3-Trichloropropane	0.276	0.270	2.2	78	0.00	12.55
95		Cyclohexanone	0.070	0.058	17.1	71	0.00	12.61
96		4-Chlorotoluene	1.556	1.545	0.7	80	0.00	12.69
97		tert-Butylbenzene	0.950	0.995	-4.7	87	0.00	12.86
98		1,2,4-Trimethylbenzene	1.701	1.794	-5.5	83	0.00	12.93
99		Pentachloroethane	0.327	0.276	15.6	68	0.00	12.91
100		sec-Butylbenzene	1.999	2.064	-3.3	84	0.00	13.04
101		4-Isopropyltoluene	1.662	1.793	-7.9	85	0.00	13.18
102		1,3-Dichlorobenzene	1.036	1.055	-1.8	85	0.00	13.30
103		1,2,3-Trimethylbenzene	1.892	1.852	2.1	79	0.00	13.39
104		1,4-Dichlorobenzene	1.143	1.098	3.9	82	0.00	13.39
105		n-Butylbenzene	0.867	0.833	3.9	75	0.00	13.62
			Amount	Calc.	%Drift			
106		Benzyl Chloride	25.000	14.215	43.1	45	0.00	13.63
			AvgRF	CCRF	%Dev			
107		1,2-Dichlorobenzene	0.995	1.035	-4.0	84	0.00	13.83
108		1,2-Dibromo-3-Chloropropa	0.229	0.244	-6.6	83	0.00	14.58
109		Hexachlorobutadiene	0.215	0.237	-10.2	88	0.00	15.15
110		1,2,4-Trichlorobenzene	0.533	0.616	-15.6	89	0.00	15.19
111		Naphthalene	2.031	2.231	-9.8	87	0.00	15.47
112		1,2,3-Trichlorobenzene	0.559	0.621	-11.1	93	0.00	15.63

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Continuing Calibration Summary

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: VI2922-ECC2910
Lab FileID: I756657.D

I756325.D VI-2023-05-02.m Thu May 11 08:05:46 2023

Run Sequence Report

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Run ID: V1A1804	**Method:** SW846 8260D	**Instrument ID:** GCMS1A

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
V1A1804-BFB	1A45831.D	05/03/23 13:13	n/a	BFB Tune
V1A1804-IC1804	1A45832.D	05/03/23 13:48	n/a	Initial cal 1
V1A1804-IC1804	1A45833.D	05/03/23 14:13	n/a	Initial cal 2
V1A1804-IC1804	1A45834.D	05/03/23 14:38	n/a	Initial cal 3
V1A1804-IC1804	1A45835.D	05/03/23 15:03	n/a	Initial cal 4
V1A1804-ICC1804	1A45836.D	05/03/23 15:28	n/a	Initial cal 5
V1A1804-IC1804	1A45837.D	05/03/23 15:53	n/a	Initial cal 6
V1A1804-IC1804	1A45838.D	05/03/23 16:17	n/a	Initial cal 7
V1A1804-ICV1804	1A45840.D	05/03/23 17:08	n/a	Initial cal verification 5

Run Sequence Report

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Run ID: V1A1807	**Method:** SW846 8260D	**Instrument ID:** GCMS1A

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
V1A1807-BFB	1A45900.D	05/05/23 10:22	n/a	BFB Tune
V1A1807-CC1804	1A45901.D	05/05/23 10:47	n/a	Continuing cal 5
V1A1807-BS	1A45902.D	05/05/23 11:11	n/a	Blank Spike
V1A1807-MB	1A45904.D	05/05/23 12:01	n/a	Method Blank
ZZZZZZ	1A45905.D	05/05/23 12:26	n/a	(unrelated sample)
FC5638-13	1A45906.D	05/05/23 12:51	n/a	(used for QC only; not part of job FC5736)
ZZZZZZ	1A45907.D	05/05/23 13:16	n/a	(unrelated sample)
ZZZZZZ	1A45908.D	05/05/23 13:41	n/a	(unrelated sample)
ZZZZZZ	1A45909.D	05/05/23 14:06	n/a	(unrelated sample)
ZZZZZZ	1A45910.D	05/05/23 14:31	n/a	(unrelated sample)
ZZZZZZ	1A45911.D	05/05/23 14:56	n/a	(unrelated sample)
ZZZZZZ	1A45912.D	05/05/23 15:21	n/a	(unrelated sample)
ZZZZZZ	1A45913.D	05/05/23 15:46	n/a	(unrelated sample)
ZZZZZZ	1A45914.D	05/05/23 16:11	n/a	(unrelated sample)
ZZZZZZ	1A45915.D	05/05/23 16:36	n/a	(unrelated sample)
ZZZZZZ	1A45916.D	05/05/23 17:01	n/a	(unrelated sample)
ZZZZZZ	1A45917.D	05/05/23 17:26	n/a	(unrelated sample)
ZZZZZZ	1A45918.D	05/05/23 17:51	n/a	(unrelated sample)
ZZZZZZ	1A45919.D	05/05/23 18:16	n/a	(unrelated sample)
ZZZZZZ	1A45920.D	05/05/23 18:41	n/a	(unrelated sample)
ZZZZZZ	1A45921.D	05/05/23 19:06	n/a	(unrelated sample)
FC5736-1	1A45922.D	05/05/23 19:31	n/a	CCF-IW0003IS-030.0-20230501
FC5736-2	1A45923.D	05/05/23 19:56	n/a	CCF-IW0003ID-051.0-20230501
FC5736-3	1A45924.D	05/05/23 20:21	n/a	CCF-IW0083ID-040.0-20230501
FC5638-13MS	1A45925.D	05/05/23 20:46	n/a	Matrix Spike
FC5638-13MSD	1A45926.D	05/05/23 21:11	n/a	Matrix Spike Duplicate
V1A1807-ECC1804	1A45927.D	05/05/23 21:36	n/a	Ending cal 5

Run Sequence Report

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Run ID: V2O2924	**Method:** SW846 8260D	**Instrument ID:** GCMS2O

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
V2O2924-BFB	2O75425.D	04/11/23 09:39	n/a	BFB Tune
V2O2924-IC2924	2O75426.D	04/11/23 10:06	n/a	Initial cal 1
V2O2924-IC2924	2O75427.D	04/11/23 10:38	n/a	Initial cal 2
V2O2924-IC2924	2O75428.D	04/11/23 11:05	n/a	Initial cal 3
V2O2924-IC2924	2O75429.D	04/11/23 11:31	n/a	Initial cal 4
V2O2924-ICC2924	2O75430.D	04/11/23 11:56	n/a	Initial cal 5
V2O2924-IC2924	2O75431.D	04/11/23 12:22	n/a	Initial cal 6
V2O2924-IC2924	2O75432.D	04/11/23 12:48	n/a	Initial cal 7
V2O2924-ICV2924	2O75434.D	04/11/23 13:39	n/a	Initial cal verification 5
V2O2924-ICV2924	2O75435.D	04/11/23 14:04	n/a	Initial cal verification 4

Run Sequence Report

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Run ID: V2O2958	**Method:** SW846 8260D	**Instrument ID:** GCMS2O

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
V2O2958-BFB	2O76181.D	05/08/23 22:15	n/a	BFB Tune
V2O2958-CC2924	2O76182.D	05/08/23 22:41	n/a	Continuing cal 5
V2O2958-BS	2O76183.D	05/08/23 23:07	n/a	Blank Spike
V2O2958-MB	2O76185.D	05/08/23 23:59	n/a	Method Blank
FC5736-8	2O76186.D	05/09/23 00:25	n/a	CCF-TB-20230501-01
FC5736-4	2O76187.D	05/09/23 00:51	n/a	CCF-IW0083IS-030.0-20230501
FC5736-5	2O76188.D	05/09/23 01:17	n/a	CCF-IW0083S-020.0-20230501
FC5736-6	2O76189.D	05/09/23 01:43	n/a	CCF-IW0029ID-042.5-20230501
FC5736-7	2O76190.D	05/09/23 02:09	n/a	CCF-IW0092-045.0-20230501
FC5788-7	2O76191.D	05/09/23 02:35	n/a	(used for QC only; not part of job FC5736)
ZZZZZZ	2O76192.D	05/09/23 03:01	n/a	(unrelated sample)
ZZZZZZ	2O76193.D	05/09/23 03:27	n/a	(unrelated sample)
ZZZZZZ	2O76194.D	05/09/23 03:52	n/a	(unrelated sample)
ZZZZZZ	2O76195.D	05/09/23 04:18	n/a	(unrelated sample)
ZZZZZZ	2O76196.D	05/09/23 04:44	n/a	(unrelated sample)
ZZZZZZ	2O76197.D	05/09/23 05:10	n/a	(unrelated sample)
FC5788-7MS	2O76198.D	05/09/23 05:36	n/a	Matrix Spike
FC5788-7MSD	2O76199.D	05/09/23 06:02	n/a	Matrix Spike Duplicate
V2O2958-ECC2924	2O76200.D	05/09/23 06:28	n/a	Ending cal 5

Run Sequence Report

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Run ID: VI2910	**Method:** SW846 8260D	**Instrument ID:** GCMSI

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
VI2910-BFB	I756321.D	05/02/23 08:34	n/a	BFB Tune
VI2910-IC2910	I756322.D	05/02/23 09:04	n/a	Initial cal 1
VI2910-IC2910	I756323.D	05/02/23 09:29	n/a	Initial cal 2
VI2910-IC2910	I756325.D	05/02/23 10:18	n/a	Initial cal 4
VI2910-ICC2910	I756326.D	05/02/23 10:42	n/a	Initial cal 5
VI2910-IC2910	I756327.D	05/02/23 11:07	n/a	Initial cal 6
VI2910-IC2910	I756328.D	05/02/23 11:32	n/a	Initial cal 7
VI2910-IC2910	I756330.D	05/02/23 12:21	n/a	Initial cal 3
VI2910-ICV2910	I756331.D	05/02/23 13:02	n/a	Initial cal verification 5
VI2910-CC2910	I756331A.D	05/02/23 13:02	n/a	Continuing cal 5
VI2910-BS	I756332.D	05/02/23 13:26	n/a	Blank Spike
VI2910-MB	I756333.D	05/02/23 13:51	n/a	Method Blank
ZZZZZZ	I756334.D	05/02/23 14:19	n/a	(unrelated sample)
ZZZZZZ	I756335.D	05/02/23 14:44	n/a	(unrelated sample)
FC5532-2	I756336.D	05/02/23 15:09	n/a	(used for QC only; not part of job FC5736)
ZZZZZZ	I756337.D	05/02/23 15:34	n/a	(unrelated sample)
ZZZZZZ	I756338.D	05/02/23 15:59	n/a	(unrelated sample)
ZZZZZZ	I756339.D	05/02/23 16:25	n/a	(unrelated sample)
ZZZZZZ	I756340.D	05/02/23 16:50	n/a	(unrelated sample)
ZZZZZZ	I756341.D	05/02/23 17:15	n/a	(unrelated sample)
ZZZZZZ	I756342.D	05/02/23 17:40	n/a	(unrelated sample)
ZZZZZZ	I756343.D	05/02/23 18:05	n/a	(unrelated sample)
FC5532-2MS	I756344.D	05/02/23 18:30	n/a	Matrix Spike
FC5532-2MSD	I756345.D	05/02/23 18:55	n/a	Matrix Spike Duplicate
VI2910-ECC2910	I756346.D	05/02/23 19:20	n/a	Ending cal 5

Run Sequence Report

Job Number: FC5736
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Run ID: VI2922	**Method:** SW846 8260D	**Instrument ID:** GCMSI

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
VI2922-BFB	I756630.D	05/10/23 07:58	n/a	BFB Tune
VI2922-CC2910	I756631.D	05/10/23 08:27	n/a	Continuing cal 4
VI2922-BS	I756632.D	05/10/23 09:03	n/a	Blank Spike
VI2922-MB	I756634.D	05/10/23 09:52	n/a	Method Blank
ZZZZZZ	I756635.D	05/10/23 10:16	n/a	(unrelated sample)
FC5815-70	I756636.D	05/10/23 10:42	n/a	(used for QC only; not part of job FC5736)
ZZZZZZ	I756637.D	05/10/23 11:07	n/a	(unrelated sample)
ZZZZZZ	I756638.D	05/10/23 11:31	n/a	(unrelated sample)
ZZZZZZ	I756641.D	05/10/23 12:44	n/a	(unrelated sample)
ZZZZZZ	I756642.D	05/10/23 13:09	n/a	(unrelated sample)
ZZZZZZ	I756643.D	05/10/23 13:33	n/a	(unrelated sample)
ZZZZZZ	I756644.D	05/10/23 13:58	n/a	(unrelated sample)
ZZZZZZ	I756645.D	05/10/23 14:23	n/a	(unrelated sample)
ZZZZZZ	I756646.D	05/10/23 14:47	n/a	(unrelated sample)
ZZZZZZ	I756647.D	05/10/23 15:12	n/a	(unrelated sample)
FC5736-4	I756648.D	05/10/23 15:37	n/a	CCF-IW0083IS-030.0-20230501
FC5736-5	I756649.D	05/10/23 16:02	n/a	CCF-IW0083S-020.0-20230501
FC5736-6	I756650.D	05/10/23 16:26	n/a	CCF-IW0029ID-042.5-20230501
FC5736-7	I756651.D	05/10/23 16:51	n/a	CCF-IW0092-045.0-20230501
FC5736-8	I756652.D	05/10/23 17:16	n/a	CCF-TB-20230501-01
ZZZZZZ	I756653.D	05/10/23 17:41	n/a	(unrelated sample)
ZZZZZZ	I756654.D	05/10/23 18:05	n/a	(unrelated sample)
FC5815-70MS	I756655.D	05/10/23 18:30	n/a	Matrix Spike
FC5815-70MSD	I756656.D	05/10/23 18:55	n/a	Matrix Spike Duplicate
VI2922-ECC2910	I756657.D	05/10/23 19:20	n/a	Ending cal 4

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Hydrogeologic, Inc.

CCF West NAM; KSC, FL

NS1003.04.06

SGS Job Number: FC6313

Sampling Date: 05/24/23

Report to:

jtracy@hgl.com
drivers@hgl.com

ATTN: Distribution3

Total number of pages in report: 50

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Norm Farmer
Technical Director

Client Service contact: Ariel Hartney 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001) DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), AL, AK, AR, CT, IA, KY, MA, MI. MS, ND, NH, NV, OK, OR, IL, UT, VT, WA, WI, WV

Test results relate only to samples analyzed.

Sections: 1 2 3 4 5 6

Table of Contents

Sample Summary

Hydrogeologic, Inc.

Job No: FC6313

CCF West NAM; KSC, FL
Project No: NS1003.04.06

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FC6313-1	05/24/23	07:21	WD	05/24/23	AQ	Ground Water	CCF-IW0003S-008.0-20230524
FC6313-2	05/24/23	06:30	WD	05/24/23	AQ	Trip Blank Water	CCF-TB-20230524

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Hydrogeologic, Inc. **Job No:** FC6313

Site: CCF West NAM; KSC, FL **Report Date:** 5/30/2023 2:02:22 PM

On 05/24/2023, 1 Sample(s), 1 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 1.2 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC6313 was assigned to the project.

Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section. Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Volatiles By Method SW846 8260D

Matrix: AQ **Batch ID:** V2P3771

Sample(s) FC6258-7MS, FC6258-7MSD were used as the QC samples indicated.

RPD(s) for MSD for cis-1,2-Dichloroethylene, trans-1,2-Dichloroethylene, Vinyl Chloride are outside control limits for sample FC6258-7MSD. Probable cause is due to sample non-homogeneity.

FC6313-1: Dilution required due to matrix interference (non-target compounds above calibration range).

V2P3771-MB: Sample was treated with an anti-foaming agent.

SGS North America Inc. - Orlando certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted. Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria. SGS North America Inc.- Orlando is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety.

Narrative prepared by:

_____

Kim Benham, Client Services *(Signature on File)*

Summary of Hits

Job Number: FC6313
Account: Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL
Collected: 05/24/23

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FC6313-1	**CCF-IW0003S-008.0-20230524**					
cis-1,2-Dichloroethylene [a]		133	100	50	ug/l	SW846 8260D
Trichloroethylene [a]		807	100	50	ug/l	SW846 8260D
FC6313-2	**CCF-TB-20230524**					

No hits reported in this sample.

(a) Dilution required due to matrix interference (non-target compounds above calibration range).

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	CCF-IW0003S-008.0-20230524		
Lab Sample ID:	FC6313-1	**Date Sampled:**	05/24/23
Matrix:	AQ - Ground Water	**Date Received:**	05/24/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CCF West NAM; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	2P99689.D	100	05/26/23 13:45	JW	n/a	n/a	V2P3771
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	133	100	50	28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	50 U	100	50	22	ug/l	
79-01-6	Trichloroethylene	807	100	50	35	ug/l	
75-01-4	Vinyl Chloride	50 U	100	50	41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		83-118%
17060-07-0	1,2-Dichloroethane-D4	100%		79-125%
2037-26-5	Toluene-D8	102%		85-112%
460-00-4	4-Bromofluorobenzene	98%		83-118%

(a) Dilution required due to matrix interference (non-target compounds above calibration range).

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: CCF-TB-20230524
Lab Sample ID: FC6313-2
Matrix: AQ - Trip Blank Water
Method: SW846 8260D
Project: CCF West NAM; KSC, FL

Date Sampled: 05/24/23
Date Received: 05/24/23
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2P99686.D	1	05/26/23 12:28	JW	n/a	n/a	V2P3771
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-01-4	Vinyl Chloride	0.50 U	1.0	0.50	0.41	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%		83-118%
17060-07-0	1,2-Dichloroethane-D4	94%		79-125%
2037-26-5	Toluene-D8	106%		85-112%
460-00-4	4-Bromofluorobenzene	104%		83-118%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- QC Evaluation: DOD QSM5.x Limits

FC6313

SGS North America Inc - Orlando

Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # : PAGE 1 OF 1

SGS - ORLANDO Quote # | SKIFF #

Client / Reporting Information

Company Name: HGL, Inc.
Address: 2405 N. Courtney Parkway, STE 203
City: Merrit Island State: FL Zip:32937
Project Contact: Denise Rivers Email:drivers@hgl.com
Phone #:910-233-8460
Sampler(s) Name(s) (Printed)
Sampler 1: William Duttenhaver Sampler 2:

Project Information

Project Name: CCF West LTM
Street Kennedy Space Center
City Merritt Island State FL
Project # NS1003.04.06
Fax #
Client Purchase Order #

Analytical Information

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; OI - Oil; LIQ - Other Liquid; AIR - Air

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	(8260B) - TCE, cDCE, tDCE, and VC only	LAB USE ONLY
1	CCF-IW0003S-008.0-20230524	5/24/23	07:21	WD	GW	3			X							X	
2	CCF-TB-20230524-01	5/24/23	06:30	WD	WW	2			X							X	

INITIAL ASSESSMENT SP

LABEL VERIFICATION AB

Turnaround Time (Business days)

X 10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [ ] EDD'S

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1	HGL	5/24/23 12:00	2	3		4
	Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
	5		6	7		8

5/24/23 1530

Lab Use Only : Cooler Temperature (s) Celsius (corrected): 1.2 IR#1

http://www.sgs.com/en/terms-and-conditions

COC IW0003S Rev 031318

FC6313: Chain of Custody
Page 1 of 2

SGS Sample Receipt Summary

Job Number: FC6313 **Client:** HGL **Project:** CCF WEST LTM

Date / Time Received: 5/24/2023 3:30:00 PM **Delivery Method:** COURIER **Airbill #'s:** N/A

Therm ID: IR 1; **Therm CF:** -0.1; **# of Coolers:** 1

Cooler Temps (Raw Measured) °C: Cooler 1: (1.3);

Cooler Temps (Corrected) °C: Cooler 1: (1.2);

Cooler Information	Y	or	N
1. Custody Seals Present	☑		☐
2. Custody Seals Intact	☑		☐
3. Temp criteria achieved	☑		☐
4. Cooler temp verification	IR Gun		
5. Cooler media	Ice (Bag)		

Trip Blank Information	Y	or	N	N/A
1. Trip Blank present / cooler	☑		☐	☐
2. Trip Blank listed on COC	☑		☐	☐

	W	or	S	N/A
3. Type Of TB Received	☑		☐	☐

Sample Information	Y	or	N	N/A
1. Sample labels present on bottles	☑		☐	
2. Samples preserved properly	☑		☐	
3. Sufficient volume/containers recvd for analysis:	☑		☐	
4. Condition of sample	Intact			
5. Sample recvd within HT	☑		☐	
6. Dates/Times/IDs on COC match Sample Label	☑		☐	
7. VOCs have headspace	☐		☑	☐
8. Bottles received for unspecified tests	☐		☑	
9. Compositing instructions clear	☐		☐	☑
10. Voa Soil Kits/Jars received past 48hrs?	☐		☐	☑
11. % Solids Jar received?	☐		☐	☑
12. Residual Chlorine Present?	☐		☐	☑

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____ Number of 5035 Field Kits: _____ Number of Lab Filtered Metals: _____

Test Strip Lot #s: pH 0-3 230320 pH 10-12 _____ Other: (Specify) pH 1.0 - 12.0 222221

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: SHAYLAP Date: 5/24/2023 3:30:00 PM Reviewer: _____ Date: _____

FC6313: Chain of Custody
Page 2 of 2

QC Evaluation: DOD QSM5.x Limits

Job Number: FC6313
Account: Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL
Collected: 05/24/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V2P3771	SW846 8260D						
V2P3771-BS	156-59-2	cis-1,2-Dichloroethylene	BSP	REC	104	%	78-123
V2P3771-BS	156-60-5	trans-1,2-Dichloroethylene	BSP	REC	110	%	75-124
V2P3771-BS	79-01-6	Trichloroethylene	BSP	REC	110	%	79-123
V2P3771-BS	75-01-4	Vinyl Chloride	BSP	REC	94	%	58-137
V2P3771-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	96	%	80-119
V2P3771-BS	17060-07-0	1,2-Dichloroethane-D4	BSP	SURR	97	%	81-118
V2P3771-BS	2037-26-5	Toluene-D8	BSP	SURR	100	%	89-112
V2P3771-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	101	%	85-114
FC6258-7MS*	156-59-2	cis-1,2-Dichloroethylene	MS	REC	96	%	78-123
FC6258-7MS*	156-60-5	trans-1,2-Dichloroethylene	MS	REC	100	%	75-124
FC6258-7MS*	79-01-6	Trichloroethylene	MS	REC	101	%	79-123
FC6258-7MS*	75-01-4	Vinyl Chloride	MS	REC	87	%	58-137
FC6258-7MS*	1868-53-7	Dibromofluoromethane	MS	SURR	97	%	80-119
FC6258-7MS*	17060-07-0	1,2-Dichloroethane-D4	MS	SURR	100	%	81-118
FC6258-7MS*	2037-26-5	Toluene-D8	MS	SURR	99	%	89-112
FC6258-7MS*	460-00-4	4-Bromofluorobenzene	MS	SURR	101	%	85-114
FC6258-7MSD*	156-59-2	cis-1,2-Dichloroethylene	MSD	REC	115	%	78-123
FC6258-7MSD*	156-59-2	cis-1,2-Dichloroethylene	MSD	RPD	18	%	20
FC6258-7MSD*	156-60-5	trans-1,2-Dichloroethylene	MSD	REC	122	%	75-124
FC6258-7MSD*	156-60-5	trans-1,2-Dichloroethylene	MSD	RPD	20	%	20
FC6258-7MSD*	79-01-6	Trichloroethylene	MSD	REC	123	%	79-123
FC6258-7MSD*	79-01-6	Trichloroethylene	MSD	RPD	8	%	20
FC6258-7MSD*	75-01-4	Vinyl Chloride	MSD	REC	105	%	58-137
FC6258-7MSD*	75-01-4	Vinyl Chloride	MSD	RPD	19	%	20
FC6258-7MSD*	1868-53-7	Dibromofluoromethane	MSD	SURR	95	%	80-119
FC6258-7MSD*	17060-07-0	1,2-Dichloroethane-D4	MSD	SURR	97	%	81-118
FC6258-7MSD*	2037-26-5	Toluene-D8	MSD	SURR	102	%	89-112
FC6258-7MSD*	460-00-4	4-Bromofluorobenzene	MSD	SURR	99	%	85-114
V2P3771-MB	1868-53-7	Dibromofluoromethane	MB	SURR	94	%	80-119
V2P3771-MB	17060-07-0	1,2-Dichloroethane-D4	MB	SURR	94	%	81-118
V2P3771-MB	2037-26-5	Toluene-D8	MB	SURR	105	%	89-112
V2P3771-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	106	%	85-114
FC6313-1	1868-53-7	Dibromofluoromethane	SAMP	SURR	97	%	80-119
FC6313-1	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	100	%	81-118
FC6313-1	2037-26-5	Toluene-D8	SAMP	SURR	102	%	89-112
FC6313-1	460-00-4	4-Bromofluorobenzene	SAMP	SURR	98	%	85-114
FC6313-2	1868-53-7	Dibromofluoromethane	SAMP	SURR	94	%	80-119
FC6313-2	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	94	%	81-118
FC6313-2	2037-26-5	Toluene-D8	SAMP	SURR	106	%	89-112
FC6313-2	460-00-4	4-Bromofluorobenzene	SAMP	SURR	104	%	85-114

* Sample used for QC is not from job FC6313

MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries
- Run Sequence Reports

Method Blank Summary

Job Number: FC6313
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2P3771-MB [a]	2P99684.D	1	05/26/23	JW	n/a	n/a	V2P3771

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC6313-1, FC6313-2

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.35	ug/l	
75-01-4	Vinyl Chloride	ND	1.0	0.41	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	94%	83-118%
17060-07-0	1,2-Dichloroethane-D4	94%	79-125%
2037-26-5	Toluene-D8	105%	85-112%
460-00-4	4-Bromofluorobenzene	106%	83-118%

(a) Sample was treated with an anti-foaming agent.

Blank Spike Summary

Job Number: FC6313
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2P3771-BS	2P99683.D	1	05/26/23	JW	n/a	n/a	V2P3771

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC6313-1, FC6313-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
156-59-2	cis-1,2-Dichloroethylene	25	26.0	104	78-120
156-60-5	trans-1,2-Dichloroethylene	25	27.5	110	76-127
79-01-6	Trichloroethylene	25	27.4	110	81-126
75-01-4	Vinyl Chloride	25	23.4	94	69-159

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	96%	83-118%
17060-07-0	1,2-Dichloroethane-D4	97%	79-125%
2037-26-5	Toluene-D8	100%	85-112%
460-00-4	4-Bromofluorobenzene	101%	83-118%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC6313
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FC6258-7MS	2P99692.D	250	05/26/23	JW	n/a	n/a	V2P3771
FC6258-7MSD	2P99693.D	250	05/26/23	JW	n/a	n/a	V2P3771
FC6258-7	2P99688.D	250	05/26/23	JW	n/a	n/a	V2P3771

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC6313-1, FC6313-2

CAS No.	Compound	FC6258-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
156-59-2	cis-1,2-Dichloroethylene	ND		6250	6000	96	6250	7190	115	18*	78-120/15
156-60-5	trans-1,2-Dichloroethylene	ND		6250	6260	100	6250	7650	122	20*	76-127/17
79-01-6	Trichloroethylene	9700		6250	16000	101	6250	17400	123	8	81-126/15
75-01-4	Vinyl Chloride	ND		6250	5410	87	6250	6540	105	19*	69-159/18

CAS No.	Surrogate Recoveries	MS	MSD	FC6258-7	Limits
1868-53-7	Dibromofluoromethane	97%	95%	94%	83-118%
17060-07-0	1,2-Dichloroethane-D4	100%	97%	97%	79-125%
2037-26-5	Toluene-D8	99%	102%	103%	85-112%
460-00-4	4-Bromofluorobenzene	101%	99%	102%	83-118%

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Job Number: FC6313
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample:	V2P3752-BFB	**Injection Date:**	05/09/23
Lab File ID:	2P99270.D	**Injection Time:**	07:39
Instrument ID:	GCMS2P		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	50997	16.0		Pass
75	30.0 - 60.0% of mass 95	156565	49.3		Pass
95	Base peak, 100% relative abundance	317781	100.0		Pass
96	5.0 - 9.0% of mass 95	22384	7.04		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 100.0% of mass 95	280298	88.2		Pass
175	5.0 - 9.0% of mass 174	21236	6.68	(7.58) [a]	Pass
176	95.0 - 101.0% of mass 174	267968	84.3	(95.6) [a]	Pass
177	5.0 - 9.0% of mass 176	18367	5.78	(6.85) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2P3752-IC3752	2P99271.D	05/09/23	08:06	00:27	Initial cal 1
V2P3752-IC3752	2P99272.D	05/09/23	08:31	00:52	Initial cal 2
V2P3752-IC3752	2P99273.D	05/09/23	08:57	01:18	Initial cal 3
V2P3752-IC3752	2P99274.D	05/09/23	09:23	01:44	Initial cal 4
V2P3752-ICC3752	2P99275.D	05/09/23	09:49	02:10	Initial cal 5
V2P3752-IC3752	2P99276.D	05/09/23	10:15	02:36	Initial cal 6
V2P3752-IC3752	2P99277.D	05/09/23	10:41	03:02	Initial cal 7
V2P3752-ICV3752	2P99279.D	05/09/23	11:34	03:55	Initial cal verification 5
V2P3752-CC3752	2P99279A.D	05/09/23	11:34	03:55	Continuing cal 5
V2P3752-ICV3752	2P99280.D	05/09/23	12:00	04:21	Initial cal verification 4
V2P3752-BS	2P99280A.D	05/09/23	12:00	04:21	Blank Spike
V2P3752-MB	2P99282.D	05/09/23	12:52	05:13	Method Blank
FC5667-1	2P99283.D	05/09/23	13:18	05:39	(used for QC only; not part of job FC6313)
ZZZZZZ	2P99284.D	05/09/23	13:44	06:05	(unrelated sample)
ZZZZZZ	2P99285.D	05/09/23	14:10	06:31	(unrelated sample)
ZZZZZZ	2P99286.D	05/09/23	14:36	06:57	(unrelated sample)
ZZZZZZ	2P99287.D	05/09/23	15:03	07:24	(unrelated sample)
ZZZZZZ	2P99288.D	05/09/23	15:29	07:50	(unrelated sample)
ZZZZZZ	2P99289.D	05/09/23	15:55	08:16	(unrelated sample)
ZZZZZZ	2P99290.D	05/09/23	16:21	08:42	(unrelated sample)
ZZZZZZ	2P99291.D	05/09/23	16:47	09:08	(unrelated sample)
ZZZZZZ	2P99292.D	05/09/23	17:13	09:34	(unrelated sample)
FC5667-1MS	2P99293.D	05/09/23	17:40	10:01	Matrix Spike
FC5667-1MSD	2P99294.D	05/09/23	18:06	10:27	Matrix Spike Duplicate

Instrument Performance Check (BFB)

Job Number: FC6313
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample:	V2P3752-BFB	**Injection Date:**	05/09/23
Lab File ID:	2P99270.D	**Injection Time:**	07:39
Instrument ID:	GCMS2P		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2P3752-ECC3752	2P99295.D	05/09/23	18:32	10:53	Ending cal 5

Instrument Performance Check (BFB)

Job Number: FC6313
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2P3771-BFB
Lab File ID: 2P99681.D
Instrument ID: GCMS2P
Injection Date: 05/26/23
Injection Time: 10:20

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	43373	16.5		Pass
75	30.0 - 60.0% of mass 95	126365	48.2		Pass
95	Base peak, 100% relative abundance	262144	100.0		Pass
96	5.0 - 9.0% of mass 95	17234	6.57		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 100.0% of mass 95	225664	86.1		Pass
175	5.0 - 9.0% of mass 174	17146	6.54	(7.60) [a]	Pass
176	95.0 - 101.0% of mass 174	218581	83.4	(96.9) [a]	Pass
177	5.0 - 9.0% of mass 176	13837	5.28	(6.33) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2P3771-CC3752	2P99682.D	05/26/23	10:46	00:26	Continuing cal 5
V2P3771-BS	2P99683.D	05/26/23	11:11	00:51	Blank Spike
V2P3771-MB	2P99684.D	05/26/23	11:37	01:17	Method Blank
ZZZZZZ	2P99685.D	05/26/23	12:02	01:42	(unrelated sample)
FC6313-2	2P99686.D	05/26/23	12:28	02:08	CCF-TB-20230524
ZZZZZZ	2P99687.D	05/26/23	12:53	02:33	(unrelated sample)
FC6258-7	2P99688.D	05/26/23	13:19	02:59	(used for QC only; not part of job FC6313)
FC6313-1	2P99689.D	05/26/23	13:45	03:25	CCF-IW0003S-008.0-20230524
ZZZZZZ	2P99690.D	05/26/23	14:10	03:50	(unrelated sample)
ZZZZZZ	2P99691.D	05/26/23	14:36	04:16	(unrelated sample)
FC6258-7MS	2P99692.D	05/26/23	15:01	04:41	Matrix Spike
FC6258-7MSD	2P99693.D	05/26/23	15:27	05:07	Matrix Spike Duplicate
ZZZZZZ	2P99695.D	05/26/23	16:18	05:58	(unrelated sample)
ZZZZZZ	2P99696.D	05/26/23	16:43	06:23	(unrelated sample)
ZZZZZZ	2P99697.D	05/26/23	17:09	06:49	(unrelated sample)
ZZZZZZ	2P99698.D	05/26/23	17:34	07:14	(unrelated sample)
ZZZZZZ	2P99699.D	05/26/23	18:00	07:40	(unrelated sample)
ZZZZZZ	2P99700.D	05/26/23	18:26	08:06	(unrelated sample)
ZZZZZZ	2P99701.D	05/26/23	18:51	08:31	(unrelated sample)
ZZZZZZ	2P99702.D	05/26/23	19:17	08:57	(unrelated sample)
ZZZZZZ	2P99703.D	05/26/23	19:42	09:22	(unrelated sample)
ZZZZZZ	2P99704.D	05/26/23	20:08	09:48	(unrelated sample)
ZZZZZZ	2P99705.D	05/26/23	20:33	10:13	(unrelated sample)
ZZZZZZ	2P99706.D	05/26/23	20:59	10:39	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: FC6313
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample:	V2P3771-BFB	**Injection Date:**	05/26/23
Lab File ID:	2P99681.D	**Injection Time:**	10:20
Instrument ID:	GCMS2P		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	2P99707.D	05/26/23	21:24	11:04	(unrelated sample)
V2P3771-ECC3752	2P99708.D	05/26/23	21:50	11:30	Ending cal 5

Internal Standard Area Summary

Job Number: FC6313
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Check Std:	V2P3771-CC3752	**Injection Date:**	05/26/23
Lab File ID:	2P99682.D	**Injection Time:**	10:46
Instrument ID:	GCMS2P	**Method:**	SW846 8260D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
Initial Cal [a]	1202975	3.73	1185660	5.69	698671	7.43
Check Std [b]	1050346	3.73	1030393	5.69	587492	7.43
Upper Limit [c]	2100692	3.90	2060786	5.86	1174984	7.60
Lower Limit [d]	525173	3.56	515197	5.52	293746	7.26

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
V2P3771-BS	1090887	3.73	1053598	5.69	596579	7.43
V2P3771-MB [e]	1028287	3.73	929173	5.69	506974	7.42
ZZZZZZ	1003947	3.73	911405	5.69	482019	7.42
FC6313-2	989710	3.73	907087	5.69	477849	7.42
ZZZZZZ	975802	3.73	895581	5.69	474131	7.43
FC6258-7	973454	3.73	921882	5.69	477581	7.43
FC6313-1 [f]	955163	3.73	906172	5.69	498275	7.42
ZZZZZZ	946690	3.73	890835	5.70	478307	7.43
ZZZZZZ	920523	3.73	853705	5.69	464048	7.43
FC6258-7MS	995963	3.73	1002442	5.69	556455	7.42
FC6258-7MSD	1083508	3.73	1052226	5.69	603197	7.42
ZZZZZZ	968760	3.73	885301	5.69	485646	7.43
ZZZZZZ	957117	3.73	888600	5.69	479863	7.43
ZZZZZZ	981641	3.73	894917	5.69	475288	7.42
ZZZZZZ	967758	3.73	928908	5.69	490089	7.42
ZZZZZZ	967650	3.73	903872	5.69	482513	7.42
ZZZZZZ	960588	3.73	904376	5.69	500732	7.42
ZZZZZZ	919397	3.73	851470	5.69	448227	7.42
ZZZZZZ	902808	3.73	857663	5.69	451752	7.43
ZZZZZZ	891290	3.73	839030	5.69	437545	7.43
ZZZZZZ	878973	3.73	826272	5.70	439530	7.43
ZZZZZZ	880850	3.73	833355	5.69	452690	7.43
ZZZZZZ	898727	3.73	849172	5.69	464445	7.43
ZZZZZZ	936099	3.73	899410	5.69	523100	7.43
V2P3771-ECC3752	1117134	3.73	1113451	5.69	620483	7.42

IS 1 = Fluorobenzene
IS 2 = Chlorobenzene-D5
IS 3 = 1,4-Dichlorobenzene-d4

(a) Initial Cal is: V2P3752-ICC3752 2P99275.D 05/09/23 09:49
(b) Check Std Limit = -50 to + 100% of initial cal area.
(c) Upper Limit = + 100% of check standard area; Retention time + 0.167 minutes.

Internal Standard Area Summary

Job Number: FC6313
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Check Std:	V2P3771-CC3752	**Injection Date:**	05/26/23
Lab File ID:	2P99682.D	**Injection Time:**	10:46
Instrument ID:	GCMS2P	**Method:**	SW846 8260D

Lab	IS 1		IS 2		IS 3	
Sample ID	**AREA**	**RT**	**AREA**	**RT**	**AREA**	**RT**

(d) Lower Limit = -50% of check standard area; Retention time -0.167 minutes.
(e) Sample was treated with an anti-foaming agent.
(f) Dilution required due to matrix interference (non-target compounds above calibration range).

Surrogate Recovery Summary

Job Number: FC6313
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Method: SW846 8260D **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
FC6313-1	2P99689.D	97	100	102	98
FC6313-2	2P99686.D	94	94	106	104
FC6258-7MS	2P99692.D	97	100	99	101
FC6258-7MSD	2P99693.D	95	97	102	99
V2P3771-BS	2P99683.D	96	97	100	101
V2P3771-MB	2P99684.D	94	94	105	106

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	83-118%
S2 = 1,2-Dichloroethane-D4	79-125%
S3 = Toluene-D8	85-112%
S4 = 4-Bromofluorobenzene	83-118%

Initial Calibration Summary

Job Number: FC6313
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2P3752-ICC3752
Lab FileID: 2P99275.D

Response Factor Report MSVOA13-Y-P

Method : C:\msdchem\1\MET...\V2P_2023-5-09.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Tue May 09 12:07:49 2023
Response via : Initial Calibration

Calibration Files
1 =2P99271.D 2 =2P99272.D 3 =2P99273.D 4 =2P99274.D
5 =2P99275.D 6 =2P99276.D 7 =2P99277.D

Compound	1	2	3	4	5	6	7	Avg	%RSD
1) I Fluorobenzene	----------ISTD----------								
2) Dichlorodifluorom	0.250	0.218	0.235	0.252	0.209	0.227	0.207	0.228	8.05
3)P Chloromethane	0.253	0.203	0.204	0.215	0.190	0.214	0.202	0.211	9.55
4) 1,3-butadiene	0.250	0.376	0.260	0.258	0.221	0.224	0.211	0.257	21.69
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9979									
Response Ratio = 0.00000 + 0.25165 *A + -0.02049 *A^2									
5)C Vinyl Chloride	0.319	0.258	0.256	0.282	0.231	0.255	0.240	0.263	11.17
6) Bromomethane	0.348	0.177	0.144	0.146	0.124	0.132	0.117	0.170	47.70
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9949									
Response Ratio = 0.00000 + 0.15395 *A + -0.01852 *A^2									
7) Chloroethane	0.163	0.118	0.113	0.114	0.098	0.104	0.095	0.115	19.94
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9978									
Response Ratio = 0.00000 + 0.11478 *A + -0.00968 *A^2									
8) Trichlorofluorome	0.451	0.406	0.400	0.404	0.320			0.396	11.88
9) Ethyl Ether	0.244	0.247	0.193	0.208	0.194	0.220	0.215	0.217	10.07
10) Ethanol	0.007	0.010	0.007	0.007	0.006	0.006	0.005	0.007	20.55
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9947									
Response Ratio = 0.00000 + 0.00724 *A + -0.00005 *A^2									
11) 1,2-Dichlorotrifl	0.216	0.314	0.232	0.250	0.220	0.242	0.229	0.243	13.66
12)C 1,1-Dichloroethen	0.239	0.358	0.268	0.305	0.275	0.297	0.282	0.289	12.79
13) Freon 113	0.184	0.265	0.199	0.224	0.200	0.213	0.200	0.212	12.50
14) Carbon Disulfide	0.547	0.626	0.485	0.542	0.491	0.562	0.537	0.541	8.70
15) Iodomethane	0.148	0.132	0.126	0.167	0.171	0.196	0.179	0.160	15.98
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9941									
Response Ratio = 0.00000 + 0.15744 *A + 0.01498 *A^2									
16) Acrolein	0.066	0.071	0.088	0.073	0.064	0.070	0.076	0.073	10.72
17) Allyl chloride	0.248	0.373	0.275	0.287	0.254	0.283	0.270	0.284	14.58
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9956									
Response Ratio = 0.00000 + 0.28430 *A + -0.00669 *A^2									
18) Methylene Chlorid	0.706	0.362	0.287	0.273	0.249	0.279	0.266	0.346	46.98
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9955									
Response Ratio = 0.00000 + 0.28925 *A + -0.01233 *A^2									
19) Acetone	0.202	0.136	0.183	0.148	0.128	0.136	0.138	0.153	18.52
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9942									
Response Ratio = 0.00000 + 0.14748 *A + -0.00128 *A^2									
20) Methyl acetate	0.280	0.366	0.279	0.309	0.297	0.331	0.335	0.314	10.13
21) trans-1,2-Dichlor	0.253	0.362	0.268	0.304	0.276	0.309	0.297	0.295	12.07
22) Hexane	0.174	0.198	0.148	0.168	0.151	0.162	0.156	0.165	10.28

Initial Calibration Summary

Job Number: FC6313
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2P3752-ICC3752
Lab FileID: 2P99275.D

```
23)  Methyl Tert Butyl 0.660 0.890 0.714 0.802 0.770 0.867 0.853 0.794  10.68
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9972
              Response Ratio = 0.00000 + 0.83298 *A

24)  Tert Butyl Alcoho 0.060 0.079 0.068 0.076 0.072 0.081 0.079 0.074  10.38
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9979
              Response Ratio = 0.00000 + 0.07778 *A

25)  Acetonitrile      0.085 0.079 0.062 0.061 0.055 0.066 0.068 0.068  15.46
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9962
              Response Ratio = 0.00000 + 0.05860 *A + 0.00045 *A^2

26)  Di-isopropyl ethe 0.591 0.791 0.611 0.697 0.657 0.745 0.728 0.688  10.55
27)  Chloroprene       1.403 1.239 1.031 1.163 1.064 1.191 1.145 1.177  10.45
28)P 1,1-Dichloroethan 0.336 0.488 0.371 0.425 0.390 0.440 0.423 0.410  12.09
29)  Acrylonitrile     0.226 0.158 0.133 0.152 0.139 0.157 0.149 0.159  19.55
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9974
              Response Ratio = 0.00000 + 0.14695 *A + 0.00037 *A^2

30)  ETBE              0.574 0.809 0.635 0.728 0.689 0.784 0.772 0.713  12.01
31)  Vinyl acetate     0.759 0.520 0.488 0.588 0.547 0.609 0.583 0.585  14.93
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9975
              Response Ratio = 0.00000 + 0.55164 *A + 0.00422 *A^2

32)  cis-1,2-Dichloroe 0.247 0.337 0.249 0.275 0.256 0.291 0.284 0.277  11.39
33)  2,2-Dichloropropa 0.264 0.364 0.285 0.314 0.284 0.313 0.298 0.303  10.59
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9981
              Response Ratio = 0.00000 + 0.30689 *A + -0.00336 *A^2

34)  Bromochloromethan 0.152 0.177 0.135 0.148 0.136 0.149 0.144 0.149   9.54
35)  Cyclohexane       0.282 0.408 0.313 0.362 0.328 0.361 0.342 0.342  11.74
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9973
              Response Ratio = 0.00000 + 0.34685 *A

36)C Chloroform        0.392 0.559 0.418 0.458 0.426 0.478 0.461 0.456  11.86
37)  Ethyl acetate     0.594 0.402 0.366 0.425 0.395 0.446 0.431 0.437  16.97
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9978
              Response Ratio = 0.00000 + 0.40145 *A + 0.00364 *A^2

38)  Tetrahydrofuran   0.174 0.169 0.126 0.152 0.144 0.159 0.156 0.154  10.42
39)S Dibromofluorometh 0.253 0.253 0.253 0.250 0.251 0.252 0.251 0.252   0.48
40)  Carbon Tetrachlor 0.261 0.386 0.297 0.339 0.312 0.338 0.330 0.323  12.11
41)  1,1,1-Trichloroet 0.316 0.457 0.357 0.391 0.358 0.400 0.382 0.380  11.57
42)  2-Butanone        0.222 0.206 0.289 0.248 0.215 0.231 0.240 0.236  11.67
43)  1,1-Dichloroprope 0.272 0.374 0.287 0.328 0.296 0.327 0.308 0.313  10.80
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9972
              Response Ratio = 0.00000 + 0.31722 *A + -0.00249 *A^2

44)  tert-Butyl format 0.142 0.164 0.182 0.190 0.178 0.198 0.208 0.180  12.27
45)  Propionitrile     0.049 0.081 0.066 0.070 0.066 0.074 0.071 0.068  14.55
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9976
              Response Ratio = 0.00000 + 0.06847 *A + 0.00015 *A^2

46)  Methacrylonitrile 0.195 0.296 0.229 0.244 0.225 0.247 0.238 0.239  12.66
47)  Benzene           0.857 1.217 0.941 1.072 1.000 1.122 1.081 1.042  11.46
48)  TAME              0.599 0.831 0.675 0.787 0.763 0.869 0.869 0.770  13.18
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9961
              Response Ratio = 0.00000 + 0.83411 *A

49)S 1,2-Dichloroethan 0.272 0.270 0.269 0.273 0.275 0.258 0.259 0.268   2.51
```

Initial Calibration Summary

Job Number: FC6313
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2P3752-ICC3752
Lab FileID: 2P99275.D

```
50)  Isobutyl alcohol  0.025 0.026 0.024 0.028 0.025 0.028 0.026 0.026   6.07
51)  1,2-Dichloroethan 0.322 0.397 0.318 0.350 0.333 0.372 0.357 0.350   8.14
52)  Tert Amyl Alcohol 0.037 0.062 0.052 0.064 0.061 0.070 0.067 0.059  18.92
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9968
              Response Ratio = 0.00000 + 0.06605 *A

53)  Trichloroethene   0.250 0.324 0.250 0.273 0.256 0.282 0.275 0.273   9.53
54)  Methylcyclohexane 0.315 0.458 0.354 0.412 0.374 0.410 0.388 0.387  11.84
55)  Dibromomethane    0.137 0.180 0.138 0.163 0.155 0.175 0.174 0.160  11.07
56)C 1,2-Dichloropropa 0.178 0.265 0.207 0.230 0.217 0.248 0.238 0.226  12.64
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9969
              Response Ratio = 0.00000 + 0.23584 *A

57)  Bromodichlorometh 0.244 0.357 0.280 0.331 0.315 0.358 0.356 0.320  13.74
58)  Methyl methacryla 0.106 0.280 0.241 0.291 0.275 0.326 0.323 0.263  28.51
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9978
              Response Ratio = 0.00000 + 0.25938 *A + 0.03540 *A^2

59)  1,4-Dioxane       0.003 0.007 0.006 0.006 0.006 0.007 0.007 0.006  22.02
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9987
              Response Ratio = 0.00000 + 0.00606 *A + 0.00003 *A^2

60)  2-Chloroethyl vin 0.130 0.170 0.196 0.208 0.193 0.210 0.215 0.189  15.82
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9992
              Response Ratio = 0.00000 + 0.18860 *A + 0.00273 *A^2

61)  cis-1,3-Dichlorop 0.272 0.392 0.327 0.385 0.369 0.425 0.422 0.370  14.72
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9984
              Response Ratio = 0.00000 + 0.35498 *A + 0.03696 *A^2


62) I   Chlorobenzene-d5      ----------------ISTD---------------------
63)S Toluene-d8        1.132 1.149 1.144 1.115 1.110 1.108 1.102 1.123   1.68
64)C Toluene           1.114 1.445 1.127 1.233 1.128 1.274 1.232 1.222   9.59
65)  2-Nitropropane    0.066 0.092 0.080 0.102 0.100 0.120 0.118 0.097  20.19
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9974
              Response Ratio = 0.00000 + 0.09126 *A + 0.00298 *A^2

66)  4-Methyl-2-pentan 0.293 0.355 0.534 0.464 0.398 0.441 0.451 0.419  18.78
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9948
              Response Ratio = 0.00000 + 0.43063 *A + 0.00164 *A^2

67)  trans-1,3-Dichlor 0.222 0.383 0.310 0.390 0.373 0.431 0.428 0.362  20.35
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9979
              Response Ratio = 0.00000 + 0.35142 *A + 0.04241 *A^2

68)  Tetrachloroethene 0.265 0.408 0.315 0.342 0.314 0.350 0.343 0.334  13.08
69)  Ethyl methacrylat 0.229 0.418 0.367 0.421 0.399 0.461 0.461 0.394  20.25
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9985
              Response Ratio = 0.00000 + 0.38417 *A + 0.04181 *A^2

70)  1,1,2-Trichloroet 0.189 0.256 0.203 0.223 0.209 0.234 0.233 0.221  10.19
71)  Dibromochlorometh 0.194 0.306 0.249 0.299 0.282 0.330 0.331 0.284  17.11
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9980
              Response Ratio = 0.00000 + 0.27018 *A + 0.03279 *A^2

72)  1,3-Dichloropropa 0.327 0.501 0.399 0.446 0.420 0.478 0.465 0.434  13.43
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9971
              Response Ratio = 0.00000 + 0.45715 *A
```

Initial Calibration Summary

Job Number: FC6313
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2P3752-ICC3752
Lab FileID: 2P99275.D

```
73)  1,2-Dibromoethane 0.211 0.304 0.241 0.291 0.270 0.315 0.311 0.278  14.21
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9976
              Response Ratio = 0.00000 + 0.26590 *A + 0.02513 *A^2

74)  3,3-dimethyl-1-bu 0.035 0.057 0.075 0.081 0.072 0.079 0.078 0.068  24.22
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9980
              Response Ratio = 0.00000 + 0.07285 *A + 0.00006 *A^2

75)  2-hexanone        0.202 0.324 0.508 0.487 0.427 0.463 0.454 0.409  26.60
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9964
              Response Ratio = 0.00000 + 0.44716 *A + 0.00098 *A^2

76)  1-Chlorohexane    0.322 0.452 0.360 0.408 0.336 0.411 0.407 0.385  12.15
77)C Ethylbenzene      1.161 1.555 1.258 1.412 1.295 1.418 1.415 1.359   9.57
78)P Chlorobenzene     0.763 1.014 0.795 0.884 0.813 0.914 0.891 0.868   9.81
79)  1,1,1,2-Tetrachlo 0.234 0.329 0.267 0.299 0.283 0.328 0.322 0.295  12.11
80)  m,p-Xylene        0.826 1.208 0.956 1.102 1.012 1.147 1.105 1.051  12.32
81)  o-Xylene          0.837 1.245 0.993 1.151 1.028 1.187 1.166 1.087  13.00
82)  Styrene           0.507 0.876 0.719 0.897 0.853 1.001 0.992 0.835  20.68
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9977
              Response Ratio = 0.00000 + 0.80513 *A + 0.10376 *A^2

83)P Bromoform         0.129 0.185 0.155 0.198 0.198 0.238 0.239 0.192  21.07
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9978
              Response Ratio = 0.00000 + 0.17542 *A + 0.03485 *A^2

84)  Isopropylbenzene  0.941 1.454 1.178 1.368 1.265 1.447 1.400 1.293  14.29
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9977
              Response Ratio = 0.00000 + 1.28086 *A + 0.07128 *A^2


85) I   1,4-Dichlorobenzene-d ----------------ISTD---------------------
86)S 4-Bromofluorobenz 0.736 0.740 0.738 0.725 0.731 0.736 0.730 0.734   0.72
87)  cis-1,4-Dichloro- 0.095 0.185 0.154 0.177 0.169 0.194 0.192 0.167  20.60
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9982
              Response Ratio = 0.00000 + 0.16433 *A + 0.01514 *A^2

88)  n-Propylbenzene   1.976 2.873 2.244 2.549 2.398 2.685 2.617 2.477  12.06
89)  Bromobenzene      0.493 0.713 0.546 0.616 0.583 0.649 0.646 0.607  12.01
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9972
              Response Ratio = 0.00000 + 0.63047 *A

90)P 1,1,2,2-Tetrachlo 0.624 0.816 0.638 0.735 0.704 0.773 0.751 0.720   9.72
91)  1,3,5-Trimethylbe 1.336 2.125 1.608 1.895 1.775 2.032 1.986 1.822  15.07
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9974
              Response Ratio = 0.00000 + 1.77768 *A + 0.11899 *A^2

92)  2-Chlorotoluene   1.166 1.756 1.338 1.538 1.445 1.637 1.596 1.496  13.24
93)  trans-1,4-Dichlor       0.167 0.150 0.197 0.199 0.234 0.229 0.196  16.90
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9964
              Response Ratio = 0.00000 + 0.17794 *A + 0.02914 *A^2

94)  1,2,3-Trichloropr 0.210 0.308 0.237 0.265 0.257 0.279 0.273 0.261  11.97
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9980
              Response Ratio = 0.00000 + 0.27027 *A

95)  Cyclohexanone     0.026 0.027 0.027 0.031 0.030 0.035 0.034 0.030  12.24
96)  4-Chlorotoluene   1.359 1.765 1.423 1.629 1.530 1.745 1.694 1.592   9.99
97)  tert-Butylbenzene 0.793 1.085 0.834 0.969 0.916 1.027 1.005 0.947  11.15
98)  a-Methyl styrene                                                  0.000  -1.00
```

Initial Calibration Summary

Job Number: FC6313
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2P3752-ICC3752
Lab FileID: 2P99275.D

```
 99)  1,2,4-Trimethylbe 1.207 2.009 1.554 1.848 1.759 1.991 1.969 1.762  16.63
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9979
               Response Ratio = 0.00000 + 1.72056 *A + 0.13846 *A^2

100)  Pentachloroethane 0.241 0.407 0.300 0.330 0.304 0.345 0.335 0.323  15.59
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9966
               Response Ratio = 0.00000 + 0.31883 *A + 0.00954 *A^2

101)  sec-Butylbenzene  1.574 2.424 1.836 2.217 2.071 2.301 2.246 2.096  14.15
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9977
               Response Ratio = 0.00000 + 2.08018 *A + 0.09837 *A^2

102)  4-Isopropyltoluen 1.274 2.032 1.611 1.943 1.857 2.096 2.069 1.840  16.28
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9981
               Response Ratio = 0.00000 + 1.80049 *A + 0.15103 *A^2

103)  1,3-Dichlorobenze 1.019 1.338 1.010 1.169 1.115 1.261 1.234 1.164  10.64
104)  1,2,3-Trimethylbe 1.451 2.051 1.618 1.864 1.787 2.040 2.008 1.831  12.54
105)  1,4-Dichlorobenze 1.246 1.402 1.105 1.209 1.174 1.301 1.268 1.243   7.65
106)  n-Butylbenzene    0.488 0.755 0.640 0.791 0.759 0.842 0.834 0.730  17.27
             ---- Linear regr., Force(0,0) ----  Coefficient =  0.9973
               Response Ratio = 0.00000 + 0.80939 *A

107)  Benzyl Chloride   0.105 0.193 0.164 0.233 0.240 0.288 0.285 0.216  30.77
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9964
               Response Ratio = 0.00000 + 0.20202 *A + 0.04685 *A^2

108)  1,2-Dichlorobenze 0.898 1.297 0.976 1.103 1.070 1.199 1.178 1.103  12.37
109)  1,2-Dibromo-3-Chl 0.097 0.133 0.116 0.145 0.144 0.166 0.168 0.138  18.69
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9986
               Response Ratio = 0.00000 + 0.12946 *A + 0.02106 *A^2

110)  Hexachlorobutadie 0.201 0.239 0.158 0.200 0.183 0.196 0.197 0.196  12.30
111)  1,2,4-Trichlorobe 0.494 0.611 0.451 0.571 0.568 0.654 0.658 0.573  13.61
112)  Naphthalene       1.482 2.036 1.682 2.115 2.115 2.501 2.528 2.066  18.72
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9981
               Response Ratio = 0.00000 + 1.89019 *A + 0.34602 *A^2

113)  1,2,3-Trichlorobe 0.461 0.628 0.492 0.551 0.543 0.621 0.620 0.559  11.93
 ----------------------------------------------------------------------------
 (#) = Out of Range

          V2P_2023-5-09.M        Tue May 09 14:19:53 2023
```

Initial Calibration Verification

Job Number: FC6313
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2P3752-ICV3752
Lab FileID: 2P99279.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\2023-05-09\2P99279.D Vial: 10
Acq On : 9 May 2023 11:34 am Operator: joannel
Sample : ICV3752-5 Inst : MSVOA13-Y-P
Misc : MS53826,V2P3752,,,,, Multiplr: 1.00
MS Integration Params: big.p

Method : C:\msdchem\1\MET...\V2P_2023-5-09.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Tue May 09 12:07:49 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	104	0.00	3.73
2	Dichlorodifluoromethane	0.228	0.301	-32.0#	150	0.00	1.12
3 P	Chloromethane	0.211	0.229	-8.5	126	0.00	1.24
		Amount	Calc.	%Drift			
4	1,3-butadiene	40.000	33.435	16.4	94	0.00	1.31
		AvgRF	CCRF	%Dev			
5 C	Vinyl Chloride	0.263	0.278	-5.7	126	0.00	1.29
		Amount	Calc.	%Drift			
6	Bromomethane	40.000	39.629	0.9	117	0.00	1.50
7	Chloroethane	40.000	41.690	-4.2	119	0.00	1.57
		AvgRF	CCRF	%Dev			
8	Trichlorofluoromethane	0.396	0.347	12.4	113	0.00	1.66
9	Ethyl Ether	0.217	0.254	-17.1	137	0.00	1.87
		Amount	Calc.	%Drift			
10	Ethanol	800.000	766.585	4.2	108	0.00	1.97
		AvgRF	CCRF	%Dev			
11	1,2-Dichlorotrifluoroetha	0.243	0.289	-18.9	137	0.00	1.97
12 C	1,1-Dichloroethene	0.289	0.342	-18.3	130	0.00	1.97
13	Freon 113		----------NA----------				
14	Carbon Disulfide	0.541	0.649	-20.0	138	0.00	1.99
		Amount	Calc.	%Drift			
15	Iodomethane	40.000	45.636	-14.1	119	0.00	2.05
		AvgRF	CCRF	%Dev			
16	Acrolein	0.073	0.079	-8.2	128	0.00	2.15
		Amount	Calc.	%Drift			
17	Allyl chloride	40.000	41.156	-2.9	118	0.00	2.24
18	Methylene Chloride	40.000	44.763	-11.9	131	0.00	2.29
19	Acetone	200.000	208.119	-4.1	121	0.00	2.31
		AvgRF	CCRF	%Dev			
20	Methyl acetate	0.314	0.337	-7.3	118	0.00	2.39
21	trans-1,2-Dichloroethene	0.295	0.352	-19.3	133	0.00	2.39
22	Hexane	0.165	0.198	-20.0	136	0.00	2.46

Initial Calibration Verification

Job Number: FC6313
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2P3752-ICV3752
Lab FileID: 2P99279.D

			Amount	Calc.	%Drift			
23		Methyl Tert Butyl Ether	40.000	47.339	-18.3	134	0.00	2.47
24		Tert Butyl Alcohol	400.000	466.589	-16.6	131	0.00	2.52
25		Acetonitrile	400.000	398.219	0.4	117	0.00	2.55
			AvgRF	CCRF	%Dev			
26		Di-isopropyl ether	0.688	0.823	-19.6	131	0.00	2.69
27		Chloroprene	1.177	1.045	11.2	103	0.00	2.73
28	P	1,1-Dichloroethane	0.410	0.464	-13.2	124	0.00	2.73
			Amount	Calc.	%Drift			
29		Acrylonitrile	200.000	188.349	5.8	105	0.00	2.73
			AvgRF	CCRF	%Dev			
30		ETBE	----------	NA	----------			
			Amount	Calc.	%Drift			
31		Vinyl acetate	200.000	211.069	-5.5	115	0.00	2.86
			AvgRF	CCRF	%Dev			
32		cis-1,2-Dichloroethene	0.277	0.314	-13.4	128	0.00	3.02
			Amount	Calc.	%Drift			
33		2,2-Dichloropropane	----------	NA	----------			
			AvgRF	CCRF	%Dev			
34		Bromochloromethane	0.149	0.164	-10.1	126	0.00	3.13
			Amount	Calc.	%Drift			
35		Cyclohexane	40.000	47.842	-19.6	132	0.00	3.16
			AvgRF	CCRF	%Dev			
36	C	Chloroform	0.456	0.530	-16.2	130	0.00	3.17
			Amount	Calc.	%Drift			
37		Ethyl acetate	200.000	195.886	2.1	108	0.00	3.23
			AvgRF	CCRF	%Dev			
38		Tetrahydrofuran	0.154	0.166	-7.8	120	0.00	3.27
39	S	Dibromofluoromethane	0.252	0.252	0.0	105	0.00	3.27
40		Carbon Tetrachloride	----------	NA	----------			
41		1,1,1-Trichloroethane	0.380	0.449	-18.2	131	0.00	3.30
42		2-Butanone	0.236	0.246	-4.2	119	0.00	3.32
			Amount	Calc.	%Drift			
43		1,1-Dichloropropene	40.000	47.852	-19.6	133	0.00	3.36
			AvgRF	CCRF	%Dev			
44		tert-Butyl formate	0.180	0.227	-26.1#	133	0.00	3.42
			Amount	Calc.	%Drift			
45		Propionitrile	400.000	396.162	1.0	110	0.00	3.47
			AvgRF	CCRF	%Dev			
46		Methacrylonitrile	0.239	0.238	0.4	110	0.00	3.49
47		Benzene	1.042	1.234	-18.4	129	0.00	3.50
			Amount	Calc.	%Drift			
48		TAME	40.000	46.011	-15.0	131	0.00	3.58

Initial Calibration Verification

Job Number: FC6313
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2P3752-ICV3752
Lab FileID: 2P99279.D

			AvgRF	CCRF	%Dev			
49	S	1,2-Dichloroethane-d4	0.268	0.275	-2.6	104	0.00	3.56
50		Isobutyl alcohol	0.026	0.029	-11.5	120	0.00	3.61
51		1,2-Dichloroethane	0.350	0.397	-13.4	125	0.00	3.59
			Amount	Calc.	%Drift			
52		Tert Amyl Alcohol	400.000	473.309	-18.3	133	0.00	3.67
			AvgRF	CCRF	%Dev			
53		Trichloroethene	0.273	0.313	-14.7	128	0.00	3.84
54		Methylcyclohexane	0.387	0.464	-19.9	130	0.00	3.86
55		Dibromomethane	0.160	0.190	-18.8	128	0.00	4.07
			Amount	Calc.	%Drift			
56	C	1,2-Dichloropropane	40.000	46.629	-16.6	132	0.00	4.12
			AvgRF	CCRF	%Dev			
57		Bromodichloromethane	0.320	0.378	-18.1	125	0.00	4.16
			Amount	Calc.	%Drift			
58		Methyl methacrylate	40.000	40.406	-1.0	110	0.00	4.26
59		1,4-Dioxane	800.000	892.287	-11.5	119	0.00	4.29
60		2-Chloroethyl vinyl ether	200.000	210.579	-5.3	114	0.00	4.50
61		cis-1,3-Dichloropropene	40.000	47.550	-18.9	131	0.00	4.55
			AvgRF	CCRF	%Dev			
62	I	Chlorobenzene-d5	1.000	1.000	0.0	105	0.00	5.69
63	S	Toluene-d8	1.123	1.098	2.2	104	0.00	4.68
64	C	Toluene	1.222	1.392	-13.9	130	0.00	4.71
			Amount	Calc.	%Drift			
65		2-Nitropropane	200.000	232.186	-16.1	128	0.00	4.81
66		4-Methyl-2-pentanone	200.000	212.285	-6.1	123	0.00	4.93
67		trans-1,3-Dichloropropene	40.000	44.194	-10.5	121	0.00	4.95
			AvgRF	CCRF	%Dev			
68		Tetrachloroethene	0.334	0.372	-11.4	125	0.00	4.97
			Amount	Calc.	%Drift			
69		Ethyl methacrylate	40.000	42.540	-6.3	118	0.00	5.07
			AvgRF	CCRF	%Dev			
70		1,1,2-Trichloroethane	0.221	0.247	-11.8	124	0.00	5.06
			Amount	Calc.	%Drift			
71		Dibromochloromethane	40.000	46.510	-16.3	131	0.00	5.18
72		1,3-Dichloropropane	40.000	47.318	-18.3	136	0.00	5.24
73		1,2-Dibromoethane	40.000	45.589	-14.0	128	0.00	5.34
74		3,3-dimethyl-1-butanol	2000.000	2176.555	-8.8	119	0.00	5.48
75		2-hexanone	200.000	218.951	-9.5	122	0.00	5.48
			AvgRF	CCRF	%Dev			
76		1-Chlorohexane	0.385	0.449	-16.6	141	0.00	5.70
77	C	Ethylbenzene	1.359	1.535	-13.0	125	0.00	5.73
78	P	Chlorobenzene	0.868	0.972	-12.0	126	0.00	5.71
79		1,1,1,2-Tetrachloroethane	0.295	0.344	-16.6	128	0.00	5.75
80		m,p-Xylene	1.051	1.240	-18.0	129	0.00	5.84
81		o-Xylene	1.087	1.240	-14.1	127	0.00	6.14

Initial Calibration Verification

Job Number: FC6313
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2P3752-ICV3752
Lab FileID: 2P99279.D

			Amount	Calc.	%Drift			
82		Styrene	40.000	47.080	-17.7	131	0.00	6.17
83	P	Bromoform	40.000	45.093	-12.7	124	0.00	6.18
84		Isopropylbenzene	40.000	45.377	-13.4	127	0.00	6.38

			AvgRF	CCRF	%Dev			
85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	105	0.00	7.43
86	S	4-Bromofluorobenzene	0.734	0.724	1.4	104	0.00	6.57

			Amount	Calc.	%Drift			
87		cis-1,4-Dichloro-2-butene	40.000	46.258	-15.6	128	0.00	6.60

			AvgRF	CCRF	%Dev			
88		n-Propylbenzene	2.477	2.894	-16.8	127	0.00	6.68

			Amount	Calc.	%Drift			
89		Bromobenzene	40.000	46.281	-15.7	131	0.00	6.64

			AvgRF	CCRF	%Dev			
90	P	1,1,2,2-Tetrachloroethane	0.720	0.837	-16.3	125	0.00	6.71

			Amount	Calc.	%Drift			
91		1,3,5-Trimethylbenzene	40.000	47.244	-18.1	132	0.00	6.84

			AvgRF	CCRF	%Dev			
92		2-Chlorotoluene	1.496	1.750	-17.0	127	0.00	6.79

			Amount	Calc.	%Drift			
93		trans-1,4-Dichloro-2-Bute	40.000	49.565	-23.9#	135	0.00	6.84
94		1,2,3-Trichloropropane	40.000	47.086	-17.7	130	0.00	6.80

			AvgRF	CCRF	%Dev			
95		Cyclohexanone	0.030	0.148	-393.3#	521#	0.00	6.83
96		4-Chlorotoluene	1.592	1.863	-17.0	128	0.00	6.91
97		tert-Butylbenzene	0.947	1.101	-16.3	126	0.00	7.08
98		a-Methyl styrene	0.000	0.000	0.0	92	0.00	7.22

			Amount	Calc.	%Drift			
99		1,2,4-Trimethylbenzene	40.000	46.560	-16.4	128	0.00	7.13
100		Pentachloroethane	40.000	40.976	-2.4	116	0.00	7.08
101		sec-Butylbenzene	40.000	44.103	-10.3	121	0.00	7.22
102		4-Isopropyltoluene	40.000	45.499	-13.7	125	0.00	7.34

			AvgRF	CCRF	%Dev			
103		1,3-Dichlorobenzene	1.164	1.312	-12.7	124	0.00	7.37
104		1,2,3-Trimethylbenzene	1.831	2.164	-18.2	127	0.00	7.47
105		1,4-Dichlorobenzene	1.243	1.392	-12.0	125	0.00	7.44

			Amount	Calc.	%Drift			
106		n-Butylbenzene	40.000	46.765	-16.9	131	0.00	7.66
107		Benzyl Chloride		----------NA----------				

			AvgRF	CCRF	%Dev			
108		1,2-Dichlorobenzene	1.103	1.273	-15.4	125	0.00	7.76

			Amount	Calc.	%Drift			
109		1,2-Dibromo-3-Chloropropa		----------NA----------				

Initial Calibration Verification

Job Number: FC6313
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2P3752-ICV3752
Lab FileID: 2P99279.D

		AvgRF	CCRF	%Dev			
110	Hexachlorobutadiene	0.196	0.216	-10.2	124	0.00	8.82
111	1,2,4-Trichlorobenzene	0.573	0.674	-17.6	125	0.00	8.81

		Amount	Calc.	%Drift			
112	Naphthalene	40.000	45.287	-13.2	124	0.00	9.02

		AvgRF	CCRF	%Dev			
113	1,2,3-Trichlorobenzene	0.559	0.647	-15.7	125	0.00	9.14

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2P99275.D V2P_2023-5-09.M Tue May 09 14:19:09 2023

Initial Calibration Verification

Job Number: FC6313
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2P3752-ICV3752
Lab FileID: 2P99280.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\2023-05-09\2P99280.D Vial: 11
Acq On : 9 May 2023 12:00 pm Operator: joannel
Sample : ICV3752-4 Inst : MSVOA13-Y-P
Misc : MS53826,V2P3752,,,,, Multiplr: 1.00
MS Integration Params: big.p

Method : C:\msdchem\1\MET...\V2P_2023-5-09.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Tue May 09 12:07:49 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	103	0.00	3.73
2	Dichlorodifluoromethane		----------	NA	----------		
3 P	Chloromethane		----------	NA	----------		
	----------	Amount	Calc.	%Drift	----------		
4	1,3-butadiene		----------	NA	----------		
	----------	AvgRF	CCRF	%Dev	----------		
5 C	Vinyl Chloride		----------	NA	----------		
	----------	Amount	Calc.	%Drift	----------		
6	Bromomethane		----------	NA	----------		
7	Chloroethane		----------	NA	----------		
	----------	AvgRF	CCRF	%Dev	----------		
8	Trichlorofluoromethane		----------	NA	----------		
9	Ethyl Ether		----------	NA	----------		
	----------	Amount	Calc.	%Drift	----------		
10	Ethanol		----------	NA	----------		
	----------	AvgRF	CCRF	%Dev	----------		
11	1,2-Dichlorotrifluoroetha		----------	NA	----------		
12 C	1,1-Dichloroethene		----------	NA	----------		
13	Freon 113	0.212	0.265	-25.0#	122	0.00	2.01
14	Carbon Disulfide		----------	NA	----------		
	----------	Amount	Calc.	%Drift	----------		
15	Iodomethane		----------	NA	----------		
	----------	AvgRF	CCRF	%Dev	----------		
16	Acrolein		----------	NA	----------		
	----------	Amount	Calc.	%Drift	----------		
17	Allyl chloride		----------	NA	----------		
18	Methylene Chloride		----------	NA	----------		
19	Acetone		----------	NA	----------		
	----------	AvgRF	CCRF	%Dev	----------		
20	Methyl acetate		----------	NA	----------		
21	trans-1,2-Dichloroethene		----------	NA	----------		
22	Hexane		----------	NA	----------		

Initial Calibration Verification

Job Number: FC6313
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2P3752-ICV3752
Lab FileID: 2P99280.D

			Amount	Calc.	%Drift			
23		Methyl Tert Butyl Ether		NA				
24		Tert Butyl Alcohol		NA				
25		Acetonitrile		NA				
			AvgRF	CCRF	%Dev			
26		Di-isopropyl ether		NA				
27		Chloroprene		NA				
28	P	1,1-Dichloroethane		NA				
			Amount	Calc.	%Drift			
29		Acrylonitrile		NA				
			AvgRF	CCRF	%Dev			
30		ETBE	0.713	0.849	-19.1	120	0.00	2.88
			Amount	Calc.	%Drift			
31		Vinyl acetate		NA				
			AvgRF	CCRF	%Dev			
32		cis-1,2-Dichloroethene		NA				
			Amount	Calc.	%Drift			
33		2,2-Dichloropropane	25.000	29.064	-16.3	117	0.00	3.09
			AvgRF	CCRF	%Dev			
34		Bromochloromethane		NA				
			Amount	Calc.	%Drift			
35		Cyclohexane		NA				
			AvgRF	CCRF	%Dev			
36	C	Chloroform		NA				
			Amount	Calc.	%Drift			
37		Ethyl acetate		NA				
			AvgRF	CCRF	%Dev			
38		Tetrahydrofuran		NA				
39	S	Dibromofluoromethane	0.252	0.253	-0.4	104	0.00	3.27
40		Carbon Tetrachloride	0.323	0.369	-14.2	112	0.00	3.27
41		1,1,1-Trichloroethane		NA				
42		2-Butanone		NA				
			Amount	Calc.	%Drift			
43		1,1-Dichloropropene		NA				
			AvgRF	CCRF	%Dev			
44		tert-Butyl formate		NA				
			Amount	Calc.	%Drift			
45		Propionitrile		NA				
			AvgRF	CCRF	%Dev			
46		Methacrylonitrile		NA				
47		Benzene		NA				
			Amount	Calc.	%Drift			
48		TAME		NA				

Initial Calibration Verification

Job Number: FC6313
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2P3752-ICV3752
Lab FileID: 2P99280.D

			AvgRF	CCRF	%Dev			
49	S	1,2-Dichloroethane-d4	0.268	0.272	-1.5	103	0.00	3.56
50		Isobutyl alcohol		----------NA----------				
51		1,2-Dichloroethane		----------NA----------				

			Amount	Calc.	%Drift
52		Tert Amyl Alcohol		----------NA----------	

			AvgRF	CCRF	%Dev
53		Trichloroethene		----------NA----------	
54		Methylcyclohexane		----------NA----------	
55		Dibromomethane		----------NA----------	

			Amount	Calc.	%Drift
56	C	1,2-Dichloropropane		----------NA----------	

			AvgRF	CCRF	%Dev
57		Bromodichloromethane		----------NA----------	

			Amount	Calc.	%Drift
58		Methyl methacrylate		----------NA----------	
59		1,4-Dioxane		----------NA----------	
60		2-Chloroethyl vinyl ether		----------NA----------	
61		cis-1,3-Dichloropropene		----------NA----------	

			AvgRF	CCRF	%Dev			
62	I	Chlorobenzene-d5	1.000	1.000	0.0	103	0.00	5.69
63	S	Toluene-d8	1.123	1.124	-0.1	104	0.00	4.68
64	C	Toluene		----------NA----------				

			Amount	Calc.	%Drift
65		2-Nitropropane		----------NA----------	
66		4-Methyl-2-pentanone		----------NA----------	
67		trans-1,3-Dichloropropene		----------NA----------	

			AvgRF	CCRF	%Dev
68		Tetrachloroethene		----------NA----------	

			Amount	Calc.	%Drift
69		Ethyl methacrylate		----------NA----------	

			AvgRF	CCRF	%Dev
70		1,1,2-Trichloroethane		----------NA----------	

			Amount	Calc.	%Drift
71		Dibromochloromethane		----------NA----------	
72		1,3-Dichloropropane		----------NA----------	
73		1,2-Dibromoethane		----------NA----------	
74		3,3-dimethyl-1-butanol		----------NA----------	
75		2-hexanone		----------NA----------	

			AvgRF	CCRF	%Dev
76		1-Chlorohexane		----------NA----------	
77	C	Ethylbenzene		----------NA----------	
78	P	Chlorobenzene		----------NA----------	
79		1,1,1,2-Tetrachloroethane		----------NA----------	
80		m,p-Xylene		----------NA----------	
81		o-Xylene		----------NA----------	

Initial Calibration Verification

Job Number: FC6313
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2P3752-ICV3752
Lab FileID: 2P99280.D

			AvgRF	CCRF	%Dev	Amount	Calc.	%Drift	
82		Styrene		NA					
83	P	Bromoform		NA					
84		Isopropylbenzene		NA					
85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	102	0.00	7.43	
86	S	4-Bromofluorobenzene	0.734	0.728	0.8	103	0.00	6.57	
87		cis-1,4-Dichloro-2-butene		NA					
88		n-Propylbenzene		NA					
89		Bromobenzene		NA					
90	P	1,1,2,2-Tetrachloroethane		NA					
91		1,3,5-Trimethylbenzene		NA					
92		2-Chlorotoluene		NA					
93		trans-1,4-Dichloro-2-Bute		NA					
94		1,2,3-Trichloropropane		NA					
95		Cyclohexanone		NA					
96		4-Chlorotoluene		NA					
97		tert-Butylbenzene		NA					
98		a-Methyl styrene		NA					
99		1,2,4-Trimethylbenzene		NA					
100		Pentachloroethane		NA					
101		sec-Butylbenzene		NA					
102		4-Isopropyltoluene		NA					
103		1,3-Dichlorobenzene		NA					
104		1,2,3-Trimethylbenzene		NA					
105		1,4-Dichlorobenzene		NA					
106		n-Butylbenzene		NA					
107		Benzyl Chloride				25.000	28.528	-14.1	115	0.00	7.63
108		1,2-Dichlorobenzene		NA					
109		1,2-Dibromo-3-Chloropropa				25.000	28.736	-14.9	115	0.00	8.33

Initial Calibration Verification

Job Number: FC6313
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2P3752-ICV3752
Lab FileID: 2P99280.D

		AvgRF	CCRF	%Dev
110	Hexachlorobutadiene		----------NA----------	
111	1,2,4-Trichlorobenzene		----------NA----------	

		Amount	Calc.	%Drift
112	Naphthalene		----------NA----------	

		AvgRF	CCRF	%Dev
113	1,2,3-Trichlorobenzene		----------NA----------	

(#) = Out of Range SPCC's out = 4 CCC's out = 6
2P99274.D V2P_2023-5-09.M Tue May 09 14:18:05 2023

Continuing Calibration Summary

Job Number: FC6313
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2P3771-CC3752
Lab FileID: 2P99682.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\2023-05-26\2P99682.D Vial: 2
Acq On : 26 May 2023 10:46 am Operator: jeniferw
Sample : CC3752-5 Inst : MSVOA13-Y-P
Misc : MS54101,V2P3771,,,,, Multiplr: 1.00
MS Integration Params: big.p

Method : C:\msdchem\1\MET...\V2P_2023-5-09.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Tue May 09 12:07:49 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	87	0.00	3.73
2	Dichlorodifluoromethane	0.228	0.184	19.3	77	0.00	1.12
3 P	Chloromethane	0.211	0.200	5.2	92	0.00	1.25
		Amount	Calc.	%Drift			
4	1,3-butadiene	40.000	40.261	-0.7	94	0.00	1.31
		AvgRF	CCRF	%Dev			
5 C	Vinyl Chloride	0.263	0.249	5.3	94	0.00	1.30
		Amount	Calc.	%Drift			
6	Bromomethane	40.000	38.274	4.3	95	0.00	1.50
7	Chloroethane	40.000	44.067	-10.2	104	0.00	1.57
		AvgRF	CCRF	%Dev			
8	Trichlorofluoromethane	0.396	0.391	1.3	107	0.00	1.66
9	Ethyl Ether	0.217	0.202	6.9	91	0.00	1.87
		Amount	Calc.	%Drift			
10	Ethanol	800.000	759.538	5.1	89	0.00	1.98
		AvgRF	CCRF	%Dev			
11	1,2-Dichlorotrifluoroetha	0.243	0.263	-8.2	104	0.00	1.97
12 C	1,1-Dichloroethene	0.289	0.333	-15.2	106	0.00	1.97
13	Freon 113	0.212	0.226	-6.6	99	0.00	2.01
14	Carbon Disulfide	0.541	0.561	-3.7	100	0.00	1.99
		Amount	Calc.	%Drift			
15	Iodomethane	40.000	53.401	-33.5#	118	0.00	2.05
		AvgRF	CCRF	%Dev			
16	Acrolein	0.073	0.071	2.7	97	0.00	2.15
		Amount	Calc.	%Drift			
17	Allyl chloride	40.000	42.315	-5.8	101	0.00	2.24
18	Methylene Chloride	40.000	43.186	-8.0	106	0.00	2.30
19	Acetone	200.000	208.416	-4.2	101	0.00	2.32
		AvgRF	CCRF	%Dev			
20	Methyl acetate	0.314	0.343	-9.2	101	0.00	2.40
21	trans-1,2-Dichloroethene	0.295	0.343	-16.3	109	0.00	2.40
22	Hexane	0.165	0.172	-4.2	99	0.00	2.46

Continuing Calibration Summary

Job Number: FC6313
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2P3771-CC3752
Lab FileID: 2P99682.D

			Amount	Calc.	%Drift			
23		Methyl Tert Butyl Ether	40.000	39.010	2.5	92	0.00	2.47
24		Tert Butyl Alcohol	400.000	413.507	-3.4	97	0.00	2.52
25		Acetonitrile	400.000	322.407	19.4	79	0.00	2.55
			AvgRF	CCRF	%Dev			
26		Di-isopropyl ether	0.688	0.737	-7.1	98	0.00	2.68
27		Chloroprene	1.177	1.175	0.2	96	0.00	2.73
28	P	1,1-Dichloroethane	0.410	0.474	-15.6	106	0.00	2.73
			Amount	Calc.	%Drift			
29		Acrylonitrile	200.000	208.600	-4.3	97	0.00	2.73
			AvgRF	CCRF	%Dev			
30		ETBE	0.713	0.755	-5.9	96	0.00	2.88
			Amount	Calc.	%Drift			
31		Vinyl acetate	200.000	195.598	2.2	89	0.00	2.86
			AvgRF	CCRF	%Dev			
32		cis-1,2-Dichloroethene	0.277	0.307	-10.8	105	0.00	3.02
			Amount	Calc.	%Drift			
33		2,2-Dichloropropane	40.000	49.055	-22.6#	114	0.00	3.09
			AvgRF	CCRF	%Dev			
34		Bromochloromethane	0.149	0.156	-4.7	100	0.00	3.13
			Amount	Calc.	%Drift			
35		Cyclohexane	40.000	42.997	-7.5	99	0.00	3.16
			AvgRF	CCRF	%Dev			
36	C	Chloroform	0.456	0.504	-10.5	103	0.00	3.17
			Amount	Calc.	%Drift			
37		Ethyl acetate	200.000	202.275	-1.1	93	0.00	3.23
			AvgRF	CCRF	%Dev			
38		Tetrahydrofuran	0.154	0.163	-5.8	99	0.00	3.27
39	S	Dibromofluoromethane	0.252	0.237	6.0	82	0.00	3.27
40		Carbon Tetrachloride	0.323	0.365	-13.0	102	0.00	3.27
41		1,1,1-Trichloroethane	0.380	0.431	-13.4	105	0.00	3.29
42		2-Butanone	0.236	0.241	-2.1	98	0.00	3.33
			Amount	Calc.	%Drift			
43		1,1-Dichloropropene	40.000	45.443	-13.6	106	0.00	3.37
			AvgRF	CCRF	%Dev			
44		tert-Butyl formate	0.180	0.159	11.7	78	0.00	3.42
			Amount	Calc.	%Drift			
45		Propionitrile	400.000	418.004	-4.5	97	0.00	3.47
			AvgRF	CCRF	%Dev			
46		Methacrylonitrile	0.239	0.250	-4.6	97	0.00	3.49
47		Benzene	1.042	1.225	-17.6	107	0.00	3.50
			Amount	Calc.	%Drift			
48		TAME	40.000	39.160	2.1	93	0.00	3.58

Continuing Calibration Summary

Job Number: FC6313
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2P3771-CC3752
Lab FileID: 2P99682.D

			AvgRF	CCRF	%Dev			
49	S	1,2-Dichloroethane-d4	0.268	0.258	3.7	82	0.00	3.56
50		Isobutyl alcohol	0.026	0.025	3.8	87	0.00	3.62
51		1,2-Dichloroethane	0.350	0.372	-6.3	98	0.00	3.60

			Amount	Calc.	%Drift			
52		Tert Amyl Alcohol	400.000	408.765	-2.2	96	0.00	3.67

			AvgRF	CCRF	%Dev			
53		Trichloroethene	0.273	0.305	-11.7	104	0.00	3.84
54		Methylcyclohexane	0.387	0.434	-12.1	101	0.00	3.85
55		Dibromomethane	0.160	0.174	-8.7	98	0.00	4.07

			Amount	Calc.	%Drift			
56	C	1,2-Dichloropropane	40.000	42.009	-5.0	100	0.00	4.13

			AvgRF	CCRF	%Dev			
57		Bromodichloromethane	0.320	0.360	-12.5	100	0.00	4.16

			Amount	Calc.	%Drift			
58		Methyl methacrylate	40.000	39.826	0.4	91	0.00	4.26
59		1,4-Dioxane	800.000	910.014	-13.8	102	0.00	4.29
60		2-Chloroethyl vinyl ether	200.000	173.129	13.4	78	0.00	4.50
61		cis-1,3-Dichloropropene	40.000	44.638	-11.6	102	0.00	4.55

			AvgRF	CCRF	%Dev			
62	I	Chlorobenzene-d5	1.000	1.000	0.0	87	0.00	5.69
63	S	Toluene-d8	1.123	1.107	1.4	87	0.00	4.68
64	C	Toluene	1.222	1.402	-14.7	108	0.00	4.71

			Amount	Calc.	%Drift			
65		2-Nitropropane	200.000	227.823	-13.9	103	0.00	4.81
66		4-Methyl-2-pentanone	200.000	211.528	-5.8	101	0.00	4.93
67		trans-1,3-Dichloropropene	40.000	44.798	-12.0	102	0.00	4.95

			AvgRF	CCRF	%Dev			
68		Tetrachloroethene	0.334	0.378	-13.2	105	0.00	4.97

			Amount	Calc.	%Drift			
69		Ethyl methacrylate	40.000	40.561	-1.4	92	0.00	5.07

			AvgRF	CCRF	%Dev			
70		1,1,2-Trichloroethane	0.221	0.239	-8.1	99	0.00	5.06

			Amount	Calc.	%Drift			
71		Dibromochloromethane	40.000	42.489	-6.2	98	0.00	5.18
72		1,3-Dichloropropane	40.000	41.880	-4.7	99	0.00	5.23
73		1,2-Dibromoethane	40.000	42.335	-5.8	98	0.00	5.33
74		3,3-dimethyl-1-butanol	2000.000	2047.677	-2.4	92	0.00	5.48
75		2-hexanone	200.000	216.319	-8.2	99	0.00	5.48

			AvgRF	CCRF	%Dev			
76		1-Chlorohexane	0.385	0.438	-13.8	114	0.00	5.70
77	C	Ethylbenzene	1.359	1.555	-14.4	104	0.00	5.73
78	P	Chlorobenzene	0.868	0.976	-12.4	104	0.00	5.71
79		1,1,1,2-Tetrachloroethane	0.295	0.335	-13.6	103	0.00	5.75
80		m,p-Xylene	1.051	1.231	-17.1	106	0.00	5.84
81		o-Xylene	1.087	1.235	-13.6	104	0.00	6.14

Continuing Calibration Summary

Job Number: FC6313
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2P3771-CC3752
Lab FileID: 2P99682.D

			Amount	Calc.	%Drift			
82		Styrene	40.000	45.067	-12.7	103	0.00	6.17
83	P	Bromoform	40.000	40.991	-2.5	92	0.00	6.18
84		Isopropylbenzene	40.000	45.677	-14.2	106	0.00	6.37

			AvgRF	CCRF	%Dev			
85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	84	0.00	7.43
86	S	4-Bromofluorobenzene	0.734	0.730	0.5	84	0.00	6.57

			Amount	Calc.	%Drift			
87		cis-1,4-Dichloro-2-butene	40.000	44.523	-11.3	98	0.00	6.60

			AvgRF	CCRF	%Dev			
88		n-Propylbenzene	2.477	3.020	-21.9#	106	0.00	6.68

			Amount	Calc.	%Drift			
89		Bromobenzene	40.000	43.336	-8.3	98	0.00	6.65

			AvgRF	CCRF	%Dev			
90	P	1,1,2,2-Tetrachloroethane	0.720	0.802	-11.4	96	0.00	6.70

			Amount	Calc.	%Drift			
91		1,3,5-Trimethylbenzene	40.000	46.303	-15.8	104	0.00	6.83

			AvgRF	CCRF	%Dev			
92		2-Chlorotoluene	1.496	1.770	-18.3	103	0.00	6.79

			Amount	Calc.	%Drift			
93		trans-1,4-Dichloro-2-Bute	40.000	47.842	-19.6	104	0.00	6.84
94		1,2,3-Trichloropropane	40.000	44.016	-10.0	97	0.00	6.80

			AvgRF	CCRF	%Dev			
95		Cyclohexanone	0.030	0.034	-13.3	96	0.00	6.83
96		4-Chlorotoluene	1.592	1.882	-18.2	103	0.00	6.91
97		tert-Butylbenzene	0.947	1.128	-19.1	104	0.00	7.07
98		a-Methyl styrene	0.000	0.000	0.0	90	0.00	7.22

			Amount	Calc.	%Drift			
99		1,2,4-Trimethylbenzene	40.000	45.640	-14.1	101	0.00	7.13
100		Pentachloroethane	40.000	42.452	-6.1	96	0.00	7.08
101		sec-Butylbenzene	40.000	46.020	-15.1	101	0.00	7.22
102		4-Isopropyltoluene	40.000	46.382	-16.0	102	0.00	7.34

			AvgRF	CCRF	%Dev			
103		1,3-Dichlorobenzene	1.164	1.309	-12.5	99	0.00	7.37
104		1,2,3-Trimethylbenzene	1.831	2.130	-16.3	100	0.00	7.47
105		1,4-Dichlorobenzene	1.243	1.336	-7.5	96	0.00	7.44

			Amount	Calc.	%Drift			
106		n-Butylbenzene	40.000	44.879	-12.2	101	0.00	7.66
107		Benzyl Chloride	40.000	49.845	-24.6#	109	0.00	7.62

			AvgRF	CCRF	%Dev			
108		1,2-Dichlorobenzene	1.103	1.253	-13.6	99	0.00	7.75

			Amount	Calc.	%Drift			
109		1,2-Dibromo-3-Chloropropa	40.000	44.037	-10.1	95	0.00	8.32

Continuing Calibration Summary

Job Number: FC6313
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2P3771-CC3752
Lab FileID: 2P99682.D

		AvgRF	CCRF	%Dev			
110	Hexachlorobutadiene	0.196	0.239	-21.9#	110	0.00	8.82
111	1,2,4-Trichlorobenzene	0.573	0.633	-10.5	94	0.00	8.82

		Amount	Calc.	%Drift			
112	Naphthalene	40.000	42.018	-5.0	91	0.00	9.02

		AvgRF	CCRF	%Dev			
113	1,2,3-Trichlorobenzene	0.559	0.605	-8.2	94	0.00	9.15

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2P99275.D V2P_2023-5-09.M Fri May 26 11:24:06 2023

Continuing Calibration Summary

Job Number: FC6313
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2P3771-ECC3752
Lab FileID: 2P99708.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\Je...023\V2P3771\2P99708.D Vial: 28
Acq On : 26 May 2023 9:50 pm Operator: jeniferw
Sample : ECC3752-5 Inst : MSVOA13-Y-P
Misc : MS54103,V2P3771,,,,, Multiplr: 1.00
MS Integration Params: big.p

Method : C:\msdchem\1\met...\V2P_2023-5-09.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Tue May 09 12:07:49 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 50% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	93	0.00	3.73
2	Dichlorodifluoromethane	0.228	0.190	16.7	84	0.00	1.11
3 P	Chloromethane	0.211	0.217	-2.8	106	0.00	1.24
	----------	True	Calc.	% Drift	----------		
4	1,3-butadiene	40.000	43.318	-8.3	106	0.00	1.31
	----------	AvgRF	CCRF	% Dev	----------		
5 C	Vinyl Chloride	0.263	0.252	4.2	101	0.00	1.30
	----------	True	Calc.	% Drift	----------		
6	Bromomethane	40.000	33.582	16.0	89	0.00	1.50
7	Chloroethane	40.000	44.187	-10.5	111	0.00	1.57
	----------	AvgRF	CCRF	% Dev	----------		
8	Trichlorofluoromethane	0.396	0.392	1.0	114	0.00	1.66
9	Ethyl Ether	0.217	0.205	5.5	98	0.00	1.87
	----------	True	Calc.	% Drift	----------		
10	Ethanol	800.000	778.732	2.7	97	0.00	1.98
	----------	AvgRF	CCRF	% Dev	----------		
11	1,2-Dichlorotrifluoroetha	0.243	0.265	-9.1	112	0.00	1.97
12 C	1,1-Dichloroethene	0.289	0.337	-16.6	114	0.00	1.97
13	Freon 113	0.212	0.213	-0.5	99	0.00	2.00
14	Carbon Disulfide	0.541	0.559	-3.3	106	0.00	1.99
	----------	True	Calc.	% Drift	----------		
15	Iodomethane	40.000	61.605	-54.0#	147	0.00	2.05
	----------	AvgRF	CCRF	% Dev	----------		
16	Acrolein	0.073	0.067	8.2	96	0.00	2.15
	----------	True	Calc.	% Drift	----------		
17	Allyl chloride	40.000	42.136	-5.3	107	0.00	2.24
18	Methylene Chloride	40.000	45.073	-12.7	117	0.00	2.29
19	Acetone	200.000	206.515	-3.3	107	0.00	2.31
	----------	AvgRF	CCRF	% Dev	----------		
20	Methyl acetate	0.314	0.365	-16.2	114	0.00	2.39
21	trans-1,2-Dichloroethene	0.295	0.349	-18.3	117	0.00	2.39
22	Hexane	0.165	0.153	7.3	94	0.00	2.46

Continuing Calibration Summary

Job Number: FC6313
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2P3771-ECC3752
Lab FileID: 2P99708.D

			True	Calc.	% Drift			
23		Methyl Tert Butyl Ether	40.000	40.118	-0.3	101	0.00	2.47
24		Tert Butyl Alcohol	400.000	414.880	-3.7	103	0.00	2.51
25		Acetonitrile	400.000	435.925	-9.0	115	0.00	2.55
			AvgRF	CCRF	% Dev			
26		Di-isopropyl ether	0.688	0.759	-10.3	107	0.00	2.68
27		Chloroprene	1.177	1.159	1.5	101	0.00	2.72
28	P	1,1-Dichloroethane	0.410	0.475	-15.9	113	0.00	2.72
			True	Calc.	% Drift			
29		Acrylonitrile	200.000	205.316	-2.7	102	0.00	2.72
			AvgRF	CCRF	% Dev			
30		ETBE	0.713	0.775	-8.7	105	0.00	2.88
			True	Calc.	% Drift			
31		Vinyl acetate	200.000	189.599	5.2	91	0.00	2.86
			AvgRF	CCRF	% Dev			
32		cis-1,2-Dichloroethene	0.277	0.307	-10.8	111	0.00	3.02
			True	Calc.	% Drift			
33		2,2-Dichloropropane	40.000	44.709	-11.8	111	0.00	3.08
			AvgRF	CCRF	% Dev			
34		Bromochloromethane	0.149	0.158	-6.0	108	0.00	3.13
			True	Calc.	% Drift			
35		Cyclohexane	40.000	42.185	-5.5	104	0.00	3.16
			AvgRF	CCRF	% Dev			
36	C	Chloroform	0.456	0.502	-10.1	109	0.00	3.17
			True	Calc.	% Drift			
37		Ethyl acetate	200.000	201.905	-1.0	99	0.00	3.23
			AvgRF	CCRF	% Dev			
38		Tetrahydrofuran	0.154	0.161	-4.5	104	0.00	3.27
39	S	Dibromofluoromethane	0.252	0.240	4.8	89	0.00	3.27
40		Carbon Tetrachloride	0.323	0.360	-11.5	107	0.00	3.27
41		1,1,1-Trichloroethane	0.380	0.434	-14.2	113	0.00	3.29
42		2-Butanone	0.236	0.245	-3.8	106	0.00	3.32
			True	Calc.	% Drift			
43		1,1-Dichloropropene	40.000	45.606	-14.0	113	0.00	3.37
			AvgRF	CCRF	% Dev			
44		tert-Butyl formate	0.180	0.166	7.8	87	0.00	3.41
			True	Calc.	% Drift			
45		Propionitrile	400.000	410.200	-2.5	101	0.00	3.47
			AvgRF	CCRF	% Dev			
46		Methacrylonitrile	0.239	0.244	-2.1	100	0.00	3.49
47		Benzene	1.042	1.210	-16.1	112	0.00	3.50
			True	Calc.	% Drift			
48		TAME	40.000	39.768	0.6	101	0.00	3.58

Continuing Calibration Summary

Job Number: FC6313
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2P3771-ECC3752
Lab FileID: 2P99708.D

			AvgRF	CCRF	% Dev			
49	S	1,2-Dichloroethane-d4	0.268	0.249	7.1	84	0.00	3.55
50		Isobutyl alcohol	0.026	0.024	7.7	90	0.00	3.62
51		1,2-Dichloroethane	0.350	0.370	-5.7	103	0.00	3.60
			True	Calc.	% Drift			
52		Tert Amyl Alcohol	400.000	399.339	0.2	100	0.00	3.68
			AvgRF	CCRF	% Dev			
53		Trichloroethene	0.273	0.301	-10.3	109	0.00	3.84
54		Methylcyclohexane	0.387	0.410	-5.9	102	0.00	3.85
55		Dibromomethane	0.160	0.169	-5.6	102	0.00	4.07
			True	Calc.	% Drift			
56	C	1,2-Dichloropropane	40.000	42.537	-6.3	107	0.00	4.12
			AvgRF	CCRF	% Dev			
57		Bromodichloromethane	0.320	0.353	-10.3	104	0.00	4.16
			True	Calc.	% Drift			
58		Methyl methacrylate	40.000	40.085	-0.2	97	0.00	4.26
59		1,4-Dioxane	800.000	854.309	-6.8	101	0.00	4.29
60		2-Chloroethyl vinyl ether	200.000	153.199	23.4	73	0.00	4.50
61		cis-1,3-Dichloropropene	40.000	42.623	-6.6	104	0.00	4.55
			AvgRF	CCRF	% Dev			
62	I	Chlorobenzene-d5	1.000	1.000	0.0	94	0.00	5.69
63	S	Toluene-d8	1.123	1.096	2.4	93	0.00	4.67
64	C	Toluene	1.222	1.339	-9.6	112	0.00	4.71
			True	Calc.	% Drift			
65		2-Nitropropane	200.000	208.512	-4.3	101	0.00	4.80
66		4-Methyl-2-pentanone	200.000	203.536	-1.8	105	0.00	4.92
67		trans-1,3-Dichloropropene	40.000	41.980	-4.9	102	0.00	4.95
			AvgRF	CCRF	% Dev			
68		Tetrachloroethene	0.334	0.355	-6.3	106	0.00	4.97
			True	Calc.	% Drift			
69		Ethyl methacrylate	40.000	38.711	3.2	95	0.00	5.07
			AvgRF	CCRF	% Dev			
70		1,1,2-Trichloroethane	0.221	0.227	-2.7	102	0.00	5.06
			True	Calc.	% Drift			
71		Dibromochloromethane	40.000	39.743	0.6	98	0.00	5.18
72		1,3-Dichloropropane	40.000	40.528	-1.3	104	0.00	5.23
73		1,2-Dibromoethane	40.000	42.129	-5.3	105	0.00	5.34
74		3,3-dimethyl-1-butanol	2000.000	2054.121	-2.7	100	0.00	5.48
75		2-hexanone	200.000	210.889	-5.4	105	0.00	5.48
			AvgRF	CCRF	% Dev			
76		1-Chlorohexane	0.385	0.419	-8.8	117	0.00	5.70
77	C	Ethylbenzene	1.359	1.532	-12.7	111	0.00	5.74
78	P	Chlorobenzene	0.868	0.950	-9.4	110	0.00	5.70
79		1,1,1,2-Tetrachloroethane	0.295	0.323	-9.5	107	0.00	5.75
80		m,p-Xylene	1.051	1.208	-14.9	112	0.00	5.83
81		o-Xylene	1.087	1.198	-10.2	109	0.00	6.14

Continuing Calibration Summary

Job Number: FC6313
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2P3771-ECC3752
Lab FileID: 2P99708.D

			True	Calc.	% Drift			
82		Styrene	40.000	43.130	-7.8	106	0.00	6.17
83	P	Bromoform	40.000	37.937	5.2	91	0.00	6.18
84		Isopropylbenzene	40.000	44.463	-11.2	111	0.00	6.37

			AvgRF	CCRF	% Dev			
85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	89	0.00	7.42
86	S	4-Bromofluorobenzene	0.734	0.745	-1.5	90	0.00	6.57

			True	Calc.	% Drift			
87		cis-1,4-Dichloro-2-butene	40.000	33.804	15.5	77	0.00	6.60

			AvgRF	CCRF	% Dev			
88		n-Propylbenzene	2.477	2.963	-19.6	110	0.00	6.68

			True	Calc.	% Drift			
89		Bromobenzene	40.000	42.508	-6.3	102	0.00	6.64

			AvgRF	CCRF	% Dev			
90	P	1,1,2,2-Tetrachloroethane	0.720	0.785	-9.0	99	0.00	6.70

			True	Calc.	% Drift			
91		1,3,5-Trimethylbenzene	40.000	45.935	-14.8	108	0.00	6.83

			AvgRF	CCRF	% Dev			
92		2-Chlorotoluene	1.496	1.742	-16.4	107	0.00	6.79

			True	Calc.	% Drift			
93		trans-1,4-Dichloro-2-Bute	40.000	39.532	1.2	88	0.00	6.84
94		1,2,3-Trichloropropane	40.000	42.315	-5.8	99	0.00	6.80

			AvgRF	CCRF	% Dev			
95		Cyclohexanone	0.030	0.033	-10.0	99	0.00	6.83
96		4-Chlorotoluene	1.592	1.848	-16.1	107	0.00	6.91
97		tert-Butylbenzene	0.947	1.102	-16.4	107	0.00	7.08
98		a-Methyl styrene	0.000	0.000	0.0	100	0.00	7.21

			True	Calc.	% Drift			
99		1,2,4-Trimethylbenzene	40.000	45.781	-14.5	107	0.00	7.13
100		Pentachloroethane	40.000	39.472	1.3	94	0.00	7.08
101		sec-Butylbenzene	40.000	45.543	-13.9	106	0.00	7.22
102		4-Isopropyltoluene	40.000	45.517	-13.8	105	0.00	7.33

			AvgRF	CCRF	% Dev			
103		1,3-Dichlorobenzene	1.164	1.281	-10.1	102	0.00	7.37
104		1,2,3-Trimethylbenzene	1.831	2.097	-14.5	104	0.00	7.47
105		1,4-Dichlorobenzene	1.243	1.307	-5.1	99	0.00	7.44

			True	Calc.	% Drift			
106		n-Butylbenzene	40.000	43.862	-9.7	104	0.00	7.66
107		Benzyl Chloride	40.000	40.781	-2.0	91	0.00	7.62

			AvgRF	CCRF	% Dev			
108		1,2-Dichlorobenzene	1.103	1.192	-8.1	99	0.00	7.75

			True	Calc.	% Drift			
109		1,2-Dibromo-3-Chloropropa	40.000	42.967	-7.4	98	0.00	8.33

Continuing Calibration Summary

Job Number: FC6313
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Sample: V2P3771-ECC3752
Lab FileID: 2P99708.D

		AvgRF	CCRF	% Dev			
110	Hexachlorobutadiene	0.196	0.222	-13.3	108	0.00	8.82
111	1,2,4-Trichlorobenzene	0.573	0.608	-6.1	95	0.00	8.81

		True	Calc.	% Drift			
112	Naphthalene	40.000	43.753	-9.4	101	0.00	9.02

		AvgRF	CCRF	% Dev			
113	1,2,3-Trichlorobenzene	0.559	0.582	-4.1	95	0.00	9.14

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2P99275.D V2P_2023-5-09.M Mon May 29 02:54:45 2023

6.7.5

6

Run Sequence Report

Job Number: FC6313
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Run ID: V2P3752	**Method:** SW846 8260D	**Instrument ID:** GCMS2P

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
V2P3752-BFB	2P99270.D	05/09/23 07:39	n/a	BFB Tune
V2P3752-IC3752	2P99271.D	05/09/23 08:06	n/a	Initial cal 1
V2P3752-IC3752	2P99272.D	05/09/23 08:31	n/a	Initial cal 2
V2P3752-IC3752	2P99273.D	05/09/23 08:57	n/a	Initial cal 3
V2P3752-IC3752	2P99274.D	05/09/23 09:23	n/a	Initial cal 4
V2P3752-ICC3752	2P99275.D	05/09/23 09:49	n/a	Initial cal 5
V2P3752-IC3752	2P99276.D	05/09/23 10:15	n/a	Initial cal 6
V2P3752-IC3752	2P99277.D	05/09/23 10:41	n/a	Initial cal 7
V2P3752-ICV3752	2P99279.D	05/09/23 11:34	n/a	Initial cal verification 5
V2P3752-CC3752	2P99279A.D	05/09/23 11:34	n/a	Continuing cal 5
V2P3752-BS	2P99280A.D	05/09/23 12:00	n/a	Blank Spike
V2P3752-ICV3752	2P99280.D	05/09/23 12:00	n/a	Initial cal verification 4
V2P3752-MB	2P99282.D	05/09/23 12:52	n/a	Method Blank
FC5667-1	2P99283.D	05/09/23 13:18	n/a	(used for QC only; not part of job FC6313)
ZZZZZZ	2P99284.D	05/09/23 13:44	n/a	(unrelated sample)
ZZZZZZ	2P99285.D	05/09/23 14:10	n/a	(unrelated sample)
ZZZZZZ	2P99286.D	05/09/23 14:36	n/a	(unrelated sample)
ZZZZZZ	2P99287.D	05/09/23 15:03	n/a	(unrelated sample)
ZZZZZZ	2P99288.D	05/09/23 15:29	n/a	(unrelated sample)
ZZZZZZ	2P99289.D	05/09/23 15:55	n/a	(unrelated sample)
ZZZZZZ	2P99290.D	05/09/23 16:21	n/a	(unrelated sample)
ZZZZZZ	2P99291.D	05/09/23 16:47	n/a	(unrelated sample)
ZZZZZZ	2P99292.D	05/09/23 17:13	n/a	(unrelated sample)
FC5667-1MS	2P99293.D	05/09/23 17:40	n/a	Matrix Spike
FC5667-1MSD	2P99294.D	05/09/23 18:06	n/a	Matrix Spike Duplicate
V2P3752-ECC3752	2P99295.D	05/09/23 18:32	n/a	Ending cal 5

Run Sequence Report

Job Number: FC6313
Account: HGLFLMI Hydrogeologic, Inc.
Project: CCF West NAM; KSC, FL

Run ID: V2P3771	**Method:** SW846 8260D	**Instrument ID:** GCMS2P

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
V2P3771-BFB	2P99681.D	05/26/23 10:20	n/a	BFB Tune
V2P3771-CC3752	2P99682.D	05/26/23 10:46	n/a	Continuing cal 5
V2P3771-BS	2P99683.D	05/26/23 11:11	n/a	Blank Spike
V2P3771-MB	2P99684.D	05/26/23 11:37	n/a	Method Blank
ZZZZZZ	2P99685.D	05/26/23 12:02	n/a	(unrelated sample)
FC6313-2	2P99686.D	05/26/23 12:28	n/a	CCF-TB-20230524
ZZZZZZ	2P99687.D	05/26/23 12:53	n/a	(unrelated sample)
FC6258-7	2P99688.D	05/26/23 13:19	n/a	(used for QC only; not part of job FC6313)
FC6313-1	2P99689.D	05/26/23 13:45	n/a	CCF-IW0003S-008.0-20230524
ZZZZZZ	2P99690.D	05/26/23 14:10	n/a	(unrelated sample)
ZZZZZZ	2P99691.D	05/26/23 14:36	n/a	(unrelated sample)
FC6258-7MS	2P99692.D	05/26/23 15:01	n/a	Matrix Spike
FC6258-7MSD	2P99693.D	05/26/23 15:27	n/a	Matrix Spike Duplicate
ZZZZZZ	2P99695.D	05/26/23 16:18	n/a	(unrelated sample)
ZZZZZZ	2P99696.D	05/26/23 16:43	n/a	(unrelated sample)
ZZZZZZ	2P99697.D	05/26/23 17:09	n/a	(unrelated sample)
ZZZZZZ	2P99698.D	05/26/23 17:34	n/a	(unrelated sample)
ZZZZZZ	2P99699.D	05/26/23 18:00	n/a	(unrelated sample)
ZZZZZZ	2P99700.D	05/26/23 18:26	n/a	(unrelated sample)
ZZZZZZ	2P99701.D	05/26/23 18:51	n/a	(unrelated sample)
ZZZZZZ	2P99702.D	05/26/23 19:17	n/a	(unrelated sample)
ZZZZZZ	2P99703.D	05/26/23 19:42	n/a	(unrelated sample)
ZZZZZZ	2P99704.D	05/26/23 20:08	n/a	(unrelated sample)
ZZZZZZ	2P99705.D	05/26/23 20:33	n/a	(unrelated sample)
ZZZZZZ	2P99706.D	05/26/23 20:59	n/a	(unrelated sample)
ZZZZZZ	2P99707.D	05/26/23 21:24	n/a	(unrelated sample)
V2P3771-ECC3752	2P99708.D	05/26/23 21:50	n/a	Ending cal 5

APPENDIX F

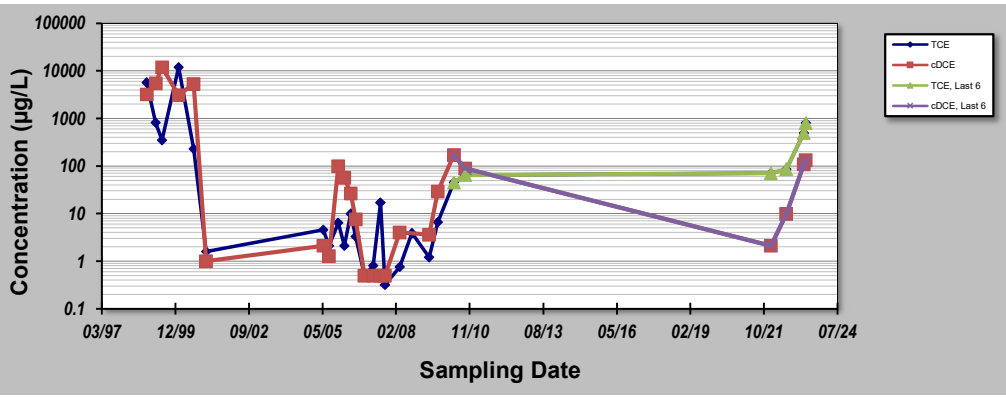
MANN-KENDALL ANALYSIS

This page was intentionally left blank.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	18-Aug-23	Job ID:	CCF West LTM
Facility Name:	CCF West - KSC, FL	Constituent:	IW0003S
Conducted By:	HGL	Concentration Units:	µg/L

Sampling Point ID:	TCE	cDCE	TCE, Last 6	cDCE, Last 6			
Sampling Event	Sampling Date	IW0003S CONCENTRATION (µg/L)						
1	11/09/1998	5700	3,200					
2	03/11/1999	820	5,500					
3	06/09/1999	350	12,000					
4	01/18/2000	12000	3,100					
5	08/08/2000	230	5,300					
6	01/26/2001	1.6	1					
7	06/08/2005	4.6	2.1					
8	08/23/2005	2.11	1.28					
9	12/27/2005	6.44	98.7					
10	03/21/2006	2.11	56.6					
11	06/15/2006	9.95	26.5					
12	08/21/2006	3.31	7.57					
13	12/19/2006	0.5	0.5					
14	04/18/2007	0.81	0.5					
15	07/24/2007	17	0.5					
16	09/22/2007	0.32	0.5					
17	04/09/2008	0.76	4					
18	09/23/2008	3.9						
19	05/14/2009	1.2	3.6					
20	09/11/2009	6.6	29					
21	04/17/2010	45	170	45	170			
22	09/16/2010	65	89	65	89			
23	02/03/2022	70.4	2.1	70.4	2.1			
24	09/01/2022	85.8	9.8	85.8	9.8			
25	04/28/2023	493	109	493	109			
26	05/24/2023	807	133	807	133			
27								
28								
29								
30								
Coefficient of Variation:		3.19	2.34	1.22	0.79			
Mann-Kendall Statistic (S):		0	-47	15	1			
Confidence Factor:		49.1%	85.7%	99.9%	50.0%			
Concentration Trend:		No Trend	No Trend	Increasing	No Trend			



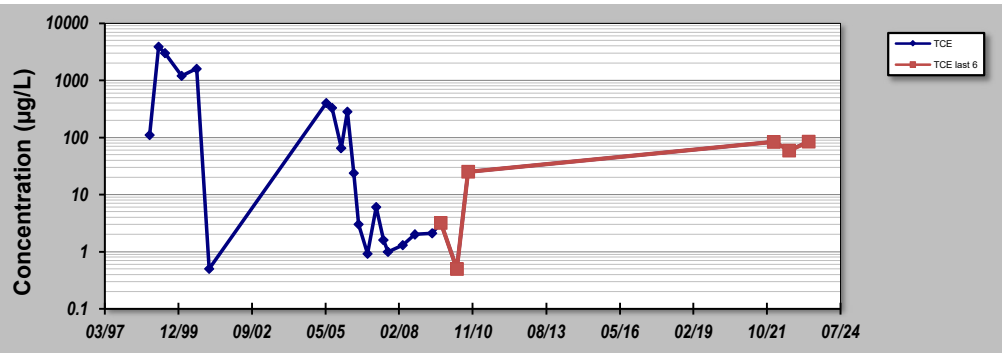
Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
4. Yellow highlighting indicates the result was a non-detect, and 1/2 of the detection limit was used.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	18-Aug-23	Job ID:	CCF West LTM
Facility Name:	CCF West - KSC, FL	Constituent:	IW0003IS
Conducted By:	HGL	Concentration Units:	µg/L

Sampling Point ID:	TCE	TCE last 6					
Sampling Event	Sampling Date	IW0003IS CONCENTRATION (µg/L)						
1	11/09/1998	110						
2	03/11/1999	3900						
3	06/09/1999	3000						
4	01/18/2000	1200						
5	08/08/2000	1600						
6	01/26/2001	0.5						
7	06/08/2005	401						
8	08/23/2005	329						
9	12/27/2005	65.2						
10	03/21/2006	285						
11	06/15/2006	23.8						
12	08/21/2006	3.01						
13	12/19/2006	0.92						
14	04/18/2007	6						
15	07/24/2007	1.6						
16	09/22/2007	1						
17	04/09/2008	1.3						
18	09/23/2008	2						
19	05/14/2009	2.1						
20	09/11/2009	3.2	3.2					
21	04/17/2010	0.5	0.5					
22	09/16/2010	25	25					
23	02/03/2022	84.3	84.3					
24	09/01/2022	59	59					
25	05/24/2023	84.5	84.5					
26								
27								
28								
29								
30								
Coefficient of Variation:		2.22	0.90					
Mann-Kendall Statistic (S):		-99	11					
Confidence Factor:		99.0%	97.2%					
Concentration Trend:		Decreasing	Increasing					



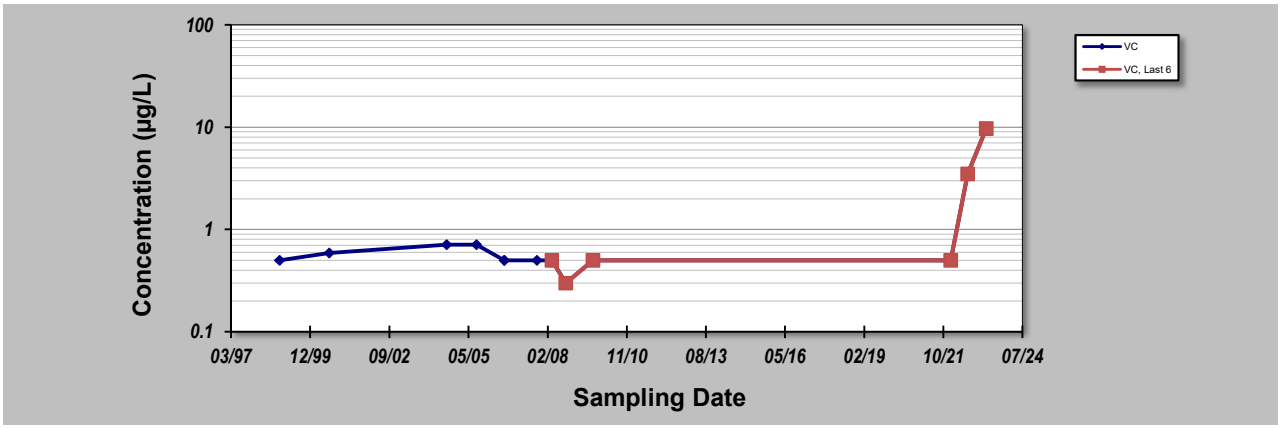
Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.
4. Yellow highlighting indicates the result was a non-detect, and 1/2 of the detection limit was used.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	18-Aug-23	Job ID:	CCF West LTM
Facility Name:	CCF West - KSC, FL	Constituent:	IW0005ID
Conducted By:	HGL	Concentration Units:	µg/L

Sampling Point ID:	VC	VC, Last 6					
Sampling Event	Sampling Date	IW0005ID CONCENTRATION (µg/L)						
1	11/12/1998	0.5						
2	08/03/2000	0.59						
3	08/23/2004	0.71						
4	09/06/2005	0.71						
5	08/23/2006	0.5						
6	08/23/2006	0.5						
7	10/09/2007	0.5						
8	04/16/2008	0.5	0.5					
9	10/07/2008	0.3	0.3					
10	09/15/2009	0.5	0.5					
11	02/01/2022	0.5	0.5					
12	09/02/2022	3.5	3.5					
13	04/25/2023	9.7	9.7					
14								
15								
16								
17								
18								
19								
20								
Coefficient of Variation:		1.78	1.49					
Mann-Kendall Statistic (S):		4	10					
Confidence Factor:		57.1%	95.2%					
Concentration Trend:		No Trend	Increasing					



Notes:

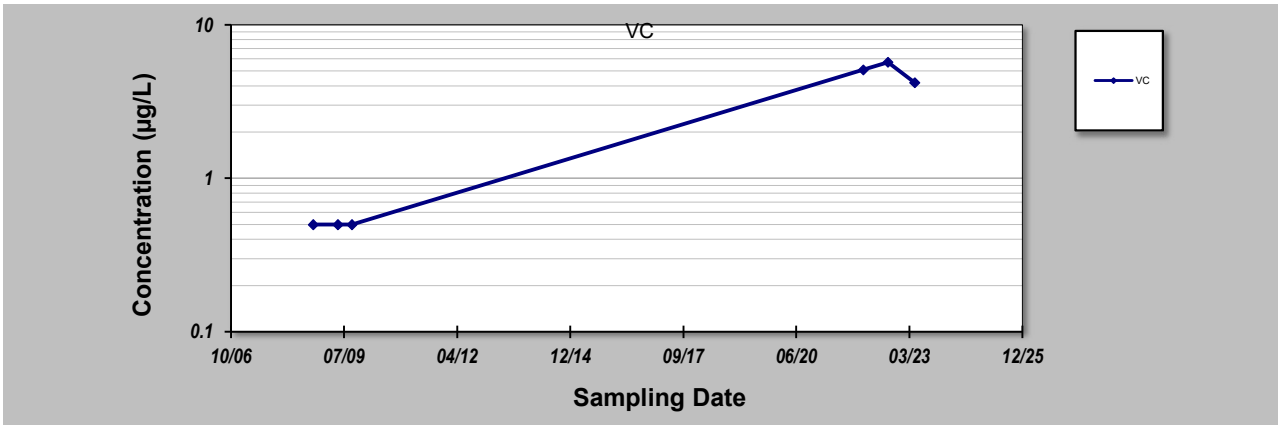
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
4. Yellow highlighting indicates the result was a non-detect, and 1/2 of the detection limit was used.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	18-Aug-23	Job ID:	CCF West LTM
Facility Name:	CCF West - KSC, FL	Constituent:	IW0029ID
Conducted By:	HGL	Concentration Units:	µg/L

Sampling Point ID:	VC						

Sampling Event	Sampling Date	IW0029ID CONCENTRATION (µg/L)						
1	10/08/2008	0.5						
2	05/13/2009	0.5						
3	09/14/2009	0.5						
4	02/01/2022	5.1						
5	09/06/2022	5.7						
6	05/01/2023	4.2						
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
Coefficient of Variation:		0.91						
Mann-Kendall Statistic (S):		8						
Confidence Factor:		89.8%						
Concentration Trend:		No Trend						



Notes:

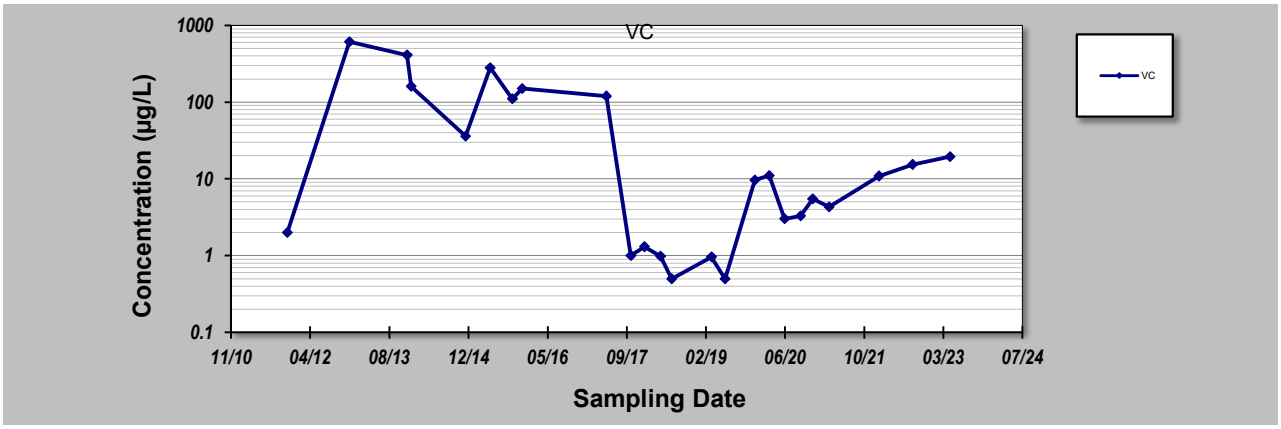
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
4. Yellow highlighting indicates the result was a non-detect, and 1/2 of the detection limit was used.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	18-Aug-23	Job ID:	CCF West LTM
Facility Name:	CCF West - KSC, FL	Constituent:	IW0037
Conducted By:	HGL	Concentration Units:	µg/L

Sampling Point ID:	VC						

Sampling Event	Sampling Date	IW0037 CONCENTRATION (µg/L)						
1	11/08/2011	2						
2	12/05/2012	610						
3	12/04/2013	410						
4	12/30/2013	160						
5	12/09/2014	36						
6	05/13/2015	280						
7	10/01/2015	110						
8	12/01/2015	150						
9	05/16/2017	120						
10	10/18/2017	1.0						
11	01/11/2018	1.3						
12	04/24/2018	0.98						
13	07/02/2018	0.5						
14	03/11/2019	0.96						
15	06/05/2019	0.5						
16	12/10/2019	9.7						
17	03/11/2020	11						
18	06/15/2020	3						
19	09/24/2020	3.3						
20	12/09/2020	5.5						
21	03/23/2021	4.3						
22	02/01/2022	10.9						
23	09/02/2022	15.4						
24	04/25/2023	19.5						
25								
Coefficient of Variation:		1.86						
Mann-Kendall Statistic (S):		-63						
Confidence Factor:		93.8%						
Concentration Trend:		Prob. Decreasing						



Notes:

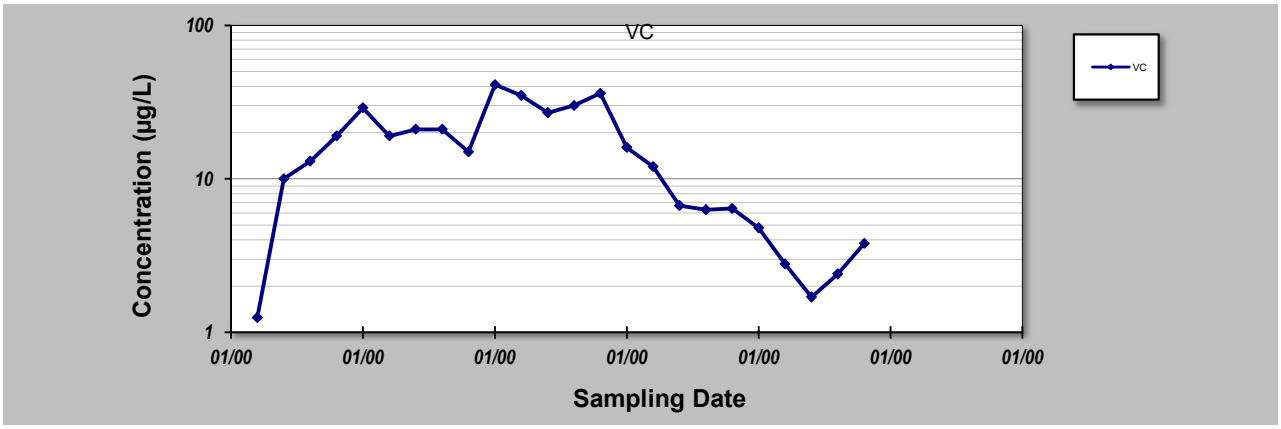
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
4. Yellow highlighting indicates the result was a non-detect, and 1/2 of the detection limit was used.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	18-Aug-23	Job ID:	CCF West LTM
Facility Name:	CCF West - KSC, FL	Constituent:	IW0042
Conducted By:	HGL	Concentration Units:	µg/L

Sampling Point ID:	VC

Sampling Event	Sampling Date	IW0042 CONCENTRATION (µg/L)
1	11/08/2011	1.25
2	03/08/2012	10
3	12/06/2012	13
4	12/04/2013	19
5	12/09/2014	29
6	05/13/2015	19
7	10/02/2015	21
8	12/01/2015	21
9	05/17/2017	15
10	10/18/2017	41
11	1/12/2018	35
12	04/24/2018	27
13	07/02/2018	30
14	3/7/2019	36
15	6/6/2019	16
16	12/10/2019	12
17	3/12/2020	6.7
18	6/17/2020	6.3
19	9/25/2020	6.4
20	12/9/2020	4.8
21	3/24/2021	2.8
22	1/31/2022	1.7
23	9/6/2022	2.4
24	4/26/2023	3.8
25		
Coefficient of Variation:		0.76
Mann-Kendall Statistic (S):		-88
Confidence Factor:		98.5%
Concentration Trend:		Decreasing



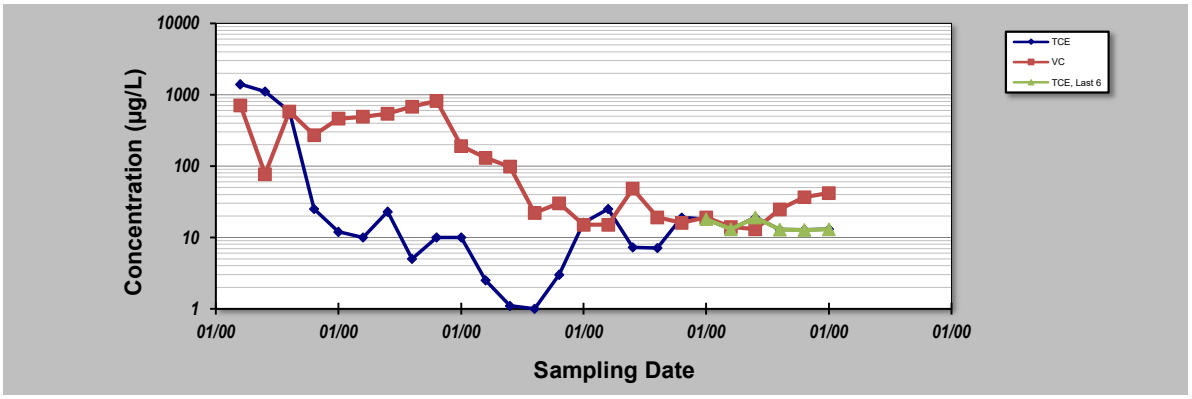
Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
4. Yellow highlighting indicates the result was a non-detect, and 1/2 of the detection limit was used.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	18-Aug-23	Job ID:	CCF West LTM
Facility Name:	CCF West - KSC, FL	Constituent:	IW0045
Conducted By:	HGL	Concentration Units:	µg/L

Sampling Point ID:	TCE	VC	TCE, Last 6				
Sampling Event	Sampling Date	IW0045 CONCENTRATION (µg/L)						
1	11/08/2011	1,400	710					
2	03/08/2012	1,100	77					
3	12/06/2012	580	580					
4	12/04/2013	25	270					
5	12/30/2013	12	460					
6	12/09/2014	10	490					
7	05/13/2015	23	540					
8	10/02/2015	5	680					
9	12/01/2015	10	820					
10	05/17/2017	10	190					
11	10/17/2017	2.5	130					
12	01/11/2018	1.1	98					
13	04/24/2018	1	22					
14	7/2/2018	3	30					
15	3/7/2019	16	15					
16	6/17/2019	25	15					
17	12/10/2019	7.2	48					
18	3/11/2020	7.1	19					
19	6/16/2020	19	16					
20	9/24/2020	18	19	18				
21	12/10/2020	13	14	13				
22	3/23/2021	19	13	19				
23	1/31/2022	12.9	24.8	12.9				
24	9/6/2022	12.7	36.7	12.7				
25	4/26/2023	13	41.9	13				
26								
27								
28								
29								
30								
Coefficient of Variation:		2.67	1.25	0.20				
Mann-Kendall Statistic (S):		-52	-160	-6				
Confidence Factor:		88.2%	>99.9%	81.5%				
Concentration Trend:		No Trend	Decreasing	Stable				



Notes:

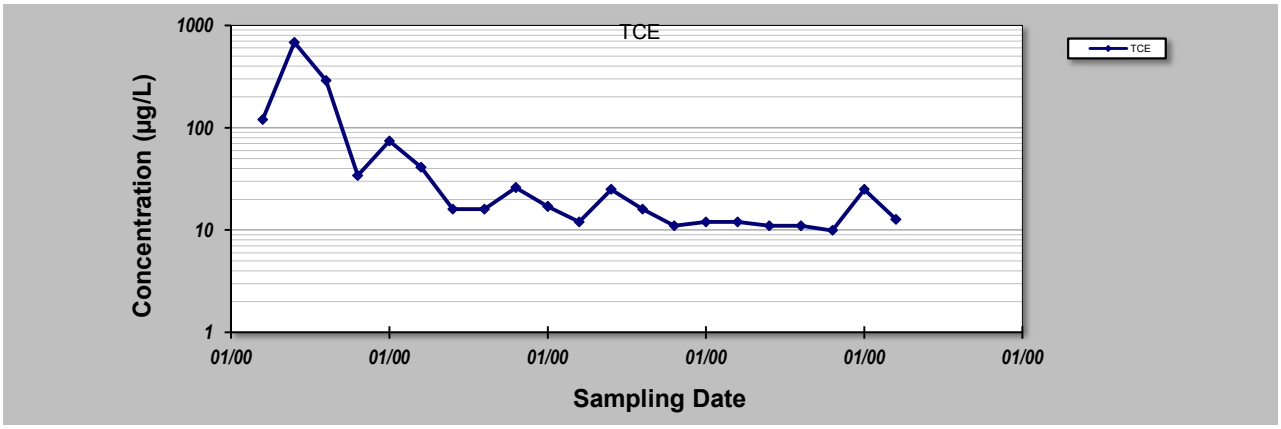
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.
4. Yellow highlighting indicates the result was a non-detect, and 1/2 of the detection limit was used.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	18-Aug-23	Job ID:	CCF West LTM
Facility Name:	CCF West - KSC, FL	Constituent:	IW0046
Conducted By:	HGL	Concentration Units:	µg/L

Sampling Point ID:	TCE

Sampling Event	Sampling Date	IW0046 CONCENTRATION (µg/L)
1	11/08/2011	120
2	12/06/2012	680
3	12/04/2013	290
4	12/09/2014	34
5	12/01/2015	74
6	05/17/2017	41
7	10/17/2017	16
8	01/11/2018	16
9	04/23/2018	26
10	07/02/2018	17
11	3/7/2019	12
12	06/04/2019	25
13	12/10/2019	16
14	3/11/2020	11
15	6/16/2020	12
16	9/24/2020	12
17	12/10/2020	11
18	3/24/2021	11
19	1/31/2022	9.9
20	9/1/2022	25
21	4/26/2023	12.7
22		
23		
24		
25		
Coefficient of Variation:		2.19
Mann-Kendall Statistic (S):		-134
Confidence Factor:		>99.9%
Concentration Trend:		Decreasing



Notes:

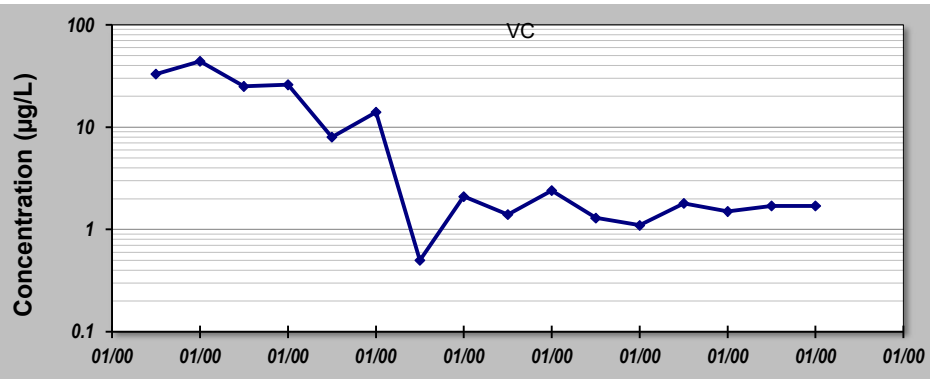
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
4. Yellow highlighting indicates the result was a non-detect, and 1/2 of the detection limit was used.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	18-Aug-23	Job ID:	CCF West LTM
Facility Name:	CCF West - KSC, FL	Constituent:	IW0059
Conducted By:	HGL	Concentration Units:	µg/L

Sampling Point ID:	VC						

Sampling Event	Sampling Date	IW0059 CONCENTRATION (µg/L)						
1	05/16/2017	33						
2	10/18/2017	44						
3	01/12/2018	25						
4	4/24/2018	26						
5	7/3/2018	8						
6	3/12/2019	14						
7	6/5/2019	0.5						
8	12/11/2019	2.1						
9	3/12/2020	1.4						
10	06/16/2020	2.4						
11	9/25/2020	1.3						
12	12/10/2020	1.1						
13	03/24/2021	1.8						
14	2/2/2022	1.5						
15	8/31/2022	1.7						
16	4/27/2023	1.7						
17								
18								
19								
20								
Coefficient of Variation:		1.34						
Mann-Kendall Statistic (S):		-63						
Confidence Factor:		99.8%						
Concentration Trend:		Decreasing						



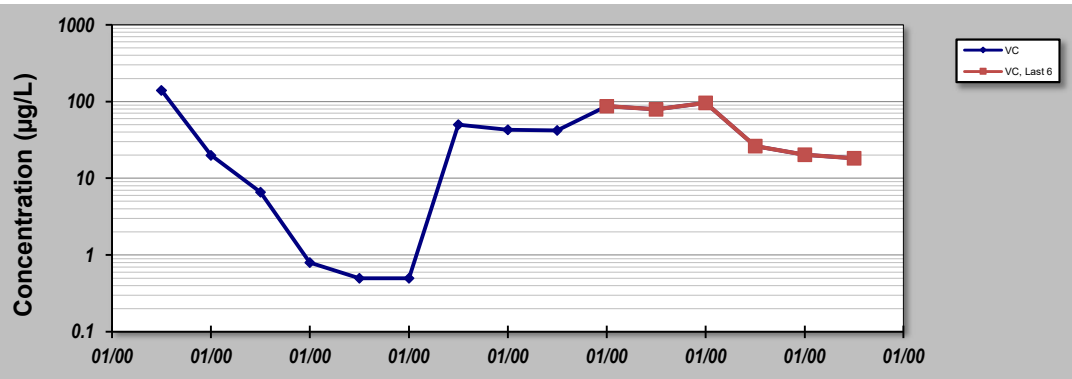
Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
4. Yellow highlighting indicates the result was a non-detect, and 1/2 of the detection limit was used.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	21-Aug-23	Job ID:	CCF West LTM
Facility Name:	CCF West - KSC, FL	Constituent:	IW0061
Conducted By:	HGL	Concentration Units:	µg/L

Sampling Point ID:	VC	VC, Last 6					
Sampling Event	Sampling Date	IW0061 CONCENTRATION (µg/L)						
1	05/17/2017	140						
2	10/18/2017	20						
3	01/12/2018	6.6						
4	4/24/2018	0.8						
5	7/3/2018	0.5						
6	6/17/2019	0.5						
7	12/10/2019	50						
8	3/12/2020	43						
9	6/17/2020	42						
10	09/25/2020	87	87					
11	12/9/2020	79	79					
12	03/24/2021	96	96					
13	01/31/2022	26.3	26.3					
14	9/2/2022	20.3	20.3					
15	4/25/2023	18.3	18.3					
16								
17								
18								
19								
20								
Coefficient of Variation:		0.99	0.67					
Mann-Kendall Statistic (S):		6	-11					
Confidence Factor:		59.6%	97.2%					
Concentration Trend:		No Trend	Decreasing					



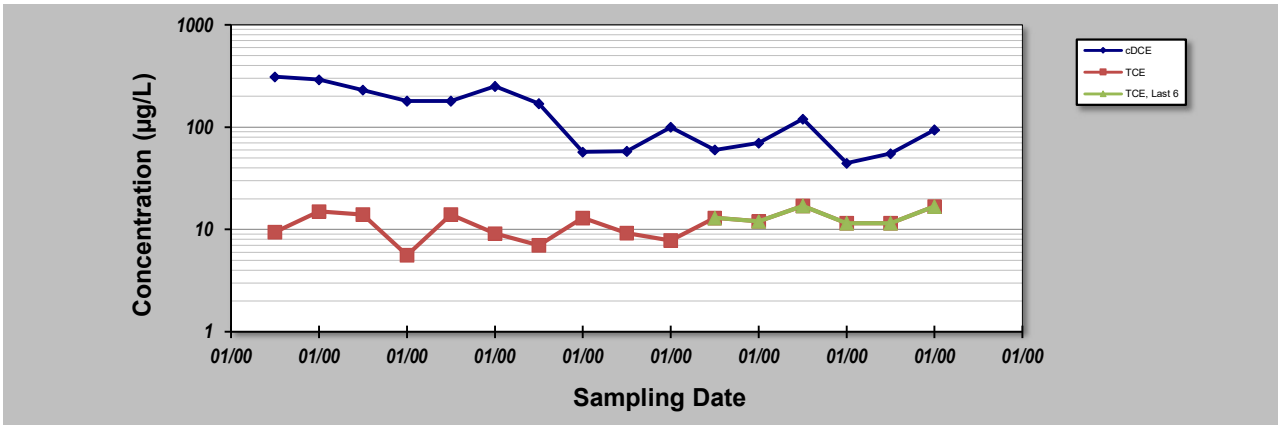
Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
4. Yellow highlighting indicates the result was a non-detect, and 1/2 of the detection limit was used.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	21-Aug-23	Job ID:	CCF West LTM
Facility Name:	CCF West - KSC, FL	Constituent:	IW0062
Conducted By:	HGL	Concentration Units:	µg/L

Sampling Point ID:	cDCE	TCE	TCE, Last 6				
Sampling Event	Sampling Date	IW0062 CONCENTRATION (µg/L)						
1	05/16/2017	310	9.4					
2	10/18/2017	290	15					
3	01/12/2018	230	14					
4	4/24/2018	180	5.6					
5	7/3/2018	180	14					
6	3/12/2019	250	9.1					
7	6/6/2019	170	7					
8	12/11/2019	57	13					
9	3/12/2020	58	9.2					
10	06/16/2020	100	7.8					
11	9/25/2020	60	13	13				
12	12/10/2020	70	12	12				
13	03/24/2021	120	17	17				
14	2/3/2022	44.4	11.5	11.5				
15	9/1/2022	55.2	11.5	11.5				
16	4/28/2023	93.8	16.8	16.8				
17								
18								
19								
20								
Coefficient of Variation:		0.63	0.29	0.19				
Mann-Kendall Statistic (S):		-73	13	-2				
Confidence Factor:		>99.9%	70.3%	57.0%				
Concentration Trend:		Decreasing	No Trend	Stable				



Notes:

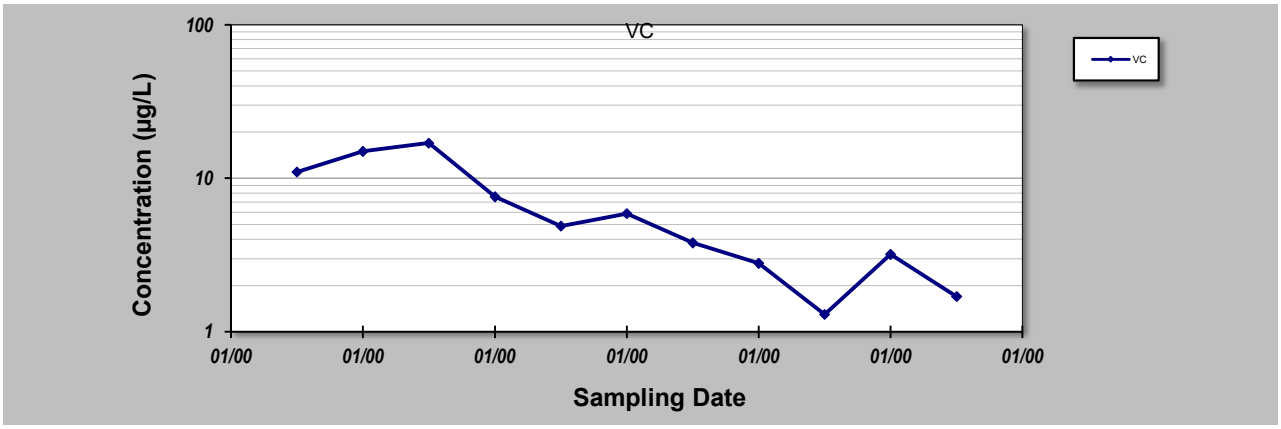
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
4. Yellow highlighting indicates the result was a non-detect, and 1/2 of the detection limit was used.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	21-Aug-23	Job ID:	CCF West LTM
Facility Name:	CCF West - KSC, FL	Constituent:	IW0063
Conducted By:	HGL	Concentration Units:	µg/L

Sampling Point ID:	VC						

Sampling Event	Sampling Date	IW0063 CONCENTRATION (µg/L)						
1	03/12/2019	11						
2	06/05/2019	15						
3	12/11/2019	17						
4	3/12/2020	7.6						
5	6/16/2020	4.9						
6	9/25/2020	5.9						
7	12/10/2020	3.8						
8	3/24/2021	2.8						
9	2/2/2022	1.3						
10	08/31/2022	3.2						
11	4/27/2023	1.7						
12								
13								
14								
15								
16								
17								
18								
19								
20								
Coefficient of Variation:		0.80						
Mann-Kendall Statistic (S):		-41						
Confidence Factor:		100.0%						
Concentration Trend:		Decreasing						



Notes:

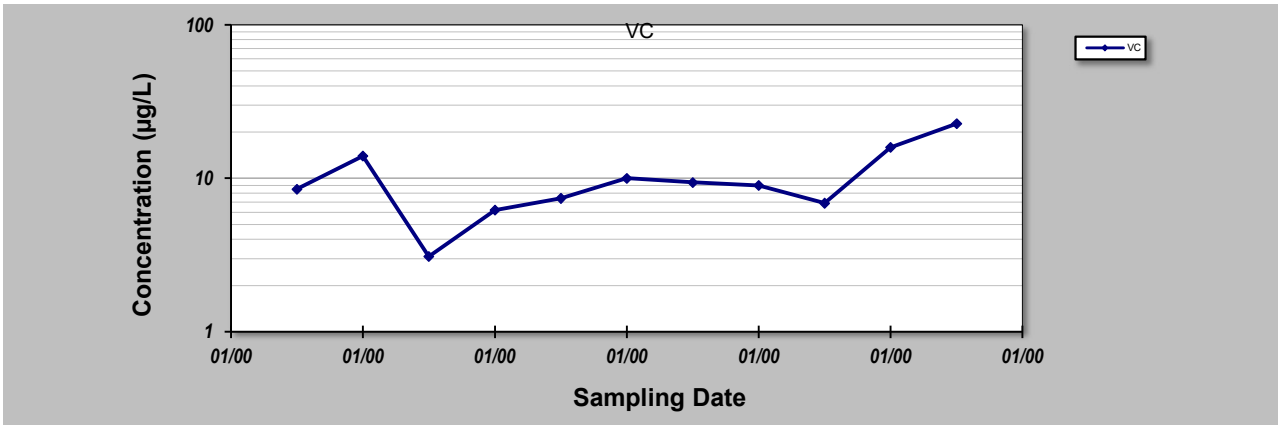
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
4. Yellow highlighting indicates the result was a non-detect, and 1/2 of the detection limit was used.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	21-Aug-23	Job ID:	CCF West LTM
Facility Name:	CCF West - KSC, FL	Constituent:	IW0064
Conducted By:	HGL	Concentration Units:	µg/L

Sampling Point ID:	VC						

Sampling Event	Sampling Date	IW0064 CONCENTRATION (µg/L)						
1	03/12/2019	8.5						
2	06/06/2019	14						
3	12/11/2019	3.1						
4	3/12/2020	6.2						
5	6/16/2020	7.4						
6	9/25/2020	10						
7	12/10/2020	9.4						
8	3/23/2021	9						
9	2/2/2022	6.9						
10	09/01/2022	15.9						
11	4/27/2023	22.7						
12								
13								
14								
15								
16								
17								
18								
19								
20								
Coefficient of Variation:		0.53						
Mann-Kendall Statistic (S):		19						
Confidence Factor:		91.8%						
Concentration Trend:		Prob. Increasing						



Notes:

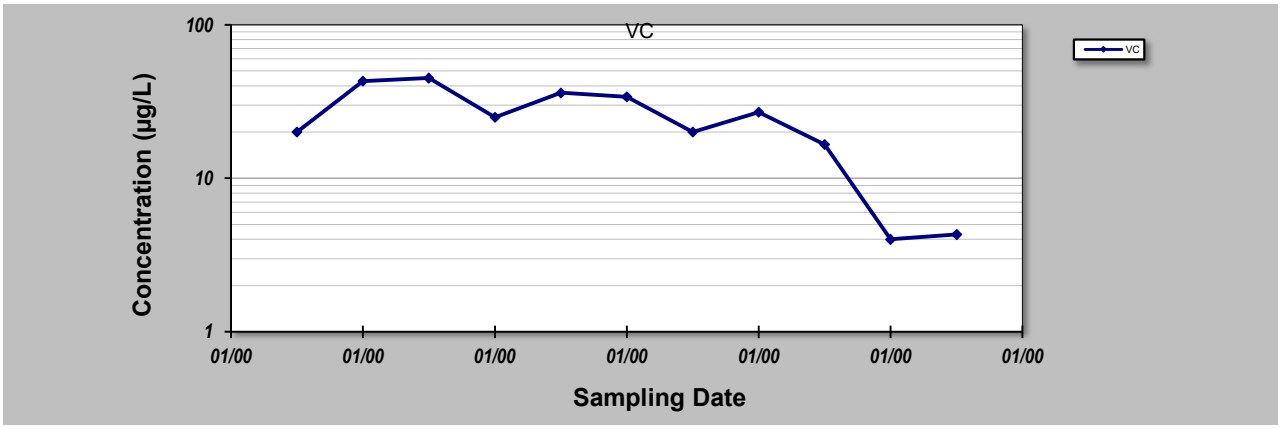
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
4. Yellow highlighting indicates the result was a non-detect, and 1/2 of the detection limit was used.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	21-Aug-23	Job ID:	CCF West LTM
Facility Name:	CCF West - KSC, FL	Constituent:	IW0067
Conducted By:	HGL	Concentration Units:	µg/L

Sampling Point ID:	VC						

Sampling Event	Sampling Date	IW0067 CONCENTRATION (µg/L)						
1	03/07/2019	20						
2	06/04/2019	43						
3	12/10/2019	45						
4	3/11/2020	25						
5	6/16/2020	36						
6	9/24/2020	34						
7	12/10/2020	20						
8	3/23/2021	27						
9	1/31/2022	16.6						
10	09/06/2022	4						
11	4/26/2023	4.3						
12								
13								
14								
15								
16								
17								
18								
19								
20								
Coefficient of Variation:		0.55						
Mann-Kendall Statistic (S):		-30						
Confidence Factor:		99.0%						
Concentration Trend:		Decreasing						



Notes:

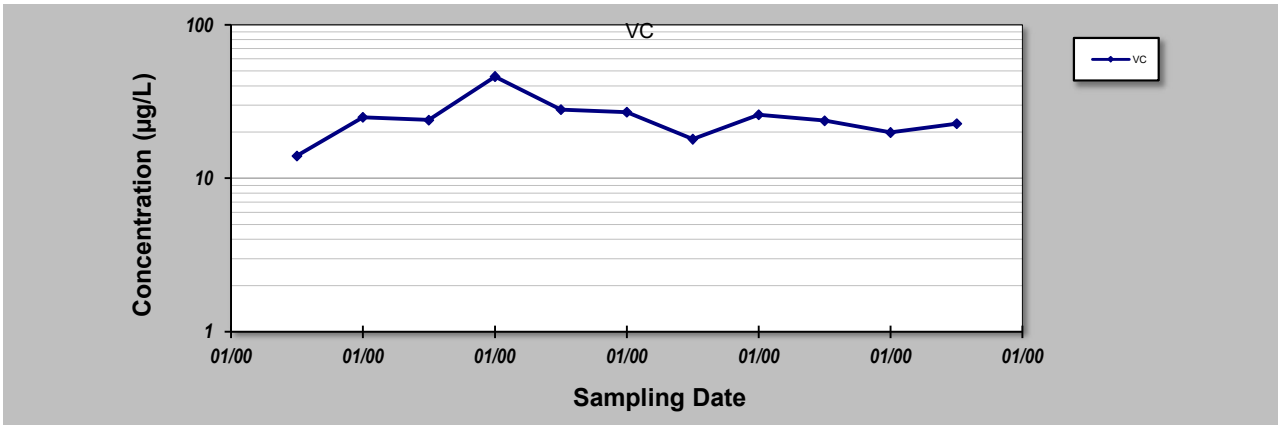
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
4. Yellow highlighting indicates the result was a non-detect, and 1/2 of the detection limit was used.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	21-Aug-23	Job ID:	CCF West LTM
Facility Name:	CCF West - KSC, FL	Constituent:	IW0070
Conducted By:	HGL	Concentration Units:	µg/L

Sampling Point ID:	VC						

Sampling Event	Sampling Date	IW0070 CONCENTRATION (µg/L)						
1	03/07/2019	14						
2	06/04/2019	25						
3	12/10/2019	24						
4	3/11/2020	46						
5	6/16/2020	28						
6	9/24/2020	27						
7	12/10/2020	18						
8	3/23/2021	26						
9	1/31/2022	23.7						
10	09/06/2022	19.9						
11	4/26/2023	22.7						
12								
13								
14								
15								
16								
17								
18								
19								
20								
Coefficient of Variation:		0.33						
Mann-Kendall Statistic (S):		-9						
Confidence Factor:		72.9%						
Concentration Trend:		Stable						



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
4. Yellow highlighting indicates the result was a non-detect, and 1/2 of the detection limit was used.

This page was intentionally left blank.

APPENDIX G

CURRENT AND HISTORICAL VOCS ANALYTICAL RESULTS

This page was intentionally left blank.

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 8 to 10 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

LOCATION ID	CCF-IW0003S							
SAMPLE ID	CCF-IW0003S-015.0-19981109		CCF-IW0003S-015.0-19990311	CCF-IW0003S-015.0-19990609	CCF-IW0003S-015.0-20000118	CCF-IW0003S-015.0-20000808	CCF-IW0003S-000.0-20010126	CCF-IW0003S-015.0-20050608
SAMPLE DATE	11/9/1998		3/11/1999	6/9/1999	1/18/2000	8/8/2000	1/26/2001	6/8/2005
VOLATILE (µg/L)								
1,1,1,2-TETRACHLOROETHANE						1 U		1 U
1,1,1-TRICHLOROETHANE	2500	U	2000 U	1000 U	5000 U	1 U	0.5 U	1 U
1,1,2,2-TETRACHLOROETHANE	2500	U	2000 U	1000 U	5000 U	1 U		1 U
1,1,2-TRICHLOROETHANE	2500	U	2000 U	1000 U	5000 U	1 U	0.5 U	1 U
1,1,2-TRICHLOROTRIFLUOROETHANE	36000		23000	46000	95000	18000	2.32	13.3
1,1-DICHLOROETHANE	2500	U	2000 U	1000 U	5000 U	1.2	0.5 U	1 U
1,1-DICHLOROETHENE	2500	U	2000 U	1000 U	5000 U	1 U	0.5 U	1 U
1,1-DICHLOROPROPENE						1 U		1 U
1,2,3-TRICHLOROBENZENE						1 U	0.5 U	1 U
1,2,3-TRICHLOROPROPANE						1 U		1 U
1,2,4-TRICHLOROBENZENE						1.6	1 U	1 U
1,2,4-TRIMETHYLBENZENE						1 U		1 U
1,2-DIBROMO-3-CHLOROPROPANE						2 U		5 U
1,2-DIBROMOETHANE						1 U		1 U
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	0.00	UN	0.00 UN	0.00 UN	5000 U	360 N		
1,2-DICHLOROBENZENE						1 U	0.5 U	1 U
1,2-DICHLOROETHANE	2500	U	2000 U	1000 U	5000 U	1 U	0.5 U	1 U
1,2-DICHLOROPROPANE	2500	U	2000 U	1000 U	5000 U	1 U		1 U
1,3,5-TRIMETHYLBENZENE						1 U		1 U
1,3-DICHLOROBENZENE						1 U		1 U
1,3-DICHLOROPROPANE						1 U		1 U
1,4-DICHLOROBENZENE						1 U		1 U
1,4-DIOXANE								
2,2-DICHLOROPROPANE						1 U		1 U
2-BUTANONE	25000	U	20000 U	10000 U	50000 U	10 U		25 U
2-CHLOROETHYL VINYL ETHER								
2-CHLOROTOLUENE						1 U		1 U
2-HEXANONE	25000	U	20000 U	10000 U	50000 U	10 U		5 U
4-CHLOROTOLUENE						1 U		1 U
4-ISOPROPYLTOLUENE						1 U	0.5 U	1 U
4-METHYL-2-PENTANONE	25000	U	20000 U	10000 U	50000 U	10 U		5 U
ACETONE	25000	U	20000 U	10000 U	50000 U	10 U	10 U	25 U
BENZENE	2500	U	2000 U	1000 U	5000 U	1 U	0.5 U	1 U
BROMOBENZENE						1 U		1 U
BROMOCHLOROMETHANE						1 U		1 U
BROMODICHLOROMETHANE	2500	U	2000 U	1000 U	5000 U	1 U		1 U
BROMOFORM	2500	U	2000 U	1000 U	5000 U	1 U		1 U
BROMOMETHANE	2200	U	1700 U	1000 U	5000 U	1 U		1 U
CARBON DISULFIDE	2500	U	2000 U	1000 U	5000 U	1 U	0.5 U	1 U
CARBON TETRACHLORIDE	2500	U	2000 U	1000 U	5000 U	1 U		1 U
CHLOROBENZENE	2500	U	2000 U	1000 U	5000 U	1 U	0.5 U	1 U
CHLORODIBROMOMETHANE	2500	U	2000 U	1000 U	5000 U	1 U		1 U
CHLOROETHANE	2500	U	2000 U	1000 U	5000 U	1 U		1 U
CHLOROFORM	2500	U	2000 U	1000 U	5000 U	1 U	0.5 U	1 U
CHLOROMETHANE	2500	U	2000 U	1000 U	5000 U	1 U		1 U
CHLOROTRIFLUOROETHENE	0.00	UN	0.00 UN	0.00 UN	5000 U	910 N		
CIS-1,2-DICHLOROETHENE	3200		5500	12000	3100 J	5300	1	2.1
CIS-1,3-DICHLOROPROPENE	2500	U	2000 U	1000 U	5000 U	1 U		1 U
CYCLOHEXANE								
DIBROMOMETHANE						1 U		1 U
DICHLORODIFLUOROMETHANE						1 U	1 U	1.8
ETHYLBENZENE	2500	U	2000 U	1000 U	5000 U	0.69 J	0.5 U	1 U
HEXACHLOROBUTADIENE						1 U		1 U
ISOPROPYLBENZENE						1 U		1 U
M+P-XYLENES								
METHYL ACETATE								
METHYL CYCLOHEXANE								
METHYL TERT-BUTYL ETHER						1 U		
METHYLENE CHLORIDE	2500	U	2000 U	1000 U	25000 U	2 U	2 U	2.5 U
NAPHTHALENE						1 U		5 U
N-BUTYLBENZENE						1 U		1 U
N-PROPYLBENZENE						1 U		1 U
O-XYLENE								
SEC-BUTYLBENZENE						1 U		1 U
STYRENE	2500	U	2000 U	1000 U	5000 U	1 U		1 U
TERT-BUTYLBENZENE						1 U		1 U
TETRACHLOROETHENE	2500	U	2000 U	1000 U	5000 U	1 U	0.5 U	1 U
TOLUENE	2500	U	2000 U	1000 U	5000 U	0.82 J	0.5 U	1 U
TOTAL XYLENES	2500	U	2000 U	1000 U	5000 U	3.5	0.5 U	1 U
TRANS-1,2-DICHLOROETHENE	2500	U	2000 U	1000 U	5000 U	21	0.5 U	1 U
TRANS-1,3-DICHLOROPROPENE	2500	U	2000 U	1000 U	5000 U	1 U		1 U
TRICHLOROETHENE	5700		820 J	350 J	12000	230	1.6	4.6
TRICHLOROFLUOROMETHANE						1 U		1 U
VINYL CHLORIDE	2500	U	2000 U	1000 U	5000 U	98 J	0.5 U	1.2

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 8 to 10 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

LOCATION ID	CCF-IW0003S							
SAMPLE ID	CCF-IW0003S-015.0-20050823	CCF-IW0003S-015.0-20051227	CCF-IW0003S-015.0-20060321	CCF-IW0003S-015.0-20060615	CCF-IW0003S-012.5-20060821	CCF-IW0003S-012.5-20061219	CCF-IW0003S-012.5-20070418	CCF-IW0003S-007.7-20070724
SAMPLE DATE	8/23/2005	12/27/2005	3/21/2006	6/15/2006	8/21/2006	12/19/2006	4/18/2007	7/24/2007
VOLATILE (µg/L)								
1,1,1,2-TETRACHLOROETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-TRICHLOROETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-TETRACHLOROETHANE	1 U	1 U	1 U	1 U	1 U	1 U	0.20 U	1 U
1,1,2-TRICHLOROETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-TRICHLOROTRIFLUOROETHANE	2.32	497	11.5		4.08	1.7	3.9	3
1,1-DICHLOROETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-DICHLOROETHENE	1 U	1.75	1 U	1 U	1 U	1 U	1 U	1 U
1,1-DICHLOROPROPENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-TRICHLOROBENZENE	0.77 I	2 U	2 U	3.58	1 U	1 U	1 U	1 U
1,2,3-TRICHLOROPROPANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-TRICHLOROBENZENE	1.58	2 U	0.94 I	1.52 I	1 U	1 U	1 U	1 U
1,2,4-TRIMETHYLBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DIBROMO-3-CHLOROPROPANE	5 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
1,2-DIBROMOETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE								
1,2-DICHLOROBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROPROPANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3,5-TRIMETHYLBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3-DICHLOROBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3-DICHLOROPROPANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-DICHLOROBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-DIOXANE								
2,2-DICHLOROPROPANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-BUTANONE	25 U	50 U	50 U	50 U	50 U	5 U	5 U	5 U
2-CHLOROETHYL VINYL ETHER						1 U	1 U	1 U
2-CHLOROTOLUENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-HEXANONE	5 U	50 U	50 U	50 U	50 U	5 U	5 U	5 U
4-CHLOROTOLUENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
4-ISOPROPYLTOLUENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
4-METHYL-2-PENTANONE	5 U	50 U	50 U	50 U	50 U	5 U	5 U	5 U
ACETONE	50 U	10.6 I	50 U	50 U	50 U	5 U	5 U	5 U
BENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BROMOBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BROMOCHLOROMETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BROMODICHLOROMETHANE	1 U	1 U	1 U	1 U	1 U	0.40 U	0.40 U	1 U
BROMOFORM	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BROMOMETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CARBON DISULFIDE	1 U	1 U	1 U	1 U	1 U	5 U	5 U	5 U
CARBON TETRACHLORIDE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLORODIBROMOMETHANE	1 U	1 U	1 U	1 U	1 U	1 U	0.20 U	1 U
CHLOROETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROFORM	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROMETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROTRIFLUOROETHENE								
CIS-1,2-DICHLOROETHENE	1.28	98.7	56.6	26.5	7.57	1 U	1 U	1 U
CIS-1,3-DICHLOROPROPENE	1 U	1 U	1 U	1 U	1 U	0.20 U	0.20 U	1 U
CYCLOHEXANE								
DIBROMOMETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
DICHLORODIFLUOROMETHANE	1.07	15.4	6.49	1 U	1 U	1 U	1 U	1 U
ETHYLBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
HEXACHLOROBUTADIENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
ISOPROPYLBENZENE	1 U	1 U	1 U	1 U	1 U	0.20 U	0.20 U	1 U
M+P-XYLENES						2 U	1 U	1 U
METHYL ACETATE								
METHYL CYCLOHEXANE					5 U			
METHYL TERT-BUTYL ETHER	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
METHYLENE CHLORIDE	5 U	5 U	5 U	5 U	5 U	2 U	2 U	2 U
NAPHTHALENE	5 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
N-BUTYLBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
N-PROPYLBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
O-XYLENE						1 U	1 U	1 U
SEC-BUTYLBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
STYRENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TERT-BUTYLBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TETRACHLOROETHENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TOLUENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TOTAL XYLENES	2 U	3 U	3 U	3 U	3 U			1 U
TRANS-1,2-DICHLOROETHENE	1 U	0.57 I	1 U	0.77 I	1 U	1 U	1 U	1 U
TRANS-1,3-DICHLOROPROPENE	1 U	1 U	1 U	1 U	1 U	0.20 U	0.20 U	1 U
TRICHLOROETHENE	2.11	6.44	2.11	9.95	3.31	1 U	0.81 I	17
TRICHLOROFLUOROMETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
VINYL CHLORIDE	1 U	0.78 I	1 U	4.98	1 U	1 U	1 U	1 U

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 8 to 10 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

LOCATION ID	CCF-IW0003S							
SAMPLE ID	CCF-IW0003S-007.7-20070922	CCF-IW0003S-007.7-20080409	CCF-IW0003S-007.7-20080923	CCF-IW0003S-007.7-20090514	CCF-IW0003S-007.7-20090911	CCF-IW0003S-007.7-20100417	CCF-IW0003S-007.7-20100916	CCF-IW0003S-008.0-20220203
SAMPLE DATE	9/22/2007	4/9/2008	9/23/2008	5/14/2009	9/11/2009	4/17/2010	9/16/2010	2/3/2022
VOLATILE (µg/L)								
1,1,1,2-TETRACHLOROETHANE	1 U		1 U	1 U	1 U	1 U	10 U	
1,1,1-TRICHLOROETHANE	1 U		1 U	1 U	1 U	1 U	10 U	
1,1,2,2-TETRACHLOROETHANE	1 U		1 U	1 U	1 U	1 U	10 U	
1,1,2-TRICHLOROETHANE	1 U		1 U	1 U	1 U	1 U	10 U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1 U	3.8	40	1.4	80	1100	2700	
1,1-DICHLOROETHANE	1 U		1 U	1 U	1 U	1 U	10 U	
1,1-DICHLOROETHENE	1 U	1 U	1.9	1 U	1 U	1 U	10 U	
1,1-DICHLOROPROPENE	1 U		1 U	1 U	1 U	1 U	10 U	
1,2,3-TRICHLOROBENZENE	1 U		1 U	1 U	1 U	1 U	10 U	
1,2,3-TRICHLOROPROPANE	1 U		1 U	1 U	1 U	1 U	10 U	
1,2,4-TRICHLOROBENZENE	0.20 I		1 U	1 U	1 U	1 U	10 U	
1,2,4-TRIMETHYLBENZENE	1 U		1 U	1 U	1 U	1 U	10 U	
1,2-DIBROMO-3-CHLOROPROPANE	1 U		1 U	1 U	1 U	1 U	10 U	
1,2-DIBROMOETHANE	1 U		1 U	1 U	1 U	1 U	10 U	
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE								
1,2-DICHLOROBENZENE	1 U		1 U	1 U	1 U	1 U	10 U	
1,2-DICHLOROETHANE	1 U		1 U	1 U	1 U	1 U	10 U	
1,2-DICHLOROPROPANE	1 U		1 U	1 U	1 U	1 U	10 U	
1,3,5-TRIMETHYLBENZENE	1 U		1 U	1 U	1 U	1 U	10 U	
1,3-DICHLOROBENZENE	1 U		1 U	1 U	1 U	1 U	10 U	
1,3-DICHLOROPROPANE	1 U		1 U	1 U	1 U	1 U	10 U	
1,4-DICHLOROBENZENE	1 U		1 U	1 U	1 U	1 U	10 U	
1,4-DIOXANE				2 U				
2,2-DICHLOROPROPANE	1 U		1 U	1 U	1 U	1 U	10 U	
2-BUTANONE	5 U		5 U	5 U	5 U	5 U	50 U	
2-CHLOROETHYL VINYL ETHER	1 U		1 U	1 U	1 U	1 U	10 U	
2-CHLOROTOLUENE	1 U		1 U	1 U	1 U	1 U	10 U	
2-HEXANONE	5 U		5 U	5 U	5 U	5 U	50 U	
4-CHLOROTOLUENE	1 U		1 U	1 U	1 U	1 U	10 U	
4-ISOPROPYLTOLUENE	1 U		1 U	1 U	1 U	1 U	10 U	
4-METHYL-2-PENTANONE	5 U		5 U	5 U	5 U	5 U	50 U	
ACETONE	5 U		5 U	5 U	5 U	5 U	45 I	
BENZENE	1 U		1 U	1 U	1 U	1 U	10 U	
BROMOBENZENE	1 U		1 U	1 U	1 U	1 U	10 U	
BROMOCHLOROMETHANE	1 U		1 U	1 U	1 U	1 U	10 U	
BROMODICHLOROMETHANE	1 U		1 U	1 U	1 U	1 U	10 U	
BROMOFORM	1 U		1 U	1 U	1 U	1 U	10 U	
BROMOMETHANE	1 U		1 U	1 U	1 U	1 U	10 U	
CARBON DISULFIDE	5 U		5 U	1.2 I	5 U	5 U	50 U	
CARBON TETRACHLORIDE	1 U		1 U	1 U	1 U	1 U	10 U	
CHLOROBENZENE	1 U		1 U	1 U	1 U	1 U	10 U	
CHLORODIBROMOMETHANE	1 U		1 U	1 U	1 U	1 U	10 U	
CHLOROETHANE	1 U		1 U	1 U	1 U	1 U	10 U	
CHLOROFORM	1 U		1 U	1 U	1 U	1 U	10 U	
CHLOROMETHANE	1 U		1 U	1 U	1 U	1 U	10 U	
CHLOROTRIFLUOROETHENE								
CIS-1,2-DICHLOROETHENE	1 U	4		3.6	29	170	89	2.1 J
CIS-1,3-DICHLOROPROPENE	1 U		1 U	1 U	1 U	1 U	10 U	
CYCLOHEXANE								
DIBROMOMETHANE	1 U		1 U	1 U	1 U	1 U	10 U	
DICHLORODIFLUOROMETHANE	1 U		42	1 U	1 U	1 U	10 U	
ETHYLBENZENE	1 U		0.31 I	1 U	1 U	1 U	10 U	
HEXACHLOROBUTADIENE	1 U		1 U	1 U	1 U	1 U	10 U	
ISOPROPYLBENZENE	1 U		1 U	1 U	1 U	1 U	10 U	
M+P-XYLENES	1 U		1	1 U	1 U	1 U	10 U	
METHYL ACETATE								
METHYL CYCLOHEXANE								
METHYL TERT-BUTYL ETHER	1 U		1 U	1 U	1 U	1 U	10 U	
METHYLENE CHLORIDE	2 U		1 U	1 U	1 U	1 U	10 U	
NAPHTHALENE	1 U		1 U	1 U	1 U	0.42 I	10 U	
N-BUTYLBENZENE	1 U		1 U	1 U	1 U	1 U	10 U	
N-PROPYLBENZENE	1 U		1 U	1 U	1 U	1 U	10 U	
O-XYLENE	1 U		0.46 I	1 U	1 U	1 U	10 U	
SEC-BUTYLBENZENE	1 U		1 U	1 U	1 U	1 U	10 U	
STYRENE	1 U		1 U	1 U	1 U	1 U	10 U	
TERT-BUTYLBENZENE	1 U		1 U	1 U	1 U	1 U	10 U	
TETRACHLOROETHENE	1 U		1 U	1 U	1 U	1 U	10 U	
TOLUENE	1 U		0.60 I	1 U	1 U	0.45 I	10 U	
TOTAL XYLENES	1 U		1.5	1 U	1 U	1 U	10 U	
TRANS-1,2-DICHLOROETHENE	1 U	1 U	3.3	0.55 I	1.1	1.3	10 U	5 U
TRANS-1,3-DICHLOROPROPENE	1 U		1 U	1 U	1 U	1 U	10 U	
TRICHLOROETHENE	0.32 I	0.76 I	3.9	1.2	6.6	45	65	70.4
TRICHLOROFLUOROMETHANE	1 U		1 U	1 U	1 U	1 U	10 U	
VINYL CHLORIDE	1 U	3.3	100	1 U	1.5	9.8	10 U	5 U

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 8 to 10 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

LOCATION ID	CCF-IW0003S			CCF-IW0079			
SAMPLE ID	CCF-IW0003S-008.0-20220901	CCF-IW0003S-008.0-20230428	CCF-IW0003S-008.0-20230524	CCF-IW0079-010.0-20220201	CCF-IW0079-010.0-20220902	CCF-IW0079-010.0-20230425	CCF-IW0079-045.0-20230609
SAMPLE DATE	9/1/2022	4/28/2023	5/24/2023	2/1/2022	9/2/2022	4/25/2023	6/9/2023
VOLATILE (µg/L)							
1,1,1,2-TETRACHLOROETHANE							0.36 U
1,1,1-TRICHLOROETHANE							0.21 U
1,1,2,2-TETRACHLOROETHANE							0.40 U
1,1,2-TRICHLOROETHANE							0.32 U
1,1,2-TRICHLOROTRIFLUOROETHANE							0.23 U
1,1-DICHLOROETHANE							0.33 U
1,1-DICHLOROETHENE							0.33 U
1,1-DICHLOROPROPENE							
1,2,3-TRICHLOROBENZENE							0.81 U
1,2,3-TRICHLOROPROPANE							
1,2,4-TRICHLOROBENZENE							0.53 U
1,2,4-TRIMETHYLBENZENE							
1,2-DIBROMO-3-CHLOROPROPANE							1.8 U
1,2-DIBROMOETHANE							0.33 U
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE							
1,2-DICHLOROBENZENE							0.31 U
1,2-DICHLOROETHANE							0.25 U
1,2-DICHLOROPROPANE							0.22 U
1,3,5-TRIMETHYLBENZENE							
1,3-DICHLOROBENZENE							0.31 U
1,3-DICHLOROPROPANE							
1,4-DICHLOROBENZENE							0.31 U
1,4-DIOXANE							
2,2-DICHLOROPROPANE							
2-BUTANONE							6.4 U
2-CHLOROETHYL VINYL ETHER							
2-CHLOROTOLUENE							
2-HEXANONE							3.2 U
4-CHLOROTOLUENE							
4-ISOPROPYLTOLUENE							
4-METHYL-2-PENTANONE							2.7 U
ACETONE							3.7 U
BENZENE							0.27 U
BROMOBENZENE							
BROMOCHLOROMETHANE							0.34 U
BROMODICHLOROMETHANE							0.25 U
BROMOFORM							0.59 U
BROMOMETHANE							3.7 U
CARBON DISULFIDE							0.43 U
CARBON TETRACHLORIDE							0.30 U
CHLOROBENZENE							0.15 U
CHLORODIBROMOMETHANE							0.39 U
CHLOROETHANE							4.6 U
CHLOROFORM							0.27 U
CHLOROMETHANE							0.54 U
CHLOROTRIFLUOROETHENE							
CIS-1,2-DICHLOROETHENE	9.8	109	133	1 U	0.93 J	4.5	0.25 U
CIS-1,3-DICHLOROPROPENE							0.26 U
CYCLOHEXANE							0.28 U
DIBROMOMETHANE							
DICHLORODIFLUOROMETHANE							0.36 U
ETHYLBENZENE							0.20 U
HEXACHLOROBUTADIENE							
ISOPROPYLBENZENE							0.26 U
M+P-XYLENES							0.49 U
METHYL ACETATE							3.2 U
METHYL CYCLOHEXANE							
METHYL TERT-BUTYL ETHER							0.81 U
METHYLENE CHLORIDE							3.2 U
NAPHTHALENE							
N-BUTYLBENZENE							
N-PROPYLBENZENE							
O-XYLENE							0.26 U
SEC-BUTYLBENZENE							
STYRENE							0.27 U
TERT-BUTYLBENZENE							
TETRACHLOROETHENE							0.35 U
TOLUENE							0.25 U
TOTAL XYLENES							0.23 U
TRANS-1,2-DICHLOROETHENE	0.50 U	5 U	50 U	1 U	0.62 J	1.7	0.34 U
TRANS-1,3-DICHLOROPROPENE							0.23 U
TRICHLOROETHENE	85.8	493	807	1 U	0.50 U	0.50 U	0.20 U
TRICHLOROFLUOROMETHANE							0.33 U
VINYL CHLORIDE	0.50 U	5 U	50 U	1 U	0.50 U	0.50 U	0.40 U

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 8 to 10 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

LOCATION ID	CCF-IW0080S		
SAMPLE ID	CCF-IW0080S-010.0-20220203	CCF-IW0080S-010.0-20220831	CCF-IW0080S-010.0-20230427
SAMPLE DATE	2/3/2022	8/31/2022	4/27/2023
VOLATILE (µg/L)			
1,1,1,2-TETRACHLOROETHANE			
1,1,1-TRICHLOROETHANE			
1,1,2,2-TETRACHLOROETHANE			
1,1,2-TRICHLOROETHANE			
1,1,2-TRICHLOROTRIFLUOROETHANE			
1,1-DICHLOROETHANE			
1,1-DICHLOROETHENE			
1,1-DICHLOROPROPENE			
1,2,3-TRICHLOROBENZENE			
1,2,3-TRICHLOROPROPANE			
1,2,4-TRICHLOROBENZENE			
1,2,4-TRIMETHYLBENZENE			
1,2-DIBROMO-3-CHLOROPROPANE			
1,2-DIBROMOETHANE			
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE			
1,2-DICHLOROBENZENE			
1,2-DICHLOROETHANE			
1,2-DICHLOROPROPANE			
1,3,5-TRIMETHYLBENZENE			
1,3-DICHLOROBENZENE			
1,3-DICHLOROPROPANE			
1,4-DICHLOROBENZENE			
1,4-DIOXANE			
2,2-DICHLOROPROPANE			
2-BUTANONE			
2-CHLOROETHYL VINYL ETHER			
2-CHLOROTOLUENE			
2-HEXANONE			
4-CHLOROTOLUENE			
4-ISOPROPYLTOLUENE			
4-METHYL-2-PENTANONE			
ACETONE			
BENZENE			
BROMOBENZENE			
BROMOCHLOROMETHANE			
BROMODICHLOROMETHANE			
BROMOFORM			
BROMOMETHANE			
CARBON DISULFIDE			
CARBON TETRACHLORIDE			
CHLOROBENZENE			
CHLORODIBROMOMETHANE			
CHLOROETHANE			
CHLOROFORM			
CHLOROMETHANE			
CHLOROTRIFLUOROETHENE			
CIS-1,2-DICHLOROETHENE	0.69 J	1	0.50 U
CIS-1,3-DICHLOROPROPENE			
CYCLOHEXANE			
DIBROMOMETHANE			
DICHLORODIFLUOROMETHANE			
ETHYLBENZENE			
HEXACHLOROBUTADIENE			
ISOPROPYLBENZENE			
M+P-XYLENES			
METHYL ACETATE			
METHYL CYCLOHEXANE			
METHYL TERT-BUTYL ETHER			
METHYLENE CHLORIDE			
NAPHTHALENE			
N-BUTYLBENZENE			
N-PROPYLBENZENE			
O-XYLENE			
SEC-BUTYLBENZENE			
STYRENE			
TERT-BUTYLBENZENE			
TETRACHLOROETHENE			
TOLUENE			
TOTAL XYLENES			
TRANS-1,2-DICHLOROETHENE	1 U	0.50 U	0.50 U
TRANS-1,3-DICHLOROPROPENE			
TRICHLOROETHENE	1 U	0.50 U	0.50 U
TRICHLOROFLUOROMETHANE			
VINYL CHLORIDE	1 U	0.50 U	0.50 U

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 20 to 25 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

LOCATION ID	CCF-IW0037							
SAMPLE ID	CCF-IW0037-025.0-20111108	CCF-IW0037-025.0-20121205	CCF-IW0037-025.0-20131204	CCF-IW0037-025.0-20131230	CCF-IW0037-025.0-20141209	CCF-IW0037-025.0-20150513	CCF-IW0037-025.0-20151001	CCF-IW0037-025.0-20151201
SAMPLE DATE	11/8/2011	12/5/2012	12/4/2013	12/30/2013	12/9/2014	5/13/2015	10/1/2015	12/1/2015
VOLATILE (µg/L)								
1,1,1,2-TETRACHLOROETHANE								
1,1,1-TRICHLOROETHANE	0.46 U							
1,1,2,2-TETRACHLOROETHANE	0.15 U							
1,1,2-TRICHLOROETHANE	0.47 U							
1,1,2-TRICHLOROTRIFLUOROETHANE	0.63 U		1	1 U	3 U	3 U	1 U	30 U
1,1-DICHLOROETHANE	0.52 U							
1,1-DICHLOROETHENE	4.2		1 U	2	3 U	3 U	1 U	3 U
1,1-DICHLOROPROPENE								
1,2,3-TRICHLOROBENZENE								
1,2,3-TRICHLOROPROPANE								
1,2,4-TRICHLOROBENZENE	0.58 U							
1,2,4-TRIMETHYLBENZENE								
1,2-DIBROMO-3-CHLOROPROPANE	2.5 U							
1,2-DIBROMOETHANE	0.5 U							
1,2-DICHLOROBENZENE	0.44 U							
1,2-DICHLOROETHANE	0.57 U							
1,2-DICHLOROPROPANE	0.52 U							
1,3,5-TRIMETHYLBENZENE								
1,3-DICHLOROBENZENE	0.64 U							
1,3-DICHLOROPROPANE								
1,4-DICHLOROBENZENE	0.52 U							
2,2-DICHLOROPROPANE								
2-BUTANONE	8.4 U							
2-CHLOROETHYL VINYL ETHER								
2-CHLOROTOLUENE								
2-HEXANONE	4.4 U							
4-CHLOROTOLUENE								
4-ISOPROPYLTOLUENE								
4-METHYL-2-PENTANONE	3.8 U							
ACETONE	11 I							
BENZENE	0.5 U							
BROMOBENZENE								
BROMOCHLOROMETHANE								
BROMODICHLOROMETHANE	0.35 U							
BROMOFORM	0.58 U							
BROMOMETHANE	2.5 U							
CARBON DISULFIDE	1 U							
CARBON TETRACHLORIDE	0.42 U							
CHLOROBENZENE	0.63 U							
CHLORODIBROMOMETHANE	0.34 U							
CHLOROETHANE	2.5 U							
CHLOROFORM	0.9 U							
CHLOROMETHANE	1 U							
CIS-1,2-DICHLOROETHENE	230		25	190	110	91	140	87
CIS-1,3-DICHLOROPROPENE	0.14 U							
CYCLOHEXANE	1.7 U							
DIBROMOMETHANE								
DICHLORODIFLUOROMETHANE	2.5 U							
ETHYLBENZENE	0.44 U							
HEXACHLOROBUTADIENE								
ISOPROPYLBENZENE	0.19 U							
M+P-XYLENES								
METHYL ACETATE	0.72 U							
METHYL CYCLOHEXANE	1.9 U							
METHYL TERT-BUTYL ETHER	0.44 U							
METHYLENE CHLORIDE	4 U							
NAPHTHALENE								
N-BUTYLBENZENE								
N-PROPYLBENZENE								
O-XYLENE								
SEC-BUTYLBENZENE								
STYRENE	0.98 U							
TERT-BUTYLBENZENE								
TETRACHLOROETHENE	0.5 U		1 U	1 U	3 U	3 U	1 U	3 U
TOLUENE	0.51 U							
TOTAL XYLENES	0.5 U							
TRANS-1,2-DICHLOROETHENE	230		190	360	240	600	320	390
TRANS-1,3-DICHLOROPROPENE	0.14 U							
TRICHLOROETHENE	1200		9	89	5	3 U	2	3 U
TRICHLOROFLUOROMETHANE	2.5 U							
VINYL CHLORIDE	2		410	160	36	280	110	150
MOBILE LAB VOLATILE (µg/L)								
1,1,2-TRICHLOROTRIFLUOROETHANE		23	1					
1,1-DICHLOROETHENE		11	1 U					
CIS-1,2-DICHLOROETHENE		270	25					
TETRACHLOROETHENE		3 U	1 U					
TRANS-1,2-DICHLOROETHENE		680	190					
TRICHLOROETHENE		590	9					
VINYL CHLORIDE		610	410					

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 20 to 25 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

LOCATION ID	CCF-IW0037							
SAMPLE ID	CCF-IW0037-025.0-20170516	CCF-IW0037-025.0-20171018	CCF-IW0037-025.0-20180111	CCF-IW0037-025.0-20180424	CCF-IW0037-025.0-20180702	CCF-IW0037-025.0-20190311	CCF-IW0037-025.0-20190605	CCF-IW0037-025.0-20191210
SAMPLE DATE	5/16/2017	10/18/2017	1/11/2018	4/24/2018	7/2/2018	3/11/2019	6/5/2019	12/10/2019
VOLATILE (µg/L)								
1,1,1,2-TETRACHLOROETHANE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	
1,1,1-TRICHLOROETHANE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	0.30 U
1,1,2,2-TETRACHLOROETHANE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	0.44 U
1,1,2-TRICHLOROETHANE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	0.29 U
1,1,2-TRICHLOROTRIFLUOROETHANE				1 U	1 U	1 U	1 U	
1,1-DICHLOROETHANE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	0.32 U
1,1-DICHLOROETHENE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	0.40 J
1,1-DICHLOROPROPENE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	
1,2,3-TRICHLOROBENZENE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	0.37 U
1,2,3-TRICHLOROPROPANE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	
1,2,4-TRICHLOROBENZENE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	0.58 U
1,2,4-TRIMETHYLBENZENE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	
1,2-DIBROMO-3-CHLOROPROPANE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	2.5 U
1,2-DIBROMOETHANE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	0.27 U
1,2-DICHLOROBENZENE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	0.24 U
1,2-DICHLOROETHANE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	0.31 U
1,2-DICHLOROPROPANE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	0.52 U
1,3,5-TRIMETHYLBENZENE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	
1,3-DICHLOROBENZENE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	0.26 U
1,3-DICHLOROPROPANE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	
1,4-DICHLOROBENZENE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	0.22 U
2,2-DICHLOROPROPANE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	
2-BUTANONE	12 U	5 U	5 U	5 U	5 U	5 U	5 U	3.2 U
2-CHLOROETHYL VINYL ETHER	25 U	5 U	5 U	5 U	5 U	5 U	5 U	
2-CHLOROTOLUENE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	
2-HEXANONE	12 U	5 U	5 U	5 U	5 U	5 U	5 U	4.4 U
4-CHLOROTOLUENE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	
4-ISOPROPYLTOLUENE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	
4-METHYL-2-PENTANONE	12 U	5 U	5 U	5 U	5 U	5 U	5 U	4 U
ACETONE	50 U	56	20 U	20 U	20 U	20 U	20 U	3 U
BENZENE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	0.25 U
BROMOBENZENE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	
BROMOCHLOROMETHANE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	
BROMODICHLOROMETHANE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	0.23 U
BROMOFORM	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1.1 U
BROMOMETHANE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	2.5 U
CARBON DISULFIDE	12 U	5 U	5 U	5 U	5 U	5 U	5 U	0.35 U
CARBON TETRACHLORIDE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	0.23 U
CHLOROBENZENE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	0.27 U
CHLORODIBROMOMETHANE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	0.31 U
CHLOROETHANE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	2.5 U
CHLOROFORM	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	0.29 U
CHLOROMETHANE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	0.76 U
CIS-1,2-DICHLOROETHENE	27	32	43	21	48	21	13	87
CIS-1,3-DICHLOROPROPENE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	0.39 U
CYCLOHEXANE								
DIBROMOMETHANE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	
DICHLORODIFLUOROMETHANE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	2.5 U
ETHYLBENZENE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	0.27 U
HEXACHLOROBUTADIENE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	
ISOPROPYLBENZENE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	0.52 U
M+P-XYLENES	5 U	2 U	2 U	2 U	2 U	2 U	2 U	
METHYL ACETATE								
METHYL CYCLOHEXANE								
METHYL TERT-BUTYL ETHER	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	0.44 U
METHYLENE CHLORIDE	12 U	5 U	5 U	5 U	5 U	5 U	5 U	1.4 U
NAPHTHALENE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	
N-BUTYLBENZENE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	
N-PROPYLBENZENE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	
O-XYLENE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	
SEC-BUTYLBENZENE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	
STYRENE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	0.49 U
TERT-BUTYLBENZENE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	
TETRACHLOROETHENE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	0.50 U
TOLUENE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	0.24 U
TOTAL XYLENES	5 U	2 U	2 U	2 U	2 U	2 U	2 U	0.50 U
TRANS-1,2-DICHLOROETHENE	220	35	46	21	55	23	9.9	130
TRANS-1,3-DICHLOROPROPENE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	0.27 U
TRICHLOROETHENE	2.7	1 U	0.99 I	1 U	1 U	1 U	1 U	1.8 J
TRICHLOROFLUOROMETHANE	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	0.49 U
VINYL CHLORIDE	120	1	1.3	0.98 I	1 U	0.96 I	1 U	9.7
MOBILE LAB VOLATILE (µg/L)								
1,1,2-TRICHLOROTRIFLUOROETHANE								
1,1-DICHLOROETHENE								
CIS-1,2-DICHLOROETHENE								
TETRACHLOROETHENE								
TRANS-1,2-DICHLOROETHENE								
TRICHLOROETHENE								
VINYL CHLORIDE								

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 20 to 25 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

LOCATION ID	CCF-IW0037							
SAMPLE ID	CCF-IW0037-025.0-20200311	CCF-IW0037-025.0-20200615	CCF-IW0037-025.0-20200924	CCF-IW0037-025.0-20201209	CCF-IW0037-025.0-20210323	CCF-IW0037-025.0-20220201	CCF-IW0037-025.0-20220902	CCF-IW0037-025.0-20230425
SAMPLE DATE	3/11/2020	6/15/2020	9/24/2020	12/9/2020	3/23/2021	2/1/2022	9/2/2022	4/25/2023
VOLATILE (µg/L)								
1,1,1,2-TETRACHLOROETHANE								
1,1,1-TRICHLOROETHANE	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U			
1,1,2,2-TETRACHLOROETHANE	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U			
1,1,2-TRICHLOROETHANE	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U			
1,1,2-TRICHLOROTRIFLUOROETHANE								
1,1-DICHLOROETHANE	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U			
1,1-DICHLOROETHENE	0.37 J	0.26 U	0.26 U	0.44 J	0.37 J			
1,1-DICHLOROPROPENE								
1,2,3-TRICHLOROBENZENE	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U			
1,2,3-TRICHLOROPROPANE								
1,2,4-TRICHLOROBENZENE	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U			
1,2,4-TRIMETHYLBENZENE								
1,2-DIBROMO-3-CHLOROPROPANE	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U			
1,2-DIBROMOETHANE	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U			
1,2-DICHLOROBENZENE	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U			
1,2-DICHLOROETHANE	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U			
1,2-DICHLOROPROPANE	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U			
1,3,5-TRIMETHYLBENZENE								
1,3-DICHLOROBENZENE	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U			
1,3-DICHLOROPROPANE								
1,4-DICHLOROBENZENE	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U			
2,2-DICHLOROPROPANE								
2-BUTANONE	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U			
2-CHLOROETHYL VINYL ETHER								
2-CHLOROTOLUENE								
2-HEXANONE	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U			
4-CHLOROTOLUENE								
4-ISOPROPYLTOLUENE								
4-METHYL-2-PENTANONE	4 U	4 U	4 U	4 U	4 U			
ACETONE	3 U	3 U	3 U	3 U	3 U			
BENZENE	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U			
BROMOBENZENE								
BROMOCHLOROMETHANE								
BROMODICHLOROMETHANE	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U			
BROMOFORM	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U			
BROMOMETHANE	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U			
CARBON DISULFIDE	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U			
CARBON TETRACHLORIDE	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U			
CHLOROBENZENE	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U			
CHLORODIBROMOMETHANE	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U			
CHLOROETHANE	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U			
CHLOROFORM	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U			
CHLOROMETHANE	0.76 U	0.76 U	0.76 U	0.91 J	0.76 U			
CIS-1,2-DICHLOROETHENE	61	39	39	92	52	62.7	29.8	27.2
CIS-1,3-DICHLOROPROPENE	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U			
CYCLOHEXANE								
DIBROMOMETHANE								
DICHLORODIFLUOROMETHANE	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U			
ETHYLBENZENE	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U			
HEXACHLOROBUTADIENE								
ISOPROPYLBENZENE	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U			
M+P-XYLENES								
METHYL ACETATE								
METHYL CYCLOHEXANE								
METHYL TERT-BUTYL ETHER	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U			
METHYLENE CHLORIDE	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U			
NAPHTHALENE								
N-BUTYLBENZENE								
N-PROPYLBENZENE								
O-XYLENE								
SEC-BUTYLBENZENE								
STYRENE	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U			
TERT-BUTYLBENZENE								
TETRACHLOROETHENE	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U			
TOLUENE	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U			
TOTAL XYLENES	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U			
TRANS-1,2-DICHLOROETHENE	79	43	45	84	45	89	42.7	40
TRANS-1,3-DICHLOROPROPENE	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U			
TRICHLOROETHENE	1.5 J	1.3 J	1.3 J	2	2.1	1.3	1.3	1.4
TRICHLOROFLUOROMETHANE	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U			
VINYL CHLORIDE	11	3	3.3	5.5	4.3	10.9	15.4	19.5
MOBILE LAB VOLATILE (µg/L)								
1,1,2-TRICHLOROTRIFLUOROETHANE								
1,1-DICHLOROETHENE								
CIS-1,2-DICHLOROETHENE								
TETRACHLOROETHENE								
TRANS-1,2-DICHLOROETHENE								
TRICHLOROETHENE								
VINYL CHLORIDE								

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 20 to 25 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

LOCATION ID	CCF-IW0062							
SAMPLE ID	CCF-IW0062-020.0-20170516	CCF-IW0062-020.0-20171018	CCF-IW0062-020.0-20180112	CCF-IW0062-020.0-20180424	CCF-IW0062-020.0-20180703	CCF-IW0062-020.0-20190312	CCF-IW0062-020.0-20190606	CCF-IW0062-020.0-20191211
SAMPLE DATE	5/16/2017	10/18/2017	1/12/2018	4/24/2018	7/3/2018	3/12/2019	6/6/2019	12/11/2019
VOLATILE (µg/L)								
1,1,1,2-TETRACHLOROETHANE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	
1,1,1-TRICHLOROETHANE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	0.30 U
1,1,2,2-TETRACHLOROETHANE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	0.44 U
1,1,2-TRICHLOROETHANE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	0.29 U
1,1,2-TRICHLOROTRIFLUOROETHANE				2.5 U	2 U	1 U	2.5 U	
1,1-DICHLOROETHANE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	0.32 U
1,1-DICHLOROETHENE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	0.26 U
1,1-DICHLOROPROPENE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	
1,2,3-TRICHLOROBENZENE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	0.37 U
1,2,3-TRICHLOROPROPANE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	
1,2,4-TRICHLOROBENZENE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	0.58 U
1,2,4-TRIMETHYLBENZENE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	
1,2-DIBROMO-3-CHLOROPROPANE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	2.5 U
1,2-DIBROMOETHANE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	0.27 U
1,2-DICHLOROBENZENE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	0.24 U
1,2-DICHLOROETHANE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	0.31 U
1,2-DICHLOROPROPANE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	0.52 U
1,3,5-TRIMETHYLBENZENE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	
1,3-DICHLOROBENZENE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	0.26 U
1,3-DICHLOROPROPANE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	
1,4-DICHLOROBENZENE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	0.22 U
2,2-DICHLOROPROPANE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	
2-BUTANONE	25 U	25 U	5 U	12 U	10 U	5 U	12 U	3.2 U
2-CHLOROETHYL VINYL ETHER	25 U	25 U	5 U	12 U	10 U	5 U	12 U	
2-CHLOROTOLUENE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	
2-HEXANONE	25 U	25 U	5 U	12 U	10 U	5 U	12 U	4.4 U
4-CHLOROTOLUENE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	
4-ISOPROPYLTOLUENE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	
4-METHYL-2-PENTANONE	25 U	25 U	5 U	12 U	10 U	5 U	12 U	4 U
ACETONE	100 U	100 U	20 U	50 U	40 U	20 U	50 U	3 U
BENZENE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	0.25 U
BROMOBENZENE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	
BROMOCHLOROMETHANE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	
BROMODICHLOROMETHANE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	0.23 U
BROMOFORM	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	1.1 U
BROMOMETHANE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	2.5 U
CARBON DISULFIDE	25 U	25 U	5 U	12 U	10 U	5 U	12 U	0.35 U
CARBON TETRACHLORIDE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	0.23 U
CHLOROBENZENE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	0.27 U
CHLORODIBROMOMETHANE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	0.31 U
CHLOROETHANE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	2.5 U
CHLOROFORM	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	0.29 U
CHLOROMETHANE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	0.76 U
CIS-1,2-DICHLOROETHENE	310	290	230	180	180	250	170	57
CIS-1,3-DICHLOROPROPENE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	0.39 U
CYCLOHEXANE								
DIBROMOMETHANE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	
DICHLORODIFLUOROMETHANE	5 U	8.8	1 U	2.5 U	2 U	1 U	2.5 U	2.5 U
ETHYLBENZENE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	0.27 U
HEXACHLOROBUTADIENE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	
ISOPROPYLBENZENE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	0.52 U
M+P-XYLENES	10 U	10 U	2 U	5 U	4 U	2 U	5 U	
METHYL ACETATE								
METHYL CYCLOHEXANE								
METHYL TERT-BUTYL ETHER	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	0.44 U
METHYLENE CHLORIDE	25 U	25 U	5 U	12 U	10 U	5 U	12 U	1.4 U
NAPHTHALENE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	
N-BUTYLBENZENE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	
N-PROPYLBENZENE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	
O-XYLENE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	
SEC-BUTYLBENZENE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	
STYRENE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	0.49 U
TERT-BUTYLBENZENE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	
TETRACHLOROETHENE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	0.50 U
TOLUENE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	0.24 U
TOTAL XYLENES	10 U	10 U	2 U	5 U	4 U	2 U	5 U	0.50 U
TRANS-1,2-DICHLOROETHENE	13	17	19	8.6	20	8.9	4.6	13
TRANS-1,3-DICHLOROPROPENE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	0.27 U
TRICHLOROETHENE	9.4	15	14	5.6	14	9.1	7	13
TRICHLOROFLUOROMETHANE	5 U	5 U	1 U	2.5 U	2 U	1 U	2.5 U	0.49 U
VINYL CHLORIDE	69	110	170	19	200	13	4.1	47
MOBILE LAB VOLATILE (µg/L)								
1,1,2-TRICHLOROTRIFLUOROETHANE								
1,1-DICHLOROETHENE								
CIS-1,2-DICHLOROETHENE								
TETRACHLOROETHENE								
TRANS-1,2-DICHLOROETHENE								
TRICHLOROETHENE								
VINYL CHLORIDE								

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 20 to 25 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

LOCATION ID	CCF-IW0062							
SAMPLE ID	CCF-IW0062-020.0-20200312	CCF-IW0062-020.0-20200616	CCF-IW0062-020-20200925	CCF-IW0062-020.0-20201210	CCF-IW0062-020.0-20210324	CCF-IW0062-020.0-20220203	CCF-IW0062-020.0-20220901	CCF-IW0062-020.0-20230428
SAMPLE DATE	3/12/2020	6/16/2020	9/25/2020	12/10/2020	3/24/2021	2/3/2022	9/1/2022	4/28/2023
VOLATILE (µg/L)								
1,1,1,2-TETRACHLOROETHANE								
1,1,1-TRICHLOROETHANE	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U			
1,1,2,2-TETRACHLOROETHANE	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U			
1,1,2-TRICHLOROETHANE	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U			
1,1,2-TRICHLOROTRIFLUOROETHANE								
1,1-DICHLOROETHANE	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U			
1,1-DICHLOROETHENE	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U			
1,1-DICHLOROPROPENE								
1,2,3-TRICHLOROBENZENE	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U			
1,2,3-TRICHLOROPROPANE								
1,2,4-TRICHLOROBENZENE	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U			
1,2,4-TRIMETHYLBENZENE								
1,2-DIBROMO-3-CHLOROPROPANE	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U			
1,2-DIBROMOETHANE	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U			
1,2-DICHLOROBENZENE	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U			
1,2-DICHLOROETHANE	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U			
1,2-DICHLOROPROPANE	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U			
1,3,5-TRIMETHYLBENZENE								
1,3-DICHLOROBENZENE	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U			
1,3-DICHLOROPROPANE								
1,4-DICHLOROBENZENE	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U			
2,2-DICHLOROPROPANE								
2-BUTANONE	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U			
2-CHLOROETHYL VINYL ETHER								
2-CHLOROTOLUENE								
2-HEXANONE	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U			
4-CHLOROTOLUENE								
4-ISOPROPYLTOLUENE								
4-METHYL-2-PENTANONE	4 U	4 U	4 U	4 U	4 U			
ACETONE	3 U	3 U	3 U	3 U	3 U			
BENZENE	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U			
BROMOBENZENE								
BROMOCHLOROMETHANE								
BROMODICHLOROMETHANE	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U			
BROMOFORM	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U			
BROMOMETHANE	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U			
CARBON DISULFIDE	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U			
CARBON TETRACHLORIDE	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U			
CHLOROBENZENE	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U			
CHLORODIBROMOMETHANE	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U			
CHLOROETHANE	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U			
CHLOROFORM	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U			
CHLOROMETHANE	0.76 U	0.76 U	0.76 U	0.76 U	0.76 U			
CIS-1,2-DICHLOROETHENE	58	100	60	70	120 J	44.4	55.2	93.8
CIS-1,3-DICHLOROPROPENE	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U			
CYCLOHEXANE								
DIBROMOMETHANE								
DICHLORODIFLUOROMETHANE	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U			
ETHYLBENZENE	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U			
HEXACHLOROBUTADIENE								
ISOPROPYLBENZENE	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U			
M+P-XYLENES								
METHYL ACETATE								
METHYL CYCLOHEXANE								
METHYL TERT-BUTYL ETHER	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U			
METHYLENE CHLORIDE	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U			
NAPHTHALENE								
N-BUTYLBENZENE								
N-PROPYLBENZENE								
O-XYLENE								
SEC-BUTYLBENZENE								
STYRENE	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U			
TERT-BUTYLBENZENE								
TETRACHLOROETHENE	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U			
TOLUENE	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U			
TOTAL XYLENES	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U			
TRANS-1,2-DICHLOROETHENE	10	3.8	9.8	10	7.2	7.6	7.1	3
TRANS-1,3-DICHLOROPROPENE	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U			
TRICHLOROETHENE	9.2	7.8	13	12	17	11.5	11.5	16.8
TRICHLOROFLUOROMETHANE	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U			
VINYL CHLORIDE	40	1.7	16	16	2.9	8.8	4.8	0.50 U
MOBILE LAB VOLATILE (µg/L)								
1,1,2-TRICHLOROTRIFLUOROETHANE								
1,1-DICHLOROETHENE								
CIS-1,2-DICHLOROETHENE								
TETRACHLOROETHENE								
TRANS-1,2-DICHLOROETHENE								
TRICHLOROETHENE								
VINYL CHLORIDE								

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 20 to 25 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

LOCATION ID	CCF-IW0080IS			CCF-IW0081			CCF-IW0082	
SAMPLE ID	CCF-IW0080IS-020.0-20220203	CCF-IW0080IS-020.0-20220831	CCF-IW0080IS-020.0-20230427	CCF-IW0081-020.0-20220202	CCF-IW0081-020.0-20220831	CCF-IW0081-020.0-20230427	CCF-IW0082-020.0-20220204	CCF-IW0082-020.0-20220902
SAMPLE DATE	2/3/2022	8/31/2022	4/27/2023	2/2/2022	8/31/2022	4/27/2023	2/4/2022	9/2/2022
VOLATILE (µg/L)								
1,1,1,2-TETRACHLOROETHANE								
1,1,1-TRICHLOROETHANE								
1,1,2,2-TETRACHLOROETHANE								
1,1,2-TRICHLOROETHANE								
1,1,2-TRICHLOROTRIFLUOROETHANE								
1,1-DICHLOROETHANE								
1,1-DICHLOROETHENE								
1,1-DICHLOROPROPENE								
1,2,3-TRICHLOROBENZENE								
1,2,3-TRICHLOROPROPANE								
1,2,4-TRICHLOROBENZENE								
1,2,4-TRIMETHYLBENZENE								
1,2-DIBROMO-3-CHLOROPROPANE								
1,2-DIBROMOETHANE								
1,2-DICHLOROBENZENE								
1,2-DICHLOROETHANE								
1,2-DICHLOROPROPANE								
1,3,5-TRIMETHYLBENZENE								
1,3-DICHLOROBENZENE								
1,3-DICHLOROPROPANE								
1,4-DICHLOROBENZENE								
2,2-DICHLOROPROPANE								
2-BUTANONE								
2-CHLOROETHYL VINYL ETHER								
2-CHLOROTOLUENE								
2-HEXANONE								
4-CHLOROTOLUENE								
4-ISOPROPYLTOLUENE								
4-METHYL-2-PENTANONE								
ACETONE								
BENZENE								
BROMOBENZENE								
BROMOCHLOROMETHANE								
BROMODICHLOROMETHANE								
BROMOFORM								
BROMOMETHANE								
CARBON DISULFIDE								
CARBON TETRACHLORIDE								
CHLOROBENZENE								
CHLORODIBROMOMETHANE								
CHLOROETHANE								
CHLOROFORM								
CHLOROMETHANE								
CIS-1,2-DICHLOROETHENE	6.9	7.5	4.9	1 U	0.50 U	0.50 U	76.2	53.3
CIS-1,3-DICHLOROPROPENE								
CYCLOHEXANE								
DIBROMOMETHANE								
DICHLORODIFLUOROMETHANE								
ETHYLBENZENE								
HEXACHLOROBUTADIENE								
ISOPROPYLBENZENE								
M+P-XYLENES								
METHYL ACETATE								
METHYL CYCLOHEXANE								
METHYL TERT-BUTYL ETHER								
METHYLENE CHLORIDE								
NAPHTHALENE								
N-BUTYLBENZENE								
N-PROPYLBENZENE								
O-XYLENE								
SEC-BUTYLBENZENE								
STYRENE								
TERT-BUTYLBENZENE								
TETRACHLOROETHENE								
TOLUENE								
TOTAL XYLENES								
TRANS-1,2-DICHLOROETHENE	0.75 J	1	0.59 J	1 U	0.50 U	0.50 U	66.2	83
TRANS-1,3-DICHLOROPROPENE								
TRICHLOROETHENE	1.4	1.7	0.50 U	1 U	0.50 U	0.50 U	10 U	1 U
TRICHLOROFLUOROMETHANE								
VINYL CHLORIDE	1 U	0.50 U	0.64 J	1 U	0.50 U	0.50 U	6.1 J	25.9
MOBILE LAB VOLATILE (µg/L)								
1,1,2-TRICHLOROTRIFLUOROETHANE								
1,1-DICHLOROETHENE								
CIS-1,2-DICHLOROETHENE								
TETRACHLOROETHENE								
TRANS-1,2-DICHLOROETHENE								
TRICHLOROETHENE								
VINYL CHLORIDE								

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 20 to 25 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

LOCATION ID	CCF-IW0082	CCF-IW0083S		
SAMPLE ID	CCF-IW0082-020.0-20230425	CCF-IW0083S-020.0-20220201	CCF-IW0083S-020.0-20220907	CCF-IW0083S-020.0-20230501
SAMPLE DATE	4/25/2023	2/1/2022	9/7/2022	5/1/2023
VOLATILE (µg/L)				
1,1,1,2-TETRACHLOROETHANE				
1,1,1-TRICHLOROETHANE				
1,1,2,2-TETRACHLOROETHANE				
1,1,2-TRICHLOROETHANE				
1,1,2-TRICHLOROTRIFLUOROETHANE				
1,1-DICHLOROETHANE				
1,1-DICHLOROETHENE				
1,1-DICHLOROPROPENE				
1,2,3-TRICHLOROBENZENE				
1,2,3-TRICHLOROPROPANE				
1,2,4-TRICHLOROBENZENE				
1,2,4-TRIMETHYLBENZENE				
1,2-DIBROMO-3-CHLOROPROPANE				
1,2-DIBROMOETHANE				
1,2-DICHLOROBENZENE				
1,2-DICHLOROETHANE				
1,2-DICHLOROPROPANE				
1,3,5-TRIMETHYLBENZENE				
1,3-DICHLOROBENZENE				
1,3-DICHLOROPROPANE				
1,4-DICHLOROBENZENE				
2,2-DICHLOROPROPANE				
2-BUTANONE				
2-CHLOROETHYL VINYL ETHER				
2-CHLOROTOLUENE				
2-HEXANONE				
4-CHLOROTOLUENE				
4-ISOPROPYLTOLUENE				
4-METHYL-2-PENTANONE				
ACETONE				
BENZENE				
BROMOBENZENE				
BROMOCHLOROMETHANE				
BROMODICHLOROMETHANE				
BROMOFORM				
BROMOMETHANE				
CARBON DISULFIDE				
CARBON TETRACHLORIDE				
CHLOROBENZENE				
CHLORODIBROMOMETHANE				
CHLOROETHANE				
CHLOROFORM				
CHLOROMETHANE				
CIS-1,2-DICHLOROETHENE	70.1	1 U	0.50 U	0.50 U
CIS-1,3-DICHLOROPROPENE				
CYCLOHEXANE				
DIBROMOMETHANE				
DICHLORODIFLUOROMETHANE				
ETHYLBENZENE				
HEXACHLOROBUTADIENE				
ISOPROPYLBENZENE				
M+P-XYLENES				
METHYL ACETATE				
METHYL CYCLOHEXANE				
METHYL TERT-BUTYL ETHER				
METHYLENE CHLORIDE				
NAPHTHALENE				
N-BUTYLBENZENE				
N-PROPYLBENZENE				
O-XYLENE				
SEC-BUTYLBENZENE				
STYRENE				
TERT-BUTYLBENZENE				
TETRACHLOROETHENE				
TOLUENE				
TOTAL XYLENES				
TRANS-1,2-DICHLOROETHENE	65.3	1 U	0.50 U	0.50 U
TRANS-1,3-DICHLOROPROPENE				
TRICHLOROETHENE	0.50 U	1 U	1	0.50 U
TRICHLOROFLUOROMETHANE				
VINYL CHLORIDE	78.4	1 U	0.50 U	0.50 U
MOBILE LAB VOLATILE (µg/L)				
1,1,2-TRICHLOROTRIFLUOROETHANE				
1,1-DICHLOROETHENE				
CIS-1,2-DICHLOROETHENE				
TETRACHLOROETHENE				
TRANS-1,2-DICHLOROETHENE				
TRICHLOROETHENE				
VINYL CHLORIDE				

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 30 to 35 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

LOCATION ID	CCF-IW0003IS												
SAMPLE ID	CCF-IW0003IS-035.0-19981106	CCF-IW0003IS-035.0-19990311	CCF-IW0003IS-035.0-19990609	CCF-IW0003IS-035.0-20000119	CCF-IW0003IS-035.0-20000808	CCF-IW0003IS-000.0-20010126	CCF-IW0003IS-035.0-20050608	CCF-IW0003IS-035.0-20050823	CCF-IW0003IS-035.0-20051222	CCF-IW0003IS-035.0-20060321	CCF-IW0003IS-037.3-20060614	CCF-IW0003IS-034.5-20060821	CCF-IW0003IS-034.5-20061219
SAMPLE DATE	11/6/1998	3/11/1999	6/9/1999	1/19/2000	8/8/2000	1/26/2001	6/8/2005	8/23/2005	12/22/2005	3/21/2006	6/14/2006	8/21/2006	12/19/2006
VOLATILE (µg/L)													
1,1,1,2-TETRACHLOROETHANE					1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-TRICHLOROETHANE	5 U	500 U	500 U	1000 U	1 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-TETRACHLOROETHANE	5 U	500 U	500 U	1000 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-TRICHLOROETHANE	5 U	500 U	500 U	1000 U	1 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-TRICHLOROTRIFLUOROETHANE	100	11000	13000	9200	4400	52.6	1 U	56.2	34.7	31		23	28
1,1-DICHLOROETHANE	5 U	500 U	500 U	1000 U	1 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-DICHLOROETHENE	5 U	500 U	500 U	1000 U	1 U	0.5 U	3	5.36	1 U	1 U	1 U	1 U	1 U
1,1-DICHLOROPROPENE					1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-TRICHLOROBENZENE					0.81 J	0.5 U	1 U	1 U	2 U	2 U	2 U	1 U	1 U
1,2,3-TRICHLOROPROPANE					1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-TRICHLOROBENZENE					2.1	0.6	1 U	1 U	2 U	2 U	2 U	1 U	1 U
1,2,4-TRIMETHYLBENZENE					1 U		1 U	1 U	1.5	1 U	1 U	1 U	1 U
1,2-DIBROM0-3-CHLOROPROPANE					2 U		5 U	5 U	5 U	5 U	5 U	5 U	1 U
1,2-DIBROMOETHANE					1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	68 N	5700 N	17000 N	8600 N	3700 N								
1,2-DICHLOROBENZENE					1 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROETHANE	5 U	500 U	500 U	1000 U	1 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROPROPANE	5 U	500 U	500 U	1000 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3,5-TRIMETHYLBENZENE					1 U		1 U	1 U	0.48 I	1 U	1 U	1 U	1 U
1,3-DICHLOROBENZENE					1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3-DICHLOROPROPANE					1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-DICHLOROBENZENE					1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-DIOXANE													
2,2-DICHLOROPROPANE					1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-BUTANONE	50 U	5000 U	5000 U	10000 U	10 U		25 U	25 U	50 U	50 U	50 U	50 U	5 U
2-CHLOROETHYL VINYL ETHER													1 U
2-CHLOROTOLUENE					1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-HEXANONE	50 U	5000 U	5000 U	10000 U	10 U		5 U	5 U	50 U	50 U	50 U	50 U	5 U
4-CHLOROTOLUENE					1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
4-ISOPROPYLTOLUENE					1 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
4-METHYL-2-PENTANONE	50 U	5000 U	5000 U	10000 U	10 U		5 U	5 U	50 U	50 U	50 U	50 U	5 U
ACETONE	50 U	5000 U	5000 U	10000 U	10 U	10 U	25 U	50 U	50 U	50 U	50 U	50 U	5 U
BENZENE	5 U	500 U	500 U	1000 U	1 U	0.5 U	1 U	1 U	1.55	1 U	1 U	1 U	1 U
BROMOBENZENE					1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
BROMOCHLOROMETHANE					1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
BROMODICHLOROMETHANE	5 U	500 U	500 U	1000 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	0.40 U
BROMOFORM	5 U	500 U	500 U	1000 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
BROMOMETHANE	4.4 U	440 U	500 U	1000 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
CARBON DISULFIDE	5 U	500 U	500 U	1000 U	1 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U
CARBON TETRACHLORIDE	5 U	500 U	500 U	1000 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROBENZENE	5 U	500 U	500 U	1000 U	1 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLORODIBROMOMETHANE	5 U	500 U	500 U	1000 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROETHANE	5 U	500 U	500 U	1000 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROFORM	5 U	500 U	500 U	1000 U	1 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROMETHANE	5 U	500 U	500 U	1000 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROTRIFLUOROETHENE	62 N	0.00 UN	1400 N	2800 N	1500 N								
CIS-1,2-DICHLOROETHENE	20	1400	1200	830 J	820	1 U	646	1030	600	503	170	8.56	0.91 I
CIS-1,3-DICHLOROPROPENE	5 U	500 U	500 U	1000 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	0.20 U
CYCLOHEXANE													
DIBROMOMETHANE					1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
DICHLORODIFLUOROMETHANE					1 U	0.5 U	133	177	1 U	26.7	1 U	1 U	1 U
ETHYLBENZENE	5 U	500 U	500 U	1000 U	1.4	0.4 J	0.60 J	0.74 I	1.3	0.57 I	0.49 I	1 U	1 U
HEXACHLOROBUTADIENE					1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
ISOPROPYLBENZENE					1 U		1 U	1 U	1 U	1 U	1 U	1 U	0.20 U
M+P-XYLENES													2 U
METHYL ACETATE													
METHYL CYCLOHEXANE												5 U	
METHYL TERT-BUTYL ETHER					1 U			1 U	1 U	1 U	1 U	1 U	1 U
METHYLENE CHLORIDE	5 U	500 U	500 U	5000 U	2 U	2 U	2.1 J	5 U	5 U	5 U	5 U	5 U	2 U
NAPHTHALENE					1 U		5 U	5 U	5.43	5 U	5 U	5 U	1 U
N-BUTYLBENZENE					1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
N-PROPYLBENZENE					1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
O-XYLENE													1 U
SEC-BUTYLBENZENE					1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
STYRENE	5 U	500 U	500 U	1000 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
TERT-BUTYLBENZENE					1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
TETRACHLOROETHANE	5 U												
TETRACHLOROETHENE		500 U	500 U	1000 U	0.91 J	0.43 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TOLUENE	5 U	500 U	500 U	1000 U	1.4	0.5 U	0.80 J	1.5	3.95	1 U	0.53 I	1 U	1 U
TOTAL XYLENES	5 U	500 U	500 U	1000 U	6.9	0.6 I	0.60 J	3.68	8.15	4.72	2.1 I	3 U	
TRANS-1,2-DICHLOROETHENE	5 U	500 U	500 U	1000 U	4.7	0.5 U	2.1	2.1	1 U	1 U	1 U	1 U	1 U
TRANS-1,3-DICHLOROPROPENE	5 U	500 U	500 U	1000 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U	0.20 U
TRICHLOROETHENE	110	3900	3000	2400 U	1600	1 U	401	329	65.2	285	23.8	3.01	0.92 I
TRICHLOROFLUOROMETHANE					1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
VINYL CHLORIDE	5 U	500 U	500 U	1000 U	48 J	0.5 U	82.2	125	142	56.7	63.6	8.41	1.2
MOBILE LAB VOLATILE (µg/L)													
1,1,1-TRICHLOROETHANE													
1,1,2,2-TETRACHLOROETHANE													
1,1,2-TRICHLOROETHANE													
1,1,2-TRICHLOROTRIFLUOROETHANE													
1,1-DICHLOROETHANE													
1,1-DICHLOROETHENE													
1,2,4-TRICHLOROBENZENE													
1,2-DIBROMO-3-CHLOROPROPANE													
1,2-DIBROMOETHANE													
1,2-DICHLOROBENZENE													
1,2-DICHLOROETHANE													
1,2-DICHLOROPROPANE													
1,3-DICHLOROBENZENE													
1,4-DICHLOROBENZENE													
2-BUTANONE													
2-HEXANONE													
4-METHYL-2-PENTANONE													
ACETONE													
BENZENE													
BROMODICHLOROMETHANE													
BROMOFORM													
BROMOMETHANE													
CARBON DISULFIDE													
CARBON TETRACHLORIDE													
CHLOROBENZENE													
CHLORODIBROMOMETHANE													
CHLOROETHANE													
CHLOROFORM													
CHLOROMETHANE													
CIS-1,2-DICHLOROETHENE													
CIS-1,3-DICHLOROPROPENE													
CYCLOHEXANE													
DICHLORODIFLUOROMETHANE													
ETHYLBENZENE													
ISOPROPYLBENZENE													
M+P-XYLENES													
METHYL ACETATE													
METHYL CYCLOHEXANE													
METHYL TERT-BUTYL ETHER													
METHYLENE CHLORIDE													
O-XYLENE													
STYRENE													
TETRACHLOROETHENE													
TOLUENE													
TRANS-1,2-DICHLOROETHENE													
TRANS-1,3-DICHLOROPROPENE													
TRICHLOROETHENE													
TRICHLOROFLUOROMETHANE													
VINYL CHLORIDE													

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 30 to 35 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

LOCATION ID	CCF-IW0003IS												CCF-IW0004IS
SAMPLE ID	CCF-IW0003IS-034.5-20070418	CCF-IW0003IS-029.4-20070727	CCF-IW0003IS-029.4-20070922	CCF-IW0003IS-029.4-20080409	CCF-IW0003IS-029.4-20080923	CCF-IW0003IS-029.4-20090514	CCF-IW0003IS-029.4-20090911	CCF-IW0003IS-029.4-20100417	CCF-IW0003IS-029.4-20100916	CCF-IW0003IS-030.0-20220203	CCF-IW0003IS-030.0-20220901	CCF-IW0003IS-030.0-20230501	CCF-IW0004IS-035.0-19981104
SAMPLE DATE	4/18/2007	7/27/2007	9/22/2007	4/9/2008	9/23/2008	5/14/2009	9/11/2009	4/17/2010	9/16/2010	2/3/2022	9/1/2022	5/1/2023	11/4/1998
VOLATILE (µg/L)													
1,1,1,2-TETRACHLOROETHANE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				
1,1,1-TRICHLOROETHANE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				1 U
1,1,2,2-TETRACHLOROETHANE	0.20 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				1 U
1,1,2-TRICHLOROETHANE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				1 U
1,1,2-TRICHLOROTRIFLUOROETHANE	48	56	59	64	7.9	30	41	15	170		44000 E		1 U
1,1-DICHLOROETHANE	1 U	1 U	1 U		1 U	1 U	1 U	0.39 I	0.84 I				1 U
1,1-DICHLOROETHENE	1 U	1 U	1 U	1 U	1 U	1 U	0.88 I	1 U	1 U				1 U
1,1-DICHLOROPROPENE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				
1,2,3-TRICHLOROBENZENE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				
1,2,3-TRICHLOROPROPANE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				
1,2,4-TRICHLOROBENZENE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				
1,2,4-TRIMETHYLBENZENE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				
1,2-DIBROMO-3-CHLOROPROPANE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				
1,2-DIBROMOETHANE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE											2520		0.00 UN
1,2-DICHLOROBENZENE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				
1,2-DICHLOROETHANE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				1 U
1,2-DICHLOROPROPANE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				1 U
1,3,5-TRIMETHYLBENZENE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				
1,3-DICHLOROBENZENE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				
1,3-DICHLOROPROPANE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				
1,4-DICHLOROBENZENE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				
1,4-DIOXANE						2 U							
2,2-DICHLOROPROPANE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				
2-BUTANONE	5 U	5 U	5 U		5 U	5 U	5 U	5 U	5 U				10 U
2-CHLOROETHYL VINYL ETHER	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				
2-CHLOROTOLUENE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				
2-HEXANONE	5 U	5 U	5 U		5 U	5 U	5 U	5 U	5 U				10 U
4-CHLOROTOLUENE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				
4-ISOPROPYLTOLUENE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				
4-METHYL-2-PENTANONE	5 U	5 U	5 U		5 U	5 U	5 U	5 U	5 U				10 U
ACETONE	5 U	5 U	5 U		5 U	5 U	5 U	5 U	5.8				10 U
BENZENE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				1 U
BROMOBENZENE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				
BROMOCHLOROMETHANE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				
BROMODICHLOROMETHANE	0.40 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				1 U
BROMOFORM	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				1 U
BROMOMETHANE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				0.87 U
CARBON DISULFIDE	5 U	5 U	5 U		5 U	0.52 I	5 U	5 U	5 U				1 U
CARBON TETRACHLORIDE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				1 U
CHLOROBENZENE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				1 U
CHLORODIBROMOMETHANE	0.20 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				1 U
CHLOROETHANE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				1 U
CHLOROFORM	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				1 U
CHLOROMETHANE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				1 U
CHLOROTRIFLUOROETHENE													0.00 UN
CIS-1,2-DICHLOROETHENE	1.7	0.81 I	0.61 I	2.4	120	1.7	160	100	530	51.6	44.5 J	69.5	1 U
CIS-1,3-DICHLOROPROPENE	0.20 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				1 U
CYCLOHEXANE													
DIBROMOMETHANE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				
DICHLORODIFLUOROMETHANE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				
ETHYLBENZENE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				1 U
HEXACHLOROBUTADIENE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				
ISOPROPYLBENZENE	0.20 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				
M+P-XYLENES	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				
METHYL ACETATE													
METHYL CYCLOHEXANE													
METHYL TERT-BUTYL ETHER	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				
METHYLENE CHLORIDE	2 U	2 U	2 U		1 U	1 U	1 U	1 U	1 U				1 U
NAPHTHALENE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				
N-BUTYLBENZENE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				
N-PROPYLBENZENE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				
O-XYLENE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				
SEC-BUTYLBENZENE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				
STYRENE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				1 U
TERT-BUTYLBENZENE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				
TETRACHLOROETHANE								1 U	1 U				1 U
TETRACHLOROETHENE	1 U	1 U	1 U		1 U	1 U	1 U						
TOLUENE	1 U	1 U	1 U		1 U	1 U	1 U	0.50 I	0.86 I				1 U
TOTAL XYLENES		1 U	1 U		1 U	1 U	1 U	1 U	1 U				1 U
TRANS-1,2-DICHLOROETHENE	0.92 I	1 U	1 U	1 U	5.4	1 U	5.8	14	16	0.94 J	25 U	1.4	1 U
TRANS-1,3-DICHLOROPROPENE	0.20 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				1 U
TRICHLOROETHENE	6	1.6	1	1.3	2	2.1	3.2	1 U	25	84.3	59	84.5	1 U
TRICHLOROFLUOROMETHANE	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U				
VINYL CHLORIDE	1.7	1.3	1 U	7.1	6.6	2	89	72	23	1 U	25 U	0.50 U	1 U
MOBILE LAB VOLATILE (µg/L)													
1,1,1-TRICHLOROETHANE													
1,1,2,2-TETRACHLOROETHANE													
1,1,2-TRICHLOROETHANE													
1,1,2-TRICHLOROTRIFLUOROETHANE													
1,1-DICHLOROETHANE													
1,1-DICHLOROETHENE													
1,2,4-TRICHLOROBENZENE													
1,2-DIBROMO-3-CHLOROPROPANE													
1,2-DIBROMOETHANE													
1,2-DICHLOROBENZENE													
1,2-DICHLOROETHANE													
1,2-DICHLOROPROPANE													
1,3-DICHLOROBENZENE													
1,4-DICHLOROBENZENE													
2-BUTANONE													
2-HEXANONE													
4-METHYL-2-PENTANONE													
ACETONE													
BENZENE													
BROMODICHLOROMETHANE													
BROMOFORM													
BROMOMETHANE													
CARBON DISULFIDE													
CARBON TETRACHLORIDE													
CHLOROBENZENE													
CHLORODIBROMOMETHANE													
CHLOROETHANE													
CHLOROFORM													
CHLOROMETHANE													
CIS-1,2-DICHLOROETHENE													
CIS-1,3-DICHLOROPROPENE													
CYCLOHEXANE													
DICHLORODIFLUOROMETHANE													
ETHYLBENZENE													
ISOPROPYLBENZENE													
M+P-XYLENES													
METHYL ACETATE													
METHYL CYCLOHEXANE													
METHYL TERT-BUTYL ETHER													
METHYLENE CHLORIDE													
O-XYLENE													
STYRENE													
TETRACHLOROETHENE													
TOLUENE													
TRANS-1,2-DICHLOROETHENE													
TRANS-1,3-DICHLOROPROPENE													
TRICHLOROETHENE													
TRICHLOROFLUOROMETHANE													
VINYL CHLORIDE													

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 30 to 35 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

LOCATION ID	CCF-IW0004IS												
SAMPLE ID	CCF-IW0004IS-035.0-20000809	CCF-IW0004IS-000.0-20031014	CCF-IW0004IS-035.0-20050608	CCF-IW0004IS-035.0-20050823	CCF-IW0004IS-035.0-20051227	CCF-IW0004IS-035.0-20060322	CCF-IW0004IS-035.0-20060322-D	CCF-IW0004IS-040.0-20060614	CCF-IW0004IS-037.5-20060821	CCF-IW0004IS-037.5-20061220	CCF-IW0004IS-037.5-20070418	CCF-IW0004IS-031.7-20070723	CCF-IW0004IS-031.7-20070923
SAMPLE DATE	8/9/2000	10/14/2003	6/8/2005	8/23/2005	12/27/2005	3/22/2006	3/22/2006	6/14/2006	8/21/2006	12/20/2006	4/18/2007	7/23/2007	9/23/2007
VOLATILE (µg/L)													
1,1,1,2-TETRACHLOROETHANE	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-TRICHLOROETHANE	1 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-TETRACHLOROETHANE	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.20 U	1 U	1 U
1,1,2-TRICHLOROETHANE	1 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-TRICHLOROTRIFLUOROETHANE	1 U	0.5 U	1 U		1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U
1,1-DICHLOROETHANE	1 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-DICHLOROETHENE	1 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-DICHLOROPROPENE	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-TRICHLOROBENZENE	1 U	0.5 U	1 U	1 U	2 U	2 U	2 U	2 U	1 U	1 U	1 U	1 U	1 U
1,2,3-TRICHLOROPROPANE	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-TRICHLOROBENZENE	1 U	0.5 U	1 U	1 U	2 U	2 U	2 U	2 U	1 U	1 U	1 U	1 U	1 U
1,2,4-TRIMETHYLBENZENE	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DIBROMO-3-CHLOROPROPANE	2 U		5 U	5 U	5 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U	1 U
1,2-DIBROMOETHANE	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	0.00 UN												
1,2-DICHLOROBENZENE	1 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROETHANE	1 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROPROPANE	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3,5-TRIMETHYLBENZENE	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3-DICHLOROBENZENE	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3-DICHLOROPROPANE	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-DICHLOROBENZENE	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-DIOXANE													
2,2-DICHLOROPROPANE	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-BUTANONE	10 U		25 U	25 U	50 U	50 U	50 U	50 U	50 U	5 U	5 U	5 U	5 U
2-CHLOROETHYL VINYL ETHER										1 U	1 U	1 U	1 U
2-CHLOROTOLUENE	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-HEXANONE	10 U		5 U	5 U	50 U	50 U	50 U	50 U	50 U	5 U	5 U	5 U	5 U
4-CHLOROTOLUENE	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
4-ISOPROPYLTOLUENE	1 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
4-METHYL-2-PENTANONE	10 U		5 U	5 U	50 U	50 U	50 U	50 U	50 U	5 U	5 U	5 U	5 U
ACETONE	10 U	25 U	25 U	50 U	50 U	50 U	50 U	50 U	50 U	5 U	5 U	5 U	5 U
BENZENE	1 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BROMOBENZENE	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BROMOCHLOROMETHANE	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BROMODICHLOROMETHANE	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.40 U	0.40 U	1 U	1 U
BROMOFORM	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BROMOMETHANE	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CARBON DISULFIDE	1 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	5 U	0.44 I
CARBON TETRACHLORIDE	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROBENZENE	1 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLORODIBROMOMETHANE	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.20 U	1 U	1 U
CHLOROETHANE	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROFORM	1 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROMETHANE	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROTRIFLUOROETHENE	0.00 UN												
CIS-1,2-DICHLOROETHENE	1 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CIS-1,3-DICHLOROPROPENE	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.20 U	0.20 U	1 U	1 U
CYCLOHEXANE													
DIBROMOMETHANE	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
DICHLORODIFLUOROMETHANE	1 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
ETHYLBENZENE	1 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
HEXACHLOROBUTADIENE	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
ISOPROPYLBENZENE	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.20 U	0.20 U	1 U	1 U
M+P-XYLENES										2 U	1 U	1 U	1 U
METHYL ACETATE													
METHYL CYCLOHEXANE									5 U				
METHYL TERT-BUTYL ETHER	1 U			1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
METHYLENE CHLORIDE	2 U	2.5 U	13	5 U	5 U	5 U	5 U	5 U	5 U	2 U	2 U	2 U	2 U
NAPHTHALENE	1 U		5 U	5 U	5 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U	1 U
N-BUTYLBENZENE	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
N-PROPYLBENZENE	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
O-XYLENE										1 U	1 U	1 U	1 U
SEC-BUTYLBENZENE	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
STYRENE	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TERT-BUTYLBENZENE	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TETRACHLOROETHANE													
TETRACHLOROETHENE	1 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TOLUENE	1 U	0.5 U	1 U	0.63 I	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TOTAL XYLENES	1 U	0.5 U	1 U	2 U	3 U	3 U	3 U	3 U	3 U			1 U	1 U
TRANS-1,2-DICHLOROETHENE	1 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TRANS-1,3-DICHLOROPROPENE	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.20 U	0.20 U	1 U	1 U
TRICHLOROETHENE	1 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TRICHLOROFLUOROMETHANE	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
VINYL CHLORIDE	1 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
MOBILE LAB VOLATILE (µg/L)													
1,1,1-TRICHLOROETHANE													
1,1,2,2-TETRACHLOROETHANE													
1,1,2-TRICHLOROETHANE													
1,1,2-TRICHLOROTRIFLUOROETHANE													
1,1-DICHLOROETHANE													
1,1-DICHLOROETHENE													
1,2,4-TRICHLOROBENZENE													
1,2-DIBROMO-3-CHLOROPROPANE													
1,2-DIBROMOETHANE													
1,2-DICHLOROBENZENE													
1,2-DICHLOROETHANE													
1,2-DICHLOROPROPANE													
1,3-DICHLOROBENZENE													
1,4-DICHLOROBENZENE													
2-BUTANONE													
2-HEXANONE													
4-METHYL-2-PENTANONE													
ACETONE													
BENZENE													
BROMODICHLOROMETHANE													
BROMOFORM													
BROMOMETHANE													
CARBON DISULFIDE													
CARBON TETRACHLORIDE													
CHLOROBENZENE													
CHLORODIBROMOMETHANE													
CHLOROETHANE													
CHLOROFORM													
CHLOROMETHANE													
CIS-1,2-DICHLOROETHENE													
CIS-1,3-DICHLOROPROPENE													
CYCLOHEXANE													
DICHLORODIFLUOROMETHANE													
ETHYLBENZENE													
ISOPROPYLBENZENE													
M+P-XYLENES													
METHYL ACETATE													
METHYL CYCLOHEXANE													
METHYL TERT-BUTYL ETHER													
METHYLENE CHLORIDE													
O-XYLENE													
STYRENE													
TETRACHLOROETHENE													
TOLUENE													
TRANS-1,2-DICHLOROETHENE													
TRANS-1,3-DICHLOROPROPENE													
TRICHLOROETHENE													
TRICHLOROFLUOROMETHANE													
VINYL CHLORIDE													

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 30 to 35 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

LOCATION ID	CCF-IW0004IS						CCF-IW0011IS						
SAMPLE ID	CCF-IW0004IS-031.7-20080409	CCF-IW0004IS-031.7-20080923	CCF-IW0004IS-031.7-20090910	CCF-IW0004IS-032.0-20220202	CCF-IW0004IS-032.0-20220831	CCF-IW0004IS-032.0-20230427	CCF-IW0011IS-035.0-19981103	CCF-IW0011IS-035.0-20000810	CCF-IW0011IS-000.0-20040820	CCF-IW0011IS-035.0-20050608	CCF-IW0011IS-035.0-20050824	CCF-IW0011IS-035.0-20051227	CCF-IW0011IS-035.0-20060323
SAMPLE DATE	4/9/2008	9/23/2008	9/10/2009	2/2/2022	8/31/2022	4/27/2023	11/3/1998	8/10/2000	8/20/2004	6/8/2005	8/24/2005	12/27/2005	3/23/2006
VOLATILE (µg/L)													
1,1,1,2-TETRACHLOROETHANE		1 U	1 U					1 U		1 U	1 U	1 U	1 U
1,1,1-TRICHLOROETHANE		1 U	1 U				1 U	1 U	0.5 U	1 U	1 U	1 U	1 U
1,1,2,2-TETRACHLOROETHANE		1 U	1 U				1 U	1 U		1 U	1 U	1 U	1 U
1,1,2-TRICHLOROETHANE		1 U	1 U				1 U	1 U	0.5 U	1 U	1 U	1 U	1 U
1,1,2-TRICHLOROTRIFLUOROETHANE	1 U	1 U	1 U				1 U	1 U	0.5 U	1 U	1 U		1 U
1,1-DICHLOROETHANE		1 U	1 U				1 U	1 U	0.5 U	1 U	1 U	1 U	1 U
1,1-DICHLOROETHENE	1 U	1 U	1 U				1 U	1 U	0.5 U	1 U	1 U	1 U	1 U
1,1-DICHLOROPROPENE		1 U	1 U					1 U		1 U	1 U	1 U	1 U
1,2,3-TRICHLOROBENZENE		1 U	1 U					1 U	0.5 U	1 U	1 U	2 U	2 U
1,2,3-TRICHLOROPROPANE		1 U	1 U					1 U		1 U	1 U	1 U	1 U
1,2,4-TRICHLOROBENZENE		1 U	1 U					1 U	0.5 U	1 U	1 U	2 U	2 U
1,2,4-TRIMETHYLBENZENE		1 U	1 U					1 U		1 U	1 U	1 U	1 U
1,2-DIBROMO-3-CHLOROPROPANE		1 U	1 U					2 U		5 U	5 U	5 U	5 U
1,2-DIBROMOETHANE		1 U	1 U					1 U		1 U	1 U	1 U	1 U
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE							0.00 UN	0.00 UN					
1,2-DICHLOROBENZENE		1 U	1 U					1 U	0.5 U	1 U	1 U	1 U	1 U
1,2-DICHLOROETHANE		1 U	1 U				1 U	1 U	0.5 U	1 U	1 U	1 U	1 U
1,2-DICHLOROPROPANE		1 U	1 U				1 U	1 U		1 U	1 U	1 U	1 U
1,3,5-TRIMETHYLBENZENE		1 U	1 U					1 U		1 U	1 U	1 U	1 U
1,3-DICHLOROBENZENE		1 U	1 U					1 U		1 U	1 U	1 U	1 U
1,3-DICHLOROPROPANE		1 U	1 U					1 U		1 U	1 U	1 U	1 U
1,4-DICHLOROBENZENE		1 U	1 U					1 U		1 U	1 U	1 U	1 U
1,4-DIOXANE													
2,2-DICHLOROPROPANE		1 U	1 U					1 U		1 U	1 U	1 U	1 U
2-BUTANONE		5 U	5 U				10 U	10 U		25 U	25 U	50 U	50 U
2-CHLOROETHYL VINYL ETHER		1 U	1 U										
2-CHLOROTOLUENE		1 U	1 U					1 U		1 U	1 U	1 U	1 U
2-HEXANONE		5 U	5 U				10 U	10 U		5 U	5 U	50 U	50 U
4-CHLOROTOLUENE		1 U	1 U					1 U		1 U	1 U	1 U	1 U
4-ISOPROPYLTOLUENE		1 U	1 U					1 U	0.5 U	1 U	1 U	1 U	1 U
4-METHYL-2-PENTANONE		5 U	5 U				10 U	10 U		5 U	5 U	50 U	50 U
ACETONE		5 U	5 U				10 U	10 U	25 U	25 U	50 U	50 U	50 U
BENZENE		1 U	1 U				1 U	1 U	0.5 U	1 U	1 U	1 U	1 U
BROMOBENZENE		1 U	1 U					1 U		1 U	1 U	1 U	1 U
BROMOCHLOROMETHANE		1 U	1 U					1 U		1 U	1 U	1 U	1 U
BROMODICHLOROMETHANE		1 U	1 U				1 U	1 U		1 U	1 U	1 U	1 U
BROMOFORM		1 U	1 U				1 U	1 U		1 U	1 U	1 U	1 U
BROMOMETHANE		1 U	1 U				0.87 U	1 U		1 U	1 U	1 U	1 U
CARBON DISULFIDE		5 U	5 U				1 U	1 U	0.5 U	1 U	1 U	1 U	1 U
CARBON TETRACHLORIDE		1 U	1 U				1 U	1 U		1 U	1 U	1 U	1 U
CHLOROBENZENE		1 U	1 U				1 U	1 U	0.5 U	1 U	1 U	1 U	1 U
CHLORODIBROMOMETHANE		1 U	1 U				1 U	1 U		1 U	1 U	1 U	1 U
CHLOROETHANE		1 U	1 U				1 U	1 U		1 U	1 U	1 U	1 U
CHLOROFORM		1 U	1 U				1 U	1 U	0.5 U	1 U	1 U	1 U	1 U
CHLOROMETHANE		1 U	1 U				1 U	1 U		3.6	1 U	1 U	1 U
CHLOROTRIFLUOROETHENE							0.00 UN	0.00 UN					
CIS-1,2-DICHLOROETHENE	1 U	1.6	1 U	1 U	0.50 U	0.50 U	1 U	0.78 J	0.5 U	1 U	1 U	1 U	1 U
CIS-1,3-DICHLOROPROPENE		1 U	1 U				1 U	1 U		1 U	1 U	1 U	1 U
CYCLOHEXANE													
DIBROMOMETHANE		1 U	1 U					1 U		1 U	1 U	1 U	1 U
DICHLORODIFLUOROMETHANE		1 U	1 U					1 U	0.5 U	1 U	1 U	1 U	1 U
ETHYLBENZENE		1 U	1 U				1 U	1 U	0.5 U	1 U	1 U	1 U	1 U
HEXACHLOROBUTADIENE		1 U	1 U					1 U		1 U	1 U	1 U	1 U
ISOPROPYLBENZENE		1 U	1 U					1 U		1 U	1 U	1 U	1 U
M+P-XYLENES		1 U	1 U										
METHYL ACETATE													
METHYL CYCLOHEXANE													
METHYL TERT-BUTYL ETHER		1 U	1 U					1 U			1 U	1 U	1 U
METHYLENE CHLORIDE		1 U	1 U				1 U	2 U	2.3 I	2.3 J	5 U	5 U	5 U
NAPHTHALENE		1 U	1 U					1 U		5 U	5 U	5 U	5 U
N-BUTYLBENZENE		1 U	1 U					1 U		1 U	1 U	1 U	1 U
N-PROPYLBENZENE		1 U	1 U					1 U		1 U	1 U	1 U	1 U
O-XYLENE		1 U	1 U										
SEC-BUTYLBENZENE		1 U	1 U					1 U		1 U	1 U	1 U	1 U
STYRENE		1 U	1 U				1 U	1 U		1 U	1 U	1 U	1 U
TERT-BUTYLBENZENE		1 U	1 U					1 U		1 U	1 U	1 U	1 U
TETRACHLOROETHANE							1 U						
TETRACHLOROETHENE		1 U	1 U					1 U	0.5 U	1 U	1 U	1 U	1 U
TOLUENE		1 U	1 U				1 U	1 U	0.5 U	1 U	1 U	1 U	1 U
TOTAL XYLENES		1 U	1 U				1 U	1 U	0.5 U	1 U	2 U	3 U	3 U
TRANS-1,2-DICHLOROETHENE	1 U	1 U	1 U	1 U	0.50 U	0.50 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U
TRANS-1,3-DICHLOROPROPENE		1 U	1 U				1 U	1 U		1 U	1 U	1 U	1 U
TRICHLOROETHENE	1 U	1 U	1 U	1 U	0.50 U	0.50 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U
TRICHLOROFLUOROMETHANE		1 U	1 U					1 U		1 U	1 U	1 U	1 U
VINYL CHLORIDE	1 U	1 U	1 U	1 U	0.50 U	0.50 U	0.42 J	10	0.5 U	1 U	1 U	1 U	1 U
MOBILE LAB VOLATILE (µg/L)													
1,1,1-TRICHLOROETHANE													
1,1,2,2-TETRACHLOROETHANE													
1,1,2-TRICHLOROETHANE													
1,1,2-TRICHLOROTRIFLUOROETHANE													
1,1-DICHLOROETHANE													
1,1-DICHLOROETHENE													
1,2,4-TRICHLOROBENZENE													
1,2-DIBROMO-3-CHLOROPROPANE													
1,2-DIBROMOETHANE													
1,2-DICHLOROBENZENE													
1,2-DICHLOROETHANE													
1,2-DICHLOROPROPANE													
1,3-DICHLOROBENZENE													
1,4-DICHLOROBENZENE													
2-BUTANONE													
2-HEXANONE													
4-METHYL-2-PENTANONE													
ACETONE													
BENZENE													
BROMODICHLOROMETHANE													
BROMOFORM													
BROMOMETHANE													
CARBON DISULFIDE													
CARBON TETRACHLORIDE													
CHLOROBENZENE													
CHLORODIBROMOMETHANE													
CHLOROETHANE													
CHLOROFORM													
CHLOROMETHANE													
CIS-1,2-DICHLOROETHENE													
CIS-1,3-DICHLOROPROPENE													
CYCLOHEXANE													
DICHLORODIFLUOROMETHANE													
ETHYLBENZENE													
ISOPROPYLBENZENE													
M+P-XYLENES													
METHYL ACETATE													
METHYL CYCLOHEXANE													
METHYL TERT-BUTYL ETHER													
METHYLENE CHLORIDE													
O-XYLENE													
STYRENE													
TETRACHLOROETHENE													
TOLUENE													
TRANS-1,2-DICHLOROETHENE													
TRANS-1,3-DICHLOROPROPENE													
TRICHLOROETHENE													
TRICHLOROFLUOROMETHANE													
VINYL CHLORIDE													

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 30 to 35 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

LOCATION ID	CCF-IW0011IS												
SAMPLE ID	CCF-IW0011IS-037.0-20060615	CCF-IW0011IS-034.5-20060822	CCF-IW0011IS-034.5-20061220	CCF-IW0011IS-034.5-20070419	CCF-IW0011IS-029.4-20070727	CCF-IW0011IS-029.4-20070923	CCF-IW0011IS-029.4-20070923-D	CCF-IW0011IS-029.4-20080416	CCF-IW0011IS-029.4-20080924	CCF-IW0011IS-029.4-20090910	CCF-IW0011IS-029.4-20100419	CCF-IW0011IS-030.0-20220203	CCF-IW0011IS-030.0-20220901
SAMPLE DATE	6/15/2006	8/22/2006	12/20/2006	4/19/2007	7/27/2007	9/23/2007	9/23/2007	4/16/2008	9/24/2008	9/10/2009	4/19/2010	2/3/2022	9/1/2022
VOLATILE (µg/L)													
1,1,1,2-TETRACHLOROETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
1,1,1-TRICHLOROETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
1,1,2,2-TETRACHLOROETHANE	1 U	1 U	1 U	0.20 U	1 U	1 U	1 U		1 U	1 U	1 U		
1,1,2-TRICHLOROETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
1,1,2-TRICHLOROTRIFLUOROETHANE		1 U	1.1	4.4	1 U	1 U	1 U	1 U	1 U	1 U	1 U		
1,1-DICHLOROETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
1,1-DICHLOROETHENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		
1,1-DICHLOROPROPENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
1,2,3-TRICHLOROBENZENE	2 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
1,2,3-TRICHLOROPROPANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
1,2,4-TRICHLOROBENZENE	2 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
1,2,4-TRIMETHYLBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
1,2-DIBROMO-3-CHLOROPROPANE	5 U	5 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
1,2-DIBROMOETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE													
1,2-DICHLOROBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
1,2-DICHLOROETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
1,2-DICHLOROPROPANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
1,3,5-TRIMETHYLBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
1,3-DICHLOROBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
1,3-DICHLOROPROPANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
1,4-DICHLOROBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
1,4-DIOXANE											2 U		
2,2-DICHLOROPROPANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
2-BUTANONE	50 U	50 U	5 U	5 U	5 U	5 U	5 U		5 U	5 U	5 U		
2-CHLOROETHYL VINYL ETHER			1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
2-CHLOROTOLUENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
2-HEXANONE	50 U	50 U	5 U	5 U	5 U	5 U	5 U		5 U	5 U	5 U		
4-CHLOROTOLUENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
4-ISOPROPYLTOLUENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
4-METHYL-2-PENTANONE	50 U	50 U	5 U	5 U	5 U	5 U	5 U		5 U	5 U	5 U		
ACETONE	50 U	50 U	5 U	5 U	5 U	5 U	5 U		5 U	5 U	5 U		
BENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
BROMOBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
BROMOCHLOROMETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
BROMODICHLOROMETHANE	1 U	1 U	0.40 U	0.40 U	1 U	1 U	1 U		1 U	1 U	1 U		
BROMOFORM	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
BROMOMETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
CARBON DISULFIDE	1 U	1 U	5 U	5 U	5 U	5 U	5 U		5 U	5 U	1.3 I		
CARBON TETRACHLORIDE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
CHLOROBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
CHLORODIBROMOMETHANE	1 U	1 U	1 U	0.20 U	1 U	1 U	1 U		1 U	1 U	1 U		
CHLOROETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
CHLOROFORM	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
CHLOROMETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
CHLOROTRIFLUOROETHENE													
CIS-1,2-DICHLOROETHENE	1 U	2.63	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.64 J	1.2
CIS-1,3-DICHLOROPROPENE	1 U	1 U	0.20 U	0.20 U	1 U	1 U	1 U		1 U	1 U	1 U		
CYCLOHEXANE													
DIBROMOMETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
DICHLORODIFLUOROMETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
ETHYLBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
HEXACHLOROBUTADIENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
ISOPROPYLBENZENE	1 U	1 U	0.20 U	0.20 U	1 U	1 U	1 U		1 U	1 U	1 U		
M+P-XYLENES			2 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
METHYL ACETATE													
METHYL CYCLOHEXANE		5 U											
METHYL TERT-BUTYL ETHER	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
METHYLENE CHLORIDE	5 U	5 U	2 U	2 U	2 U	2 U	2 U		1 U	1 U	1 U		
NAPHTHALENE	5 U	5 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
N-BUTYLBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
N-PROPYLBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
O-XYLENE			1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
SEC-BUTYLBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
STYRENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
TERT-BUTYLBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
TETRACHLOROETHANE											1 U		
TETRACHLOROETHENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U			
TOLUENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
TOTAL XYLENES	3 U	3 U			1 U	1 U	1 U		1 U	1 U	1 U		
TRANS-1,2-DICHLOROETHENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.50 U
TRANS-1,3-DICHLOROPROPENE	1 U	1 U	0.20 U	0.20 U	1 U	1 U	1 U		1 U	1 U	1 U		
TRICHLOROETHENE	1 U	1 U	0.90 I	1 U	1 U	1 U	1 U	0.46 I	1 U	1 U	1 U	0.60 J	0.66 J
TRICHLOROFLUOROMETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U		
VINYL CHLORIDE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.50 U
MOBILE LAB VOLATILE (µg/L)													
1,1,1-TRICHLOROETHANE													
1,1,2,2-TETRACHLOROETHANE													
1,1,2-TRICHLOROETHANE													
1,1,2-TRICHLOROTRIFLUOROETHANE													
1,1-DICHLOROETHANE													
1,1-DICHLOROETHENE													
1,2,4-TRICHLOROBENZENE													
1,2-DIBROMO-3-CHLOROPROPANE													
1,2-DIBROMOETHANE													
1,2-DICHLOROBENZENE													
1,2-DICHLOROETHANE													
1,2-DICHLOROPROPANE													
1,3-DICHLOROBENZENE													
1,4-DICHLOROBENZENE													
2-BUTANONE													
2-HEXANONE													
4-METHYL-2-PENTANONE													
ACETONE													
BENZENE													
BROMODICHLOROMETHANE													
BROMOFORM													
BROMOMETHANE													
CARBON DISULFIDE													
CARBON TETRACHLORIDE													
CHLOROBENZENE													
CHLORODIBROMOMETHANE													
CHLOROETHANE													
CHLOROFORM													
CHLOROMETHANE													
CIS-1,2-DICHLOROETHENE													
CIS-1,3-DICHLOROPROPENE													
CYCLOHEXANE													
DICHLORODIFLUOROMETHANE													
ETHYLBENZENE													
ISOPROPYLBENZENE													
M+P-XYLENES													
METHYL ACETATE													
METHYL CYCLOHEXANE													
METHYL TERT-BUTYL ETHER													
METHYLENE CHLORIDE													
O-XYLENE													
STYRENE													
TETRACHLOROETHENE													
TOLUENE													
TRANS-1,2-DICHLOROETHENE													
TRANS-1,3-DICHLOROPROPENE													
TRICHLOROETHENE													
TRICHLOROFLUOROMETHANE													
VINYL CHLORIDE													

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 30 to 35 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

LOCATION ID	CCF-IW0011S	CCF-IW0042											
SAMPLE ID	CCF-IW0011S-030.0-20230428	CCF-IW0042-035.0-20111108	CCF-IW0042-035.0-20120308	CCF-IW0042-035.0-20121206	CCF-IW0042-035.0-20131204	CCF-IW0042-035.0-20141209	CCF-IW0042-035.0-20150513	CCF-IW0042-035.0-20151002	CCF-IW0042-035.0-20151201	CCF-IW0042-035.0-20170517	CCF-IW0042-035.0-20171018	CCF-IW0042-035.0-20180112	CCF-IW0042-035.0-20180424
SAMPLE DATE	4/28/2023	11/8/2011	3/8/2012	12/6/2012	12/4/2013	12/9/2014	5/13/2015	10/2/2015	12/1/2015	5/17/2017	10/18/2017	1/12/2018	4/24/2018
VOLATILE (µg/L)													
1,1,1,2-TETRACHLOROETHANE										5 U	1 U	2.5 U	2.5 U
1,1,1-TRICHLOROETHANE		2.3 U Q								5 U	1 U	2.5 U	2.5 U
1,1,2,2-TETRACHLOROETHANE		0.75 U Q								5 U	1 U	2.5 U	2.5 U
1,1,2-TRICHLOROETHANE		2.4 U Q								5 U	1 U	2.5 U	2.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE		3.2 U Q			2 U	3 U	3 U	1 U	30 U				2.5 U
1,1-DICHLOROETHANE		2.6 U Q								5 U	1 U	2.5 U	2.5 U
1,1-DICHLOROETHENE		2.3 U Q			2 U	3 U	3 U	1 U	3 U	5 U	1 U	2.5 U	2.5 U
1,1-DICHLOROPROPENE										5 U	1 U	2.5 U	2.5 U
1,2,3-TRICHLOROBENZENE										5 U	1 U	2.5 U	2.5 U
1,2,3-TRICHLOROPROPANE										5 U	1 U	2.5 U	2.5 U
1,2,4-TRICHLOROBENZENE		2.9 U Q								5 U	1 U	2.5 U	2.5 U
1,2,4-TRIMETHYLBENZENE										5 U	1 U	2.5 U	2.5 U
1,2-DIBROMO-3-CHLOROPROPANE		13 U Q								5 U	1 U	2.5 U	2.5 U
1,2-DIBROMOETHANE		2.5 U Q								5 U	1 U	2.5 U	2.5 U
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE													
1,2-DICHLOROBENZENE		2.2 U Q								5 U	1 U	2.5 U	2.5 U
1,2-DICHLOROETHANE		2.9 U Q								5 U	1 U	2.5 U	2.5 U
1,2-DICHLOROPROPANE		2.6 U Q								5 U	1 U	2.5 U	2.5 U
1,3,5-TRIMETHYLBENZENE										5 U	1 U	2.5 U	2.5 U
1,3-DICHLOROBENZENE		3.2 U Q								5 U	1 U	2.5 U	2.5 U
1,3-DICHLOROPROPANE										5 U	1 U	2.5 U	2.5 U
1,4-DICHLOROBENZENE		2.6 U Q								5 U	1 U	2.5 U	2.5 U
1,4-DIOXANE													
2,2-DICHLOROPROPANE										5 U	1 U	2.5 U	2.5 U
2-BUTANONE		42 U Q								25 U	5 U	12 U	12 U
2-CHLOROETHYL VINYL ETHER										25 U	5 U	12 U	12 U
2-CHLOROTOLUENE										5 U	1 U	2.5 U	2.5 U
2-HEXANONE		22 U Q								25 U	5 U	12 U	12 U
4-CHLOROTOLUENE										5 U	1 U	2.5 U	2.5 U
4-ISOPROPYLTOLUENE										5 U	1 U	2.5 U	2.5 U
4-METHYL-2-PENTANONE		19 U,Q,J3								25 U	5 U	12 U	12 U
ACETONE		50 U Q								100 U	71	50 U	50 U
BENZENE		2.5 U Q								5 U	1 U	2.5 U	2.5 U
BROMOBENZENE										5 U	1 U	2.5 U	2.5 U
BROMOCHLOROMETHANE										5 U	1 U	2.5 U	2.5 U
BROMODICHLOROMETHANE		1.8 U Q								5 U	1 U	2.5 U	2.5 U
BROMOFORM		2.9 U Q								5 U	1 U	2.5 U	2.5 U
BROMOMETHANE		13 U Q								5 U	1 U	2.5 U	2.5 U
CARBON DISULFIDE		5 U Q								25 U	5 U	12 U	12 U
CARBON TETRACHLORIDE		2.1 U Q								5 U	1 U	2.5 U	2.5 U
CHLOROBENZENE		3.2 U Q								5 U	1 U	2.5 U	2.5 U
CHLORODIBROMOMETHANE		1.7 U Q								5 U	1 U	2.5 U	2.5 U
CHLOROETHANE		13 U,Q,J3								5 U	1 U	2.5 U	2.5 U
CHLOROFORM		4.5 U Q								5 U	1 U	2.5 U	2.5 U
CHLOROMETHANE		5 U Q								5 U	1.8	2.5 U	2.5 U
CHLOROTRIFLUOROETHENE													
CIS-1,2-DICHLOROETHENE	0.99 J	420 Q			280	390	240	180	180	100	97	110	92
CIS-1,3-DICHLOROPROPENE		0.7 U Q								5 U	1 U	2.5 U	2.5 U
CYCLOHEXANE		4.2 U											
DIBROMOMETHANE										5 U	1 U	2.5 U	2.5 U
DICHLORODIFLUOROMETHANE		15 Q								5 U	1 U	2.5 U	2.5 U
ETHYLBENZENE		2.2 U Q								5 U	1 U	2.5 U	2.5 U
HEXACHLOROBUTADIENE										5 U	1 U	2.5 U	2.5 U
ISOPROPYLBENZENE		0.95 U Q								5 U	1 U	2.5 U	2.5 U
M+P-XYLENES										10 U	2 U	5 U	5 U
METHYL ACETATE		1.8 U											
METHYL CYCLOHEXANE		4.8 U											
METHYL TERT-BUTYL ETHER		2.2 U Q								5 U	1 U	2.5 U	2.5 U
METHYLENE CHLORIDE		20 U Q								25 U	5 U	12 U	12 U
NAPHTHALENE										5 U	1 U	2.5 U	2.5 U
N-BUTYLBENZENE										5 U	1 U	2.5 U	2.5 U
N-PROPYLBENZENE										5 U	1 U	2.5 U	2.5 U
O-XYLENE										5 U	1 U	2.5 U	2.5 U
SEC-BUTYLBENZENE										5 U	1 U	2.5 U	2.5 U
STYRENE		4.9 U Q								5 U	1 U	2.5 U	2.5 U
TERT-BUTYLBENZENE										5 U	1 U	2.5 U	2.5 U
TETRACHLOROETHANE													
TETRACHLOROETHENE		2.5 U Q			2 U	3 U	3 U	1 U	3 U	5 U	1 U	2.5 U	2.5 U
TOLUENE		2.6 U Q								5 U	1 U	2.5 U	2.5 U
TOTAL XYLENES		2.5 U Q								10 U	2 U	5 U	5 U
TRANS-1,2-DICHLOROETHENE	0.50 U	1100			690	1200	720	340	490	260	240	240	210
TRANS-1,3-DICHLOROPROPENE		0.7 U Q								5 U	1 U	2.5 U	2.5 U
TRICHLOROETHENE	0.50 U	1300			8	5	4	6	5	5.2	6.9	4.4	3.1
TRICHLOROFLUOROMETHANE		13 U Q								5 U	1 U	2.5 U	2.5 U
VINYL CHLORIDE	0.50 U	2.5 U Q			19	29	19	21	21	15	41	35	27
MOBILE LAB VOLATILE (µg/L)													
1,1,1-TRICHLOROETHANE			20 U										
1,1,2,2-TETRACHLOROETHANE			12 U										
1,1,2-TRICHLOROETHANE			20 U										
1,1,2-TRICHLOROTRIFLUOROETHANE			100 U	13	2 U								
1,1-DICHLOROETHANE			20 U										
1,1-DICHLOROETHENE			20 U	5 U	2 U								
1,2,4-TRICHLOROBENZENE			100 U										
1,2-DIBROMO-3-CHLOROPROPANE			30 U										
1,2-DIBROMOETHANE			9.6 U										
1,2-DICHLOROBENZENE			40 U										
1,2-DICHLOROETHANE			20 U										
1,2-DICHLOROPROPANE			20 U										
1,3-DICHLOROBENZENE			40 U										
1,4-DICHLOROBENZENE			40 U										
2-BUTANONE			200 U										
2-HEXANONE			200 U										
4-METHYL-2-PENTANONE			100 U										
ACETONE			200 U										
BENZENE			20 U										
BROMODICHLOROMETHANE			10 U										
BROMOFORM			40 U										
BROMOMETHANE			100 U										
CARBON DISULFIDE			20 U										
CARBON TETRACHLORIDE			20 U										
CHLOROBENZENE			20 U										
CHLORODIBROMOMETHANE			6.2 U										
CHLOROETHANE			100 U										
CHLOROFORM			20 U										
CHLOROMETHANE			50 U										
CIS-1,2-DICHLOROETHENE			270	280	280								
CIS-1,3-DICHLOROPROPENE			4 U										
CYCLOHEXANE			40 U										
DICHLORODIFLUOROMETHANE			22 D										
ETHYLBENZENE			20 U										
ISOPROPYLBENZENE			10 U										
M+P-XYLENES			40 U										
METHYL ACETATE			200 U										
METHYL CYCLOHEXANE			200 U										
METHYL TERT-BUTYL ETHER			100 U										
METHYLENE CHLORIDE			100 U										
O-XYLENE			20 U										
STYRENE			20 U										
TETRACHLOROETHENE			20 U	5 U	2 U								
TOLUENE			20 U										
TRANS-1,2-DICHLOROETHENE			860	720	690								
TRANS-1,3-DICHLOROPROPENE			2.6 U										
TRICHLOROETHENE			550	11	8								
TRICHLOROFLUOROMETHANE			100 U										
VINYL CHLORIDE			20 U	13	19								

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 30 to 35 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

LOCATION ID	CCF-IW0042												CCF-IW0083IS
SAMPLE ID	CCF-IW0042-035.0-20180702	CCF-IW0042-035.0-20190307	CCF-IW0042-035.0-20190606	CCF-IW0042-035.0-20191210	CCF-IW0042-035.0-20200312	CCF-IW0042-035.0-20200617	CCF-IW0042-035.0-20200925	CCF-IW0042-035.0-20201209	CCF-IW0042-035.0-20210324	CCF-IW0042-035.0-20220131	CCF-IW0042-035.0-20220906	CCF-IW0042-035.0-20230426	CCF-IW0083IS-030.0-20220201
SAMPLE DATE	7/2/2018	3/7/2019	6/6/2019	12/10/2019	3/12/2020	6/17/2020	9/25/2020	12/9/2020	3/24/2021	1/31/2022	9/6/2022	4/26/2023	2/1/2022
VOLATILE (µg/L)													
1,1,1,2-TETRACHLOROETHANE	5 U	2 U	2.5 U										
1,1,1-TRICHLOROETHANE	5 U	2 U	2.5 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U				
1,1,2,2-TETRACHLOROETHANE	5 U	2 U	2.5 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U				
1,1,2-TRICHLOROETHANE	5 U	2 U	2.5 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U				
1,1,2-TRICHLOROTRIFLUOROETHANE	5 U	2 U	2.5 U										
1,1-DICHLOROETHANE	5 U	2 U	2.5 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U				
1,1-DICHLOROETHENE	5 U	2 U	2.5 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U				
1,1-DICHLOROPROPENE	5 U	2 U	2.5 U										
1,2,3-TRICHLOROBENZENE	5 U	2 U	2.5 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U				
1,2,3-TRICHLOROPROPANE	5 U	2 U	2.5 U										
1,2,4-TRICHLOROBENZENE	5 U	2 U	2.5 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U				
1,2,4-TRIMETHYLBENZENE	5 U	2 U	2.5 U										
1,2-DIBROMO-3-CHLOROPROPANE	5 U	2 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U				
1,2-DIBROMOETHANE	5 U	2 U	2.5 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U				
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE													
1,2-DICHLOROBENZENE	5 U	2 U	2.5 U	0.47 J	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U				
1,2-DICHLOROETHANE	5 U	2 U	2.5 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U				
1,2-DICHLOROPROPANE	5 U	2 U	2.5 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U				
1,3,5-TRIMETHYLBENZENE	5 U	2 U	2.5 U										
1,3-DICHLOROBENZENE	5 U	2 U	2.5 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U				
1,3-DICHLOROPROPANE	5 U	2 U	2.5 U										
1,4-DICHLOROBENZENE	5 U	2 U	2.5 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U				
1,4-DIOXANE													
2,2-DICHLOROPROPANE	5 U	2 U	2.5 U										
2-BUTANONE	25 U	10 U	12 U	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U				
2-CHLOROETHYL VINYL ETHER	25 U	10 U	12 U										
2-CHLOROTOLUENE	5 U	2 U	2.5 U										
2-HEXANONE	25 U	10 U	12 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U				
4-CHLOROTOLUENE	5 U	2 U	2.5 U										
4-ISOPROPYLTOLUENE	5 U	2 U	2.5 U										
4-METHYL-2-PENTANONE	25 U	10 U	12 U	4 U	4 U	4 U	4 U	4 U	4 U				
ACETONE	100 U	40 U	50 U	3 U	3 U	3 U	3 U	3 U	3 U				
BENZENE	5 U	2 U	2.5 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U				
BROMOBENZENE	5 U	2 U	2.5 U										
BROMOCHLOROMETHANE	5 U	2 U	2.5 U										
BROMODICHLOROMETHANE	5 U	2 U	2.5 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U				
BROMOFORM	5 U	2 U	2.5 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U				
BROMOMETHANE	5 U	2 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U				
CARBON DISULFIDE	25 U	10 U	12 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U				
CARBON TETRACHLORIDE	5 U	2 U	2.5 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U				
CHLOROBENZENE	5 U	2 U	2.5 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U				
CHLORODIBROMOMETHANE	5 U	2 U	2.5 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U				
CHLOROETHANE	5 U	2 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U				
CHLOROFORM	5 U	2 U	2.5 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U				
CHLOROMETHANE	5 U	2 U	2.5 U	0.76 U	0.76 U	0.76 U	0.76 U	0.90 J	0.76 U				
CHLOROTRIFLUOROETHENE													
CIS-1,2-DICHLOROETHENE	130	88	59	22	15	13	11	12	11	7.9	8.7	12.4	0.76 J
CIS-1,3-DICHLOROPROPENE	5 U	2 U	2.5 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U				
CYCLOHEXANE													
DIBROMOMETHANE	5 U	2 U	2.5 U										
DICHLORODIFLUOROMETHANE	5 U	2 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U				
ETHYLBENZENE	5 U	2 U	2.5 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U				
HEXACHLOROBUTADIENE	5 U	2 U	2.5 U										
ISOPROPYLBENZENE	5 U	2 U	2.5 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U				
M+P-XYLENES	10 U	4 U	5 U										
METHYL ACETATE													
METHYL CYCLOHEXANE													
METHYL TERT-BUTYL ETHER	5 U	2 U	2.5 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U				
METHYLENE CHLORIDE	47	10 U	12 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U				
NAPHTHALENE	5 U	2 U	2.5 U										
N-BUTYLBENZENE	5 U	2 U	2.5 U										
N-PROPYLBENZENE	5 U	2 U	2.5 U										
O-XYLENE	5 U	2 U	2.5 U										
SEC-BUTYLBENZENE	5 U	2 U	2.5 U										
STYRENE	5 U	2 U	2.5 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U				
TERT-BUTYLBENZENE	5 U	2 U	2.5 U										
TETRACHLOROETHANE													
TETRACHLOROETHENE	5 U	2 U	2.5 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U				
TOLUENE	5 U	2 U	2.5 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U				
TOTAL XYLENES	10 U	4 U	5 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U				
TRANS-1,2-DICHLOROETHENE	310	170	130	64	36	35	29	20	19	11.4	10	15.3	1 U
TRANS-1,3-DICHLOROPROPENE	5 U	2 U	2.5 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U				
TRICHLOROETHENE	5 U	2	2.5 U	1.6 J	1 J	1 J	1.4 J	1.3 J	1.5 J	1.5	3.9	2.3	1 U
TRICHLOROFLUOROMETHANE	5 U	2 U	2.5 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U				
VINYL CHLORIDE	30	36	16	12	6.7	6.3	6.4	4.8	2.8	1.7	2.4	3.8	1 U
MOBILE LAB VOLATILE (µg/L)													
1,1,1-TRICHLOROETHANE													
1,1,2,2-TETRACHLOROETHANE													
1,1,2-TRICHLOROETHANE													
1,1,2-TRICHLOROTRIFLUOROETHANE													
1,1-DICHLOROETHANE													
1,1-DICHLOROETHENE													
1,2,4-TRICHLOROBENZENE													
1,2-DIBROMO-3-CHLOROPROPANE													
1,2-DIBROMOETHANE													
1,2-DICHLOROBENZENE													
1,2-DICHLOROETHANE													
1,2-DICHLOROPROPANE													
1,3-DICHLOROBENZENE													
1,4-DICHLOROBENZENE													
2-BUTANONE													
2-HEXANONE													
4-METHYL-2-PENTANONE													
ACETONE													
BENZENE													
BROMODICHLOROMETHANE													
BROMOFORM													
BROMOMETHANE													
CARBON DISULFIDE													
CARBON TETRACHLORIDE													
CHLOROBENZENE													
CHLORODIBROMOMETHANE													
CHLOROETHANE													
CHLOROFORM													
CHLOROMETHANE													
CIS-1,2-DICHLOROETHENE													
CIS-1,3-DICHLOROPROPENE													
CYCLOHEXANE													
DICHLORODIFLUOROMETHANE													
ETHYLBENZENE													
ISOPROPYLBENZENE													
M+P-XYLENES													
METHYL ACETATE													
METHYL CYCLOHEXANE													
METHYL TERT-BUTYL ETHER													
METHYLENE CHLORIDE													
O-XYLENE													
STYRENE													
TETRACHLOROETHENE													
TOLUENE													
TRANS-1,2-DICHLOROETHENE													
TRANS-1,3-DICHLOROPROPENE													
TRICHLOROETHENE													
TRICHLOROFLUOROMETHANE													
VINYL CHLORIDE													

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 30 to 35 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

LOCATION ID	CCF-IW0083IS		CCF-IW0084		
SAMPLE ID	CCF-IW0083IS-030.0-20220907	CCF-IW0083IS-030.0-20230501	CCF-IW0084-030.0-20220202	CCF-IW0084-030.0-20220831	CCF-IW0084-030.0-20230427
SAMPLE DATE	9/7/2022	5/1/2023	2/2/2022	8/31/2022	4/27/2023
VOLATILE (µg/L)					
1,1,1,2-TETRACHLOROETHANE					
1,1,1-TRICHLOROETHANE					
1,1,2,2-TETRACHLOROETHANE					
1,1,2-TRICHLOROETHANE					
1,1,2-TRICHLOROTRIFLUOROETHANE					
1,1-DICHLOROETHANE					
1,1-DICHLOROETHENE					
1,1-DICHLOROPROPENE					
1,2,3-TRICHLOROBENZENE					
1,2,3-TRICHLOROPROPANE					
1,2,4-TRICHLOROBENZENE					
1,2,4-TRIMETHYLBENZENE					
1,2-DIBROMO-3-CHLOROPROPANE					
1,2-DIBROMOETHANE					
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE					
1,2-DICHLOROBENZENE					
1,2-DICHLOROETHANE					
1,2-DICHLOROPROPANE					
1,3,5-TRIMETHYLBENZENE					
1,3-DICHLOROBENZENE					
1,3-DICHLOROPROPANE					
1,4-DICHLOROBENZENE					
1,4-DIOXANE					
2,2-DICHLOROPROPANE					
2-BUTANONE					
2-CHLOROETHYL VINYL ETHER					
2-CHLOROTOLUENE					
2-HEXANONE					
4-CHLOROTOLUENE					
4-ISOPROPYLTOLUENE					
4-METHYL-2-PENTANONE					
ACETONE					
BENZENE					
BROMOBENZENE					
BROMOCHLOROMETHANE					
BROMODICHLOROMETHANE					
BROMOFORM					
BROMOMETHANE					
CARBON DISULFIDE					
CARBON TETRACHLORIDE					
CHLOROBENZENE					
CHLORODIBROMOMETHANE					
CHLOROETHANE					
CHLOROFORM					
CHLOROMETHANE					
CHLOROTRIFLUOROETHENE					
CIS-1,2-DICHLOROETHENE	1.9	3.1	0.44 J	0.44 J	0.50 U
CIS-1,3-DICHLOROPROPENE					
CYCLOHEXANE					
DIBROMOMETHANE					
DICHLORODIFLUOROMETHANE					
ETHYLBENZENE					
HEXACHLOROBUTADIENE					
ISOPROPYLBENZENE					
M+P-XYLENES					
METHYL ACETATE					
METHYL CYCLOHEXANE					
METHYL TERT-BUTYL ETHER					
METHYLENE CHLORIDE					
NAPHTHALENE					
N-BUTYLBENZENE					
N-PROPYLBENZENE					
O-XYLENE					
SEC-BUTYLBENZENE					
STYRENE					
TERT-BUTYLBENZENE					
TETRACHLOROETHANE					
TETRACHLOROETHENE					
TOLUENE					
TOTAL XYLENES					
TRANS-1,2-DICHLOROETHENE	0.33 J	0.60 J	0.39 J	0.34 J	0.50 U
TRANS-1,3-DICHLOROPROPENE					
TRICHLOROETHENE	0.77 J	0.50 U	1 U	0.50 U	0.50 U
TRICHLOROFLUOROMETHANE					
VINYL CHLORIDE	0.50 U	0.50 U	0.78 J	0.51 J	0.50 U
MOBILE LAB VOLATILE (µg/L)					
1,1,1-TRICHLOROETHANE					
1,1,2,2-TETRACHLOROETHANE					
1,1,2-TRICHLOROETHANE					
1,1,2-TRICHLOROTRIFLUOROETHANE					
1,1-DICHLOROETHANE					
1,1-DICHLOROETHENE					
1,2,4-TRICHLOROBENZENE					
1,2-DIBROMO-3-CHLOROPROPANE					
1,2-DIBROMOETHANE					
1,2-DICHLOROBENZENE					
1,2-DICHLOROETHANE					
1,2-DICHLOROPROPANE					
1,3-DICHLOROBENZENE					
1,4-DICHLOROBENZENE					
2-BUTANONE					
2-HEXANONE					
4-METHYL-2-PENTANONE					
ACETONE					
BENZENE					
BROMODICHLOROMETHANE					
BROMOFORM					
BROMOMETHANE					
CARBON DISULFIDE					
CARBON TETRACHLORIDE					
CHLOROBENZENE					
CHLORODIBROMOMETHANE					
CHLOROETHANE					
CHLOROFORM					
CHLOROMETHANE					
CIS-1,2-DICHLOROETHENE					
CIS-1,3-DICHLOROPROPENE					
CYCLOHEXANE					
DICHLORODIFLUOROMETHANE					
ETHYLBENZENE					
ISOPROPYLBENZENE					
M+P-XYLENES					
METHYL ACETATE					
METHYL CYCLOHEXANE					
METHYL TERT-BUTYL ETHER					
METHYLENE CHLORIDE					
O-XYLENE					
STYRENE					
TETRACHLOROETHENE					
TOLUENE					
TRANS-1,2-DICHLOROETHENE					
TRANS-1,3-DICHLOROPROPENE					
TRICHLOROETHENE					
TRICHLOROFLUOROMETHANE					
VINYL CHLORIDE					

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 40 to 45 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

LOCATION ID	CCF-IW0029D						CCF-IW0045					
SAMPLE ID	CCF-IW0029ID-042.5-20081008	CCF-IW0029ID-042.5-20090513	CCF-IW0029ID-042.5-20090914	CCF-IW0029ID-042.5-20220201	CCF-IW0029ID-042.5-20220906	CCF-IW0029ID-042.5-20230501	CCF-IW0045-045.0-20111108	CCF-IW0045-045.0-20120308	CCF-IW0045-045.0-20121206	CCF-IW0045-045.0-20131204	CCF-IW0045-045.0-20131230	CCF-IW0045-045.0-20141209
SAMPLE DATE	10/8/2008	5/13/2009	9/14/2009	2/1/2022	9/6/2022	5/1/2023	11/8/2011	3/8/2012	12/6/2012	12/4/2013	12/30/2013	12/9/2014
VOLATILE (µg/L)												
1,1,1,2-TETRACHLOROETHANE	1 U	1 U	1 U									
1,1,1-TRICHLOROETHANE	1 U	1 U	1 U				0.92 U Q					
1,1,2,2-TETRACHLOROETHANE	1 U	1 U	1 U				0.3 U Q					
1,1,2-TRICHLOROETHANE	1 U	1 U	1 U				0.94 U Q					
1,1,2-TRICHLOROTRIFLUOROETHANE	1 U	1 U	1 U				1.3 U Q			3 U	3 U	20 U
1,1-DICHLOROETHANE	1 U	1 U	1 U				1 U Q					
1,1-DICHLOROETHENE	1 U	1 U	1 U				0.9 U Q			3 U	4	20 U
1,1-DICHLOROPROPENE	1 U	1 U	1 U									
1,2,3-TRICHLOROBENZENE	1 U	1 U	1 U									
1,2,3-TRICHLOROPROPANE	1 U	1 U	1 U									
1,2,4-TRICHLOROBENZENE	1 U	1 U	1 U				1.2 U Q					
1,2,4-TRIMETHYLBENZENE	1 U	1 U	1 U									
1,2-DIBROMO-3-CHLOROPROPANE	1 U	1 U	1 U				5 U Q					
1,2-DIBROMOETHANE	1 U	1 U	1 U				1 U Q					
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE												
1,2-DICHLOROBENZENE	1 U	1 U	1 U				0.88 U Q					
1,2-DICHLOROETHANE	1 U	1 U	1 U				1.1 U Q					
1,2-DICHLOROPROPANE	1 U	1 U	1 U				1 U Q					
1,3,5-TRIMETHYLBENZENE	1 U	1 U	1 U									
1,3-DICHLOROBENZENE	1 U	1 U	1 U				1.3 U Q					
1,3-DICHLOROPROPANE	1 U	1 U	1 U									
1,4-DICHLOROBENZENE	1 U	1 U	1 U				1 U Q					
1,4-DIOXANE		2 U										
2,2-DICHLOROPROPANE	1 U	1 U	1 U									
2-BUTANONE	5 U	5 U	5 U				17 U Q					
2-CHLOROETHYL VINYL ETHER	1 U	1 U	1 U									
2-CHLOROTOLUENE	1 U	1 U	1 U									
2-HEXANONE	5 U	5 U	5 U				8.8 U Q					
4-CHLOROTOLUENE	1 U	1 U	1 U									
4-ISOPROPYLTOLUENE	1 U	1 U	1 U									
4-METHYL-2-PENTANONE	5 U	5 U	5 U				7.6 U,QJ3					
ACETONE	5 U	5 U	5 U				20 I Q					
BENZENE	1 U	1 U	1 U				1 U Q					
BROMOBENZENE	1 U	1 U	1 U									
BROMOCHLOROMETHANE	1 U	1 U	1 U									
BROMODICHLOROMETHANE	1 U	1 U	1 U				0.7 U Q					
BROMOFORM	1 U	1 U	1 U				1.2 U Q					
BROMOMETHANE	1 U	1 U	1 U				5 U Q					
CARBON DISULFIDE	0.29 I	5 U	5 U				2 U Q					
CARBON TETRACHLORIDE	1 U	1 U	1 U				0.84 U Q					
CHLOROBENZENE	1 U	1 U	1 U				1.3 U Q					
CHLORODIBROMOMETHANE	1 U	1 U	1 U				0.68 U Q					
CHLOROETHANE	1 U	1 U	1 U				5 U,QJ3					
CHLOROFORM	1 U	1 U	1 U				1.8 U Q					
CHLOROMETHANE	1 U	1 U	1 U				2 U Q					
CIS-1,2-DICHLOROETHENE	1 U	1 U	1 U	5.3	4.6	4.1	710			570	780	830
CIS-1,3-DICHLOROPROPENE	1 U	1 U	1 U				0.28 U Q					
CYCLOHEXANE							83 U					
DIBROMOMETHANE	1 U	1 U	1 U									
DICHLORODIFLUOROMETHANE	1 U	1 U	1 U				15 Q					
ETHYLBENZENE	1 U	1 U	1 U				0.88 U Q					
HEXACHLOROBUTADIENE	1 U	1 U	1 U									
ISOPROPYLBENZENE	1 U	1 U	1 U				0.38 U Q					
M+P-XYLENES	1 U	1 U	1 U									
METHYL ACETATE							36 U					
METHYL CYCLOHEXANE							96 U					
METHYL TERT-BUTYL ETHER	1 U	1 U	1 U				0.88 U Q					
METHYLENE CHLORIDE	1 U	1 U	1 U				8 U Q					
NAPHTHALENE	1 U	1 U	1 U									
N-BUTYLBENZENE	1 U	1 U	1 U									
N-PROPYLBENZENE	1 U	1 U	1 U									
O-XYLENE	1 U	1 U	1 U									
SEC-BUTYLBENZENE	1 U	1 U	1 U									
STYRENE	1 U	1 U	1 U				2 U Q					
TERT-BUTYLBENZENE	1 U	1 U	1 U									
TETRACHLOROETHENE	1 U	1 U	1 U				1 U Q			3 U	3 U	20 U
TOLUENE	1 U	1 U	1 U				1 U Q					
TOTAL XYLENES	1 U	1 U	1 U				1 U Q					
TRANS-1,2-DICHLOROETHENE	1 U	1 U	1 U	1.4	1.3	1	2600			1500	2100	2100
TRANS-1,3-DICHLOROPROPENE	1 U	1 U	1 U				0.28 U Q					
TRICHLOROETHENE	1 U	1 U	1 U	1 U	0.73 J	0.50 U	1400			25	12	20 U
TRICHLOROFLUOROMETHANE	1 U	1 U	1 U				5 U Q					
VINYL CHLORIDE	1 U	1 U	1 U	5.1	5.7	4.2	710			270	460	490
MOBILE LAB VOLATILE (ug/L)												
1,1,1-TRICHLOROETHANE								50 U				
1,1,2,2-TETRACHLOROETHANE								30 U				
1,1,2-TRICHLOROETHANE								50 U				
1,1,2-TRICHLOROTRIFLUOROETHANE								250 U	25	3 U		
1,1-DICHLOROETHANE								50 U				
1,1-DICHLOROETHENE								50 U	10 U	3 U		
1,2,4-TRICHLOROBENZENE								250 U				
1,2-DIBROMO-3-CHLOROPROPANE								75 U				
1,2-DIBROMOETHANE								24 U				
1,2-DICHLOROBENZENE								100 U				
1,2-DICHLOROETHANE								50 U				
1,2-DICHLOROPROPANE								50 U				
1,3-DICHLOROBENZENE								100 U				
1,4-DICHLOROBENZENE								100 U				
2-BUTANONE								500 U				
2-HEXANONE								500 U				
4-METHYL-2-PENTANONE								250 U				
ACETONE								500 U				
BENZENE								50 U				
BROMODICHLOROMETHANE								25 U				
BROMOFORM								100 U				
BROMOMETHANE								250 U				
CARBON DISULFIDE								50 U				
CARBON TETRACHLORIDE								50 U				
CHLOROBENZENE								50 U				
CHLORODIBROMOMETHANE								15.5 U				
CHLOROETHANE								250 U				
CHLOROFORM								50 U				
CHLOROMETHANE								125 U				
CIS-1,2-DICHLOROETHENE								670	1000	570		
CIS-1,3-DICHLOROPROPENE								10 U				
CYCLOHEXANE								100 U				
DICHLORODIFLUOROMETHANE								200 D				
ETHYLBENZENE								50 U				
ISOPROPYLBENZENE								25 U				
M+P-XYLENES								100 U				
METHYL ACETATE								500 U				
METHYL CYCLOHEXANE								500 U				
METHYL TERT-BUTYL ETHER								250 U				
METHYLENE CHLORIDE								250 U				
O-XYLENE								50 U				
STYRENE								50 U				
TETRACHLOROETHENE								50 U	10 U	3 U		
TOLUENE								50 U				
TRANS-1,2-DICHLOROETHENE								1900	3100	1500		
TRANS-1,3-DICHLOROPROPENE								6.5 U				
TRICHLOROETHENE								1100	580	25		
TRICHLOROFLUOROMETHANE								250 U				
VINYL CHLORIDE								77	580	270		

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 40 to 45 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

CCF-IW0045													
CCF-IW0045-045.0-20150513 5/13/2015	CCF-IW0045-045.0-20151002 10/2/2015	CCF-IW0045-045.0-20151201 12/1/2015	CCF-IW0045-045.0-20170517 5/17/2017	CCF-IW0045-045.0-20171017 10/17/2017	CCF-IW0045-045.0-20180111 1/11/2018	CCF-IW0045-045.0-20180424 4/24/2018	CCF-IW0045-045.0-20180702 7/2/2018	CCF-IW0045-045.0-20190307 3/7/2019	CCF-IW0045-045.0-20190617 6/17/2019	CCF-IW0045-045.0-20191210 12/10/2019	CCF-IW0045-045.0-20200311 3/11/2020	CCF-IW0045-045.0-20200616 6/16/2020	CCF-IW0045-045-20200924 9/24/2020
			10 U	5 U	1 U	1 U	1 U	1 U	1 U				
			10 U	5 U	1 U	1 U	1 U	1 U	1 U	0.30 U	0.30 U	0.30 U	0.30 U
			10 U	5 U	1 U	1 U	1 U	1 U	1 U	0.44 U	0.44 U	0.44 U	0.44 U
			10 U	5 U	1 U	1 U	1 U	1 U	1 U	0.29 U	0.29 U	0.29 U	0.29 U
10 U	1 U	200 U				1 U	1 U	1 U	1 U				
			10 U	5 U	1 U	1 U	1 U	1 U	1 U	0.32 U	0.32 U	0.32 U	0.32 U
10 U	4	20 U	10 U	5 U	1 U	1 U	1 U	1 U	1 U	0.26 U	0.26 U	0.26 U	0.26 U
			10 U	5 U	1 U	1 U	1 U	1 U	1 U				
			10 U	5 U	1 U	1 U	1 U	1 U	1 U	0.37 U	0.37 U	0.37 U	0.37 U
			10 U	5 U	1 U	1 U	1 U	1 U	1 U				
			10 U	5 U	1 U	1 U	1 U	1 U	1 U	0.58 U	0.58 U	0.58 U	0.58 U
			10 U	5 U	1 U	1 U	1 U	1 U	1 U				
			10 U	5 U	1 U	1 U	1 U	1 U	1 U	2.5 U	2.5 U	2.5 U	2.5 U
			10 U	5 U	1 U	1 U	1 U	1 U	1 U	0.27 U	0.27 U	0.27 U	0.27 U
			10 U	5 U	1 U	1 U	1 U	1 U	1 U	0.54 J	0.24 U	0.53 J	0.54 J
			10 U	5 U	1 U	1 U	1 U	1 U	1 U	0.31 U	0.31 U	0.31 U	0.31 U
			10 U	5 U	1 U	1 U	1 U	1 U	1 U	0.52 U	0.52 U	0.52 U	0.52 U
			10 U	5 U	1 U	1 U	1 U	1 U	1 U				
			10 U	5 U	1 U	1 U	1 U	1 U	1 U	0.26 U	0.26 U	0.26 U	0.26 U
			10 U	5 U	1 U	1 U	1 U	1 U	1 U				
			10 U	5 U	1 U	1 U	1 U	1 U	1 U	0.22 U	0.22 U	0.22 U	0.22 U
			10 U	5 U	1 U	1 U	1 U	1 U	1 U				
			50 U	25 U	5 U	5 U	5 U	5 U	5 U	3.2 U	3.2 U	3.2 U	3.2 U
			50 U	25 U	5 U	5 U	5 U	5 U	5 U				
			10 U	5 U	1 U	1 U	1 U	1 U	1 U				
			50 U	25 U	5 U	5 U	5 U	5 U	5 U	4.4 U	4.4 U	4.4 U	4.4 U
			10 U	5 U	1 U	1 U	1 U	1 U	1 U				
			10 U	5 U	1 U	1 U	1 U	1 U	1 U				
			50 U	25 U	5 U	5 U	5 U	5 U	5 U	4 U	4 U	4 U	4 U
			200 U	60 J	20 U	20 U	20 U	20 U	20 U	5 U	5 U	5 U	5 U
			10 U	5 U	1 U	1 U	1 U	1 U	1 U	0.25 U	0.25 U	0.25 U	0.25 U
			10 U	5 U	1 U	1 U	1 U	1 U	1 U				
			10 U	5 U	1 U	1 U	1 U	1 U	1 U				
			10 U	5 U	1 U	1 U	1 U	1 U	1 U	0.23 U	0.23 U	0.23 U	0.23 U
			10 U	5 U	1 U	1 U	1 U	1 U	1 U	1.1 U	1.1 U	1.1 U	1.1 U
			10 U	5 U	1 U	1 U	1 U	1 U	1 U	2.5 U	2.5 U	2.5 U	2.5 U
			50 U	25 U	5 U	5 U	5 U	5 U	5 U	0.35 U	0.35 U	0.35 U	0.35 U
			10 U	5 U	1 U	1 U	1 U	1 U	1 U	0.23 U	0.23 U	0.23 U	0.23 U
			10 U	5 U	1 U	0.75 J	1 U	1 U	1 U	0.27 U	0.27 U	0.27 U	0.27 U
			10 U	5 U	1 U	1 U	1 U	1 U	1 U	0.31 U	0.31 U	0.31 U	0.31 U
			10 U	5 U	1 U	1 U	1 U	1 U	1 U	2.5 U	2.5 U	2.5 U	2.5 U
			10 U	5 U	1 U	1 U	1 U	1 U	1 U	0.29 U	0.29 U	0.29 U	0.29 U
			10 U	5 U	1 U	1 U	1 U	1 U	1 U	0.76 U	0.76 U	0.76 U	0.76 U
960	810	950	280	170	110	71	85	78	83	61	51	45	48
			10 U	5 U	1 U	1 U	1 U	1 U	1 U	0.39 U	0.39 U	0.39 U	0.39 U
			10 U	5 U	1 U	1 U	1 U	1 U	1 U				
			10 U	5 U	1 U	1 U	1 U	1 U	1 U	2.5 U	2.5 U	2.5 U	2.5 U
			10 U	5 U	1 U	1 U	1 U	1 U	1 U	0.27 U	0.27 U	0.27 U	0.27 U
			10 U	5 U	1 U	1 U	1 U	1 U	1 U				
			10 U	5 U	1 U	1 U	1 U	1 U	1 U	0.52 U	0.52 U	0.52 U	0.52 U
			20 U	10 U	2 U	2 U	2 U	2 U	2 U				
			10 U	5 U	1 U	1 U	1 U	1 U	1 U	0.44 U	0.44 U	0.44 U	0.44 U
			50 U	25 U	5 U	5 U	5 U	5 U	5 U	1.4 U	1.4 U	1.4 U	1.4 U
			10 U	5 U	1 U	1 U	1 U	1 U	1 U				
			10 U	5 U	1 U	1 U	1 U	1 U	1 U				
			10 U	5 U	1 U	1 U	1 U	1 U	1 U				
			10 U	5 U	1 U	1 U	1 U	1 U	1 U				
			10 U	5 U	1 U	1 U	1 U	1 U	1 U				
			10 U	5 U	1 U	1 U	1 U	1 U	1 U	0.49 U	0.49 U	0.49 U	0.49 U
			10 U	5 U	1 U	1 U	1 U	1 U	1 U				
10 U	1 U	20 U	10 U	5 U	1 U	1 U	1 U	1 U	1 U	0.50 U	0.50 U	0.50 U	0.50 U
			10 U	5 U	1 U	1 U	1 U	1 U	1 U	0.24 U	0.24 U	0.24 U	0.24 U
			20 U	10 U	2 U	2 U	2 U	2 U	2 U	0.50 U	0.50 U	0.50 U	0.50 U
2700	2000	2500	710	330	150	67	85	71	74	79	53	55	53
			10 U	5 U	1 U	1 U	1 U	1 U	1 U	0.27 U	0.27 U	0.27 U	0.27 U
23	5	20 U	10	5 U	1.1	1	3	16	25	7.2	7.1	19	18
			10 U	5 U	1 U	1 U	1 U	1 U	1 U	0.49 U	0.49 U	0.49 U	0.49 U
540	680	820	190	130	98	22	30	15	15	48	19	16	19

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 40 to 45 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

CCF-IW0045					CCF-IW0046										
CCF-IW0045-045.0-20201210 12/10/2020	CCF-IW0045-045.0-20210323 3/23/2021	CCF-IW0045-045.0-20220131 1/31/2022	CCF-IW0045-045.0-20220906 9/6/2022	CCF-IW0045-045.0-20230426 4/26/2023	CCF-IW0046-045.0-20111108 11/8/2011	CCF-IW0046-045.0-20121206 12/6/2012	CCF-IW0046-045.0-20131204 12/4/2013	CCF-IW0046-045.0-20141209 12/9/2014	CCF-IW0046-045.0-20151201 12/1/2015	CCF-IW0046-045.0-20170517 5/17/2017	CCF-IW0046-045.0-20171017 10/17/2017	CCF-IW0046-045.0-20180111 1/11/2018	CCF-IW0046-045.0-20180423 4/23/2018	CCF-IW0046-045.0-20180702 7/2/2018	CCF-IW0046-045.0-20190307 3/7/2019
										5 U	1 U	1 U	1 U	5 U	10 U
0.30 U	0.30 U				0.46 U					5 U	1 U	1 U	1 U	5 U	10 U
0.44 U	0.44 U				0.15 U					5 U	1 U	1 U	1 U	5 U	10 U
0.29 U	0.29 U				0.47 U					5 U	1 U	1 U	1 U	5 U	10 U
					0.63 U		3 U	1 U	20 U				1400	500	1200
0.32 U	0.32 U				0.52 U					5 U	1 U	1 U	1 U	5 U	10 U
0.26 U	0.26 U				0.45 U		3 U	1 U	2 U	5 U	1 U	1 U	1 U	5 U	10 U
										5 U	1 U	1 U	1 U	5 U	10 U
0.37 U	0.37 U									5 U	1 U	1 U	1 U	5 U	10 U
										5 U	1 U	1 U	1 U	5 U	10 U
0.58 U	0.58 U				0.58 U					5 U	1 U	1 U	1 U	5 U	10 U
										5 U	1 U	1 U	1 U	5 U	10 U
2.5 U	2.5 U				2.5 U					5 U	1 U	1 U	1 U	5 U	10 U
0.27 U	0.27 U				0.5 U					5 U	1 U	1 U	1 U	5 U	10 U
0.55 J	0.54 J				0.7 I					5 U	1.2	1.6	2.5	5 U	10 U
0.31 U	0.31 U				0.57 U					5 U	1 U	1 U	1 U	5 U	10 U
0.52 U	0.52 U				0.52 U					5 U	1 U	1 U	1 U	5 U	10 U
										5 U	1 U	1 U	1 U	5 U	10 U
0.26 U	0.26 U				0.64 U					5 U	1 U	1 U	1 U	5 U	10 U
										5 U	1 U	1 U	1 U	5 U	10 U
0.22 U	0.22 U				0.52 U					5 U	1 U	1 U	1 U	5 U	10 U
										5 U	1 U	1 U	1 U	5 U	10 U
3.2 U	3.2 U				8.4 U					25 U	5 U	5 U	5 U	25 U	50 U
										50 U	5 U	5 U	5 U	25 U	50 U
										5 U	1 U	1 U	1 U	5 U	10 U
4.4 U	4.4 U				4.4 U					25 U	5 U	5 U	5 U	25 U	50 U
										5 U	1 U	1 U	1 U	5 U	10 U
										5 U	1 U	1 U	1 U	5 U	10 U
4 U	4 U				3.8 U					25 U	5 U	5 U	5 U	25 U	50 U
3 U	3 U				34 J3					100 U	46	20 U	20 U	100 U	200 U
0.25 U	0.25 U				0.5 U					5 U	1 U	1 U	1 U	5 U	10 U
										5 U	1 U	1 U	1 U	5 U	10 U
										5 U	1 U	1 U	1 U	5 U	10 U
0.23 U	0.23 U				0.35 U					5 U	1 U	1 U	1 U	5 U	10 U
1.1 U	1.1 U				0.58 U					5 U	1 U	1 U	1 U	5 U	10 U
2.5 U	2.5 U				2.5 U,J3					5 U	1 U	1 U	1 U	5 U	10 U
0.35 U	0.35 U				1 U					25 U	5 U	5 U	5 U	25 U	50 U
0.23 U	0.23 U				0.42 U					5 U	1 U	1 U	1 U	5 U	10 U
0.27 U	0.27 U				0.63 U					5 U	1 U	1 U	1 U	5 U	10 U
0.31 U	0.31 U				0.34 U					5 U	1 U	1 U	1 U	5 U	10 U
2.5 U	2.5 U				2.5 U					5 U	1 U	1 U	1 U	5 U	10 U
0.29 U	0.29 U				0.9 U					5 U	1 U	1 U	1 U	5 U	10 U
0.76 U	0.76 U				1 U					5 U	3.6	7.1	8.5	5 U	10 U
64	74	41.4	39	38.7	25		45	5	28	38	24	22	34	21	18
0.39 U	0.39 U				0.14 U					5 U	1 U	1 U	1 U	5 U	10 U
					83 U										
										5 U	1 U	1 U	1 U	5 U	10 U
2.5 U	2.5 U				2.5 U					5 U	1 U	1 U	1 U	5 U	10 U
0.27 U	0.27 U				0.44 U					5 U	1 U	1 U	1 U	5 U	10 U
										5 U	1 U	1 U	1 U	5 U	10 U
0.52 U	0.52 U				0.19 U					5 U	1 U	1 U	1 U	5 U	10 U
										10 U	2 U	2 U	2 U	10 U	20 U
					36 U										
					96 U										
0.44 U	0.44 U				0.44 U					5 U	1 U	1 U	1 U	5 U	10 U
1.4 U	1.4 U				4 U					25 U	5 U	5 U	5 U	25 U	50 U
										5 U	1 U	1 U	1 U	5 U	10 U
										5 U	1 U	1 U	1 U	5 U	10 U
										5 U	1 U	1 U	1 U	5 U	10 U
										5 U	1 U	1 U	1 U	5 U	10 U
										5 U	1 U	1 U	1 U	5 U	10 U
0.49 U	0.49 U				0.98 U					5 U	1 U	1 U	1 U	5 U	10 U
										5 U	1 U	1 U	1 U	5 U	10 U
0.50 U	0.50 U				0.5 U		3 U	1 U	2 U	5 U	1 U	1 U	1 U	5 U	10 U
0.24 U	0.24 U				0.51 U					5 U	1 U	1 U	1 U	5 U	10 U
0.50 U	0.50 U				0.5 U					10 U	2 U	2 U	2 U	10 U	20 U
53	57	44.4	41.4	42.7	46		63	7	28	40	20	17	35	19	21
0.27 U	0.27 U				0.14 U					5 U	1 U	1 U	1 U	5 U	10 U
13	19	12.9	12.7	13	120		290	34	74	41	16	16	26	17	12
0.49 U	0.49 U				2.5 U					5 U	1 U	1 U	1 U	5 U	10 U
14	13	24.8	36.7	41.9	53		4	10	3	5 U	4.7	4.8	2.4	5 U	10 U

						4	3 U								
						2 U	3 U								
						140	45								
						2 U	3 U								
						190	63								
						680	290								
						13	4								

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 40 to 45 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

CCF-IW0046										CCF-IW0059					
CCF-IW0046-045.0-20190604 6/4/2019	CCF-IW0046-045.0-20191210 12/10/2019	CCF-IW0046-045.0-20200311 3/11/2020	CCF-IW0046-045.0-20200616 6/16/2020	CCF-IW0046-045-20200924 9/24/2020	CCF-IW0046-045.0-20201210 12/10/2020	CCF-IW0046-045.0-20210323 3/24/2021	CCF-IW0046-045.0-20220131 1/31/2022	CCF-IW0046-045.0-20220901 9/1/2022	CCF-IW0046-045.0-20230426 4/26/2023	CCF-IW0059-040.0-20170516 5/16/2017	CCF-IW0059-040.0-20171018 10/18/2017	CCF-IW0059-040.0-20180112 1/12/2018	CCF-IW0059-040.0-20180424 4/24/2018	CCF-IW0059-040.0-20180703 7/3/2018	CCF-IW0059-040.0-20190312 3/12/2019
50 U										1 U	1 U	1 U	1 U	1 U	1 U
50 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U				1 U	1 U	1 U	1 U	1 U	1 U
50 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U				1 U	1 U	1 U	1 U	1 U	1 U
50 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U				1 U	1 U	1 U	1 U	1 U	1 U
3200								2730					1 U	1 U	1 U
50 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U				1 U	1 U	1 U	1 U	1 U	1 U
50 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U				1 U	1 U	1 U	1 U	1 U	1 U
50 U										1 U	1 U	1 U	1 U	1 U	1 U
50 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U				1 U	1 U	1 U	1 U	1 U	1 U
50 U										1 U	1 U	1 U	1 U	1 U	1 U
50 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U				1 U	1 U	1 U	1 U	1 U	1 U
50 U										1 U	1 U	1 U	1 U	1 U	1 U
50 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U				1 U	1 U	1 U	1 U	1 U	1 U
50 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U				1 U	1 U	1 U	1 U	1 U	1 U
								9530							
50 U	2.7	2.2	2.5	2.4	2.1	1.9				1 U	1 U	1 U	1 U	1 U	1 U
50 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U				1 U	1 U	1 U	1 U	1 U	1 U
50 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U				1 U	1 U	1 U	1 U	1 U	1 U
50 U										1 U	1 U	1 U	1 U	1 U	1 U
50 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U				1 U	1 U	1 U	1 U	1 U	1 U
50 U										1 U	1 U	1 U	1 U	1 U	1 U
50 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U				1 U	1 U	1 U	1 U	1 U	1 U
50 U										1 U	1 U	1 U	1 U	1 U	1 U
250 U	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U				5 U	5 U	5 U	5 U	5 U	5 U
250 U										5 U	5 U	5 U	5 U	5 U	5 U
50 U										1 U	1 U	1 U	1 U	1 U	1 U
250 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U				5 U	5 U	5 U	5 U	5 U	5 U
50 U										1 U	1 U	1 U	1 U	1 U	1 U
50 U										1 U	1 U	1 U	1 U	1 U	1 U
250 U	4 U	4 U	4 U	4 U	4 U	4 U				5 U	5 U	5 U	5 U	5 U	5 U
1000 U	3 U	3 U	9.4 J	3 U	3 U	3 U				14 I	69	20 U	20 U	20 U	20 U
50 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U				1 U	1 U	1 U	1 U	1 U	1 U
50 U										1 U	1 U	1 U	1 U	1 U	1 U
50 U										1 U	1 U	1 U	1 U	1 U	1 U
50 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U				1 U	1 U	1 U	1 U	1 U	1 U
50 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U				1 U	1 U	1 U	1 U	1 U	1 U
50 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U				1 U	1 U	1 U	1 U	1 U	1 U
250 U	0.35 U	0.35 U	3.2 J	0.35 U	0.35 U	0.35 U				5 U	5 U	5 U	5 U	5 U	5 U
50 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U				1 U	1 U	1 U	1 U	1 U	1 U
50 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U				1 U	1 U	1 U	1 U	1 U	1 U
50 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U				1 U	1 U	1 U	1 U	1 U	1 U
50 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U				1 U	1 U	1 U	1 U	1 U	1 U
50 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U				1 U	1 U	1 U	1 U	1 U	1 U
50 U	0.76 U	0.76 U	0.76 U	0.76 U	0.76 U	0.76 U				1 U	2.4	1 U	1 U	1 U	1 U
32 I	10	9.9	9.7	8.6	8.8	8	5.9	50 U	8.3	3.3	4.3	3	3.5	2.2	1.8
50 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U				1 U	1 U	1 U	1 U	1 U	1 U
50 U										1 U	1 U	1 U	1 U	1 U	1 U
50 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U				1 U	1 U	1 U	1 U	1 U	1 U
50 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U				1 U	1 U	1 U	1 U	1 U	1 U
50 U										1 U	1 U	1 U	1 U	1 U	1 U
50 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U				1 U	1 U	1 U	1 U	1 U	1 U
100 U										2 U	2 U	2 U	2 U	2 U	2 U
50 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U				1 U	1 U	1 U	1 U	1 U	1 U
250 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U				5 U	5 U	5 U	5 U	5 U	5 U
50 U										1 U	1 U	1 U	1 U	1 U	1 U
50 U										1 U	1 U	1 U	1 U	1 U	1 U
50 U										1 U	1 U	1 U	1 U	1 U	1 U
50 U										1 U	1 U	1 U	1 U	1 U	1 U
50 U										1 U	1 U	1 U	1 U	1 U	1 U
50 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U				1 U	1 U	1 U	1 U	1 U	1 U
50 U										1 U	1 U	1 U	1 U	1 U	1 U
50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U				1 U	1 U	1 U	1 U	1 U	1 U
50 U	0.43 J	0.24 U	0.31 J	0.31 J	0.29 J	0.24 U				1 U	1 U	1 U	1 U	1 U	1 U
100 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U				2 U	2 U	2 U	2 U	2 U	2 U
60	12	10	13	10	7.1	8.3	5.8	50 U	9.4	33	58	25	20	8.1	11
50 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U				1 U	1 U	1 U	1 U	1 U	1 U
50 U	16	11	12	12	11	11	9.9	50 U	12.7	1 U	1 U	1 U	1 U	1 U	1 U
50 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U				1 U	1 U	1 U	1 U	1 U	1 U
50 U	0.26 U	0.97 J	0.26 U	0.90 J	0.84 J	0.26 U	0.63 J	50 U	0.50 U	33	44	25	26	8	14

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 40 to 45 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

CCF-IW0059										CCF-IW0061					
CCF-IW0059-040.0-20190605 6/5/2019	CCF-IW0059-040.0-20191211 12/11/2019	CCF-IW0059-040.0-20200312 3/12/2020	CCF-IW0059-040.0-20200616 6/16/2020	CCF-IW0059-040.0-20200925 9/25/2020	CCF-IW0059-040.0-20201210 12/10/2020	CCF-IW0059-040.0-20210324 3/24/2021	CCF-IW0059-040.0-20220202 2/2/2022	CCF-IW0059-040.0-20220831 8/31/2022	CCF-IW0059-040.0-20230427 4/27/2023	CCF-IW0061-040.0-20170517 5/17/2017	CCF-IW0061-040.0-20171018 10/18/2017	CCF-IW0061-040.0-20180112 1/12/2018	CCF-IW0061-040.0-20180424 4/24/2018	CCF-IW0061-040.0-20180703 7/3/2018	CCF-IW0061-040.0-20190617 6/17/2019
1 U										25 U	2.5 U	1 U	1 U	1 U	1 U
1 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U				25 U	2.5 U	1 U	1 U	1 U	1 U
1 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U				25 U	2.5 U	1 U	1 U	1 U	1 U
1 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U				25 U	2.5 U	1 U	1 U	1 U	1 U
1 U													1 U	1 U	1 U
1 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U				25 U	2.5 U	1 U	1 U	1 U	1 U
1 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U				25 U	2.5 U	1 U	1 U	1 U	1 U
1 U										25 U	2.5 U	1 U	1 U	1 U	1 U
1 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U				25 U	2.5 U	1 U	1 U	1 U	1 U
1 U										25 U	2.5 U	1 U	1 U	1 U	1 U
1 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U				25 U	2.5 U	1 U	1 U	1 U	1 U
1 U										25 U	2.5 U	1 U	1 U	1 U	1 U
1 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U				25 U	2.5 U	1 U	1 U	1 U	1 U
1 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U				25 U	2.5 U	1 U	1 U	1 U	1 U
1 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U				25 U	2.5 U	1 U	1 U	1 U	1 U
1 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U				25 U	2.5 U	1 U	1 U	1 U	1 U
1 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U				25 U	2.5 U	1 U	1 U	1 U	1 U
1 U										25 U	2.5 U	1 U	1 U	1 U	1 U
1 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U				25 U	2.5 U	1 U	1 U	1 U	1 U
1 U										25 U	2.5 U	1 U	1 U	1 U	1 U
1 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U				25 U	2.5 U	1 U	1 U	1 U	1 U
1 U										25 U	2.5 U	1 U	1 U	1 U	1 U
5 U	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U				120 U	12 U	5 U	5 U	5 U	5 U
5 U										120 U	12 U	5 U	5 U	5 U	5 U
1 U										25 U	2.5 U	1 U	1 U	1 U	1 U
5 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U				120 U	12 U	5 U	5 U	5 U	5 U
1 U										25 U	2.5 U	1 U	1 U	1 U	1 U
1 U										25 U	2.5 U	1 U	1 U	1 U	1 U
5 U	4 U	4 U	4 U	4 U	4 U	4 U				120 U	12 U	5 U	5 U	5 U	5 U
20 U	3 U	3 U	3 U	3 U	3 U	3 U				500 U	31 I	20 U	20 U	20 U	20 U
1 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U				25 U	2.5 U	1 U	1 U	1 U	1 U
1 U										25 U	2.5 U	1 U	1 U	1 U	1 U
1 U										25 U	2.5 U	1 U	1 U	1 U	1 U
1 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U				25 U	2.5 U	1 U	1 U	1 U	1 U
1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U				25 U	2.5 U	1 U	1 U	1 U	1 U
1 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U				25 U	2.5 U	1 U	1 U	1 U	1 U
5 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U				120 U	12 U	5 U	5 U	5 U	5 U
1 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U				25 U	2.5 U	1 U	1 U	1 U	1 U
1 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U				25 U	2.5 U	1 U	1 U	1 U	1 U
1 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U				25 U	2.5 U	1 U	1 U	1 U	1 U
1 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U				25 U	2.5 U	1 U	1 U	1 U	1 U
1 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U				25 U	2.5 U	1 U	1 U	1 U	1 U
1 U	0.76 U	0.76 U	0.76 U	0.76 U	1.6 J	0.76 U				25 U	2.6	6.4	1 U	1 U	1 U
1 U	0.93 J	0.49 J	1.1	0.38 J	0.32 U	1.1	1 U	0.50 U	0.50 U	940	190	44	6.7	2.2	0.58 I
1 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U				25 U	2.5 U	1 U	1 U	1 U	1 U
1 U										25 U	2.5 U	1 U	1 U	1 U	1 U
1 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U				25 U	2.5 U	1 U	1 U	1 U	1 U
1 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U				25 U	2.5 U	1 U	1 U	1 U	1 U
1 U										25 U	2.5 U	1 U	1 U	1 U	1 U
1 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U				25 U	2.5 U	1 U	1 U	1 U	1 U
2 U										50 U	5 U	2 U	2 U	2 U	2 U
1 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U				25 U	2.5 U	1 U	1 U	1 U	1 U
5 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U				120 U	12 U	5 U	5 U	5 U	5 U
1 U										25 U	2.5 U	1 U	1 U	1 U	1 U
1 U										25 U	2.5 U	1 U	1 U	1 U	1 U
1 U										25 U	2.5 U	1 U	1 U	1 U	1 U
1 U										25 U	2.5 U	1 U	1 U	1 U	1 U
1 U										25 U	2.5 U	1 U	1 U	1 U	1 U
1 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U				25 U	2.5 U	1 U	1 U	1 U	1 U
1 U										25 U	2.5 U	1 U	1 U	1 U	1 U
1 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U				25 U	2.5 U	1 U	1 U	1 U	1 U
1 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U				25 U	2.5 U	1 U	1 U	1 U	1 U
2 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U				50 U	5 U	2 U	2 U	2 U	2 U
1.7	2.7	0.95 J	0.39 U	0.43 J	0.39 U	4.6	1 U	0.50 U	0.50 U	1600	240	57	12	4.8	1.6
1 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U				25 U	2.5 U	1 U	1 U	1 U	1 U
1 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	1 U	0.50 U	0.50 U	590	4	1 U	1 U	1 U	1 U
1 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U				25 U	2.5 U	1 U	1 U	1 U	1 U
1 U	2.1	1.4	2.4	1.3	1.1	1.8	1.5	1.7	1.7	140	20	6.6	0.80 I	1 U	1 U

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 40 to 45 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

CCF-IW0061									CCF-IW0063						
CCF-IW0061-040.0-20191210 12/10/2019	CCF-IW0061-040.0-20200312 3/12/2020	CCF-IW0061-040.0-20200617 6/17/2020	CCF-IW0061-040-20200925 9/25/2020	CCF-IW0061-040.0-20201209 12/9/2020	CCF-IW0061-040.0-20210324 3/24/2021	CCF-IW0061-040.0-20220131 1/31/2022	CCF-IW0061-040.0-20220902 9/2/2022	CCF-IW0061-040.0-20230425 4/25/2023	CCF-IW0063-045.0-20190312 3/12/2019	CCF-IW0063-045.0-20190605 6/5/2019	CCF-IW0063-045.0-20191211 12/11/2019	CCF-IW0063-045.0-20200312 3/12/2020	CCF-IW0063-045.0-20200616 6/16/2020	CCF-IW0063-045-20200925 9/25/2020	CCF-IW0063-045.0-20201210 12/10/2020
									1 U	1 U					
0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U				1 U	1 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U				1 U	1 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U
0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U				1 U	1 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U
									1 U	1 U					
0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U				1 U	1 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U
0.26 U	0.26 U	0.26 U	0.27 J	0.31 J	0.57 J				1 U	1 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
									1 U	1 U					
0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U				1 U	1 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U
									1 U	1 U					
0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U				1 U	1 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U
									1 U	1 U					
2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U				1 U	1 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U				1 U	1 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U
0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U				1 U	1 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U				1 U	1 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U
0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U				1 U	1 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U
									1 U	1 U					
0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U				1 U	1 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
									1 U	1 U					
0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U				1 U	1 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
									1 U	1 U					
3.2 U	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U				5 U	5 U	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U
									5 U	5 U					
									1 U	1 U					
4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U				5 U	5 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U
									1 U	1 U					
									1 U	1 U					
4 U	4 U	4 U	4 U	4 U	4 U				5 U	5 U	4 U	4 U	4 U	4 U	4 U
3 U	3 U	5.2 J	3 U	3 U	3 U				20 U	20 U	3 U	3 U	3 U	3 U	3 U
0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U				1 U	1 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
									1 U	1 U					
									1 U	1 U					
0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U				1 U	1 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U				1 U	1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U				1 U	1 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U				5 U	5 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U
0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U				1 U	1 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U				1 U	1 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U
0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U				1 U	1 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U
2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U				1 U	1 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U				12	1 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U
0.76 U	0.76 U	0.76 U	0.76 U	1.7 J	0.76 U				1 U	1 U	0.76 U	0.76 U	0.76 U	0.76 U	2.3 J
50	37	35	49	81	89	93.6	24	17.7	2.6	80	1.9	1.1	1.3	1.3	1.2
0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U				1 U	1 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U
									1 U	1 U					
2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U				1 U	1 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U				1 U	1 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U
									1 U	1 U					
0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U				1 U	1 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U
									2 U	2 U					
0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U				1 U	1 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U
1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U				5 U	5 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
									1 U	1 U					
									1 U	1 U					
									1 U	1 U					
									1 U	1 U					
									1 U	1 U					
0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U				1 U	1 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U
									1 U	1 U					
0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U				1 U	1 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U				1 U	1 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U				2 U	2 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
140	110	100	200	220	270	130	57.2	42.2	8.6	200	13	6.6	5.4	5.9	4.1
0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U				1 U	1 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U
0.76 J	0.97 J	1.6 J	1.7 J	2	2.3	3.5	3	1.9	1 U	1 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U
0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U				1 U	1 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U
50	43	42	87	79	96	26.3	20.3	18.3	11	15	17	7.6	4.9	5.9	3.8

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 40 to 45 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

CCF-IW0063				CCF-IW0064										
CCF-IW0063-045.0-20210324 3/24/2021	CCF-IW0063-045.0-20220202 2/2/2022	CCF-IW0063-045.0-20220831 8/31/2022	CCF-IW0063-045.0-20230427 4/27/2023	CCF-IW0064-045.0-20190312 3/12/2019	CCF-IW0064-045.0-20190606 6/6/2019	CCF-IW0064-045.0-20191211 12/11/2019	CCF-IW0064-045.0-20200312 3/12/2020	CCF-IW0064-045.0-20200616 6/16/2020	CCF-IW0064-045-20200925 9/25/2020	CCF-IW0064-045.0-20201210 12/10/2020	CCF-IW0064-045.0-20210323 3/23/2021	CCF-IW0064-045.0-20220202 2/2/2022	CCF-IW0064-045.0-20220901 9/1/2022	CCF-IW0064-045.0-20230427 4/27/2023
				1 U	1 U									
0.30 U				1 U	1 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U			
0.44 U				1 U	1 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U			
0.29 U				1 U	1 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U			
				1 U	1 U									
0.32 U				1 U	1 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U			
0.26 U				1 U	1 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U			
				1 U	1 U									
0.37 U				1 U	1 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U			
				1 U	1 U									
0.58 U				1 U	1 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U			
				1 U	1 U									
2.5 U				1 U	1 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U			
0.27 U				1 U	1 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U			
0.24 U				1 U	1 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U			
0.31 U				1 U	1 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U			
0.52 U				1 U	1 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U			
				1 U	1 U									
0.26 U				1 U	1 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U			
				1 U	1 U									
0.22 U				1 U	1 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U			
				1 U	1 U									
3.2 U				5 U	5 U	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U			
				5 U	5 U									
				1 U	1 U									
4.4 U				5 U	5 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U			
				1 U	1 U									
				1 U	1 U									
4 U				5 U	5 U	4 U	4 U	4 U	4 U	4 U	4 U			
3 U				20 U	20 U	3 U	3 U	3 U	3 U	3 U	3 U			
0.25 U				1 U	1 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U			
				1 U	1 U									
				1 U	1 U									
0.23 U				1 U	1 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U			
1.1 U				1 U	1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U			
2.5 U				1 U	1 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U			
0.35 U				5 U	5 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U			
0.23 U				1 U	1 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U			
0.27 U				1 U	1 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U			
0.31 U				1 U	1 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U			
2.5 U				1 U	1 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U			
0.29 U				4.6	1 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U			
0.76 U				1 U	1 U	0.76 U	0.76 U	0.76 U	0.76 U	1.3 J	0.76 U			
1.8	1.2	2.9	3.9	0.86 I	2.2	0.34 J	0.37 J	0.40 J	0.50 J	0.47 J	0.63 J	20.7	40.8	27.9
0.39 U				1 U	1 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U			
				1 U	1 U									
2.5 U				1 U	1 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U			
0.27 U				1 U	1 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U			
				1 U	1 U									
0.52 U				1 U	1 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U			
				2 U	2 U									
0.44 U				1 U	1 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U			
1.4 U				5 U	5 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U			
				1 U	1 U									
				1 U	1 U									
				1 U	1 U									
				1 U	1 U									
				1 U	1 U									
				1 U	1 U									
0.49 U				1 U	1 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U			
				1 U	1 U									
0.50 U				1 U	1 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U			
0.24 U				1 U	1 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U			
0.50 U				2 U	2 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U			
3.7	2.2	3.3	2.6	11	10	4	4.8	5.9	7.3	6.4	5.9	3	8.6	11.1
0.27 U				1 U	1 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U			
0.61 U	1 U	0.62 J	0.50 U	1 U	1 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	2.7	4.4	2.9
0.49 U				1 U	1 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U			
2.8	1.3	3.2	1.7	8.5	14	3.1	6.2	7.4	10	9.4	9	6.9	15.9	22.7

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 40 to 45 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

CCF-IW0067											CCF-IW0083D			CCF-IW0085		
CCF-IW0067-045.0-20190307 3/7/2019	CCF-IW0067-045.0-20190604 6/4/2019	CCF-IW0067-045.0-20191210 12/10/2019	CCF-IW0067-045.0-20200311 3/11/2020	CCF-IW0067-045.0-20200616 6/16/2020	CCF-IW0067-045-20200924 9/24/2020	CCF-IW0067-045.0-20201210 12/10/2020	CCF-IW0067-045.0-20210323 3/23/2021	CCF-IW0067-045.0-20220131 1/31/2022	CCF-IW0067-045.0-20220906 9/6/2022	CCF-IW0067-045.0-20230426 4/26/2023	CCF-IW0083D-040.0-20220201 2/1/2022	CCF-IW0083D-040.0-20220907 9/7/2022	CCF-IW0083D-040.0-20230501 5/1/2023	CCF-IW0085-040.0-20220131 1/31/2022	CCF-IW0085-040.0-20220902 9/2/2022	CCF-IW0085-040.0-20230425 4/25/2023
1 U	1 U															
1 U	1 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U									
1 U	1 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U									
1 U	1 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U									
1 U	1 U															
1 U	1 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U									
1 U	1 U	0.69 J	0.31 J	0.47 J	0.36 J	0.26 U	0.26 U									
1 U	1 U															
1 U	1 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U									
1 U	1 U															
1 U	1 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U									
1 U	1 U															
1 U	1 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U									
1 U	1 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U									
1 U	1 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.25 J									
1 U	1 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U									
1 U	1 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U									
1 U	1 U															
1 U	1 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U									
1 U	1 U															
1 U	1 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U									
1 U	1 U															
5 U	5 U	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U									
5 U	5 U															
1 U	1 U															
5 U	5 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U									
1 U	1 U															
1 U	1 U															
5 U	5 U	4 U	4 U	4 U	4 U	4 U	4 U									
20 U	20 U	3 U	3 U	6 J	3 U	3 U	3 U									
1 U	1 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U									
1 U	1 U															
1 U	1 U															
1 U	1 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U									
1 U	1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U									
1 U	1 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U									
5 U	12	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U									
1 U	1 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U									
1 U	1 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U									
1 U	1 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U									
1 U	1 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U									
13	1 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U									
1 U	1 U	0.76 U	0.76 U	0.76 U	0.76 U	0.76 U	0.76 U									
49	120	89	63	76	62	74	79	31.2	12.2	12.8	1 U	1.6	3.5	6.7	2.8	1.3
1 U	1 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U									
1 U	1 U															
1 U	1 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U									
1 U	1 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U									
1 U	1 U															
1 U	1 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U									
2 U	2 U															
1 U	1 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U									
5 U	5 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U									
1 U	1 U															
1 U	1 U															
1 U	1 U															
1 U	1 U															
1 U	1 U															
1 U	1 U															
1 U	1 U															
1 U	1 U															
1 U	1 U															
1 U	1 U															
1 U	1 U															
1 U	1 U															
1 U	1 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U									
1 U	1 U															
1 U	1 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U									
1 U	1 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U									
2 U	2 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U									
110	240	220	130	120	110	89	95	41.7	12.1	13	1 U	0.80 J	1.8	2.2	0.65 J	0.50 U
1 U	1 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U									
1.7	2.6	3	2.9	3.1	2.3	2.6	2.8	2.7	5	3.4	1 U	0.84 J	0.50 U	1 U	0.50 U	0.50 U
1 U	1 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U									
20	43	45	25	36	34	20	27	16.6	4	4.3	1 U	0.50 U	0.50 U	9.9	5.5	2.2

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 40 to 45 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

CCF-IW0086		
CCF-IW0086-040.0-20220203 2/3/2022	CCF-IW0086-040.0-20220831 8/31/2022	CCF-IW0086-040.0-20230428 4/28/2023
1 U	0.50 U	0.50 U
1 U	0.50 U	0.50 U
1 U	0.50 U	0.50 U
1 U	0.50 U	0.50 U

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 40 to 45 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

LOCATION ID	CCF-IW0087	CCF-IW0087	CCF-IW0087	CCF-IW0088	CCF-IW0088	CCF-IW0088	CCF-IW0092
SAMPLE ID	CCF-IW0087-040.0-20220202	CCF-IW0087-040.0-20220831	CCF-IW0087-040.0-20230427	CCF-IW0088-040.0-20220203	CCF-IW0088-040.0-20220901	CCF-IW0088-040.0-20230428	CCF-IW0092-045.0-20230501
SAMPLE DATE	2/2/2022	8/31/2022	4/27/2023	2/3/2022	9/1/2022	4/28/2023	5/1/2023
VOLATILE (µg/L)							
1,1,1,2-TETRACHLOROETHANE							
1,1,1-TRICHLOROETHANE							
1,1,2,2-TETRACHLOROETHANE							
1,1,2-TRICHLOROETHANE							
1,1,2-TRICHLOROTRIFLUOROETHANE					123000 E		
1,1-DICHLOROETHANE							
1,1-DICHLOROETHENE							
1,1-DICHLOROPROPENE							
1,2,3-TRICHLOROBENZENE							
1,2,3-TRICHLOROPROPANE							
1,2,4-TRICHLOROBENZENE							
1,2,4-TRIMETHYLBENZENE							
1,2-DIBROMO-3-CHLOROPROPANE							
1,2-DIBROMOETHANE							
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE					3790		
1,2-DICHLOROBENZENE							
1,2-DICHLOROETHANE							
1,2-DICHLOROPROPANE							
1,3,5-TRIMETHYLBENZENE							
1,3-DICHLOROBENZENE							
1,3-DICHLOROPROPANE							
1,4-DICHLOROBENZENE							
1,4-DIOXANE							
2,2-DICHLOROPROPANE							
2-BUTANONE							
2-CHLOROETHYL VINYL ETHER							
2-CHLOROTOLUENE							
2-HEXANONE							
4-CHLOROTOLUENE							
4-ISOPROPYLTOLUENE							
4-METHYL-2-PENTANONE							
ACETONE							
BENZENE							
BROMOBENZENE							
BROMOCHLOROMETHANE							
BROMODICHLOROMETHANE							
BROMOFORM							
BROMOMETHANE							
CARBON DISULFIDE							
CARBON TETRACHLORIDE							
CHLOROBENZENE							
CHLORODIBROMOMETHANE							
CHLOROETHANE							
CHLOROFORM							
CHLOROMETHANE							
CIS-1,2-DICHLOROETHENE	1 U	0.50 U	0.50 U	1.6	500 U	1.6	0.50 U
CIS-1,3-DICHLOROPROPENE							
CYCLOHEXANE							
DIBROMOMETHANE							
DICHLORODIFLUOROMETHANE							
ETHYLBENZENE							
HEXACHLOROBUTADIENE							
ISOPROPYLBENZENE							
M+P-XYLENES							
METHYL ACETATE							
METHYL CYCLOHEXANE							
METHYL TERT-BUTYL ETHER							
METHYLENE CHLORIDE							
NAPHTHALENE							
N-BUTYLBENZENE							
N-PROPYLBENZENE							
O-XYLENE							
SEC-BUTYLBENZENE							
STYRENE							
TERT-BUTYLBENZENE							
TETRACHLOROETHENE							
TOLUENE							
TOTAL XYLENES							
TRANS-1,2-DICHLOROETHENE	1 U	0.50 U	0.50 U	1 U	500 U	0.50 U	0.50 U
TRANS-1,3-DICHLOROPROPENE							
TRICHLOROETHENE	1 U	0.50 U	0.50 U	14.8	500 U	10.2	0.50 U
TRICHLOROFLUOROMETHANE							
VINYL CHLORIDE	1 U	0.50 U	0.50 U	1 U	500 U	0.50 UJ	0.50 U
MOBILE LAB VOLATILE (µg/L)							
1,1,1-TRICHLOROETHANE							
1,1,2,2-TETRACHLOROETHANE							
1,1,2-TRICHLOROETHANE							
1,1,2-TRICHLOROTRIFLUOROETHANE							
1,1-DICHLOROETHANE							
1,1-DICHLOROETHENE							
1,2,4-TRICHLOROBENZENE							
1,2-DIBROMO-3-CHLOROPROPANE							
1,2-DIBROMOETHANE							
1,2-DICHLOROBENZENE							
1,2-DICHLOROETHANE							
1,2-DICHLOROPROPANE							
1,3-DICHLOROBENZENE							
1,4-DICHLOROBENZENE							
2-BUTANONE							
2-HEXANONE							
4-METHYL-2-PENTANONE							
ACETONE							
BENZENE							
BROMODICHLOROMETHANE							
BROMOFORM							
BROMOMETHANE							
CARBON DISULFIDE							
CARBON TETRACHLORIDE							
CHLOROBENZENE							
CHLORODIBROMOMETHANE							
CHLOROETHANE							
CHLOROFORM							
CHLOROMETHANE							
CIS-1,2-DICHLOROETHENE							
CIS-1,3-DICHLOROPROPENE							
CYCLOHEXANE							
DICHLORODIFLUOROMETHANE							
ETHYLBENZENE							
ISOPROPYLBENZENE							
M+P-XYLENES							
METHYL ACETATE							
METHYL CYCLOHEXANE							
METHYL TERT-BUTYL ETHER							
METHYLENE CHLORIDE							
O-XYLENE							
STYRENE							
TETRACHLOROETHENE							
TOLUENE							
TRANS-1,2-DICHLOROETHENE							
TRANS-1,3-DICHLOROPROPENE							
TRICHLOROETHENE							
TRICHLOROFLUOROMETHANE							
VINYL CHLORIDE							

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 50 to 55 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

LOCATION ID	CCF-IW0003ID											
SAMPLE ID	CCF-IW0003ID-060.0-19981109	CCF-IW0003ID-060.0-19990310	CCF-IW0003ID-060.0-19990608	CCF-IW0003ID-060.0-20000119	CCF-IW0003ID-060.0-20000808	CCF-IW0003ID-000.0-20010126	CCF-IW0003ID-060.0-20050608	CCF-IW0003ID-060.0-20050823	CCF-IW0003ID-060.0-20051222	CCF-IW0003ID-060.0-20060321	CCF-IW0003ID-0
SAMPLE DATE	11/9/1998	3/10/1999	6/8/1999	1/19/2000	8/8/2000	1/26/2001	6/8/2005	8/23/2005	12/22/2005	3/21/2006	6/14/2
VOLATILE (ng/L)											
1,1,1,2-TETRACHLOROETHANE					1 U		1 U	1 U	1 U	1 U	1
1,1,1-TRICHLOROETHANE	1 U	1 U	1 U	5 U	1 U	0.5 U	1 U	1 U	1 U	1 U	1
1,1,2,2-TETRACHLOROETHANE	1 U	1 U	1 U	5 U	1 U		1 U	1 U	1 U	1 U	1
1,1,2-TRICHLOROETHANE	1 U	1 U	1 U	5 U	1 U	0.5 U	1 U	1 U	1 U	1 U	1
1,1,2-TRICHLOROTRIFLUOROETHANE	20	3.5	2	5 U	8	0.5 U	1 U	1 U	1 U	1 U	
1,1-DICHLOROETHANE	1 U	1 U	1 U	5 U	1 U	0.5 U	1 U	1 U	1 U	1 U	1
1,1-DICHLOROETHENE	1 U	1 U	1 U	5 U	1 U	0.5 U	1 U	1 U	1 U	1 U	1
1,1-DICHLOROPROPENE					1 U		1 U	1 U	1 U	1 U	1
1,2,3-TRICHLOROBENZENE					1 U	0.5 U	1 U	1 U	2 U	2 U	2
1,2,3-TRICHLOROPROPANE					1 U		1 U	1 U	1 U	1 U	1
1,2,4-TRICHLOROBENZENE					1 U	0.5 U	1 U	1 U	2 U	2 U	2
1,2,4-TRIMETHYLBENZENE					1 U		1 U	1 U	1 U	1 U	1
1,2-DIBROMO-3-CHLOROPROPANE					2 U		5 U	5 U	5 U	5 U	5
1,2-DIBROMOETHANE					1 U		1 U	1 U	1 U	1 U	1
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	180 N	130 N	250 N	5 U	15 N						
1,2-DICHLOROBENZENE					1 U	0.5 U	1 U	1 U	1 U	1 U	1
1,2-DICHLOROETHANE	1 U	1 U	1 U	5 U	1 U	0.5 U	1 U	1 U	1 U	1 U	1
1,2-DICHLOROPROPANE	1 U	1 U	1 U	5 U	1 U		1 U	1 U	1 U	1 U	1
1,3,5-TRIMETHYLBENZENE					1 U		1 U	1 U	1 U	1 U	1
1,3-DICHLOROBENZENE					1 U		1 U	1 U	1 U	1 U	1
1,3-DICHLOROPROPANE					1 U		1 U	1 U	1 U	1 U	1
1,4-DICHLOROBENZENE					1 U		1 U	1 U	1 U	1 U	1
1,4-DIOXANE											
2,2-DICHLOROPROPANE					1 U		1 U	1 U	1 U	1 U	1
2-BUTANONE	10 U	10 U	10 U	50 U	10 U		25 U	25 U	50 U	50 U	50
2-CHLOROETHYL VINYL ETHER											
2-CHLOROTOLUENE					1 U		1 U	1 U	1 U	1 U	1
2-HEXANONE	10 U	10 U	10 U	50 U	10 U		5 U	5 U	50 U	50 U	50
4-CHLOROTOLUENE					1 U		1 U	1 U	1 U	1 U	1
4-ISOPROPYLTOLUENE					1 U	0.5 U	1 U	1 U	1 U	1 U	1
4-METHYL-2-PENTANONE	10 U	10 U	10 U	50 U	10 U		5 U	5 U	50 U	50 U	50
ACETONE	10 U	10 U	10 U	50 U	10 U	10 U	25 U	50 U	50 U	50 U	50
BENZENE	1 U	1 U	1 U	5 U	1 U	0.5 U	1 U	1 U	1 U	1 U	1
BROMOBENZENE					1 U		1 U	1 U	1 U	1 U	1
BROMOCHLOROMETHANE					1 U		1 U	1 U	1 U	1 U	1
BROMODICHLOROMETHANE	1 U	1 U	1 U	5 U	1 U		1 U	1 U	1 U	1 U	1
BROMOFORM	1 U	1 U	1 U	5 U	1 U		1 U	1 U	1 U	1 U	1
BROMOMETHANE	0.87 U	0.87 U	1 U	5 U	1 U		1 U	1 U	1 U	1 U	1
CARBON DISULFIDE	1 U	1 U	1 U	5 U	1 U	0.5 U	1 U	1 U	1 U	1 U	1
CARBON TETRACHLORIDE	1 U	1 U	1 U	5 U	1 U		1 U	1 U	1 U	1 U	1
CHLOROBENZENE	1 U	1 U	1 U	5 U	1 U	0.5 U	1 U	1 U	1 U	1 U	1
CHLORODIBROMOMETHANE	1 U	1 U	1 U	5 U	1 U		1 U	1 U	1 U	1 U	1
CHLOROETHANE	1 U	1 U	1 U	5 U	1 U		1 U	1 U	1 U	1 U	1
CHLOROFORM	1 U	1 U	1 U	5 U	1 U	0.5 U	1 U	1 U	1 U	1 U	1
CHLOROMETHANE	1 U	1 U	1 U	5 U	1 U		1 U	1 U	1 U	1 U	1
CHLOROTRIFLUOROETHENE	100 N	120 N	150 N	5 U	26 N						
CIS-1,2-DICHLOROETHENE	21	9.7	6.4	5 U	3.9	1	1	3.13	4.21	1 U	3.17
CIS-1,3-DICHLOROPROPENE	1 U	1 U	1 U	5 U	1 U		1 U	1 U	1 U	1 U	1
CYCLOHEXANE											
DIBROMOMETHANE					1 U		1 U	1 U	1 U	1 U	1
DICHLORODIFLUOROMETHANE					1 U	0.5 U	1 U	1 U	1 U	1 U	1
ETHYLBENZENE	1 U	1 U	1 U	5 U	1 U	0.5 U	1 U	1 U	1 U	1 U	1
HEXACHLOROBUTADIENE					1 U		1 U	1 U	1 U	1 U	1
ISOPROPYLBENZENE					1 U		1 U	1 U	1 U	1 U	1
M+P-XYLENES											
METHYL ACETATE											
METHYL CYCLOHEXANE											
METHYL TERT-BUTYL ETHER					1 U			1 U	1 U	1 U	1
METHYLENE CHLORIDE	2.1	1 U	1 U	25 U	2 U	1.4 J	2.5 U	5 U	5 U	5 U	5
NAPHTHALENE					1 U		5 U	5 U	5 U	5 U	5
N-BUTYLBENZENE					1 U		1 U	1 U	1 U	1 U	1
N-PROPYLBENZENE					1 U		1 U	1 U	1 U	1 U	1
O-XYLENE											
SEC-BUTYLBENZENE					1 U		1 U	1 U	1 U	1 U	1
STYRENE	1 U	1 U	1 U	5 U	1 U		1 U	1 U	1 U	1 U	1
TERT-BUTYLBENZENE					1 U		1 U	1 U	1 U	1 U	1
TETRACHLOROETHANE											
TETRACHLOROETHENE	1 U	1 U	1 U	5 U	1 U	0.5 U	1 U	1 U	1 U	1 U	1
TOLUENE	1 U	1 U	1 U	5 U	1 U	0.5 U	1 U	1 U	1 U	1 U	1
TOTAL XYLENES	1 U	1 U	1 U	5 U	1 U	0.5 U	1 U	2 U	3 U	3 U	3
TRANS-1,2-DICHLOROETHENE	1 U	1 U	1 U	5 U	1 U	0.5 U	1 U	1 U	1 U	1 U	1
TRANS-1,3-DICHLOROPROPENE	1 U	1 U	1 U	5 U	1 U		1 U	1 U	1 U	1 U	1
TRICHLOROETHENE	6.2	2	1.4	61	1.7	0.68 I	1 U	0.68 I	1 U	1 U	1
TRICHLOROFLUOROMETHANE					1 U		1 U	1 U	1 U	1 U	1
VINYL CHLORIDE	1 U	1 U	1 U	5 U	1 U	0.5 U	1 U	1 U	14.2	1 U	83.8
MOBILE LAB VOLATILE (ng/L)											
1,1,2-TRICHLOROTRIFLUOROETHANE											
1,1-DICHLOROETHENE											
CIS-1,2-DICHLOROETHENE											
TETRACHLOROETHENE											
TRANS-1,2-DICHLOROETHENE											
TRICHLOROETHENE											
VINYL CHLORIDE											

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 50 to 55 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

LOCATION ID	CCF-IW0003ID										
SAMPLE ID	058.7-20060614	CCF-IW0003ID-058.7-20060614-D	CCF-IW0003ID-055.5-20060821	CCF-IW0003ID-055.5-20061219	CCF-IW0003ID-055.5-20070418	CCF-IW0003ID-050.8-20070727	CCF-IW0003ID-050.8-20070922	CCF-IW0003ID-050.8-20080409	CCF-IW0003ID-050.8-20080923	CCF-IW0003ID-050.8-20080923-D	CCF-IW0003ID-050.8-20090514
SAMPLE DATE	006	6/14/2006	8/21/2006	12/19/2006	4/18/2007	7/27/2007	9/22/2007	4/9/2008	9/23/2008	9/23/2008	5/14/2009
VOLATILE (ng/L)											
1,1,1,2-TETRACHLOROETHANE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
1,1,1-TRICHLOROETHANE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
1,1,2,2-TETRACHLOROETHANE	U	1 U	1 U	1 U	0.20 U	1 U	1 U		1 U	1 U	1 U
1,1,2-TRICHLOROETHANE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
1,1,2-TRICHLOROTRIFLUOROETHANE			1 U	0.43 I	1 U	1 U	1 U	1 U	1 U	1 U	
1,1-DICHLOROETHANE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
1,1-DICHLOROETHENE	U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-DICHLOROPROPENE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
1,2,3-TRICHLOROBENZENE	U	2 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
1,2,3-TRICHLOROPROPANE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
1,2,4-TRICHLOROBENZENE	U	2 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
1,2,4-TRIMETHYLBENZENE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
1,2-DIBROMO-3-CHLOROPROPANE	U	5 U	5 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
1,2-DIBROMOETHANE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE											
1,2-DICHLOROBENZENE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
1,2-DICHLOROETHANE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
1,2-DICHLOROPROPANE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
1,3,5-TRIMETHYLBENZENE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
1,3-DICHLOROBENZENE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
1,3-DICHLOROPROPANE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
1,4-DICHLOROBENZENE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
1,4-DIOXANE											2 U
2,2-DICHLOROPROPANE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
2-BUTANONE	U	50 U	50 U	5 U	5 U	5 U	5 U		5 U	5 U	5 U
2-CHLOROETHYL VINYL ETHER				1 U	1 U	1 U	1 U		1 U	1 U	1 U
2-CHLOROTOLUENE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
2-HEXANONE	U	50 U	50 U	5 U	5 U	5 U	5 U		5 U	5 U	5 U
4-CHLOROTOLUENE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
4-ISOPROPYLTOLUENE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
4-METHYL-2-PENTANONE	U	50 U	50 U	5 U	5 U	5 U	5 U		5 U	5 U	5 U
ACETONE	U	50 U	50 U	5 U	5 U	5 U	5 U		4.5 I	5 U	5 U
BENZENE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
BROMOBENZENE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
BROMOCHLOROMETHANE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
BROMODICHLOROMETHANE	U	1 U	1 U	0.40 U	0.40 U	1 U	1 U		1 U	1 U	1 U
BROMOFORM	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
BROMOMETHANE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
CARBON DISULFIDE	U	1 U	1 U	5 U	5 U	5 U	0.40 I		5 U	5 U	1.7 I
CARBON TETRACHLORIDE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
CHLOROBENZENE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
CHLORODIBROMOMETHANE	U	1 U	1 U	1 U	0.20 U	1 U	1 U		1 U	1 U	1 U
CHLOROETHANE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
CHLOROFORM	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
CHLOROMETHANE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
CHLOROTRIFLUOROETHENE											
CIS-1,2-DICHLOROETHENE		2.55	5.22	2.2	1.4	0.24 I	0.62 I	1 U	1 U	1 U	1 U
CIS-1,3-DICHLOROPROPENE	U	1 U	1 U	0.20 U	0.20 U	1 U	1 U		1 U	1 U	1 U
CYCLOHEXANE											
DIBROMOMETHANE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
DICHLORODIFLUOROMETHANE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
ETHYLBENZENE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
HEXACHLOROBUTADIENE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
ISOPROPYLBENZENE	U	1 U	1 U	0.20 U	0.20 U	1 U	1 U		1 U	1 U	1 U
M+P-XYLENES				0.47 I	1 U	1 U	1 U		1 U	1 U	1 U
METHYL ACETATE											
METHYL CYCLOHEXANE			5 U								
METHYL TERT-BUTYL ETHER	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
METHYLENE CHLORIDE	U	5 U	5 U	2 U	2 U	2 U	2 U		1 U	1 U	1 U
NAPHTHALENE	U	5 U	5 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
N-BUTYLBENZENE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
N-PROPYLBENZENE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
O-XYLENE				0.23 I	1 U	1 U	1 U		1 U	1 U	1 U
SEC-BUTYLBENZENE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
STYRENE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
TERT-BUTYLBENZENE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
TETRACHLOROETHANE											
TETRACHLOROETHENE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
TOLUENE	U	1 U	1 U	1 U	0.25 I	1 U	1 U		1 U	1 U	1 U
TOTAL XYLENES	U	3 U	3 U			1 U	1 U		1 U	1 U	1 U
TRANS-1,2-DICHLOROETHENE	U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TRANS-1,3-DICHLOROPROPENE	U	1 U	1 U	0.20 U	0.20 U	1 U	1 U		1 U	1 U	1 U
TRICHLOROETHENE	U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TRICHLOROFLUOROMETHANE	U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
VINYL CHLORIDE		66.9	369	150	95	1.5	8.1	1 U	1 U	1 U	1 U
MOBILE LAB VOLATILE (µg/L)											
1,1,2-TRICHLOROTRIFLUOROETHANE											
1,1-DICHLOROETHENE											
CIS-1,2-DICHLOROETHENE											
TETRACHLOROETHENE											
TRANS-1,2-DICHLOROETHENE											
TRICHLOROETHENE											
VINYL CHLORIDE											

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 50 to 55 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

LOCATION ID	CCF-IW0003ID											
SAMPLE ID	CCF-IW0003ID-050.8-20090514-D	CCF-IW0003ID-050.8-20090911	CCF-IW0003ID-050.8-20100417	CCF-IW0003ID-050.8-20100916	CCF-IW0003ID-051.0-201111	CCF-IW0003ID-051.0-20121206	CCF-IW0003ID-051.0-20131205	CCF-IW0003ID-051.0-20141209	CCF-IW0003ID-051.0-20151201	CCF-IW0003ID-051.0-20161230	CCF-IW0003ID-
SAMPLE DATE	5/14/2009	9/11/2009	4/17/2010	9/16/2010	11/4/2011	12/6/2012	12/5/2013	12/9/2014	12/1/2015	12/30/2016	12/20/
VOLATILE (µg/L)											
1,1,1,2-TETRACHLOROETHANE	1 U	1 U	1 U	1 U							
1,1,1-TRICHLOROETHANE	1 U	1 U	1 U	1 U	0.46 U						
1,1,2,2-TETRACHLOROETHANE	1 U	1 U	1 U	1 U	0.15 U						
1,1,2-TRICHLOROETHANE	1 U	1 U	1 U	1 U	0.47 U						
1,1,2-TRICHLOROTRIFLUOROETHANE		1 U	1 U	2.7	0.63 U		1900	1 U	32	10 U	
1,1-DICHLOROETHANE	1 U	1 U	1 U	1 U	0.52 U						
1,1-DICHLOROETHENE	1 U	1 U	1 U	1 U	0.45 U		1 U	1 U	1 U	1 U	
1,1-DICHLOROPROPENE	1 U	1 U	1 U	1 U							
1,2,3-TRICHLOROBENZENE	1 U	1 U	1 U	1 U							
1,2,3-TRICHLOROPROPANE	1 U	1 U	1 U	1 U							
1,2,4-TRICHLOROBENZENE	1 U	1 U	1 U	1 U	0.58 U						
1,2,4-TRIMETHYLBENZENE	1 U	1 U	1 U	1 U							
1,2-DIBROMO-3-CHLOROPROPANE	1 U	1 U	1 U	1 U	2.5 U						
1,2-DIBROMOETHANE	1 U	1 U	1 U	1 U	0.5 U						
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE											
1,2-DICHLOROBENZENE	1 U	1 U	1 U	1 U	0.44 U						
1,2-DICHLOROETHANE	1 U	1 U	1 U	1 U	0.57 U						
1,2-DICHLOROPROPANE	1 U	1 U	1 U	1 U	0.52 U						
1,3,5-TRIMETHYLBENZENE	1 U	1 U	1 U	1 U							
1,3-DICHLOROBENZENE	1 U	1 U	1 U	1 U	0.64 U						
1,3-DICHLOROPROPANE	1 U	1 U	1 U	1 U							
1,4-DICHLOROBENZENE	1 U	1 U	1 U	1 U	0.52 U						
1,4-DIOXANE	2 U										
2,2-DICHLOROPROPANE	1 U	1 U	1 U	1 U							
2-BUTANONE	5 U	5 U	5 U	5 U	8.4 U						
2-CHLOROETHYL VINYL ETHER	1 U	1 U	1 U	1 U							
2-CHLOROTOLUENE	1 U	1 U	1 U	1 U							
2-HEXANONE	5 U	5 U	5 U	5 U	4.4 U						
4-CHLOROTOLUENE	1 U	1 U	1 U	1 U							
4-ISOPROPYLTOLUENE	1 U	1 U	1 U	1 U							
4-METHYL-2-PENTANONE	5 U	5 U	5 U	5 U	3.8 U						
ACETONE	5 U	5 U	5 U	5.6	21						
BENZENE	1 U	1 U	1 U	1 U	0.5 U						
BROMOBENZENE	1 U	1 U	1 U	1 U							
BROMOCHLOROMETHANE	1 U	1 U	1 U	1 U							
BROMODICHLOROMETHANE	1 U	1 U	1 U	1 U	0.35 U						
BROMOFORM	1 U	1 U	1 U	1 U	0.58 U						
BROMOMETHANE	1 U	1 U	1 U	1 U	2.5 U						
CARBON DISULFIDE	5 U	5 U	1.4 I	5 U	1 U						
CARBON TETRACHLORIDE	1 U	1 U	1 U	1 U	0.42 U						
CHLOROBENZENE	1 U	1 U	1 U	1 U	0.63 U						
CHLORODIBROMOMETHANE	1 U	1 U	1 U	1 U	0.34 U						
CHLOROETHANE	1 U	1 U	1 U	1 U	2.5 U						
CHLOROFORM	1 U	1 U	1 U	1 U	0.9 U						
CHLOROMETHANE	1 U	1 U	1 U	1 U	1 U						
CHLOROTRIFLUOROETHENE											
CIS-1,2-DICHLOROETHENE	1 U	1 U			0.65 U		24	1 U	3	3	
CIS-1,3-DICHLOROPROPENE	1 U	1 U	0.45 I	4.1	0.14 U						
CYCLOHEXANE			1 U	1 U	0.83 U						
DIBROMOMETHANE	1 U	1 U									
DICHLORODIFLUOROMETHANE	1 U	1 U	1 U	1 U	2.5 U						
ETHYLBENZENE	1 U	1 U	1 U	1 U	0.44 U						
HEXACHLOROBUTADIENE	1 U	1 U	1 U	1 U							
ISOPROPYLBENZENE	1 U	1 U	1 U	1 U	0.19 U						
M+P-XYLENES	1 U	1 U	1 U	1 U							
METHYL ACETATE			1 U	1 U	0.36 U						
METHYL CYCLOHEXANE					0.96 U						
METHYL TERT-BUTYL ETHER	1 U	1 U			0.44 U						
METHYLENE CHLORIDE	1 U	1 U	1 U	1 U	4 U						
NAPHTHALENE	1 U	1 U	1 U	1 U							
N-BUTYLBENZENE	1 U	1 U	1 U	1 U							
N-PROPYLBENZENE	1 U	1 U	1 U	1 U							
O-XYLENE	1 U	1 U	1 U	1 U							
SEC-BUTYLBENZENE	1 U	1 U	1 U	1 U							
STYRENE	1 U	1 U	1 U	1 U	0.98 U						
TERT-BUTYLBENZENE	1 U	1 U	1 U	1 U							
TETRACHLOROETHANE			1 U	1 U							
TETRACHLOROETHENE	1 U	1 U	1 U	1 U	0.5 U		1 U	1 U	1 U		
TOLUENE	1 U	1 U			0.71 I						
TOTAL XYLENES	1 U	1 U	1 U	1 U	0.5 U						
TRANS-1,2-DICHLOROETHENE	1 U	1 U	1 U	1 U	0.44 U		3	1 U	1 U	1 U	
TRANS-1,3-DICHLOROPROPENE	1 U	1 U	1 U	1 U	0.14 U						
TRICHLOROETHENE	1 U	1 U	1 U	1 U	0.5 U		8	1 U	1 U	1 U	
TRICHLOROFLUOROMETHANE	1 U	1 U	1 U	0.40 I	2.5 U						
VINYL CHLORIDE	1 U	1 U	1 U	1 U	0.5 U		2	2	1 U	1 U	
MOBILE LAB VOLATILE (µg/L)			1 U	2.2							
1,1,2-TRICHLOROTRIFLUOROETHANE						1	1900				100
1,1-DICHLOROETHENE						1 U	1 U				1
CIS-1,2-DICHLOROETHENE						1 U	24				1
TETRACHLOROETHENE						1 U	1 U				
TRANS-1,2-DICHLOROETHENE						1 U	3				1
TRICHLOROETHENE						1 U	8				1
VINYL CHLORIDE						1 U	2				1

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 50 to 55 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

LOCATION ID	CCF-IW0003ID				CCF-IW0005ID						
SAMPLE ID	051.0-20171220	CCF-IW0003ID-051.0-20220203	CCF-IW0003ID-051.0-20220901	CCF-IW0003ID-051.0-20230501	CCF-IW0005ID-060.0-19981112	CCF-IW0005ID-060.0-20000803	CCF-IW0005ID-000.0-20040823	CCF-IW0005ID-060.0-20050906	CCF-IW0005ID-057.5-20060823	CCF-IW0005ID-057.5-20060823-D	CCF-IW0005ID-050.7-20071009
SAMPLE DATE	2017	2/3/2022	9/1/2022	5/1/2023	11/12/1998	8/3/2000	8/23/2004	9/6/2005	8/23/2006	8/23/2006	10/9/2007
VOLATILE (ng/L)											
1,1,1,2-TETRACHLOROETHANE						1 U		1 U	1 U	1 U	1 U
1,1,1-TRICHLOROETHANE					1 U	1 U	0.5 U	1 U	1 U	1 U	1 U
1,1,2,2-TETRACHLOROETHANE					1 U	1 U		1 U	1 U	1 U	1 U
1,1,2-TRICHLOROETHANE					1 U	1 U	0.5 U	1 U	1 U	1 U	1 U
1,1,2-TRICHLOROTRIFLUOROETHANE					1 U	2	0.5 U	1 U	1 U	1 U	1 U
1,1-DICHLOROETHANE					1 U	1 U	0.5 U	1 U	1 U	1 U	1 U
1,1-DICHLOROETHENE					1 U	1 U	0.5 U	1 U	1 U	1 U	1 U
1,1-DICHLOROPROPENE						1 U		1 U	1 U	1 U	1 U
1,2,3-TRICHLOROBENZENE						1 U	0.5 U	1 U	1 U	1 U	1 U
1,2,3-TRICHLOROPROPANE						1 U		1 U	1 U	1 U	1 U
1,2,4-TRICHLOROBENZENE						1 U	0.5 U	1 U	1 U	1 U	1 U
1,2,4-TRIMETHYLBENZENE						1 U		1 U	1 U	1 U	1 U
1,2-DIBROMO-3-CHLOROPROPANE						2 U		5 U	5 U	5 U	1 U
1,2-DIBROMOETHANE						1 U		1 U	1 U	1 U	1 U
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE					0.00 UN	0.00 UN					
1,2-DICHLOROBENZENE						1 U	0.5 U	1 U	1 U	1 U	1 U
1,2-DICHLOROETHANE					1 U	1 U	0.5 U	1 U	1 U	1 U	1 U
1,2-DICHLOROPROPANE					1 U	1 U		1 U	1 U	1 U	1 U
1,3,5-TRIMETHYLBENZENE						1 U		1 U	1 U	1 U	1 U
1,3-DICHLOROBENZENE						1 U		1 U	1 U	1 U	1 U
1,3-DICHLOROPROPANE						1 U		1 U	1 U	1 U	1 U
1,4-DICHLOROBENZENE						1 U		1 U	1 U	1 U	1 U
1,4-DIOXANE											
2,2-DICHLOROPROPANE						1 U		1 U	1 U	1 U	1 U
2-BUTANONE					10 U	10 U		25 U	50 U	50 U	5 U
2-CHLOROETHYL VINYL ETHER											1 U
2-CHLOROTOLUENE						1 U		1 U	1 U	1 U	1 U
2-HEXANONE					10 U	10 U		5 U	50 U	50 U	5 U
4-CHLOROTOLUENE						1 U		1 U	1 U	1 U	1 U
4-ISOPROPYLTOLUENE						1 U	0.5 U	1 U	1 U	1 U	1 U
4-METHYL-2-PENTANONE					10 U	10 U		5 U	50 U	50 U	5 U
ACETONE					10 U	10 U	50 U	50 U	50 U	50 U	5 U
BENZENE					1 U	1 U	0.5 U	1 U	1 U	1 U	1 U
BROMOBENZENE						1 U		1 U	1 U	1 U	1 U
BROMOCHLOROMETHANE						1 U		1 U	1 U	1 U	1 U
BROMODICHLOROMETHANE					1 U	1 U		1 U	1 U	1 U	1 U
BROMOFORM					1 U	1 U		1 U	1 U	1 U	1 U
BROMOMETHANE					0.87 U	1 U		1 U	1 U	1 U	1 U
CARBON DISULFIDE					1 U	1 U	0.5 U	1 U	1 U	1 U	5 U
CARBON TETRACHLORIDE					1 U	1 U		1 U	1 U	1 U	1 U
CHLOROBENZENE					1 U	1 U	0.5 U	1 U	1 U	1 U	1 U
CHLORODIBROMOMETHANE					1 U	1 U		1 U	1 U	1 U	1 U
CHLOROETHANE					1 U	1 U		1 U	1 U	1 U	1 U
CHLOROFORM					1 U	1 U	0.5 U	1 U	1 U	1 U	1 U
CHLOROMETHANE					1 U	1 U		1 U	1 U	1 U	1 U
CHLOROTRIFLUOROETHENE					0.00 UN	0.00 UN					
CIS-1,2-DICHLOROETHENE		1 U	0.50 U	0.50 U	1 U	0.90 J	1.96	1.96	1.15	1.11	0.45 I
CIS-1,3-DICHLOROPROPENE					1 U	1 U		1 U	1 U	1 U	1 U
CYCLOHEXANE											
DIBROMOMETHANE						1 U		1 U	1 U	1 U	1 U
DICHLORODIFLUOROMETHANE						1 U	0.5 U	1 U	1 U	1 U	1 U
ETHYLBENZENE					1 U	1 U	0.5 U	1 U	1 U	1 U	1 U
HEXACHLOROBUTADIENE						1 U		1 U	1 U	1 U	1 U
ISOPROPYLBENZENE						1 U		1 U	1 U	1 U	1 U
M+P-XYLENES											1 U
METHYL ACETATE											
METHYL CYCLOHEXANE									5 U	5 U	
METHYL TERT-BUTYL ETHER						1 U		1 U	1 U	1 U	1 U
METHYLENE CHLORIDE					1 U	2 U	2.5 U	5 U	5 U	5 U	2 U
NAPHTHALENE						1 U		5 U	5 U	5 U	1 U
N-BUTYLBENZENE						1 U		1 U	1 U	1 U	1 U
N-PROPYLBENZENE						1 U		1 U	1 U	1 U	1 U
O-XYLENE											1 U
SEC-BUTYLBENZENE						1 U		1 U	1 U	1 U	1 U
STYRENE					1 U	1 U		1 U	1 U	1 U	1 U
TERT-BUTYLBENZENE						1 U		1 U	1 U	1 U	1 U
TETRACHLOROETHANE											
TETRACHLOROETHENE					1 U	1 U	0.5 U	1 U	1 U	1 U	1 U
TOLUENE					1 U	1 U	0.5 U	1 U	1 U	1 U	1 U
TOTAL XYLENES					1 U	1 U	0.5 U	2 U	3 U	3 U	1 U
TRANS-1,2-DICHLOROETHENE		1 U	0.50 U	0.50 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U
TRANS-1,3-DICHLOROPROPENE					1 U	1 U		1 U	1 U	1 U	1 U
TRICHLOROETHENE		1 U	0.50 U	0.50 U	1 U	1 U	0.5	1 U	1 U	1 U	1 U
TRICHLOROFLUOROMETHANE						1 U		1 U	1 U	1 U	1 U
VINYL CHLORIDE		1 U	0.50 U	0.50 U	1 U	0.59 J	0.71 I	0.71 I	1 U	1 U	1 U
MOBILE LAB VOLATILE (ng/L)											
1,1,2-TRICHLOROTRIFLUOROETHANE	U										
1,1-DICHLOROETHENE	U										
CIS-1,2-DICHLOROETHENE	U										
TETRACHLOROETHENE											
TRANS-1,2-DICHLOROETHENE	U										
TRICHLOROETHENE	U										
VINYL CHLORIDE	U										

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 50 to 55 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

LOCATION ID	CCF-IW0005ID						CCF-IW0011D				
SAMPLE ID	CCF-IW0005ID-050.7-20080416	CCF-IW0005ID-050.7-20081007	CCF-IW0005ID-050.7-20090915	CCF-IW0005ID-051.0-20220201	CCF-IW0005ID-051.0-20220902	CCF-IW0005ID-051.0-20230425	CCF-IW0011ID-060.0-19981103	CCF-IW0011ID-060.0-20000810	CCF-IW0011ID-000.0-20040820	CCF-IW0011ID-060.0-20050824	CCF-IW0011ID-
SAMPLE DATE	4/16/2008	10/7/2008	9/15/2009	2/1/2022	9/2/2022	4/25/2023	11/3/1998	8/10/2000	8/20/2004	8/24/2005	8/22/
VOLATILE (µg/L)											
1,1,1,2-TETRACHLOROETHANE		1 U	1 U					1 U		1 U	1
1,1,1-TRICHLOROETHANE		1 U	1 U				1 U	1 U	0.5 U	1 U	1
1,1,2,2-TETRACHLOROETHANE		1 U	1 U				1 U	1 U		1 U	1
1,1,2-TRICHLOROETHANE		1 U	1 U				1 U	1 U	0.5 U	1 U	1
1,1,2-TRICHLOROTRIFLUOROETHANE	1 U	1 U	1 U				1 U	1 U	0.5 U	1 U	1
1,1-DICHLOROETHANE		1 U	1 U				1 U	1 U	0.5 U	1 U	1
1,1-DICHLOROETHENE	1 U	1 U	1 U				1 U	1 U	0.5 U	1 U	1
1,1-DICHLOROPROPENE		1 U	1 U					1 U		1 U	1
1,2,3-TRICHLOROBENZENE		1 U	1 U					1 U	0.5 U	1 U	1
1,2,3-TRICHLOROPROPANE		1 U	1 U					1 U		1 U	1
1,2,4-TRICHLOROBENZENE		1 U	1 U					1 U	0.5 U	1 U	1
1,2,4-TRIMETHYLBENZENE		1 U	1 U					1 U		1 U	1
1,2-DIBROMO-3-CHLOROPROPANE		1 U	1 U					2 U		5 U	5
1,2-DIBROMOETHANE		1 U	1 U					1 U		1 U	1
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE							0.00 UN	0.00 UN			
1,2-DICHLOROBENZENE		1 U	1 U					1 U	0.5 U	1 U	1
1,2-DICHLOROETHANE		1 U	1 U				1 U	1 U	0.5 U	1 U	1
1,2-DICHLOROPROPANE		1 U	1 U				1 U	1 U		1 U	1
1,3,5-TRIMETHYLBENZENE		1 U	1 U					1 U		1 U	1
1,3-DICHLOROBENZENE		1 U	1 U					1 U		1 U	1
1,3-DICHLOROPROPANE		1 U	1 U					1 U		1 U	1
1,4-DICHLOROBENZENE		1 U	1 U					1 U		1 U	1
1,4-DIOXANE											
2,2-DICHLOROPROPANE		1 U	1 U					1 U		1 U	1
2-BUTANONE		5 U	5 U				10 U	10 U		25 U	50
2-CHLOROETHYL VINYL ETHER		1 U	1 U								
2-CHLOROTOLUENE		1 U	1 U					1 U		1 U	1
2-HEXANONE		5 U	5 U				10 U	10 U		5 U	50
4-CHLOROTOLUENE		1 U	1 U					1 U		1 U	1
4-ISOPROPYLTOLUENE		1 U	1 U					1 U	0.5 U	1 U	1
4-METHYL-2-PENTANONE		5 U	5 U				10 U	10 U		5 U	50
ACETONE		9.2	5 U				10 U	10 U	50 U	50 U	50
BENZENE		1 U	1 U				1 U	1 U	0.5 U	1 U	1
BROMOBENZENE		1 U	1 U					1 U		1 U	1
BROMOCHLOROMETHANE		1 U	1 U					1 U		1 U	1
BROMODICHLOROMETHANE		1 U	1 U				1 U	1 U		1 U	1
BROMOFORM		1 U	1 U				1 U	1 U		1 U	1
BROMOMETHANE		1 U	1 U				0.87 U	1 U		1 U	1
CARBON DISULFIDE		0.56 I	5 U				1 U	1 U	0.5 U	1 U	1
CARBON TETRACHLORIDE		1 U	1 U				1 U	1 U		1 U	1
CHLOROBENZENE		1 U	1 U				1 U	1 U	0.5 U	1 U	1
CHLORODIBROMOMETHANE		1 U	1 U				1 U	1 U		1 U	1
CHLOROETHANE		1 U	1 U				1 U	1 U		1 U	1
CHLOROFORM		1 U	1 U				1 U	1 U	0.5 U	1 U	1
CHLOROMETHANE		1 U	1 U				1 U	1 U		1 U	1
CHLOROTRIFLUOROETHENE							0.00 UN	0.00 UN			
CIS-1,2-DICHLOROETHENE	1 U	1 U	1 U	1 U	1.2	5.2	1 U	1 U	0.5 U	1 U	1
CIS-1,3-DICHLOROPROPENE		1 U	1 U				1 U	1 U		1 U	1
CYCLOHEXANE											
DIBROMOMETHANE		1 U	1 U					1 U		1 U	1
DICHLORODIFLUOROMETHANE		1 U	1 U					1 U	0.5 U	1 U	1
ETHYLBENZENE		1 U	1 U				1 U	1 U	0.5 U	1 U	1
HEXACHLOROBUTADIENE		1 U	1 U					1 U		1 U	1
ISOPROPYLBENZENE		1 U	1 U					1 U		1 U	1
M+P-XYLENES		1 U	1 U								
METHYL ACETATE											
METHYL CYCLOHEXANE											5
METHYL TERT-BUTYL ETHER		1 U	1 U					1 U		1 U	1
METHYLENE CHLORIDE		1 U	1 U				1 U	2 U	2.5 U	5 U	5
NAPHTHALENE		1 U	1 U					1 U		5 U	5
N-BUTYLBENZENE		1 U	1 U					1 U		1 U	1
N-PROPYLBENZENE		1 U	1 U					1 U		1 U	1
O-XYLENE		1 U	1 U								
SEC-BUTYLBENZENE		1 U	1 U					1 U		1 U	1
STYRENE		1 U	1 U				1 U	1 U		1 U	1
TERT-BUTYLBENZENE		1 U	1 U					1 U		1 U	1
TETRACHLOROETHANE							1 U				
TETRACHLOROETHENE		1 U	1 U					1 U	0.5 U	1 U	1
TOLUENE		1 U	1 U				1 U	1 U	0.5 U	1 U	1
TOTAL XYLENES		1 U	1 U				1 U	1 U	0.5 U	2 U	3
TRANS-1,2-DICHLOROETHENE	1 U	1 U	1 U	1 U	0.50 U	1.1	1 U	1 U	0.5 U	1 U	1
TRANS-1,3-DICHLOROPROPENE		1 U	1 U				1 U	1 U		1 U	1
TRICHLOROETHENE	0.34 I	1 U	1 U	1 U	0.50 U	0.50 U	1 U	1 U	0.5 U	1 U	1
TRICHLOROFLUOROMETHANE		1 U	1 U					1 U		1 U	1
VINYL CHLORIDE	1 U	0.30 I	1 U	1 U	3.5	9.7	1 U	1 U	0.5 U	1 U	1
MOBILE LAB VOLATILE (µg/L)											
1,1,2-TRICHLOROTRIFLUOROETHANE											
1,1-DICHLOROETHENE											
CIS-1,2-DICHLOROETHENE											
TETRACHLOROETHENE											
TRANS-1,2-DICHLOROETHENE											
TRICHLOROETHENE											
VINYL CHLORIDE											

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 50 to 55 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

LOCATION ID	CCF-IW0011ID										
SAMPLE ID	057.5-20060822	CCF-IW0011ID-051.8-20070923	CCF-IW0011ID-051.8-20080416	CCF-IW0011ID-051.8-20080924	CCF-IW0011ID-051.8-20090910	CCF-IW0011ID-052.0-201111	CCF-IW0011ID-052.0-20121206	CCF-IW0011ID-052.0-20131205	CCF-IW0011ID-052.0-20141209	CCF-IW0011ID-052.0-20151201	CCF-IW0011ID-052.0-20161230
SAMPLE DATE	006	9/23/2007	4/16/2008	9/24/2008	9/10/2009	11/4/2011	12/6/2012	12/5/2013	12/9/2014	12/1/2015	12/30/2016
VOLATILE (ug/L)											
1,1,1,2-TETRACHLOROETHANE	U	1 U		1 U	1 U						
1,1,1-TRICHLOROETHANE	U	1 U		1 U	1 U	0.46 U					
1,1,2,2-TETRACHLOROETHANE	U	1 U		1 U	1 U	0.15 U					
1,1,2-TRICHLOROETHANE	U	1 U		1 U	1 U	0.47 U					
1,1,2-TRICHLOROTRIFLUOROETHANE	U	1 U	1 U	1 U	1 U	0.63 U		1 U	1 U	10 U	10 U
1,1-DICHLOROETHANE	U	1 U		1 U	1 U	0.52 U					
1,1-DICHLOROETHENE	U	1 U	1 U	1 U	1 U	0.45 U		1 U	1 U	1 U	1 U
1,1-DICHLOROPROPENE	U	1 U		1 U	1 U						
1,2,3-TRICHLOROBENZENE	U	1 U		1 U	1 U						
1,2,3-TRICHLOROPROPANE	U	1 U		1 U	1 U						
1,2,4-TRICHLOROBENZENE	U	1 U		1 U	1 U	0.58 U					
1,2,4-TRIMETHYLBENZENE	U	1 U		1 U	1 U						
1,2-DIBROMO-3-CHLOROPROPANE	U	1 U		1 U	1 U	2.5 U					
1,2-DIBROMOETHANE	U	1 U		1 U	1 U	0.5 U					
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE											
1,2-DICHLOROBENZENE	U	1 U		1 U	1 U	0.44 U					
1,2-DICHLOROETHANE	U	1 U		1 U	1 U	0.57 U					
1,2-DICHLOROPROPANE	U	1 U		1 U	1 U	0.52 U					
1,3,5-TRIMETHYLBENZENE	U	1 U		1 U	1 U						
1,3-DICHLOROBENZENE	U	1 U		1 U	1 U	0.64 U					
1,3-DICHLOROPROPANE	U	1 U		1 U	1 U						
1,4-DICHLOROBENZENE	U	1 U		1 U	1 U	0.52 U					
1,4-DIOXANE											
2,2-DICHLOROPROPANE	U	1 U		1 U	1 U						
2-BUTANONE	U	5 U		5 U	5 U	8.4 U					
2-CHLOROETHYL VINYL ETHER		1 U		1 U	1 U						
2-CHLOROTOLUENE	U	1 U		1 U	1 U						
2-HEXANONE	U	5 U		5 U	5 U	4.4 U					
4-CHLOROTOLUENE	U	1 U		1 U	1 U						
4-ISOPROPYLTOLUENE	U	1 U		1 U	1 U						
4-METHYL-2-PENTANONE	U	5 U		5 U	5 U	3.8 U					
ACETONE	U	5 U		5 U	5 U	13 I					
BENZENE	U	1 U		1 U	1 U	0.5 U					
BROMOBENZENE	U	1 U		1 U	1 U						
BROMOCHLOROMETHANE	U	1 U		1 U	1 U						
BROMODICHLOROMETHANE	U	1 U		1 U	1 U	0.35 U					
BROMOFORM	U	1 U		1 U	1 U	0.58 U					
BROMOMETHANE	U	1 U		1 U	1 U	2.5 U					
CARBON DISULFIDE	U	5 U		0.22 I	5 U	1 U					
CARBON TETRACHLORIDE	U	1 U		1 U	1 U	0.42 U					
CHLOROBENZENE	U	1 U		1 U	1 U	0.63 U					
CHLORODIBROMOMETHANE	U	1 U		1 U	1 U	0.34 U					
CHLOROETHANE	U	1 U		1 U	1 U	2.5 U					
CHLOROFORM	U	1 U		1 U	1 U	0.9 U					
CHLOROMETHANE	U	1 U		1 U	1 U	1 U					
CHLOROTRIFLUOROETHENE											
CIS-1,2-DICHLOROETHENE	U	1 U	1 U	1 U	1 U	0.65 U		1 U	1 U	1 U	1 U
CIS-1,3-DICHLOROPROPENE	U	1 U		1 U	1 U	0.14 U					
CYCLOHEXANE						0.83 U					
DIBROMOMETHANE	U	1 U		1 U	1 U						
DICHLORODIFLUOROMETHANE	U	1 U		1 U	1 U	2.5 U					
ETHYLBENZENE	U	1 U		1 U	1 U	0.44 U					
HEXACHLOROBUTADIENE	U	1 U		1 U	1 U						
ISOPROPYLBENZENE	U	1 U		1 U	1 U	0.19 U					
M+P-XYLENES		1 U		1 U	1 U						
METHYL ACETATE						0.36 U					
METHYL CYCLOHEXANE	U					0.96 U					
METHYL TERT-BUTYL ETHER	U	1 U		1 U	1 U	0.44 U					
METHYLENE CHLORIDE	U	2 U		1 U	1 U	4 U					
NAPHTHALENE	U	1 U		1 U	1 U						
N-BUTYLBENZENE	U	1 U		1 U	1 U						
N-PROPYLBENZENE	U	1 U		1 U	1 U						
O-XYLENE		1 U		1 U	1 U						
SEC-BUTYLBENZENE	U	1 U		1 U	1 U						
STYRENE	U	1 U		1 U	1 U	0.98 U					
TERT-BUTYLBENZENE	U	1 U		1 U	1 U						
TETRACHLOROETHANE											
TETRACHLOROETHENE	U	1 U		1 U	1 U	0.5 U		1 U	1 U	1 U	
TOLUENE	U	1 U		1 U	1 U	0.51 U					
TOTAL XYLENES	U	1 U		1 U	1 U	0.5 U					
TRANS-1,2-DICHLOROETHENE	U	1 U	1 U	1 U	1 U	0.44 U		1 U	1 U	1 U	1 U
TRANS-1,3-DICHLOROPROPENE	U	1 U		1 U	1 U	0.14 U					
TRICHLOROETHENE	U	1 U	1 U	1 U	1 U	0.5 U		1 U	1 U	1 U	1 U
TRICHLOROFLUOROMETHANE	U	1 U		1 U	1 U	2.5 U					
VINYL CHLORIDE	U	1 U	1 U	1 U	1 U	0.5 U		1 U	1 U	1 U	1 U
MOBILE LAB VOLATILE (ug/L)											
1,1,2-TRICHLOROTRIFLUOROETHANE							1	1 U			
1,1-DICHLOROETHENE							1 U	1 U			
CIS-1,2-DICHLOROETHENE							1 U	1 U			
TETRACHLOROETHENE							1 U	1 U			
TRANS-1,2-DICHLOROETHENE							1 U	1 U			
TRICHLOROETHENE							1 U	1 U			
VINYL CHLORIDE							1 U	1 U			

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 50 to 55 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

LOCATION ID	CCF-IW0011ID				CCF-IW0070						
SAMPLE ID	CCF-IW0011ID-052.0-20171220	CCF-IW0011ID-052.0-20220203	CCF-IW0011ID-052.0-20220901	CCF-IW0011ID-052.0-20230428	CCF-IW0070-050.0-20190307	CCF-IW0070-050.0-20190604	CCF-IW0070-050.0-20191210	CCF-IW0070-050.0-20200311	CCF-IW0070-050.0-20200616	CCF-IW0070-050.0-20200924	CCF-IW0070-0
SAMPLE DATE	12/20/2017	2/3/2022	9/1/2022	4/28/2023	3/7/2019	6/4/2019	12/10/2019	3/11/2020	6/16/2020	9/24/2020	12/10/
VOLATILE (µg/L)											
1,1,1,2-TETRACHLOROETHANE					1 U	1 U					
1,1,1-TRICHLOROETHANE					1 U	1 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30
1,1,2,2-TETRACHLOROETHANE					1 U	1 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44
1,1,2-TRICHLOROETHANE					1 U	1 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29
1,1,2-TRICHLOROTRIFLUOROETHANE					1 U	1 U					
1,1-DICHLOROETHANE					1 U	1 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32
1,1-DICHLOROETHENE					1 U	1 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26
1,1-DICHLOROPROPENE					1 U	1 U					
1,2,3-TRICHLOROBENZENE					1 U	1 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37
1,2,3-TRICHLOROPROPANE					1 U	1 U					
1,2,4-TRICHLOROBENZENE					1 U	1 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58
1,2,4-TRIMETHYLBENZENE					1 U	1 U					
1,2-DIBROMO-3-CHLOROPROPANE					1 U	1 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5
1,2-DIBROMOETHANE					1 U	1 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE											
1,2-DICHLOROBENZENE					1 U	1 U	0.32 J	0.39 J	0.41 J	0.41 J	0.37
1,2-DICHLOROETHANE					1 U	1 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31
1,2-DICHLOROPROPANE					1 U	1 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52
1,3,5-TRIMETHYLBENZENE					1 U	1 U					
1,3-DICHLOROBENZENE					1 U	1 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26
1,3-DICHLOROPROPANE					1 U	1 U					
1,4-DICHLOROBENZENE					1 U	1 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22
1,4-DIOXANE											
2,2-DICHLOROPROPANE					1 U	1 U					
2-BUTANONE					5 U	5 U	3.2 U	3.2 U	3.2 U	3.2 U	3.2
2-CHLOROETHYL VINYL ETHER					5 U	5 U					
2-CHLOROTOLUENE					1 U	1 U					
2-HEXANONE					5 U	5 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4
4-CHLOROTOLUENE					1 U	1 U					
4-ISOPROPYLTOLUENE					1 U	1 U					
4-METHYL-2-PENTANONE					5 U	5 U	4 U	4 U	4 U	4 U	4
ACETONE					20 U	20 U	3 U	3 U	5 J	3 U	3
BENZENE					1 U	1 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25
BROMOBENZENE					1 U	1 U					
BROMOCHLOROMETHANE					1 U	1 U					
BROMODICHLOROMETHANE					1 U	1 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23
BROMOFORM					1 U	1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1
BROMOMETHANE					1 U	1 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5
CARBON DISULFIDE					5 U	5 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35
CARBON TETRACHLORIDE					1 U	1 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23
CHLOROBENZENE					1 U	1 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27
CHLORODIBROMOMETHANE					1 U	1 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31
CHLOROETHANE					1 U	1 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5
CHLOROFORM					12	1 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29
CHLOROMETHANE					1 U	1 U	0.76 U	0.76 U	0.76 U	0.76 U	0.76
CHLOROTRIFLUOROETHENE											
CIS-1,2-DICHLOROETHENE		1 U	0.50 U	0.50 U	1.6	3.7	3.1	3.4	3	3.2	3.4
CIS-1,3-DICHLOROPROPENE					1 U	1 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39
CYCLOHEXANE											
DIBROMOMETHANE					1 U	1 U					
DICHLORODIFLUOROMETHANE					1 U	1 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5
ETHYLBENZENE					1 U	1 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27
HEXACHLOROBUTADIENE					1 U	1 U					
ISOPROPYLBENZENE					1 U	1 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52
M+P-XYLENES					2 U	2 U					
METHYL ACETATE											
METHYL CYCLOHEXANE											
METHYL TERT-BUTYL ETHER					1 U	1 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44
METHYLENE CHLORIDE					5 U	5 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4
NAPHTHALENE					1 U	1 U					
N-BUTYLBENZENE					1 U	1 U					
N-PROPYLBENZENE					1 U	1 U					
O-XYLENE					1 U	1 U					
SEC-BUTYLBENZENE					1 U	1 U					
STYRENE					1 U	1 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49
TERT-BUTYLBENZENE					1 U	1 U					
TETRACHLOROETHANE											
TETRACHLOROETHENE					1 U	1 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50
TOLUENE					1 U	1 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24
TOTAL XYLENES					2 U	2 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50
TRANS-1,2-DICHLOROETHENE		1 U	0.50 U	0.50 U	6.4	9	6.9	8.2	7.2	7	5.9
TRANS-1,3-DICHLOROPROPENE					1 U	1 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27
TRICHLOROETHENE		1 U	0.50 U	0.50 U	1 U	1.1	1 J	1.1 J	1.1 J	1 J	1.1
TRICHLOROFLUOROMETHANE					1 U	1 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49
VINYL CHLORIDE		1 U	0.50 U	0.50 U	14	25	24	46	28	27	18
MOBILE LAB VOLATILE (µg/L)											
1,1,2-TRICHLOROTRIFLUOROETHANE	100 U										
1,1-DICHLOROETHENE	1 U										
CIS-1,2-DICHLOROETHENE	1 U										
TETRACHLOROETHENE											
TRANS-1,2-DICHLOROETHENE	1 U										
TRICHLOROETHENE	1 U										
VINYL CHLORIDE	1 U										

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 50 to 55 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

LOCATION ID	CCF-IW0070					CCF-IW0089			CCF-IW0090		
SAMPLE ID	50.0-20201210	CCF-IW0070-050.0-20210323	CCF-IW0070-050.0-20220131	CCF-IW0070-050.0-20220906	CCF-IW0070-050.0-20230426	CCF-IW0089-050.0-20220202	CCF-IW0089-050.0-20220831	CCF-IW0089-050.0-20230427	CCF-IW0090-050.0-20220201	CCF-IW0090-050.0-20220902	CCF-IW0090-050.0-20230425
SAMPLE DATE	2020	3/23/2021	1/31/2022	9/6/2022	4/26/2023	2/2/2022	8/31/2022	4/27/2023	2/1/2022	9/2/2022	4/25/2023
VOLATILE (ng/L)											
1,1,1,2-TETRACHLOROETHANE											
1,1,1-TRICHLOROETHANE	U	0.30 U									
1,1,2,2-TETRACHLOROETHANE	U	0.44 U									
1,1,2-TRICHLOROETHANE	U	0.29 U									
1,1,2-TRICHLOROTRIFLUOROETHANE											
1,1-DICHLOROETHANE	U	0.32 U									
1,1-DICHLOROETHENE	U	0.26 U									
1,1-DICHLOROPROPENE											
1,2,3-TRICHLOROBENZENE	U	0.37 U									
1,2,3-TRICHLOROPROPANE											
1,2,4-TRICHLOROBENZENE	U	0.58 U									
1,2,4-TRIMETHYLBENZENE											
1,2-DIBROMO-3-CHLOROPROPANE	U	2.5 U									
1,2-DIBROMOETHANE	U	0.27 U									
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE											
1,2-DICHLOROBENZENE	J	0.38 J									
1,2-DICHLOROETHANE	U	0.31 U									
1,2-DICHLOROPROPANE	U	0.52 U									
1,3,5-TRIMETHYLBENZENE											
1,3-DICHLOROBENZENE	U	0.26 U									
1,3-DICHLOROPROPANE											
1,4-DICHLOROBENZENE	U	0.22 U									
1,4-DIOXANE											
2,2-DICHLOROPROPANE											
2-BUTANONE	U	3.2 U									
2-CHLOROETHYL VINYL ETHER											
2-CHLOROTOLUENE											
2-HEXANONE	U	4.4 U									
4-CHLOROTOLUENE											
4-ISOPROPYLTOLUENE											
4-METHYL-2-PENTANONE	U	4 U									
ACETONE	U	3 U									
BENZENE	U	0.25 U									
BROMOBENZENE											
BROMOCHLOROMETHANE											
BROMODICHLOROMETHANE	U	0.23 U									
BROMOFORM	U	1.1 U									
BROMOMETHANE	U	2.5 U									
CARBON DISULFIDE	U	1.9 J									
CARBON TETRACHLORIDE	U	0.23 U									
CHLOROBENZENE	U	0.27 U									
CHLORODIBROMOMETHANE	U	0.31 U									
CHLOROETHANE	U	2.5 U									
CHLOROFORM	U	0.29 U									
CHLOROMETHANE	U	0.76 U									
CHLOROTRIFLUOROETHENE											
CIS-1,2-DICHLOROETHENE		3.7	2.3	2.9	3.4	1 U	0.50 U	0.50 U	10.9	17.5	20.1
CIS-1,3-DICHLOROPROPENE	U	0.39 U									
CYCLOHEXANE											
DIBROMOMETHANE											
DICHLORODIFLUOROMETHANE	U	2.5 U									
ETHYLBENZENE	U	0.27 U									
HEXACHLOROBUTADIENE											
ISOPROPYLBENZENE	U	0.52 U									
M+P-XYLENES											
METHYL ACETATE											
METHYL CYCLOHEXANE											
METHYL TERT-BUTYL ETHER	U	0.44 U									
METHYLENE CHLORIDE	U	1.4 U									
NAPHTHALENE											
N-BUTYLBENZENE											
N-PROPYLBENZENE											
O-XYLENE											
SEC-BUTYLBENZENE											
STYRENE	U	0.49 U									
TERT-BUTYLBENZENE											
TETRACHLOROETHANE											
TETRACHLOROETHENE	U	0.50 U									
TOLUENE	U	0.24 U									
TOTAL XYLENES	U	0.50 U									
TRANS-1,2-DICHLOROETHENE		7	5.2	4.9	6.1	1 U	0.50 U	0.50 U	10.7	9.1	9.1
TRANS-1,3-DICHLOROPROPENE	U	0.27 U									
TRICHLOROETHENE	J	0.61 U	1.1	2.4	1.8	1 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U
TRICHLOROFLUOROMETHANE	U	0.49 U									
VINYL CHLORIDE		26	23.7	19.9	22.7	1 U	0.50 U	0.50 U	1.7	23.6	28.9
MOBILE LAB VOLATILE (ng/L)											
1,1,2-TRICHLOROTRIFLUOROETHANE											
1,1-DICHLOROETHENE											
CIS-1,2-DICHLOROETHENE											
TETRACHLOROETHENE											
TRANS-1,2-DICHLOROETHENE											
TRICHLOROETHENE											
VINYL CHLORIDE											

Appendix G
Current and Historical VOCs Analytical Results
Sample Depths at 60 ft bls
2023 Annual Long Term Monitoring Report
Components Cleaning Facility West
Kennedy Space Center, Florida

LOCATION ID SAMPLE ID SAMPLE DATE	CCF-IW0091 CCF-IW0091-060.0-20220131 1/31/2022	CCF-IW0091 CCF-IW0091-060.0-20220901 9/1/2022	CCF-IW0091 CCF-IW0091-060.0-20230426 4/26/2023
VOLATILE (µg/L)			
1,1,1,2-TETRACHLOROETHANE			
1,1,1-TRICHLOROETHANE			
1,1,2,2-TETRACHLOROETHANE			
1,1,2-TRICHLOROETHANE			
1,1,2-TRICHLOROTRIFLUOROETHANE			
1,1-DICHLOROETHANE			
1,1-DICHLOROETHENE			
1,1-DICHLOROPROPENE			
1,2,3-TRICHLOROBENZENE			
1,2,3-TRICHLOROPROPANE			
1,2,4-TRICHLOROBENZENE			
1,2,4-TRIMETHYLBENZENE			
1,2-DIBROMO-3-CHLOROPROPANE			
1,2-DIBROMOETHANE			
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE			
1,2-DICHLOROBENZENE			
1,2-DICHLOROETHANE			
1,2-DICHLOROPROPANE			
1,3,5-TRIMETHYLBENZENE			
1,3-DICHLOROBENZENE			
1,3-DICHLOROPROPANE			
1,4-DICHLOROBENZENE			
1,4-DIOXANE			
2,2-DICHLOROPROPANE			
2-BUTANONE			
2-CHLOROETHYL VINYL ETHER			
2-CHLOROTOLUENE			
2-HEXANONE			
4-CHLOROTOLUENE			
4-ISOPROPYLTOLUENE			
4-METHYL-2-PENTANONE			
ACETONE			
BENZENE			
BROMOBENZENE			
BROMOCHLOROMETHANE			
BROMODICHLOROMETHANE			
BROMOFORM			
BROMOMETHANE			
CARBON DISULFIDE			
CARBON TETRACHLORIDE			
CHLOROBENZENE			
CHLORODIBROMOMETHANE			
CHLOROETHANE			
CHLOROFORM			
CHLOROMETHANE			
CHLOROTRIFLUOROETHENE			
CIS-1,2-DICHLOROETHENE	1 U	0.50 U	0.50 U
CIS-1,3-DICHLOROPROPENE			
CYCLOHEXANE			
DIBROMOMETHANE			
DICHLORODIFLUOROMETHANE			
ETHYLBENZENE			
HEXACHLOROBUTADIENE			
ISOPROPYLBENZENE			
M+P-XYLENES			
METHYL ACETATE			
METHYL CYCLOHEXANE			
METHYL TERT-BUTYL ETHER			
METHYLENE CHLORIDE			
NAPHTHALENE			
N-BUTYLBENZENE			
N-PROPYLBENZENE			
O-XYLENE			
SEC-BUTYLBENZENE			
STYRENE			
TERT-BUTYLBENZENE			
TETRACHLOROETHANE			
TETRACHLOROETHENE			
TOLUENE			
TOTAL XYLENES			
TRANS-1,2-DICHLOROETHENE	1 U	0.50 U	0.50 U
TRANS-1,3-DICHLOROPROPENE			
TRICHLOROETHENE	1 U	0.50 U	0.50 U
TRICHLOROFLUOROMETHANE			
VINYL CHLORIDE	1 U	0.50 U	0.50 U

Appendix G
Current and Historical VOCs Analytical Results
Legend
2023 Annual Long Term Monitoring Report
Components Cleaning Facility
Kennedy Space Center, Florida

Notes
All results are in micrograms per liter (µg/L)

Definitions
CCF = Components Cleaning Facility
ft bls = feet below land surface
ID = identification
VOC = volatile organic compound

Qualifiers
D = Compound identified in an analysis at a secondary dilution factor.
E = Compound's concentration exceeds the calibration range of the instrument at this dilution.
I = The reported value is between the laboratory method detection limit and the practical quantitation limit.
J = analyte was detected at an estimated value.
J3 = Estimated value; value may not be accurate. Spike recovery or relative percentage difference outside of criteria.
N = analyte was detected at an estimated value.
Q = Sample held beyond the accepted holding time
U = analyte was not detected, value is the limit of quantitation.

APPENDIX H

ADVANCE DATA PACKAGES

This page was intentionally left blank.

HGL *Restoring the Environment. Protecting Our Future.*

November 22, 2023

Ms. Natasha Darre
NASA
Mail Code SI-E2
Building K6-1547 (Logistics Facility)
Room 2910A
Kennedy Space Center, Florida 32899-0001

Subject: 2023 Annual Long-Term Monitoring (LTM), Components Cleaning Facility (CCF) West, Solid Waste Management Unit (SWMU) #030, Kennedy Space Center (KSC), Florida

Dear Ms. Darre:

Please find an electronic copy of the CCF West advance data package (ADP), Revision 1 enclosed. The ADP presents the following:

- Site history and Background;
- Review of Corrective Action Objective;
- Summary of 2023 LTM activities and results;
- Conclusions, path forward, recommendations; and
- Consensus statements.

The objective of the ADP and a concise summary are presented herein.

OBJECTIVE

The objective of the ADP is to summarize and present the 2023 Annual LTM activities and results. Additionally, the ADP includes the proposed LTM well network, sample frequency, and proposed groundwater investigation around well cluster IW0003.

MONITORING WELL INSTALLATION

On April 6, 2023, monitoring well IW0092 was installed using direct push technology (DPT). The well was constructed using of 1-inch diameter PVC Sch. 40 pipe; 0.010 inch slot screen installed at 40 to 50 feet (ft) below land surface (bls). The well provides a sentinel monitoring point in the southwest quadrant of the toe of the CCF West volatile organic compound (VOC) plume, as well as the northwest quadrant of the 516S West (SWMU #100) VOC plume. The well was installed in accordance with the Brevard County and Volusia County

FLORIDA OPERATIONS
2405 N. Courtenay Parkway, Suite 203
Merritt Island, Florida 32953
407-737-7881

Health Departments and St. Johns River Water Management Districts rules and guidelines.

2023 ANNUAL LTM ACTIVITIES

The 2023 LTM activities were conducted in accordance with the recommendations presented and approved at the February 2023 KSC Remediation Team (KSCRT) meeting. The 2023 annual groundwater sampling event was conducted between April 24 and May 1, 2023. Groundwater samples were collected from 36 monitoring wells during the sampling event and analyzed for the following site contaminants of concern (COCs) by U.S. Environmental Protection Agency (EPA) Method SW846-8260B: trichloroethene (TCE), cis-1,2-dichloroethene (cDCE), trans-1,2-dichloroethene (tDCE), and vinyl chloride (VC). A groundwater sample was re-collected from IW0003S on May 28, 2023, to confirm a natural attenuation default concentration (NADC) exceedance of TCE detected in the original sample collected on April 28, 2023.

Groundwater level measurements were collected from all accessible on-site monitoring wells (48 wells total) during the annual sampling event on April 24, 2023 (considered the dry season) and again on September 12, 2023 (considered the wet season). A consensus was reached at the February 2023 KSCRT meeting to abandon IW0031 due to an obstruction at 10 ft below top of casing. The well is tentatively scheduled to be abandoned in early 2024.

2023 Site-Wide Groundwater Elevations and Flow Direction:

The groundwater level measurements were used to assess the hydraulic gradient and flow direction of the site's surficial aquifer. Groundwater flow directions were evaluated for wells with screen bottom depths of 12 to 15 ft bls; 25 to 30 ft bls; 35 to 40 ft bls; 45 to 50 ft bls; 55 to 57 ft bls; and 65 to 76 ft bls. Groundwater flow contour maps for each zone, during each semiannual water levels measurements event, are presented as attachments (Figure 1 through 12). Groundwater flow at CCF West is predominantly to the west and is consistent with historical data.

2023 LTM Results Summary:

The detection of TCE at IW0003S on April 28, 2023 (493 micrograms per liter [µg/L]) exceeded the NADC of 300 µg/L. To confirm the NADC exceedance, the sample was re-collected from IW0003S on May 24, 2023. The May 2023 result of 807 µg/L confirmed the NADC exceedance. No other NADC exceedances of site COCs were detected.

No groundwater cleanup target level (GCTL) exceedances of tDCE were detected. Various GCTL exceedances of site COCs (TCE, cDCE, and VC) were detected, and are summarized below:

- TCE above GCTL at 5 wells:
    - Highest detection at IW0003IS (84.5 µg/L). Remaining 4 detections above the GCTL were under 20 µg/L.
- cDCE above GCTL at 2 wells:
    - Highest detection at IW0003S (133 µg/L in the sample collected on May 24, 2023), followed by IW0062 (93.8 µg/L).
- VC above GCTL at 14 wells:
    - Highest detection at IW0082 (78.4 µg/L); followed by IW0045 (41.9 µg/L); IW0090 (28.9 µg/L); and IW0064 and IW00670 (both 22.7 µg/L). Remaining 9 detections above the GCTL were under 20 µg/L.

Mann-Kendall Statistical Trend Analyses

A Mann-Kendall (M-K) trend analysis was conducted for each analyte at a given well detected at a concentration greater than the GCTL or NADC. The entire period of record for the given well was analyzed. Half of the reporting limit was used as a proxy concentration for non-detect results. The M-K trend analysis was not conducted for wells with three of fewer data points.

The M-K analysis for TCE showed no trend at IW0003S, IW0045, and IW0062 but showed a decreasing trend at IW0003IS and IW0046. When only evaluating the last six sampling events, the TCE trend changed to increasing at IW0003S; and stable at IW0045 and IW0062.

The M-K analysis for cDCE showed no trend at IW0003S but a decreasing trend at IW0062. Evaluation of only the last six sampling events at IW0003S resulted in no change.

The M-K analysis for VC identified a decreasing trend at IW0042 IW0045, IW0059, IW0063, and IW0067; and a probably decreasing trend at IW0037. A probably increasing trend was identified for IW0064. A stable trend was identified for IW0070; and no trend was identified for IW0005ID, IW0029ID, and IW0061. When only the last six sampling events are evaluated, the M-K analysis identified an increasing trend for IW0005ID and a decreasing trend for IW0061.

CONCLUSIONS

Various GCTL exceedances of TCE, cDCE, and VC were detected in 2023. The concentration of TCE increased to above the NADC at IW0003S for the first time since January 2000. The 2023 annual sampling event confirmed remaining concentrations of site COCs within the former air sparge treatment area of influence (formerly CCF Hot Spot 1) remain below their respective NADCs. Monitoring well IW0003S is outside the former air sparge treatment area of influence.

PATH FORWARD

In response to the NADC exceedance of TCE detected at IW0003S in 2023, further investigation is scheduled for groundwater near IW0003S. The investigation is planned for early 2024. The investigation shall be conducted as follows:

- One soil core will be collected to a depth of 30 ft bls next to IW0003S for lithologic characterization.
- Up to five days of a DPT groundwater investigation around well cluster IW0003 will be conducted.
- All DPT locations and screen intervals will be selected based on evaluation of the subsurface geology (soil core).
- The proposed DPT sample locations will be presented as a basket item at the next KSCRT meeting (early 2024).
- Up to 75 groundwater samples shall be analyzed by a mobile laboratory using EPA Method 8260B for VOCs.

The investigation and analytical data will be presented to the KSCRT via the 2024 LTM Report and associated ADP. The next groundwater event shall be conducted in 2024 as follows:

- Collect groundwater samples from 36 monitoring wells and analyze for site COCs (TCE, cDCE, tDCE, and VC) by EPA Method 8260B.
- Water level measurements will be collected from up to 48 monitoring wells annually during the sampling event.
    - Abandonment of IW0031 (tentatively scheduled during the groundwater investigation regarding IW0003S);
- Document monitoring activities into a LTM Report and submit to Florida Department of Environmental Protection.
- Document LTM activities in an ADP and present results to the KSCRT.

CONSENSUS STATEMENTS

Given the 2023 annual groundwater monitoring results, the following consensus statements are proposed:

1. Proposed LTM Monitoring Well Network.
    a) Sample 36 wells for site COCs (TCE, cDCE, tDCE, and VC) by EPA Method 8260B (IW0003S, IW0003IS, IW0003ID, IW0004IS, IW0005ID, IW0011IS, IW0011ID, IW0029ID, IW0037, IW0042, IW0045, IW0046, IW0059, IW0061, IW0062, IW0063, IW0064, IW0067, IW0070, IW0079, IW0080S, IW0080IS, IW0081, IW0082, IW0083S, IW0083IS, IW0083ID, IW0084, IW0085, IW0086, IW0087, IW0088, IW0089, IW0090, IW0091, and IW0092)
    b) Collect water levels from 48 monitoring wells (IW0003S, IW0003IS, IW0003ID, IW0003D, IW0004IS, IW0004D, IW0005ID, IW0011IS, IW0011ID, IW0017S, IW0021S, IW0025IS, IW0029ID, IW0030, IW0032, IW0036, IW0037, IW0039, IW0042, IW0044, IW0045, IW0046, IW0059, IW0061, IW0062, IW0063, IW0064, IW0067, IW0068, IW0069, IW0070, IW0079, IW0080S, IW0080IS, IW0081, IW0082, IW0083S, IW0083IS, IW0083ID, IW0084, IW0085, IW0086, IW0087, IW0088, IW0089, IW0090, IW0091, and IW0092)
2. Proposed LTM frequency: annual sampling with annual water level measurements during the event.
3. Proposed soil lithology location.

Please call (813) 340-6256 should you have any questions.

Sincerely,

Richard Smith

Digitally signed by Richard Smith
Date: 2023.11.22 08:42:38 -05'00'

Richard Smith, P.E.

Senior Project Manager

HGL

Restoring the Environment.
Protecting Our Future.

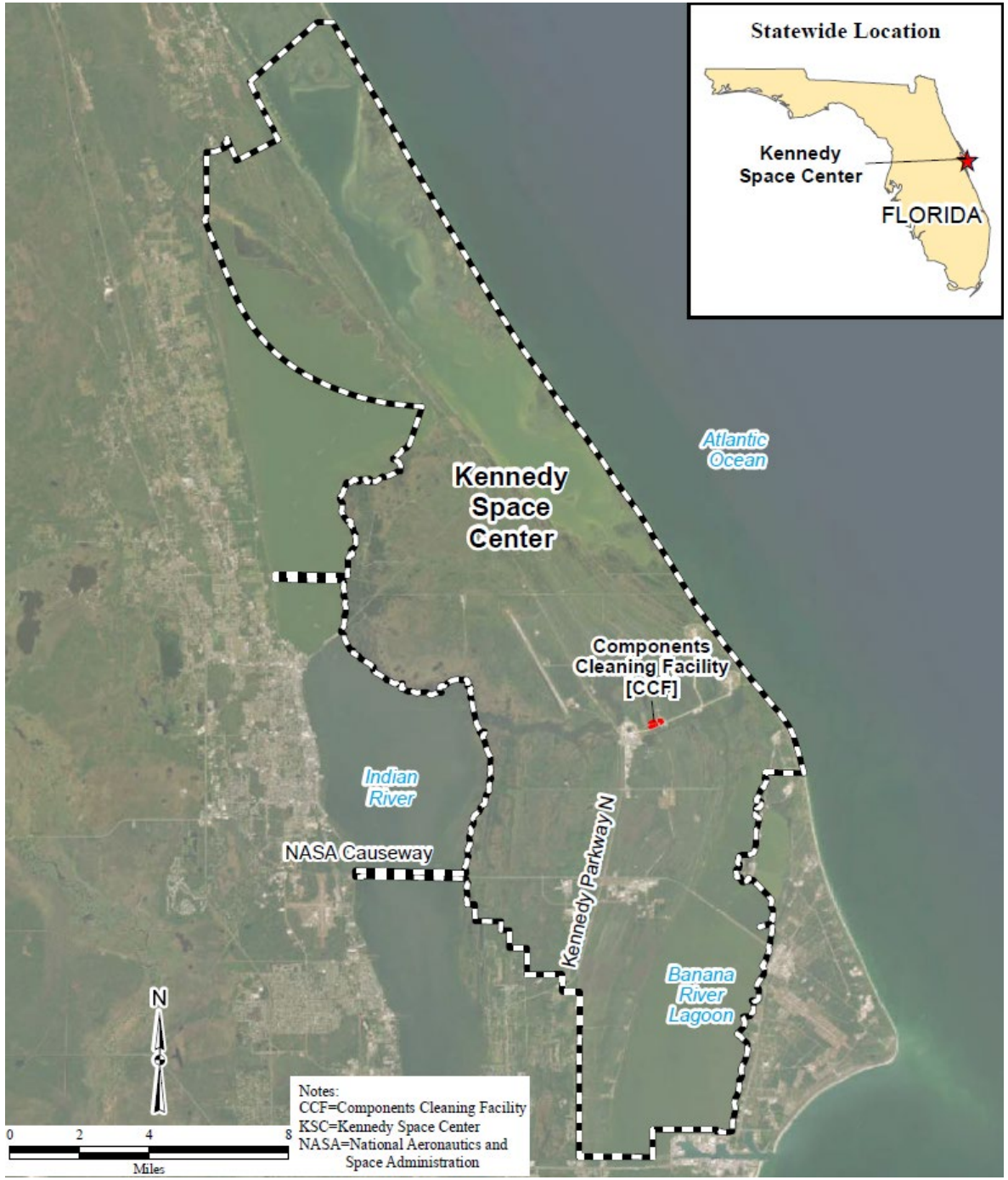
Components Cleaning Facility West - SWMU 030

2023 LONG-TERM MONITORING

NOVEMBER 2023

Presentation Overview

- Site Location
- Site Assessment History and Background
- Summary of 2023 Long-Term Monitoring (LTM) Event
- Path Forward
- Test Consensus:
  1. Proposed 2024 LTM Monitoring Well (MW) Network; and
  2. Proposed 2024 LTM frequency.
  3. Proposed Soil Lithology Location.



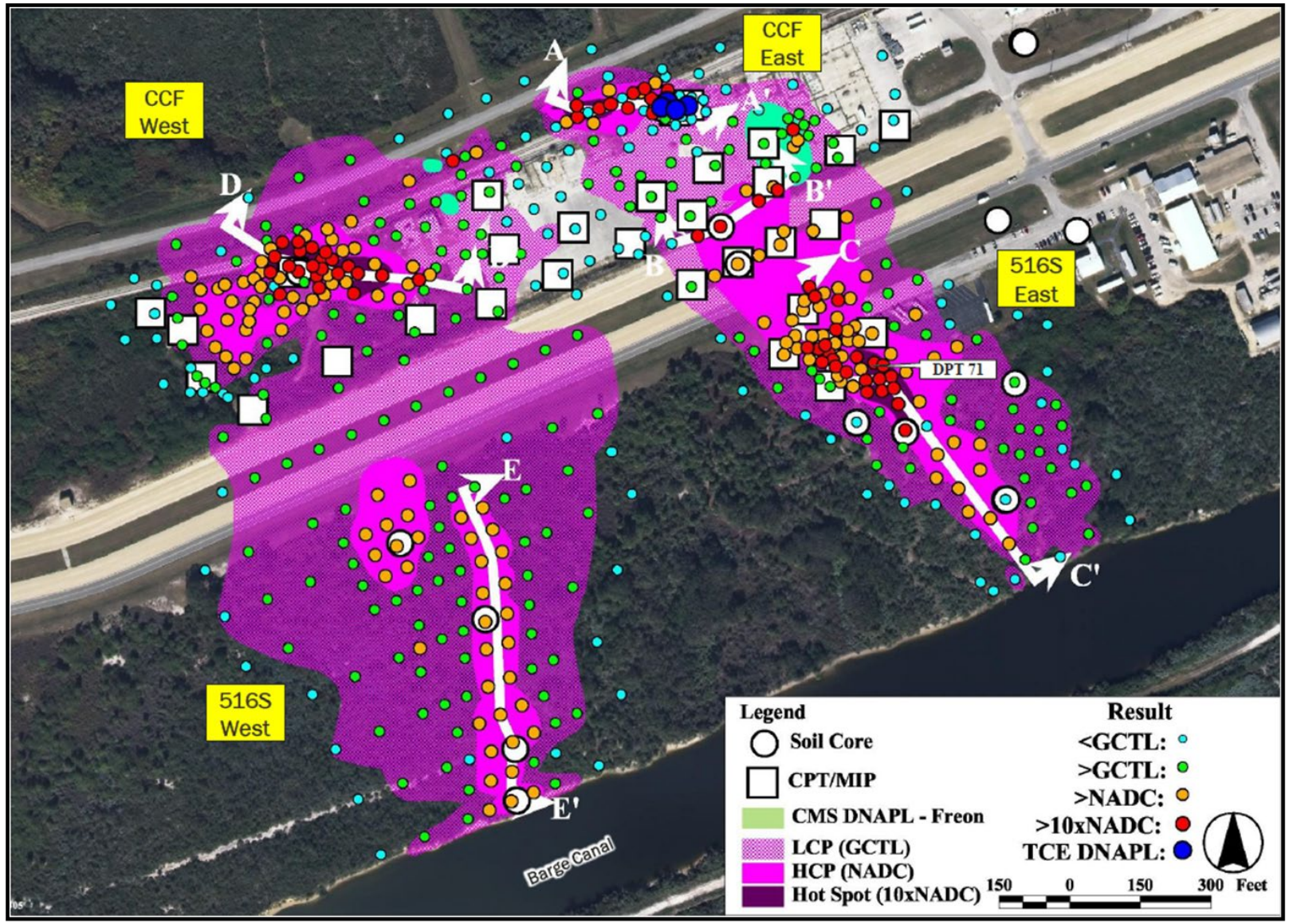
Site Location

- Components Cleaning Facility (CCF) West is located within the Launch Complex 39 Area of Kennedy Space Center (KSC).
- The site is at the northwest corner of the intersection of Saturn Causeway and Fluid Servicing Road.
- The site is approximately 14 acres in size.

Site Layout

- CCF West refers to the section of the site that is approximately 1/4 mile west of Saturn Causeway and Fluid Servicing Road.
- To the south of CCF West is SWMU 100 (Area South of K7-0516 – 516S West).

2010 Site Characterization Plume Map (Tetra Tech, Inc., 2022)



5 Tetra Tech, Inc. 2022. *Annual Update on the Interim Measure Operation, Maintenance, and Monitoring at Area South of K7-516 and Interim Groundwater Monitoring of 516S and Eastern Components Cleaning Facility. May.*

Site Layout

- CCF West is part of a comingled volatile organic compound (VOC) plume located to the south (516S West) (Tetra Tech, Inc., 2022).
- Tetra Tech, Inc. manages east side of CCF and Area South of K7-0516 (516S)

Site Assessment History & Background

- **1962**: CCF was constructed.
  - Function – Cleaning and refurbishment of hardware with associated laboratory.
  - Operations phased out in early 2000's.
- **1994 - 1997**: Resource Conservation and Recovery Act Facility Investigation activities were conducted to determine the extent and characterization of the contaminants.
- **2002 - 2004**: Interim Corrective Measure conducted for what is now Hot Spot 2 (HS 2); then called K7-514 Shallow Source Area.
- **2004**: Removal of contaminated sediments from north and south ditches. Excavation of K7-514 source area.
- **2005 - 2010**: Air sparge (AS) system operated across the site to include a portion of the Hot Spot 1 (HS 1) location on the west side of the site.
- **2011 - 2012**: System decommissioned & additional investigation conducted.
- **2013**: CCF HS-1 Air Sparging Interim Measure (IM) Work Plan (IMWP) submitted by Tetra Tech using 2006-2011 groundwater data for system design.

Site Assessment History & Background

- **2016**: Direct-push technology (DPT) groundwater sampling conducted across HS-1 demonstrated change in plume conditions since the development of the IMWP (Tetra Tech, 2013).
  - KSC Remediation Team (KSCRT) approved Implementation WP including partial re-design of the AS system.
- **2017**: AS System Construction in July and full operation initiated.
  - System constructed with 4 Zones and a total of 47 AS wells.
    - Zone 1 consisted of 17 AS wells.
    - Zones 2, 3, and 4 consisted of 10 AS wells each.
- **2018**: Installation of additional 6 AS wells in Zone 3 and an additional 8 AS wells in Zone 4.
- **2019**: Installation of 8 additional Performance MWs.
  - AS system re-started March 2019.
- **2020**: September 2019-May 2020 Operations, Maintenance and Monitoring results presented to the KSCRT.
  - DPT groundwater sampling was recommended.

Site Assessment History & Background

- **2021**: The March 2021 DPT groundwater investigation showed no natural attenuation default concentration (NADC) exceedances within treatment area.
  - June 2021 - AS system decommissioned.
  - September 2021 - transition to LTM recommended at KSCRT.
- **2022**: January/February 2022 - Installation of 16 wells; abandonment of 12 wells; and completion of 2 semiannual LTM groundwater sampling events.
- **2023**: February - Transitioned to annual LTM with semiannual water levels as recommended at the February 2023 KSCRT meeting.

Corrective Action Objective

- Overall Corrective Action Objective for the site is to reduce concentrations of constituents of concern (COCs) to below their respective State of Florida groundwater cleanup target levels (GCTLs):
    - trichloroethene (TCE)
    - cis-1,2-dichloroethene (cDCE)
    - trans-1,2-dichloroethene (tDCE)
    - vinyl chloride (VC)
- The GCTL criteria are from the Final Technical Report: Development of Cleanup Target Levels for Chapter 62-777, Florida Administrative Code.

2023 Monitoring Well Installation Activities

- On April 6, 2023, IW0092 was installed in accordance with the recommendation presented at the February 2023 KSCRT meeting.
- IW0092 provides a sentinel monitoring point in the southwest quadrant of the toe of the CCF West VOC plume, as well as northwest quadrant of 516S West VOC plume.
- The well was constructed using 1-inch diameter PVC Sch. 40 pipe; 0.010 slot screen installed at 40 to 50 feet (ft) below land surface (bls); and a 2-ft x 2-ft well pad with a 3-ft, 6-inch diameter outer PVC casing.
- IW0092 was developed using a centrifugal pump until the water was clear (approx. 51 gallons total).

IW0092 Installation Activities

Photo of driller installing MW screen. Vehicle Assembly Building (VAB) pictured in background.

Photo of driller adding 20/30 silica sand for filter pack.

Photo of MW development.

2023 LTM Activities

- The 2023 LTM activities were conducted in accordance with the recommendations presented and approved at the February 2023 KSCRT meeting.
- Annual sampling was conducted between April 24 and May 1, 2023.
  - Groundwater samples were collected from 36 MWs during the sampling event and analyzed for site COCs (TCE, cDCE, tDCE, and VC) by Method 8260B.
  - A groundwater sample was re-collected from IW0003S on May 28, 2023, to confirm the NADC exceedance of TCE detected in the original sample collected on April 28, 2023.
- Water levels were collected from all accessible on-site MWs (48 wells total) during the annual sampling event on April 24, 2023 (dry season) and September 12, 2023 (wet season).
  - Consensus was reached at the February 2023 KSCRT meeting to abandon IW0031 due to an obstruction at 10 ft below top of casing. The well is tentatively scheduled to be abandoned early 2024.

2023 LTM Network

Legend

- Monitoring Well (Water Level Only)
- Monitoring Well (Collected Sample and Water Level)
- New Monitoring Well (Collected Sample and Water Level)
- Proposed Monitoring Well for Abandonment
- [xx-xx] Screen Interval in ft bls. Sample collected at the Mid-point of the Screen
- Swale
- Fence
- Railroad
- Site Boundary

Notes:
All monitoring wells begin with prefix, CCF-
CCF=Components Cleaning Facility
ft bls=feet below land surface
LTM=Long Term Monitoring
KSC=Kennedy Space Center

2023 LTM Network

Screen Bottom Depths 12 to 15 ft bls	
IW0003S	3-13
IW0017S	2-12
IW0021S	5-15
IW0079	5-15
IW0080S	5-15

Screen Bottom Depths 25 to 30 ft bls	
IW0025IS	20-30
IW0037	20-30
IW0062	15-25
IW0080IS	15-25
IW0081	15-25
IW0082	15-25
IW0083S	15-25

Screen Bottom Depths 35 to 40 ft bls	
IW0003IS	25-35
IW0004IS	27-37
IW0011IS	25-35
IW0036	25-35
IW0042	30-40
IW0083IS	25-35
IW0084	25-35

Screen Bottom Depths 45 to 50 ft bls	
IW0029ID	40-45
IW0039	40-50
IW0044	40-50
IW0045	40-50
IW0046	40-50
IW0059	35-45
IW0061	35-45
IW0063	40-50
IW0064	40-50
IW0067	40-50
IW0068	40-50
IW0069	40-50
IW0083ID	35-45
IW0085	35-45
IW0086	35-45
IW0087	35-45
IW0088	35-45
IW0092	40-50

Screen Bottom Depths 55 to 57 ft bls	
IW0003ID	46-56
IW0005ID	46-56
IW0011ID	47-57
IW0070	45-55
IW0089	45-55
IW0090	45-55

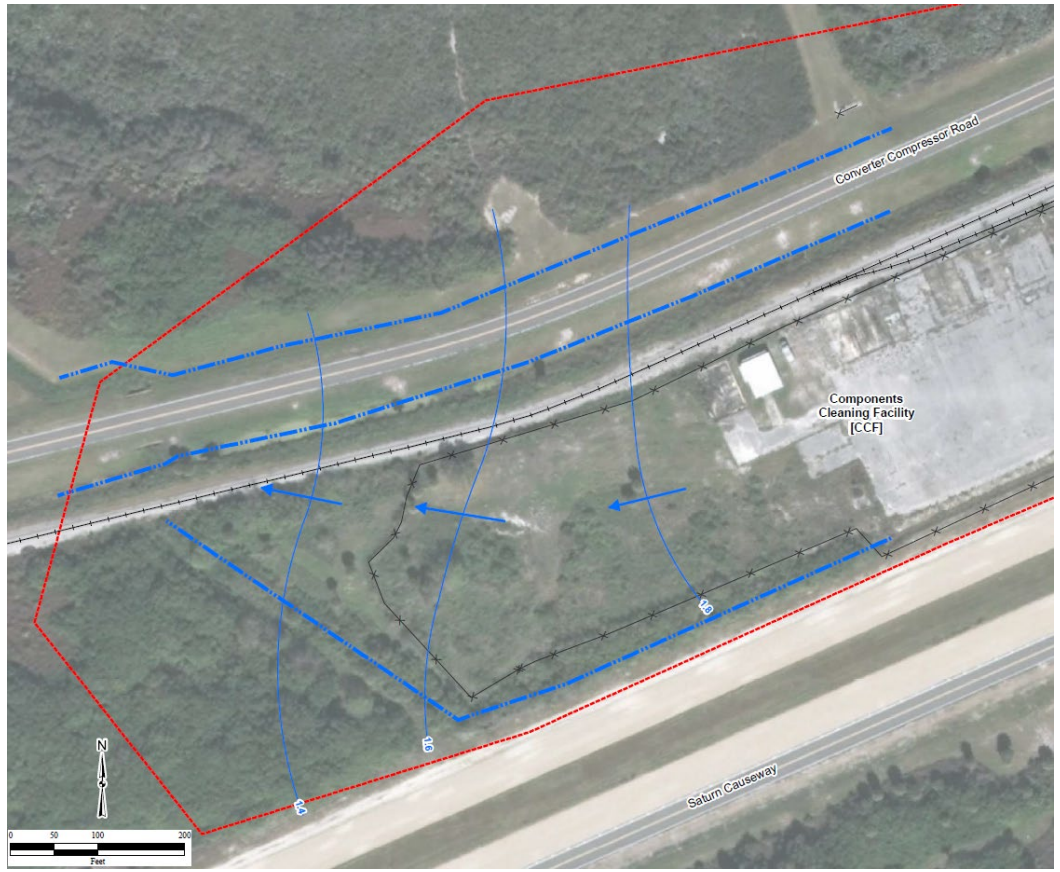
Screen Bottom Depths 65 to 67 ft bls	
IW0030	57-67
IW0031	57-67
IW0032	57-67
IW0091	55-65

Screen Bottom Depths 76 ft bls	
IW0003D	71-76
IW0004D	71-76

Existing	Sample and Water Level Collected
New	Sample and Water Level Collected
Existing	Water Level Collected
Existing	MW to be Abandoned

2023 Site-Wide Groundwater Elevations and Flow Direction

Compiled Groundwater Elevations and Flow Direction September 2023



- The groundwater level measurements were used to assess the hydraulic gradient and flow direction of the site's surficial aquifer.
- Water level measurements from April 24, 2023 (dry season) and September 12, 2023 (wet season) were used to develop groundwater contours.
  - Groundwater flow direction was evaluated for wells with screen bottom depths of 12 to 15 ft bls; 25 to 30 ft bls; 35 to 40 ft bls; 45 to 50 ft bls; 55 to 57 ft bls; and 65 to 76 ft bls.
  - Groundwater flow contours for each zone are presented as attachments (**Figure 1** through **12**).
- Groundwater flow at CCF West is predominantly to the west and is consistent with historical data.

2023 Annual LTM Analytical Results Summary

- Various GCTL exceedances of site COCs (TCE, cDCE, and VC) were detected. No GCTL exceedances of tDCE were detected.
  - TCE:
    - GCTL exceedances detected at five MWs; ranging from 10.2 micrograms per liter (µg/L) to 84.5 µg/L.
    - NADC exceedance detected at IW0003S (493 µg/L). To confirm the NADC exceedance, a sample was re-collected on May 24, 2023, and the result was 807 µg/L.
  - cDCE: GCTL exceedances detected at IW0003S (109 µg/L) and IW0062 (93.8 µg/L).
  - VC: GCTL exceedances detected at 14 MWs; ranging from 1.7 µg/L to 78.4 µg/L.

Historical TCE Results IW0003S

Sample Date	TCE (µg/L)
05/24/2023	807
04/28/2023	493
09/01/2022	85.8
02/03/2022	70.4
09/16/2010	65
04/17/2010	45
09/11/2009	6.6
05/14/2009	1.2
09/23/2008	3.9
04/09/2008	0.76 I
09/22/2007	0.32 I
07/24/2007	17
04/18/2007	0.81 I
12/19/2006	1 U
08/21/2006	3.31
06/15/2006	9.95
03/21/2006	2.11
12/27/2005	6.44
08/23/2005	2.11
06/08/2005	4.6
01/26/2001	1.6
08/08/2000	230
01/18/2000	12,000
06/09/1999	350 J
03/11/1999	820 J
11/09/1998	5,700

- Prior to 2023, TCE was last detected above the NADC of 300 µg/L at IW0003S in January 2000.
- The January 2000 concentration (12,000 µg/L) exceeded 10X the NADC (10xNADC) of 3,000 µg/L.

Qualifiers

I = The reported value is between the laboratory method detection limit and the practical quantitation limit.
J = analyte was detected at an estimated value.
U = analyte was not detected above the reporting limit.

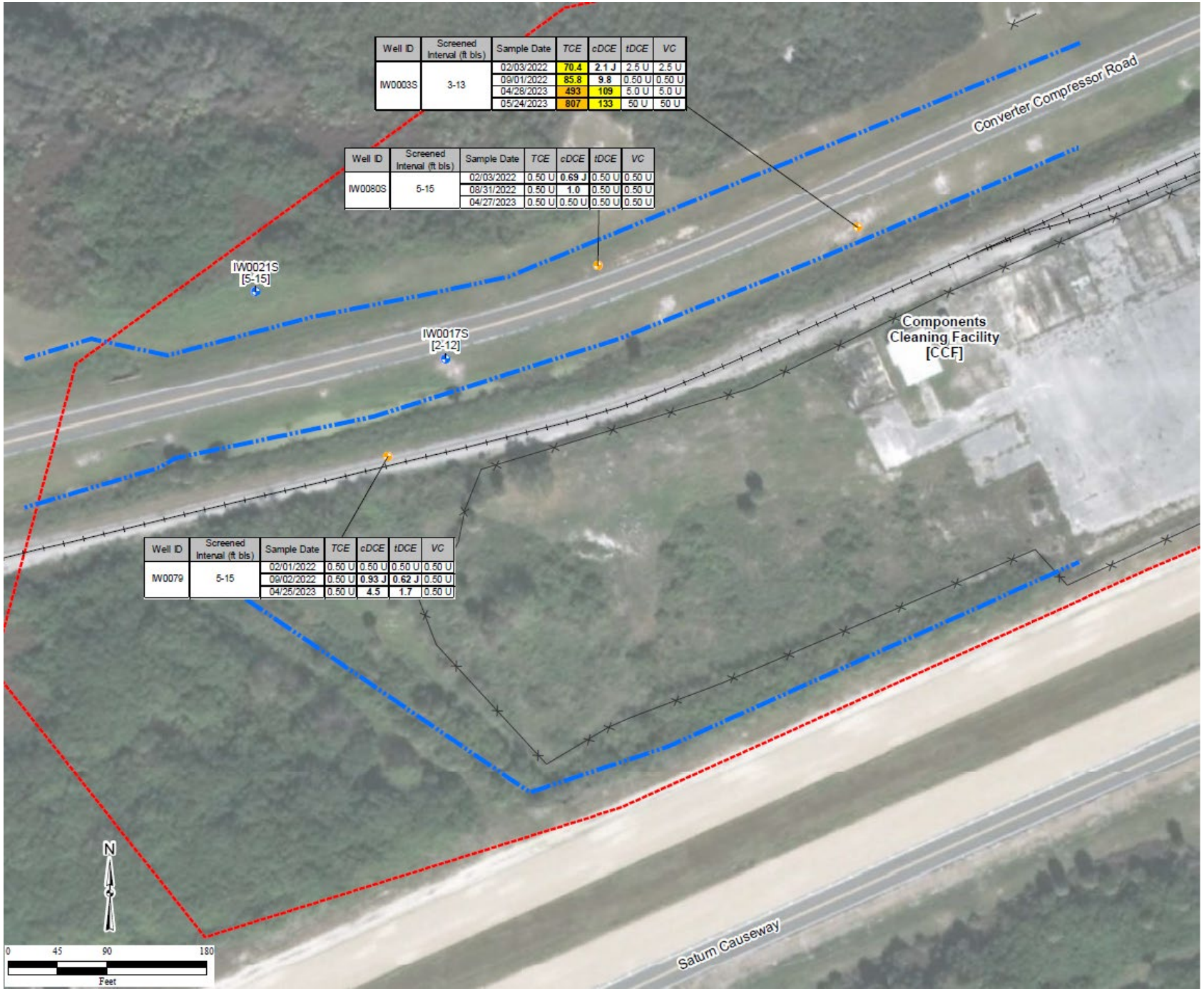
Criterion	TCE (µg/L)
10xNADC	3,000
NADC	300
GCTL	3

2023 Maximum Detections

COC	Maximum Detection (µg/L) April/May 2023
TCE	807
cDCE	133
tDCE	65
VC	78.4

COC	NADC (µg/L)	GCTL (µg/L)
TCE	300	3
cDCE	700	70
tDCE	1,000	100
VC	100	1

Analytical Results Summary Sample Depths at 8 to 10 ft bls



Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0003S	3-13	02/03/2022	70.4	2.1 J	2.5 U	2.5 U
		09/01/2022	85.8	9.8	0.50 U	0.50 U
		04/28/2023	493	109	5.0 U	5.0 U
		05/24/2023	807	133	50 U	50 U

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0080S	5-15	02/03/2022	0.50 U	0.69 J	0.50 U	0.50 U
		08/31/2022	0.50 U	1.0	0.50 U	0.50 U
		04/27/2023	0.50 U	0.50 U	0.50 U	0.50 U

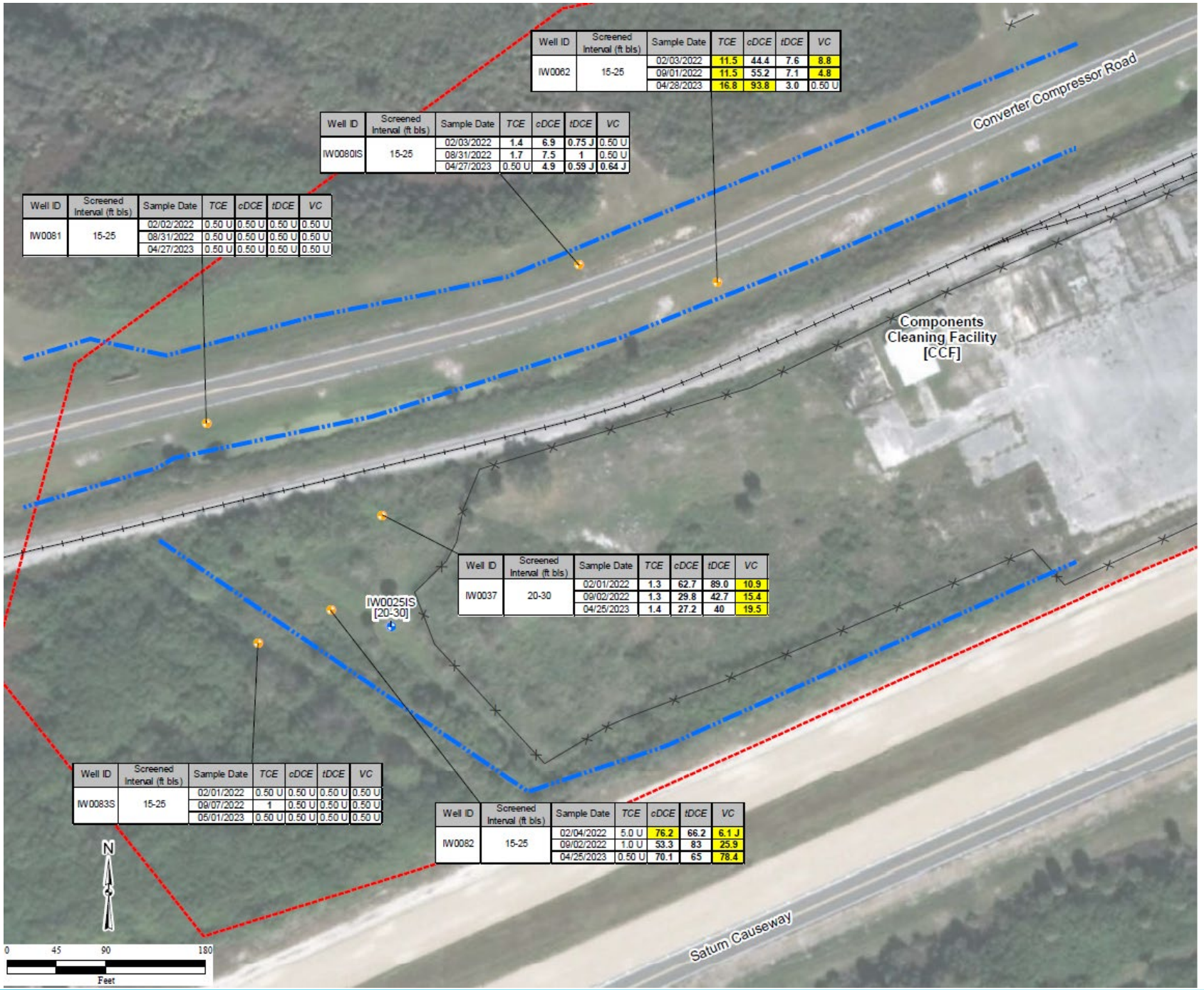
Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0079	5-15	02/01/2022	0.50 U	0.50 U	0.50 U	0.50 U
		09/02/2022	0.50 U	0.93 J	0.62 J	0.50 U
		04/25/2023	0.50 U	4.5	1.7	0.50 U

Legend

- Monitoring Well (Collected Water Level Only)
- Monitoring Well (Collected Sample and Water Level)
- [xx-xx] Screen Interval in ft bls.
- Fence
- Railroad
- Swale
- Site Boundary

Analyte	TCE	cDCE	tDCE	VC
GCTL (µg/L)	3	70	100	1
NADC (µg/L)	300	700	1000	100

Notes:
All monitoring wells begin with prefix, CCF-
Groundwater samples were collected at the mid-point of the screened interval.
The GCTL criteria are from the Final Technical Report: Development of Cleanup Target Levels for Chapter 62-777, Florida Administrative Code, University of Florida, February 2005.
Bolded results indicate the analyte was detected at the specified concentration.
Yellow=the analyte exceeded the GCTL
Orange=the analyte exceeded the NADC
CCF=Components Cleaning Facility
cDCE=cis-1,2-dichloroethene
ft bls=feet below land surface
GCTL=groundwater cleanup target level
ID=Identification
J=analyte was detected at an estimated value
KSC=Kennedy Space Center
LTM=Long Term Monitoring
µg/L = micrograms per liter
NADC=natural attenuation default concentration
tDCE = trans-1,2-dichloroethene
TCE=trichloroethene
VC=vinyl chloride
U=analyte was not detected above the reporting limit



Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0062	15-25	02/03/2022	11.5	44.4	7.6	8.8
		09/01/2022	11.5	55.2	7.1	4.8
		04/28/2023	16.8	93.8	3.0	0.50 U

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0080IS	15-25	02/03/2022	1.4	6.9	0.75 J	0.50 U
		08/31/2022	1.7	7.5	1	0.50 U
		04/27/2023	0.50 U	4.9	0.59 J	0.64 J

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0081	15-25	02/02/2022	0.50 U	0.50 U	0.50 U	0.50 U
		08/31/2022	0.50 U	0.50 U	0.50 U	0.50 U
		04/27/2023	0.50 U	0.50 U	0.50 U	0.50 U

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0037	20-30	02/01/2022	1.3	62.7	89.0	10.9
		09/02/2022	1.3	29.8	42.7	15.4
		04/25/2023	1.4	27.2	40	19.5

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0083S	15-25	02/01/2022	0.50 U	0.50 U	0.50 U	0.50 U
		09/07/2022	1	0.50 U	0.50 U	0.50 U
		05/01/2023	0.50 U	0.50 U	0.50 U	0.50 U

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0082	15-25	02/04/2022	5.0 U	76.2	66.2	6.1 J
		09/02/2022	1.0 U	53.3	83	25.9
		04/25/2023	0.50 U	70.1	65	78.4

Analytical Results Summary Sample Depths at 20 to 25 ft bls

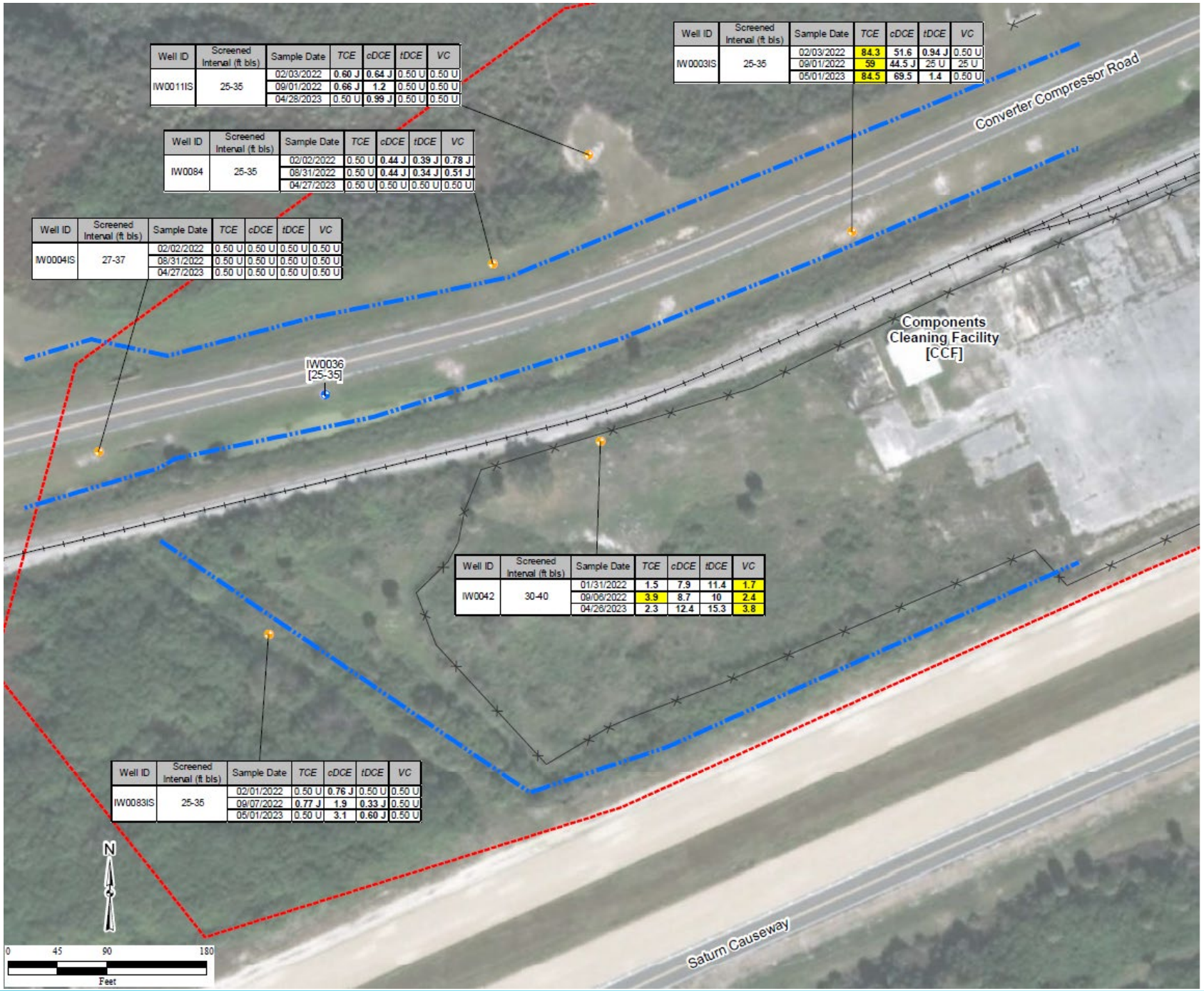
Legend

- Monitoring Well (Collected Water Level Only)
- Monitoring Well (Collected Sample and Water Level)
- [xx-xx] Screen Interval in ft bls.
- Fence
- Railroad
- Swale
- Site Boundary

Analyte	TCE	cDCE	tDCE	VC
GCTL (µg/L)	3	70	100	1
NADC (µg/L)	300	700	1000	100

Notes:
All monitoring wells begin with prefix, CCF-
Groundwater samples were collected at the mid-point of the screened interval.
The GCTL criteria are from the Final Technical Report: Development of Cleanup Target Levels for Chapter 62-777, Florida Administrative Code, University of Florida, February 2005.
Bolded results indicate the analyte was detected at the specified concentration.
Yellow=the analyte exceeded the GCTL
CCF=Components Cleaning Facility
cDCE=cis-1,2-dichloroethene
ft bls=feet below land surface
GCTL=groundwater cleanup target level
ID=Identification
J=analyte was detected at an estimated value
KSC=Kennedy Space Center
LTM=Long Term Monitoring
µg/L = micrograms per liter
NADC=natural attenuation default concentration
tDCE = trans-1,2-dichloroethene
TCE=trichloroethene
VC=vinyl chloride
U=analyte was not detected above the reporting limit

Analytical Results Summary Sample Depths at 30 to 35 ft bls



Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0011IS	25-35	02/03/2022	0.60 J	0.64 J	0.50 U	0.50 U
		09/01/2022	0.66 J	1.2	0.50 U	0.50 U
		04/26/2023	0.50 U	0.99 J	0.50 U	0.50 U

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0003IS	25-35	02/03/2022	84.3	51.6	0.94 J	0.50 U
		09/01/2022	59	44.5 J	25 U	25 U
		05/01/2023	84.5	69.5	1.4	0.50 U

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0084	25-35	02/02/2022	0.50 U	0.44 J	0.39 J	0.78 J
		08/31/2022	0.50 U	0.44 J	0.34 J	0.51 J
		04/27/2023	0.50 U	0.50 U	0.50 U	0.50 U

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0004IS	27-37	02/02/2022	0.50 U	0.50 U	0.50 U	0.50 U
		08/31/2022	0.50 U	0.50 U	0.50 U	0.50 U
		04/27/2023	0.50 U	0.50 U	0.50 U	0.50 U

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0042	30-40	01/31/2022	1.5	7.9	11.4	1.7
		09/06/2022	3.9	8.7	10	2.4
		04/26/2023	2.3	12.4	15.3	3.8

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0083IS	25-35	02/01/2022	0.50 U	0.76 J	0.50 U	0.50 U
		09/07/2022	0.77 J	1.9	0.33 J	0.50 U
		05/01/2023	0.50 U	3.1	0.60 J	0.50 U

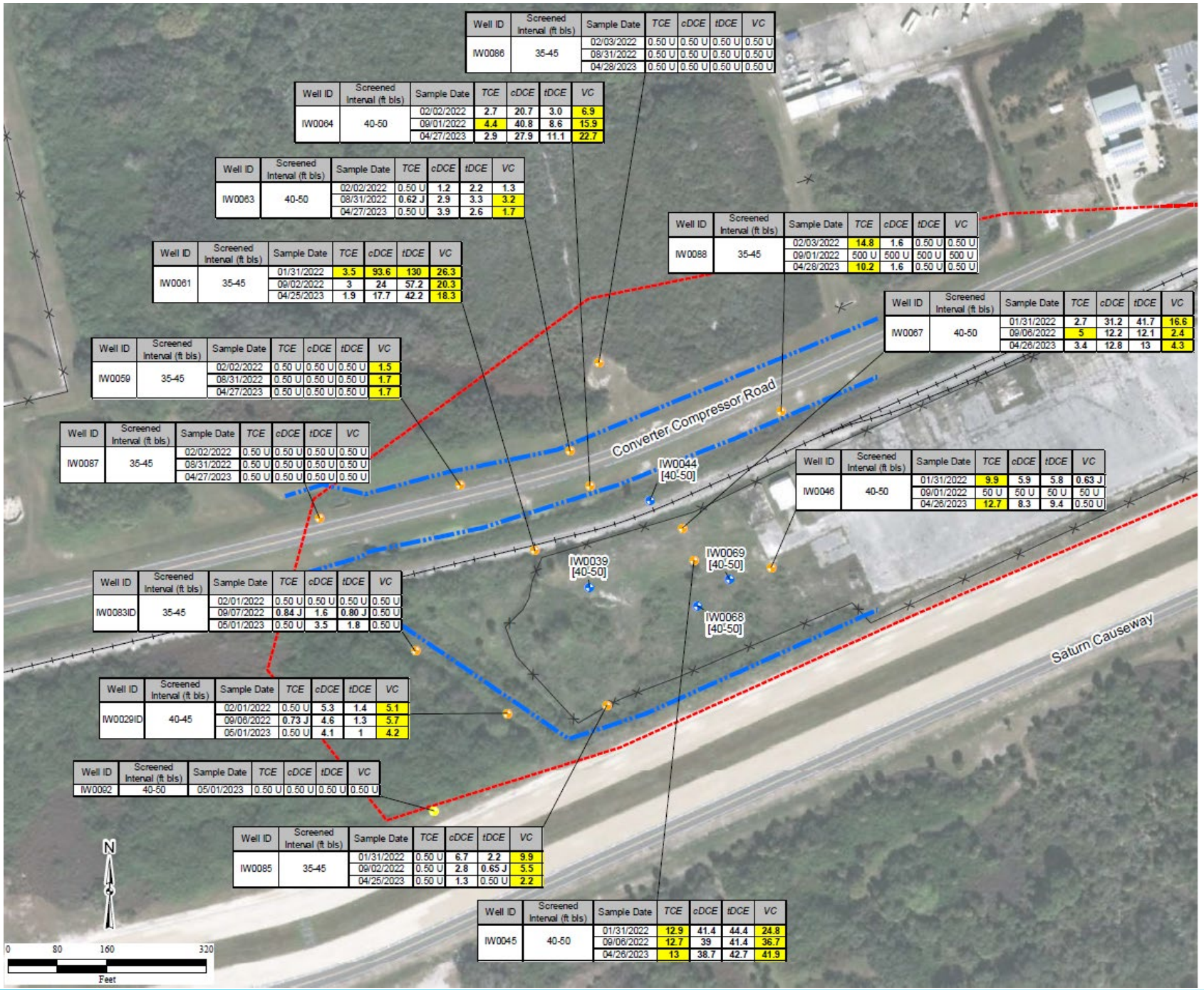
Legend

- Monitoring Well (Collected Water Level Only)
- Monitoring Well (Collected Sample and Water Level)
- [xx-xx] Screen Interval in ft bls.
- Fence
- Railroad
- Swale
- Site Boundary

Analyte	TCE	cDCE	tDCE	VC
GCTL (µg/L)	3	70	100	1
NADC (µg/L)	300	700	1000	100

Notes:
All monitoring wells begin with prefix, CCF-
Groundwater samples were collected at the mid-point of the screened interval.
The GCTL criteria are from the Final Technical Report: Development of Cleanup Target Levels for Chapter 62-777, Florida Administrative Code, University of Florida, February 2005.
Bolded results indicate the analyte was detected at the specified concentration.
Yellow=the analyte exceeded the GCTL
CCF=Components Cleaning Facility
cDCE=cis-1,2-dichloroethene
ft bls=feet below land surface
GCTL=groundwater cleanup target level
ID=Identification
J=analyte was detected at an estimated value
KSC=Kennedy Space Center
LTM=Long Term Monitoring
µg/L = micrograms per liter
NADC=natural attenuation default concentration
tDCE = trans-1,2-dichloroethene
TCE=trichloroethene
VC=vinyl chloride
U=analyte was not detected above the reporting limit

Analytical Results Summary Sample Depths at 40 to 45 ft bls



Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0086	35-45	02/03/2022	0.50 U	0.50 U	0.50 U	0.50 U
		08/31/2022	0.50 U	0.50 U	0.50 U	0.50 U
		04/28/2023	0.50 U	0.50 U	0.50 U	0.50 U

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0064	40-50	02/02/2022	2.7	20.7	3.0	6.9
		09/01/2022	4.4	40.8	8.6	15.9
		04/27/2023	2.9	27.9	11.1	22.7

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0063	40-50	02/02/2022	0.50 U	1.2	2.2	1.3
		08/31/2022	0.62 J	2.9	3.3	3.2
		04/27/2023	0.50 U	3.9	2.6	1.7

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0061	35-45	01/31/2022	3.5	93.6	130	26.3
		09/02/2022	3	24	57.2	20.3
		04/25/2023	1.9	17.7	42.2	18.3

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0088	35-45	02/03/2022	14.8	1.6	0.50 U	0.50 U
		09/01/2022	500 U	500 U	500 U	500 U
		04/28/2023	10.2	1.6	0.50 U	0.50 U

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0067	40-50	01/31/2022	2.7	31.2	41.7	16.6
		09/06/2022	5	12.2	12.1	2.4
		04/26/2023	3.4	12.8	13	4.3

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0059	35-45	02/02/2022	0.50 U	0.50 U	0.50 U	1.5
		08/31/2022	0.50 U	0.50 U	0.50 U	1.7
		04/27/2023	0.50 U	0.50 U	0.50 U	1.7

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0087	35-45	02/02/2022	0.50 U	0.50 U	0.50 U	0.50 U
		08/31/2022	0.50 U	0.50 U	0.50 U	0.50 U
		04/27/2023	0.50 U	0.50 U	0.50 U	0.50 U

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0046	40-50	01/31/2022	9.9	5.9	5.8	0.63 J
		09/01/2022	50 U	50 U	50 U	50 U
		04/26/2023	12.7	8.3	9.4	0.50 U

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0083ID	35-45	02/01/2022	0.50 U	0.50 U	0.50 U	0.50 U
		09/07/2022	0.84 J	1.6	0.80 J	0.50 U
		05/01/2023	0.50 U	3.5	1.8	0.50 U

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0029ID	40-45	02/01/2022	0.50 U	5.3	1.4	5.1
		09/06/2022	0.73 J	4.6	1.3	5.7
		05/01/2023	0.50 U	4.1	1	4.2

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0092	40-50	05/01/2023	0.50 U	0.50 U	0.50 U	0.50 U

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0085	35-45	01/31/2022	0.50 U	6.7	2.2	9.9
		09/02/2022	0.50 U	2.8	0.65 J	5.5
		04/25/2023	0.50 U	1.3	0.50 U	2.2

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0045	40-50	01/31/2022	12.9	41.4	44.4	24.8
		09/06/2022	12.7	39	41.4	36.7
		04/26/2023	13	38.7	42.7	41.9

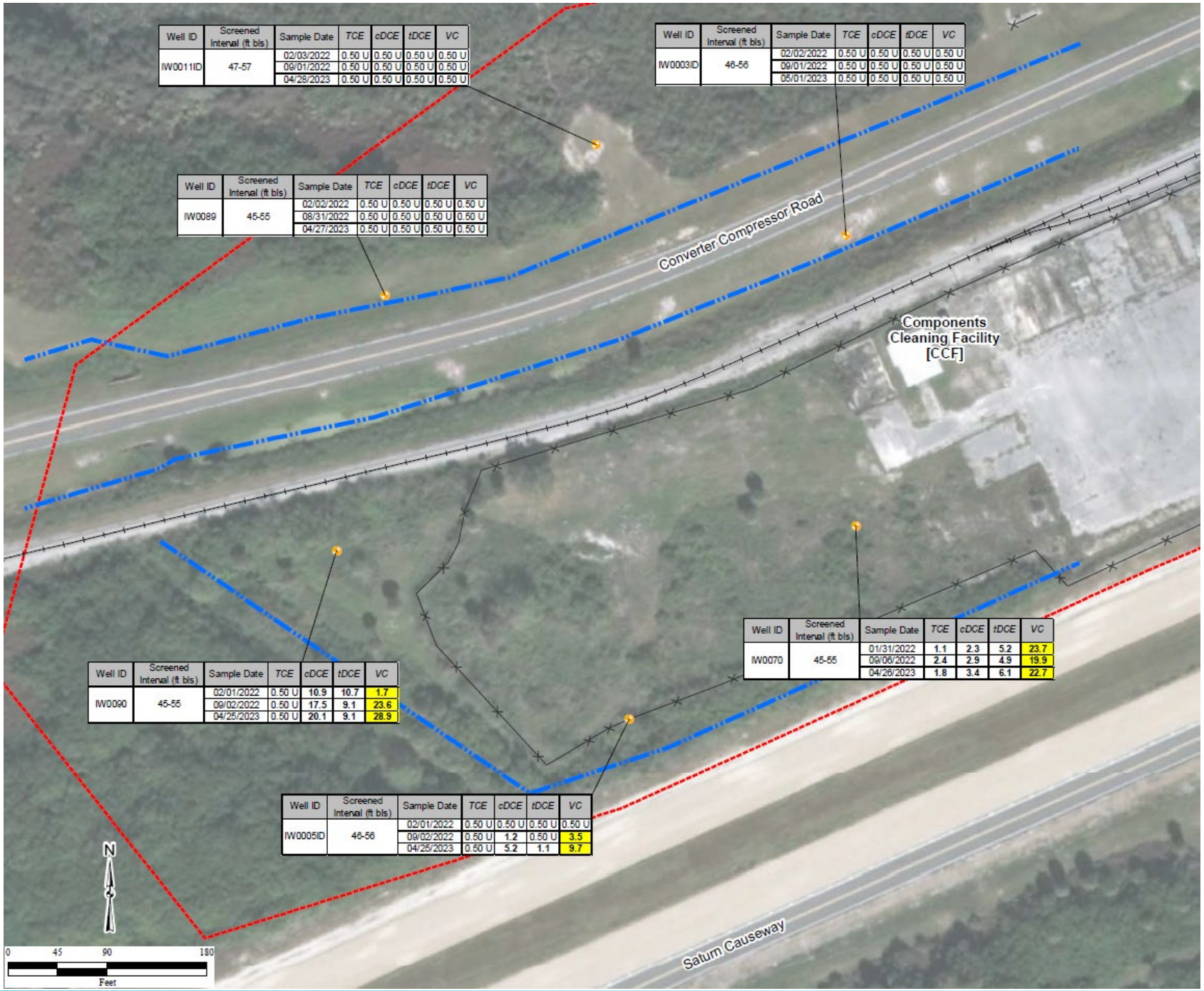
Legend

- Monitoring Well (Collected Water Level Only)
- Monitoring Well (Collected Sample and Water Level)
- New LTM Well (Collected Sample and Water Level)
- [xx-xx] Screen Interval in ft bls.
- Fence
- Railroad
- Swale
- Site Boundary

Analyte	TCE	cDCE	tDCE	VC
GCTL (µg/L)	3	70	100	1
NADC (µg/L)	300	700	1000	100

Notes:
All monitoring wells begin with prefix, CCF-
Groundwater samples were collected at the mid-point of the screened interval.
The GCTL criteria are from the Final Technical Report: Development of Cleanup Target Levels for Chapter 62-777, Florida Administrative Code, University of Florida, February 2005.
Bolded results indicate the analyte was detected at the specified concentration.
Yellow=the analyte exceeded the GCTL
CCF=Components Cleaning Facility
cDCE=cis-1,2-dichloroethene
ft bls=feet below land surface
GCTL=groundwater cleanup target level
ID=Identification
J=analyte was detected at an estimated value
KSC=Kennedy Space Center
LTM=Long Term Monitoring
µg/L = micrograms per liter
NADC=natural attenuation default concentration
tDCE = trans-1,2-dichloroethene
TCE=trichloroethene
VC=vinyl chloride
U=analyte was not detected above the reporting limit

Analytical Results Summary Sample Depths at 50 to 55 ft bls



Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0011ID	47-57	02/03/2022	0.50 U	0.50 U	0.50 U	0.50 U
		09/01/2022	0.50 U	0.50 U	0.50 U	0.50 U
		04/28/2023	0.50 U	0.50 U	0.50 U	0.50 U

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0003ID	46-56	02/02/2022	0.50 U	0.50 U	0.50 U	0.50 U
		09/01/2022	0.50 U	0.50 U	0.50 U	0.50 U
		05/01/2023	0.50 U	0.50 U	0.50 U	0.50 U

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0089	45-55	02/02/2022	0.50 U	0.50 U	0.50 U	0.50 U
		08/31/2022	0.50 U	0.50 U	0.50 U	0.50 U
		04/27/2023	0.50 U	0.50 U	0.50 U	0.50 U

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0090	45-55	02/01/2022	0.50 U	**10.9**	**10.7**	**1.7**
		09/02/2022	0.50 U	**17.5**	**9.1**	**23.6**
		04/25/2023	0.50 U	**20.1**	**9.1**	**28.9**

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0070	45-55	01/31/2022	**1.1**	**2.3**	**5.2**	**23.7**
		09/06/2022	**2.4**	**2.9**	**4.9**	**19.9**
		04/26/2023	**1.8**	**3.4**	**6.1**	**22.7**

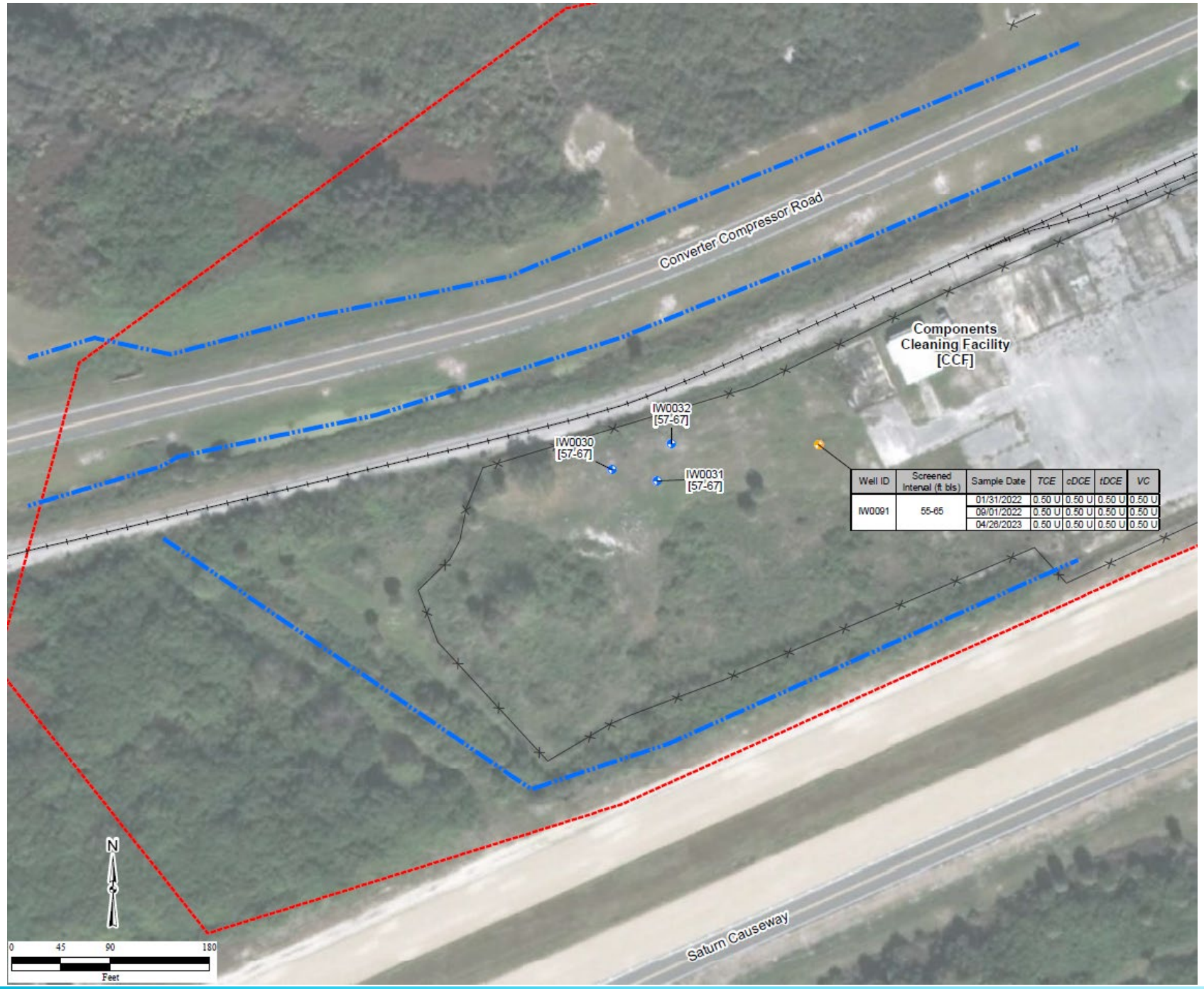
Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0005ID	46-56	02/01/2022	0.50 U	0.50 U	0.50 U	0.50 U
		09/02/2022	0.50 U	**1.2**	0.50 U	**3.5**
		04/25/2023	0.50 U	**5.2**	**1.1**	**9.7**

Legend

- Monitoring Well (Collected Sample and Water Level)
- [xx-xx] Screen Interval in ft bls.
- Fence
- Railroad
- Swale
- Site Boundary

Analyte	TCE	cDCE	tDCE	VC
GCTL (µg/L)	3	70	100	1
NADC (µg/L)	300	700	1000	100

Notes:
All monitoring wells begin with prefix, CCF-
Groundwater samples were collected at the mid-point of the screened interval.
The GCTL criteria are from the Final Technical Report: Development of Cleanup Target Levels for Chapter 62-777, Florida Administrative Code, University of Florida, February 2005.
Bolded results indicate the analyte was detected at the specified concentration.
Yellow=the analyte exceeded the GCTL
CCF=Components Cleaning Facility
cDCE=cis-1,2-dichloroethen
ft bls=feet below land surface
GCTL=groundwater cleanup target level
ID=Identification
J=analyte was detected at an estimated value
KSC=Kennedy Space Center
LTM=Long Term Monitoring
µg/L = micrograms per liter
NADC=natural attenuation default concentration
tDCE = trans-1,2-dichloroethene
TCE=trichloroethene
VC=vinyl chloride
U=analyte was not detected above the reporting limit



Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0091	55-65	01/31/2022	0.50 U	0.50 U	0.50 U	0.50 U
		09/01/2022	0.50 U	0.50 U	0.50 U	0.50 U
		04/26/2023	0.50 U	0.50 U	0.50 U	0.50 U

Analytical Results Summary Sample Depth at 60 ft bls

Legend

- Monitoring Well (Collected Water Level Only)
- Monitoring Well (Collected Sample and Water Level)
- Monitoring Well Abandoned
- [xx-xx] Screen Interval in ft bls.
- Fence
- Railroad
- Swale
- Site Boundary

Analyte	TCE	cDCE	tDCE	VC
GCTL (µg/L)	3	70	100	1
NADC (µg/L)	300	700	1000	100

Notes:
All monitoring wells begin with prefix, CCF-
Groundwater samples were collected at the mid-point of the screened interval.
The GCTL criteria are from the Final Technical Report: Development of Cleanup Target Levels for Chapter 62-777, Florida Administrative Code, University of Florida, February 2005.
CCF=Components Cleaning Facility
cDCE=cis-1,2-dichloroethene
ft bls=feet below land surface
GCTL=groundwater cleanup target level
ID=Identification
J=analyte was detected at an estimated value
KSC=Kennedy Space Center
LTM=Long Term Monitoring
µg/L = micrograms per liter
NADC=natural attenuation default concentration
tDCE = trans-1,2-dichloroethene
TCE=trichloroethene
VC=vinyl chloride
U=analyte was not detected above the reporting limit

Statistical Analyses (Mann-Kendall)

- A Mann-Kendall (M-K) trend analysis was conducted for each analyte at a given well detected at a concentration greater than the GCTL or NADC.
  - The entire period of record for the given well was analyzed.
  - Half of the reporting limit was used as a proxy concentration for non-detect results.
- A M-K trend analysis was not conducted for wells with three or fewer data points.
  - Accordingly, a M-K trend analysis was not conducted for IW0082, IW0085, IW0088, and IW0090 (wells were recently installed in 2022).
  - No GCTL exceedances of tDCE were detected in 2023, thus M-K trend analyses were not conducted for tDCE.

M-K Trend Analyses

Well ID (CCF-)	Screened Interval (ft bls)	TCE	cDCE	VC
Sample Depths 8 to 10 ft bls				
IW0003S	3-13	No Trend	No Trend	--
Sample Depths 20 to 25 ft bls				
IW0037	20-30	--	--	Probably Decreasing
IW0062	15-25	No Trend	Decreasing	--
Sample Depths 30 to 35 ft bls				
IW0003IS	25-35	Decreasing	--	--
IW0042	30-40	--	--	Decreasing
Sample Depths 40 to 45 ft bls				
IW0029ID	40-45	--	--	No Trend
IW0045	40-50	No Trend	--	Decreasing
IW0046	40-50	Decreasing	--	--
IW0059	35-45	--	--	Decreasing
IW0061	35-45	--	--	No Trend
IW0063	40-50	--	--	Decreasing
IW0064	40-50	--	--	Probably Increasing
IW0067	40-50	--	--	Decreasing
Sample Depths 50 to 55 ft bls				
IW0005ID	46-56	--	--	No Trend
IW0070	45-55	--	--	Stable

Notes
-- indicates M-K analysis not conducted; analyte less than GCTL

Statistical Analyses (M-K, cont.)

- TCE:
  - When only the last six sampling events are evaluated, the trend at:
    - IW0003S (originally no trend) is increasing; and
    - IW0045 and IW0062 (both originally no trend) is stable.
  - VC:
    - When only the last six sampling events are evaluated, the trend at:
      - IW0005ID (originally no trend) is increasing; and
      - IW0061 (originally no trend) is decreasing.

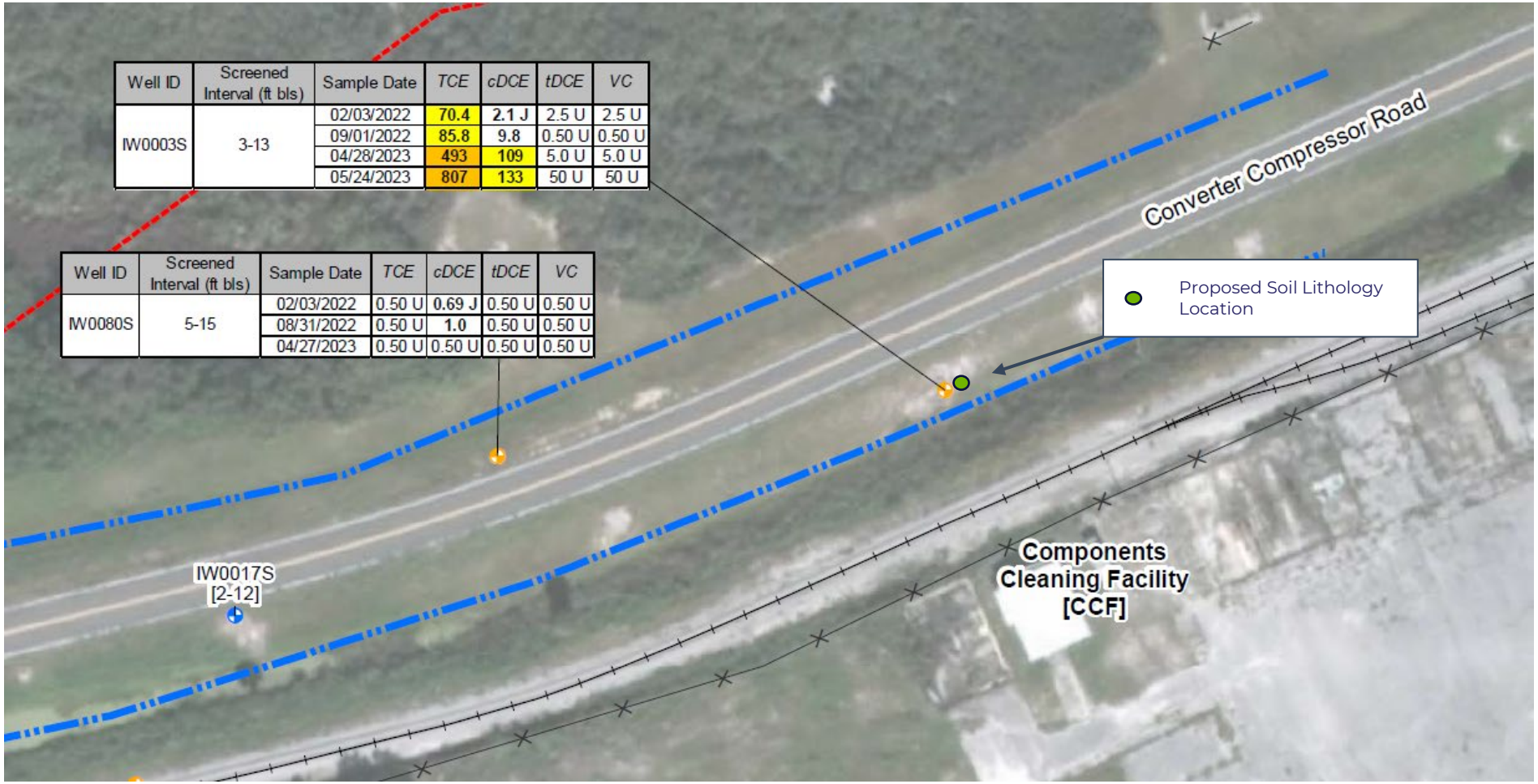
2023 Conclusions

- Various GCTL exceedances of TCE, cDCE, and VC were detected in 2023.
- The concentration of TCE at IW0003S increased to above the NADC (first time since January 2000).
- The 2023 annual sampling event confirmed remaining concentrations of site COCs within the former AS treatment area of influence (AOI) (formerly CCF Hot Spot 1) remain below their respective NADCs.
  - Monitoring well IW0003S is outside the former AS AOI.

Path Forward / Recommendations

- In response to the NADC exceedance of TCE detected at IW0003S in 2023, further investigation of groundwater is scheduled near IW0003S (early 2024).
- One soil core will be collected to a depth of 30 ft bls next to IW0003S for lithologic characterization.
- Up to five days of a DPT groundwater investigation around well cluster IW0003 will be conducted to delineate the NADC exceedance of TCE below NADC laterally and vertically.
  - Up to 75 groundwater samples shall be analyzed by a mobile laboratory using EPA Method 8260B for VOCs.
  - All DPT locations and screen intervals will be selected based on evaluation of the subsurface geology (soil core).
  - The proposed DPT locations will be presented as a basket item at the next KSCRT meeting (early 2024).
- The investigation and analytical data will be presented to the KSCRT via the 2024 LTM Report and associated Advance Data Package.

Proposed Soil Lithology Location



Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0003S	3-13	02/03/2022	70.4	2.1 J	2.5 U	2.5 U
		09/01/2022	85.8	9.8	0.50 U	0.50 U
		04/28/2023	493	109	5.0 U	5.0 U
		05/24/2023	807	133	50 U	50 U

Well ID	Screened Interval (ft bls)	Sample Date	TCE	cDCE	tDCE	VC
IW0080S	5-15	02/03/2022	0.50 U	0.69 J	0.50 U	0.50 U
		08/31/2022	0.50 U	1.0	0.50 U	0.50 U
		04/27/2023	0.50 U	0.50 U	0.50 U	0.50 U

Legend

- Monitoring Well (Collected Water Level Only)
- Monitoring Well (Collected Sample and Water Level)
- [xx-xx] Screen Interval in ft bls.
- Fence
- Railroad
- Swale
- Site Boundary

Analyte	TCE	cDCE	tDCE	VC
GCTL (µg/L)	3	70	100	1
NADC (µg/L)	300	700	1000	100

Notes:
All monitoring wells begin with prefix, CCF-
Groundwater samples were collected at the mid-point of the screened interval.
The GCTL criteria are from the Final Technical Report: Development of Cleanup Target Levels for Chapter 62-777, Florida Administrative Code, University of Florida, February 2005.
Bolded results indicate the analyte was detected at the specified concentration.
Yellow=the analyte exceeded the GCTL
Orange=the analyte exceeded the NADC
CCF=Components Cleaning Facility
cDCE=cis-1,2-dichloroethene
ft bls=feet below land surface
GCTL=groundwater cleanup target level
ID=Identification
J=analyte was detected at an estimated value
KSC=Kennedy Space Center
LTM=Long Term Monitoring
µg/L = micrograms per liter
NADC=natural attenuation default concentration
tDCE = trans-1,2-dichloroethene
TCE=trichloroethene
VC=vinyl chloride
U=analyte was not detected above the reporting limit

Path Forward / Recommendations cont.

- The next groundwater event shall be conducted in 2024:
  - Groundwater samples will be collected from 36 monitoring wells and analyzed for site COCs (TCE, cDCE, tDCE, and VC) using EPA Method 8260B
  - Water level measurements will be collected from up to 48 monitoring wells during the event.
  - The obstruction at IW0031 was confirmed during groundwater measurements in 2023. The well is tentatively scheduled to be abandoned during the investigation activities regarding IW0003S.

Proposed 2024 LTM Network

Screen Bottom Depths 12 to 15 ft bls	
IW0003S	3-13
IW0017S	2-12
IW0021S	5-15
IW0079	5-15
IW0080S	5-15

Screen Bottom Depths 25 to 30 ft bls	
IW0025IS	20-30
IW0037	20-30
IW0062	15-25
IW0080IS	15-25
IW0081	15-25
IW0082	15-25
IW0083S	15-25

Screen Bottom Depths 35 to 40 ft bls	
IW0003IS	25-35
IW0004IS	27-37
IW0011IS	25-35
IW0036	25-35
IW0042	30-40
IW0083IS	25-35
IW0084	25-35

Screen Bottom Depths 45 to 50 ft bls	
IW0029ID	40-45
IW0039	40-50
IW0044	40-50
IW0045	40-50
IW0046	40-50
IW0059	35-45
IW0061	35-45
IW0063	40-50
IW0064	40-50
IW0067	40-50
IW0068	40-50
IW0069	40-50
IW0083ID	35-45
IW0085	35-45
IW0086	35-45
IW0087	35-45
IW0088	35-45
IW0092	40-50

Screen Bottom Depths 55 to 57 ft bls	
IW0003ID	46-56
IW0005ID	46-56
IW0011ID	47-57
IW0070	45-55
IW0089	45-55
IW0090	45-55

Screen Bottom Depths 65 to 67 ft bls	
IW0030	57-67
IW0031	57-67
IW0032	57-67
IW0091	55-65

Screen Bottom Depths 76 ft bls	
IW0003D	71-76
IW0004D	71-76

Existing	Collect Sample and Water Level
Existing	Collect Water Level
Existing	MW to be Abandoned

Proposed 2024 LTM Network

Legend

- Monitoring Well (Water Level Only)
- Monitoring Well (Collect Sample and Water Level)
- Proposed Monitoring Well for Abandonment
- [xx-xx] Screen Interval in ft bls. Sample to be collected at the mid-point of the screen
- Swale
- Fence
- Railroad
- Site Boundary

Notes:
All monitoring wells begin with prefix, CCF-
CCF=Components Cleaning Facility
ft bls=feet below land surface
LTM=Long Term Monitoring
KSC=Kennedy Space Center

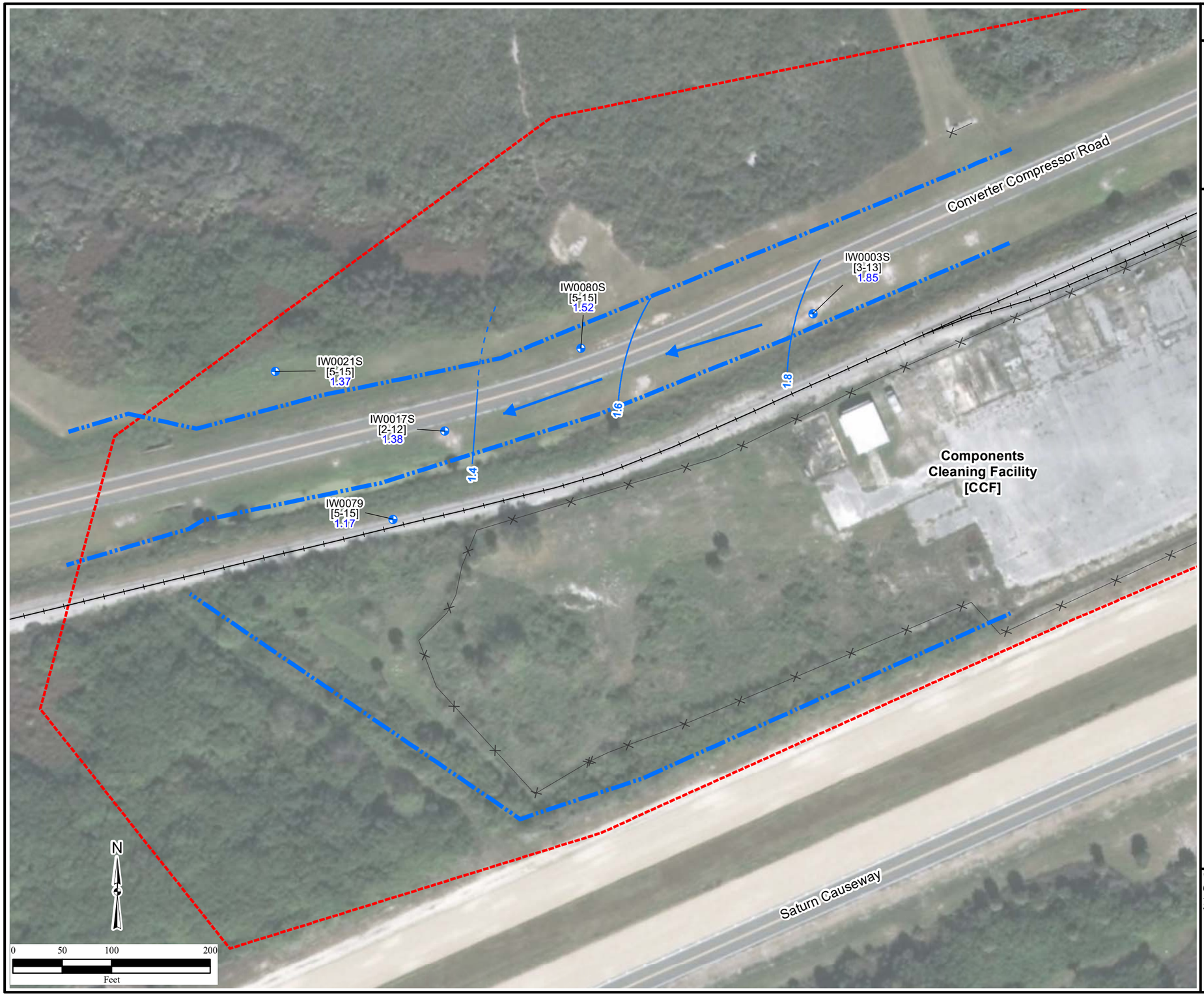
Test Consensus

1. Proposed 2024 LTM Monitoring Well Network:
   a) Sample 36 wells for site COCs (TCE, cDCE, tDCE, and VC) by EPA Method 8260B (IW0003S, IW0003IS, IW0003ID, IW0004IS, IW0005ID, IW0011IS, IW0011ID, IW0029ID, IW0037, IW0042, IW0045, IW0046, IW0059, IW0061, IW0062, IW0063, IW0064, IW0067, IW0070, IW0079, IW0080S, IW0080IS, IW0081, IW0082, IW0083S, IW0083IS, IW0083ID, IW0084, IW0085, IW0086, IW0087, IW0088, IW0089, IW0090, IW0091, and IW0092).
   b) Collect water levels from 48 monitoring wells (IW0003S, IW0003IS, IW0003ID, IW0003D, IW0004IS, IW0004D, IW0005ID, IW0011IS, IW0011ID, IW0017S, IW0021S, IW0025IS, IW0029ID, IW0030, IW0032, IW0036, IW0037, IW0039, IW0042, IW0044, IW0045, IW0046, IW0059, IW0061, IW0062, IW0063, IW0064, IW0067, IW0068, IW0069, IW0070, IW0079, IW0080S, IW0080IS, IW0081, IW0082, IW0083S, IW0083IS, IW0083ID, IW0084, IW0085, IW0086, IW0087, IW0088, IW0089, IW0090, IW0091, and IW0092).
2. Proposed 2024 LTM frequency: annual sampling with annual water level measurements during the event.
3. Proposed soil lithology location adjacent to IW0003S.

Thank you.

Attachments

Figure 1
Groundwater Elevations
Monitoring Well Screen Depths of 12 to 15 ft bls
April 27, 2023



Legend

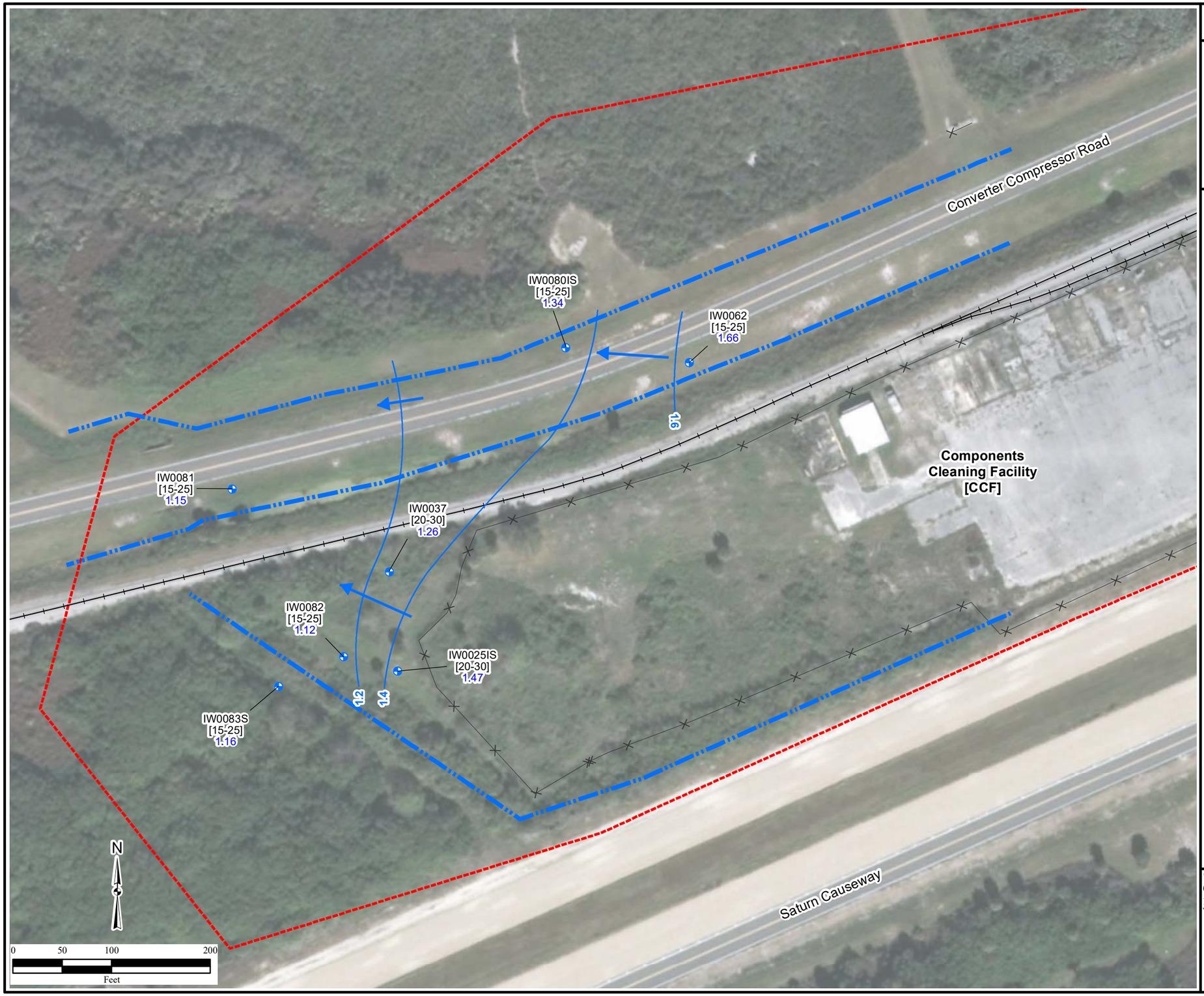
⊕	Monitoring Well
IW003S	Sample/Well Identification
[3-13]	Sample Collected at the Mid-point of the Screen
2.32	Groundwater Elevation (ft NAVD88) April 27, 2023
→	Groundwater Flow Direction
—1.2—	Groundwater Elevation Contour (ft bls, dashed where inferred)
×———	Fence
+—+—+	Railroad
▬·▬	Swale
▭	Site Boundary

Notes:
All monitoring wells begin with prefix, CCF-
Elevation is referenced to the North American Datum of 1988 (NAVD88).
Monitoring well screen depths between 12 and 15 ft bls.

CCF=Components Cleaning Facility
bls=below land surface
FL=Florida
ft=feet
KSC=Kennedy Space Center
NAVD=North American Vertical Datum

\\Srv-gst-01\hglgis\KSC_NS1002\CCF\Annual_GWMR\2023\(4-01)GWE_2020_12-15.mxd
10/13/2023 TB
Source: HGL, ArcGIS Online Imagery

Figure 2
Groundwater Elevations
Monitoring Well Screen Depths of 25 to 30 ft bls
April 27, 2023



Legend

●	Monitoring Well
IW0062	Sample/Well Identification
[15-25]	Sample Collected at the Mid-point of the Screen
1.66	Groundwater Elevation (ft NAVD88) April 27, 2023
→	Groundwater Flow Direction
—1.2—	Groundwater Elevation Contour (ft bls, dashed where inferred)
	Fence
	Railroad
	Swale
	Site Boundary

Notes:
All monitoring wells begin with prefix, CCF-
Elevation is referenced to the North American Datum of 1988 (NAVD88).
Monitoring well screen depths between 25 and 30 ft bls.

CCF=Components Cleaning Facility
bls=below land surface
FL=Florida
ft=feet
KSC=Kennedy Space Center
NAVD=North American Vertical Datum

\\Srv-gst-01\hglgis\KSC_NS1002\CCF\Annual_GWMR\2023\(4-02)GWE_2022_25-30.mxd
10/13/2023 TB
Source: HGL, ArcGIS Online Imagery

Figure 3
Groundwater Elevations
Monitoring Well Screen Depths of 35 to 40 ft bls
April 27, 2023

Legend

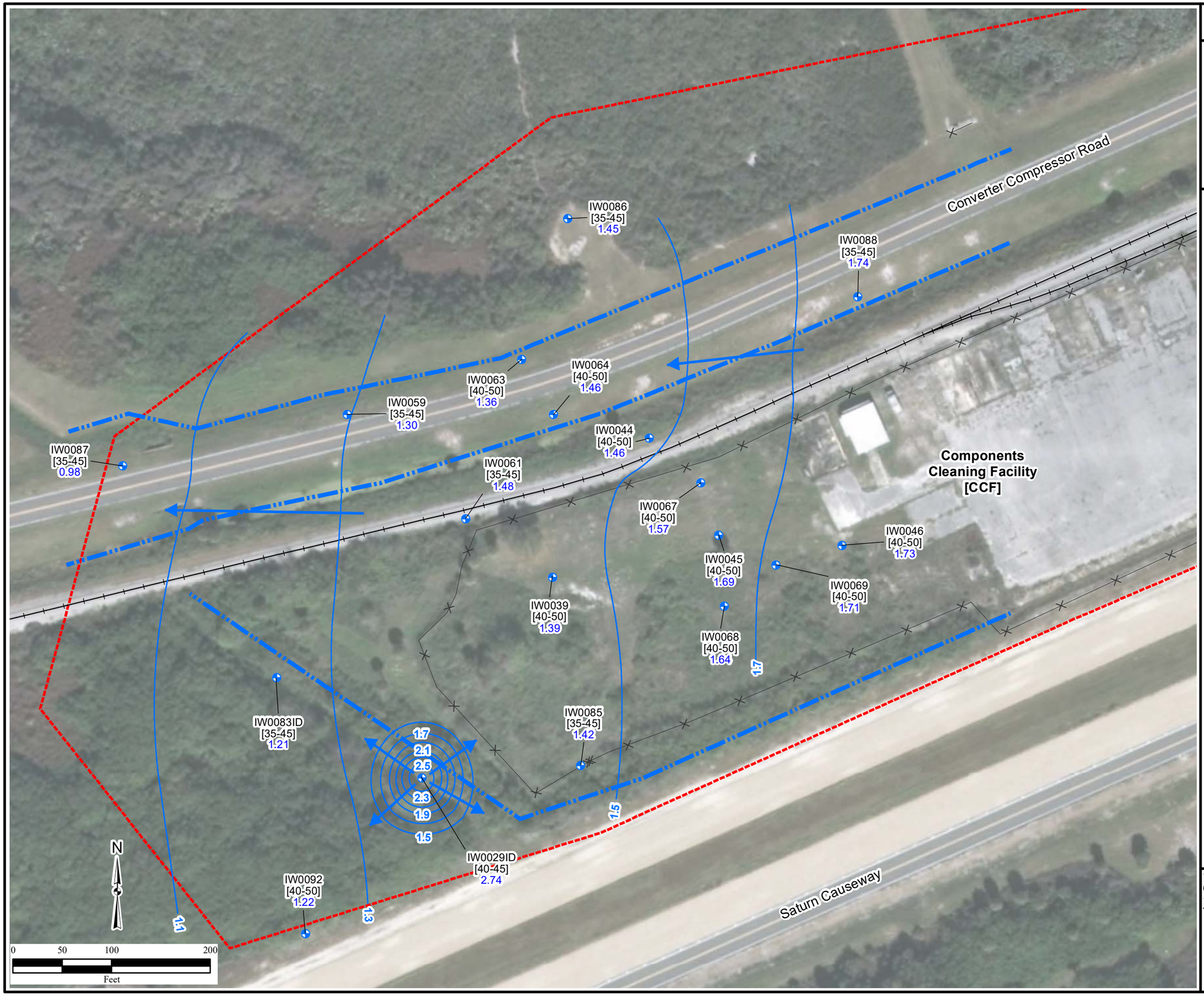
⊕	Monitoring Well
IW0003IS	Sample/Well Identification
[25-35]	Sample Collected at the Mid-point of the Screen
1.56	Groundwater Elevation (ft NAVD88) April 27, 2023
→	Groundwater Flow Direction
—1.5—	Groundwater Elevation Contour (ft bls, dashed where inferred)
×———	Fence
——+——+——	Railroad
▬·▬	Swale
▭	Site Boundary

Notes:
Elevation is referenced to the North American Datum of 1988 (NAVD88).
Monitoring wells are screened between 35 and 40 ft bls.

CCF=Components Cleaning Facility
bls=below land surface
FL=Florida
ft=feet
KSC=Kennedy Space Center
NAVD=North American Vertical Datum

\\Srv-gst-01\hglgis\KSC_NS1002\CCF\Annual_GWMR\2023\(4-03)GWE_2022_35-40.mxd
10/16/2023 TB
Source: HGL, ArcGIS Online Imagery

Figure 4
Groundwater Elevations
Monitoring Well Screen Depths of 45 to 50 ft bls
April 27, 2023



Legend

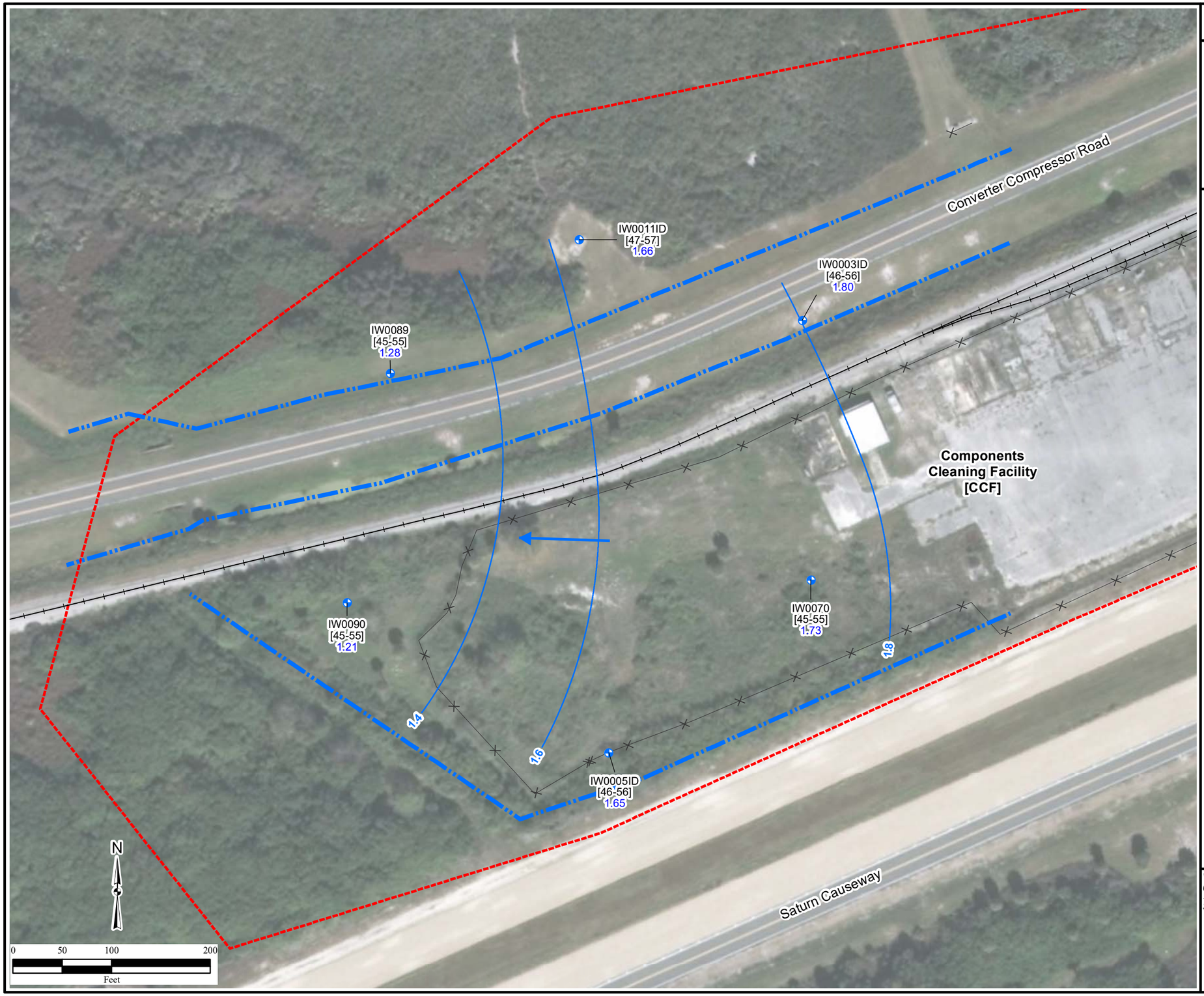
●	Monitoring Well
IW0067	Sample/Well Identification
[40-50]	Sample Collected at the Mid-point of the Screen
1.57	Groundwater Elevation (ft NAVD88) April 27, 2023
→	Groundwater Flow Direction
—1.7—	Groundwater Elevation Contour (ft bls, dashed where inferred)
×——	Fence
—+—+—	Railroad
—·—·—	Swale
▭	Site Boundary

Notes:
All monitoring wells begin with prefix, CCF-
Elevation is referenced to the North American Datum of 1988 (NAVD88).
Monitoring wells are screened between 45 and 50 ft bls.

CCF=Components Cleaning Facility
bls=below land surface
FL=Florida
ft=feet
KSC=Kennedy Space Center
NAVD=North American Vertical Datum

\\srv-gst-01\hglgis\KSC_NS1002\CCF\Annual_GWMR\2023\(4-04)GWE_2022_45-50.mxd
10/6/2023 TB
Source: HGL, ArcGIS Online Imagery

Figure 5
Groundwater Elevations
Monitoring Well Screen Depths of 55 to 57 ft bls
April 27, 2023



Legend

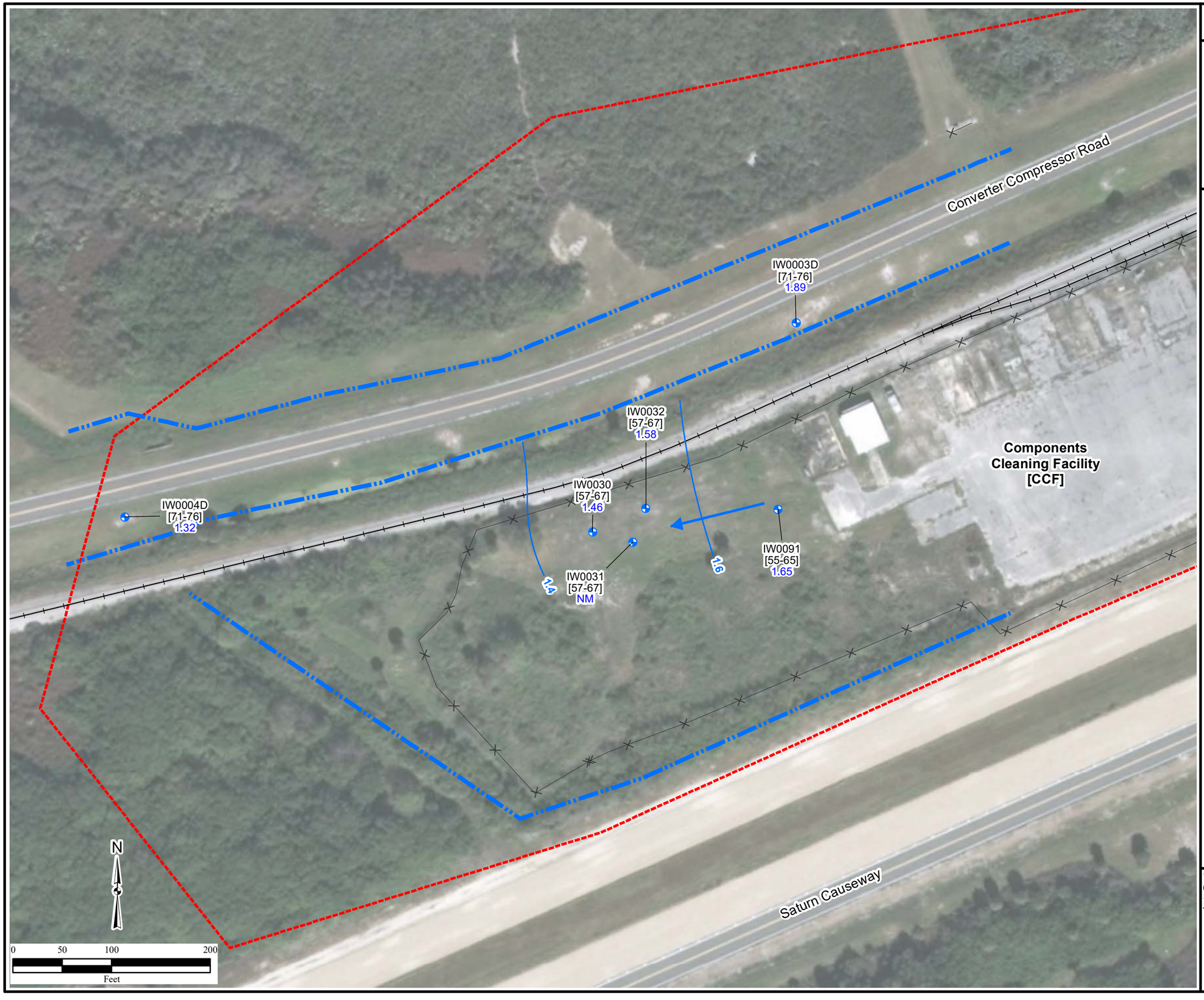
- Monitoring Well
- IW0003ID — Sample/Well Identification
- [46-56] — Sample Collected at the Mid-point of the Screen
- 1.80 — Groundwater Elevation (ft NAVD88) April 27, 2023
- Groundwater Flow Direction
- —1.4— Groundwater Elevation Contour (ft bls, dashed where inferred)
- Fence
- Railroad
- Swale
- Site Boundary

Notes:
All monitoring wells begin with prefix, CCF-
Elevation is referenced to the North American Datum of 1988 (NAVD88).
Monitoring well screen depths between 55 and 60 ft bls.

CCF=Components Cleaning Facility
bls=below land surface
FL=Florida
ft=feet
KSC=Kennedy Space Center
NAVD=North American Vertical Datum

\\Srv-gst-01\hglgis\KSC_NS1002\CCF\Annual_GWMR\2023\(4-05)GWE_2022_55-60.mxd
10/13/2023 TB
Source: HGL, ArcGIS Online Imagery

Figure 6
Groundwater Elevations
Monitoring Well Screen Depths of 65 to 76 ft bls
April 27, 2023



Legend

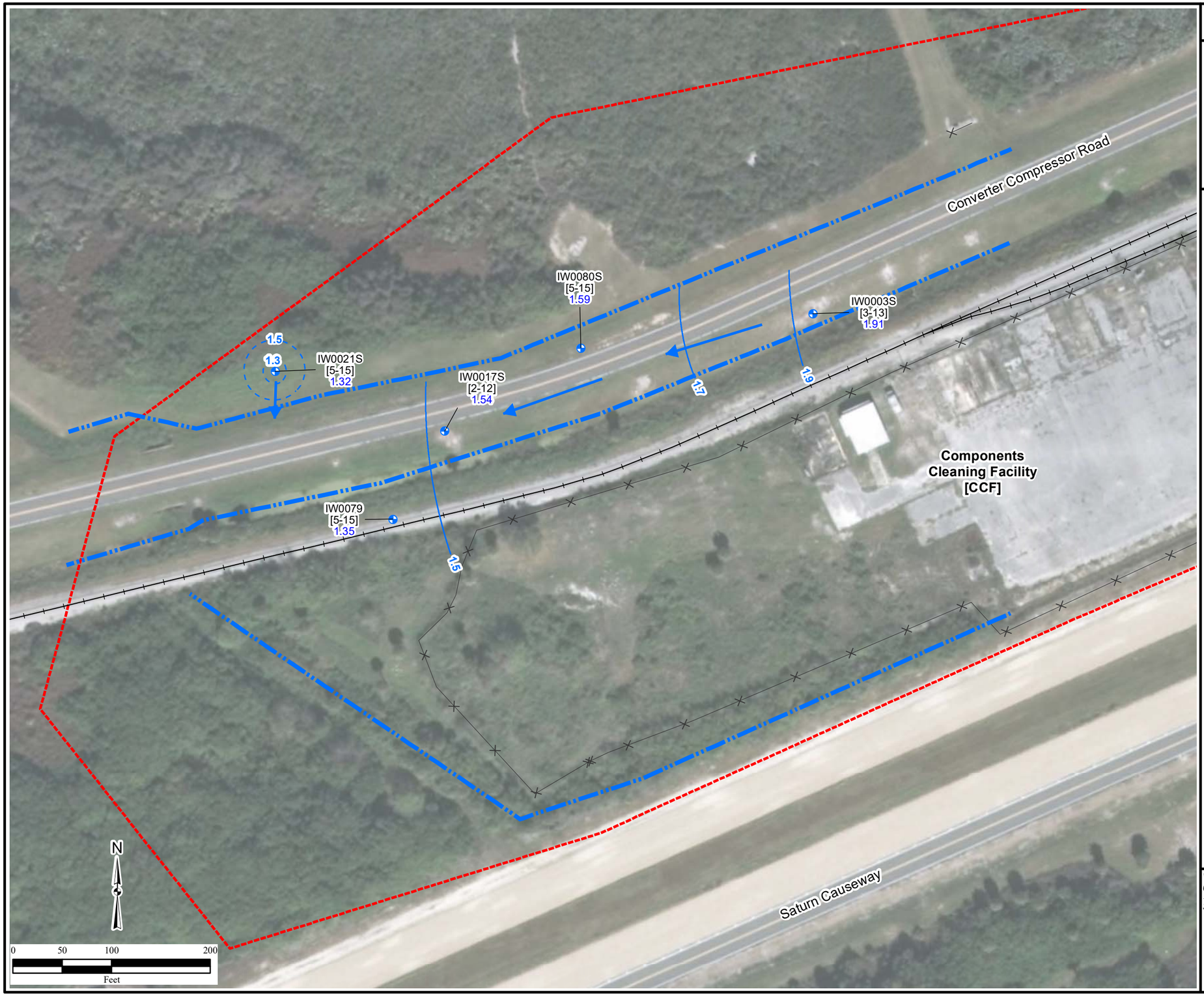
●	Monitoring Well
CCF-IW0003D	Sample/Well Identification
[71-76]	Sample Collected at the Mid-point of the Screen
1.89	Groundwater Elevation (ft NAVD88) April 27, 2023
→	Groundwater Flow Direction
—1.4—	Groundwater Elevation Contour (ft bls, dashed where inferred)
×——	Fence
——+——	Railroad
——·——	Swale
▭	Site Boundary

Notes:
All monitoring wells begin with prefix, CCF-
Elevation is referenced to the North American Datum of 1988 (NAVD88).
Monitoring wells are screened between 65 and 76 ft bls.

CCF=Components Cleaning Facility
bls=below land surface
FL=Florida
ft=feet
KSC=Kennedy Space Center
NAVD=North American Vertical Datum
NM=not measured

\\Srv-gst-01\hglgis\KSC_NS1002\CCF\Annual_GWMR\2023\(4-06)GWE_2022_65-76.mxd
10/13/2023 JM
Source: HGL,
ArcGIS Online Imagery

Figure 7
Groundwater Elevations
Monitoring Well Screen Depths of 12 to 15 ft bls
September 12, 2023



Legend

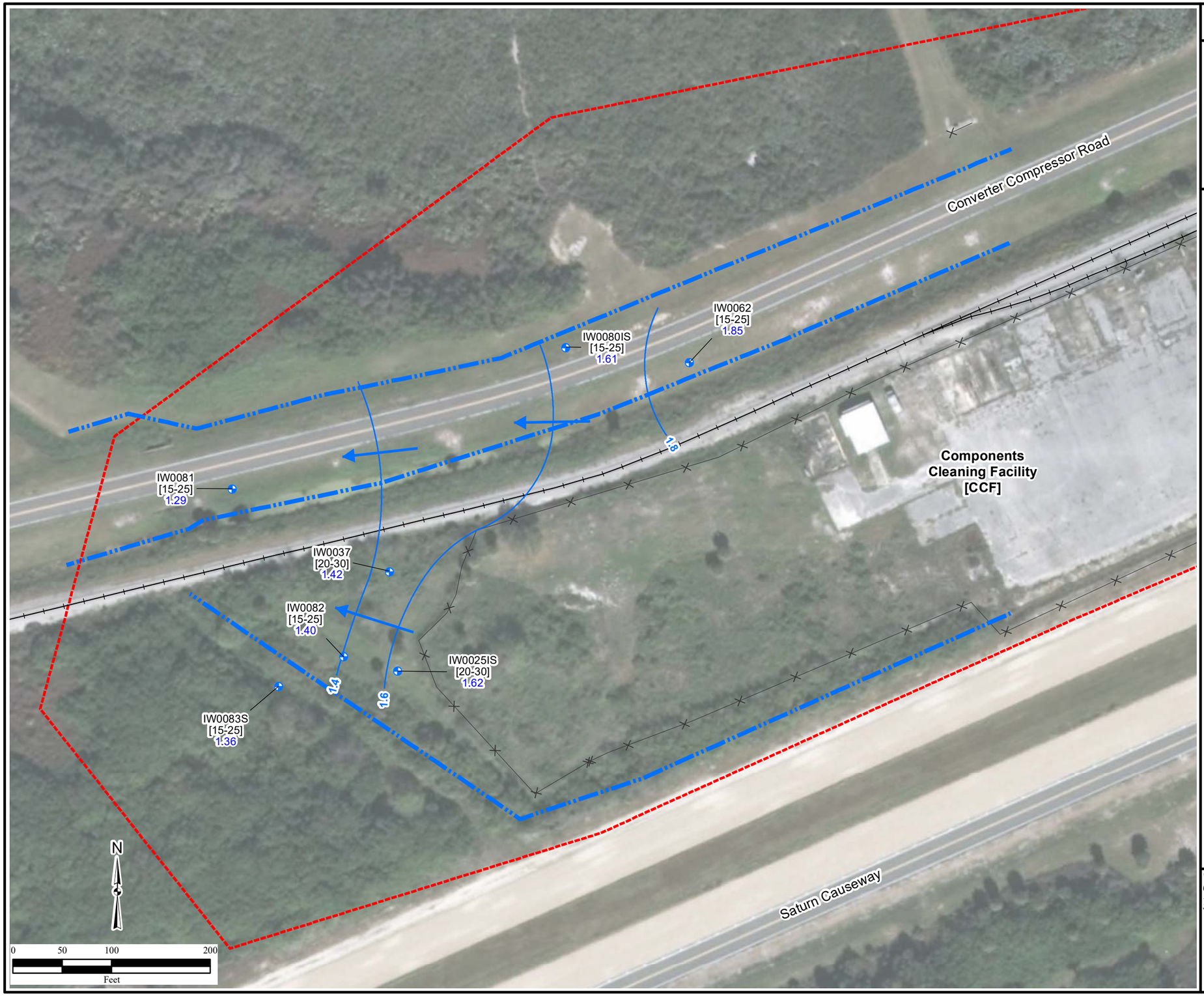
⊕	Monitoring Well
IW003S	Sample/Well Identification
[3-13]	Sample Collected at the Mid-point of the Screen
1.91	Groundwater Elevation (ft NAVD88) September 12, 2023
→	Groundwater Flow Direction
—1.9—	Groundwater Elevation Contour (ft bls, dashed where inferred)
×———	Fence
——+——	Railroad
▬·▬	Swale
▭	Site Boundary

Notes:
All monitoring wells begin with prefix, CCF-
Elevation is referenced to the North American Datum of 1988 (NAVD88).
Monitoring well screen depths between 12 and 15 ft bls.

CCF=Components Cleaning Facility
bls=below land surface
FL=Florida
ft=feet
KSC=Kennedy Space Center
NAVD=North American Vertical Datum

\\Srv-gst-01\hglgis\KSC_NS1002\CCF\Annual_GWMR\2023\(4-07)GWE_2023-09_12-15.mxd
10/13/2023 TB
Source: HGL, ArcGIS Online Imagery

Figure 8
Groundwater Elevations
Monitoring Well Screen Depths of 25 to 30 ft bls
September 12, 2023



Legend

●	Monitoring Well
IW0062	Sample/Well Identification
[15-25]	Sample Collected at the Mid-point of the Screen
1.85	Groundwater Elevation (ft NAVD88) September 12, 2023
→	Groundwater Flow Direction
—1.8—	Groundwater Elevation Contour (ft bls, dashed where inferred)
	Fence
	Railroad
	Swale
	Site Boundary

Notes:
All monitoring wells begin with prefix, CCF-
Elevation is referenced to the North American Datum of 1988 (NAVD88).
Monitoring well screen depths between 25 and 30 ft bls.

CCF=Components Cleaning Facility
bls=below land surface
FL=Florida
ft=feet
KSC=Kennedy Space Center
NAVD=North American Vertical Datum

\\Srv-gst-01\hglgis\KSC_NS1002\CCF\Annual_GWMR\2023\(4-08)GWE_2023-09_25-30.mxd
10/13/2023 TB
Source: HGL, ArcGIS Online Imagery

Figure 9
Groundwater Elevations
Monitoring Well Screen Depths of 35 to 40 ft bls
September 12, 2023

Legend

●	Monitoring Well
IW0003IS	Sample/Well Identification
[25-35]	Sample Collected at the Mid-point of the Screen
2.05	Groundwater Elevation (ft NAVD88) September 12, 2023
→	Groundwater Flow Direction
—2.0—	Groundwater Elevation Contour (ft bls, dashed where inferred)
×——	Fence
——+——	Railroad
— · —	Swale
▭	Site Boundary

Notes:
Elevation is referenced to the North American Datum of 1988 (NAVD88).
Monitoring wells are screened between 35 and 40 ft bls.

CCF=Components Cleaning Facility
bls=below land surface
FL=Florida
ft=feet
KSC=Kennedy Space Center
NAVD=North American Vertical Datum

\\Srv-gst-01\hglgis\KSC_NS1002\CCF\Annual_GWMR\2023\(4-09)GWE_2023-09_35-40.mxd
10/13/2023 TB
Source: HGL, ArcGIS Online Imagery

Figure 10
Groundwater Elevations
Monitoring Well Screen Depths of 45 to 50 ft bls
September 12, 2023

Legend

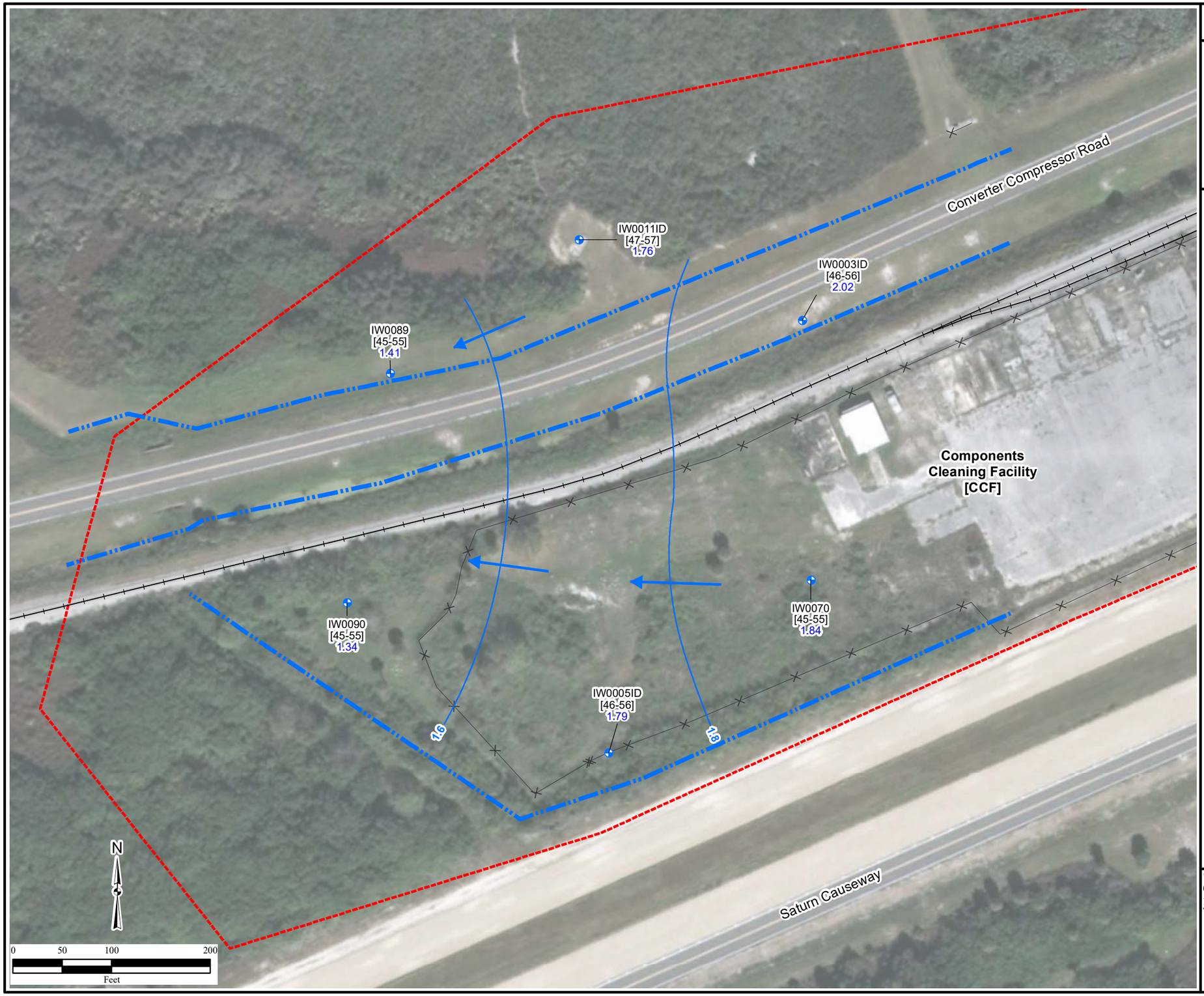
●	Monitoring Well
IW0067	Sample/Well Identification
[40-50]	Sample Collected at the Mid-point of the Screen
2.05	Groundwater Elevation (ft NAVD88) September 12, 2023
→	Groundwater Flow Direction
—1.2—	Groundwater Elevation Contour (ft bls, dashed where inferred)
	Groundwater Elevation Contour Depression
	Fence
	Railroad
	Swale
	Site Boundary

Notes:
All monitoring wells begin with prefix, CCF-
Elevation is referenced to the North American Datum of 1988 (NAVD88).
Monitoring wells are screened between 45 and 50 ft bls.

CCF=Components Cleaning Facility
bls=below land surface
FL=Florida
ft=feet
KSC=Kennedy Space Center
NAVD=North American Vertical Datum

\\Srv-gst-01\hglgis\KSC_NS1002\CCF\Annual_GWMR\2023\(4-10)GWE_2023-09_45-50.mxd
10/13/2023 TB
Source: HGL, ArcGIS Online Imagery

Figure 11
Groundwater Elevations
Monitoring Well Screen Depths of 55 to 57 ft bls
September 12, 2023



Legend

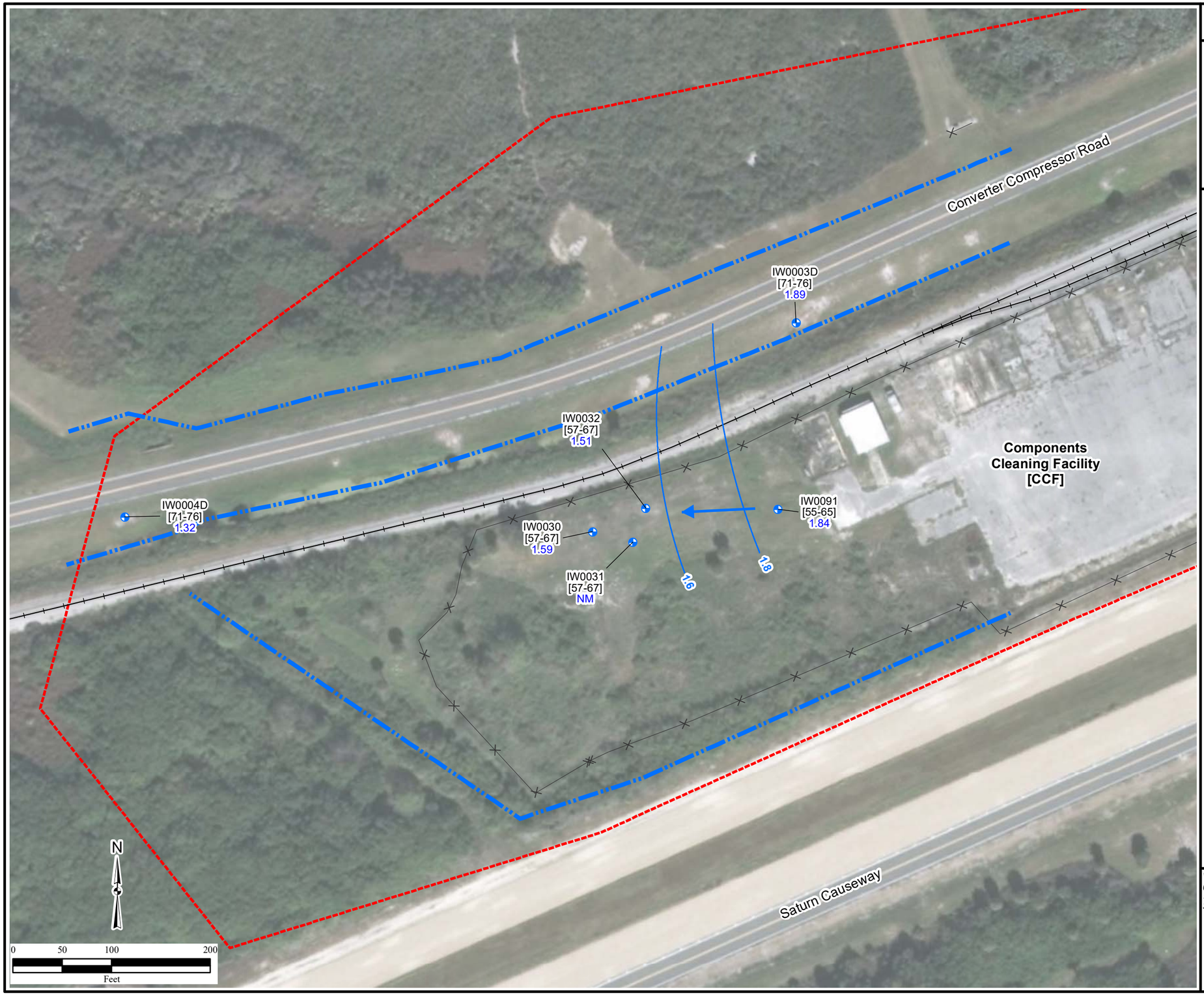
●	Monitoring Well
IW0003ID	Sample/Well Identification
[46-56]	Sample Collected at the Mid-point of the Screen
2.02	Groundwater Elevation (ft NAVD88) September 12, 2023
→	Groundwater Flow Direction
—1.8—	Groundwater Elevation Contour (ft bls, dashed where inferred)
×—	Fence
—+—	Railroad
	Swale
	Site Boundary

Notes:
All monitoring wells begin with prefix, CCF-
Elevation is referenced to the North American Datum of 1988 (NAVD88).
Monitoring well screen depths between 55 and 60 ft bls.

CCF=Components Cleaning Facility
bls=below land surface
FL=Florida
ft=feet
KSC=Kennedy Space Center
NAVD=North American Vertical Datum

\\Srv-gst-01\hglgis\KSC_NS1002\CCF\Annual_GWMR\2023\(4-11)GWE_2023-09_55-60.mxd
10/13/2023 TB
Source: HGL, ArcGIS Online Imagery

Figure 12
Groundwater Elevations
Monitoring Well Screen Depths of 65 to 76 ft bls
September 12, 2023



Legend

●	Monitoring Well
CCF-IW0003D	Sample/Well Identification
[71-76]	Sample Collected at the Mid-point of the Screen
2.02	Groundwater Elevation (ft NAVD88) September 12, 2023
→	Groundwater Flow Direction
—1.8—	Groundwater Elevation Contour (ft bls, dashed where inferred)
×——	Fence
—+—	Railroad
—·—	Swale
▭	Site Boundary

Notes:
All monitoring wells begin with prefix, CCF-
Elevation is referenced to the North American Datum of 1988 (NAVD88).
Monitoring wells are screened between 65 and 76 ft bls.
Monitoring well IW0031 was recommended to be abandoned at the February 2023 KSC Remediation Team meeting because of an obstruction that could not be repaired. The obstruction was confirmed during the 2023 semiannual groundwater level measurements and is tentatively scheduled to be abandoned in late 2023/early 2024.

CCF=Components Cleaning Facility
bls=below land surface
FL=Florida
ft=feet
KSC=Kennedy Space Center
NAVD=North American Vertical Datum
NM=not measured

\\Srv-gst-01\hglgis\KSC_NS1002\CCF\Annual_GWMR\2023\(4-12)GWE_2023-09_65-76.mxd
10/13/2023 TB
Source: HGL,
ArcGIS Online Imagery

This page was intentionally left blank.