INL/EXT-20-60847

Idaho National Laboratory

Permanent Closure of the TAN-680 Diesel Underground Storage Tank 98TAN00650 (DEQ Facility ID# 6-120618)

December 2020

Idaho National Laboratory
Idaho Falls, Idaho 83415

http://www.inl.gov

Prepared for the
U.S. Department of Energy
Office of Nuclear Energy
Under DOE Idaho Operations Office
Contract DE-AC07-05ID14517

CONTENTS

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TABLES

1. PURPOSE

This closure package documents the site assessment and petitions for permanent closure of the Idaho National Laboratory (INL) Test Area North (TAN) diesel underground storage tank 98TAN00650 (DEQ Facility ID# 6-120618), in accordance with the regulatory requirements established in 40 CFR 280.71, "Permanent Closure and Changes-In-Service".

2. INTRODUCTION

The TAN diesel underground storage tank 98TAN00650 is a 15,000-gallon; double-walled, fiberglass reinforced plastic tank located at the Idaho National Laboratory's (INL) Test Area North, TAN-680. This tank is identified under the Idaho Department of Environmental Quality (DEQ) Tank Management Plan facility identification number 6-120618.

The tank was installed in 1991 to supply diesel fuel for bus and vehicle operations. The tank was manufactured by Xerxes Corporation and the dimensions of the tank are 10' 4" diameter by 29' 5" in length. The tank was monitored by a Gilbarco Veeder-Root TLS-350 Automatic Tank Gauge (ATG). The tank monitoring included Continuous Statistical Leak Detection (CSLD), an interstitial sensor, and a transition sump sensor. The piping from tank to the transition sump is fiberglass reinforced pipe. Piping from the transition sump to the dispenser is above ground carbon steel. The piping run is safe-suction.

Key personnel that were involved in this closure activity are listed in Table 1.

Table 1. Key personnel.

Organization/Title	Name	Responsibilities
BEA Project Manager	Herbert A. Pollard III	Project execution and completion
BEA Project Supervisor	Eric Walker	Project execution and completion
CFA Facility Manager	Bryan Crofts	Manage/approve facility activities
BEA Environmental Compliance	Bradley Griffith/Brian Donovan/Kerry Nisson	Coordinate UST closure activity
Sampling Personnel	Joanna Taylor/Tylor Johnson/Jonah Davis	Environmental Sampling

PERMANENT CLOSURE

In accordance with 40 CFR 280.71(a), a 30-day closure notification was e-mailed on September 9, 2020, (Appendix B, CCN 247669) notifying DEQ of INL's intent to permanently close the 98TAN00650 diesel underground storage tank (DEQ ID# 6-120618). Michael Summers (DEQ) was contacted regarding a sampling and analysis plan. Michael stated that a sampling and analysis plan would not be required.
On November 18, 2020, a conference call was placed to Michael Summers at the DEQ Idaho Falls Office, informing him of INL's intent to remove the UST and to identify if DEQ wanted to be present during any part of the removal process. Michael stated that he wanted to be present during the tank removal and sampling process. It was stated that INL would contact him when an exact date was confirmed or to any delays. Michael also e-mailed three documents for use in sampling process:

1. Fact Sheet: "How DEQ Evaluates Sample Collection and Data Analysis for UST Closures and Release Investigations"
2. Table 1 "Chemicals of Interest for Various Petroleum Products" and Table 2 "Residential Use Screening Levels" from IDAPA 58.01.24 - Application of Risk Based Department of Environmental Quality Corrective Action at Petroleum Release Sites
3. Table 2. "Screening Level Concentrations for Soil, Groundwater, and Soil Vapor" from Risk Evaluation Manual for Petroleum Releases—August 2018

The tank was placed in temporary closure status in October 2108 after the tank was drained to less than one-inch of product (including piping), the vent lines remained open and functioning, all lines were capped and secured, and the fill pipe was padlocked shut.

On October 2, 2018, the INL notified the DEQ that this tank met the temporary closure requirements and sent a "Notification for Underground Storage Tank Systems" form to place the tank in temporary closure status (Appendix A – CCN: 243516, Temporary Closure of UST at Test Area North).

On November 23, 2020, the UST at TAN-680 was removed with Michael Summers (DEQ) in attendance. INL's Environmental Monitoring personnel collected three soil samples from under the tank (one at each end of tank and one in the middle) and one sample from under the transition sump (end of piping run). Soil samples were sent to GEL Laboratories LLC in Charleston, South Carolina for analysis. Laboratory analysis was requested for Chemicals of Interest for Various Petroleum Products (diesel) as identified in IDAPA 58.01.24.800.01 table 1, with laboratory detection limits for the Residential Use Screening Levels identified in IDAPA 58.01.24.800.02 table 2. The sampling collection and handling process adhered to the "Waste Management and Remediation Division Statewide Generic Quality Assurance Plan".

On December 12, 2020, Joanna Taylor from INL Environmental Monitoring e-mailed the sampling data package received from GEL Laboratories LLC. The preliminary sampling data showed that the screening levels for the Chemicals of Interest for Various Petroleum Products (diesel) as identified in IDAPA 58.01.24.800.01 table 1, were below the Residential Use Screening Levels as identified in IDAPA 58.01.24.800.02 table 2 and below the Screening Level Concentrations for soil in Table 2 of the "Risk Evaluation Manual for Petroleum Releases".

3. SITE ASSESSMENT AND CONCLUSION

This site assessment was performed in accordance with IDAPA 58.01.24.200, "Risk Evaluation Process." A screening evaluation was performed according to the chemicals of interest for diesel fuel found in the Idaho Risk Evaluation Manual for Petroleum Releases, Table 2 - Screening Level Concentrations for Soil, Groundwater, and Soil Vapor and sample results were below the Screening Level Concentrations for soil from Table 2 of the "Risk Evaluation Manual for Petroleum Releases".

Per 40 CFR 280.71 “Permanent Closure and Changes-In-Service” all liquids and accumulated sludge were removed from the UST. Sample results were received on December 12, 2020 and were compared to the “Idaho Risk Evaluation Manual for Petroleum Releases”, Table 2 - Screening Level Concentrations for Soil, Groundwater, and Soil Vapor maximum media-specific (soil) petroleum contaminant concentrations. The concentrations for the chemicals of interest are below the DEQ identified screening levels for these analytes.

According to IDAPA 58.01.24.200.01.c., “if the maximum media-specific petroleum contaminant concentrations at the site do not exceed the screening levels, the owner and/or operator may petition for site closure, subject to other Department regulatory obligations”. This site assessment meets the requirements of IDAPA 58.01.24.200. The INL is petitioning the DEQ for site closure of the TAN-680 diesel tank 98TAN00650 (DEQ ID# 6-120618).

Figure 1. TAN Underground Storage Tank Location

Figure 2. Tank Removal

Figure 3. Underground Storage Tank Soil Sampling

4. APPENDIXES

Appendix A, CCN: 243516 Temporary Closure - 30 Day Notification for Underground Storage Tank Systems - Test Area North (DEQ Facility ID# 6-120618)

Appendix B, CCN: 247669 – Permanent Closure - 30 Day Notification for Underground Storage Tank Systems - Test Area North (DEQ Facility ID# 6-120618)

Appendix C, – TAN UST Removal TOS-302 Sampling Logbook

Appendix D - UST Removal TOS-302 Sampling Event Narrative Test Area North (DEQ Facility ID# 6-120618

Appendix E - Sample Analytical Report TOS-302 Gel Laboratories Data Package

Appendix A, CCN: 243516 Temporary Closure - 30 Day Notification for Underground Storage Tank Systems - Test Area North (DEQ Facility ID# 6-120618)

CCN: 243516 Temporary Closure of UST at Test Area North

Kerry L. Nisson

Tue 10/2/2018 2:27 PM

To:michael.summers@deq.idaho.gov <michael.summers@deq.idaho.gov>;

Cc:Nicole K. Hernandez <hernannk@id.doe.gov>; Bradley K. Griffith <bradley.griffith@inl.gov>; Kent L. Miller <kent.miller@inl.gov>; Bryan P. Crofts <bryan.crofts@inl.gov>; George J. Krauszer II <george.krauszerii@inl.gov>; James F. Graham <james.graham@inl.gov>; Timothy A. Miller <timothy.miller@inl.gov>; Carlo D. Melbihess <Carlo.Melbihess@inl.gov>; Dwight S. Stevenson <dwight.stevenson@inl.gov>; BEA CORRESPONDENCE CONTROL <beacc@inl.gov>; ENVIRONMENTAL CORRESPONDENCE <envaff@inl.gov>; LauraLee Gourley <lauralee.gourley@inl.gov>; Rob L. Pope <rob.pope@inl.gov>;

1 attachments (599 KB)

TAN ust-notification-form.pdf;

Michael

Attached is the signed Notification for Underground Storage Tank Systems form for the temporary closure of the underground storage tank (UST) at the Idaho National Laboratory (INL), Test Area North (TAN). The tank is identified on the Idaho Underground Storage Tank Management Plan as tank number 98TAN00650, DEQ facility Identification number 6-120618.

The remaining diesel fuel from the UST was pumped into an available above ground compartment storage tank near the existing UST.

The tank meets the Code of Federal Regulation (CFR) - 40 CFR 280.70 - Temporary closure. The fuel in the tank has been removed using commonly employed practices so that no more than 2.5 centimeters (one inch) of residue remain in the tank. The vent line to the tank remains open and functioning, and the lines, pumps, manways, and ancillary equipment have been secured and capped. The UST's meets the performance standards in § 280.20 for new UST systems.

Meeting the temporary closure requirements above, release detection for this tank is no longer required.

If you have any questions or concerns, please contact me.

Kerry L. Nisson
Nuclear Operations Environmental Support - UST TPOC
Office (208) 533-7102
Cell (208) 569-4721
email: kerry.nisson@inl.gov
Materials and Fuels Complex - Mail Stop 6134

DEQ Version of EPA 7530-1 (Revised 3/2017)

NOTIFICATION FOR UNDERGROUND STORAGE TANK SYSTEMS

Idaho Department of Environmental Quality, 1410 N Hilton, Boise ID 83706

Facility ID: 6-120618

TYPE OF NOTIFICATION ☒ Notice (install or closure) ☐ New Facility (site diagram & install docs required) ☐ Closure ☒ Updates ☐ Change of Owner ☐ Change of Use (substance stored)

INSTRUCTIONS – See additional instructions on page 6

Please type or use ink. This form must be completed for each location containing underground storage tanks. If more than five (5) tanks are owned at this location, photocopy the following sheets, and attach continuation sheets to the form (pages 3, 4, & 5)

GENERAL INFORMATION

Notification is required by law for all underground storage tanks (USTs) storing regulated substances that are brought into use after May 8, 1986, or USTs in the ground as of May 8, 1986, that have stored regulated substances at any time since January 1, 1974. The information requested is required by Section 9002 of the Resource Conservation and Recovery Act (RCRA), as amended.

The primary purpose of this notification form is to provide information about the installation, existence, changes to, and closure of USTs that store or have stored petroleum or hazardous substances. The information you provide will be based on reasonably available records, or in the absence of such records, your knowledge or recollection.

Who must notify? Unless exempted, owners of USTs that store or will store regulated substances must notify DEQ.

1. Owner means -

a) in the case of an UST in use on November 8, 1984, or brought into use after that date, any person who owns an underground storage tank used for the storage, use, or dispensing of regulated substances

b) in the case of an UST in use before November 8, 1984, but no longer in use on that date, any person who owned such tank immediately before the discontinuation of its use

c) in the case of a new installation on or after April 2, 2008, any person who will install an underground storage tank system

d) in the case of an underground storage tank closure, any person who will remove or close in place such tank

e) in the case of changes or updates, any person who will make a change to an UST system

What tanks are included? Underground storage tank is defined as any one or combination of tanks that is used to contain an accumulation of "regulated substances," and whose volume (including connected underground piping) is 10% or more beneath the ground.

What tanks are excluded?

1. Tanks with a capacity of 110 gallons or less
2. Farm or residential tanks of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purposes
3. Tanks used for storing heating oil for consumptive use on the premises where stored
4. Septic tanks
5. Certain pipeline facilities regulated under chapters 601 and 603 of Title 49
6. Surface impoundments, pits, ponds, or lagoons
7. Stormwater or wastewater collection systems
8. Flow-through process tanks
9. Liquid traps or associated gathering lines directly related to oil or gas production and gathering operations
10. Tanks on or above the floor of underground areas, such as basements or tunnels
11. Wastewater treatment tanks
12. UST systems containing radioactive material that are regulated under the Atomic Energy Act of 1954
13. UST systems that are part of an emergency generator system at nuclear power generation facilities regulated by the Nuclear Regulatory Commission under 10 CFR Part 50

What substances are covered? The notification requirements apply to USTs containing petroleum or certain hazardous substances. Petroleum includes gasoline, used oil, diesel fuel, crude oil, or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute). Hazardous substances are those found in section 101 (14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, with the exception of those substances regulated as hazardous waste under Subtitle C of the Resource Conservation and Recovery Act.

Where to notify? Send completed forms to:

UST Coordinator
Idaho Department of Environmental Quality
1410 N. Hilton
Boise, ID 83706 Telephone: (208) 373-0502

When to notify? Owners of underground storage tank systems that are still in the ground must notify immediately. Owners who bring USTs into use after May 8, 1986, must notify within 30 days of bringing the tanks into use. Owners who will install an UST system must notify 30 days prior to the installation. Owners who will replace 50% of piping connected to a single underground storage tank must notify 24 hours prior to the replacement. Owners who will close an UST must notify 30 days prior to the closure. Owners who have closed an UST must notify and indicate the date of closure. New owners must notify within 30 days of ownership.

Penalties: Any owner who knowingly fails to notify or submits false information shall be subject to a civil penalty.

I. OWNERSHIP OF USTs

Name U.S. Department of Energy, Idaho Operations Office (DOE-ID)
Mailing Address 1955 Fremont Avenue
City Idaho Falls
State Idaho
ZIP Code 83401
County Bonneville
Phone Number (With Area Code) (208) 526-2493
Email sturmjr@id.doe.gov

II. LOCATION OF USTs

(If same as Section I, mark box here ☐)
Name U.S. Department of Energy, Idaho Operations Office (DOE-ID)
Street Address (no PO Box) Central Facilities Area
City Scoville
State Idaho
ZIP Code 83415
County Butte

III. TYPE OF OWNER

☐ Commercial ☐ Private ☐ State Government

☒ Federal Government ☐ Local Government

IV. TYPE OF FACILITY

Select the Appropriate Facility

☐ Gas Station	☐ Local Government	☐ Trucking/Transport
☐ Petroleum Distributor	☐ State Government	☐ Utilities
☐ Air Taxi (Airline)	☒ Federal – Non-Military	☐ Farm
☐ Aircraft Owner	☐ Federal – Military	☐ Residential
☐ Auto Dealership	☐ Commercial	☐ Marina
☐ Railroad	☐ Industrial	☐ Other
☐ Hospital	☐ Contractor	

V. CONTACT PERSON IN CHARGE OF TANKS

Name Bryan Crofts
Title Manager, Facility Support Services
Address PO Box 1625
City Idaho Falls
State Idaho
Zip Code 83415
Phone (208) 526-7995
Email Bryan.Crofts@inl.gov

VI. CERTIFICATION (Read and sign after completing all required sections)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Name and official title of owner or owner's authorized representative (Print)
Name Timothy A. Miller
Title Director, Environmental Support and Services

Signature [signature]
Date Signed 10-2-18

VII. FINANCIAL RESPONSIBILITY

I have met the financial responsibility requirements in accordance with 40 CFR 280 Subpart H.

Check All That Apply

☐ State Insurance Fund (PSTF)	☐ Surety Bond
☐ Commercial Insurance	☐ Letter of Credit
☐ Risk Retention Group	☐ Self Insurance
☐ Guarantee	☐ Trust Fund

☒ Other Method Allowed, Specify Federal Government

VIII. Notices

IDENTIFICATION NUMBER	Tank No. 98TAN00650	Tank No.	Tank No.	Tank No.	Tank No.
A. 30-day Tank and Piping Installation/24-hr Piping Replacement Notifications (see page 7)					
When will tank be installed or replaced?					
When will piping be installed or replaced?					
B. 30-day Notice of Closures (see page 7)					
When will tank be closed?					
Date tank was last used?					

Closure to be performed by:

Company Site Supervisor:

Phone:

IX. DESCRIPTION OF UNDERGROUND STORAGE TANKS (Complete for each tank at this location)

IDENTIFICATION NUMBER	Tank No. 98TAN00650	Tank No.	Tank No.	Tank No.	Tank No.
A. Type of Tank (check all that apply)					
☐Compartment ☐Emergency Generator ☐Airport Fuel Hydrant ☐Manifold ☐Field-Constructed					
B. Status of Tank					
Currently In Use	No	Select	Select	Select	Select
Temporarily Out of Use (Complete Section X, estimated date last used)					
Permanently Out of Use (Complete Section X, removal or closed in place)	Select	Select	Select	Select	Select
Date of Installation	1991				
Total Capacity (gallons)	15000				
Substance Currently or Last Stored	Diesel	Select	Select	Select	Select
CERCLA Name or CAS # (if hazardous)					
C. Tank Construction (Mark all that apply)					
Fiberglass Reinforced Plastic	☒	☐	☐	☐	☐
Cathodically Protected Steel (STIP-3)	☐	☐	☐	☐	☐
Cathodically Protected Steel (Impressed Current)	☐	☐	☐	☐	☐
Composite (Steel with Fiberglass)	☐	☐	☐	☐	☐
Asphalt Coated or Bare Steel	☐	☐	☐	☐	☐
Concrete	☐	☐	☐	☐	☐
Double-Walled	☒	☐	☐	☐	☐
Lined Interior	☐	☐	☐	☐	☐
Polyethylene Tank Jacket	☐	☐	☐	☐	☐
Unknown	☐	☐	☐	☐	☐
Other, Please Specify	☐	☐	☐	☐	☐
Has tank been repaired? (circle one)	No	Select	Select	Select	Select

D. Spill and Overfill Protection					
Overfill Device Installed? (Alarm, Flapper)	Alarm	Select	Select	Select	Select
Spill Bucket Installed? (Single Wall or Double Wall)	Single-Walled	Select	Select	Select	Select

E. Piping Construction (Mark all that apply)					
Plastic/Flexible	☐	☐	☐	☐	☐
Fiberglass Reinforced Plastic	☒	☐	☐	☐	☐
Bare Steel	☐	☐	☐	☐	☐
Catholically Protected Steel (Impressed Current)	☐	☐	☐	☐	☐
Cathodically Protected Steel (Galvanic)	☐	☐	☐	☐	☐
Corrosion Protection (Soil Isolation)	☐	☐	☐	☐	☐
Double-Walled	☐	☐	☐	☐	☐
Unknown	☐	☐	☐	☐	☐
Other, Please Specify	☐	☐	☐	☐	☐

F. Piping Type (Mark all that Apply)					
Pressure	☐	☐	☐	☐	☐
Safe Suction (check valve at dispenser)	☒	☐	☐	☐	☐
U.S. Suction (check valve at tank)	☐	☐	☐	☐	☐
Gravity Feed	☐	☐	☐	☐	☐
Has piping been repaired or replaced?	Repair	Select	Select	Select	Select
Date of the repair or replacement	July 2012				

G. Release Detection (Mark all that Apply)	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping
Automatic Tank Gauging	☒		☐		☐		☐		☐	
Continuous Interstitial Double-Wall Monitoring (sensors)	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐
Manual Interstitial Double-Wall Monitoring (record log)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Statistical Inventory Reconciliation (SIR)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Manual Tank Gauging (1,000 gallons or less)	☐		☐		☐		☐		☐	
Vapor Monitoring	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Mechanical Line Leak Detector		☐		☐		☐		☐		☐
Electronic Line Leak Detector		☐		☐		☐		☐		☐
Annual Line Tightness Test		☐		☐		☐		☐		☐
3-Year Line Tightness Test (US Suction Only)										
Not Required (safe suction piping, empty tank)	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐

G. Under-Dispenser Spill Containment (required for new installations, piping replacement and dispenser replacement*)	
Is there under-dispenser spill containment for each new dispenser island?	Select

X. TANKS OUT OF USE OR CHANGE IN SERVICE

TANK IDENTIFICATION NUMBER	Tank No. 98TAN00650	Tank No.	Tank No.	Tank No.	Tank No.
Closing of Tank					
Tank Was Removed From Ground	☐	☐	☐	☐	☐
Tank Was Closed In Ground	☐	☐	☐	☐	☐
Estimated Date Last Used	September 28, 2018				
Date Tank Closed					
Tank Filled With Inert Material (indicate material – sand, concrete)					
Change in Service (No longer holds a regulated substance)	☐	☐	☐	☐	☐
Site Assessment Completed (samples taken)	Select	Select	Select	Select	Select
Evidence of a Release Detected?	Select	Select	Select	Select	Select
Release Reported to DEQ?	Select	Select	Select	Select	Select
Date Release Reported to DEQ					

XI. CERTIFICATION OF COMPLIANCE

(Complete for installation of all new tanks and/or piping or for upgrading existing tanks and/or piping)

TANK IDENTIFICATION NUMBER	Tank No.	Tank No.	Tank No.	Tank No.	Tank No.
A. Installation (Mark all that apply)					
Installer certified by tank and piping manufacturers	☐	☐	☐	☐	☐
Installer certified or licensed by a State	☐	☐	☐	☐	☐
Installation is inspected by a registered engineer	☐	☐	☐	☐	☐
Installation inspected by DEQ	☐	☐	☐	☐	☐
Manufacturer's installation checklists have been completed	☐	☐	☐	☐	☐

Note: The installer must complete this section only if work on your UST system has taken place since December 22, 1988.

OATH: I certify the information concerning installation is true to the best of my belief and knowledge.

Installation Company _____

Address: _____

Installer Name _____

Phone _____

Signature _____

Date_____

*When a dispenser is replaced and any equipment necessary to connect the dispenser to the underground storage tank system under the dispenser is installed; under dispenser containment is required.

Appendix B, CCN: 247669 – Permanent Closure - 30 Day Notification for Underground Storage Tank Systems - Test Area North (DEQ Facility ID# 6-120618)

CCN: 247669 PERMANENT CLOSURE NOTIFICATION -TEST AREA NORTH

From: Kerry L. Nisson
To: BEA CORRESPONDENCE CONTROL
Subject: CCN: 247669 PERMANENT CLOSURE NOTIFICATION -TEST AREA NORTH
Date: Wednesday, September 9, 2020 6:02:00 AM
Attachments: image001.png
Closure Notification TAN.pdf

Michael

Attached is a 30-Day Notification for permanent closure of the underground storage tank at Test Area

North. This tank is a 15,000 double-walled fiberglass tank that contained diesel fuel.

This tank was temporary closed in October of 2018.

Please contact me with any questions or concerns.

Kerry
Nisson
UST
TPOC
(208) 569-4721 -

Kerry Nisson
Idaho National Laboratory | P.O. Box 1625 | Idaho Falls, ID 83415
Environment Support and Services/ UST TPOC
Phone: 208-533-7102 | Cell: 208-569-4721
Kerry.Nisson@INL.gov

DEQ Version of EPA 7530-1 (Revised 4/2020)

NOTIFICATION FOR UNDERGROUND STORAGE TANK SYSTEMS

Facility ID 6-120618

Idaho Department of Environmental Quality, 1410 N Hilton, Boise ID 83706

TYPE OF NOTIFICATION ☒ **Notice** (install or closure) ☐ **New Facility** (site diagram & install docs required) ☒ **Closure**
☐ **Updates** ☐ **Change of Owner** ☐ **Change of Use** (substance stored)

INSTRUCTIONS – See additional instructions on page 6

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The primary purpose of this notification form is to provide information about the installation, existence, changes to, and closure of USTs that store or have stored petroleum or hazardous substances. The information you provide will be based on reasonably available records, or in the absence of such records, your knowledge or recollection.

Who must notify? Unless exempted, owners of USTs that store or will store regulated substances must notify DEQ.

1. Owner means -

a) in the case of an UST in use on November 8, 1984, or brought into use after that date, any person who owns an underground storage tank used for the storage, use, or dispensing of regulated substances

b) in the case of an UST in use before November 8, 1984, but no longer in use on that date, any person who owned such tank immediately before the discontinuation of its use

c) in the case of a new installation on or after April 2, 2008, any person who will install an underground storage tank system

d) in the case of an underground storage tank closure, any person who will remove or close in place such tank

e) in the case of changes or updates, any person who will make a change to an UST system

What tanks are included? Underground storage tank is defined as any one or combination of tanks that is used to contain an accumulation of "regulated substances," and whose volume (including connected underground piping) is 10% or more beneath the ground.

What tanks are excluded?

1. Tanks with a capacity of 110 gallons or less
2. Farm or residential tanks of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purposes
3. Tanks used for storing heating oil for consumptive use on the premises where stored
4. Septic tanks
5. Certain pipeline facilities regulated under chapters 601 and 603 of Title 49
6. Surface impoundments, pits, ponds, or lagoons
7. Stormwater or wastewater collection systems
8. Flow-through process tanks
9. Liquid traps or associated gathering lines directly related to oil or gas production and gathering operations
10. Tanks on or above the floor of underground areas, such as basements or tunnels
11. Wastewater treatment tanks
12. UST systems containing radioactive material that are regulated under the Atomic Energy Act of 1954
13. UST systems that are part of an emergency generator system at nuclear power generation facilities regulated by the Nuclear Regulatory Commission under 10 CFR Part 50

What substances are covered? The notification requirements apply to USTs containing petroleum or certain hazardous substances. Petroleum includes gasoline, used oil, diesel fuel, crude oil, or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute). Hazardous substances are those found in section 101 (14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, with the exception of those substances regulated as hazardous waste under Subtitle C of the Resource Conservation and Recovery Act.

Where to notify? Send completed forms to:

UST Coordinator
Idaho Department of Environmental Quality
1410 N. Hilton
Boise, ID 83706 Telephone: (208) 373-0502

When to notify? Owners of underground storage tank systems that are still in the ground must notify immediately. Owners who bring USTs into use after May 8, 1986, must notify within 30 days of bringing the tanks into use. Owners who will install an UST system must notify 30 days prior to the installation. Owners who will replace 100% of piping connected to a single underground storage tank must notify 24 hours prior to the replacement. Owners who will close an UST must notify 30 days prior to the closure. Owners who have closed an UST must notify and indicate the date of closure. New owners must notify within 30 days of ownership.

Penalties: Any owner who knowingly fails to notify or submits false information shall be subject to a civil penalty.

I. OWNERSHIP OF USTs

Name U.S. Department of Energy, Idaho Operations Office (DOE-ID)
Mailing Address 1955 Fremont Avenue
City Idaho Falls
State Idaho
ZIP Code 83401
County 83401
Phone Number (With Area Code) (208) 526-4612
Email ljungbe@id.idaho.gov

II. LOCATION OF USTs

(If same as Section I, mark box here ☐)
Business Name U.S. Department of Energy, Idaho Operations Office (DOE-ID)
Street Address (no PO Box) Teat Area North
City Scoville
State Idaho
ZIP Code 83415
County Butte

III. TYPE OF OWNER

☐ Commercial ☐ Private ☐ State Government

☒ Federal Government ☐ Local Government

IV. TYPE OF FACILITY

Select the Appropriate Facility

☐ Gas Station	☐ Local Government	☐ Trucking/Transport
☐ Petroleum Distributor	☐ State Government	☐ Utilities
☐ Air Taxi (Airline)	☒ Federal – Non-Military	☐ Farm
☐ Aircraft Owner	☐ Federal – Military	☐ Residential
☐ Auto Dealership	☐ Commercial	☐ Marina
☐ Railroad	☐ Industrial	☐ Other
☐ Hospital	☐ Contractor	

V. CONTACT PERSON IN CHARGE OF TANKS

Name Bryan Crofts
Title Manager, Facility Support Services
Address PO Box 1625

City Idaho Falls
State Idaho
Zip Code 83415
Phone (208) 526-7995
Email Bryan.Crofts@inl.gov

VI. CERTIFICATION (Read and sign after completing all required sections)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Name and official title of owner or owner's authorized representative (Print)
Name Kent L Miller
Title Manager ESES

Signature K L Miller
Date Signed 8/20/2020

VII. FINANCIAL RESPONSIBILITY

I have met the financial responsibility requirements in accordance with 40 CFR 280 Subpart H.

Check All That Apply

☐ State Insurance Fund (PSTF)	☐ Surety Bond
☐ Commercial Insurance	☐ Letter of Credit
☐ Risk Retention Group	☐ Self Insurance
☐ Guarantee	☐ Trust Fund

☐ Other Method Allowed, Specify _____

VIII. Notices					
IDENTIFICATION NUMBER	Tank No. 98TAN00650	Tank No.	Tank No.	Tank No.	Tank No.
A. 30-day Tank and Piping Installation/24-hr Piping Replacement Notifications (see page 7)					
Date tank will be installed or replaced?					
Date piping will be installed or replaced?					
B. 30-day Notice of Closures (see page 7)					
Date tank will be closed?	Temp closed 10/2/18				
Date tank was last used?	9/2018				

Closure to be performed by:

Company Idaho National Laboratory Site Supervisor: Steven Christensen

Phone: (208) 526-4743

IX. DESCRIPTION OF UNDERGROUND STORAGE TANKS (Complete for each tank at this location)					
IDENTIFICATION NUMBER	Tank No. 98TAN00650	Tank No.	Tank No.	Tank No.	Tank No.
A. Status of Tank					
Currently in Use	☐	☐	☐	☐	☐
Temporarily Out of Use (complete section X)	☒	☐	☐	☐	☐
Permanently Closed (complete section X)	☐	☐	☐	☐	☐
B. Tank Information					
Date of Installation	1991				
Total Capacity	15,000 gallon				
Compartment Tank	☐	☐	☐	☐	☐
Manifold Tank	☐	☐	☐	☐	☐
Emergency Generator	☐	☐	☐	☐	☐
Substance currently or last stored	Diesel	Select	Select	Select	Select
CERCLA Name or CAS # (if hazardous)					
C. Tank Construction (Mark all that apply)					
Fiberglass Reinforced Plastic	☒	☐	☐	☐	☐
Cathodically Protected Steel (STIP-3)	☐	☐	☐	☐	☐
Cathodically Protected Steel (Impressed Current)	☐	☐	☐	☐	☐
Composite (Steel with Fiberglass)	☐	☐	☐	☐	☐
Asphalt Coated or Bare Steel	☐	☐	☐	☐	☐
Concrete	☐	☐	☐	☐	☐
Double-Walled	☒	☐	☐	☐	☐
Lined Interior	☐	☐	☐	☐	☐
Polyethylene Tank Jacket	☐	☐	☐	☐	☐
Unknown	☐	☐	☐	☐	☐
Other, Please Specify	☐	☐	☐	☐	☐
Has tank been repaired?	No	Select	Select	Select	Select

D. Spill and Overfill Protection										
Overfill Device Installed? (Alarm, Flapper, Ball Float)	Alarm		Select		Select		Select		Select	
Spill Bucket Installed? (Single Wall or Double Wall)	Single-Walled		Select		Select		Select		Select	
E. Piping Construction (Mark all that apply)										
Plastic/Flexible	☐		☐		☐		☐		☐	
Fiberglass Reinforced Plastic	☒		☐		☐		☐		☐	
Bare Steel	☐		☐		☐		☐		☐	
Cathodically Protected Steel (Impressed Current)	☐		☐		☐		☐		☐	
Cathodically Protected Steel (Galvanic)	☐		☐		☐		☐		☐	
Corrosion Protection (Soil Isolation)	☐		☐		☐		☐		☐	
Double-Walled	☐		☐		☐		☐		☐	
Unknown	☐		☐		☐		☐		☐	
Other, Please Specify	☐		☐		☐		☐		☐	
F. Piping Type (Mark all that Apply)										
Pressure	☐		☐		☐		☐		☐	
Safe Suction (check valve at dispenser)	☒		☐		☐		☐		☐	
U.S. Suction (check valve at tank)	☐		☐		☐		☐		☐	
Gravity Feed	☐		☐		☐		☐		☐	
Has piping been repaired or replaced?	Replace		Select		Select		Select		Select	
Date of the repair or replacement										
G. Release Detection (Mark all that Apply)	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping
Automatic Tank Gauging	☒		☐		☐		☐		☐	
Continuous Interstitial Double-Wall Monitoring (sensors)	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐
Manual Interstitial Double-Wall Monitoring (record log)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Statistical Inventory Reconciliation (SIR)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Manual Tank Gauging (1,000 gallons or less)	☐		☐		☐		☐		☐	
Continuous In-Tank Leak Detection (CITLD)	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐
Mechanical Line Leak Detector		☐		☐		☐		☐		☐
Electronic Line Leak Detector		☐		☐		☐		☐		☐
Annual Line Tightness Test		☐		☐		☐		☐		☐
3-Year Line Tightness Test (US Suction Only)		☐		☐		☐		☐		☐
Not Required (safe suction piping, less than 1 inch in tank)	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐
H. Under-Dispenser Spill Containment (required for new installations, piping replacement and dispenser replacement*)										
Is there under-dispenser spill containment for each new dispenser island?	Select									

X. TANKS OUT OF USE OR CHANGE IN SERVICE					
TANK IDENTIFICATION NUMBER	Tank No.	Tank No.	Tank No.	Tank No.	Tank No.
Closing of Tank					
Estimated Date Last Used					
Date Tank Was Removed From Ground	☐	☐	☐	☐	☐
Date Tank Was Closed In Ground	☐	☐	☐	☐	☐
Tank Filled With Inert Material (indicate material – sand, concrete)					
Change in Service (No longer holds a regulated substance)	☐	☐	☐	☐	☐
Site Assessment Completed (samples taken)	Select	Select	Select	Select	Select
Evidence of a Release Detected?	Select	Select	Select	Select	Select
Release Reported to DEQ?	Select	Select	Select	Select	Select
Date Release Reported to DEQ					

XI. CERTIFICATION OF COMPLIANCE (Complete for installation of all new tanks and/or piping or for upgrading existing tanks and/or piping)					
TANK IDENTIFICATION NUMBER	Tank No.	Tank No.	Tank No.	Tank No.	Tank No.
A. Installation (Mark all that apply)					
Installer certified by tank and piping manufacturers	☐	☐	☐	☐	☐
Installer certified or licensed by a State	☐	☐	☐	☐	☐
Installation is inspected by a registered engineer	☐	☐	☐	☐	☐
Installation inspected by DEQ	☐	☐	☐	☐	☐
Manufacturer's installation checklists have been completed	☐	☐	☐	☐	☐

Note: The installer must complete this section only if work on your UST system has taken place since December 22, 1988.

OATH: I certify the information concerning installation is true to the best of my belief and knowledge.

Installation Company _____

Address: _____

Installer Name _____

Phone _____

Signature _____

Date_____

*When a dispenser is replaced and any equipment necessary to connect the dispenser to the underground storage tank system under the dispenser is installed; under dispenser containment is required.

Appendix C – UST Removal TOS-302 Sampling Logbook Test Area North (DEQ Facility ID# 6-120618)

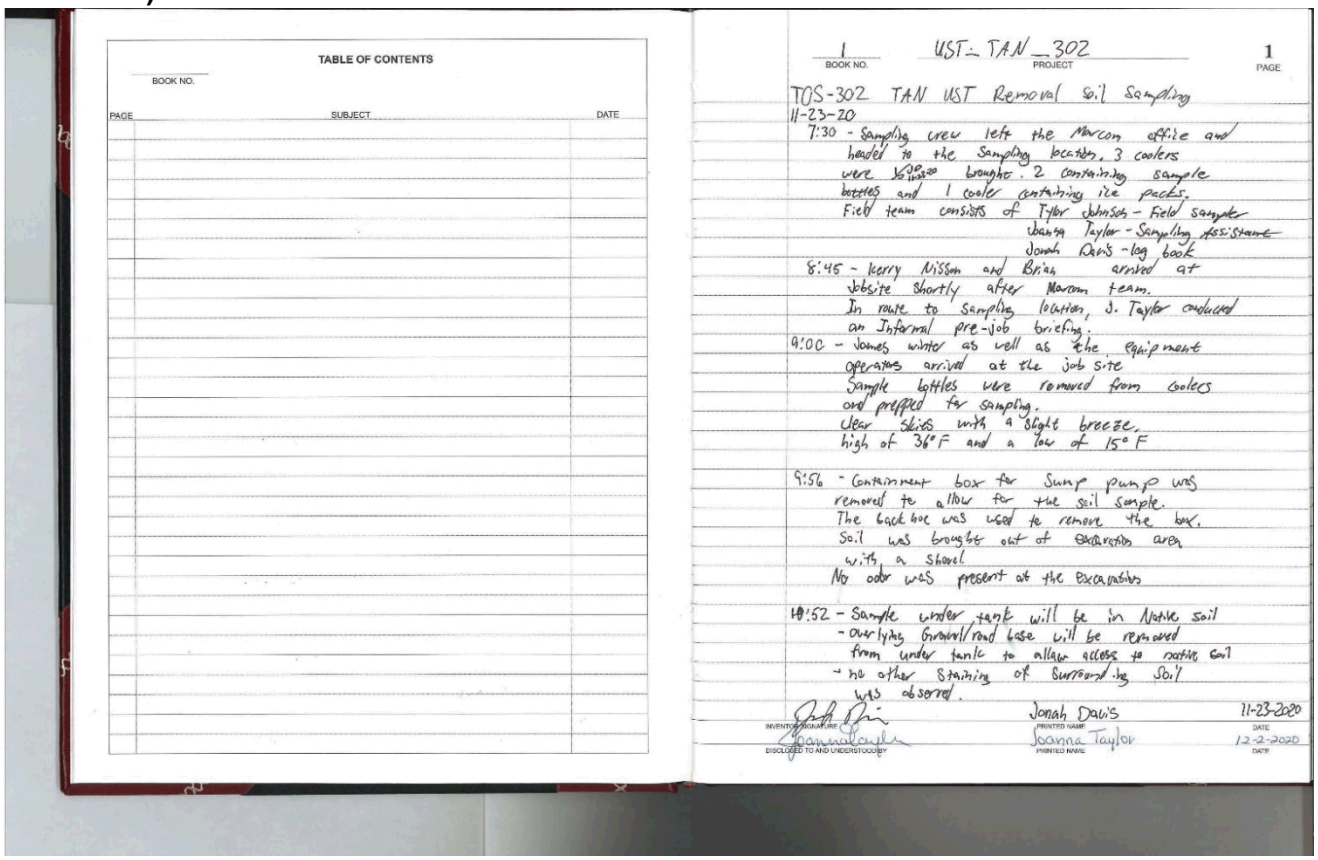


TABLE OF CONTENTS

BOOK NO.

PAGE | SUBJECT | DATE

1 BOOK NO. | UST-TAN-302 PROJECT | 1 PAGE

TOS-302 TAN UST Removal Soil Sampling
11-23-20
7:30 - Sampling crew left the Marcom office and headed to the sampling location, 3 coolers were brought. 2 containing sample bottles and 1 cooler containing ice packs. Field team consists of Tyler Johnson - Field sampler, Joanna Taylor - Sampling Assistant, Jonah Davis - log book
8:45 - Kerry Nissen and Brian arrived at jobsite shortly after Marcom team. In route to sampling location, J. Taylor conducted an Informal pre-job briefing.
9:00 - James winter as well as the equipment operators arrived at the job site. Sample bottles were removed from coolers and prepped for sampling. Clear skies with a slight breeze, high of 36°F and a low of 15°F
9:56 - Containment box for Sump pump was removed to allow for the soil sample. The back hoe was used to remove the box. Soil was brought out of excavation area with a shovel. No odor was present at the excavation.
10:52 - Sample under tank will be in Native soil - Overlying Gravel/road base will be removed from under tank to allow access to native soil - no other staining of surrounding soil was observed.

INVENTOR SIGNATURE — Jonah Davis PRINTED NAME — 11-23-2020 DATE
DISCLOSED TO AND UNDERSTOOD BY — Joanna Taylor PRINTED NAME — 12-2-2020 DATE

2 PAGE | 1 BOOK NO. | TOS-302_TAN_UST_Removal PROJECT

TOS-302 TAN UST Removal Soil Sampling
11-23-2020
Contacts
kerry Nissen - 208-569-4721 - Environmental
Brian Donovan - Environmental - ATR
James Winter - Environmental
Eric Walker - Construction

Shipping information
TRK # 7721 6610 9027

JD 11-23-2020

INVENTOR SIGNATURE Jonah Davis PRINTED NAME 11-23-2020 DATE
DISCLOSED TO AND UNDERSTOOD BY Joanna Taylor PRINTED NAME 12-2-2020 DATE

1 BOOK NO. | TOS-302-TAN_UST_Removal PROJECT | 3 PAGE

Samples 11-23-2020
-Sample were collected at random within the bucket/shovel scoop
10:00 - TANN 20010
- Under sump containment box
- 4 vials were filled first using plunger
- ↳ TANN 20010 B
-250 Squat
↳ TANN 20010 A
- Sample soil was, clay and sand that was very saturated and sticky
- Field blank -1 was used for this sample
- Sample collected 28" bGS
11:45 - TANN 20009
- North end of storage tank
- 4 vials were filled using plunger
- ↳ TANN 20009 B
-250 Squat
↳ ~~TANN 20009 B split 250~~ TANN 20009 A
-Uniform clay soil
Sample taken 18' BGS
- Field blank #3
11:25 - TANN 20008
- Middle over of storage tank
- 4 vials filled with plunger
↳ TANN 20008 B
-250 Squat
↳ TANN 20008 A
- Uniform clay
Field blank -2 taken at this location
Sample collected 18' bgs
JD 11-23-2020

INVENTOR SIGNATURE Jonah Davis PRINTED NAME 11-23-2020 DATE
DISCLOSED TO AND UNDERSTOOD BY Joanna Taylor PRINTED NAME 12-2-2020 DATE

4 PAGE | 1 BOOK NO. | TOS 302 TAN UST Removal PROJECT

Sample continued. 11-23-2020

11:00 - TANN 20007
- South end of storage tank
- 4 vials filled using plunger
↳ TANN 20007 B
-250 Squat
↳ TANN 20007 A
- Mostly clay Uniform
- Sample collected 18' bgs
JD 11-23-2020 ~~Duplicate~~ Duplicate

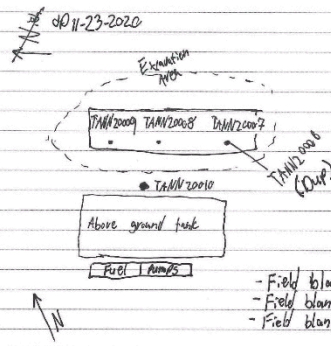
11:00 -TANN 20006
- South end of storage tank
- 4 vials filled using plunger
↳ TANN 20006 B
-250 squat
↳ TANN 20006 A
- Mostly uniform clay
- Sample collected 18' bgs

JD 11-23-2020

INVENTOR SIGNATURE Jonah Davis PRINTED NAME 11-23-2020 DATE
DISCLOSED TO AND UNDERSTOOD BY Joanna Taylor PRINTED NAME 12-2-2020 DATE

1 BOOK NO. | TOS -302 TAN UST Removal PROJECT | 5 PAGE

11-23-2020 JD 11-23-2020



- Field blank 1 - TAN 10
- Field blank 2 - TAN 08
- Field blank 3 - TAN 09

- All sample taken underneath fuel tank were at approximately 18' below ground surface (BGS).
- TANN20010 was taken at 28" (BGS)

JD 11-23-2020

INVENTOR SIGNATURE Jonah Davis PRINTED NAME 11-23-2020 DATE
DISCLOSED TO AND UNDERSTOOD BY Joanna Taylor PRINTED NAME 12-2-2020 DATE

Appendix D - UST Removal TOS-302 Sampling Event Narrative Test Area North (DEQ Facility ID# 6-120618

Sampling Event Narrative

Date:	11/23/2020
Organization:	BEA
TPOC:	Kerry Nisson
Project Name:	302_Removal of Underground Fuel Storage Tank TAN
Sampling Event#:	TOS-302
TOS#:	302
Laboratory:	GEL
WO/SDG:	528429

Table of Contents

1. EVENT SUMMARY

The sampling activity will support Battelle Energy Alliance (BEA) in a permanent closure of the underground storage tank (UST) at Test Area North (TAN). Per conversation from BEA, Idaho Department of Environmental Quality (IDEQ) requires three samples to be taken under the UST (one at each end of the tank and one in the middle), another sample will be taken under the transition sump. IDEQ may also require a sample from under the diesel dispenser that was formerly used for the UST, depending on any soil staining. If a sample is required under the dispenser, the INL would have to auger into the soil below the dispenser to sample.

There is a piping transition sump ~ 23-feet from the UST adjacent to the concrete pad for the above ground fuel storage tank. A sample would be required under the sump and not to remove soil from underneath the transition sump until a sample could be taken. IDEQ also stated that they would like to see the transition sump at the time of sampling.

IDEQ stated as the concrete is removed from around the spill bucket, any staining of the soil should be noted, and pictures should be taken of the staining. Stained soil should be properly contained and detailed in notes.

IDEQ requested that the laboratory and sampling described in the *"Fact Sheet: How DEQ Evaluates Sample Collection and Data Analysis for UST Closures and Release Investigations"* is followed. MarCom will need to ensure the laboratory selected for analysis could meet the screening detection criteria required and would provide QA/QC controls.

Data collected from the samples will be compared to the petroleum chemical of interest (COI) in the sample to the screening levels, obtained from Table 2 in the Risk Evaluation Manual for Petroleum Releases-August 2018.

1.1 Notable Results/Events

N/A

2. SAMPLING SUMMARY

2.1 Ship Screens

Shipment screening was not necessary, for this sampling event, because the samples were collected outside of a INL regulated perimeter or radiological area.

2.2 Sampling Summary

On November 23, 2020 Samples were collected from the excavated area near the TAN facility. The excavated area, containing the underground storage tank, is located approximately 100 feet southeast of the TAN perimeter fence *(See Figure 1)*. The Sampling crew was unable to enter the excavated area due to the safety concerns driven by the instability of the excavation. Because of this, the sampling crew was not allowed to enter the excavation area while the digging equipment was active and required to stay at least 6 feet away from the edge of the hole.

Samples were collected at multiple locations from within the bucket/shovel scoop. The samples were collected to exclude rocks and other debris. The 4 vial soil kits were collected by using the provided plunger that was only used for its unique sample. The 250 mL soil samples were collected using a stainless-steel spoon that was also unique to its respective sample. Throughout the sampling event, crew members noted there was no organic smells associated with the excavation. Also, there was no stained soil observed within the excavated area.

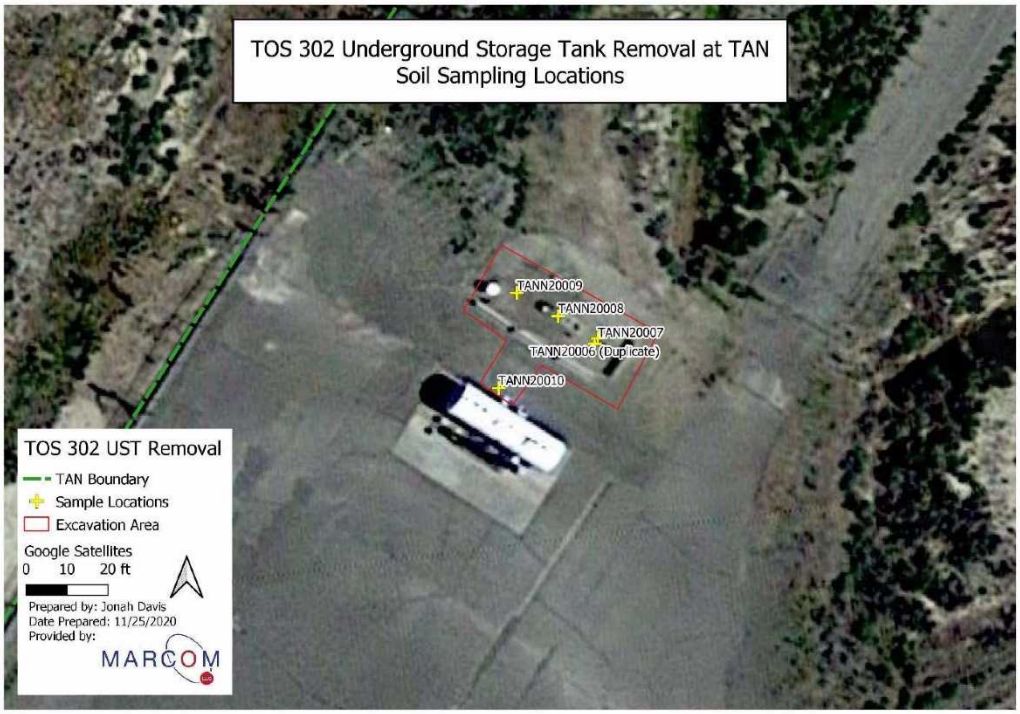
Construction workers removed the sump pump's containment box which revealed the underlying soil. TANN20010 was collected from under the containment box. The sample material was brought to the sampling crew, by construction workers, on a shovel. TANN0009, TANN0008, TANN0007, and TANN0006 (Duplicate) were collected from native soil underneath the storage tank *(See Figure 1)*. Operators removed the overlying gravel from the excavation to reveal the native soil underneath. Once the native soil was exposed, the excavator would collect a bucket full of soil and set the bucket on the ground to allow the sampling crew access to the material. Pertinent information of the sample was noted in the logbook, and the sample bottles were labeled immediately following their collection. Once complete, the samples containers were placed on ice in coolers.

Table 1. Sample Collection Information obtained from the Sampler

Date/Time Sample Collection	MarCom ID#	Description
11/23/2020 - 11:00	TANN20006	Duplicate sample of TANN20007. Uniform clay soil collected 18 feet Below Ground Surface (BGS).
11/23/2020 - 11:00	TANN20007	Uniform clay soil collected from 18 feet BGS.
11/23/2020 - 11:25	TANN20008	Uniform clay soil collected from 18 feet BGS. Field blank 2 was present at this location.
11/23/2020 - 11:45	TANN20009	Uniform clay soil collected from 18 feet BGS. Field blank 3 was present at this location.

11/23/2020 - 10:00	TANN20010	Soil was clay with sand that was saturated/sticky and difficult to sample. Field Blank 1 was present at this location. Sample was collected from 28 inches BGS.
11/23/2020 - 10:00	Field Blank 1	Field blank bottle was opened and kept near sampling site of TANN20010.
11/23/2020 - 11:25	Field Blank 2	Field blank bottle was opened and kept near sampling site of TANN20008
11/23/2020 - 11:45	Field Blank 3	Field blank bottle was opened and kept near sampling site of TANN20009
11/23/2020 - N/A	Trip Blank	Trip blank was left in sample coolers throughout entire sampling event.

Figure 1. Soil sample locations
Note: Due to safety concerns, GPS points could not be collected. All sample locations are approximate.



2.3 Shipment

On November 23, 2020, each of the 9 samples were placed into a cooler until completion of packaging at MarCom and subsequent shipment by FedEx Express. All chain of custody documentation was completed with a copy sent in the cooler with the samples. Samples were mailed on November 23, 2020 with sample receipt occurring on November 24, 2020.

3. LABORATORY SUMMARY

3.1 Holding Times

Samples were received at the laboratory on November 24, 2020 and the data report was received on December 2, 2020. All samples met the holding requirements as see in Table 2 below.

Table 2. Sample specific requirements from GEL laboratory

Analysis	Sample Bottle (type/size)	Minimum Sample Amount	Preservative	Maximum Holding Time
BTEX, EDB, EDC, MTBE	O2Si Kit 5035 soil kit (4 vial kit)	NA	0< 6°C,	48 hours for preservation 14 days for analysis
PAH	250 mL Amber glass, Teflon-lined cap	200g	0< 6°C,	14 days for extraction. 40 days after extraction

3.2 Analyses

IVOA-A-018 BTEX, EDB, EDC, METBE has no direct line item with GEL so the custom list of VOA-A-007 for water and VOA-A-008 for solid. ISVO-A-014 PAHs is SVO-A-008 for liquid and SVO-A-009 for solids. These are shown in Table 3 below.

Table 3. Sample Analysis Identification

Laboratory ID	MarCom ID	Matrix	Line-Item Code	Method
528429001	Field Blank	Water	SVO-A-008	SW-846 8270 SIM
528429002	TANN20006	Soil	SVO-A-009	SW-846 8270 SIM
528429002	TANN20006	Soil	VOA-A-003	SW-846 5035B
528429002	TANN20006	Soil	VOA-A-008	SW-846 8260
528429003	TANN20007	Soil	SVO-A-009	SW-846 8270 SIM
528429003	TANN20007	Soil	VOA-A-003	SW-846 5035B
528429003	TANN20007	Soil	VOA-A-008	SW-846 8260
528429004	TANN20008	Soil	SVO-A-009	SW-846 8270 SIM
528429004	TANN20008	Soil	VOA-A-003	SW-846 5035B
528429004	TANN20008	Soil	VOA-A-008	SW-846 8260

528429005	TANN20009	Soil	SVO-A-009	SW-846 8270 SIM
528429005	TANN20009	Soil	VOA-A-003	SW-846 5035B
528429005	TANN20009	Soil	VOA-A-008	SW-846 8260
528429006	TANN20010	Soil	SVO-A-009	SW-846 8270 SIM
528429006	TANN20010	Soil	VOA-A-003	SW-846 5035B
528429006	TANN20010	Soil	VOA-A-008	SW-846 8260
528429008	Trip Blank	Water	VOA-A-007	SW-486 8260

3.3 Limits of Detection

Limits of detection are as stated in the TOS and in Table 4 below.

Table 4. Screening levels concentrations for Groundwater Protection for Diesel/Fuel Oil No. 2/Kerosene unrestricted use.

Chemical	Screening Level [mg/kg]
Benzene	**0.025**
Toluene	**6.6**
Ethyl benzene	7.4
Xylenes (mixed)	93
Ethylene Dibromide (EDB)	**0.00014**
1,2 Dichloroethane (EDC)	**0.013**
Methyl Tert-Butyl Ether (MTBE)	**0.08**
Acenaphthene	**200**
Anthracene	**3200**
Benzo(a)pyrene	2.1
Benzo(b)fluoranthene	2.29
Benzo(k)fluoranthene	22.5
Benz(a)anthracene	**0.68**
Chrysene	**69**
Fluorene	**240**
Fluoranthene	**1400**
Naphthalene	21
Pyrene	**1000**

Values in bold are current screening level values.

3.4 QA/QC

The sample receipt checklist shown that the methanol tubes for the soil kits were not added to the samples in the field. The lab Matrix Spike and Matrix Spike Duplicate test were done on an outside sample instead of on one of the samples from this project.

3.5 Data Package

A full data package was provided which included case narratives, chain of custody documentation, data and quality control summary.

3.6 Sample Analysis Identification

Table 5. Sample Analysis Identification.

Laboratory ID	MarCom ID	Matrix	Line-Item Code	Method
528429001	Field Blank	Water	SVO-A-008	SW-846 8270 SIM
528429002	TANN20006	Soil	SVO-A-009	SW-846 8270 SIM
528429002	TANN20006	Soil	VOA-A-003	SW-846 5035B
528429002	TANN20006	Soil	VOA-A-008	SW-846 8260
528429003	TANN20007	Soil	SVO-A-009	SW-846 8270 SIM
528429003	TANN20007	Soil	VOA-A-003	SW-846 5035B
528429003	TANN20007	Soil	VOA-A-008	SW-846 8260
528429004	TANN20008	Soil	SVO-A-009	SW-846 8270 SIM
528429004	TANN20008	Soil	VOA-A-003	SW-846 5035B
528429004	TANN20008	Soil	VOA-A-008	SW-846 8260
528429005	TANN20009	Soil	SVO-A-009	SW-846 8270 SIM
528429005	TANN20009	Soil	VOA-A-003	SW-846 5035B
528429005	TANN20009	Soil	VOA-A-008	SW-846 8260
528429006	TANN20010	Soil	SVO-A-009	SW-846 8270 SIM
528429006	TANN20010	Soil	VOA-A-003	SW-846 5035B
528429006	TANN20010	Soil	VOA-A-008	SW-846 8260
528429008	Trip Blank	Water	VOA-A-007	SW-486 8260

4. CLOSE OUT COMMENTS

5. REFERENCES/TRAINING REQUIREMENTS

IDEQ, 2018. Idaho Risk Evaluation Manual for Petroleum Releases, Boise Idaho.

IDEQ, Fact Sheet: How DEQ Evaluates Sample Collection and Data Analysis for UST Closures and Release Investigations. Retrieved on 12-4-2020 from https://www.deq.idaho.gov/media/60180049/how-deq-evaluates-sample-collection-data-analysis-used-oil-ust-closures-releases.pdf

APPENDIX A
FREQUENTLY USED ACRONYMS

Since acronyms are commonly used in lab documents, acronyms will not be defined throughout the document itself. This list is provided as a reference for frequently used acronyms in sampling event narratives. Not all acronyms will be used. This list may not be all inclusive. If an acronym is used that is not included on this list, every effort will be made to define it within the narrative.

Ag	Silver
AL	Analytical Laboratory
As	Arsenic
ATR	Advanced Test Reactor
Ba	Barium
Be	Beryllium
BEA	Battelle Energy Alliance
Cd	Cadmium
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code Federal Regulations
Cr	Chromium
CSU	Combined Standard Uncertainty
Dup	Duplicate
EPA	Environmental Protection Agency
G&A	General and Administrative Expense
GEL	GEL Laboratories, LLC
HDPE	High Density Polyethylene
HFEF	Hot Fuel Examination Facility
Hg	Mercury
IDAPA	Idaho Administrative Procedure Act
INL	Idaho National Laboratory
LCS	Laboratory Control Sample
MDC	Minimum Detectable Concentration
MFC	Material Fuels Complex
MS	Matrix Spike
MSD	Matrix Spike Duplicates
NA	Not Available
NEPA	National Environmental Policy Act
Ni	Nickel
P&T	Packing & Transportation

Pb	Lead
PCBs	Polychlorinated biphenyls
PCDDs	Polychlorinated dibenzo-dioxins
PCDFs	Polychlorinated dibenzo Furans
ppb	Parts per Billion
ppm	Parts per Million
QA/QC	Quality Assurance/Quality Control
RadCon	Radiological Controls
RCRA	Resource Conservation and Recovery Act
RML	Radiation Measurements Laboratory
RSD	Relative Standard Deviation
Sb	Antimony
SE	Sampling Event
Se	Selenium
SVOAs	Semi-Volatile Organic Analysis
TCLP	Toxicity Characteristic Leaching Procedure
Tl	Thallium
TOS	Task-Order Statement of Work
TREAT	Transient Reactor Test
UTS	Universal Treatment Standards
V	Vanadium
VOAs	Volatile Organic Analysis
WO	Work Order
Zn	Zinc

Appendix E - Sample Analytical Report TOS-302 Gel Laboratories Data

Package

GEL Laboratories LLC
a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.556.8171
F 843.766.1178

gel.com

November 25, 2020

Ms. Kim Archibald
MarCom, LLC
506 S. Woodruff
Idaho Falls, Idaho 83401

Re: Analytical for
Work Order: 528429

Dear Ms. Archibald:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on November 24, 2020. This original report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at www.gel.com.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4487.

Sincerely,

Clare Drennen for
Brielle Luthman
Project Manager

Purchase Order: 23270002P01TOS302
Chain of Custody: 259
Enclosures

Table of Contents

Case Narrative

Case Narrative
for
Marcom LLC
SDG: 528429

November 25, 2020

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

TOS

Analytical for

Project Title

302_COC

Summary:

Sample Receipt The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on November 24, 2020 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. Shipping container temperatures were checked, documented, and within specifications. There are no additional comments concerning sample receipt.

Items of Note There are no additional items of note concerning this SDG.

Sample Identification The laboratory received the following sample(s):

Laboratory ID	Client ID	Matrix	LIC
528429001	FIELD BLANK	Water	SVO-A-008
528429002	TANN20006	Soil	SVO-A-009
528429002	TANN20006	Soil	VOA-A-003
528429002	TANN20006	Soil	VOA-A-008
528429003	TANN20007	Soil	SVO-A-009
528429003	TANN20007	Soil	VOA-A-003
528429003	TANN20007	Soil	VOA-A-008
528429004	TANN20008	Soil	SVO-A-009
528429004	TANN20008	Soil	VOA-A-003
528429004	TANN20008	Soil	VOA-A-008
528429005	TANN20009	Soil	SVO-A-009

528429005	TANN20009	Soil	VOA-A-003
528429005	TANN20009	Soil	VOA-A-008
528429006	TANN20010	Soil	SVO-A-009
528429006	TANN20010	Soil	VOA-A-003
528429006	TANN20010	Soil	VOA-A-008
528429007	TRIP BLANK	Water	VOA-A-007

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Prep Methods and Prep Dates

Method	Run Date ID
SW846 3510C	
SW846 3541	
SW846 5035A	

Analysis Methods and Analysis Dates

Method	Run Date ID

Certification Statement

I certify that this data package is in compliance with the terms and conditions of SOW-0062 and any applicable TOSs for this project, both technically and for completeness, for other than the conditions detailed in this case narrative. Release of the data contained in this data package and also in any associated computer-readable data submitted has been authorized by the laboratory manager or manager's designee.

Clare Drennen for
Brielle Luthman
Project Manager

Chain of Custody and Supporting Documentation

Chain of Custody Record

MARCOM

528429

Chain of Custody ID # 259

Client	Contact	Date
MarCom LLC 506 S Woodruff Idaho Falls, ID 83401	Name: Matt Ladd Tel: Not Specified	11/23/2020

Title

302_COC

Location

TAN (just past the entrance to SMC)

Sample Name / Sample ID#	Date/Time	Container(s)	Matrix	Containers	Container Lot #s	Preservatives	Analysis
FIELD BLANK - FIELD BLANK #1-10:00 #2:1125 #3	11-23-20 11:00	3	Liquid	(3) - 1000mL Amber Glass		(1) - <6C	(3) - SVO-A-008 (Field Blank SIM PAHs)
TANN20006 - TANN20006	11-23-20 11:00	2	soil	(1) - 250 mL Amber Glass, (1) - 4 Vial Soil Kit		(2) - <6C	(1) - SVOA (SVO-A-009), (1) - VOA-A-008 (VOCs)
TANN20007 - TANN20007	11-23-20 11:00	2	soil	(1) - 250 mL Amber Glass, (1) - 4 Vial Soil Kit		(2) - <6C	(1) - SVOA (SVO-A-009), (1) - VOA-A-008 (VOCs)
TANN20008 - TANN20008	11-23-20 11:25	2	soil	(1) - 250 mL Amber Glass, (1) - 4 Vial Soil Kit		(2) - <6C	(1) - SVOA (SVO-A-009), (1) - VOA-A-008 (VOCs)
TANN20009 - TANN20009	11-23-20 11:45	2	soil	(1) - 250 mL Amber Glass, (1) - 4 Vial Soil Kit		(2) - <6C	(1) - SVOA (SVO-A-009), (1) - VOA-A-008 (VOCs)
TANN20010 - TANN20010	11-23-20 10:00	2	soil	(1) - 250 mL Amber Glass, (1) - 4 Vial Soil Kit		(2) - <6C	(1) - SVOA (SVO-A-009), (1) - VOA-A-008 (VOCs)
TRIP BLANK - TRIP BLANK	11-23-20 11:45	3	Liquid	(3) - 40 mL Vial		(3) - DI with HCL	(3) - VOA-A-007 (Trip Blank VOA Custom List)

Signatures

	Relinquished By (sign/print)	Date	Time	Received By (sign/print)	Date	Time
X	Jonah Davis	11-23-2020	15:34	Shyasaa Dadem	11/24/20	9:40
	2. Relinquished By (sign/print)	Date	Time	2. Received By (sign/print)	Date	Time
	3. Relinquished By (sign/print)	Date	Time	3. Received By (sign/print)	Date	Time

Report - Generated 11/23/2020

1 of 2

Cooler #1 - Has all the soil kits - + trip blanks -

Chain of Custody Record

MARCOM

Chain of Custody ID # 259

Cooler	Possible Hazard Identification	Sample Disposal
☑ Yes ☐ No Cooler Temp: 4C	☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown	Disposal by Lab

Turn Around Time	QC Requirements

Signatures

1. Relinquished By (sign/print)	Date	Time	1. Received By (sign/print)	Date	Time
Jonah Davis	11-23-2020	15:34	Shyasia Dalton	11/24/20	9:40
2. Relinquished By (sign/print)	Date	Time	2. Received By (sign/print)	Date	Time
3. Relinquished By (sign/print)	Date	Time	3. Received By (sign/print)	Date	Time

Report - Generated 11/23/2020

2 of 2

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: MCOM	SDG/AR/COC/Work Order: 528429 B.L.
Received By: Tye	Date Received: 11/24/20
Carrier and Tracking Number	Circle Applicable: (FedEx Express) FedEx Ground UPS Field Services Courier Other 7721 6610 9027 (2 of 2)

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
A)Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#: If UN2910, Is the Radioactive Shipment Survey Compliant? Yes___ No___
B) Did the client designate the samples are to be received as radioactive?		✓	COC notation or radioactive stickers on containers equal client designation.
C) Did the RSO classify the samples as radioactive?		✓	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0 CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3
D) Did the client designate samples are hazardous?		✓	COC notation or hazard labels on containers equal client designation.
E) Did the RSO identify possible hazards?		✓	If D or E is yes, select Hazards below. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	✓			Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	✓			Preservation Method: Wet Ice (Ice Packs) Dry ice None Other: *all temperatures are recorded in Celsius TEMP: 2°C
4	Daily check performed and passed on IR temperature gun?	✓			Temperature Device Serial #: IR3-19 Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?		✓		Sample ID's and Containers Affected: If Preservation added, Lot#:
7	Do any samples require Volatile Analysis?	✓			If Yes, are Encores or Soil Kits present for solids? Yes ✓ No___ NA___(If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes ✓ No___ NA___(If unknown, select No) Are liquid VOA vials free of headspace? Yes ✓ No___ NA___ Sample ID's and containers affected:
8	Samples received within holding time?	✓			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓			Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
11	Number of containers received match number indicated on COC?	✓			Circle Applicable: No container count on COC Other (describe)
12	Are sample containers identifiable as GEL provided by use of GEL labels?			✓	
13	COC form is properly signed in relinquished/received sections?	✓			Circle Applicable: Not relinquished Other (describe)

Comments (Use Continuation Form if needed):

* Methanol Package not added to Soil kit.

PM (or PMA) review: Initials CD Date 11/25/20 Page 1 of 1

GL-CHL-SR-001 Rev 7

Data Review Qualifier Definitions

Data Review Qualifier Definitions

Qualifier	Explanation
*	A quality control analyte recovery is outside of specified acceptance criteria
**	Analyte is a surrogate compound
<	Result is less than value reported
>	Result is greater than value reported
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
A	The TIC is a suspected aldol-condensation product
B	Target analyte was detected in the associated blank
B	Metals-Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL
BD	Results are either below the MDC or tracer recovery is low
C	Analyte has been confirmed by GC/MS analysis
D	Results are reported from a diluted aliquot of the sample
d	5-day BOD-The 2:1 depletion requirement was not met for this sample
E	Organics-Concentration of the target analyte exceeds the instrument calibration range
E	Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
H	Analytical holding time was exceeded
h	Preparation or preservation holding time was exceeded
J	Value is estimated
N	Metals-The Matrix spike sample recovery is not within specified control limits
N	Organics-Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
N/A	Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND	Analyte concentration is not detected above the reporting limit
UI	Gamma Spectroscopy-Uncertain identification
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	QC Samples were not spiked with this compound
Z	Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.

P Organics-The concentrations between the primary and confirmation columns/detectors is >40% difference. For HPLC, the difference is >70%.

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Laboratory Certifications

List of current GEL Certifications as of 25 November 2020

State	Certification
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2019020
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122021-1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2019-165
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-20-17
Utah NELAP	SC000122020-33
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

Volatile Analysis

Case Narrative

GC/MS Volatile
Technical Case Narrative
Marcom LLC
SDG #: 528429

Product: **Volatile Organic Compounds (VOC) by Gas Chromatograph/Mass Spectrometer**
Analytical Method: SW846 8260D
Analytical Procedure: GL-OA-E-038 REV# 28
Analytical Batches: 2067534 and 2067535

Preparation Method: SW846 5035A
Preparation Procedure: GL-OA-E-039 REV# 13
Preparation Batch: 2067533

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
528429002	TANN20006
528429003	TANN20007
528429004	TANN20008
528429005	TANN20009
528429006	TANN20010
528429007	TRIP BLANK
1204704445	Method Blank (MB)
1204704446	Method Blank (MB)
1204704448	Laboratory Control Sample (LCS)
1204704449	Laboratory Control Sample (LCS)
1204704450	528414001(NonSDG) Post Spike (PS)
1204704451	528414001(NonSDG) Post Spike Duplicate (PSD)
1204704452	Method Blank (MB)
1204704454	Laboratory Control Sample (LCS)
1204704456	527604007(NonSDG) Post Spike (PS)
1204704457	527604007(NonSDG) Post Spike Duplicate (PSD)

Samples 528429002, 003, 004, 005 and 006 in this SDG were analyzed on a "dry weight corrected" basis. Sample 528429007 in this SDG was analyzed on an "as received" basis.
Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Calibration Information

Continuing Calibration Verification Requirements
All Calibration Verification Standards (CCV) did not meet the acceptance criteria as outlined in Method 8260D for samples and the associated QC . However, the method allows for a designated number of outliers dependent on the requested analyte list. This SDG satisfied the 8260D outlier acceptance criteria. The results are reported.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

MCOM001 Marcom LLC

Client SDG: 528429 GEL Work Order: 528429

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria
** Analyte is a surrogate compound
E Concentration of the target analyte exceeds the instrument calibration range
U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Erin Haubert Name: Erin Haubert

Date: 01 DEC 2020 Title: Data Validator

Sample Data Summary

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**528429**	**Date Collected:**	**11/23/2020 11:00**	**Matrix:**	**SOIL**
Lab Sample ID:	**528429002**	**Date Received:**	**11/24/2020 09:40**	**%Moisture:**	**13.6**
		Client:	**MCOM001**	**Project:**	**MCOM00118**
Client ID:	**TANN20006**	**Method:**	**SW846 8260D**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**2067534**	**Inst:**	**VOA2.I**	**Dilution:**	**1**
Run Date:	**11/28/2020 03:39**	**Analyst:**	**JP1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/23/2020 11:00**	**Aliquot:**	**6.69 g**	**Final Volume:**	**5 mL**
Data File:	**112720V2.b\2P525.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether	U	0.865	ug/kg	0.288	0.865
107-06-2	1,2-Dichloroethane	U	0.865	ug/kg	0.288	0.865
71-43-2	Benzene	U	0.865	ug/kg	0.288	0.865
108-88-3	Toluene	U	0.865	ug/kg	0.288	0.865
106-93-4	1,2-Dibromoethane	U	0.865	ug/kg	0.288	0.865
100-41-4	Ethylbenzene	U	0.865	ug/kg	0.288	0.865
179601-23-1	m,p-Xylenes	U	1.73	ug/kg	0.577	1.73
95-47-6	o-Xylene	U	0.865	ug/kg	0.288	0.865

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**528429**	**Date Collected:**	**11/23/2020 11:00**	**Matrix:**	**SOIL**
Lab Sample ID:	**528429003**	**Date Received:**	**11/24/2020 09:40**	**%Moisture:**	**13.6**
		Client:	**MCOM001**	**Project:**	**MCOM00118**
Client ID:	**TANN20007**	**Method:**	**SW846 8260D**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**2067534**	**Inst:**	**VOA2.I**	**Dilution:**	**1**
Run Date:	**11/28/2020 04:04**	**Analyst:**	**JP1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/23/2020 11:00**	**Aliquot:**	**7.41 g**	**Final Volume:**	**5 mL**
Data File:	**112720V2.b\2P526.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether	U	0.781	ug/kg	0.260	0.781
107-06-2	1,2-Dichloroethane	U	0.781	ug/kg	0.260	0.781
71-43-2	Benzene	U	0.781	ug/kg	0.260	0.781
108-88-3	Toluene	U	0.781	ug/kg	0.260	0.781
106-93-4	1,2-Dibromoethane	U	0.781	ug/kg	0.260	0.781
100-41-4	Ethylbenzene	U	0.781	ug/kg	0.260	0.781
179601-23-1	m,p-Xylenes	U	1.56	ug/kg	0.521	1.56
95-47-6	o-Xylene	U	0.781	ug/kg	0.260	0.781

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**528429**	**Date Collected:**	**11/23/2020 11:25**	**Matrix:**	**SOIL**
Lab Sample ID:	**528429004**	**Date Received:**	**11/24/2020 09:40**	**%Moisture:**	**13.6**
		Client:	**MCOM001**	**Project:**	**MCOM00118**
Client ID:	**TANN20008**	**Method:**	**SW846 8260D**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**2067534**	**Inst:**	**VOA2.I**	**Dilution:**	**1**
Run Date:	**11/28/2020 04:31**	**Analyst:**	**JP1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/23/2020 11:25**	**Aliquot:**	**5.87 g**	**Final Volume:**	**5 mL**
Data File:	**112720V2.b\2P527.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether	U	0.985	ug/kg	0.328	0.985
107-06-2	1,2-Dichloroethane	U	0.985	ug/kg	0.328	0.985
71-43-2	Benzene	U	0.985	ug/kg	0.328	0.985
108-88-3	Toluene	U	0.985	ug/kg	0.328	0.985
106-93-4	1,2-Dibromoethane	U	0.985	ug/kg	0.328	0.985
100-41-4	Ethylbenzene	U	0.985	ug/kg	0.328	0.985
179601-23-1	m,p-Xylenes	U	1.97	ug/kg	0.657	1.97
95-47-6	o-Xylene	U	0.985	ug/kg	0.328	0.985

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**528429**	**Date Collected:**	**11/23/2020 11:45**	**Matrix:**	**SOIL**
Lab Sample ID:	**528429005**	**Date Received:**	**11/24/2020 09:40**	**%Moisture:**	**13.5**
		Client:	**MCOM001**	**Project:**	**MCOM00118**
Client ID:	**TANN20009**	**Method:**	**SW846 8260D**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**2067534**	**Inst:**	**VOA2.I**	**Dilution:**	**1**
Run Date:	**11/28/2020 04:56**	**Analyst:**	**JP1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/23/2020 11:45**	**Aliquot:**	**5.43 g**	**Final Volume:**	**5 mL**
Data File:	**112720V2.b\2P528.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether	U	1.06	ug/kg	0.355	1.06
107-06-2	1,2-Dichloroethane	U	1.06	ug/kg	0.355	1.06
71-43-2	Benzene	U	1.06	ug/kg	0.355	1.06
108-88-3	Toluene	U	1.06	ug/kg	0.355	1.06
106-93-4	1,2-Dibromoethane	U	1.06	ug/kg	0.355	1.06
100-41-4	Ethylbenzene	U	1.06	ug/kg	0.355	1.06
179601-23-1	m,p-Xylenes	U	2.13	ug/kg	0.710	2.13
95-47-6	o-Xylene	U	1.06	ug/kg	0.355	1.06

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**528429**	**Date Collected:**	**11/23/2020 10:00**	**Matrix:**	**SOIL**
Lab Sample ID:	**528429006**	**Date Received:**	**11/24/2020 09:40**	**%Moisture:**	**17.5**
		Client:	**MCOM001**	**Project:**	**MCOM00118**
Client ID:	**TANN20010**	**Method:**	**SW846 8260D**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**2067534**	**Inst:**	**VOA2.I**	**Dilution:**	**1**
Run Date:	**11/28/2020 05:22**	**Analyst:**	**JP1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/23/2020 10:00**	**Aliquot:**	**6.5 g**	**Final Volume:**	**5 mL**
Data File:	**112720V2.b\2P529.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether	U	0.932	ug/kg	0.310	0.932
107-06-2	1,2-Dichloroethane	U	0.932	ug/kg	0.310	0.932
71-43-2	Benzene	U	0.932	ug/kg	0.310	0.932
108-88-3	Toluene	U	0.932	ug/kg	0.310	0.932
106-93-4	1,2-Dibromoethane	U	0.932	ug/kg	0.310	0.932
100-41-4	Ethylbenzene	U	0.932	ug/kg	0.310	0.932
179601-23-1	m,p-Xylenes	U	1.86	ug/kg	0.622	1.86
95-47-6	o-Xylene	U	0.932	ug/kg	0.310	0.932

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**528429**	**Date Collected:**	**11/23/2020 11:45**	**Matrix:**	**WATER**
Lab Sample ID:	**528429007**	**Date Received:**	**11/24/2020 09:40**		
		Client:	**MCOM001**	**Project:**	**MCOM00118**
Client ID:	**TRIP BLANK**	**Method:**	**SW846 8260D**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**2067535**	**Inst:**	**VOA3.I**	**Dilution:**	**1**
Run Date:	**11/28/2020 04:32**	**Analyst:**	**JP1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/28/2020 04:32**				
Data File:	**112720V3\3X525.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.333	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.333	1.00
71-43-2	Benzene	U	1.00	ug/L	0.333	1.00
108-88-3	Toluene	U	1.00	ug/L	0.333	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.333	1.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.333	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.667	2.00
95-47-6	o-Xylene	U	1.00	ug/L	0.333	1.00

Quality Control Summary

Surrogate Recovery Report

SDG Number: 528429

Matrix Type: LIQUID

Sample ID	Client ID	DCED4 %REC	TOL %REC	BFB %REC
1204704454	LCS for batch 2067535	102	101	99
1204704452	MB for batch 2067535	102	100	99
528429007	TRIP BLANK	102	101	101
1204704456	B3XLX9PS	99	99	96
1204704457	B3XLX9PSD	100	100	98

Surrogate		Parmname	Acceptance Limits
DCED4	=	1,2-Dichloroethane-d4	(71%-134%)
TOL	=	Toluene-d8	(74%-124%)
BFB	=	Bromofluorobenzene	(70%-131%)

* Recovery outside Acceptance Limits

Column to be used to flag recovery values

D Sample Diluted

Surrogate Recovery Report

SDG Number: 528429

Matrix Type: SOLID

Sample ID	Client ID	DCED4 %REC	TOL %REC	BFB %REC
1204704448	LCS for batch 2067534	98	94	95
1204704445	MB for batch 2067534	93	93	93
528429002	TANN20006	89	94	93
528429003	TANN20007	95	92	93
528429004	TANN20008	94	91	93
528429005	TANN20009	90	94	94
528429006	TANN20010	89	94	97
1204704449	LCS for batch 2067534	100	99	96
1204704446	MB for batch 2067534	96	98	91
1204704450	IS NO.1PS	98	100	97
1204704451	IS NO.1PSD	99	98	95

Surrogate	Parmname	Acceptance Limits
DCED4	= 1,2-Dichloroethane-d4	(81%-124%)
TOL	= Toluene-d8	(81%-120%)
BFB	= Bromofluorobenzene	(70%-130%)

* Recovery outside Acceptance Limits

Column to be used to flag recovery values

D Sample Diluted

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 528429
Client ID: LCS for batch 2067534
Lab Sample ID 1204704448
Instrument: VOA2.I
Analyst: JP1
Purge Vol: 5 mL

Sample Type: Laboratory Control Sample
Matrix: SOIL
Analysis Date: 11/27/2020 17:55
Prep Batch ID: 2067533
Batch ID: 2067534
Dilution: 1

CAS No		Parmname	Amount Added ug/kg	Sample Conc. ug/kg	Spike Conc. ug/kg	Recovery %	Acceptance Limits
179601-23-1	LCS	m,p-Xylenes	100	0.0	99.2	99	72-124
1634-04-4	LCS	tert-Butyl methyl ether	50.0	0.0	56.2	112	67-133
107-06-2	LCS	1,2-Dichloroethane	50.0	0.0	51.1	102	72-121
71-43-2	LCS	Benzene	50.0	0.0	50.8	102	73-122
108-88-3	LCS	Toluene	50.0	0.0	49.3	99	72-120
106-93-4	LCS	1,2-Dibromoethane	50.0	0.0	54.7	109	77-123
100-41-4	LCS	Ethylbenzene	50.0	0.0	49.5	99	72-123
95-47-6	LCS	o-Xylene	50.0	0.0	49.6	99	72-124

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 528429
Client ID: LCS for batch 2067534
Lab Sample ID 1204704449
Instrument: VOA2.I
Analyst: JP1
Purge Vol: 5 mL

Sample Type: Laboratory Control Sample
Matrix: SOIL
Analysis Date: 11/30/2020 21:20
Prep Batch ID: 2067533
Batch ID: 2067534
Dilution: 1

CAS No		Parmname	Amount Added ug/kg	Sample Conc. ug/kg	Spike Conc. ug/kg	Recovery %	Acceptance Limits
179601-23-1	LCS	m,p-Xylenes	100	0.0	91.4	91	72-124
1634-04-4	LCS	tert-Butyl methyl ether	50.0	0.0	47.6	95	67-133
107-06-2	LCS	1,2-Dichloroethane	50.0	0.0	41.8	84	72-121
71-43-2	LCS	Benzene	50.0	0.0	42.7	85	73-122
108-88-3	LCS	Toluene	50.0	0.0	44.9	90	72-120
106-93-4	LCS	1,2-Dibromoethane	50.0	0.0	49.6	99	77-123
100-41-4	LCS	Ethylbenzene	50.0	0.0	45.3	91	72-123
95-47-6	LCS	o-Xylene	50.0	0.0	45.7	91	72-124

Quality Control Summary
Spike Recovery Report

SDG Number: 528429
Client ID: IS NO.1PS
Lab Sample ID 1204704450
Instrument: VOA2.I
Analyst: JP1
Purge Vol: 5 mL

Sample Type: Post Spike
Matrix: SOIL
%Moisture: 5.2
Analysis Date: 12/01/2020 00:47
Prep Batch ID: 2067533
Batch ID: 2067534

Dilution: 1

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
179601-23-1	PS	m,p-Xylenes	100	0.000	U	87.4	87	39-131
1634-04-4	PS	tert-Butyl methyl ether	50.0	0.000	U	45.7	91	60-140
107-06-2	PS	1,2-Dichloroethane	50.0	0.000	U	39.6	79	62-125
71-43-2	PS	Benzene	50.0	0.000	U	41.1	82	56-129
108-88-3	PS	Toluene	50.0	0.000	U	43.2	86	56-132
106-93-4	PS	1,2-Dibromoethane	50.0	0.000	U	47.6	95	54-134
100-41-4	PS	Ethylbenzene	50.0	0.000	U	43.2	86	45-132
95-47-6	PS	o-Xylene	50.0	0.000	U	43.9	88	44-134

Quality Control Summary
Spike Recovery Report

SDG Number:	**528429**	**Sample Type:**	**Post Spike Duplicate**
Client ID:	**IS NO.1PSD**	**Matrix:**	**SOIL**
Lab Sample ID	**1204704451**	**%Moisture:**	**5.2**
Instrument:	**VOA2.I**	**Analysis Date:**	**12/01/2020 01:13**
Analyst:	**JP1**	**Prep Batch ID:**	**2067533**
Purge Vol:	**5 mL**	**Batch ID:**	**2067534**

Dilution: 1

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
179601-23-1	PSD	m,p-Xylenes	100	0.000	U	81.1	81	39-131	8	0-20
1634-04-4	PSD	tert-Butyl methyl ether	50.0	0.000	U	42.0	84	60-140	8	0-20
107-06-2	PSD	1,2-Dichloroethane	50.0	0.000	U	36.7	73	62-125	8	0-20
71-43-2	PSD	Benzene	50.0	0.000	U	38.5	77	56-129	7	0-20
108-88-3	PSD	Toluene	50.0	0.000	U	39.9	80	56-132	8	0-20
106-93-4	PSD	1,2-Dibromoethane	50.0	0.000	U	43.6	87	54-134	9	0-20
100-41-4	PSD	Ethylbenzene	50.0	0.000	U	40.0	80	45-132	8	0-20
95-47-6	PSD	o-Xylene	50.0	0.000	U	40.7	81	44-134	8	0-20

Quality Control Summary
Spike Recovery Report

SDG Number: 528429
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 2067535
Matrix: WATER
Lab Sample ID 1204704454
Instrument: VOA3.I
Analysis Date: 11/27/2020 18:45
Dilution: 1
Analyst: JP1
Purge Vol: 5 mL
Batch ID: 2067535

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
179601-23-1	LCS	m,p-Xylenes	100	0.0	96.1	96	73-124
1634-04-4	LCS	tert-Butyl methyl ether	50.0	0.0	49.2	98	70-129
107-06-2	LCS	1,2-Dichloroethane	50.0	0.0	44.6	89	72-127
71-43-2	LCS	Benzene	50.0	0.0	49.3	99	73-120
108-88-3	LCS	Toluene	50.0	0.0	47.4	95	74-120
106-93-4	LCS	1,2-Dibromoethane	50.0	0.0	48.5	97	78-125
100-41-4	LCS	Ethylbenzene	50.0	0.0	47.5	95	76-123
95-47-6	LCS	o-Xylene	50.0	0.0	47.4	95	76-124

Quality Control Summary
Spike Recovery Report

SDG Number: 528429
Client ID: B3XLX9PS
Lab Sample ID 1204704456
Instrument: VOA3.I
Analyst: JP1
Purge Vol: 5 mL

Sample Type: Post Spike
Matrix: WATER
Analysis Date: 11/28/2020 04:59
Dilution: 1
Batch ID: 2067535

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
179601-23-1	PS	m,p-Xylenes	100	0.000	U	97.4	97	53-128
1634-04-4	PS	tert-Butyl methyl ether	50.0	0.000	U	52.2	104	63-137
107-06-2	PS	1,2-Dichloroethane	50.0	0.000	U	49.2	98	69-132
71-43-2	PS	Benzene	50.0	0.000	U	51.8	104	63-124
108-88-3	PS	Toluene	50.0	0.000	U	49.3	99	60-122
106-93-4	PS	1,2-Dibromoethane	50.0	0.000	U	53.0	106	72-129
100-41-4	PS	Ethylbenzene	50.0	0.000	U	48.4	97	57-126
95-47-6	PS	o-Xylene	50.0	0.000	U	49.6	99	58-128

Quality Control Summary
Spike Recovery Report

SDG Number: 528429
Client ID: B3XLX9PSD
Lab Sample ID 1204704457
Instrument: VOA3.I
Analyst: JP1
Purge Vol: 5 mL

Sample Type: Post Spike Duplicate
Matrix: WATER
Analysis Date: 11/28/2020 05:25
Dilution: 1
Batch ID: 2067535

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
179601-23-1	PSD	m,p-Xylenes	100	0.000	U	95.7	96	53-128	2	0-20
1634-04-4	PSD	tert-Butyl methyl ether	50.0	0.000	U	51.3	103	63-137	2	0-20
107-06-2	PSD	1,2-Dichloroethane	50.0	0.000	U	48.1	96	69-132	2	0-20
71-43-2	PSD	Benzene	50.0	0.000	U	51.2	102	63-124	1	0-20
108-88-3	PSD	Toluene	50.0	0.000	U	48.4	97	60-122	2	0-20
106-93-4	PSD	1,2-Dibromoethane	50.0	0.000	U	51.1	102	72-129	4	0-20
100-41-4	PSD	Ethylbenzene	50.0	0.000	U	47.1	94	57-126	3	0-20
95-47-6	PSD	o-Xylene	50.0	0.000	U	48.2	96	58-128	3	0-20

Method Blank Summary

SDG Number:	528429	Client:	MCOM001	Matrix:	SOIL
Client ID:	MB for batch 2067534	Instrument ID:	VOA2.I	Data File:	112720V2.b\2P507B34.D
Lab Sample ID:	1204704445	Prep Date:	11/27/2020 16:30	Analyzed:	11/27/20 19:38
Column:	DB-624				

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 2067534	1204704448	112720V2.b\2P503L34.D	11/27/20	1755
02	TANN20006	528429002	112720V2.b\2P525.D	11/28/20	0339
03	TANN20007	528429003	112720V2.b\2P526.D	11/28/20	0404
04	TANN20008	528429004	112720V2.b\2P527.D	11/28/20	0431
05	TANN20009	528429005	112720V2.b\2P528.D	11/28/20	0456
06	TANN20010	528429006	112720V2.b\2P529.D	11/28/20	0522

Method Blank Summary

SDG Number:	528429	Client:	MCOM001	Matrix:	SOIL
Client ID:	MB for batch 2067534	Instrument ID:	VOA2.I	Data File:	113020V2.b\2Q110B34.D
Lab Sample ID:	1204704446	Prep Date:	11/30/2020 18:30	Analyzed:	11/30/20 22:38
Column:	DB-624				

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
08	LCS for batch 2067534	1204704449	113020V2.b\2Q107L34.D	11/30/20	2120
09	IS NO.1PS	1204704450	113020V2.b\2Q115.D	12/01/20	0047
10	IS NO.1PSD	1204704451	113020V2.b\2Q116.D	12/01/20	0113

Method Blank Summary

SDG Number:	528429	Client:	MCOM001	Matrix:	WATER
Client ID:	MB for batch 2067535	Instrument ID:	VOA3.I	Data File:	112720V3\3X506B35.D
Lab Sample ID:	1204704452	Prep Date:	11/27/2020 20:05	Analyzed:	11/27/20 20:05
Column:	DB-624				

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 2067535	1204704454	112720V3\3X503L35.D	11/27/20	1845
02	TRIP BLANK	528429007	112720V3\3X525.D	11/28/20	0432
03	B3XLX9PS	1204704456	112720V3\3X526.D	11/28/20	0459
04	B3XLX9PSD	1204704457	112720V3\3X527.D	11/28/20	0525

Instrument Performance Check

BROMOFLUOROBENZENE

Lab Name GEL Laboratories LLC **Client SDG:** 528429

Instrument ID: VOA2.I **Injection Date/Time:** 13-OCT-20 20:39

Column Description: Description: DB-624 **Lab File ID** 101320V2.b\2J201.D

m/e	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	23.2
75	30.0 - 60.0% of mass 95	48.6
95	50 - 200% of mass 174	124
96	5.0 - 9.0% of mass 95	7.1
173	Less than 2.0% of mass 174	0.6
174	50 - 200% of mass 95	80.6
175	5.0 -9.0% of mass 174	7.3
176	95.0 - 105.0% of mass 174	97.6
177	5.0 - 10.0% of mass 176	6.6

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

Client Sample ID	Lab Sample ID	Lab File ID	Time Analyzed
ICALMIX[A]	W2VM201013-02	101320V2.b\2J203.D	13-OCT-20 21:31
ICALMIX[A]	W2VM201013-03	101320V2.b\2J204.D	13-OCT-20 21:57
ICALMIX[A]	W2VM201013-04	101320V2.b\2J205.D	13-OCT-20 22:23
ICALMIX[A]	W2VM201013-05	101320V2.b\2J206.D	13-OCT-20 22:49
ICALMIX[A]	W2VM201013-06	101320V2.b\2J207.D	13-OCT-20 23:15
ICALMIX[A]	W2VM201013-07	101320V2.b\2J208.D	13-OCT-20 23:40
ICALMIX[A]	W2VM201013-08	101320V2.b\2J209.D	14-OCT-20 00:06
ICALMIX[A]	W2VM201013-09	101320V2.b\2J210.D	14-OCT-20 00:32
ICALMIX[A]	W2VM201013-10	101320V2.b\2J211.D	14-OCT-20 00:58

Instrument Performance Check

BROMOFLUOROBENZENE

Lab Name GEL Laboratories LLC **Client SDG:** 528429

Instrument ID: VOA2.I **Injection Date/Time:** 14-OCT-20 17:44

Column Description: Description: DB-624 **Lab File ID** 101420V2.b\2J301.D

m/e	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	22.2
75	30.0 - 60.0% of mass 95	49
95	50 - 200% of mass 174	123
96	5.0 - 9.0% of mass 95	6.9
173	Less than 2.0% of mass 174	0.6
174	50 - 200% of mass 95	81.3
175	5.0 -9.0% of mass 174	7.2
176	95.0 - 105.0% of mass 174	97
177	5.0 - 10.0% of mass 176	6.8

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

Client Sample ID	Lab Sample ID	Lab File ID	Time Analyzed
ICVMIX[A]01	W2VM201014-01	101420V2.b\2J302.D	14-OCT-20 18:09
CCVMIX[A]01	W2VM201127-01	112720V2.b\2P502.D	27-NOV-20 17:29
BLK01LCS	1204704448	112720V2.b\2P503L34.D	27-NOV-20 17:55
BLK01	1204704445	112720V2.b\2P507B34.D	27-NOV-20 19:38
TANN20006	528429002	112720V2.b\2P525.D	28-NOV-20 03:39
TANN20007	528429003	112720V2.b\2P526.D	28-NOV-20 04:04
TANN20008	528429004	112720V2.b\2P527.D	28-NOV-20 04:31
TANN20009	528429005	112720V2.b\2P528.D	28-NOV-20 04:56
TANN20010	528429006	112720V2.b\2P529.D	28-NOV-20 05:22
CCVMIX[A]02	W2VM201130-05	113020V2.b\2Q106.D	30-NOV-20 20:54
BLK03LCS	1204704449	113020V2.b\2Q107L34.D	30-NOV-20 21:20
BLK03	1204704446	113020V2.b\2Q110B34.D	30-NOV-20 22:38
IS NO.1MS	1204704450	113020V2.b\2Q115.D	01-DEC-20 00:47
IS NO.1MSD	1204704451	113020V2.b\2Q116.D	01-DEC-20 01:13

Instrument Performance Check

BROMOFLUOROBENZENE

Lab Name GEL Laboratories LLC **Client SDG:** 528429

Instrument ID: VOA3.I **Injection Date/Time:** 25-NOV-20 16:55

Column Description: DB-624 **Lab File ID** 112520V3\3X301.D

m/e	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	21.6
75	30.0 - 60.0% of mass 95	51.6
95	50 - 200% of mass 174	112.9
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.7
174	50 - 200% of mass 95	88.5
175	5.0 -9.0% of mass 174	6.4
176	95.0 - 105.0% of mass 174	99.7
177	5.0 - 10.0% of mass 176	6.5

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

Client Sample ID	Lab Sample ID	Lab File ID	Time Analyzed
ICALMIX[A]	W3VM201125-01	112520V3\3X302.D	25-NOV-20 17:22
ICALMIX[A]	W3VM201125-02	112520V3\3X303.D	25-NOV-20 17:48
ICALMIX[A]	W3VM201125-03	112520V3\3X304.D	25-NOV-20 18:15
ICALMIX[A]	W3VM201125-04	112520V3\3X305.D	25-NOV-20 18:42
ICALMIX[A]	W3VM201125-05	112520V3\3X306.D	25-NOV-20 19:09
ICALMIX[A]	W3VM201125-06	112520V3\3X307.D	25-NOV-20 19:36
ICALMIX[A]	W3VM201125-07	112520V3\3X308.D	25-NOV-20 20:03
ICALMIX[A]	W3VM201125-08	112520V3\3X309.D	25-NOV-20 20:30
ICALMIX[A]	W3VM201125-09	112520V3\3X310.D	25-NOV-20 20:56
ICVMIX[A]01	W3VM201125-10	112520V3\3X312.D	25-NOV-20 21:50
CCVMIX[A]01	W3VM201127-02	112720V3\3X503.D	27-NOV-20 18:45
BLK02LCS	1204704454	112720V3\3X503L35.D	27-NOV-20 18:45
BLK02	1204704452	112720V3\3X506B35.D	27-NOV-20 20:05
TRIP BLANK	528429007	112720V3\3X525.D	28-NOV-20 04:32
B3XLX9MS	1204704456	112720V3\3X526.D	28-NOV-20 04:59
B3XLX9MSD	1204704457	112720V3\3X527.D	28-NOV-20 05:25

Internal Standard
Area and RT Summary

Lab Name : GEL Laboratories LLC

Client SDG: 528429

Instrument: VOA2.I

STD Analysis Time: 27-NOV-20 17:29

GC Column: DB-624

Data File: 112720V2.b\2P502.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Area #	RT #	Area #	RT #	Area #	RT #
12 Hour STD	1350697	9.9	1029366	13.1	576975	15.5
Upper Limit	2701394	10.4	2058732	13.6	1153950	16.0
Lower Limit	675349	9.4	514683	12.6	288488	15.0
Sample ID						
BLK01LCS	1356388	9.9	1032138	13.1	573738	15.5
BLK01	1317148	9.9	1007989	13.1	587548	15.5
TANN20006	1253930	9.9	961499	13.1	544524	15.5
TANN20007	1308693	9.9	1038687	13.1	613766	15.5
TANN20008	1358983	9.9	1074022	13.1	629560	15.5
TANN20009	1302720	9.9	1000660	13.1	574808	15.5
TANN20010	1317889	9.9	992920	13.1	539753	15.5

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area

RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk
* Value outside of QC Limits

Internal Standard
Area and RT Summary

Lab Name : GEL Laboratories LLC

Client SDG: 528429

Instrument: VOA2.I

STD Analysis Time: 30-NOV-20 20:54

GC Column: DB-624

Data File: 113020V2.b\2Q106.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Area #	RT #	Area #	RT #	Area #	RT #
12 Hour STD	1598820	9.9	1153905	13.1	625299	15.5
Upper Limit	3197640	10.4	2307810	13.6	1250598	16.0
Lower Limit	799410	9.4	576953	12.6	312650	15.0
Sample ID						
BLK03LCS	1591735	9.9	1143334	13.1	622265	15.5
BLK03	1562368	9.9	1131832	13.1	654376	15.5
IS NO.1MS	1663638	9.9	1186414	13.1	636257	15.5
IS NO.1MSD	1685277	9.9	1220984	13.1	661665	15.5

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area

RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk
* Value outside of QC Limits

Internal Standard
Area and RT Summary

Lab Name : GEL Laboratories LLC

Client SDG: 528429

Instrument: VOA3.I

STD Analysis Time: 27-NOV-20 18:45

GC Column: DB-624

Data File: 112720V3\3X503.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Area #	RT #	Area #	RT #	Area #	RT #
12 Hour STD	1247254	9.97	663264	13.1	684483	15.6
Upper Limit	2494508	10.5	1326528	13.6	1368966	16.1
Lower Limit	623627	9.47	331632	12.6	342242	15.1
Sample ID						
BLK02LCS	1247254	9.97	663264	13.1	684483	15.6
BLK02	1225141	9.98	648747	13.1	667821	15.6
TRIP BLANK	1030988	9.98	547444	13.1	548031	15.6
B3XLX9MS	1092351	9.98	580532	13.1	604136	15.6
B3XLX9MSD	1111570	9.98	596555	13.1	608308	15.6

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area

RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk
* Value outside of QC Limits

Standards

Low level SW846 8260B and Regular level 8260B and EPA 624

Calibration Standard Concentration Levels

	Level 1	Level 1a	Level 2	Level 3	Level 4	Level 5	Level 6 #	Level 7 !	Level 7a
Fluorobenzene (IS)	20	20/50	20/50	20/50	20/50	20/50	20/50	20/50	20/50
1,2-Dichloroethane-d4(surr)		20/50	20/50	20/50	20/50	20/50	20/50	20/50	20/50
Dichlorodifluoromethane		0.5	1	2	5	10	20	50	100
Chloromethane		0.5	1	2	5	10	20	50	100
Vinyl chloride		0.5	1	2	5	10	20	50	100
Bromomethane		0.5	1	2	5	10	20	50	100
Chloroethane		0.5	1	2	5	10	20	50	100
Trichlorofluoromethane		0.5	1	2	5	10	20	50	100
1,1-Dichloroethene		0.5	1	2	5	10	20	50	100
Acetone	1	2.5	5	10	25	50	100	250	500
Iodomethane	1	2.5	5	10	25	50	100	250	500
Carbon disulfide	1	2.5	5	10	25	50	100	250	500
Methylene chloride		0.5	1	2	5	10	20	50	100
trans-1,2-Dichloroethene		0.5	1	2	5	10	20	50	100
1,1-Dichloroethane		0.5	1	2	5	10	20	50	100
Ethyl ether		0.5	1	2	5	10	20	50	100
Vinyl acetate	1	2.5	5	10	25	50	100	250	500
cis-1,2-Dichloroethene		0.5	1	2	5	10	20	50	100
1,2-Dichloroethene (total)		1	2	4	10	20	40	100	200
Cyclohexene		0.5	1	2	5	10	20	50	100
2-Chloroethylvinyl ether			5	10	25	50	100	250	500
2,2-Dichloropropane		0.5	1	2	5	10	20	50	100
2-Butanone	1	2.5	5	10	25	50	100	250	500
Bromochloromethane		0.5	1	2	5	10	20	50	100
Chloroform		0.5	1	2	5	10	20	50	100
1,1,1-Trichloroethane		0.5	1	2	5	10	20	50	100
1,1-Dichloropropene		0.5	1	2	5	10	20	50	100
Carbon tetrachloride		0.5	1	2	5	10	20	50	100
Benzene		0.5	1	2	5	10	20	50	100
1,2-Dichloroethane		0.5	1	2	5	10	20	50	100
Trichloroethene		0.5	1	2	5	10	20	50	100
1,2-Dichloropropane		0.5	1	2	5	10	20	50	100
Dibromomethane		0.5	1	2	5	10	20	50	100
Bromodichloromethane		0.5	1	2	5	10	20	50	100
cis-1,3-Dichloropropene		0.5	1	2	5	10	20	50	100
tert-Butylmethylether		0.5	1	2	5	10	20	50	100
Ethyl Ether			1	2	5	10	20	50	100
Acetonitrile			25	50	125	250	500	1250	2500
Methyl acetate			5	10	25	50	100	250	500
Cyclohexane			1	2	5	10	20	50	100
Methylcyclohexane			1	2	5	10	20	50	100
n-Butyl alcohol		50	100	200	500	1000	2000	5000	10000
2-Nitropropane			5	10	25	50	100	250	500
Ethyl acetate			5	10	25	50	100	250	500
Acrolein			5	10	25	50	100	250	500
Trichlorotrifluoroethane		2	5	10	25	50	100	250	500
Allyl chloride			5	10	25	50	100	250	500
Acrylonitrile			5	10	25	50	100	250	500
1,4-Dioxane			50	100	250	500	1000	2500	5000
Isobutyl alcohol			50	100	250	500	1000	2500	5000
Methacrylonitrile			5	10	25	50	100	250	500
Propionitrile			5	10	25	50	100	250	500
Methyl methacrylate			5	10	25	50	100	250	500
Chlorotrifluoroethylene			5	10	25	50	100	150	200
2-Chloro-1,1,1-trifluoroethane			5	10	25	50	100	150	200
Tetrahydrofuran			5	10	25	50	100	250	500
tert-Butyl alcohol			50	100	250	500	1000	2500	5000
Isopropyl ether			1	2	5	10	20	50	100
Ethyl tert-butyl ether			1	2	5	10	20	50	100
Isopropyl alcohol			50	100	250	500	1000	2500	5000
Methyl tert-amyl ether			1	2	5	10	20	50	100
1-Chlorohexane			1	2	5	10	20	50	100
2-Chloro-1,3-butadiene(chloroprene)			1	2	5	10	20	50	100
Chlorobenzene-d5 (IS)	20	20	20/50	20/50	20/50	20/50	20/50	20/50	20/50
Toluene-d8 (surr)		20	20/50	20/50	20/50	20/50	20/50	20/50	20/50
4-Methyl-2-pentanone	1	2.5	5	10	25	50	100	250	500
Toluene		0.5	1	2	5	10	20	50	100
trans-1,3-Dichloropropene		0.5	1	2	5	10	20	50	100
1,1,2-Trichloroethane		0.5	1	2	5	10	20	50	100
Tetrachloroethene		0.5	1	2	5	10	20	50	100
1,3-Dichloropropane		0.5	1	2	5	10	20	50	100
2-Hexanone	1	2.5	5	10	25	50	100	250	500
Dibromochloromethane		0.5	1	2	5	10	20	50	100
1,2-Dibromoethane		0.5	1	2	5	10	20	50	100
Chlorobenzene		0.5	1	2	5	10	20	50	100
1,1,1,2-Tetrachloroethane		0.5	1	2	5	10	20	50	100
Ethylbenzene		0.5	1	2	5	10	20	50	100
m,p-Xylene		1	2	4	10	20	20	100	200
o-Xylene		0.5	1	2	5	10	20	50	100
Xylenes (total)		1.5	3	6	15	30	60	150	300
Styrene		0.5	1	2	5	10	20	50	100
Ethyl methacrylate			5	10	25	50	100	250	500
1,4-Dichlorobenzene-d4 (IS)	20	20	20/50	20/50	20/50	20/50	20/50	20/50	20/50
Bromofluorobenzene (surr)		20	20/50	20/50	20/50	20/50	20/50	20/50	20/50
Bromoform		0.5	1	2	5	10	20	50	100
Isopropylbenzene		0.5	1	2	5	10	20	50	100
1,1,2,2-Tetrachloroethane		0.5	1	2	5	10	20	50	100
Bromobenzene		0.5	1	2	5	10	20	50	100
1,2,3-Trichloropropane		0.5	1	2	5	10	20	50	100
n-Propylbenzene		0.5	1	2	5	10	20	50	100
2-Chlorotoluene		0.5	1	2	5	10	20	50	100
1,3,5-Trimethylbenzene		0.5	1	2	5	10	20	50	100
4-Chlorotoluene		0.5	1	2	5	10	20	50	100
1,2,4-Trimethylbenzene		0.5	1	2	5	10	20	50	100
sec-Butylbenzene		0.5	1	2	5	10	20	50	100
1,3-Dichlorobenzene		0.5	1	2	5	10	20	50	100
tert-Butylbenzene		0.5	1	2	5	10	20	50	100
Isopropyltoluene		0.5	1	2	5	10	20	50	100
1,4-Dichlorobenzene		0.5	1	2	5	10	20	50	100
n-Butylbenzene		0.5	1	2	5	10	20	50	100
1,2-Dichlorobenzene		0.5	1	2	5	10	20	50	100
1,2-Dibromo-3-chloropropa		0.5	1	2	5	10	20	50	100
1,2,4-Trichlorobenzene		0.5	1	2	5	10	20	50	100
Hexachlorobutadiene		0.5	1	2	5	10	20	50	100
Naphthalene		0.5	1	2	5	10	20	50	100
1,2,3-Trichlorobenzene		0.5	1	2	5	10	20	50	100
cis-1,4-Dichloro-2-butene			5	10	25	50	100	250	500
trans-1,4-Dichloro-2-butene			5	10	25	50	100	250	500
Pentachloroethane			5	10	25	50	100	250	500
Benzyl chloride			5	10	25	50	100	250	500
Cyclohexanone			25	50	125	250	500	1250	2500
bis(2-Chloro-isopropyl)ether			5	10	25	50	100	250	500

Method	PQL	Concentration range		
SW 846 8260B low level	Level 1 &1a	Levels 1--> 7a	IS/SS @ 20 ppb	
EPA 524.2	Level 1a	Levels 1a -> 7a	IS/SS @ 20 ppb	
SW846 8260B/624	Level 2	Levels 1a-> 7a	IS/SS @ 50 ppb	n-butyl alchol only in 1a

#: Indicates calibration verification concentration level used for low level analysis

!: Indicates calibration verification concentration level used for regular level analysis

JP
11/27/2020

Calibration History Report VOA3
GEL Laboratories, LLC
Method File : C:\msdchem\1\data\112520V3\VOA3-8260D-112520.M
Last Update : Fri Nov 27 17:58:59 2020
Integrator : (RTE Integrator) Response via : Initial Calibration

EM
11/30/2020

Cal Lvl:8 Amt:0.00 Last Updated with: C:\msdchem\1\data\112520V3\3X302.D

Injection Date	Mix	Calibration File
25 Nov 2020 17:22	A	C:\msdchem\1\data\112520V3\3X302.D

Cal Lvl:1 Amt:1.00 Last Updated with: C:\msdchem\1\data\112520V3\3X313.D

Injection Date	Mix	Calibration File
25 Nov 2020 22:17	B	C:\msdchem\1\data\112520V3\3X313.D
25 Nov 2020 17:48	A	C:\msdchem\1\data\112520V3\3X303.D

Cal Lvl:2 Amt:2.00 Last Updated with: C:\msdchem\1\data\112520V3\3X314.D

Injection Date	Mix	Calibration File
25 Nov 2020 22:44	B	C:\msdchem\1\data\112520V3\3X314.D
25 Nov 2020 18:15	A	C:\msdchem\1\data\112520V3\3X304.D

Cal Lvl:3 Amt:5.00 Last Updated with: C:\msdchem\1\data\112520V3\3X315.D

Injection Date	Mix	Calibration File
25 Nov 2020 23:10	B	C:\msdchem\1\data\112520V3\3X315.D
25 Nov 2020 18:42	A	C:\msdchem\1\data\112520V3\3X305.D

Cal Lvl:4 Amt:10.00 Last Updated with: C:\msdchem\1\data\112520V3\3X316.D

Injection Date	Mix	Calibration File
25 Nov 2020 23:37	B	C:\msdchem\1\data\112520V3\3X316.D
25 Nov 2020 19:09	A	C:\msdchem\1\data\112520V3\3X306.D

Cal Lvl:5 Amt:20.00 Last Updated with: C:\msdchem\1\data\112520V3\3X317.D

Injection Date	Mix	Calibration File
26 Nov 2020 00:04	B	C:\msdchem\1\data\112520V3\3X317.D
25 Nov 2020 19:36	A	C:\msdchem\1\data\112520V3\3X307.D

Cal Lvl:6 Amt:50.00 Last Updated with: C:\msdchem\1\data\112520V3\3X318.D

Injection Date	Mix	Calibration File
26 Nov 2020 00:30	B	C:\msdchem\1\data\112520V3\3X318.D
25 Nov 2020 20:03	A	C:\msdchem\1\data\112520V3\3X308.D

Cal Lvl:7 Amt:100.00 Last Updated with: C:\msdchem\1\data\112520V3\3X320.D

Injection Date	Mix	Calibration File
26 Nov 2020 01:24	B	C:\msdchem\1\data\112520V3\3X320.D
25 Nov 2020 20:56	A	C:\msdchem\1\data\112520V3\3X310.D

Cal Lvl:9 Amt:80.00 Last Updated with: C:\msdchem\1\data\112520V3\3X319.D

Injection Date	Mix	Calibration File
26 Nov 2020 00:58	B	C:\msdchem\1\data\112520V3\3X319.D

Calibration History Report VOA3
GEL Laboratories, LLC

Method File : C:\msdchem\1\data\112520V3\VOA3-8260D-112520.M
Last Update : Fri Nov 27 17:58:59 2020
Integrator : (RTE Integrator) Response via : Initial Calibration

25 Nov 2020 20:30	A	C:\msdchem\1\data\112520V3\3X309.D

VOA3-8260D-112520.M Fri Nov 27 18:02:17 2020

SDG: 528429

Response Factor Report VOA3
GEL Laboratories, LLC

Method File : C:\msdchem\1\data\112520V3\VOA3-8260D-112520.M
Last Update : Fri Nov 27 17:58:59 2020
Integrator : (RTE Integrator) Response via : Initial Calibration

JP 11/27/2020

11/30/2020

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound b | m1 | m2	8 6	1 7	2 9	3	4	5	Avg	Curve	Exp	%RSD/r2
2)MA Dichlorodifluoromethane		0.3744294	0.3994300	0.4046934	0.3613307	0.3723489				
	0.3973105	0.3797133	0.3652372				0.3818	AVRG		4.3340
3)MPA Chloromethane		0.4482916	0.4540134	0.4509880	0.4223608	0.4030095				
	0.4152442	0.4008737	0.3805596				0.4219	AVRG		6.4140
4)MCA Vinyl chloride		0.3421905	0.3473471	0.3667323	0.3453847	0.3427812				
	0.3551582	0.3387015	0.3208112				0.3449	AVRG		3.8257
5)MA Bromomethane		0.2412980	0.2703040	0.2632518	0.2469324	0.2500815				
	0.2559836	0.2510004	0.2400740				0.2524	AVRG		4.1385
6)MA Chloroethane		0.2109898	0.2516515	0.2550088	0.2358181	0.2363626				
	0.2418662	0.2318517	0.2180730				0.2352	AVRG		6.4277
7)MA Trichlorofluoromethane		0.5010502	0.5150171	0.5142296	0.4896286	0.5032737				
	0.5090707	0.4666368	0.4277545				0.4908	AVRG		6.1071
8)MA Ethyl ether		0.2925749	0.3411070	0.3631169	0.3400470	0.3578906				
	0.3559771	0.3524800	0.3313505				0.3418	AVRG		6.6014
9)MA Acetone		0.1220050	0.1202908	0.0989847	0.1133514	0.1065855				
	0.0984181	0.1045975	0.1099774				0.1093	AVRG		8.1365
10)MCA 1,1-Dichloroethylene		0.4246287	0.4171589	0.3535724	0.4124197	0.4210485				
	0.4203744	0.4260749	0.4156753				0.4114	AVRG		5.7822
11)MA Iodomethane		0.4199950	0.4088779	0.3223719	0.4427283	0.4576343				
	0.4522431	0.4594360	0.4515593				0.4269	AVRG		10.7731
12)MA Acetonitrile		0.0511997	0.0538058	0.0482245	0.0533355	0.0510789				
	0.0478080	0.0501625	0.0521054				0.0510	AVRG		4.2718
13)MA Methyl acetate		0.0411742	0.0443426	0.0368422	0.0434693	0.0429167				
	0.0393587	0.0419933	0.0434574				0.0417	AVRG		6.0216
14)MA Carbon disulfide		0.6484153	0.5993770	0.3943969	0.7222100	0.7692535				
	0.7704617	0.7602488	0.7589308				0.6779	AVRG	#	19.2843
15)MA Methylene chloride		0.4728973	0.4122254	0.3168856	0.3344092	0.3287562				
	0.3178887	0.3251994	0.3192702				0.3534	AVRG	#	16.3103
16)MA tert-Butyl methyl ether		0.8576989	0.9195382	0.8383820	0.9139059	0.9285258				
	0.8985909	0.9445002	0.9430396				0.9055	AVRG		4.2904

Response Factor Report VOA3
GEL Laboratories, LLC

Method File : C:\msdchem\1\data\112520V3\VOA3-8260D-112520.M
Last Update : Fri Nov 27 17:58:59 2020
Integrator : (RTE Integrator) Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound b m1 m2	8 6	1 7	2 9	3	4	5	Avg	Curve	Exp	%RSD/r2
17)MA trans-1,2-Dichloroethyle		0.4246287	0.4171589	0.3535724	0.4124197	0.4210485				
	0.4206779	0.4262677	0.4160920				0.4115	AVRG		5.7915
18)MA Hexane				0.4432964	0.4918586	0.4966772				
	0.4532707	0.4577346	0.4583196				0.4669	AVRG		4.7027
19)MA Vinyl acetate		0.7368613	0.8885363	0.8766578	0.8875263	0.9623040				
	0.9473990	0.9053535	0.8930979				0.8872	AVRG		7.6615
20)MPA 1,1-Dichloroethane		0.5429429	0.5510156	0.5156486	0.5612849	0.5760525				
	0.5672799	0.5769495	0.5647763				0.5570	AVRG		3.6472
21)MA 2-Butanone		0.0357592	0.0415492	0.0368983	0.0403222	0.0383039				
	0.0359987	0.0383660	0.0406906				0.0385	AVRG		5.7101
22)MA cis-1,2-Dichloroethylene		0.3108496	0.3013240	0.2882520	0.3093730	0.3127414				
	0.3114607	0.3193642	0.3111879				0.3081	AVRG		3.0507
23)MA 2,2-Dichloropropane		0.2932035	0.3032163	0.3024242	0.3085222	0.3323670				
	0.3363624	0.3433985	0.3359038				0.3194	AVRG		6.1014
24)MA Bromochloromethane		0.1471855	0.1514955	0.1421556	0.1565672	0.1569032				
	0.1545372	0.1637686	0.1586847				0.1539	AVRG		4.4313
25)MCA Chloroform		0.5345913	0.5331515	0.5302185	0.5399743	0.5444692				
	0.5492724	0.5660439	0.5487462				0.5433	AVRG		2.1386
26)MA 1,1,1-Trichloroethane		0.3381943	0.3542854	0.3521172	0.3770976	0.4011535				
	0.4075387	0.4161930	0.4089694				0.3819	AVRG		7.9903
27)MA Cyclohexane		0.5150593	0.5065469	0.4204293	0.4953962	0.5213881				
	0.5074431	0.4937644	0.4955841				0.4945	AVRG		6.3714
28)MA 1,1-Dichloropropene		0.3888875	0.3684551	0.3592575	0.3768110	0.3899718				
	0.3896753	0.3810244	0.3784727				0.3791	AVRG		2.8936
29)MA Carbon tetrachloride		0.2857050	0.3014591	0.3024332	0.3355914	0.3595850				
	0.3738913	0.3805471	0.3724601				0.3390	AVRG		11.1982
30)SA 1,2-Dichloroethane-d4		0.2185592	0.2273689	0.2229886	0.2281563	0.2212256				
	0.2205739	0.2275864	0.2275005				0.2242	AVRG		1.7133
31)MA 1,2-Dichloroethane		0.5268234	0.5474112	0.4987649	0.5065374	0.5069944				
	0.4999903	0.5222826	0.5145475				0.5154	AVRG		3.1683

Response Factor Report VOA3
GEL Laboratories, LLC

Method File : C:\msdchem\1\data\112520V3\VOA3-8260D-112520.M
Last Update : Fri Nov 27 17:58:59 2020
Integrator : (RTE Integrator) Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound	b	m1	m2	8	6	1	7	2	9	3	4	5	Avg	Curve	Exp	%RSD/r2
32)MA Benzene						1.1767204		1.2226418		1.1413847	1.1514480	1.1476233				
				1.1382879		1.1492721		1.1317232					1.1574	AVRG		2.5522
33)MA Cyclohexene						0.5924687		0.5749620		0.5168417	0.5775219	0.5946045				
				0.5827680		0.5728748		0.5684248					0.5726	AVRG		4.2468
34)MA n-Butyl alcohol				0.0087138		0.0095033		0.0089123		0.0115609	0.0122399	0.0120553				
				0.0115936		0.0123678		0.0132542					0.0111	AVRG	$	14.8729
35)MA Trichloroethylene						0.3042043		0.3121596		0.3001646	0.2904491	0.3059725				
				0.3076791		0.3075636		0.3039997					0.3040	AVRG		2.1356
36)MA 2-Pentanone								0.3273519		0.3057377	0.3476703	0.3248246				
				0.3001347		0.3123057		0.3395219					0.3225	AVRG		5.4260
37)MCA 1,2-Dichloropropane						0.3629797		0.3508388		0.3666057	0.3656698	0.3787341				
				0.3685153		0.3837756		0.3745197					0.3690	AVRG		2.7615
38)MA Methylcyclohexane						0.4706074		0.4579782		0.4264036	0.4529676	0.4668530				
				0.4615221		0.4435628		0.4422430					0.4528	AVRG		3.2450
39)MA Dibromomethane						0.1895720		0.1986900		0.1987178	0.2003885	0.2009874				
				0.2004489		0.2110422		0.2099715					0.2012	AVRG		3.3744
40)MA Bromodichloromethane						0.2979630		0.3333577		0.3540876	0.3694895	0.3920413				
				0.4081338		0.4402480		0.4224768					0.3772	AVRG		12.6725
41)MA 2-Chloroethylvinyl ether						0.1996478		0.2334360		0.2974697	0.2361951	0.2379561				
				0.2360514		0.2284556		0.2209079					0.2363	AVRG		11.7498
42)MA cis-1,3-Dichloropropylen						0.3927041		0.4368026		0.4576312	0.4801443	0.5009649				
				0.5205450		0.5484512		0.5274786					0.4831	AVRG		10.7657
44)MA 4-Methyl-2-pentanone						0.2485108		0.2944122		0.2785925	0.2938251	0.2883147				
				0.2714200		0.2804063		0.2922685					0.2810	AVRG		5.5110
45)SA Toluene-d8						2.4714870		2.4912121		2.5068495	2.5377945	2.5085000				
				2.4891314		2.4972403		2.4681459					2.4963	AVRG		0.8917
46)MCA Toluene						2.5168018		2.5584985		2.5050674	2.4673439	2.5042691				
				2.4877321		2.4539876		2.3679454					2.4827	AVRG		2.2646
47)MA trans-1,3-Dichloropropyl						0.6938294		0.7583202		0.8124369	0.8699708	0.9277178				
				0.9575905		0.9954933		0.9742179					0.8737	AVRG		12.5624

Response Factor Report VOA3
GEL Laboratories, LLC

Method File : C:\msdchem\1\data\112520V3\VOA3-8260D-112520.M
Last Update : Fri Nov 27 17:58:59 2020
Integrator : (RTE Integrator) Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound b | m1 | m2	8 6	1 7	2 9	3	4	5	Avg	Curve	Exp	%RSD/r2
48)MA 1,1,2-Trichloroethane		0.4756586	0.4871081	0.4939929	0.4988056	0.5021957				
	0.4899209	0.5044931	0.4976687				0.4937	AVRG		1.8966
49)MA 2-Hexanone		0.2374267	0.2795954	0.2774913	0.2862876	0.2861515				
	0.2585168	0.2719132	0.2921324				0.2749	AVRG		6.2029
50)MA 1,3-Dichloropropane		0.8881873	0.9310541	0.9719021	0.9444398	0.9461702				
	0.9176765	0.9233768	0.9213755				0.9305	AVRG		2.6459
51)MA Tetrachloroethylene		0.5261968	0.4905439	0.4870800	0.4857244	0.4954906				
	0.4953635	0.4706845	0.4645543				0.4895	AVRG		3.7944
52)MA Dibromochloromethane		0.4079888	0.4177053	0.4547389	0.4859210	0.5561809				
	0.5867309	0.6324295	0.6111341				0.5191	AVRG	#	17.0963
53)MA 1,2-Dibromoethane		0.4752303	0.5146373	0.5543677	0.5451542	0.5584589				
	0.5570674	0.5768858	0.5685873				0.5438	AVRG		6.1250
54)MPA Chlorobenzene		1.5895545	1.6493904	1.7051709	1.6222959	1.6484235				
	1.6152490	1.6154820	1.5733005				1.6274	AVRG		2.5067
55)MA 1,1,1,2-Tetrachloroethan		0.5557488	0.5280368	0.5790665	0.5403236	0.5482995				
	0.5720005	0.5824109	0.5692305				0.5594	AVRG		3.4820
56)MCA Ethylbenzene		2.8495829	2.7831987	2.9460674	2.8361579	2.8912571				
	2.8859988	2.8137425	2.7606571				2.8458	AVRG		2.1432
57)MA m,p-Xylenes		1.0733797	1.0623869	1.0676229	1.0401509	1.0509878				
	1.0507867	1.0228601	1.0090871				1.0472	AVRG		2.1216
58)MA o-Xylene		1.0419433	1.0330969	1.0706972	1.0369660	1.0653019				
	1.0500936	1.0316829	1.0134873				1.0429	AVRG		1.7937
59)MA Styrene		1.5581181	1.4886387	1.7160266	1.6765275	1.7717246				
	1.8151735	1.8031247	1.7660498				1.6994	AVRG		6.9984
61)MPA Bromoform -0.0071 | 0.4484 | 0.00	256641	3239 599022	6334 461470	18136	40196	91992		1/x LINR	#	0.9939
62)MA Isopropylbenzene		2.5736633	2.5764105	2.6704095	2.5524780	2.6417127				
	2.5863785	2.5497369	2.4832084				2.5792	AVRG		2.2279
63)SA Bromofluorobenzene		0.9775348	0.9843268	0.9875434	0.9918457	0.9862888				
	0.9634896	0.9815273	0.9739465				0.9808	AVRG		0.9183

SDG# 528429

Response Factor Report VOA3
GEL Laboratories, LLC

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Last Update : Fri Nov 27 17:58:59 2020
Integrator : (RTE Integrator) Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound b / m1 / m2	8 6	1 7	2 9	3	4	5	Avg	Curve	Exp	%RSD/r2
64)MPA 1,1,2,2-Tetrachloroethan		0.6795637	0.7446377	0.7644517	0.7668362	0.7704306				
	0.7344822	0.7693432	0.7722118				0.7502	AVRG		4.2173
65)MA 1,2,3-Trichloropropane		0.7093275	0.7594415	0.7567204	0.7526467	0.7336082				
	0.7053963	0.7260681	0.7385162				0.7352	AVRG		2.8203
66)MA Bromobenzene		0.7721335	0.7454934	0.7635523	0.7460459	0.7647060				
	0.7490132	0.7593697	0.7351271				0.7544	AVRG		1.6455
67)MA n-Propylbenzene		3.2876495	3.1712992	3.4017912	3.1883469	3.2659699				
	3.2325487	3.1410339	3.0913113				3.2225	AVRG		3.0136
68)MA 1,3,5-Trimethylbenzene		2.2357362	2.2600978	2.3415075	2.2402245	2.3049394				
	2.2925256	2.2606567	2.1974658				2.2666	AVRG		1.9912
69)MA 2-Chlorotoluene		0.7334837	0.6615912	0.6809982	0.6259635	0.6410865				
	0.6362395	0.6219475	0.6098334				0.6514	AVRG		6.1670
70)MA 4-Chlorotoluene		2.1679265	2.1439781	2.2138798	2.0914735	2.1030994				
	2.0973658	2.1182383	2.0533023				2.1237	AVRG		2.3639
71)MA tert-Butylbenzene		0.3761455	0.3574723	0.4059907	0.3853472	0.3983615				
	0.3874762	0.3813817	0.3751848				0.3834	AVRG		3.8823
72)MA 1,2,4-Trimethylbenzene		2.2288345	2.2522681	2.3448802	2.2784151	2.3270665				
	2.3089622	2.3142986	2.2457665				2.2876	AVRG		1.8505
73)MA sec-Butylbenzene		2.8185892	2.8718867	2.9989830	2.8255104	2.9403299				
	2.8811547	2.8047389	2.7327911				2.8592	AVRG		2.9110
74)MA 4-Isopropyltoluene		2.2508338	2.2454224	2.4202565	2.3042390	2.3594856				
	2.3349637	2.2679382	2.2153782				2.2998	AVRG		2.9776
75)MA 1,3-Dichlorobenzene		1.4698143	1.4462333	1.4917861	1.4222092	1.4152679				
	1.3877526	1.4107499	1.3668334				1.4263	AVRG		2.9006
76)MA 1,4-Dichlorobenzene		1.5566901	1.4908585	1.5439165	1.4388430	1.4387122				
	1.4231624	1.4293352	1.3951425				1.4646	AVRG		4.0460
77)MA n-Butylbenzene		2.3455604	2.3368121	2.4759152	2.3756036	2.4221612				
	2.4409408	2.3664034	2.3124564				2.3845	AVRG		2.3696
78)MA 1,2-Dichlorobenzene		1.5371064	1.4289052	1.4936541	1.4051835	1.4152227				
	1.3789241	1.4149948	1.3861011				1.4325	AVRG		3.8298

SDG: 528429

Response Factor Report VOA3
GEL Laboratories, LLC

Method File : C:\msdchem\1\data\112520V3\VOA3-8260D-112520.M
Last Update : Fri Nov 27 17:58:59 2020
Integrator : (RTE Integrator) Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound b m1 m2	8 6	1 7	2 9	3	4	5	Avg	Curve	Exp	%RSD/r2
79)MA 1,2-Dibromo-3-chloroprop		0.0971422	0.1003318	0.1205190	0.1171270	0.1300295				
	0.1350023	0.1538150	0.1577847				0.1265	AVRG	#	17.6298
80)MA 1,2,4-Trichlorobenzene		1.1887405	1.1295355	1.1682285	1.1238385	1.1428896				
	1.1575983	1.1862898	1.1611616				1.1573	AVRG		2.0814
81)MA Hexachlorobutadiene		0.7217507	0.6876903	0.7255356	0.6715214	0.7230535				
	0.7078003	0.7028045	0.6798730				0.7025	AVRG		2.9679
82)MA Naphthalene		2.1140066	2.1867208	2.2539547	2.3024759	2.3564612				
	2.2459424	2.2699033	2.3070355				2.2546	AVRG		3.3571
83)MA 1,2,3-Trichlorobenzene		1.1388753	1.0957778	1.1296583	1.0871383	1.1178366				
	1.0928773	1.0691560	1.0693586				1.1001	AVRG		2.3886
85)B Acrolein		0.0525146	0.0484100	0.0493946	0.0534824	0.0547053				
	0.0568469	0.0585542	0.0588349				0.0541	AVRG		7.2474
86)B Trichlorotrifluoroethane		0.2643915	0.2557430	0.2432608	0.2489227	0.2606575				
	0.2517884	0.2406136	0.2485145				0.2517	AVRG		3.2538
87)B Isopropyl Alcohol		0.0257127	0.0260733	0.0266433	0.0267060	0.0301913				
	0.0318745	0.0291030	0.0286512				0.0281	AVRG		7.8145
88)B Allyl chloride		0.1357576	0.1291211	0.1301374	0.1373669	0.1466514				
	0.1472315	0.1396049	0.1433310				0.1387	AVRG		4.9802
89)B tert-Butyl Alcohol		0.0413143	0.0433937	0.0446869	0.0447118	0.0503860				
	0.0531922	0.0476149	0.0476959				0.0466	AVRG		8.3250
90)B Acrylonitrile		0.1262095	0.1269056	0.1251283	0.1264630	0.1383469				
	0.1406659	0.1290682	0.1308380				0.1305	AVRG		4.5215
91)B Isopropyl ether		1.2646273	1.2275223	1.1806185	1.2120925	1.2974934				
	1.3042453	1.2315803	1.2530891				1.2464	AVRG		3.3786
92)B 2-Chloro-1,3-butadiene		0.4512938	0.4266069	0.4266067	0.4430946	0.4726783				
	0.4772655	0.4579997	0.4692524				0.4531	AVRG		4.3819
93)B Ethyl tert-butyl ether		1.1345653	1.1211939	1.1250577	1.1373302	1.2220724				
	1.2449613	1.1852960	1.1948944				1.1707	AVRG		4.0718
94)B Ethyl acetate		0.3721192	0.3741624	0.3699536	0.3658654	0.4116117				
	0.4078517	0.3546729	0.3690703				0.3782	AVRG		5.3877

Response Factor Report VOA3
GEL Laboratories, LLC

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Last Update : Fri Nov 27 17:58:59 2020
Integrator : (RTE Integrator) Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound b m1 m2	8 6	1 7	2 9	3	4	5	Avg	Curve	Exp	%RSD/r2
95)B Propionitrile		0.0492434	0.0485393	0.0505883	0.0512053	0.0572809				
	0.0582525	0.0536015	0.0541498				0.0529	AVRG		6.8019
96)B Methacrylonitrile		0.1329845	0.1318998	0.1362405	0.1383970	0.1534561				
	0.1540610	0.1411677	0.1454408				0.1417	AVRG		6.0705
97)B Tetrahydrofuran		0.1246071	0.1251867	0.1182688	0.1182830	0.1334439				
	0.1335432	0.1206006	0.1236449				0.1247	AVRG		4.8436
98)B Isobutyl alcohol		0.0178757	0.0189180	0.0196022	0.0199727	0.0224202				
	0.0235378	0.0208544	0.0212634				0.0206	AVRG		9.0216
99)B Methyl tert-amyl ether		0.8922092	0.8941431	0.9156737	0.9330812	0.9994265				
	1.0193475	0.9724585	0.9787872				0.9506	AVRG		5.1081
100)B Methyl methacrylate		0.2210015	0.2142005	0.2230348	0.2235319	0.2505525				
	0.2526412	0.2290222	0.2373160				0.2314	AVRG		6.0992
101)B 1,4-Dioxane		0.0029201	0.0031496	0.0032033	0.0031176	0.0035208				
	0.0035099	0.0033823	0.0032508				0.0033	AVRG	#	6.3209
102)B 2-Nitropropane		0.0723498	0.0746823	0.0837386	0.0895875	0.1092408				
	0.1166825	0.1105033	0.1099295				0.0959	AVRG	#	18.5601
104)B Ethyl methacrylate		0.7665371	0.7692258	0.8297530	0.8490585	0.9117746				
	0.9085234	0.8095080	0.8600410				0.8381	AVRG		6.6500
106)B 1-Chlorohexane		0.7009748	0.6400971	0.6565317	0.6551772	0.6856682				
	0.6771631	0.6361459	0.6687271				0.6651	AVRG		3.3642
107)B cis-1,4-Dichloro-2-buten		0.2446764	0.2461974	0.2650151	0.2747390	0.3141891				
	0.3300531	0.3028430	0.3129072				0.2863	AVRG		11.5088
108)B Cyclohexanone		0.0275995	0.0280791	0.0266738	0.0263773	0.0287832				
	0.0325167	0.0291275	0.0291673				0.0285	AVRG		6.7356
109)B trans-1,4-Dichloro-2-but		0.1951106	0.2019149	0.2208715	0.2317609	0.2577677				
	0.2660343	0.2444159	0.2523440				0.2338	AVRG		11.1486
110)B Pentachloroethane		0.3752225	0.3648662	0.4147527	0.4353491	0.4598478				
	0.4173256	0.4376002	0.4570671				0.4203	AVRG		8.3337
111)B Benzyl chloride		0.9075653	0.9805488	1.1406117	1.2217088	1.3641241				
	1.4213552	1.2436584	1.3240637				1.2005	AVRG	#	15.1294

Response Factor Report VOA3
GEL Laboratories, LLC

Method File : C:\msdchem\1\data\112520V3\VOA3-8260D-112520.M
Last Update : Fri Nov 27 17:58:59 2020
Integrator : (RTE Integrator) Response via : Initial Calibration

Curve Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound	8	1	2	3	4	5	Avg	Curve	Exp	%RSD/r2
b m1 m2	6	7	9							
(112)B bis(2-Chloroisopropyl)et		0.3643795	0.3678839	0.3846713	0.3867911	0.4392897				
	0.4575996	0.3990093	0.4161072				0.4020	AVRG		8.3047

SDG# 528425

(*) = Out of Range ($) = Individual RF Out of Range
AVRG = Average, LINR = Linear Regression, 1/x = the inverse of concentration, 1/x^2 = the inverse square of concentration

JP
10/15/2020

10/16/2020

Calibration History Report VOA2
GEL Laboratories, LLC
Method File : D:\MSDCHEM\1\Data\101320V2.b\VOA2-8260D-101320.M
Last Update : Thu Oct 15 16:56:20 2020
Integrator : (RTE Integrator) Response via : Initial Calibration

Cal Lvl:8 Amt:0.00 Last Updated with: D:\MSDCHEM\1\Data\101320V2.b\2J203.D

Injection Date	Mix	Calibration File
13 Oct 2020 21:31	A	D:\MSDCHEM\1\Data\101320V2.b\2J203.D

Cal Lvl:1 Amt:1.00 Last Updated with: D:\MSDCHEM\1\Data\101320V2.b\2J215.D

Injection Date	Mix	Calibration File
13 Oct 2020 21:57	A	D:\MSDCHEM\1\Data\101320V2.b\2J204.D
14 Oct 2020 02:40	B	D:\MSDCHEM\1\Data\101320V2.b\2J215.D

Cal Lvl:2 Amt:2.00 Last Updated with: D:\MSDCHEM\1\Data\101320V2.b\2J216.D

Injection Date	Mix	Calibration File
13 Oct 2020 22:23	A	D:\MSDCHEM\1\Data\101320V2.b\2J205.D
14 Oct 2020 03:06	B	D:\MSDCHEM\1\Data\101320V2.b\2J216.D

Cal Lvl:3 Amt:5.00 Last Updated with: D:\MSDCHEM\1\Data\101320V2.b\2J217.D

Injection Date	Mix	Calibration File
13 Oct 2020 22:49	A	D:\MSDCHEM\1\Data\101320V2.b\2J206.D
14 Oct 2020 03:32	B	D:\MSDCHEM\1\Data\101320V2.b\2J217.D

Cal Lvl:4 Amt:10.00 Last Updated with: D:\MSDCHEM\1\Data\101320V2.b\2J218.D

Injection Date	Mix	Calibration File
13 Oct 2020 23:15	A	D:\MSDCHEM\1\Data\101320V2.b\2J207.D
14 Oct 2020 03:57	B	D:\MSDCHEM\1\Data\101320V2.b\2J218.D

Cal Lvl:5 Amt:20.00 Last Updated with: D:\MSDCHEM\1\Data\101320V2.b\2J219.D

Injection Date	Mix	Calibration File
13 Oct 2020 23:40	A	D:\MSDCHEM\1\Data\101320V2.b\2J208.D
14 Oct 2020 04:24	B	D:\MSDCHEM\1\Data\101320V2.b\2J219.D

Cal Lvl:6 Amt:50.00 Last Updated with: D:\MSDCHEM\1\Data\101320V2.b\2J220.D

Injection Date	Mix	Calibration File
14 Oct 2020 00:06	A	D:\MSDCHEM\1\Data\101320V2.b\2J209.D
14 Oct 2020 04:49	B	D:\MSDCHEM\1\Data\101320V2.b\2J220.D

Cal Lvl:7 Amt:100.00 Last Updated with: D:\MSDCHEM\1\Data\101320V2.b\2J222.D

Injection Date	Mix	Calibration File
14 Oct 2020 00:58	A	D:\MSDCHEM\1\Data\101320V2.b\2J211.D
14 Oct 2020 05:41	B	D:\MSDCHEM\1\Data\101320V2.b\2J222.D

Calibration History Report VOA2
GEL Laboratories, LLC

Method File : D:\MSDCHEM\1\Data\101320V2.b\VOA2-8260D-101320.M
Last Update : Thu Oct 15 16:56:20 2020
Integrator : (RTE Integrator) Response via : Initial Calibration

Cal Lvl:9 Amt:80.00 Last Updated with: D:\MSDCHEM\1\Data\101320V2.b\2J221.D

Injection Date	Mix	Calibration File
14 Oct 2020 00:32	A	D:\MSDCHEM\1\Data\101320V2.b\2J210.D
14 Oct 2020 05:15	B	D:\MSDCHEM\1\Data\101320V2.b\2J221.D

VOA2-8260D-101320.M Thu Oct 15 16:59:54 2020

JP 10/15/2020

10/16/2020

Response Factor Report VOA2
GEL Laboratories, LLC

Method File : D:\MSDCHEM\1\Data\101320V2.b\VOA2-8260D-101320.M
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Integrator : (RTE Integrator) Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound	8	1	2	3	4	5	Avg	Curve	Exp	%RSD/r2
b m1 m2	6	7	9							
2)MA Dichlorodifluoromethane		0.4923679	0.3806513	0.4657273	0.3131322	0.4730385				
	0.3668208	0.3830764	0.3764883				0.4064	AVRG	#	15.4833
3)MPA Chloromethane		0.6616765	0.5413197	0.5765134	0.4809918	0.5355529				
	0.4960244	0.5163158	0.5093713				0.5397	AVRG		10.6376
4)MCA Vinyl chloride		0.4498360	0.3950000	0.4487947	0.3840440	0.4202260				
	0.3973165	0.4175701	0.4085884				0.4152	AVRG		5.8303
5)MA Bromomethane		0.3227702	0.2894326	0.3116017	0.2791193	0.2928971				
	0.2797073	0.2991750	0.2934980				0.2960	AVRG		5.0745
6)MA Chloroethane		0.3503702	0.3162575	0.3482591	0.3126496	0.3249482				
	0.3072296	0.3221635	0.3107327				0.3241	AVRG		5.1292
7)MA Trichlorofluoromethane		0.6193855	0.5617544	0.6316840	0.5546477	0.5877729				
	0.5652159	0.5953829	0.5770019				0.5866	AVRG		4.7232
8)MA Ethyl ether		0.2967598	0.2839318	0.3066989	0.2886906	0.2883687				
	0.2914450	0.3115237	0.2984299				0.2957	AVRG		3.2318
9)MA Acetone		0.0944660	0.0947345	0.0960247	0.0948850	0.0958607				
	0.0999221	0.0979529	0.0934791				0.0959	AVRG		2.1838
10)MCA 1,1-Dichloroethylene		0.5047951	0.5187315	0.5393449	0.5430703	0.5716958				
	0.5973200	0.5773875	0.5801219				0.5541	AVRG		5.8755
11)MA Iodomethane		0.4539302	0.4652175	0.4943831	0.5046849	0.5176548				
	0.5280446	0.4939313	0.5001325				0.4947	AVRG		5.0096
12)MA Acetonitrile		0.0467918	0.0475264	0.0516588	0.0511248	0.0505800				
	0.0497548	0.0456436	0.0451143				0.0485	AVRG		5.2973
13)MA Methyl acetate		0.0345457	0.0365998	0.0398849	0.0392778	0.0392207				
	0.0380113	0.0345575	0.0341830				0.0370	AVRG		6.4174
14)MA Carbon disulfide		0.8678815	0.8871735	0.9984241	1.0474846	1.0598209				
	1.0574462	0.9482110	0.9787541				0.9806	AVRG		7.6561
15)MA Methylene chloride		0.3539346	0.3484895	0.3340807	0.3322606	0.3276537				

SDG: 528429

Response Factor Report VOA2
GEL Laboratories, LLC

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For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound	8	1	2	3	4	5	Avg	Curve	Exp	%RSD/r2
b m1 m2	6	7	9							
	0.3281639	0.3128109	0.3130675				0.3313	AVRG		4.4388
16)MA tert-Butyl methyl ether		0.7241497	0.7749958	0.8301240	0.8390802	0.8456352				
	0.8765921	0.8485017	0.8415514				0.8226	AVRG		5.9490
17)MA trans-1,2-Dichloroethyle		0.4770506	0.5097197	0.5392692	0.5295532	0.5445257				
	0.5485146	0.5241951	0.5258077				0.5248	AVRG		4.3760
18)MA Hexane				0.6228816	0.6483640	0.5970551				
	0.6680941	0.6121139	0.6162438				0.6275	AVRG		4.1528
19)MA Vinyl acetate		0.5974596	0.6286106	0.7936578	0.7668266	0.8646620				
	0.8783541	0.8872347	0.8684551				0.7857	AVRG		14.6322
20)MPA 1,1-Dichloroethane		0.5442924	0.5661315	0.6058733	0.6018796	0.5995520				
	0.5991002	0.5679206	0.5758021				0.5826	AVRG		3.8236
21)MA 2-Butanone		0.1341753	0.1483140	0.1590416	0.1574603	0.1607242				
	0.1680438	0.1633297	0.1564137				0.1559	AVRG		6.7171
22)MA cis-1,2-Dichloroethylene		0.2946886	0.3221795	0.3393621	0.3387282	0.3435557				
	0.3445090	0.3301546	0.3321123				0.3307	AVRG		4.9392
23)MA 2,2-Dichloropropane		0.3663136	0.3975982	0.4379764	0.4520981	0.4644111				
	0.4759659	0.4595587	0.4667888				0.4401	AVRG		8.7448
24)MA Bromochloromethane		0.3406403	0.3699073	0.4081242	0.4068438	0.4138532				
	0.4245624	0.4123135	0.4116150				0.3985	AVRG		7.1014
25)MCA Chloroform		0.4618297	0.5033295	0.5284509	0.5339201	0.5439165				
	0.5477642	0.5287195	0.5335842				0.5227	AVRG		5.3493
26)MA 1,1,1-Trichloroethane		0.3904455	0.4405508	0.4724947	0.4915093	0.5042142				
	0.5275499	0.5144292	0.5175000				0.4823	AVRG		9.6484
27)MA Cyclohexane		0.6753561	0.7130832	0.7789286	0.7867385	0.7919953				
	0.8120982	0.7826151	0.7859071				0.7658	AVRG		6.0619
28)MA 1,1-Dichloropropene		0.3615450	0.3887502	0.4161694	0.4280587	0.4279492				
	0.4301615	0.4068355	0.4126090				0.4090	AVRG		5.7719

Response Factor Report VOA2
GEL Laboratories, LLC

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Integrator : (RTE Integrator) Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound	8	1	2	3	4	5	Avg	Curve	Exp	%RSD/r2
b m1 m2	6	7	9							
29)MA Carbon tetrachloride		0.3244079	0.3538966	0.4076415	0.4194573	0.4385529				
	0.4531734	0.4381848	0.4430488				0.4098	AVRG		11.3465
30)SA 1,2-Dichloroethane-d4		0.1431990	0.1440745	0.1477747	0.1487567	0.1494503				
	0.1512627	0.1478160	0.1476225				0.1475	AVRG		1.8114
31)MA 1,2-Dichloroethane		0.4104350	0.4257105	0.4511988	0.4440408	0.4409658				
	0.4445715	0.4192629	0.4249093				0.4326	AVRG		3.3448
32)MA Benzene		1.1091041	1.1847893	1.2071751	1.2001304	1.1817148				
	1.1758724	1.1032271	1.1233475				1.1607	AVRG		3.6156
33)MA Cyclohexene		0.5615845	0.5992764	0.6486071	0.6562321	0.6547365				
	0.6604659	0.6229840	0.6328497				0.6296	AVRG		5.4545
34)MA n-Butyl alcohol	7682	15772	37167	109700	227502	472300		1/x		
-0.0081 | 0.0117 | 0.00	1271375	2511586	1884140					LINR	# #	0.9980
35)MA Trichloroethylene		0.2836582	0.3054667	0.3121412	0.3046775	0.3038318				
	0.3120972	0.3008242	0.3039062				0.3033	AVRG		2.9348
36)MA 2-Pentanone			0.2624626	0.2786849	0.2800003	0.2744335				
	0.3000709	0.2890405	0.2774848				0.2803	AVRG		4.1971
37)MCA 1,2-Dichloropropane		0.3179535	0.3356388	0.3457604	0.3397691	0.3389242				
	0.3417608	0.3254094	0.3299417				0.3344	AVRG		2.7808
38)MA Methylcyclohexane		0.5481458	0.5899603	0.6097728	0.5993011	0.5995903				
	0.5993044	0.5624602	0.5748022				0.5854	AVRG		3.6689
39)MA Dibromomethane		0.1500898	0.1612068	0.1667138	0.1684179	0.1687941				
	0.1744722	0.1694316	0.1680102				0.1659	AVRG		4.4283
40)MA Bromodichloromethane		0.2786006	0.3141508	0.3445867	0.3613956	0.3784322				
	0.4060277	0.4004121	0.3993759				0.3604	AVRG		12.6765
41)MA 2-Chloroethylvinyl ether		0.1659562	0.1729620	0.2526310	0.1937432	0.1945957				
	0.1912389	0.1851387	0.1811978				0.1922	AVRG		13.7538
42)MA cis-1,3-Dichloropropylen		0.3169901	0.3751973	0.4152797	0.4344695	0.4539441				
	0.4833766	0.4664968	0.4697178				0.4269	AVRG		13.2108

Response Factor Report VOA2
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For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound	8	1	2	3	4	5	Avg	Curve	Exp	%RSD/r2
b m1 m2	6	7	9							
44)MA 4-Methyl-2-pentanone		0.3957059	0.4403366	0.5071546	0.4995322	0.5001192				
	0.5014474	0.4713895	0.4607910				0.4721	AVRG		8.2438
45)SA Toluene-d8		1.2821813	1.2989521	1.2950814	1.2965666	1.2939301				
	1.2883979	1.2700757	1.2782680				1.2879	AVRG		0.7922
46)MCA Toluene		1.6668309	1.7733431	1.7646918	1.7136635	1.6778806				
	1.6526917	1.5584209	1.5884468				1.6745	AVRG		4.5628
47)MA trans-1,3-Dichloropropyl		0.3872758	0.4578749	0.5142926	0.5408056	0.5548231				
	0.5858725	0.5687494	0.5701076				0.5225	AVRG		13.0075
48)MA 1,1,2-Trichloroethane		0.2865282	0.3151276	0.3363590	0.3338350	0.3261595				
	0.3342172	0.3210892	0.3186441				0.3215	AVRG		5.0270
49)MA 2-Hexanone		0.2648871	0.2999521	0.3407801	0.3355601	0.3353177				
	0.3391964	0.3102763	0.3065592				0.3166	AVRG		8.3553
50)MA 1,3-Dichloropropane		0.5386970	0.5818242	0.6072353	0.5900650	0.5772176				
	0.5571327	0.5061065	0.5180854				0.5595	AVRG		6.4187
51)MA Tetrachloroethylene		0.3102335	0.3400937	0.3407722	0.3353478	0.3303214				
	0.3229387	0.2972788	0.3046405				0.3227	AVRG		5.2052
52)MA Dibromochloromethane		0.2354552	0.2753776	0.3014243	0.3238822	0.3488737				
	0.3823106	0.3842709	0.3772366				0.3286	AVRG	#	16.6801
53)MA 1,2-Dibromoethane		0.2548989	0.2904878	0.3184013	0.3186670	0.3289630				
	0.3395968	0.3309583	0.3270569				0.3136	AVRG		8.8747
54)MPA Chlorobenzene		1.0852513	1.1227888	1.1325676	1.1013309	1.0735604				
	1.0719525	1.0197164	1.0345020				1.0802	AVRG		3.6509
55)MA 1,1,1,2-Tetrachloroethan		0.3008446	0.3452174	0.3848646	0.3962785	0.4020699				
	0.4048703	0.3860095	0.3918450				0.3765	AVRG		9.4962
56)MCA Ethylbenzene		1.8059333	1.9376298	1.9779710	1.9481767	1.9143220				
	1.8742549	1.7269866	1.7754744				1.8701	AVRG		4.8598
57)MA m,p-Xylenes		0.6736042	0.7565542	0.7566884	0.7441302	0.7285956				

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For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound	8	1	2	3	4	5	Avg	Curve	Exp	%RSD/r2
b | m1 | m2	6	7	9							
	0.7011493	0.6464532	0.6636395				0.7089	AVRG		6.1810
58)MA o-Xylene		0.6662130	0.7109299	0.7440451	0.7446444	0.7276900				
	0.7150106	0.6629602	0.6778449				0.7062	AVRG		4.7103
59)MA Styrene		0.8412063	0.9745261	1.0865535	1.1214885	1.1396087				
	1.1457884	1.0673289	1.0898335				1.0583	AVRG		9.7338
61)MPA Bromoform		2019	4654	13192	29257	63532		1/x		
-0.0078 | 0.4563 | 0.00	189644	397104	303387					LINR	#	0.9960
62)MA Isopropylbenzene		2.8568734	3.3012503	3.5091416	3.5250810	3.5407573				
	3.6224305	3.4355886	3.4951949				3.4108	AVRG		7.1041
63)SA Bromofluorobenzene		0.9035373	0.9087484	0.9164300	0.9231603	0.9314341				
	0.9432006	0.9368498	0.9391322				0.9253	AVRG		1.5892
64)MPA 1,1,2,2-Tetrachloroethan		0.6730823	0.7515798	0.7876840	0.8048472	0.7987287				
	0.8364886	0.8110947	0.7959374				0.7824	AVRG		6.4142
65)MA 1,2,3-Trichloropropane		0.2091446	0.2320024	0.2518493	0.2452390	0.2416985				
	0.2500047	0.2427869	0.2379215				0.2388	AVRG		5.6796
66)MA Bromobenzene		0.7297936	0.7864060	0.8262566	0.8010540	0.8029605				
	0.8124988	0.7742743	0.7843041				0.7897	AVRG		3.7159
67)MA n-Propylbenzene		3.6965959	4.0428305	4.2926677	4.2424487	4.2146330				
	4.1802606	3.8765825	4.0028866				4.0686	AVRG		5.0410
68)MA 1,3,5-Trimethylbenzene		2.4940145	2.8635088	3.0062886	3.0184940	3.0168191				
	3.0208741	2.7941461	2.8731375				2.8859	AVRG		6.2823
69)MA 2-Chlorotoluene		0.7109286	0.7993366	0.8214879	0.8055110	0.8006435				
	0.7936480	0.7277480	0.7490984				0.7761	AVRG		5.2658
70)MA 4-Chlorotoluene		0.7483091	0.8133590	0.8398110	0.8340544	0.8220065				
	0.8268566	0.7720185	0.7943379				0.8063	AVRG		4.0032
71)MA tert-Butylbenzene		0.5274031	0.5929653	0.6331118	0.6443021	0.6492413				
	0.6655727	0.6336806	0.6476630				0.6242	AVRG		7.1148

SDG: 528429

Response Factor Report VOA2
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For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound	8	1	2	3	4	5	Avg	Curve	Exp	%RSD/r2
b m1 m2	6	7	9							
72)MA 1,2,4-Trimethylbenzene		2.4805062	2.8594860	3.0419248	3.0816499	3.0496951				
	3.0835581	2.9019485	2.9634376				2.9328	AVRG		6.8473
73)MA sec-Butylbenzene		3.2523383	3.7595657	3.9760296	3.9857591	4.0314173				
	4.0841352	3.8629470	3.9407785				3.8616	AVRG		6.8845
74)MA 4-Isopropyltoluene		2.7074677	3.0672365	3.2866093	3.3727979	3.3608070				
	3.4114786	3.2160944	3.2964085				3.2149	AVRG		7.2086
75)MA 1,3-Dichlorobenzene		1.3953066	1.5752833	1.5911307	1.5782468	1.5356671				
	1.5622685	1.4673332	1.4981253				1.5254	AVRG		4.4397
76)MA 1,4-Dichlorobenzene		1.5183945	1.6342465	1.6169945	1.5838654	1.5349288				
	1.5600077	1.4656155	1.4937472				1.5510	AVRG		3.8017
77)MA n-Butylbenzene		2.8126223	3.1597616	3.3445152	3.3665511	3.3392578				
	3.3962802	3.1445387	3.2409831				3.2256	AVRG		5.9490
78)MA 1,2-Dichlorobenzene		1.3864564	1.5067227	1.5385103	1.5191092	1.4966146				
	1.5357899	1.4780253	1.4876070				1.4936	AVRG		3.2394
79)MA 1,2-Dibromo-3-chloroprop		718	2007	5696	11438	25433		1/x		
-0.0031 | 0.1838 | 0.00	76133	162357	120156					LINR	#	0.9953
80)MA 1,2,4-Trichlorobenzene		1.1323620	1.1789769	1.2101736	1.2582116	1.2320944				
	1.3353321	1.2896547	1.2996251				1.2421	AVRG		5.4153
81)MA Hexachlorobutadiene		0.5982048	0.6818124	0.6930614	0.7164549	0.7361161				
	0.7823157	0.7724453	0.7731939				0.7192	AVRG		8.5951
82)MA Naphthalene		2.3600967	2.5591529	2.8490854	2.9661604	3.0517539				
	3.2297908	3.0985458	3.0491671				2.8955	AVRG		10.1780
83)MA 1,2,3-Trichlorobenzene		1.0647044	1.1348982	1.2201573	1.2503052	1.2494358				
	1.3035531	1.2098890	1.2306061				1.2079	AVRG		6.1933
85)B Acrolein		0.0490251	0.0489113	0.0487203	0.0514533	0.0543430				
	0.0572747	0.0587082	0.0584979				0.0534	AVRG		8.2301
86)B Trichlorotrifluoroethane		0.1587793	0.1705250	0.1613910	0.1747808	0.1688767				
	0.1654761	0.1605450	0.1572412				0.1647	AVRG		3.7882

Response Factor Report VOA2
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For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound	8	1	2	3	4	5	Avg	Curve	Exp	%RSD/r2
b m1 m2	6	7	9							
87)B Isopropyl Alcohol		0.0247664	0.0274885	0.0264607	0.0288059	0.0286359				
	0.0301297	0.0286776	0.0285320				0.0279	AVRG		5.9570
88)B Allyl chloride		0.1449319	0.1592704	0.1619367	0.1784049	0.1736263				
	0.1683681	0.1562384	0.1594022				0.1628	AVRG		6.4801
89)B tert-Butyl Alcohol		0.0389437	0.0432769	0.0425686	0.0453992	0.0442420				
	0.0458923	0.0427457	0.0438208				0.0434	AVRG		4.9367
90)B Acrylonitrile		0.1235451	0.1367377	0.1358425	0.1440495	0.1380259				
	0.1430461	0.1349678	0.1354445				0.1365	AVRG		4.5844
91)B Isopropyl ether		1.2819380	1.3959845	1.3558552	1.4972142	1.4528226				
	1.4854611	1.4587355	1.4183114				1.4183	AVRG		5.0953
92)B 2-Chloro-1,3-butadiene		0.4398627	0.4917052	0.5036590	0.5882141	0.5731253				
	0.5909224	0.5856002	0.5670938				0.5425	AVRG		10.4404
93)B Ethyl tert-butyl ether		1.0132636	1.0913847	1.0722368	1.1856093	1.1551515				
	1.1833027	1.1607704	1.1316461				1.1242	AVRG		5.3898
94)B Ethyl acetate		0.3231896	0.3598831	0.3471236	0.3745827	0.3574648				
	0.3446247	0.2926349	0.2978586				0.3372	AVRG		8.8312
95)B Propionitrile		0.0459416	0.0500990	0.0482212	0.0528079	0.0514405				
	0.0528627	0.0495766	0.0502403				0.0501	AVRG		4.6374
96)B Methacrylonitrile		0.0497019	0.0551042	0.0566436	0.0619114	0.0594581				
	0.0609488	0.0568645	0.0576476				0.0573	AVRG		6.6808
97)B Tetrahydrofuran		0.0353940	0.0357385	0.0354758	0.0369797	0.0353961				
	0.0360686	0.0329322	0.0339042				0.0352	AVRG		3.5859
98)B Isobutyl alcohol		0.0161957	0.0183745	0.0192559	0.0213392	0.0207246				
	0.0217666	0.0202089	0.0208109				0.0198	AVRG		9.2554
99)B Methyl tert-amyl ether		0.1653598	0.1956829	0.1938160	0.2163187	0.2081906				
	0.2120409	0.2089443	0.2035812				0.2005	AVRG		8.0559
100)B Methyl methacrylate		0.1533362	0.1778066	0.1766303	0.1960218	0.1897537				

Response Factor Report VOA2
GEL Laboratories, LLC

Method File : D:\MSDCHEM\1\Data\101320V2.b\VOA2-8260D-101320.M
Last Update : Thu Oct 15 16:56:20 2020
Integrator : (RTE Integrator) Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound	8	1	2	3	4	5	Avg	Curve	Exp	%RSD/r2
b | m1 | m2	6	7	9							
	0.1898313	0.1743592	0.1803115				0.1798	AVRG		7.3052
101)B 1,4-Dioxane		0.0026059	0.0028103	0.0026973	0.0027999	0.0027603				
	0.0027234	0.0025657	0.0025947				0.0027	AVRG	#	3.5513
102)B 2-Nitropropane		5349	12800	36061	89631	184906		1/x		
-0.0067 | 0.0943 | 0.00	502902	967909	582334					LINR	#	0.9984
104)B Ethyl methacrylate		0.3951950	0.4777663	0.4849851	0.5405193	0.5104186				
	0.4964863	0.4432279	0.4649408				0.4767	AVRG		9.2374
106)B 1-Chlorohexane		0.8174573	0.8831658	0.8738855	0.9905382	0.9436135				
	0.9563684	0.9352085	0.9118375				0.9140	AVRG		5.9732
107)B cis-1,4-Dichloro-2-buten		0.2556135	0.2936197	0.3102720	0.3549964	0.3504023				
	0.3682684	0.3488974	0.3474118				0.3287	AVRG		11.7259
108)B Cyclohexanone		0.0185095	0.0193860	0.0203642	0.0221419	0.0239996				
	0.0239876	0.0233354	0.0237219				0.0219	AVRG		10.1040
109)B trans-1,4-Dichloro-2-but		0.2321073	0.2723814	0.2757616	0.3070408	0.2899607				
	0.2990489	0.2805257	0.2819923				0.2799	AVRG		8.0664
110)B Pentachloroethane		0.4097920	0.4713664	0.5009918	0.5629288	0.5421045				
	0.5483511	0.5123958	0.5137596				0.5077	AVRG		9.6768
111)B Benzyl chloride		0.9720164	1.1794445	1.2818045	1.4539889	1.3953017				
	1.4229659	1.3021874	1.3243194				1.2915	AVRG		12.0797
112)B bis(2-Chloroisopropyl)et		0.0895699	0.0998845	0.1002305	0.1075399	0.1043964				
	0.1081278	0.1006501	0.1029267				0.1017	AVRG		5.7340

(#) = Out of Range ($) = Individual RF Out of Range
AVRG = Average, LINR = Linear Regression, 1/x = the inverse of concentration, 1/x^2 = the inverse square of concentration

Continuing Calibration Summary

Client SDG: 528429

Instrument ID: VOA2.I **Injection Date:** 14-OCT-20 18:09

Data File: 101420V2.b\2J302.D **Init. Cal. Date(s):** 13-OCT-20 21:31 - 14-OCT-20 00:5

Lab Sample ID W2VM201014-01 **Method:** 101320V2.b\VOA2-8260D-101320.M

Quant Type ISTD **Method Update:** 15-OCT-20 16:56

	Compound	AVERF / Amount	RF CCV	Nominal CCV	Min RF	RF Q	%D / %Drift	Max	Drift Q	Curve Type
S	1,2-Dichloroethane-d4	0.1475	0.14984		.01		1.58644	30		Averaged
S	Toluene-d8	1.2879	1.26558		.01		-1.73305	30		Averaged
S	Bromofluorobenzene	0.9253	0.92779		.01		0.2691	30		Averaged
	Chloromethane	0.5397	0.54472		.1		0.93015	30		Averaged
	Vinyl chloride	0.4152	0.39637		.01		-4.53516	30		Averaged
	1,1-Dichloroethylene	0.5541	0.56801		.01		2.51038	30		Averaged
	tert-Butyl methyl ether	0.8226	0.85268		.01		3.6567	30		Averaged
	1,1-Dichloroethane	0.5826	0.60269		.1		3.44834	30		Averaged
	Chloroform	0.5227	0.54046		.01		3.39774	30		Averaged
	1,2-Dichloroethane	0.4326	0.41794		.01		-3.38881	30		Averaged
	Benzene	1.1607	1.12799		.01		-2.81813	30		Averaged
	1,2-Dichloropropane	0.3344	0.329		.01		-1.61483	30		Averaged
	Toluene	1.6745	1.62271		.01		-3.09286	30		Averaged
	1,2-Dibromoethane	0.3136	0.32977		.01		5.15625	30		Averaged
	Chlorobenzene	1.0802	1.04098		.3		-3.63081	30		Averaged
	Ethylbenzene	1.8701	1.82445		.01		-2.44105	30		Averaged
	m,p-Xylenes	0.7089	0.68946		.01		-2.74228	30		Averaged
	o-Xylene	0.7062	0.67834		.01		-3.94506	30		Averaged
	Bromoform	50	49.26	50			-1.48	30		Linear
	1,1,2,2-Tetrachloroethane	0.7824	0.77114		.3		-1.43916	30		Averaged

Continuing Calibration Summary

Client SDG: 528429

Instrument ID: VOA2.I **Injection Date:** 27-NOV-20 17:29

Data File: 112720V2.b\2P502.D **Init. Cal. Date(s):** 13-OCT-20 21:31 - 14-OCT-20 00:5

Lab Sample ID W2VM201127-01 **Method:** 101320V2.b\VOA2-8260D-101320.M

Quant Type ISTD **Method Update:** 15-OCT-20 16:56

	Compound	AVERF / Amount	RF CCV	Nominal CCV	Min RF	RF Q	%D / %Drift	Max	Drift Q	Curve Type
S	1,2-Dichloroethane-d4	0.1475	0.14604		.01		-0.98983	20		Averaged
S	Toluene-d8	1.2879	1.22546		.01		-4.8482	20		Averaged
S	Bromofluorobenzene	0.9253	0.89661		.01		-3.10062	20		Averaged
	Chloromethane	0.5397	0.50988		.1		-5.52529	20		Averaged
	Vinyl chloride	0.4152	0.38351		.01		-7.63247	20		Averaged
	1,1-Dichloroethylene	0.5541	0.54554		.01		-1.54485	20		Averaged
	tert-Butyl methyl ether	0.8226	0.83625		.01		1.65937	20		Averaged
	1,1-Dichloroethane	0.5826	0.59774		.1		2.5987	20		Averaged
	Chloroform	0.5227	0.531		.01		1.58791	20		Averaged
	1,2-Dichloroethane	0.4326	0.40446		.01		-6.50485	20		Averaged
	Benzene	1.1607	1.09669		.01		-5.51478	20		Averaged
	1,2-Dichloropropane	0.3344	0.32429		.01		-3.02333	20		Averaged
	Toluene	1.6745	1.53885		.01		-8.10093	20		Averaged
	1,2-Dibromoethane	0.3136	0.30843		.01		-1.6486	20		Averaged
	Chlorobenzene	1.0802	0.99191		.3		-8.17349	20		Averaged
	Ethylbenzene	1.8701	1.73884		.01		-7.01888	20		Averaged
	m,p-Xylenes	0.7089	0.65922		.01		-7.00804	20		Averaged
	o-Xylene	0.7062	0.65258		.01		-7.59275	20		Averaged
	Bromoform	50	44.72	50			-10.56	20		Linear
	1,1,2,2-Tetrachloroethane	0.7824	0.73071		.3		-6.6066	20		Averaged

Continuing Calibration Summary

Client SDG: 528429

Instrument ID: VOA2.I **Injection Date:** 30-NOV-20 20:54

Data File: 113020V2.b\2Q106.D **Init. Cal. Date(s):** 13-OCT-20 21:31 - 14-OCT-20 00:5

Lab Sample ID W2VM201130-05 **Method:** 101320V2.b\VOA2-8260D-101320.M

Quant Type ISTD **Method Update:** 15-OCT-20 16:56

	Compound	AVERF / Amount	RF CCV	Nominal CCV	Min RF	RF Q	%D / %Drift	Max	Drift Q	Curve Type
S	1,2-Dichloroethane-d4	0.1475	0.14435		.01		-2.13559	20		Averaged
S	Toluene-d8	1.2879	1.28711		.01		-0.06134	20		Averaged
S	Bromofluorobenzene	0.9253	0.88753		.01		-4.08192	20		Averaged
	Chloromethane	0.5397	0.55971		.1		3.70762	20		Averaged
	Vinyl chloride	0.4152	0.4354		.01		4.86513	20		Averaged
	1,1-Dichloroethylene	0.5541	0.45163		.01		-18.49305	20		Averaged
	tert-Butyl methyl ether	0.8226	0.77705		.01		-5.53732	20		Averaged
	1,1-Dichloroethane	0.5826	0.54706		.1		-6.10024	20		Averaged
	Chloroform	0.5227	0.49729		.01		-4.8613	20		Averaged
	1,2-Dichloroethane	0.4326	0.36673		.01		-15.22654	20		Averaged
	Benzene	1.1607	1.03574		.01		-10.76592	20		Averaged
	1,2-Dichloropropane	0.3344	0.30452		.01		-8.93541	20		Averaged
	Toluene	1.6745	1.56349		.01		-6.62944	20		Averaged
	1,2-Dibromoethane	0.3136	0.30822		.01		-1.71556	20		Averaged
	Chlorobenzene	1.0802	1.01823		.3		-5.7369	20		Averaged
	Ethylbenzene	1.8701	1.77459		.01		-5.10721	20		Averaged
	m,p-Xylenes	0.7089	0.67804		.01		-4.35322	20		Averaged
	o-Xylene	0.7062	0.67591		.01		-4.28915	20		Averaged
	Bromoform	50	46.59	50			-6.82	20		Linear
	1,1,2,2-Tetrachloroethane	0.7824	0.73083		.3		-6.59126	20		Averaged

Continuing Calibration Summary

Client SDG: 528429

Instrument ID: VOA3.I **Injection Date:** 25-NOV-20 21:50

Data File: 112520V3\3X312.D **Init. Cal. Date(s):** 25-NOV-20 17:22 - 25-NOV-20 20:5

Lab Sample ID W3VM201125-10 **Method:** 112520V3\VOA3-8260D-112520.M

Quant Type ISTD **Method Update:** 27-NOV-20 17:58

	Compound	AVERF / Amount	RF CCV	Nominal CCV	Min RF	RF Q	%D / %Drift	Max	Drift Q	Curve Type
S	1,2-Dichloroethane-d4	0.2242	0.22394		.01		-0.11597	30		Averaged
S	Toluene-d8	2.4963	2.50263		.01		0.25358	30		Averaged
S	Bromofluorobenzene	0.9808	0.97756		.01		-0.33034	30		Averaged
	Chloromethane	0.4219	0.36933		.1		-12.4603	30		Averaged
	Vinyl chloride	0.3449	0.30671		.01		-11.07277	30		Averaged
	tert-Butyl methyl ether	0.9055	1.01052		.01		11.59801	30		Averaged
	1,1-Dichloroethylene	0.4114	0.46533		.01		13.1089	30		Averaged
	1,1-Dichloroethane	0.557	0.62054		.1		11.40754	30		Averaged
	Chloroform	0.5433	0.58581		.01		7.82441	30		Averaged
	1,2-Dichloroethane	0.5154	0.5129		.01		-0.48506	30		Averaged
	Benzene	1.1574	1.2395		.01		7.09349	30		Averaged
	1,2-Dichloropropane	0.369	0.39643		.01		7.4336	30		Averaged
	Toluene	2.4827	2.57974		.01		3.90865	30		Averaged
	1,2-Dibromoethane	0.5438	0.60622		.01		11.47848	30		Averaged
	Chlorobenzene	1.6274	1.65826		.3		1.89628	30		Averaged
	Ethylbenzene	2.8458	2.90847		.01		2.20219	30		Averaged
	m,p-Xylenes	1.0472	1.0817		.01		3.2945	30		Averaged
	o-Xylene	1.0429	1.0679		.01		2.39716	30		Averaged
	Bromoform	50	52.83	50			5.66	30		Linear
	1,1,2,2-Tetrachloroethane	0.7502	0.81077		.3		8.07385	30		Averaged

Continuing Calibration Summary

Client SDG: 528429

Instrument ID: VOA3.I **Injection Date:** 27-NOV-20 18:45

Data File: 112720V3\3X503.D **Init. Cal. Date(s):** 25-NOV-20 17:22 - 25-NOV-20 20:5

Lab Sample ID W3VM201127-02 **Method:** 112520V3\VOA3-8260D-112520.M

Quant Type ISTD **Method Update:** 27-NOV-20 17:58

	Compound	AVERF / Amount	RF CCV	Nominal CCV	Min RF	RF Q	%D / %Drift	Max	Drift Q	Curve Type
S	1,2-Dichloroethane-d4	0.2242	0.229		.01		2.14095	20		Averaged
S	Toluene-d8	2.4963	2.50949		.01		0.52838	20		Averaged
S	Bromofluorobenzene	0.9808	0.97402		.01		-0.69127	20		Averaged
	Chloromethane	0.4219	0.36583		.1		-13.28988	20		Averaged
	Vinyl chloride	0.3449	0.31256		.01		-9.37663	20		Averaged
	tert-Butyl methyl ether	0.9055	0.89021		.01		-1.68857	20		Averaged
	1,1-Dichloroethylene	0.4114	0.4353		.01		5.80943	20		Averaged
	1,1-Dichloroethane	0.557	0.58152		.1		4.40215	20		Averaged
	Chloroform	0.5433	0.54619		.01		0.53193	20		Averaged
	1,2-Dichloroethane	0.5154	0.45947		.01		-10.85177	20		Averaged
	Benzene	1.1574	1.14086		.01		-1.42907	20		Averaged
	1,2-Dichloropropane	0.369	0.35821		.01		-2.92412	20		Averaged
	Toluene	2.4827	2.35156		.01		-5.28215	20		Averaged
	1,2-Dibromoethane	0.5438	0.52774		.01		-2.95329	20		Averaged
	Chlorobenzene	1.6274	1.50718		.3		-7.38724	20		Averaged
	Ethylbenzene	2.8458	2.7021		.01		-5.04955	20		Averaged
	m,p-Xylenes	1.0472	1.00679		.01		-3.85886	20		Averaged
	o-Xylene	1.0429	0.98804		.01		-5.26033	20		Averaged
	Bromoform	50	46.99	50			-6.02	20		Linear
	1,1,2,2-Tetrachloroethane	0.7502	0.69194		.3		-7.76593	20		Averaged

Quality Control Data

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**528429**			**Matrix:**	**SOIL**
Lab Sample ID:	**1204704445**				
Client Sample:	**QC for batch 2067533**	**Client:**	**MCOM001**	**Project:**	**MCOM00118**
Client ID:	**MB for batch 2067534**	**Method:**	**SW846 8260D**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**2067534**	**Inst:**	**VOA2.I**	**Dilution:**	**1**
Run Date:	**11/27/2020 19:38**	**Analyst:**	**JP1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/27/2020 16:30**	**Aliquot:**	**5 g**	**Final Volume:**	**5 mL**
Data File:	**112720V2.b\2P507B34.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/kg	0.333	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/kg	0.333	1.00
71-43-2	Benzene	U	1.00	ug/kg	0.333	1.00
108-88-3	Toluene	U	1.00	ug/kg	0.333	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/kg	0.333	1.00
100-41-4	Ethylbenzene	U	1.00	ug/kg	0.333	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/kg	0.667	2.00
95-47-6	o-Xylene	U	1.00	ug/kg	0.333	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**528429**			**Matrix:**	**SOIL**
Lab Sample ID:	**1204704446**				
Client Sample:	**QC for batch 2067533**	**Client:**	**MCOM001**	**Project:**	**MCOM00118**
Client ID:	**MB for batch 2067534**	**Method:**	**SW846 8260D**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**2067534**	**Inst:**	**VOA2.I**	**Dilution:**	**1**
Run Date:	**11/30/2020 22:38**	**Analyst:**	**JP1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/30/2020 18:30**	**Aliquot:**	**5 g**	**Final Volume:**	**5 mL**
Data File:	**113020V2.b\2Q110B34.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/kg	0.333	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/kg	0.333	1.00
71-43-2	Benzene	U	1.00	ug/kg	0.333	1.00
108-88-3	Toluene	U	1.00	ug/kg	0.333	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/kg	0.333	1.00
100-41-4	Ethylbenzene	U	1.00	ug/kg	0.333	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/kg	0.667	2.00
95-47-6	o-Xylene	U	1.00	ug/kg	0.333	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**528429**			**Matrix:**	**SOIL**
Lab Sample ID:	**1204704448**				
Client Sample:	**QC for batch 2067533**	**Client:**	**MCOM001**	**Project:**	**MCOM00118**
Client ID:	**LCS for batch 2067534**	**Method:**	**SW846 8260D**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**2067534**	**Inst:**	**VOA2.I**	**Dilution:**	**1**
Run Date:	**11/27/2020 17:55**	**Analyst:**	**JP1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/27/2020 16:30**	**Aliquot:**	**5 g**	**Final Volume:**	**5 mL**
Data File:	**112720V2.b\2P503L34.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether		56.2	ug/kg	0.333	1.00
107-06-2	1,2-Dichloroethane		51.1	ug/kg	0.333	1.00
71-43-2	Benzene		50.8	ug/kg	0.333	1.00
108-88-3	Toluene		49.3	ug/kg	0.333	1.00
106-93-4	1,2-Dibromoethane		54.7	ug/kg	0.333	1.00
100-41-4	Ethylbenzene		49.5	ug/kg	0.333	1.00
179601-23-1	m,p-Xylenes		99.2	ug/kg	0.667	2.00
95-47-6	o-Xylene		49.6	ug/kg	0.333	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**528429**			**Matrix:**	**SOIL**
Lab Sample ID:	**1204704449**				
Client Sample:	**QC for batch 2067533**	**Client:**	**MCOM001**	**Project:**	**MCOM00118**
Client ID:	**LCS for batch 2067534**	**Method:**	**SW846 8260D**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**2067534**	**Inst:**	**VOA2.I**	**Dilution:**	**1**
Run Date:	**11/30/2020 21:20**	**Analyst:**	**JP1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/30/2020 18:30**	**Aliquot:**	**5 g**	**Final Volume:**	**5 mL**
Data File:	**113020V2.b\2Q107L34.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether		47.6	ug/kg	0.333	1.00
107-06-2	1,2-Dichloroethane		41.8	ug/kg	0.333	1.00
71-43-2	Benzene		42.7	ug/kg	0.333	1.00
108-88-3	Toluene		44.9	ug/kg	0.333	1.00
106-93-4	1,2-Dibromoethane		49.6	ug/kg	0.333	1.00
100-41-4	Ethylbenzene		45.3	ug/kg	0.333	1.00
179601-23-1	m,p-Xylenes		91.4	ug/kg	0.667	2.00
95-47-6	o-Xylene		45.7	ug/kg	0.333	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**528429**	**Date Collected:**	**11/23/2020 14:06**	**Matrix:**	**SOIL**
Lab Sample ID:	**1204704450**	**Date Received:**	**11/24/2020 09:40**	**%Moisture:**	**5.2**
Client Sample:	**QC for batch 2067533**	**Client:**	**MCOM001**	**Project:**	**MCOM00118**
Client ID:	**IS NO.1PS**	**Method:**	**SW846 8260D**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**2067534**	**Inst:**	**VOA2.I**	**Dilution:**	**1**
Run Date:	**12/01/2020 00:47**	**Analyst:**	**JP1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/30/2020 21:40**	**Aliquot:**	**5 g**	**Final Volume:**	**5 mL**
Data File:	**113020V2.b\2Q115.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether		48.2	ug/kg	0.351	1.05
107-06-2	1,2-Dichloroethane		41.8	ug/kg	0.351	1.05
71-43-2	Benzene		43.4	ug/kg	0.351	1.05
108-88-3	Toluene		45.6	ug/kg	0.351	1.05
106-93-4	1,2-Dibromoethane		50.2	ug/kg	0.351	1.05
100-41-4	Ethylbenzene		45.6	ug/kg	0.351	1.05
179601-23-1	m,p-Xylenes		92.2	ug/kg	0.704	2.11
95-47-6	o-Xylene		46.3	ug/kg	0.351	1.05

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**528429**	**Date Collected:**	**11/23/2020 14:06**	**Matrix:**	**SOIL**
Lab Sample ID:	**1204704451**	**Date Received:**	**11/24/2020 09:40**	**%Moisture:**	**5.2**
Client Sample:	**QC for batch 2067533**	**Client:**	**MCOM001**	**Project:**	**MCOM00118**
Client ID:	**IS NO.1PSD**	**Method:**	**SW846 8260D**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**2067534**	**Inst:**	**VOA2.I**	**Dilution:**	**1**
Run Date:	**12/01/2020 01:13**	**Analyst:**	**JP1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/30/2020 21:41**	**Aliquot:**	**5 g**	**Final Volume:**	**5 mL**
Data File:	**113020V2.b\2Q116.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether		44.3	ug/kg	0.351	1.05
107-06-2	1,2-Dichloroethane		38.7	ug/kg	0.351	1.05
71-43-2	Benzene		40.6	ug/kg	0.351	1.05
108-88-3	Toluene		42.1	ug/kg	0.351	1.05
106-93-4	1,2-Dibromoethane		46.0	ug/kg	0.351	1.05
100-41-4	Ethylbenzene		42.2	ug/kg	0.351	1.05
179601-23-1	m,p-Xylenes		85.5	ug/kg	0.704	2.11
95-47-6	o-Xylene		42.9	ug/kg	0.351	1.05

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**528429**			**Matrix:**	**WATER**
Lab Sample ID:	**1204704452**				
Client Sample:	**QC for batch 2067535**	**Client:**	**MCOM001**	**Project:**	**MCOM00118**
Client ID:	**MB for batch 2067535**	**Method:**	**SW846 8260D**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**2067535**	**Inst:**	**VOA3.I**	**Dilution:**	**1**
Run Date:	**11/27/2020 20:05**	**Analyst:**	**JP1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/27/2020 20:05**				
Data File:	**112720V3\3X506B35.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.333	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.333	1.00
71-43-2	Benzene	U	1.00	ug/L	0.333	1.00
108-88-3	Toluene	U	1.00	ug/L	0.333	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.333	1.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.333	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.667	2.00
95-47-6	o-Xylene	U	1.00	ug/L	0.333	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**528429**			**Matrix:**	**WATER**
Lab Sample ID:	**1204704454**				
Client Sample:	**QC for batch 2067535**	**Client:**	**MCOM001**	**Project:**	**MCOM00118**
Client ID:	**LCS for batch 2067535**	**Method:**	**SW846 8260D**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**2067535**	**Inst:**	**VOA3.I**	**Dilution:**	**1**
Run Date:	**11/27/2020 18:45**	**Analyst:**	**JP1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/27/2020 18:45**				
Data File:	**112720V3\3X503L35.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether		49.2	ug/L	0.333	1.00
107-06-2	1,2-Dichloroethane		44.6	ug/L	0.333	1.00
71-43-2	Benzene		49.3	ug/L	0.333	1.00
108-88-3	Toluene		47.4	ug/L	0.333	1.00
106-93-4	1,2-Dibromoethane		48.5	ug/L	0.333	1.00
100-41-4	Ethylbenzene		47.5	ug/L	0.333	1.00
179601-23-1	m,p-Xylenes		96.1	ug/L	0.667	2.00
95-47-6	o-Xylene		47.4	ug/L	0.333	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**528429**	**Date Collected:**	**11/16/2020 12:24**	**Matrix:**	**WATER**
Lab Sample ID:	**1204704456**	**Date Received:**	**11/17/2020 10:00**		
Client Sample:	**QC for batch 2067535**	**Client:**	**MCOM001**	**Project:**	**MCOM00118**
Client ID:	**B3XLX9PS**	**Method:**	**SW846 8260D**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**2067535**	**Inst:**	**VOA3.I**	**Dilution:**	**1**
Run Date:	**11/28/2020 04:59**	**Analyst:**	**JP1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/28/2020 04:59**				
Data File:	**112720V3\3X526.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether		52.2	ug/L	0.333	1.00
107-06-2	1,2-Dichloroethane		49.2	ug/L	0.333	1.00
71-43-2	Benzene		51.8	ug/L	0.333	1.00
108-88-3	Toluene		49.3	ug/L	0.333	1.00
106-93-4	1,2-Dibromoethane		53.0	ug/L	0.333	1.00
100-41-4	Ethylbenzene		48.4	ug/L	0.333	1.00
179601-23-1	m,p-Xylenes		97.4	ug/L	0.667	2.00
95-47-6	o-Xylene		49.6	ug/L	0.333	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**528429**	**Date Collected:**	**11/16/2020 12:24**	**Matrix:**	**WATER**
Lab Sample ID:	**1204704457**	**Date Received:**	**11/17/2020 10:00**		
Client Sample:	**QC for batch 2067535**	**Client:**	**MCOM001**	**Project:**	**MCOM00118**
Client ID:	**B3XLX9PSD**	**Method:**	**SW846 8260D**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**2067535**	**Inst:**	**VOA3.I**	**Dilution:**	**1**
Run Date:	**11/28/2020 05:25**	**Analyst:**	**JP1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/28/2020 05:25**				
Data File:	**112720V3\3X527.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether		51.3	ug/L	0.333	1.00
107-06-2	1,2-Dichloroethane		48.1	ug/L	0.333	1.00
71-43-2	Benzene		51.2	ug/L	0.333	1.00
108-88-3	Toluene		48.4	ug/L	0.333	1.00
106-93-4	1,2-Dibromoethane		51.1	ug/L	0.333	1.00
100-41-4	Ethylbenzene		47.1	ug/L	0.333	1.00
179601-23-1	m,p-Xylenes		95.7	ug/L	0.667	2.00
95-47-6	o-Xylene		48.2	ug/L	0.333	1.00

Miscellaneous

Prep Logbook

Closed-System Purge-and-Trap Collection and Extraction: Volatile Organics in Soil and Waste Samples

Batch ID: **2067533**
Analyst: James Pressley
Method: SW846 5035A SW846 5035
Lab SOP: GL-OA-E-039 REV# 13
Instrument: OH AUS Balance

Type	Sample Id	Description	Serial Number	Spike Amount	Spike Units

Sample ID	Prep Date	Matrix	Tare Wt (g)	Final Wt (g)	Sample Wt (g)	Preservative	Final Volume (mL)	Prep Factor (mL/g)	Scanned Container
527867001	17-NOV-2020 12:30:00	Soil	31.4	35.31	3.91	DI WATER	5	1.27877	527867001.01
528163001	19-NOV-2020 14:00:00	Misc Solid	31.33	35.21	3.88	DI WATER	5	1.28866	528163001.01
528163002	19-NOV-2020 14:15:00	Misc Solid	35.54	39.85	4.31	DI WATER	5	1.16009	528163002.01
528429006	23-NOV-2020 10:00:00	Soil	35.42	41.92	6.5	DI WATER	5	0.76923	528429006.03
528429002	23-NOV-2020 11:00:00	Soil	34.94	41.63	6.69	DI WATER	5	0.74738	528429002.03
528429003	23-NOV-2020 11:00:00	Soil	31.44	38.85	7.41	DI WATER	5	0.67476	528429003.03
528429004	23-NOV-2020 11:25:00	Soil	35.36	41.23	5.87	DI WATER	5	0.85179	528429004.03
528429005	23-NOV-2020 11:45:00	Soil	31.49	36.92	5.43	DI WATER	5	0.92081	528429005.03
1204704445 MB	27-NOV-2020 16:30:00	Soil			5	DI WATER	5	1	NA
1204704448 LCS	27-NOV-2020 16:30:00	Soil			5	DI WATER	5	1	NA
1204704447 HB	27-NOV-2020 19:00:00	Soil			5	DY869-US	10	2	NA
527865001	27-NOV-2020 19:01:00	Soil			5	DI WATER	5	1	527865001.01.01
527865002	27-NOV-2020 19:02:00	Soil			5.2	DI WATER	5	0.96154	527865002.01.01
527865003	27-NOV-2020 19:03:00	Soil			5.3	DI WATER	5	0.9434	527865003.01.01
527865004	27-NOV-2020 19:04:00	Soil			5.1	DI WATER	5	0.98039	527865004.01.01
527865005	27-NOV-2020 19:05:00	Soil			5	DI WATER	5	1	527865005.01.01
527865006	27-NOV-2020 19:06:00	Soil			5.1	DI WATER	5	0.98039	527865006.01.01
528414001	27-NOV-2020 19:07:00	Soil			5.1	DI WATER	5	0.98039	528414001.01
528414002	27-NOV-2020 19:08:00	Soil			5.2	DI WATER	5	0.96154	528414002.01
528414003	27-NOV-2020 19:09:00	Soil			5.1	DI WATER	5	0.98039	528414003.01
528414004	27-NOV-2020 19:10:00	Soil			5.1	DI WATER	5	0.98039	528414004.01
1204704446 MB	30-NOV-2020 18:30:00	Soil			5	DI WATER	5	1	NA
1204704449 LCS	30-NOV-2020 18:30:00	Soil			5	DI WATER	5	1	NA
1204704450 PS (528414001)	30-NOV-2020 21:40:00	Soil			5	DI WATER	5	1	NA
1204704451 PSD (528414001)	30-NOV-2020 21:41:00	Soil			5	DI WATER	5	1	NA
1204705487 HB	30-NOV-2020 23:00:00	Soil			1	DY869-US	10	10	NA
528035001	30-NOV-2020 23:02:00	Misc Solid			1	DY869-US	10	10	528035001.01.01
528035002	30-NOV-2020 23:03:00	Misc Solid			1	DY869-US	10	10	528035002.01.01

Reagent/Solvent Lot ID	Description	Amount	Comments:

GEL Laboratories, LLC
Revision:11/22/04

ORGANIC RUN LOG - INSTRUMENT ID#VOA2

JP 10/14/2020

10/15/2020

Date: 10/13/2020 Method 8260 Operator: JP1

HARDWARE CONFIGURATION & METHOD CONDITIONS SUMMARY No# 50

Daily Instrument Readings:
Multiplier Voltage: 1459

CALIBRATION & CC INFORMATION:

Initial Calibration Date: 10/13/2020 & 10/14/2020

(See pg. 001-002 for ICAL Std. Ids)

CI test lot # 85161C

Sequence Number: 101320V2

Daily Standard Solution ID#		Volume Added for Purge (ul) Blk/ Smpl	CCV 5uL ea.	MS/ LCS	BFB
CCV			5uL ea.		
IS	UVM200820-01	1	1	1	
SS	UVM200820-02	1	1	1	
LCS/MS				5uL ea.	
BFB	IVM201012-01				1
SH CCV			5uL ea.		
SH LCS				5uL ea.	

Purge Amount	
5ML	Water Purge Vol:
5.0G	Soil Purge Wt.
N/A	Mid level ext. MeOH Vol:
N/A	ul
N/A	Methanol Lot #
X	Heated Purge

Analysis Date Time	Data File	Lab Sample ID	Client	Batch #	Wt.(g) or Vol(ml/ul)	Dil. Factor	pH	AS Slot #	Matrix w or s	Analyst	CI test (Y/N)	Acceptable(O/X)	Comments
10/13/2020 20:39	2J201.D	IVM201012-01	GEL	BFB	10ML	1	N/A	1	W	JP1	N/A	O	
10/13/2020 21:05	2J202.D	W2VM201013-01	VSTD0002	ICAL	2UL/5ML	1	N/A	2	W	JP1	N/A	O	MIX[A] UVM200921-01/UVM200625-11C/UVM200618-01C
10/13/2020 21:31	2J203.D	W2VM201013-02	VSTD0005	ICAL	5UL/5ML	1	N/A	3	W	JP1	N/A	O	MIX[A] UVM200921-01/UVM200625-11C/UVM200618-01C
10/13/2020 21:57	2J204.D	W2VM201013-03	VSTD001	ICAL	5UL/5ML	1	N/A	4	W	JP1	N/A	O	MIX[A] UVM200921-02/UVM200625-12C/UVM200618-02C
10/13/2020 22:23	2J205.D	W2VM201013-04	VSTD002	ICAL	5UL/5ML	1	N/A	5	W	JP1	N/A	O	MIX[A] UVM200921-03/UVM200625-13C/UVM200618-03C
10/13/2020 22:49	2J206.D	W2VM201013-05	VSTD005	ICAL	5UL/5ML	1	N/A	6	W	JP1	N/A	O	MIX[A] UVM200921-04/UVM200625-14C/UVM200618-04C
10/13/2020 23:15	2J207.D	W2VM201013-06	VSTD010	ICAL	5UL/5ML	1	N/A	7	W	JP1	N/A	O	MIX[A] UVM200921-05/UVM200625-15C/UVM200618-05C
10/13/2020 23:40	2J208.D	W2VM201013-07	VSTD020	ICAL	5UL/5ML	1	N/A	8	W	JP1	N/A	O	MIX[A] UVM200921-06/UVM200625-16C/UVM200618-06C
10/14/2020 0:06	2J209.D	W2VM201013-08	VSTD050	ICAL	5UL/5ML	1	N/A	9	W	JP1	N/A	O	MIX[A] UVM200921-07/UVM200625-17C/UVM200618-07C
10/14/2020 0:32	2J210.D	W2VM201013-09	VSTD080	ICAL	4UL/5ML	1	N/A	10	W	JP1	N/A	O	MIX[A] UVM200921-08/UVM200625-18C/UVM200618-08C
10/14/2020 0:58	2J211.D	W2VM201013-10	VSTD100	ICAL	5UL/5ML	1	N/A	11	W	JP1	N/A	O	MIX[A] UVM200921-08/UVM200625-18C/UVM200618-08C
10/14/2020 1:23	2J212.D	120------	GEL	GEL	5ML	1	N/A	12	W	JP1	N/A	X	
10/14/2020 1:49	2J213.D	W2VM201013-11	ICV050	ICV	5UL/5ML	1	N/A	13	W	JP1	N/A	X	MIX[A] UVM200625-10B/UVM200625-20G/UVM1007-01A. GAS HIGH. SEE 2J302
10/14/2020 2:15	2J214.D	W2VM201013-12	VSTD002	ICAL	5UL/5ML	1	N/A	14	W	JP1	N/A	O	MIX[B] UVM200904-01B/UVM200925-01A
10/14/2020 2:40	2J215.D	W2VM201013-13	VSTD005	ICAL	5UL/5ML	1	N/A	15	W	JP1	N/A	O	MIX[B] UVM200904-01B/UVM200925-01A
10/14/2020 3:06	2J216.D	W2VM201013-14	VSTD010	ICAL	5UL/5ML	1	N/A	16	W	JP1	N/A	O	MIX[B] UVM200904-02B/UVM200925-02A
10/14/2020 3:32	2J217.D	W2VM201013-15	VSTD025	ICAL	5UL/5ML	1	N/A	17	W	JP1	N/A	O	MIX[B] UVM200904-03B/UVM200925-03A
10/14/2020 3:57	2J218.D	W2VM201013-16	VSTD050	ICAL	5UL/5ML	1	N/A	18	W	JP1	N/A	O	MIX[B] UVM200904-04B/UVM200925-04A
10/14/2020 4:24	2J219.D	W2VM201013-17	VSTD100	ICAL	5UL/5ML	1	N/A	19	W	JP1	N/A	O	MIX[B] UVM200904-05B/UVM200925-05A
10/14/2020 4:49	2J220.D	W2VM201013-18	VSTD250	ICAL	5UL/5ML	1	N/A	20	W	JP1	N/A	O	MIX[B] UVM200904-06B/UVM200925-06A
10/14/2020 5:15	2J221.D	W2VM201013-19	VSTD300	ICAL	3UL/5ML	1	N/A	21	W	JP1	N/A	O	MIX[B] UVM200904-07B/UVM200925-07A
10/14/2020 5:41	2J222.D	W2VM201013-20	VSTD500	ICAL	5UL/5ML	1	N/A	22	W	JP1	N/A	O	MIX[B] UVM200904-07B/UVM200925-07A
10/14/2020 6:06	2J223.D	120------	GEL	GEL	5ML	1	N/A	23	W	JP1	N/A	X	
10/14/2020 6:32	2J224.D	W2VM201013-21	ICV250	ICV	5UL/5ML	1	N/A	24	W	JP1	N/A	O	MIX[B] UVM200904-08E/UVM200925-08F

GEL Laboratories, LLC
Revision:11/22/04

ORGANIC RUN LOG - INSTRUMENT ID#VOA2

JP 10/15/2020

EH 10/15/2020

Date: 10/14/2020 Method 8260 Operator: JP1

HARDWARE CONFIGURATION & METHOD CONDITIONS SUMMARY No# 50 Daily Instrument Readings:

Multiplier Voltage: 1459

CALIBRATION & CC INFORMATION:

Initial Calibration Date: 10/13/2020 & 10/14/2020

(See pg. 001-002 for ICAL Std. Ids)

CI test lot # 85161C

Sequence Number: 101420V2

Daily Standard

Solution ID#		Blk/ Smpl	CCV	MS/ LCS	BFB
CCV	W2VM201014-01		5uL ea.		
IS	UVM200820-01	1	1	1	
SS	UVM200820-02	1	1	1	
LCS/MS	W2VM201014-02			5uL ea.	
BFB	IVM201012-01				1
SH CCV	W2VM201014-03		5uL ea.		
SH LCS	W2VM201014-04			5uL ea.	

Volume Added for Purge (ul)

Purge Amount

5ML	Water Purge Vol:
5.0G	Soil Purge Wt.
N/A	Mid level ext. MeOH Vol:
N/A	ul
N/A	Methanol Lot #
X	Heated Purge

Analysis Date	Time	Data File	Lab Sample ID	Client	Batch #	Wt.(g) or Vol(ml/ul)	Dil. Factor	pH	AS Slot #	Matrix w or s	Analyst	CI test (Y/N)	Accepta ble(O/X)	Comments
10/14/2020	17:44	2J301.D	IVM201012-01	GEL	BFB	10ML	1	N/A	1	W	JP1	N/A	O	
10/14/2020	18:09	2J302.D	W2VM201014-01	ICV	ICV/CCV/LCS	5UL/5ML	1	N/A	2	w	JP1	N/A	O	MIX[A] UVM200723-10A/ UVM200625-20G/ UVM201007-01A
10/14/2020	18:47	2J303.D	W2VM201014-02	GEL	LCS	5UL/5ML	1	N/A	3	S	JP1	N/A	O	SOIL MIX[A] UVM200723-10A/ UVM200625-20G/ UVM201007-01A
10/14/2020	19:13	2J304.D	W2VM201014-03	GEL	CCV/LCS	5UL/5ML	1	N/A	4	W	JP1	N/A	O	MIX[B] UVM200904-08E/ UVM200925-08F
10/14/2020	19:39	2J305.D	W2VM201014-04	GEL	LCS	5UL/5ML	1	N/A	5	S	JP1	N/A	O	SOIL MIX[B] UVM200904-08E/ UVM200925-08F
10/14/2020	20:05	2J306.D	120------	GEL	BLANK	5ML	1	N/A	6	w	JP1	N/A	O	
10/14/2020	20:30	2J307.D	120------	GEL	BLANK	5ML	1	N/A	7	S	JP1	N/A	O	SOIL
10/14/2020	21:02	2J308.D	523892001	OLAB	2051793	25UL	200	N/A	8	w	JP1	N/A	X	INVALID RUN
10/14/2020	21:42	2J309.D	523892002	OLAB	2051793	25UL	200	N/A	9	w	JP1	N/A	X	INVALID RUN
10/14/2020	22:08	2J310.D	120------	GEL	BLANK	5ML	1	N/A	10	w	JP1	N/A	X	
10/14/2020	22:34	2J311.D	523892001	OLAB	2051793	50UL	100	N/A	11	w	JP1	N/A	O	
10/14/2020	23:00	2J312.D	523892002	OLAB	2051793	50UL	100	N/A	12	w	JP1	N/A	O	
10/14/2020	23:26	2J313.D	523892003	OLAB	2051793	1G/2ML/100UL	100	N/A	13	W	JP1	N/A	O	MATRIX
10/14/2020	23:52	2J314.D	523892004	OLAB	2051793	1G/2ML/5UL	2000	N/A	14	W	JP1	N/A	O	VISCOUS OVER RANGE. SEE 2J408(4000X)
10/15/2020	0:18	2J315.D	1204664144	GEL	2051793	500UL	10	N/A	15	w	JP1	N/A	O	TB
10/15/2020	0:44	2J316.D	1204664150	GEL	2051793	500UL	10	N/A	16	w	JP1	N/A	O	TB
10/15/2020	1:09	2J317.D	1204668898	GEL	2051793	100UL	50	N/A	17	w	JP1	N/A	O	HB
10/15/2020	1:35	2J318.D	1204668872	GEL	2051795	100UL	50	N/A	18	S	JP1	N/A	O	HB 523971
10/15/2020	2:01	2J319.D	523971007	CPRC	2051795	100UL	50	N/A	19	S	JP1	N/A	O	SOIL
10/15/2020	2:27	2J320.D	523971008	CPRC	2051795	100UL	50	N/A	20	S	JP1	N/A	O	SOIL
10/15/2020	2:53	2J321.D	523971009	CPRC	2051795	100UL	50	N/A	21	S	JP1	N/A	O	SOIL
10/15/2020	3:19	2J322.D	1204668869	OLAB	2051793	50UL	100	N/A	22	w	JP1	N/A	O	MIX[A] 523892001PS
10/15/2020	3:44	2J323.D	1204668870	OLAB	2051793	50UL	100	N/A	23	w	JP1	N/A	O	MIX[A] 523892001PSD
10/15/2020	4:10	2J324.D	1204668873	CPRC	2051795	100UL	50	N/A	24	S	JP1	N/A	O	SOIL MIX[A] 523971007PS
10/15/2020	4:36	2J325.D	1204668874	CPRC	2051795	100UL	50	N/A	25	S	JP1	N/A	O	SOIL MIX[A] 523971007PSD

SDG: 528429

GEL Laboratories, LLC
Revision:11/22/04

ORGANIC RUN LOG - INSTRUMENT ID#VOA2

JP 12/01/2020

KP 12/01/2020

Date: 11/27/2020 Method 8260 Operator: JP1

HARDWARE CONFIGURATION & METHOD CONDITIONS SUMMARY No# 50

Daily Instrument Readings:
Multiplier Voltage: 1518

CALIBRATION & CC INFORMATION:

Initial Calibration Date: 10/13/2020 & 10/14/2020

(See pg. 001-002 for ICAL Std. Ids)

CI test lot # 85161C

Sequence Number: 112720V2

Daily Standard Solution ID#		Volume Added for Purge (ul) Blk/ Smpl	CCV	MS/ LCS	BFB
CCV	W2VM201127-01		5uL ea.		
IS	UVM201002-01	1	1	1	
SS	UVM200820-02	1	1	1	
LCS/MS	W2VM201127-01/02			5uL ea.	
BFB	IVM201112-01				1
SH CCV	W2VM201127-03		5uL ea.		
SH LCS	W2VM201127-03/04			5uL ea.	

Purge Amount	
5ML	Water Purge Vol:
5.0G	Soil Purge Wt.
N/A	Mid level ext. MeOH Vol:
N/A	ul
N/A	Methanol Lot #
X	Heated Purge

Analysis Date Time	Data File	Lab Sample ID	Client	Batch #	Wt.(g) or Vol(ml/ul)	Dil. Factor	pH	AS Slot #	Matrix w or s	Analyst	CI test (Y/N)	Acceptable(O/X)	Comments
11/27/2020 17:04	2P501.D	IVM201112-01	GEL	BFB	10ML	1	N/A	1	W	JP1	N/A	O	
11/27/2020 17:29	2P502.D	W2VM201127-01	GEL	CCV/LCS	5UL/5ML	1	N/A	2	W	JP1	N/A	O	MIX[A]
11/27/2020 17:55	2P503.D	W2VM201127-02	GEL	LCS	5UL/5ML	1	N/A	3	S	JP1	N/A	O	SOIL MIX[A]
11/27/2020 18:21	2P504.D	W2VM201127-03	GEL	CCV/LCS	5UL/5ML	1	N/A	4	W	JP1	N/A	O	MIX[B]
11/27/2020 18:47	2P505.D	W2VM201127-04	GEL	LCS	5UL/5ML	1	N/A	5	S	JP1	N/A	O	SOIL MIX[B]
11/27/2020 19:12	2P506.D	120-----	GEL	BLANK	5ML	1	N/A	6	W	JP1	N/A	O	
11/27/2020 19:38	2P507.D	120-----	GEL	BLANK	5G/5ML	1	N/A	7	S	JP1	N/A	O	SOIL
11/27/2020 20:04	2P508.D	528424001	FRNP	2067532	100UL	50	N/A	8	S	JP1	N/A	O	SOIL
11/27/2020 20:29	2P509.D	528424002	FRNP	2067532	100UL	50	N/A	9	S	JP1	N/A	O	SOIL
11/27/2020 21:12	2P510.D	528424003	FRNP	2067532	100UL	50	N/A	10	S	JP1	N/A	X	SOIL. OI ERROR MESSAGE
11/27/2020 21:37	2P511.D	528431001	FRNP	2067532	100UL	50	N/A	11	S	JP1	N/A	O	SOIL
11/27/2020 22:03	2P512.D	528432001	FRNP	2067532	100UL	50	N/A	12	S	JP1	N/A	O	SOIL
11/27/2020 22:28	2P513.D	528432002	FRNP	2067532	100UL	50	N/A	13	S	JP1	N/A	O	SOIL
11/27/2020 22:54	2P514.D	528424003	FRNP	2067532	100UL	50	N/A	14	S	JP1	N/A	O	SOIL
11/27/2020 23:20	2P515.D	527865001	WNUC	2067534	5.0G	1	N/A	15	S	JP1	N/A	O	SOIL
11/27/2020 23:46	2P516.D	527865002	WNUC	2067534	5.2G	1	N/A	16	S	JP1	N/A	O	SOIL
11/28/2020 0:12	2P517.D	527865003	WNUC	2067534	5.3G	1	N/A	17	S	JP1	N/A	O	SOIL
11/28/2020 0:38	2P518.D	527865004	WNUC	2067534	5.1G	1	N/A	18	S	JP1	N/A	O	SOIL
11/28/2020 1:04	2P519.D	527865005	WNUC	2067534	5.0G	1	N/A	19	S	JP1	N/A	O	SOIL
11/28/2020 1:29	2P520.D	527865006	WNUC	2067534	5.1G	1	N/A	20	S	JP1	N/A	O	SOIL
11/28/2020 1:56	2P521.D	528414001	OLAB	2067534	5.1G	1	N/A	21	S	JP1	N/A	O	SOIL
11/28/2020 2:21	2P522.D	528414002	OLAB	2067534	5..2G	1	N/A	22	S	JP1	N/A	O	SOIL
11/28/2020 2:47	2P523.D	528414003	OLAB	2067534	5.1G	1	N/A	23	S	JP1	N/A	O	SOIL
11/28/2020 3:13	2P524.D	528414004	OLAB	2067534	5.1G	1	N/A	24	S	JP1	N/A	O	SOIL
11/28/2020 3:39	2P525.D	528429002	MCOM	2067534	6.7G	1	N/A	25	S	JP1	N/A	O	SOIL
11/28/2020 4:04	2P526.D	528429003	MCOM	2067534	7.4G	1	N/A	26	S	JP1	N/A	O	SOIL
11/28/2020 4:31	2P527.D	528429004	MCOM	2067534	5.9G	1	N/A	27	S	JP1	N/A	O	SOIL
11/28/2020 4:56	2P528.D	528429005	MCOM	2067534	5.4G	1	N/A	28	S	JP1	N/A	O	SOIL
11/28/2020 5:22	2P529.D	528429006	MCOM	2067534	6.5G	1	N/A	29	S	JP1	N/A	O	SOIL. MEETS 8260D TUNE CRITERIA

GEL Laboratories, LLC
Revision:11/22/04

ORGANIC RUN LOG - INSTRUMENT ID#VOA2

JP 12/01/2020

12/01/2020

Date: 11/30/2020 Method 8260 Operator: JP1

HARDWARE CONFIGURATION & METHOD CONDITIONS SUMMARY No# 50

Daily Instrument Readings:
Multiplier Voltage: 1518

CALIBRATION & CC INFORMATION:

Initial Calibration Date: 10/13/2020 & 10/14/2020

(See pg. 001-002 for ICAL Std. Ids)

CI test lot # 85161C

Sequence Number: 113020V2-AM

Daily Standard Solution ID#		Volume Added for Purge (ul) Blk/ Smpl	CCV	MS/ LCS	BFB
CCV	W2VM201130-05		5uL ea.		
IS	UVM201008-01	1	1	1	
SS	UVM201105-01	1	1	1	
LCS/MS	W2VM201130-05/06			5uL ea.	
BFB	IVM201112-01				1
SH CCV	W2VM201130-07		5uL ea.		
SH LCS	W2VM201130-07			5uL ea.	

Purge Amount	
5ML	Water Purge Vol:
5.0G	Soil Purge Wt.
N/A	Mid level ext. MeOH Vol:
N/A	ul
N/A	Methanol Lot #
X	Heated Purge

Analysis Date Time	Data File	Lab Sample ID	Client	Batch #	Wt.(g) or Vol(ml/ul)	Dil. Factor	pH	AS Slot #	Matrix w or s	Analyst	CI test (Y/N)	Acceptable(O/X)	Comments
11/30/2020 18:44	2Q101.D	IVM201112-01	GEL	BFB	10ML	1	N/A	1	W	JP1	N/A	O	
11/30/2020 19:10	2Q102.D	W2VM201130-01	GEL	CCV	5UL/5ML	1	N/A	2	W	JP1	N/A	X	MIX[A] DUSE
11/30/2020 19:36	2Q103.D	W2VM201130-02	GEL	LCS	5UL/5ML	1	N/A	3	S	JP1	N/A	X	SOIL MIX[A] DUSE
11/30/2020 20:01	2Q104.D	W2VM201130-03	GEL	CCV	5UL/5ML	1	N/A	4	W	JP1	N/A	X	MIX[A] DUSE
11/30/2020 20:28	2Q105.D	W2VM201130-04	GEL	LCS	5UL/5ML	1	N/A	5	S	JP1	N/A	X	SOIL MIX[A] DUSE
11/30/2020 20:54	2Q106.D	W2VM201130-05	GEL	CCV/LCS	5UL/5ML	1	N/A	6	W	JP1	N/A	O	MIX[A] UVM200820-12E/UVM200821-10F/UVM201007-01D
11/30/2020 21:20	2Q107.D	W2VM201130-06	GEL	LCS	5UL/5ML	1	N/A	7	S	JP1	N/A	O	SOIL MIX[A] UVM200820-12E/UVM200821-10F/UVM201007-01D
11/30/2020 21:46	2Q108.D	W2VM201130-07	GEL	CCV/LCS	5UL/5ML	1	N/A	8	W	JP1	N/A	O	MIX[B] UVM201029-08C/UVM201029-16B
11/30/2020 22:12	2Q109.D	120-----	GEL	BLANK	5ML	1	N/A	9	W	JP1	N/A	O	
11/30/2020 22:38	2Q110.D	120-----	GEL	BLANK	5ML	1	N/A	10	S	JP1	N/A	O	SOIL
11/30/2020 23:04	2Q111.D	1204704006	FRNP	2067338	5ML	1	PH<2	11	W	JP1	N/A	O	MIX[A] 527641002PS
11/30/2020 23:30	2Q112.D	1204704007	FRNP	2067338	5ML	1	PH<2	12	W	JP1	N/A	O	MIX[A] 527641002PSD
11/30/2020 23:56	2Q113.D	1204704443	FRNP	2067532	100UL	50	N/A	13	S	JP1	N/A	O	SOIL MIX[A] 528424001PS
12/1/2020 0:21	2Q114.D	1204704444	FRNP	2067532	100UL	50	N/A	14	S	JP1	N/A	O	SOIL MIX[A] 528424001PSD
12/1/2020 0:47	2Q115.D	1204704450	OLAB	2067534	5.0G	1	N/A	15	S	JP1	N/A	O	SOIL MIX[A] 528414001PS
12/1/2020 1:13	2Q116.D	1204704451	OLAB	2067534	5.0G	1	N/A	16	S	JP1	N/A	O	SOIL MIX[A] 528414001PSD
12/1/2020 1:38	2Q117.D	120------	GEL	N/A	N/A	1	N/A	17	W	JP1	N/A	X	INVALID RUN OVERRANGE 2-BUTANONE/2-PENTANONE/4-METHYL-2-PENTANONE
12/1/2020 2:04	2Q118.D	120------	GEL	BLANK	5ML	1	N/A	18	W	JP1	N/A	X	
12/1/2020 2:30	2Q119.D	1204704440	GEL	2067532	100UL	50	N/A	19	S	JP1	N/A	X	SOIL HB 11-27-20 2-BUTANONE 8.26
12/1/2020 2:56	2Q120.D	1204705490	GEL	2068007	100UL	50	N/A	20	S	JP1	N/A	X	SOIL HB 11-30-20 2-BUTANONE 5.65
12/1/2020 3:22	2Q121.D	527867001	3VIN	2067534	3.9G	1	N/A	21	S	JP1	N/A	X	SOIL
12/1/2020 3:48	2Q122.D	527839001	CARE	2068007	100UL	50	N/A	22	S	JP1	N/A	X	SOIL
12/1/2020 4:14	2Q123.D	527840001	CARE	2068007	100UL	50	N/A	23	S	JP1	N/A	X	SOIL
12/1/2020 4:40	2Q124.D	527840002	CARE	2068007	100UL	50	N/A	24	S	JP1	N/A	X	SOIL
12/1/2020 5:05	2Q125.D	528035001	BOEN	2067534	100UL	50	N/A	25	S	JP1	N/A	X	SOIL
12/1/2020 5:31	2Q126.D	528035002	BOEN	2067534	100UL	50	N/A	26	S	JP1	N/A	X	SOIL
12/1/2020 5:58	2Q127.D	528163001	NRTH	2067534	3.9G	1	N/A	27	S	JP1	N/A	X	SOIL
12/1/2020 6:24	2Q128.D	528163002	NRTH	2067534	4.3G	1	N/A	28	S	JP1	N/A	X	SOIL

GEL Laboratories, LLC
Revision:11/22/04

ORGANIC RUN LOG - INSTRUMENT ID#VOA3

JP 11/27/2020

11/30/2020

Date: 11/25/2020 Method 8260 Operator: JP1

REVIEWED BY: _____
DATE: _____

HARDWARE CONFIGURATION & METHOD CONDITIONS SUMMARY No# 50

Daily Instrument Readings:
Multiplier Voltage: 1565

CALIBRATION & CC INFORMATION:

Initial Calibration Date: 11/25/2020

Cl test lot # 85161C

Sequence Number: 112520V3

Daily Standard Solution ID#		Volume Added for Purge (ul) Blk/ Smpl	CCV	MS/ LCS	BFB
CCV			5uL ea.		
IS	UVM201008-01	1	1	1	
SS	UVM201029-18	1	1	1	
LCS/MS				5uL ea.	
BFB	IVM201112-01				1
SHORT			5uL ea.		
SHORT LCS				5uL ea.	

Purge Amount	
5ML	Water Purge Vol:
5G	Soil Purge Wt.
N/A	Mid level ext. MeOH Vol:
N/A	ul
N/A	Methanol Lot #
X	Heated Purge

Analysis Date	Time	Data File	Lab Sample ID	Client	Batch #	Wt (g) or Vol(ml/ul)	Dil Factor	pH	AS Slot #	Matrix w or s	Analyst	Cl test (Y/N)	Acceptable(O/X)	Comments
11/25/2020	16:55	3X301.D	IVM201112-01	GEL	BFB	10ML	1	N/A	1	W	JP1	N/A	O	
11/25/2020	17:22	3X302.D	WSVM201125-01	VSTD0005	ICAL	5UL/5ML	1	N/A	2	W	JP1	N/A	O	MIX[A] UVM201022-01/UVM200821-01B/UVM201002-01B
11/25/2020	17:48	3X303.D	WSVM201125-02	VSTD001	ICAL	5UL/5ML	1	N/A	3	W	JP1	N/A	O	MIX[A] UVM201022-02/UVM200821-02B/UVM201002-02B
11/25/2020	18:15	3X304.D	WSVM201125-03	VSTD002	ICAL	5UL/5ML	1	N/A	4	W	JP1	N/A	O	MIX[A] UVM201022-03/UVM200821-03B/UVM201002-03B
11/25/2020	18:42	3X305.D	WSVM201125-04	VSTD005	ICAL	5UL/5ML	1	N/A	5	W	JP1	N/A	O	MIX[A] UVM201022-04/UVM200821-04B/UVM201002-04B
11/25/2020	19:09	3X306.D	WSVM201125-05	VSTD010	ICAL	5UL/5ML	1	N/A	6	W	JP1	N/A	O	MIX[A] UVM201022-05/UVM200821-05B/UVM201002-05B
11/25/2020	19:36	3X307.D	WSVM201125-06	VSTD020	ICAL	5UL/5ML	1	N/A	7	W	JP1	N/A	O	MIX[A] UVM201022-06/UVM200821-06B/UVM201002-06B
11/25/2020	20:03	3X308.D	WSVM201125-07	VSTD050	ICAL	5UL/5ML	1	N/A	8	W	JP1	N/A	O	MIX[A] UVM201022-07/UVM200821-07B/UVM201002-07B
11/25/2020	20:30	3X309.D	WSVM201125-08	VSTD080	ICAL	4UL/5ML	1	N/A	9	W	JP1	N/A	O	MIX[A] UVM201022-08/UVM200821-08B/UVM201002-08B
11/25/2020	20:56	3X310.D	WSVM201125-09	VSTD100	ICAL	5UL/5ML	1	N/A	10	W	JP1	N/A	O	MIX[A] UVM201022-08/UVM200821-08B/UVM201002-08B
11/25/2020	21:23	3X311.D	120429----	GEL	BLANK	5ML	1	N/A	11	W	JP1	N/A	X	
11/25/2020	21:50	3X312.D	WSVM201125-10	ICV050	ICV	5UL/5ML	1	N/A	12	W	JP1	N/A	O	MIX[A] UVM200820-12E/UVM200824-10E/UVM201007-01D
11/25/2020	22:17	3X313.D	WSVM201125-11	VSTD005	ICAL	5UL/5ML	1	N/A	13	W	JP1	N/A	O	MIX[B] UVM201029-01A/UVM201029-09A
11/25/2020	22:44	3X314.D	WSVM201125-12	VSTD010	ICAL	5UL/5ML	1	N/A	14	W	JP1	N/A	O	MIX[B] UVM201029-02A/UVM201029-10A
11/25/2020	23:10	3X315.D	WSVM201125-13	VSTD025	ICAL	5UL/5ML	1	N/A	15	W	JP1	N/A	O	MIX[B] UVM201029-03A/UVM201029-11A
11/25/2020	23:37	3X316.D	WSVM201125-14	VSTD050	ICAL	5UL/5ML	1	N/A	16	W	JP1	N/A	O	MIX[B] UVM201029-04A/UVM201029-12A
11/26/2020	0:04	3X317.D	WSVM201125-15	VSTD100	ICAL	5UL/5ML	1	N/A	17	W	JP1	N/A	O	MIX[B] UVM201029-05A/UVM201029-13A
11/26/2020	0:30	3X318.D	WSVM201125-16	VSTD250	ICAL	5UL/5ML	1	N/A	18	W	JP1	N/A	O	MIX[B] UVM201029-06A/UVM201029-14A
11/26/2020	0:58	3X319.D	WSVM201125-17	VSTD300	ICAL	3UL/5ML	1	N/A	19	W	JP1	N/A	O	MIX[B] UVM201029-07A/UVM201029-15A
11/26/2020	1:24	3X320.D	WSVM201125-18	VSTD500	ICAL	5UL/5ML	1	N/A	20	W	JP1	N/A	O	MIX[B] UVM201029-07A/UVM201029-15A
11/26/2020	1:51	3X321.D	120429----	BLANK	BLANK	5ML	1	N/A	21	W	JP1	N/A	X	
11/26/2020	2:18	3X322.D	WSVM201125-19	ICV250	ICV	5UL/5ML	1	N/A	22	W	JP1	N/A	O	MIX[B] UVM201029-08C/UVM201029-16B

GEL Laboratories, LLC
Revision:11/22/04

ORGANIC RUN LOG - INSTRUMENT ID#VOA3

JP 12/01/2020

12/01/2020

Date: 11/27/2020 Method 8260 Operator: JP1

REVIEWED BY: _____
DATE: _____

HARDWARE CONFIGURATION & METHOD CONDITIONS SUMMARY No# 50

Daily Instrument Readings:
Multiplier Voltage: 1565

CALIBRATION & CC INFORMATION:

Initial Calibration Date: 11/25/2020

Daily Standard / Volume Added for Purge (ul)

Solution ID#		Blk/ Smpl	CCV	MS/ LCS	BFB
CCV	W3VM201127-02		5uL ea.		
IS	UVM201008-01	1	1	1	
SS	UVM201029-18	1	1	1	
LCS/MS	W3VM201127-02			5uL ea.	
BFB	IVM201112-01				1
SHORT	W3VM201127-03		5uL ea.		
SHORT LCS	W3VM201127-04			5uL ea.	

CI test lot # 85161C

Sequence Number: 112720V3

Purge Amount

5ML	Water Purge Vol:
5G	Soil Purge Wt.
N/A	Mid level ext. MeOH Vol:
N/A	ul
N/A	Methanol Lot #
X	Heated Purge

Analysis Date	Time	Data File	Lab Sample ID	Client	Batch #	Wt (g) or Vol(ml/ul)	Dil Factor	pH	AS Slot #	Matrix w or s	Analyst	CI test (Y/N)	Acceptable(O/X)	Comments
11/27/2020	17:51	3X501.D	IVM201112-01	GEL	BFB	10ML	1	N/A	1	W	JP1	N/A	O	
11/27/2020	18:19	3X502.D	W3VM201127-01	GEL	CCV	5UL/5ML	1	N/A	2	W	JP1	N/A	O	MIX[A] UVM200820-09G/UVM200821-07E/UVM201007-01D
11/27/2020	18:45	3X503.D	W3VM201127-02	GEL	CCV/LCS	5UL/5ML	1	N/A	3	W	JP1	N/A	O	MIX[A] UVM200820-12E/UVM200821-10E/UVM201007-01D
11/27/2020	19:12	3X504.D	W3VM201127-03	GEL	CCV	5UL/5ML	1	N/A	4	W	JP1	N/A	O	MIX[B] UVM201029-06D/UVM201029-12D
11/27/2020	19:39	3X505.D	W3VM201127-04	GEL	LCS	5UL/5ML	1	N/A	5	W	JP1	N/A	O	MIX[B] UVM201029-08C/UVM201029-16B
11/27/2020	20:05	3X506.D	120429----	GEL	BLANK	5ML	1	N/A	6	W	JP1	N/A	O	
11/27/2020	20:33	3X507.D	528736001	UCOR	2065781	5ML	1	PH7	7	W	JP1	N	O	
11/27/2020	21:00	3X508.D	528736007	UCOR	2065781	5ML	1	PH7	8	W	JP1	N	O	
11/27/2020	21:26	3X509.D	528736008	UCOR	2065781	5ML	1	PH7	9	W	JP1	N	O	
11/27/2020	21:53	3X510.D	528736014	UCOR	2065781	5ML	1	PH7	10	W	JP1	N	O	
11/27/2020	22:20	3X511.D	528736020	UCOR	2065781	5ML	1	PH7	11	W	JP1	N	O	
11/27/2020	22:46	3X512.D	527604007	CPRC	2067535	5ML	1	PH<2	12	W	JP1	N	O	
11/27/2020	23:13	3X513.D	527604008	CPRC	2067535	5ML	1	PH7	13	W	JP1	N	O	
11/27/2020	23:40	3X514.D	527604009	CPRC	2067535	5ML	1	PH<2	14	W	JP1	N	O	
11/28/2020	0:06	3X515.D	527604010	CPRC	2067535	5ML	1	PH<2	15	W	JP1	N	O	
11/28/2020	0:33	3X516.D	527604015	CPRC	2067535	5ML	1	PH<2	16	W	JP1	N	X	OVERRANGE CARBON TETRACHLORIDE. SEE 3Y111 (2.5X) DUE TO 11/30 CCV
11/28/2020	1:00	3X517.D	527616001	CPRC	2067535	5ML	1	PH<2	17	W	JP1	N	O	NO CARRYOVER.
11/28/2020	1:26	3X518.D	527764005	CPRC	2067535	5ML	1	PH<2	18	W	JP1	N	O	
11/28/2020	1:53	3X519.D	527766001	CPRC	2067535	5ML	1	PH<2	19	W	JP1	N	O	
11/28/2020	2:19	3X520.D	527770004	CPRC	2067535	5ML	1	PH<2	20	W	JP1	N	O	
11/28/2020	2:46	3X521.D	527770005	CPRC	2067535	5ML	1	PH<2	21	W	JP1	N	X	OVERRANGE CARBON TETRACHLORIDE. SEE 3Y113 (2.5X)
11/28/2020	3:12	3X522.D	527906001	CPRC	2067535	5ML	1	PH<2	22	W	JP1	N	X	OVERRANGE CARBON TETRACHLORIDE. SEE 3Y114 (2X)
11/28/2020	3:39	3X523.D	527906002	CPRC	2067535	5ML	1	PH<2	23	W	JP1	N	X	POSSIBLE CARRYOVER. SEE 3Y115 (1X)
11/28/2020	4:06	3X524.D	527906003	CPRC	2067535	5ML	1	PH<2	24	W	JP1	N	X	POSSIBLE CARRYOVER. SEE 3Y116 (1X)
11/28/2020	4:32	3X525.D	528429007	MCOM	2067535	5ML	1	PH<2	25	W	JP1	N	O	
11/28/2020	4:59	3X526.D	1204704456	CPRC	2067535	5ML	1	PH<2	26	W	JP1	N	O	MIX[A] 527604007PS
11/28/2020	5:25	3X527.D	1204704457	CPRC	2067535	5ML	1	PH<2	27	W	JP1	N	O	MIX[A] 527604007PSD

Semi-Volatile Analysis

Case Narrative

GC/MS Semivolatile
Technical Case Narrative
Marcom LLC
SDG #: 528429

Product: Analysis of Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry
Analytical Method: SW846 3541/8270D SIM PAH
Analytical Procedure: GL-OA-E-009 REV# 45
Analytical Batch: 2067376

Preparation Method: SW846 3541
Preparation Procedure: GL-OA-E-066 REV# 9
Preparation Batch: 2067375

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
528429002	TANN20006
528429003	TANN20007
528429004	TANN20008
528429005	TANN20009
528429006	TANN20010
1204704080	Method Blank (MB)
1204704081	Laboratory Control Sample (LCS)
1204704082	527597001(NonSDG) Matrix Spike (MS)
1204704083	527597001(NonSDG) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on a "dry weight" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Spike Recovery Statement
The MS (See Below) did not meet spike recovery acceptance criteria. The MS, along with the parent and MSD, were analyzed at a dilution. There were multiple target anlytes detected above the reporting limits in the un-spike parent sample that caused a biased calculated result in the MS. The data results have been reported.

Sample	Analyte	Value
1204704082 (Non SDG 527597001MS)	Benzo(a)pyrene	16* (24%-129%)
	Benzo(b)fluoranthene	0* (22%-130%)
	Chrysene	0* (31%-119%)
	Fluoranthene	0* (21%-122%)
	Naphthalene	15* (29%-122%)
	Pyrene	0* (19%-139%)

MS/MSD Relative Percent Difference (RPD) Statement
The RPD values between the MS and MSD, (See Below) were not within the acceptance limits. The MS, along with the parent and MSD, were analyzed at a dilution. The RPD failures were attributed to the biased calculated results in the MS and MSD that resulted from multiple detected presences of target analytes above the reporting limits in the un-spike parent sample. The data results have been reported.

Sample	Analyte	Value
1204704082MS and 1204704083MSD (Non SDG 527597001)	Acenaphthene	81* (0%-30%)
	Anthracene	76* (0%-30%)
	Benzo(a)pyrene	69* (0%-30%)
	Benzo(b)fluoranthene	70* (0%-30%)
	Benzo(k)fluoranthene	73* (0%-30%)
	Chrysene	70* (0%-30%)
	Fluoranthene	66* (0%-30%)
	Fluorene	79* (0%-30%)
	Naphthalene	86* (0%-30%)
	Pyrene	65* (0%-30%)

Internal Standard (ISTD) Acceptance
The internal standard response for 1,4-Dichlorobenzene-d4 was outside of the acceptance criteria for sample 528429006 (TANN20010). Since 1,4-Dichlorobenzene-d4 was not used to quantitate the requested target analytes or surrogates for this batch, the data were not adversely impacted by the failure. The results are reported.

Technical Information

Sample Dilutions
Samples 528429002 (TANN20006), 528429003 (TANN20007), 528429004 (TANN20008), 528429005 (TANN20009) and 528429006 (TANN20010) were diluted due to the presence of non-target analytes. The data from the dilutions are reported.

Miscellaneous Information

Additional Comments
The additional comments field is used to address special issues associated with each analysis, clarify method/contractual issues pertaining to the analysis, and to list any report documents generated as a result of sample analysis or review. The following additional comments were required:

Due to this SDG requesting two separate method criteria, 8270D SIM PAH with 3541 Prep in Solid and 8270C SIM PAH in Liquid, the batches being analyzed on the same instrument, certain forms cannot be generated for both methods due to software limitations. All raw data associated with samples 528429002 (TANN20006), 528429003 (TANN20007), 528429004 (TANN20008), 528429005 (TANN20009) and 528429006 (TANN20010) has been provided.

Product: Analysis of Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry
Analytical Method: SW846 3510C/8270C SIM PAH
Analytical Procedure: GL-OA-E-009 REV# 45

Analytical Batch: 2067384

Preparation Method: SW846 3510C
Preparation Procedure: GL-OA-E-013 REV# 34
Preparation Batch: 2067383

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
528429001	FIELD BLANK
1204704097	Method Blank (MB)
1204704098	Laboratory Control Sample (LCS)
1204704099	Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Laboratory Control Sample Duplicate (LCSD)
An LCSD was used in place of matrix QC due to limited sample volume.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries were not within the acceptance limits. The associated LCSD passed recoveries. It appears that the low spike recoveries were isolated to the LCS only and were the result of a poor extraction.

Sample	Analyte	Value
1204704098 (LCS)	Acenaphthene	46* (62%-98%)
	Anthracene	46* (60%-105%)
	Benzo(a)anthracene	43* (60%-104%)
	Benzo(a)pyrene	46* (61%-106%)
	Benzo(b)fluoranthene	45* (60%-107%)
	Benzo(k)fluoranthene	42* (59%-109%)
	Chrysene	48* (62%-105%)
	Fluoranthene	48* (56%-107%)
	Fluorene	49* (58%-104%)
	Naphthalene	39* (64%-93%)
	Pyrene	50* (55%-112%)

LCS/LCSD Relative Percent Difference (RPD) Statement
The RPD values between the LCS and LCSD (See Below) were not within the acceptance limits due to the large difference between the individual recoveries in each LCS and LCSD analyte pair. The failures may be attributed to an error in the extraction process.

Sample	Analyte	Value
1204704098 (LCS) and 1204704099 (LCSD)	Acenaphthene	RPD 47* (0%-20%)
	Anthracene	RPD 50* (0%-22%)
	Benzo(a)anthracene	RPD 47* (0%-20%)
	Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene	RPD 48* (0%-20%)
	Chrysene	RPD 47* (0%-20%)
	Fluoranthene	RPD 51* (0%-20%)
	Fluorene	RPD 48* (0%-20%)
	Naphthalene	RPD 50* (0%-20%)
	Pyrene	RPD 38* (0%-20%)

Technical Information

Sample Re-extraction/Re-analysis
Sample 1204704097 (MB) was re-analyzed for ISTD failure.

Miscellaneous Information

Additional Comments
The additional comments field is used to address special issues associated with each analysis, clarify method/contractual issues pertaining to the analysis, and to list any report documents generated as a result of sample analysis or review. The following additional comments were required:

Due to this SDG requesting two separate method criteria, 8270D SIM PAH with 3541 Prep in Solid and 8270C SIM PAH in Liquid, the batches being analyzed on the same instrument, certain forms cannot be generated for both methods due to software limitations. All raw data associated with sample 528429001 (FIELD BLANK) has been provided.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

MCOM001 Marcom LLC

Client SDG: 528429 GEL Work Order: 528429

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria
** Analyte is a surrogate compound
J Value is estimated
U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Barbara Bailey **Name: Barbara Bailey**

Date: 01 DEC 2020 **Title: Data Validator**

Sample Data Summary

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**528429**	**Date Collected:**	**11/23/2020 11:00**	**Matrix:**	**WATER**
Lab Sample ID:	**528429001**	**Date Received:**	**11/24/2020 09:40**		
		Client:	**MCOM001**	**Project:**	**MCOM00118**
Client ID:	**FIELD BLANK**	**Method:**	**SW846 3510C/8270C SIM**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**2067384**	**Inst:**	**MSD1.I**	**Dilution:**	**1**
Run Date:	**11/30/2020 16:17**	**Analyst:**	**LXA1**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/30/2020 05:00**	**Aliquot:**	**1000 mL**	**Final Volume:**	**1 mL**
Data File:	**s113020.B\s1k3007.D**	**Column:**	**Description: DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
91-20-3	Naphthalene	U	0.100	ug/L	0.0300	0.100
83-32-9	Acenaphthene	U	0.100	ug/L	0.0300	0.100
86-73-7	Fluorene	U	0.100	ug/L	0.0300	0.100
120-12-7	Anthracene	U	0.100	ug/L	0.0300	0.100
206-44-0	Fluoranthene	U	0.100	ug/L	0.0300	0.100
129-00-0	Pyrene	U	0.100	ug/L	0.0300	0.100
56-55-3	Benzo(a)anthracene	U	0.100	ug/L	0.0300	0.100
218-01-9	Chrysene	U	0.100	ug/L	0.0300	0.100
205-99-2	Benzo(b)fluoranthene	U	0.100	ug/L	0.0300	0.100
207-08-9	Benzo(k)fluoranthene	U	0.100	ug/L	0.0300	0.100
50-32-8	Benzo(a)pyrene	U	0.100	ug/L	0.0300	0.100

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**528429**	**Date Collected:**	**11/23/2020 11:00**	**Matrix:**	**SOIL**
Lab Sample ID:	**528429002**	**Date Received:**	**11/24/2020 09:40**	**%Moisture:**	**13.6**
		Client:	**MCOM001**	**Project:**	**MCOM00118**
Client ID:	**TANN20006**	**Method:**	**SW846 3541/8270D SIM P.**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**2067376**	**Inst:**	**MSD1.I**	**Dilution:**	**4**
Run Date:	**12/01/2020 00:04**	**Analyst:**	**LXA1**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/30/2020 10:33**	**Aliquot:**	**30.27 g**	**Final Volume:**	**1 mL**
Data File:	**s113020.B\s1k3021.D**	**Column:**	**Description: DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
91-20-3	Naphthalene	U	15.3	ug/kg	5.05	15.3
83-32-9	Acenaphthene	U	15.3	ug/kg	5.05	15.3
86-73-7	Fluorene	U	15.3	ug/kg	5.05	15.3
120-12-7	Anthracene	U	15.3	ug/kg	5.05	15.3
206-44-0	Fluoranthene	U	15.3	ug/kg	5.05	15.3
129-00-0	Pyrene	U	15.3	ug/kg	5.05	15.3
56-55-3	Benzo(a)anthracene	U	15.3	ug/kg	5.05	15.3
218-01-9	Chrysene	U	15.3	ug/kg	5.05	15.3
205-99-2	Benzo(b)fluoranthene	U	15.3	ug/kg	5.05	15.3
207-08-9	Benzo(k)fluoranthene	U	15.3	ug/kg	5.05	15.3
50-32-8	Benzo(a)pyrene	U	15.3	ug/kg	5.05	15.3

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**528429**	**Date Collected:**	**11/23/2020 11:00**	**Matrix:**	**SOIL**
Lab Sample ID:	**528429003**	**Date Received:**	**11/24/2020 09:40**	**%Moisture:**	**13.6**
		Client:	**MCOM001**	**Project:**	**MCOM00118**
Client ID:	**TANN20007**	**Method:**	**SW846 3541/8270D SIM P.**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**2067376**	**Inst:**	**MSD1.I**	**Dilution:**	**4**
Run Date:	**12/01/2020 00:37**	**Analyst:**	**LXA1**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/30/2020 10:33**	**Aliquot:**	**30.07 g**	**Final Volume:**	**1 mL**
Data File:	**s113020.B\s1k3022.D**	**Column:**	**Description: DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
91-20-3	Naphthalene	U	15.4	ug/kg	5.08	15.4
83-32-9	Acenaphthene	U	15.4	ug/kg	5.08	15.4
86-73-7	Fluorene	U	15.4	ug/kg	5.08	15.4
120-12-7	Anthracene	U	15.4	ug/kg	5.08	15.4
206-44-0	Fluoranthene	U	15.4	ug/kg	5.08	15.4
129-00-0	Pyrene	U	15.4	ug/kg	5.08	15.4
56-55-3	Benzo(a)anthracene	U	15.4	ug/kg	5.08	15.4
218-01-9	Chrysene	U	15.4	ug/kg	5.08	15.4
205-99-2	Benzo(b)fluoranthene	U	15.4	ug/kg	5.08	15.4
207-08-9	Benzo(k)fluoranthene	U	15.4	ug/kg	5.08	15.4
50-32-8	Benzo(a)pyrene	U	15.4	ug/kg	5.08	15.4

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**528429**	**Date Collected:**	**11/23/2020 11:25**	**Matrix:**	**SOIL**
Lab Sample ID:	**528429004**	**Date Received:**	**11/24/2020 09:40**	**%Moisture:**	**13.6**
		Client:	**MCOM001**	**Project:**	**MCOM00118**
Client ID:	**TANN20008**	**Method:**	**SW846 3541/8270D SIM P.**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**2067376**	**Inst:**	**MSD1.I**	**Dilution:**	**4**
Run Date:	**12/01/2020 01:09**	**Analyst:**	**LXA1**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/30/2020 10:33**	**Aliquot:**	**30.19 g**	**Final Volume:**	**1 mL**
Data File:	**s113020.B\s1k3023.D**	**Column:**	**Description: DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
91-20-3	Naphthalene	U	15.3	ug/kg	5.06	15.3
83-32-9	Acenaphthene	U	15.3	ug/kg	5.06	15.3
86-73-7	Fluorene	U	15.3	ug/kg	5.06	15.3
120-12-7	Anthracene	U	15.3	ug/kg	5.06	15.3
206-44-0	Fluoranthene	U	15.3	ug/kg	5.06	15.3
129-00-0	Pyrene	U	15.3	ug/kg	5.06	15.3
56-55-3	Benzo(a)anthracene	U	15.3	ug/kg	5.06	15.3
218-01-9	Chrysene	U	15.3	ug/kg	5.06	15.3
205-99-2	Benzo(b)fluoranthene	U	15.3	ug/kg	5.06	15.3
207-08-9	Benzo(k)fluoranthene	U	15.3	ug/kg	5.06	15.3
50-32-8	Benzo(a)pyrene	U	15.3	ug/kg	5.06	15.3

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**528429**	**Date Collected:**	**11/23/2020 11:45**	**Matrix:**	**SOIL**
Lab Sample ID:	**528429005**	**Date Received:**	**11/24/2020 09:40**	**%Moisture:**	**13.5**
		Client:	**MCOM001**	**Project:**	**MCOM00118**
Client ID:	**TANN20009**	**Method:**	**SW846 3541/8270D SIM P.**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**2067376**	**Inst:**	**MSD1.I**	**Dilution:**	**4**
Run Date:	**11/30/2020 21:24**	**Analyst:**	**LXA1**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/30/2020 10:33**	**Aliquot:**	**30.13 g**	**Final Volume:**	**1 mL**
Data File:	**s113020.B\s1k3016.D**	**Column:**	**Description: DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
91-20-3	Naphthalene	U	15.4	ug/kg	5.07	15.4
83-32-9	Acenaphthene	U	15.4	ug/kg	5.07	15.4
86-73-7	Fluorene	U	15.4	ug/kg	5.07	15.4
120-12-7	Anthracene	U	15.4	ug/kg	5.07	15.4
206-44-0	Fluoranthene	U	15.4	ug/kg	5.07	15.4
129-00-0	Pyrene	U	15.4	ug/kg	5.07	15.4
56-55-3	Benzo(a)anthracene	U	15.4	ug/kg	5.07	15.4
218-01-9	Chrysene	U	15.4	ug/kg	5.07	15.4
205-99-2	Benzo(b)fluoranthene	J	13.8	ug/kg	5.07	15.4
207-08-9	Benzo(k)fluoranthene	U	15.4	ug/kg	5.07	15.4
50-32-8	Benzo(a)pyrene	U	15.4	ug/kg	5.07	15.4

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**528429**	**Date Collected:**	**11/23/2020 10:00**	**Matrix:**	**SOIL**
Lab Sample ID:	**528429006**	**Date Received:**	**11/24/2020 09:40**	**%Moisture:**	**17.5**
		Client:	**MCOM001**	**Project:**	**MCOM00118**
Client ID:	**TANN20010**	**Method:**	**SW846 3541/8270D SIM P.**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**2067376**	**Inst:**	**MSD1.I**	**Dilution:**	**4**
Run Date:	**12/01/2020 13:04**	**Analyst:**	**LXA1**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/30/2020 10:33**	**Aliquot:**	**30.33 g**	**Final Volume:**	**1 mL**
Data File:	**s120120.B\s1L0107.D**	**Column:**	**Description: DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
91-20-3	Naphthalene	U	16.0	ug/kg	5.27	16.0
83-32-9	Acenaphthene	U	16.0	ug/kg	5.27	16.0
86-73-7	Fluorene	U	16.0	ug/kg	5.27	16.0
120-12-7	Anthracene	U	16.0	ug/kg	5.27	16.0
206-44-0	Fluoranthene	J	7.99	ug/kg	5.27	16.0
129-00-0	Pyrene		32.0	ug/kg	5.27	16.0
56-55-3	Benzo(a)anthracene	U	16.0	ug/kg	5.27	16.0
218-01-9	Chrysene	U	16.0	ug/kg	5.27	16.0
205-99-2	Benzo(b)fluoranthene	U	16.0	ug/kg	5.27	16.0
207-08-9	Benzo(k)fluoranthene	U	16.0	ug/kg	5.27	16.0
50-32-8	Benzo(a)pyrene	U	16.0	ug/kg	5.27	16.0

Quality Control Summary

Semi-Volatile

Surrogate Recovery Report

SDG Number: 528429

Matrix Type: LIQUID

Sample ID	Client ID	5-alpha %REC
1204704098	LCS for batch 2067383	40
1204704099	LCSD for batch 2067383	63
528429001	FIELD BLANK	50
1204704097	MB for batch 2067383	54

Surrogate	Parmname	Acceptance Limits
5-alpha-Androst =	5-alpha-Androstane	(30%-116%)

* Recovery outside Acceptance Limits

Column to be used to flag recovery values

D Sample Diluted

Surrogate Recovery Report

SDG Number: 528429

Matrix Type: SOLID

Sample ID	Client ID	5-alpha %REC	
1204704080	MB for batch 2067375	110	
1204704081	LCS for batch 2067375	116	
528429005	TANN20009	107	D
1204704082	CV-SB-2E-1.0MS	48	D
1204704083	CV-SB-2E-1.0MSD	110	D
528429002	TANN20006	109	D
528429003	TANN20007	111	D
528429004	TANN20008	97	D
528429006	TANN20010	74	D

Surrogate		Parmname	Acceptance Limits
5-alpha-Androst	=	5-alpha-Androstane	(25%-121%)

* Recovery outside Acceptance Limits

Column to be used to flag recovery values

D Sample Diluted

Semi-Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 528429
Client ID: LCS for batch 2067375
Lab Sample ID 1204704081
Instrument: MSD1.I
Analyst: LXA1
Inj. Vol: 1 uL

Sample Type: Laboratory Control Sample
Matrix: SOIL
Analysis Date: 11/30/2020 19:18
Prep Batch ID: 2067375
Batch ID: 2067376
Dilution: 1

CAS No		Parmname	Amount Added ug/kg	Sample Conc. ug/kg	Spike Conc. ug/kg	Recovery %	Acceptance Limits
91-20-3	LCS	Naphthalene	333	0.0	296	89	52-106
83-32-9	LCS	Acenaphthene	333	0.0	311	93	48-107
86-73-7	LCS	Fluorene	333	0.0	328	99	42-113
120-12-7	LCS	Anthracene	333	0.0	295	89	49-113
206-44-0	LCS	Fluoranthene	333	0.0	318	96	43-116
129-00-0	LCS	Pyrene	333	0.0	276	83	42-114
218-01-9	LCS	Chrysene	333	0.0	316	95	53-108
205-99-2	LCS	Benzo(b)fluoranthene	333	0.0	318	96	42-119
207-08-9	LCS	Benzo(k)fluoranthene	333	0.0	313	94	39-119
50-32-8	LCS	Benzo(a)pyrene	333	0.0	328	99	42-123

Semi-Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 528429
Client ID: CV-SB-2E-1.0MS
Lab Sample ID 1204704082
Instrument: MSD1.I
Analyst: LXA1
Inj. Vol: 1 uL

Sample Type: Matrix Spike
Matrix: SOIL
%Moisture: 7.9
Analysis Date: 11/30/2020 22:28
Prep Batch ID: 2067375
Batch ID: 2067376

Dilution: 10

CAS No		Parmname	Amount Added ug/kg	Sample Conc. ug/kg		Spike Conc. ug/kg	Recovery %	Acceptance Limits
83-32-9	MS	Acenaphthene	360	0.000	U	137	38	29-118
86-73-7	MS	Fluorene	360	0.000	U	148	41	26-123
120-12-7	MS	Anthracene	360	0.000	U	159	44	29-127
91-20-3	MS	Naphthalene	360	116		169	15 *	29-122
206-44-0	MS	Fluoranthene	360	416		397	0 *	21-122
129-00-0	MS	Pyrene	360	484		415	0 *	19-139
218-01-9	MS	Chrysene	360	372		360	0 *	31-119
205-99-2	MS	Benzo(b)fluoranthene	360	466		425	0 *	22-130
207-08-9	MS	Benzo(k)fluoranthene	360	145		242	27	26-130
50-32-8	MS	Benzo(a)pyrene	360	257		314	16 *	24-129

Semi-Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 528429
Client ID: CV-SB-2E-1.0MSD
Lab Sample ID 1204704083
Instrument: MSD1.I
Analyst: LXA1
Inj. Vol: 1 uL

Sample Type: Matrix Spike Duplicate
Matrix: SOIL
%Moisture: 7.9
Analysis Date: 11/30/2020 23:00
Prep Batch ID: 2067375
Batch ID: 2067376

Dilution: 10

CAS No		Parmname	Amount Added ug/kg	Sample Conc. ug/kg		Spike Conc. ug/kg	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
83-32-9	MSD	Acenaphthene	359	0.000	U	323	90	29-118	81 *	0-30
86-73-7	MSD	Fluorene	359	0.000	U	341	95	26-123	79 *	0-30
120-12-7	MSD	Anthracene	359	0.000	U	352	98	29-127	76 *	0-30
91-20-3	MSD	Naphthalene	359	116		427	87	29-122	86 *	0-30
206-44-0	MSD	Fluoranthene	359	416		789	104	21-122	66 *	0-30
129-00-0	MSD	Pyrene	359	484		811	91	19-139	65 *	0-30
218-01-9	MSD	Chrysene	359	372		746	104	31-119	70 *	0-30
205-99-2	MSD	Benzo(b)fluoranthene	359	466		886	117	22-130	70 *	0-30
207-08-9	MSD	Benzo(k)fluoranthene	359	145		520	105	26-130	73 *	0-30
50-32-8	MSD	Benzo(a)pyrene	359	257		646	108	24-129	69 *	0-30

Quality Control Summary
Spike Recovery Report

SDG Number: 528429
Client ID: LCS for batch 2067383
Lab Sample ID 1204704098
Instrument: MSD1.I
Analyst: LXA1
Inj. Vol: 1 uL

Sample Type: Laboratory Control Sample
Matrix: WATER
Analysis Date: 11/30/2020 15:14
Prep Batch ID: 2067383
Batch ID: 2067384
Dilution: 1

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
91-20-3	LCS	Naphthalene	10.0	0.0	3.87	39 *	64-93
83-32-9	LCS	Acenaphthene	10.0	0.0	4.59	46 *	62-98
86-73-7	LCS	Fluorene	10.0	0.0	4.92	49 *	58-104
120-12-7	LCS	Anthracene	10.0	0.0	4.64	46 *	60-105
206-44-0	LCS	Fluoranthene	10.0	0.0	4.84	48 *	56-107
129-00-0	LCS	Pyrene	10.0	0.0	5.01	50 *	55-112
56-55-3	LCS	Benzo(a)anthracene	10.0	0.0	4.28	43 *	60-104
218-01-9	LCS	Chrysene	10.0	0.0	4.79	48 *	62-105
205-99-2	LCS	Benzo(b)fluoranthene	10.0	0.0	4.47	45 *	60-107
207-08-9	LCS	Benzo(k)fluoranthene	10.0	0.0	4.22	42 *	59-109
50-32-8	LCS	Benzo(a)pyrene	10.0	0.0	4.57	46 *	61-106

Quality Control Summary
Spike Recovery Report

SDG Number: 528429
Client ID: LCSD for batch 2067383
Lab Sample ID 1204704099
Instrument: MSD1.I
Analyst: LXA1
Inj. Vol: 1 uL

Sample Type: Laboratory Control Sample Duplicate
Matrix: WATER
Analysis Date: 11/30/2020 15:45
Dilution: 1
Prep Batch ID: 2067383
Batch ID: 2067384

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
91-20-3	LCSD Naphthalene	10.0	0.0	6.47	65	64-93	50 *	0-20
83-32-9	LCSD Acenaphthene	10.0	0.0	7.42	74	62-98	47 *	0-20
86-73-7	LCSD Fluorene	10.0	0.0	8.01	80	58-104	48 *	0-20
120-12-7	LCSD Anthracene	10.0	0.0	7.72	77	60-105	50 *	0-22
206-44-0	LCSD Fluoranthene	10.0	0.0	8.13	81	56-107	51 *	0-20
129-00-0	LCSD Pyrene	10.0	0.0	7.37	74	55-112	38 *	0-20
56-55-3	LCSD Benzo(a)anthracene	10.0	0.0	6.91	69	60-104	47 *	0-20
218-01-9	LCSD Chrysene	10.0	0.0	7.74	77	62-105	47 *	0-20
205-99-2	LCSD Benzo(b)fluoranthene	10.0	0.0	7.31	73	60-107	48 *	0-20
207-08-9	LCSD Benzo(k)fluoranthene	10.0	0.0	6.85	69	59-109	48 *	0-20
50-32-8	LCSD Benzo(a)pyrene	10.0	0.0	7.49	75	61-106	48 *	0-20

Method Blank Summary

SDG Number:	528429	Client:	MCOM001	Matrix:	SOIL
Client ID:	MB for batch 2067375	Instrument ID:	MSD1.I	Data File:	s113020.B\s1k3011.D
Lab Sample ID:	1204704080	Prep Date:	11/30/2020 10:33	Analyzed:	11/30/20 18:46
Column:	Description: DB-5ms				

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 2067375	1204704081	s113020.B\s1k3012.D	11/30/20	1918
02	TANN20009	528429005	s113020.B\s1k3016.D	11/30/20	2124
03	CV-SB-2E-1.0MS	1204704082	s113020.B\s1k3018.D	11/30/20	2228
04	CV-SB-2E-1.0MSD	1204704083	s113020.B\s1k3019.D	11/30/20	2300
05	TANN20006	528429002	s113020.B\s1k3021.D	12/01/20	0004
06	TANN20007	528429003	s113020.B\s1k3022.D	12/01/20	0037
07	TANN20008	528429004	s113020.B\s1k3023.D	12/01/20	0109
08	TANN20010	528429006	s120120.B\s1L0107.D	12/01/20	1304

Method Blank Summary

SDG Number:	528429	Client:	MCOM001	Matrix:	WATER
Client ID:	MB for batch 2067383	Instrument ID:	MSD1.I	Data File:	s113020.B\s1k3008.D
Lab Sample ID:	1204704097	Prep Date:	11/30/2020 05:00	Analyzed:	11/30/20 17:17
Column:	Description: DB-5ms				

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 2067383	1204704098	s113020.B\s1k3005.D	11/30/20	1514
02	LCSD for batch 2067383	1204704099	s113020.B\s1k3006.D	11/30/20	1545
03	FIELD BLANK	528429001	s113020.B\s1k3007.D	11/30/20	1617

Instrument Performance Check

DFTPP

Lab Name GEL Laboratories LLC **Client SDG:** 528429

Instrument ID: MSD1.I **Injection Date/Time:** 17-NOV-20 12:07

Column Description: Description: DB-5ms **Lab File ID** s111720.B\s1k1701.D

m/e	Ion Abundance Criteria	% Relative Abundance
51	10 - 80% of mass 198	43
68	Less than 2% of mass 69	1.8
69	Mass 69 Relative Abundance	44.6
70	Less than 2% of mass 69	0.4
127	10 - 80% of mass 198	51.7
197	Less than 2% of mass 198	0
198	Base Peak, 100% Relative Abundance	100
199	5 - 9% of mass 198	7.1
275	10 - 60% of mass 198	29.5
365	Greater than 1% of mass 198	3.7
441	Less than 24% of mass 442	15.1
442	Greater than 50% of mass 198	86.5
443	15 - 24% of mass 442	19.6

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

Client Sample ID	Lab Sample ID	Lab File ID	Time Analyzed
ICALMIX[A]	WBN200805-81	s111720.B\s1k1702.D	17-NOV-20 12:32
ICALMIX[A]	WBN200805-82	s111720.B\s1k1703.D	17-NOV-20 13:03
ICALMIX[A]	WBN200805-83	s111720.B\s1k1704.D	17-NOV-20 13:35
ICALMIX[A]	WBN200805-84	s111720.B\s1k1705.D	17-NOV-20 14:06
ICALMIX[A]	WBN200805-85	s111720.B\s1k1706.D	17-NOV-20 14:38
ICALMIX[A]	WBN200805-86.1	s111720.B\s1k1707.D	17-NOV-20 15:09
ICALMIX[A]	WBN200805-87	s111720.B\s1k1708.D	17-NOV-20 15:41
ICALMIX[A]	WBN200805-88	s111720.B\s1k1709.D	17-NOV-20 16:13
ICVMIX[A]01	WBN200625-89	s111720.B\s1k1710.D	17-NOV-20 16:45

Instrument Performance Check

DFTPP

Lab Name GEL Laboratories LLC **Client SDG:** 528429

Instrument ID: MSD1.I **Injection Date/Time:** 30-NOV-20 13:18

Column Description: Description: DB-5ms **Lab File ID** s113020.B\s1k3001.D

m/e	Ion Abundance Criteria	% Relative Abundance
51	30 - 60% of mass 198	42.8
68	Less than 2% of mass 69	1.3
69	Mass 69 Relative Abundance	44.2
70	Less than 2% of mass 69	0
127	40 - 60% of mass 198	50.6
197	0 - 1% of mass 198	0
198	Base Peak, 100% Relative Abundance	100
199	5 - 9% of mass 198	6.7
275	10 - 30% of mass 198	29.2
365	Greater than 1% of mass 198	3.5
441	Present, but less than mass 443	72.6
442	Greater than 40% of mass 198	87.4
443	17 - 23% of mass 442	19.6

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

Client Sample ID	Lab Sample ID	Lab File ID	Time Analyzed
CCV01	WBN201120-86.4	s113020.B\s1k3002.D	30-NOV-20 13:36
BLK01LCS	1204704098	s113020.B\s1k3005.D	30-NOV-20 15:14
BLK01LCSD	1204704099	s113020.B\s1k3006.D	30-NOV-20 15:45
FIELD BLANK	528429001	s113020.B\s1k3007.D	30-NOV-20 16:17
BLK01	1204704097	s113020.B\s1k3008.D	30-NOV-20 17:17

Instrument Performance Check

DFTPP

Lab Name GEL Laboratories LLC **Client SDG:** 528429

Instrument ID: MSD1.I **Injection Date/Time:** 30-NOV-20 17:47

Column Description: Description: DB-5ms **Lab File ID** s113020.B\s1k3009.D

m/e	Ion Abundance Criteria	% Relative Abundance
51	10 - 80% of mass 198	37.4
68	Less than 2% of mass 69	0.9
69	Mass 69 Relative Abundance	41
70	Less than 2% of mass 69	0.3
127	10 - 80% of mass 198	49.1
197	Less than 2% of mass 198	0
198	Base Peak, 100% Relative Abundance	90.9
199	5 - 9% of mass 198	7.1
275	10 - 60% of mass 198	30.8
365	Greater than 1% of mass 198	4.3
441	Less than 24% of mass 442	15.6
442	Greater than 50% of mass 198	100
443	15 - 24% of mass 442	19.1

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

Client Sample ID	Lab Sample ID	Lab File ID	Time Analyzed
CCV02	WBN201120-86.4	s113020.B\s1k3010.D	30-NOV-20 18:06
BLK02	1204704080	s113020.B\s1k3011.D	30-NOV-20 18:46
BLK02LCS	1204704081	s113020.B\s1k3012.D	30-NOV-20 19:18
TANN20009	528429005	s113020.B\s1k3016.D	30-NOV-20 21:24
CV-SB-2E-1.0MS	1204704082	s113020.B\s1k3018.D	30-NOV-20 22:28
CV-SB-2E-1.0MSD	1204704083	s113020.B\s1k3019.D	30-NOV-20 23:00
TANN20006	528429002	s113020.B\s1k3021.D	01-DEC-20 00:04
TANN20007	528429003	s113020.B\s1k3022.D	01-DEC-20 00:37
TANN20008	528429004	s113020.B\s1k3023.D	01-DEC-20 01:09

Instrument Performance Check

DFTPP

Lab Name GEL Laboratories LLC **Client SDG:** 528429

Instrument ID: MSD1.I **Injection Date/Time:** 01-DEC-20 12:10

Column Description: Description: DB-5ms **Lab File ID** s120120.B\s1L0105.D

m/e	Ion Abundance Criteria	% Relative Abundance
51	10 - 80% of mass 198	40.6
68	Less than 2% of mass 69	1.7
69	Mass 69 Relative Abundance	41.3
70	Less than 2% of mass 69	0.3
127	10 - 80% of mass 198	50.2
197	Less than 2% of mass 198	0
198	Base Peak, 100% Relative Abundance	100
199	5 - 9% of mass 198	6.7
275	10 - 60% of mass 198	28.4
365	Greater than 1% of mass 198	3.9
441	Less than 24% of mass 442	14.2
442	Greater than 50% of mass 198	95
443	15 - 24% of mass 442	19.3

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

Client Sample ID	Lab Sample ID	Lab File ID	Time Analyzed
CCV03	WBN201120-82.1	s120120.B\s1L0106.D	01-DEC-20 12:32
TANN20010	528429006	s120120.B\s1L0107.D	01-DEC-20 13:04

Internal Standard
Area and RT Summary

Lab Name : GEL Laboratories LLC

Client SDG: 528429

Instrument: MSD1.I

STD Analysis Time: 30-NOV-20 13:36

GC Column: Description: DB-5ms

Data File: s113020.B\s1k3002.D

	1,4-Dichlorobenzene-d4		Naphthalene-d8		Acenaphthene-d10		Phenanthrene-d10		Chrysene-d12		Perylene-d12	
	Area #	RT #	Area #	RT #	Area #	RT #	Area #	RT #	Area #	RT #	Area #	RT #
12 Hour STD	4307	5.63	15920	7.4	6955	9.7	12738	11.6	7105	15.1	6205	18.4
Upper Limit	8614	6.13	31840	7.9	13910	10.2	25476	12.1	14210	15.6	12410	18.9
Lower Limit	2154	5.13	7960	6.9	3478	9.2	6369	11.1	3553	14.6	3103	17.9
Sample ID												
BLK01LCS	4931	5.63	18470	7.4	8484	9.7	15800	11.6	8463	15.1	7402	18.4
BLK01LCSD	2940	5.63	10782	7.4	5210	9.7	9820	11.6	6075	15.1	5428	18.4
FIELD BLANK	3218	5.63	11803	7.4	5701	9.7	10073	11.6	4781	15.1	3929	18.4
BLK01	3290	5.63	11963	7.4	5774	9.7	10651	11.6	6532	15.1	5711	18.4

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area

RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk
* Value outside of QC Limits

Internal Standard
Area and RT Summary

Lab Name : GEL Laboratories LLC

Client SDG: 528429

Instrument: MSD1.I

STD Analysis Time: 30-NOV-20 18:06

GC Column: Description: DB-5ms

Data File: s113020.B\s1k3010.D

	1,4-Dichlorobenzene-d4		Naphthalene-d8		Acenaphthene-d10		Phenanthrene-d10		Chrysene-d12		Perylene-d12	
	Area #	RT #	Area #	RT #	Area #	RT #	Area #	RT #	Area #	RT #	Area #	RT #
12 Hour STD	4282	5.63	15562	7.4	6793	9.7	11956	11.6	5175	15.1	4234	18.4
Upper Limit	8564	6.13	31124	7.9	13586	10.2	23912	12.1	10350	15.6	8468	18.9
Lower Limit	2141	5.13	7781	6.9	3397	9.2	5978	11.1	2588	14.6	2117	17.9
Sample ID												
BLK02	2693	5.64	10158	7.4	5187	9.7	9834	11.6	6427	15.1	5592	18.4
BLK02LCS	3128	5.64	11918	7.4	5891	9.7	11612	11.6	7538	15.1	6761	18.4
TANN20009	3447	5.63	12879	7.4	6446	9.7	12412	11.6	8365	15.1	7370	18.4
CV-SB-2E-1.0MS	3841	5.63	14237	7.4	6821	9.7	12643	11.6	7166	15.1	5495	18.4
CV-SB-2E-1.0MSD	2893	5.63	11022	7.4	5389	9.7	9989	11.6	5725	15.1	4551	18.4
TANN20006	3589	5.63	13339	7.4	6671	9.7	12159	11.6	7205	15.1	5597	18.4
TANN20007	4997	5.63	13510	7.4	6545	9.7	11505	11.6	6488	15.1	5550	18.4
TANN20008	2892	5.63	17711	7.4	8864	9.7	12965	11.6	6377	15.1	4827	18.4

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area

RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk
* Value outside of QC Limits

Internal Standard
Area and RT Summary

Lab Name : GEL Laboratories LLC

Client SDG: 528429

Instrument: MSD1.I

STD Analysis Time: 01-DEC-20 12:32

GC Column: Description: DB-5ms

Data File: s120120.B\s1L0106.D

	1,4-Dichlorobenzene-d4			Naphthalene-d8			Acenaphthene-d10			Phenanthrene-d10			Chrysene-d12			Perylene-d12		
	Area	#	RT #	Area	#	RT #	Area	#	RT #	Area	#	RT #	Area	#	RT #	Area	#	RT #
12 Hour STD	7714		5.63	27195		7.4	10457		9.7	18848		11.6	10322		15.1	8220		18.4
Upper Limit	15428		6.13	54390		7.9	20914		10.2	37696		12.1	20644		15.6	16440		18.9
Lower Limit	3857		5.13	13598		6.9	5229		9.2	9424		11.1	5161		14.6	4110		17.9
Sample ID																		
TANN20010	2901	*	5.63	21284		7.4	11493		9.7	23931		11.6	9843		15.1	9851		18.4

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area

RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk
* Value outside of QC Limits

Standards

SW846 8270/EPA 625										
Calibration Standard Concentration Levels*										
MEGA MIX	Level 1	Level 2	Level 3	Level 4#	Level 5	Level 6	Level 7	Level 8	Level 9	Level 10
1,4-Dichlorobenzene-d4 (INTERNAL STANDARD)										
Naphthalene-d8 (INTERNAL STANDARD)										
Acenaphthene-d10 (INTERNAL STANDARD)										
Phenanthrene-d10 (INTERNAL STANDARD)										
Chrysene-d12 (INTERNAL STANDARD)										
Perylene-d12 (INTERNAL STANDARD)										
2-Fluorophenol (SURROGATE)		10	20	40	50	80	100	120	30	60
Phenol-d5 (SURROGATE)		10	20	40	50	80	100	120	30	60
2-Chlorophenol-d4 (CLP SURROGATE)		10	20	40	50	80	100	120	30	60
1,2-Dichlorobenzene-d4 (CLP SURROGATE)		10	20	40	50	80	100	120	30	60
Nitrobenzene-d5 (SURROGATE)		10	20	40	50	80	100	120	30	60
2-Fluorobiphenyl (SURROGATE)		10	20	40	50	80	100	120	30	60
2,4,6-Tribromophenol (SURROGATE)		10	20	40	50	80	100	120	30	60
p-Terphenyl-d14 (SURROGATE)		10	20	40	50	80	100	120	30	60
N-Nitrosodimethylamine	1**	10	20	40	50	80	100	120	30	60
Pyridine		10	20	40	50	80	100	120	30	60
Aniline		10	20	40	50	80	100	120	30	60
Phenol		10	20	40	50	80	100	120	30	60
bis(2-Chloroethyl)ether		10	20	40	50	80	100	120	30	60
2-Chlorophenol		10	20	40	50	80	100	120	30	60
n-Decane		10	20	40	50	80	100	120	30	60
1,3-Dichlorobenzene		10	20	40	50	80	100	120	30	60
1,4-Dichlorobenzene		10	20	40	50	80	100	120	30	60
Benzyl Alcohol		10	20	40	50	80	100	120	30	60
1,2-Dichlorobenzene		10	20	40	50	80	100	120	30	60
bis(2-Chloro-1-methylethyl)ether		10	20	40	50	80	100	120	30	60
o-Cresol (2-Methylphenol)		10	20	40	50	80	100	120	30	60
N-Nitrosodipropylamine		10	20	40	50	80	100	120	30	60
m,p-Cresols (3-Methylphenol & 4-Methylphenol)		10	20	40	50	80	100	120	30	60
Hexachloroethane		10	20	40	50	80	100	120	30	60
Nitrobenzene		10	20	40	50	80	100	120	30	60
Isophorone		10	20	40	50	80	100	120	30	60
2-Nitrophenol		10	20	40	50	80	100	120	30	60
2,4-Dimethylphenol		10	20	40	50	80	100	120	30	60
bis(2-Chloroethoxy)methane		10	20	40	50	80	100	120	30	60
2,4-Dichlorophenol		10	20	40	50	80	100	120	30	60
Benzoic Acid			20	40	50	80	100	120	30	60
1,2,4-Trichlorobenzene		10	20	40	50	80	100	120	30	60
Naphthalene	1	10	20	40	50	80	100	120	30	60
alpha-Terpineol		10	20	40	50	80	100	120	30	60
4-Chloroaniline		10	20	40	50	80	100	120	30	60

SW846 8270/EPA 625										
Calibration Standard Concentration Levels*										
MEGA MIX	Level 1	Level 2	Level 3	Level 4#	Level 5	Level 6	Level 7	Level 8	Level 9	Level 10
Hexachlorobutadiene		10	20	40	50	80	100	120	30	60
4-Chloro-3-methylphenol		10	20	40	50	80	100	120	30	60
2-Methylnaphthalene	1	10	20	40	50	80	100	120	30	60
1-Methylnaphthalene	1	10	20	40	50	80	100	120	30	60
Hexachlorocyclopentadiene		10	20	40	50	80	100	120	30	60
2,3-Dichloroaniline		10	20	40	50	80	100	120	30	60
2,4,6-Trichlorophenol		10	20	40	50	80	100	120	30	60
2,4,5-Trichlorophenol		10	20	40	50	80	100	120	30	60
2-Chloronaphthalene	1	10	20	40	50	80	100	120	30	60
o-Nitroaniline		10	20	40	50	80	100	120	30	60
m-Nitroaniline		10	20	40	50	80	100	120	30	60
Dimethylphthalate	1**	10	20	40	50	80	100	120	30	60
2,6-Dinitrotoluene		10	20	40	50	80	100	120	30	60
Acenaphthylene	1	10	20	40	50	80	100	120	30	60
Acenaphthene	1	10	20	40	50	80	100	120	30	60
2,4-Dinitrophenol			20	40	50	80	100	120	30	60
Dibenzofuran		10	20	40	50	80	100	120	30	60
2,4-Dinitrotoluene		10	20	40	50	80	100	120	30	60
Diethylphthalate	1**	10	20	40	50	80	100	120	30	60
4-Nitrophenol		10	20	40	50	80	100	120	30	60
Fluorene	1	10	20	40	50	80	100	120	30	60
4-Chlorophenyl phenyl ether		10	20	40	50	80	100	120	30	60
2-Methyl-4,6-dinitrophenol		10	20	40	50	80	100	120	30	60
p-Nitroaniline		10	20	40	50	80	100	120	30	60
Diphenylamine		10	20	40	50	80	100	120	30	60
1,2-Diphenylhydrazine		10	20	40	50	80	100	120	30	60
4-Bromophenyl phenyether		10	20	40	50	80	100	120	30	60
Hexachlorobenzene		10	20	40	50	80	100	120	30	60
Pentachlorophenol		10	20	40	50	80	100	120	30	60
n-Octadecane		10	20	40	50	80	100	120	30	60
Phenanthrene	1	10	20	40	50	80	100	120	30	60
Anthracene	1	10	20	40	50	80	100	120	30	60
Di-n-butylphthalate	1**	10	20	40	50	80	100	120	30	60
Fluoranthene	1	10	20	40	50	80	100	120	30	60
Pyrene	1	10	20	40	50	80	100	120	30	60
Butylbenzylphthalate	1**	10	20	40	50	80	100	120	30	60
Benzo(a)anthracene	1	10	20	40	50	80	100	120	30	60
Chrysene	1	10	20	40	50	80	100	120	30	60
bis (2-Ethylhexyl) phthalate	1	10	20	40	50	80	100	120	30	60
Di-n-octylphthalate	1**	10	20	40	50	80	100	120	30	60

SW846 8270/EPA 625										
Calibration Standard Concentration Levels*										
MEGA MIX	Level 1	Level 2	Level 3	Level 4#	Level 5	Level 6	Level 7	Level 8	Level 9	Level 10
Benzo(b)fluoranthene	1	10	20	40	50	80	100	120	30	60
Benzo(k)fluoranthene	1	10	20	40	50	80	100	120	30	60
Benzo(a)pyrene	1	10	20	40	50	80	100	120	30	60
Indeno-(1,2,3-cd)pyrene	1	10	20	40	50	80	100	120	30	60
Dibenzo(a,h)anthracene	1	10	20	40	50	80	100	120	30	60
Benzo(ghi)perylene	1	10	20	40	50	80	100	120	30	60
m-Dinitrobenzene		10	20	40	50	80	100	120	30	60
2,3,4,6-Tetrachlorophenol		10	20	40	50	80	100	120	30	60
Dinoseb		10	20	40	50	80	100	120	30	60
Carbazole	1	10	20	40	50	80	100	120	30	60
p-Benzoquinone		10	20	40	50	80	100	120	30	60
Methoxychlor		10	20	40	50	80	100	120	30	60
p-Toluidine		10	20	40	50	80	100	120	30	60
m-Toluidine		10	20	40	50	80	10	120	30	60
1,4-Dinitrobenzene		10	20	40	50	80	100	120	30	60
2-Ethoxyethanol		10	20	40	50	80	100	120	30	60
Phthalic anhydride		10	20	40	50	80	100	120	30	60
Methylenebis(2-chloroaniline)		10	20	40	50	80	100	120	30	60
Dibenzo(a,e)pyrene		10	20	40	50	80	100	120	30	60

SW846 8270/EPA 625										
Calibration Standard Concentration Levels*										
AP MIX	Level 1	Level 2	Level 3	Level 4#	Level 5	Level 6	Level 7	Level 8	Level 9	Level 10
Benzaldehyde		10	20	40	50	80	100	120	30	60
Acetophenone		10	20	40	50	80	100	120	30	60
Caprolactam		10	20	40	50	80	100	120	30	60
1,1'-Biphenyl		10	20	40	50	80	100	120	30	60
Atrazine		10	20	40	50	80	100	120	30	60
Benzidine		10	20	40	50	80	100	120	30	60
3,3'-Dichlorobenzidene		10	20	40	50	80	100	120	30	60
1,4-Dioxane		10	20	40	50	80	100	120	30	60
Methyl methacrylate		10	20	40	50	80	100	120	30	60
Ethyl methacrylate		10	20	40	50	80	100	120	30	60
2-Picoline		10	20	40	50	80	100	120	30	60
N-Nitrosomethylethylamine		10	20	40	50	80	100	120	30	60
2-Butoxyethanol		10	20	40	50	80	100	120	30	60
Methyl methanesulfonate		10	20	40	50	80	100	120	30	60
N-Nitrosodiethylamine		10	20	40	50	80	100	120	30	60
Ethyl methanesulfonate		10	20	40	50	80	100	120	30	60
Pentachloroethane		10	20	40	50	80	100	120	30	60
N-Nitrosopyrrolidine		10	20	40	50	80	100	120	30	60
N-Nitrosomorpholine		10	20	40	50	80	100	120	30	60
o-Toluidine		10	20	40	50	80	100	120	30	60
N-Nitrosopiperidine		10	20	40	50	80	100	120	30	60
a,a-Dimethylphenethylamine		10	20	40	50	80	100	120	30	60
2,6-Dichlorophenol		10	20	40	50	80	100	120	30	60

SW846 8270/EPA 625										
Calibration Standard Concentration Levels*										
AP MIX	Level 1	Level 2	Level 3	Level 4#	Level 5	Level 6	Level 7	Level 8	Level 9	Level 10
Hexachloropropene		10	20	40	50	80	100	120	30	60
N-Nitrosodi-n-butylamine		10	20	40	50	80	100	120	30	60
Safrole		10	20	40	50	80	100	120	30	60
1,2,4,5-Tetrachlorobenzene		10	20	40	50	80	100	120	30	60
Isosafrole		10	20	40	50	80	100	120	30	60
1,4-Naphthoquinone		10	20	40	50	80	100	120	30	60
Pentachlorobenzene		10	20	40	50	80	100	120	30	60
1-Naphthylamine		10	20	40	50	80	100	120	30	60
2-Naphthylamine		10	20	40	50	80	100	120	30	60
5-Nitro-o-toluidine		10	20	40	50	80	100	120	30	60
1,3,5-Trinitrobenzene		10	20	40	50	80	100	120	30	60
Phenacetin		10	20	40	50	80	100	120	30	60
Diallate		10	20	40	50	80	100	120	30	60
cis-Diallate		1.5	3	6	7.5	12	15	18	4.5	9
trans-Diallate		8.5	17	34	42	68	85	102	25.5	51
4-Aminobiphenyl		10	20	40	50	80	100	120	30	60
Pentachloronitrobenzene		10	20	40	50	80	100	120	30	60
Pronamide		10	20	40	50	80	100	120	30	60
4-Nitroquinoline-1-oxide		10	20	40	50	80	100	120	30	60
Methapyrilene		10	20	40	50	80	100	120	30	60
Isodrin		10	20	40	50	80	100	120	30	60
Aramite		10	20	40	50	80	100	120	30	60
Kepone		10	20	40	50	80	100	120	30	60
p-(Dimethylamino)azobenzene		10	20	40	50	80	100	120	30	60
Chlorobenzilate		10	20	40	50	80	100	120	30	60
3,3'-Dimethylbenzidine		10	20	40	50	80	100	120	30	60
2-Acetylaminofluorene		10	20	40	50	80	100	120	30	60
7,12-Dimethylbenz(a)anthracene		10	20	40	50	80	100	120	30	60
3-Methylcholanthrene		10	20	40	50	80	100	120	30	60

SW846 8270/EPA 625										
Calibration Standard Concentration Levels*										
	Level 1	Level 2	Level 3	Level 4#	Level 5	Level 6	Level 7	Level 8	Level 9	Level 10
Hexachlorophene		500	1000	1250	1500	1750	2000			
p-Phenylenediamine		500	1000	1250	1500	1750	2000			

SW846 8270/EPA 625										
Calibration Standard Concentration Levels*										
PEST MIX	Level 1	Level 2	Level 3	Level 4#	Level 5	Level 6	Level 7	Level 8	Level 9	Level 10
bis(Chloromethyl)ether		10	20	40	50	80	100	120	30	60
Tributylphosphate		10	20	40	50	80	100	120	30	60
Triethylphosphorothioate		10	20	40	50	80	100	120	30	60
Thionazin		10	20	40	50	80	100	120	30	60
Sulfotepp		10	20	40	50	80	100	120	30	60
Phorate		10	20	40	50	80	100	120	30	60
Dimethoate		10	20	40	50	80	100	120	30	60
Disulfoton		10	20	40	50	80	100	120	30	60
Methyl parathion		10	20	40	50	80	100	120	30	60
Famphur		10	20	40	50	80	100	120	30	60
Parathion		10	20	40	50	80	100	120	30	60

SW846 8270/EPA 625										
Calibration Standard Concentration Levels*										
NEVADA MIX	Level 1	Level 2	Level 3	Level 4#	Level 5	Level 6	Level 7	Level 8	Level 9	Level 10
bis(Chloromethyl)ether		10	20	40	50	80	100	120	30	60
4-Chlorothiophenol		10	20	40	50	80	100	120	30	60
4-Chlorothioanisole		10	20	40	50	80	100	120	30	60
Phthalic acid		10	20	40	50	80	100	120	30	60
Hydroxymethyl phthalimide		10	20	40	50	80	100	120	30	60
Diphenyl sulfide		10	20	40	50	80	100	120	30	60
Diphenyl disulfide		10	20	40	50	80	100	120	30	60
Phenyl sulfone		10	20	40	50	80	100	120	30	60
Octachlorostyrene		10	20	40	50	80	100	120	30	60
Thiophenol		10	20	40	50	80	100	120	30	60
2,2'-Dichlorobenzil		10	20	40	50	80	100	120	30	60
bis(p-Chlorophenyl)disulfide		10	20	40	50	80	100	120	30	60
bis(p-Chlorophenyl)sulfone		10	20	40	50	80	100	120	30	60

All values are mg/L without the prep factor.
# Indicates the calibration verification concentration level used
* Usual calibration levels using SCAN methodology
** This analyte included in this level at special client request.

EPA 522								
Calibration Standard Concentration Levels#								
	Level 1	Level 2	Level 3	Level 4	Level 5	ICV	CCV	
Tetrahydrofuran-d8 (INTERNAL STANDARD)								
1,4-Dioxane-d8 (SURROGATE)	50	100	200	400	500	200	See Method	
1,4-Dioxane	50	100	200	400	500	200	See Method	

All values are ug/L without the prep factor.
Usual calibration levels using SIM methodology

SW846 8270SIM										
Calibration Standard Concentration Levels*										
MEGASIM analytes (A)	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6#	Level 7	Level 8	Level 9	Level 10
1,4-Dichlorobenzene-d4 (INTERNAL STANDARD)										
Naphthalene-d8 (INTERNAL STANDARD)										
Acenaphthene-d10 (INTERNAL STANDARD)										
Phenanthrene-d10 (INTERNAL STANDARD)										
Chrysene-d12 (INTERNAL STANDARD)										
Perylene-d12 (INTERNAL STANDARD)										
5-alpha-Androstane (SURROGATE)	$0.1	0.2	0.5	1	2	5	10	20		
$N-Methyl-N-nitrosomethylamine		0.2	0.5	1	2	5	10	20		
$bis(2-Chloroethyl)ether	0.1	0.2	0.5	1	2	5	10	20		
$N-Nitrosodipropylamine	0.1	0.2	0.5	1	2	5	10	20		
Naphthalene	$0.1	0.2	0.5	1	2	5	10	20		
2-Methylnaphthalene	$0.1	0.2	0.5	1	2	5	10	20		
1-Methylnaphthalene	$0.1	0.2	0.5	1	2	5	10	20		
2-Chloronaphthalene	$0.1	0.2	0.5	1	2	5	10	20		
Acenaphthylene	$0.1	0.2	0.5	1	2	5	10	20		
Acenaphthene	$0.1	0.2	0.5	1	2	5	10	20		
Fluorene	$0.1	0.2	0.5	1	2	5	10	20		
Phenanthrene	$0.1	0.2	0.5	1	2	5	10	20		
Anthracene	$0.1	0.2	0.5	1	2	5	10	20		
Fluoranthene	$0.1	0.2	0.5	1	2	5	10	20		
Pyrene	$0.1	0.2	0.5	1	2	5	10	20		
Benzo(a)anthracene	$0.1	0.2	0.5	1	2	5	10	20		
Chrysene	$0.1	0.2	0.5	1	2	5	10	20		
Benzo(b)fluoranthene	$0.1	0.2	0.5	1	2	5	10	20		
Benzo(k)fluoranthene	$0.1	0.2	0.5	1	2	5	10	20		
Benzo(a)pyrene	$0.1	0.2	0.5	1	2	5	10	20		
Indeno-(1,2,3-cd)pyrene	$0.1	0.2	0.5	1	2	5	10	20		
Dibenzo(a,h)anthracene	$0.1	0.2	0.5	1	2	5	10	20		
Benzo(ghi)perylene	$0.1	0.2	0.5	1	2	5	10	20		

$ By special request - Not for regulatory purposes

SW846 8270SIM										
Calibration Standard Concentration Levels*										
APSIM analytes (A)	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6#	Level 7	Level 8	Level 9	Level 10
$N-Nitrosodimethylamine	0.1	0.2	0.5	1	2	5	10	20		
$N-Nitrosopyrrolidine	0.1	0.2	0.5	1	2	5	10	20		
$N-Nitrosodi-n-butylamine	0.1	0.2	0.5	1	2	5	10	20		
$Benzidine			2.5	5	10	25	50	100		
$3,3'-Dichlorobenzidine	0.1	0.2	0.5	1	2	5	10	20		

$ By special request - Not for regulatory purposes
All values are mg/L without prep factor.
# indicates the calibraton verification concentration level used.
* Usual calibration levels using SIM methodology
(10/16/Full list)

11/30/2020

12/01/2020

Calibration History Report MSD1
GEL Laboratories, LLC
Method File : D:\MSDCHEM\1\Data\s113020.B\MSD1_SIMPAHPLUS_8270C_8270D_111720.m
Last Update : Tue Nov 17 18:19:42 2020
Integrator : (RTE Integrator) Response via : Initial Calibration

Cal Lvl:1 Amt:0.10 Last Updated with: D:\MSDCHEM\1\Data\s111720.B\s1k1702.D

Injection Date	Mix	Calibration File
17 Nov 2020 12:32	A	D:\MSDCHEM\1\Data\s111720.B\s1k1702.D

Cal Lvl:2 Amt:0.20 Last Updated with: D:\MSDCHEM\1\Data\s111720.B\s1k1703.D

Injection Date	Mix	Calibration File
17 Nov 2020 13:03	A	D:\MSDCHEM\1\Data\s111720.B\s1k1703.D

Cal Lvl:3 Amt:0.50 Last Updated with: D:\MSDCHEM\1\Data\s111720.B\s1k1704.D

Injection Date	Mix	Calibration File
17 Nov 2020 13:35	A	D:\MSDCHEM\1\Data\s111720.B\s1k1704.D

Cal Lvl:4 Amt:1.00 Last Updated with: D:\MSDCHEM\1\Data\s111720.B\s1k1705.D

Injection Date	Mix	Calibration File
17 Nov 2020 14:06	A	D:\MSDCHEM\1\Data\s111720.B\s1k1705.D

Cal Lvl:5 Amt:2.00 Last Updated with: D:\MSDCHEM\1\Data\s111720.B\s1k1706.D

Injection Date	Mix	Calibration File
17 Nov 2020 14:38	A	D:\MSDCHEM\1\Data\s111720.B\s1k1706.D

Cal Lvl:6 Amt:5.00 Last Updated with: D:\MSDCHEM\1\Data\s111720.B\s1k1707.D

Injection Date	Mix	Calibration File
17 Nov 2020 15:09	A	D:\MSDCHEM\1\Data\s111720.B\s1k1707.D

Cal Lvl:7 Amt:10.00 Last Updated with: D:\MSDCHEM\1\Data\s111720.B\s1k1708.D

Injection Date	Mix	Calibration File
17 Nov 2020 15:41	A	D:\MSDCHEM\1\Data\s111720.B\s1k1708.D

Cal Lvl:8 Amt:20.00 Last Updated with: D:\MSDCHEM\1\Data\s111720.B\s1k1709.D

Injection Date	Mix	Calibration File
17 Nov 2020 16:13	A	D:\MSDCHEM\1\Data\s111720.B\s1k1709.D

MSD1_SIMPAH...70D_111720.m Mon Nov 30 18:35:43 2020

WAJ
12/01/2020

Calibration History Report MSD1
GEL Laboratories, LLC
Method File : D:\MSDCHEM\1\Data\s120120.B\MSD1_SIMPAHPLUS_8270C_8270D_111720.m
Last Update : Tue Nov 17 18:19:42 2020
Integrator : (RTE Integrator) Response via : Initial Calibration

Cal Lvl:1 Amt:0.10 Last Updated with: D:\MSDCHEM\1\Data\s111720.B\s1k1702.D

Injection Date	Mix	Calibration File
17 Nov 2020 12:32	A	D:\MSDCHEM\1\Data\s111720.B\s1k1702.D

Cal Lvl:2 Amt:0.20 Last Updated with: D:\MSDCHEM\1\Data\s111720.B\s1k1703.D

Injection Date	Mix	Calibration File
17 Nov 2020 13:03	A	D:\MSDCHEM\1\Data\s111720.B\s1k1703.D

Cal Lvl:3 Amt:0.50 Last Updated with: D:\MSDCHEM\1\Data\s111720.B\s1k1704.D

Injection Date	Mix	Calibration File
17 Nov 2020 13:35	A	D:\MSDCHEM\1\Data\s111720.B\s1k1704.D

Cal Lvl:4 Amt:1.00 Last Updated with: D:\MSDCHEM\1\Data\s111720.B\s1k1705.D

Injection Date	Mix	Calibration File
17 Nov 2020 14:06	A	D:\MSDCHEM\1\Data\s111720.B\s1k1705.D

Cal Lvl:5 Amt:2.00 Last Updated with: D:\MSDCHEM\1\Data\s111720.B\s1k1706.D

Injection Date	Mix	Calibration File
17 Nov 2020 14:38	A	D:\MSDCHEM\1\Data\s111720.B\s1k1706.D

Cal Lvl:6 Amt:5.00 Last Updated with: D:\MSDCHEM\1\Data\s111720.B\s1k1707.D

Injection Date	Mix	Calibration File
17 Nov 2020 15:09	A	D:\MSDCHEM\1\Data\s111720.B\s1k1707.D

Cal Lvl:7 Amt:10.00 Last Updated with: D:\MSDCHEM\1\Data\s111720.B\s1k1708.D

Injection Date	Mix	Calibration File
17 Nov 2020 15:41	A	D:\MSDCHEM\1\Data\s111720.B\s1k1708.D

Cal Lvl:8 Amt:20.00 Last Updated with: D:\MSDCHEM\1\Data\s111720.B\s1k1709.D

Injection Date	Mix	Calibration File
17 Nov 2020 16:13	A	D:\MSDCHEM\1\Data\s111720.B\s1k1709.D

11/30/2020

12/01/2020

Response Factor Report MSD1
GEL Laboratories, LLC

Method File : D:\MSDCHEM\1\Data\s113020.B\MSD1_SIMPAHPLUS_8270C_8270D_111720.m
Last Update : Tue Nov 17 18:19:42 2020
Integrator : (RTE Integrator) Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound	1	2	3	4	5	6	Avg	Curve	Exp	%RSD/r2
b m1 m2	7	8								
3)AM Naphthalene	1.2055336	1.1620795	1.1508958	1.1357074	1.0996220	1.0444500				
	1.0284585	0.9750544					1.1002	AVRG		7.0964
4)AM 2-Methylnaphthalene	0.7848673	0.7510703	0.7613322	0.7604748	0.7364955	0.7066898				
	0.6840247	0.6541533					0.7299	AVRG		6.0869
5)AM 1-Methylnaphthalene	0.6973461	0.7253823	0.7117951	0.6963106	0.6847945	0.6476710				
	0.6164787	0.5826571					0.6703	AVRG		7.4516
7)AM 2-Chloronaphthalene	1.4252373	1.3694952	1.3592283	1.3556531	1.3366231	1.2878784				
	1.2612031	1.2167331					1.3265	AVRG		5.0510
8)AM Acenaphthylene	2.2778902	2.1723953	2.1443087	2.1361142	2.1280341	2.0637697				
	2.0116065	1.9422026					2.1095	AVRG		4.8817
9)AM Acenaphthene	1.3567761	1.2916219	1.2676527	1.2574094	1.2341958	1.2233015				
	1.1832979	1.1487194					1.2454	AVRG		5.1682
10)AM Fluorene	1.4563560	1.4849624	1.4580064	1.4763996	1.4075754	1.4408180				
	1.3272753	1.3124929					1.4205	AVRG		4.6779
12)AM Phenanthrene	1.3379143	1.2838753	1.2509813	1.2352845	1.2082207	1.1591541				
	1.1304348	1.0588532					1.2081	AVRG		7.3953
13)AM Anthracene	1.2287793	1.2076558	1.1945846	1.1935431	1.1574552	1.1218127				
	1.0809155	1.0150441					1.1500	AVRG		6.3435
14)SA 5-alpha-Androstane	0.1495554	0.1507453	0.1467596	0.1395728	0.1352657	0.1336556				
	0.1345018	0.1239445					0.1393	AVRG		6.6420
15)AM Fluoranthene	1.3217462	1.3296070	1.2670031	1.2776781	1.2254155	1.2018731				
	1.1429592	1.0503938					1.2271	AVRG		7.7042
17)AM Pyrene	2.4367317	2.2035324	2.1206503	2.1515276	2.1421718	2.0156996				
	2.0636778	2.0635298					2.1497	AVRG		6.0645
18)AM Benzo(a)anthracene	1.8944324	1.7017101	1.6616956	1.6363885	1.5949993	1.6192985				
	1.5843952	1.6073511					1.6625	AVRG		6.0823
19)AM Chrysene	1.7136659	1.6035884	1.5907564	1.5678860	1.5307457	1.4920329				

Response Factor Report MSD1
GEL Laboratories, LLC

Method File : D:\MSDCHEM\1\Data\s113020.B\MSD1_SIMPAHPLUS_8270C_8270D_111720.m
Last Update : Tue Nov 17 18:19:42 2020
Integrator : (RTE Integrator) Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound	1	2	3	4	5	6	Avg	Curve	Exp	%RSD/r2
b m1 m2	7	8								
	1.4808243	1.4518695					1.5539	AVRG		5.4204
21)AM Benzo(b)fluoranthene	1.9318438	1.7408124	1.6888021	1.7023287	1.6818932	1.6868564				
	1.6855047	1.6419936					1.7200	AVRG		5.2197
22)AM Benzo(k)fluoranthene	1.7693523	1.6704765	1.6197917	1.6483294	1.6033755	1.5870586				
	1.5580408	1.5235388					1.6225	AVRG		4.6656
23)AM Benzo(a)pyrene	1.5165877	1.3820995	1.3867188	1.3783328	1.3461750	1.3847255				
	1.3414238	1.3422738					1.3848	AVRG		4.1034
24)AM Indeno(1,2,3-cd)pyrene	1.1554954	1.0022859	1.0690104	1.0475869	0.9928453	1.1068595				
	0.9866349	1.0126902					1.0467	AVRG		5.7768
25)AM Dibenzo(a,h)anthracene	1.0381404	0.9073325	0.9635417	0.9443132	0.8614933	0.9317779				
	0.8066627	0.8375500					0.9114	AVRG		8.2124
26)AM Benzo(ghi)perylene	1.2277138	1.1710920	1.1731771	1.1636855	1.0820033	1.1458081				
	1.0308943	1.0266213					1.1276	AVRG		6.4694

(#) = Out of Range ($) = Individual RF Out of Range
AVRG = Average, LINR = Linear Regression, 1/x = the inverse of concentration, 1/x^2 = the inverse square of concentration

12/01/2020

Response Factor Report MSD1
GEL Laboratories, LLC

Method File : D:\MSDCHEM\1\Data\s120120.B\MSD1_SIMPAHPLUS_8270C_8270D_111720.m
Last Update : Tue Nov 17 18:19:42 2020
Integrator : (RTE Integrator) Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound	1	2	3	4	5	6	Avg	Curve	Exp	%RSD/r2
b m1 m2	7	8								
3)AM Naphthalene	1.2055336	1.1620795	1.1508958	1.1357074	1.0996220	1.0444500				
	1.0284585	0.9750544					1.1002	AVRG		7.0964
4)AM 2-Methylnaphthalene	0.7848673	0.7510703	0.7613322	0.7604748	0.7364955	0.7066898				
	0.6840247	0.6541533					0.7299	AVRG		6.0869
5)AM 1-Methylnaphthalene	0.6973461	0.7253823	0.7117951	0.6963106	0.6847945	0.6476710				
	0.6164787	0.5826571					0.6703	AVRG		7.4516
7)AM 2-Chloronaphthalene	1.4252373	1.3694952	1.3592283	1.3556531	1.3366231	1.2878784				
	1.2612031	1.2167331					1.3265	AVRG		5.0510
8)AM Acenaphthylene	2.2778902	2.1723953	2.1443087	2.1361142	2.1280341	2.0637697				
	2.0116065	1.9422026					2.1095	AVRG		4.8817
9)AM Acenaphthene	1.3567761	1.2916219	1.2676527	1.2574094	1.2341958	1.2233015				
	1.1832979	1.1487194					1.2454	AVRG		5.1682
10)AM Fluorene	1.4563560	1.4849624	1.4580064	1.4763996	1.4075754	1.4408180				
	1.3272753	1.3124929					1.4205	AVRG		4.6779
12)AM Phenanthrene	1.3379143	1.2838753	1.2509813	1.2352845	1.2082207	1.1591541				
	1.1304348	1.0588532					1.2081	AVRG		7.3953
13)AM Anthracene	1.2287793	1.2076558	1.1945846	1.1935431	1.1574552	1.1218127				
	1.0809155	1.0150441					1.1500	AVRG		6.3435
14)SA 5-alpha-Androstane	0.1495554	0.1507453	0.1467596	0.1395728	0.1352657	0.1336556				
	0.1345018	0.1239445					0.1393	AVRG		6.6420
15)AM Fluoranthene	1.3217462	1.3296070	1.2670031	1.2776781	1.2254155	1.2018731				
	1.1429592	1.0503938					1.2271	AVRG		7.7042
17)AM Pyrene	2.4367317	2.2035324	2.1206503	2.1515276	2.1421718	2.0156996				
	2.0636778	2.0635298					2.1497	AVRG		6.0645
18)AM Benzo(a)anthracene	1.8944324	1.7017101	1.6616956	1.6363885	1.5949993	1.6192985				
	1.5843952	1.6073511					1.6625	AVRG		6.0823
19)AM Chrysene	1.7136659	1.6035884	1.5907564	1.5678860	1.5307457	1.4920329				

MSD1_SIMPAH...70D_111720.m Tue Dec 01 13:00:44 2020 Page: 1

Response Factor Report MSD1
GEL Laboratories, LLC
Method File : D:\MSDCHEM\1\Data\s120120.B\MSD1_SIMPAHPLUS_8270C_8270D_111720.m
Last Update : Tue Nov 17 18:19:42 2020
Integrator : (RTE Integrator) Response via : Initial Calibration

Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound	1	2	3	4	5	6	Avg	Curve	Exp	%RSD/r2
b m1 m2	7	8								
	1.4808243	1.4518695					1.5539	AVRG		5.4204
21)AM Benzo(b)fluoranthene	1.9318438	1.7408124	1.6888021	1.7023287	1.6818932	1.6868564				
	1.6855047	1.6419936					1.7200	AVRG		5.2197
22)AM Benzo(k)fluoranthene	1.7693523	1.6704765	1.6197917	1.6483294	1.6033755	1.5870586				
	1.5580408	1.5235388					1.6225	AVRG		4.6656
23)AM Benzo(a)pyrene	1.5165877	1.3820995	1.3867188	1.3783328	1.3461750	1.3847255				
	1.3414238	1.3422738					1.3848	AVRG		4.1034
24)AM Indeno(1,2,3-cd)pyrene	1.1554954	1.0022859	1.0690104	1.0475869	0.9928453	1.1068595				
	0.9866349	1.0126902					1.0467	AVRG		5.7768
25)AM Dibenzo(a,h)anthracene	1.0381404	0.9073325	0.9635417	0.9443132	0.8614933	0.9317779				
	0.8066627	0.8375500					0.9114	AVRG		8.2124
26)AM Benzo(ghi)perylene	1.2277138	1.1710920	1.1731771	1.1636855	1.0820033	1.1458081				
	1.0308943	1.0266213					1.1276	AVRG		6.4694

(#) = Out of Range ($) = Individual RF Out of Range
AVRG = Average, LINR = Linear Regression, 1/x = the inverse of concentration, 1/x^2 = the inverse square of concentration

Continuing Calibration Summary

Client SDG: 528429

Instrument ID: MSD1.I **Injection Date:** 17-NOV-20 16:45

Data File: s111720.B\s1k1710.D **Init. Cal. Date(s):** 17-NOV-20 12:32 - 17-NOV-20 16:1

Lab Sample ID WBN200625-89 **Method:** s111720.B\MSD1_SIMPAHPLUS_8270C_8270D_

Quant Type ISTD **Method Update:** 17-NOV-20 18:19

	Compound	AVERF / Amount	RF CCV	Nominal CCV	Min RF	RF Q	%D / %Drift	Max	Drift Q	Curve Type	
S	5-alpha-Androstane	0.1393	0.14424		.01		3.5463	60		Averaged	
	Naphthalene	1.1002	1.01829		.7		-7.44501	60		Averaged	
	Acenaphthene	1.2454	1.23515		.9		-0.82303	20		Averaged	CCC
	Fluorene	1.4205	1.42743		.9		0.48786	60		Averaged	
	Anthracene	1.15	1.0658		.7		-7.32174	60		Averaged	
	Fluoranthene	1.2271	1.07129		.6		-12.69742	20		Averaged	CCC
	Pyrene	2.1497	2.0032		.6		-6.8149	60		Averaged	
	Benzo(a)anthracene	1.6625	1.33342		.8		-19.79429	60		Averaged	
	Chrysene	1.5539	1.28901		.7		-17.04679	60		Averaged	
	Benzo(b)fluoranthene	1.72	1.59267		.7		-7.40291	60		Averaged	
	Benzo(k)fluoranthene	1.6225	1.50646		.7		-7.15193	60		Averaged	
	Benzo(a)pyrene	1.3848	1.33403		.7		-3.66623	20		Averaged	CCC

Continuing Calibration Summary

Client SDG: 528429

Instrument ID: MSD1.I **Injection Date:** 30-NOV-20 13:36

Data File: s113020.B\s1k3002.D **Init. Cal. Date(s):** 17-NOV-20 12:32 - 17-NOV-20 16:1

Lab Sample ID WBN201120-86.4 **Method:** s113020.B\MSD1_SIMPAHPLUS_8270C_8270D_

Quant Type ISTD **Method Update:** 17-NOV-20 18:19

	Compound	AVERF / Amount	RF CCV	Nominal CCV	Min RF	RF Q	%D / %Drift	Max	Drift Q	Curve Type	
S	5-alpha-Androstane	0.1393	0.14012		.01		0.58866	60		Averaged	
	Naphthalene	1.1002	1.0606		.7		-3.59935	60		Averaged	
	Acenaphthene	1.2454	1.29507		.9		3.98828	20		Averaged	CCC
	Fluorene	1.4205	1.50671		.9		6.06899	60		Averaged	
	Anthracene	1.15	1.1041		.7		-3.9913	60		Averaged	
	Fluoranthene	1.2271	1.17394		.6		-4.33217	20		Averaged	CCC
	Pyrene	2.1497	2.0541		.6		-4.44713	60		Averaged	
	Benzo(a)anthracene	1.6625	1.59088		.8		-4.30797	60		Averaged	
	Chrysene	1.5539	1.48099		.7		-4.69207	60		Averaged	
	Benzo(b)fluoranthene	1.72	1.63352		.7		-5.02791	60		Averaged	
	Benzo(k)fluoranthene	1.6225	1.5367		.7		-5.28814	60		Averaged	
	Benzo(a)pyrene	1.3848	1.36483		.7		-1.44209	20		Averaged	CCC

Continuing Calibration Summary

Client SDG: 528429

Instrument ID: MSD1.I **Injection Date:** 30-NOV-20 18:06

Data File: s113020.B\s1k3010.D **Init. Cal. Date(s):** 17-NOV-20 12:32 - 17-NOV-20 16:1

Lab Sample ID WBN201120-86.4 **Method:** s113020.B\MSD1_SIMPAHPLUS_8270C_8270D_

Quant Type ISTD **Method Update:** 17-NOV-20 18:19

	Compound	AVERF / Amount	RF CCV	Nominal CCV	Min RF	RF Q	%D / %Drift	Max	Drift Q	Curve Type	
S	5-alpha-Androstane	0.1393	0.14466		.01		3.84781	60		Averaged	
	Naphthalene	1.1002	1.06321		.7		-3.36212	60		Averaged	
	Acenaphthene	1.2454	1.28603		.9		3.26241	20		Averaged	CCC
	Fluorene	1.4205	1.48164		.9		4.30412	60		Averaged	
	Anthracene	1.15	1.09441		.7		-4.83391	60		Averaged	
	Fluoranthene	1.2271	1.08397		.6		-11.66409	20		Averaged	CCC
	Pyrene	2.1497	2.3949		.6		11.40624	60		Averaged	
	Benzo(a)anthracene	1.6625	1.58671		.8		-4.5588	60		Averaged	
	Chrysene	1.5539	1.48622		.7		-4.35549	60		Averaged	
	Benzo(b)fluoranthene	1.72	1.64724		.7		-4.23023	60		Averaged	
	Benzo(k)fluoranthene	1.6225	1.54558		.7		-4.74083	60		Averaged	
	Benzo(a)pyrene	1.3848	1.33566		.7		-3.54853	20		Averaged	CCC

Continuing Calibration Summary

Client SDG: 528429

Instrument ID: MSD1.I **Injection Date:** 01-DEC-20 12:32

Data File: s120120.B\s1L0106.D **Init. Cal. Date(s):** 17-NOV-20 12:32 - 17-NOV-20 16:1

Lab Sample ID WBN201120-82.1 **Method:** s120120.B\MSD1_SIMPAHPLUS_8270C_8270D_

Quant Type ISTD **Method Update:** 17-NOV-20 18:19

	Compound	AVERF / Amount	RF CCV	Nominal CCV	Min RF	RF Q	%D / %Drift	Max	Drift Q	Curve Type	
S	5-alpha-Androstane	0.1393	0.12602		.01		-9.53338	60		Averaged	
	Naphthalene	1.1002	1.05778		.7		-3.85566	60		Averaged	
	Acenaphthene	1.2454	1.29666		.9		4.11595	20		Averaged	CCC
	Fluorene	1.4205	1.50582		.9		6.00634	60		Averaged	
	Anthracene	1.15	1.1014		.7		-4.22609	60		Averaged	
	Fluoranthene	1.2271	1.16248		.6		-5.26607	20		Averaged	CCC
	Pyrene	2.1497	2.20864		.6		2.74178	60		Averaged	
	Benzo(a)anthracene	1.6625	1.64247		.8		-1.20481	60		Averaged	
	Chrysene	1.5539	1.58341		.7		1.89909	60		Averaged	
	Benzo(b)fluoranthene	1.72	1.38112		.7		-19.70233	60		Averaged	
	Benzo(k)fluoranthene	1.6225	1.32487		.7		-18.34391	60		Averaged	
	Benzo(a)pyrene	1.3848	1.16759		.7		-15.6853	20		Averaged	CCC

Quality Control Data

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**528429**			**Matrix:**	**SOIL**
Lab Sample ID:	**1204704080**				
Client Sample:	**QC for batch 2067375**	**Client:**	**MCOM001**	**Project:**	**MCOM00118**
Client ID:	**MB for batch 2067375**	**Method:**	**SW846 3541/8270D SIM P**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**2067376**	**Inst:**	**MSD1.I**	**Dilution:**	**1**
Run Date:	**11/30/2020 18:46**	**Analyst:**	**LXA1**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/30/2020 10:33**	**Aliquot:**	**30.43 g**	**Final Volume:**	**1 mL**
Data File:	**s113020.B\s1k3011.D**	**Column:**	**Description: DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
91-20-3	Naphthalene	U	3.29	ug/kg	1.08	3.29
83-32-9	Acenaphthene	U	3.29	ug/kg	1.08	3.29
86-73-7	Fluorene	U	3.29	ug/kg	1.08	3.29
120-12-7	Anthracene	U	3.29	ug/kg	1.08	3.29
206-44-0	Fluoranthene	U	3.29	ug/kg	1.08	3.29
129-00-0	Pyrene	U	3.29	ug/kg	1.08	3.29
56-55-3	Benzo(a)anthracene	U	3.29	ug/kg	1.08	3.29
218-01-9	Chrysene	U	3.29	ug/kg	1.08	3.29
205-99-2	Benzo(b)fluoranthene	U	3.29	ug/kg	1.08	3.29
207-08-9	Benzo(k)fluoranthene	U	3.29	ug/kg	1.08	3.29
50-32-8	Benzo(a)pyrene	U	3.29	ug/kg	1.08	3.29

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**528429**			**Matrix:**	**SOIL**
Lab Sample ID:	**1204704081**				
Client Sample:	**QC for batch 2067375**	**Client:**	**MCOM001**	**Project:**	**MCOM00118**
Client ID:	**LCS for batch 2067375**	**Method:**	**SW846 3541/8270D SIM P.**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**2067376**	**Inst:**	**MSD1.I**	**Dilution:**	**1**
Run Date:	**11/30/2020 19:18**	**Analyst:**	**LXA1**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/30/2020 10:33**	**Aliquot:**	**30.04 g**	**Final Volume:**	**1 mL**
Data File:	**s113020.B\s1k3012.D**	**Column:**	**Description: DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
91-20-3	Naphthalene		296	ug/kg	1.10	3.33
83-32-9	Acenaphthene		311	ug/kg	1.10	3.33
86-73-7	Fluorene		328	ug/kg	1.10	3.33
120-12-7	Anthracene		295	ug/kg	1.10	3.33
206-44-0	Fluoranthene		318	ug/kg	1.10	3.33
129-00-0	Pyrene		276	ug/kg	1.10	3.33
218-01-9	Chrysene		316	ug/kg	1.10	3.33
205-99-2	Benzo(b)fluoranthene		318	ug/kg	1.10	3.33
207-08-9	Benzo(k)fluoranthene		313	ug/kg	1.10	3.33
50-32-8	Benzo(a)pyrene		328	ug/kg	1.10	3.33

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**528429**	**Date Collected:**	**11/16/2020 12:50**	**Matrix:**	**SOIL**
Lab Sample ID:	**1204704082**	**Date Received:**	**11/17/2020 07:20**	**%Moisture:**	**7.9**
Client Sample:	**QC for batch 2067375**	**Client:**	**MCOM001**	**Project:**	**MCOM00118**
Client ID:	**CV-SB-2E-1.0MS**	**Method:**	**SW846 3541/8270D SIM P.**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**2067376**	**Inst:**	**MSD1.I**	**Dilution:**	**10**
Run Date:	**11/30/2020 22:28**	**Analyst:**	**LXA1**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/30/2020 10:33**	**Aliquot:**	**30.12 g**	**Final Volume:**	**1 mL**
Data File:	**s113020.B\s1k3018.D**	**Column:**	**Description: DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
91-20-3	Naphthalene		169	ug/kg	11.9	36.0
83-32-9	Acenaphthene		137	ug/kg	11.9	36.0
86-73-7	Fluorene		148	ug/kg	11.9	36.0
120-12-7	Anthracene		159	ug/kg	11.9	36.0
206-44-0	Fluoranthene		397	ug/kg	11.9	36.0
129-00-0	Pyrene		415	ug/kg	11.9	36.0
218-01-9	Chrysene		360	ug/kg	11.9	36.0
205-99-2	Benzo(b)fluoranthene		425	ug/kg	11.9	36.0
207-08-9	Benzo(k)fluoranthene		242	ug/kg	11.9	36.0
50-32-8	Benzo(a)pyrene		314	ug/kg	11.9	36.0

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**528429**	**Date Collected:**	**11/16/2020 12:50**	**Matrix:**	**SOIL**
Lab Sample ID:	**1204704083**	**Date Received:**	**11/17/2020 07:20**	**%Moisture:**	**7.9**
Client Sample:	**QC for batch 2067375**	**Client:**	**MCOM001**	**Project:**	**MCOM00118**
Client ID:	**CV-SB-2E-1.0MSD**	**Method:**	**SW846 3541/8270D SIM P.**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**2067376**	**Inst:**	**MSD1.I**	**Dilution:**	**10**
Run Date:	**11/30/2020 23:00**	**Analyst:**	**LXA1**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/30/2020 10:33**	**Aliquot:**	**30.27 g**	**Final Volume:**	**1 mL**
Data File:	**s113020.B\s1k3019.D**	**Column:**	**Description: DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
91-20-3	Naphthalene		427	ug/kg	11.8	35.9
83-32-9	Acenaphthene		323	ug/kg	11.8	35.9
86-73-7	Fluorene		341	ug/kg	11.8	35.9
120-12-7	Anthracene		352	ug/kg	11.8	35.9
206-44-0	Fluoranthene		789	ug/kg	11.8	35.9
129-00-0	Pyrene		811	ug/kg	11.8	35.9
218-01-9	Chrysene		746	ug/kg	11.8	35.9
205-99-2	Benzo(b)fluoranthene		886	ug/kg	11.8	35.9
207-08-9	Benzo(k)fluoranthene		520	ug/kg	11.8	35.9
50-32-8	Benzo(a)pyrene		646	ug/kg	11.8	35.9

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**528429**			**Matrix:**	**WATER**
Lab Sample ID:	**1204704097**				
Client Sample:	**QC for batch 2067383**	**Client:**	**MCOM001**	**Project:**	**MCOM00118**
Client ID:	**MB for batch 2067383**	**Method:**	**SW846 3510C/8270C SIM**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**2067384**	**Inst:**	**MSD1.I**	**Dilution:**	**1**
Run Date:	**11/30/2020 17:17**	**Analyst:**	**LXA1**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/30/2020 05:00**	**Aliquot:**	**1000 mL**	**Final Volume:**	**1 mL**
Data File:	**s113020.B\s1k3008.D**	**Column:**	**Description: DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
91-20-3	Naphthalene	U	0.100	ug/L	0.0300	0.100
83-32-9	Acenaphthene	U	0.100	ug/L	0.0300	0.100
86-73-7	Fluorene	U	0.100	ug/L	0.0300	0.100
120-12-7	Anthracene	U	0.100	ug/L	0.0300	0.100
206-44-0	Fluoranthene	U	0.100	ug/L	0.0300	0.100
129-00-0	Pyrene	U	0.100	ug/L	0.0300	0.100
56-55-3	Benzo(a)anthracene	U	0.100	ug/L	0.0300	0.100
218-01-9	Chrysene	U	0.100	ug/L	0.0300	0.100
205-99-2	Benzo(b)fluoranthene	U	0.100	ug/L	0.0300	0.100
207-08-9	Benzo(k)fluoranthene	U	0.100	ug/L	0.0300	0.100
50-32-8	Benzo(a)pyrene	U	0.100	ug/L	0.0300	0.100

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**528429**			**Matrix:**	**WATER**
Lab Sample ID:	**1204704098**				
Client Sample:	**QC for batch 2067383**	**Client:**	**MCOM001**	**Project:**	**MCOM00118**
Client ID:	**LCS for batch 2067383**	**Method:**	**SW846 3510C/8270C SIM**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**2067384**	**Inst:**	**MSD1.I**	**Dilution:**	**1**
Run Date:	**11/30/2020 15:14**	**Analyst:**	**LXA1**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/30/2020 05:00**	**Aliquot:**	**1000 mL**	**Final Volume:**	**1 mL**
Data File:	**s113020.B\s1k3005.D**	**Column:**	**Description: DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
91-20-3	Naphthalene		3.87	ug/L	0.0300	0.100
83-32-9	Acenaphthene		4.59	ug/L	0.0300	0.100
86-73-7	Fluorene		4.92	ug/L	0.0300	0.100
120-12-7	Anthracene		4.64	ug/L	0.0300	0.100
206-44-0	Fluoranthene		4.84	ug/L	0.0300	0.100
129-00-0	Pyrene		5.01	ug/L	0.0300	0.100
56-55-3	Benzo(a)anthracene		4.28	ug/L	0.0300	0.100
218-01-9	Chrysene		4.79	ug/L	0.0300	0.100
205-99-2	Benzo(b)fluoranthene		4.47	ug/L	0.0300	0.100
207-08-9	Benzo(k)fluoranthene		4.22	ug/L	0.0300	0.100
50-32-8	Benzo(a)pyrene		4.57	ug/L	0.0300	0.100

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**528429**			**Matrix:**	**WATER**
Lab Sample ID:	**1204704099**				
Client Sample:	**QC for batch 2067383**	**Client:**	**MCOM001**	**Project:**	**MCOM00118**
Client ID:	**LCSD for batch 2067383**	**Method:**	**SW846 3510C/8270C SIM**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**2067384**	**Inst:**	**MSD1.I**	**Dilution:**	**1**
Run Date:	**11/30/2020 15:45**	**Analyst:**	**LXA1**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/30/2020 05:00**	**Aliquot:**	**1000 mL**	**Final Volume:**	**1 mL**
Data File:	**s113020.B\s1k3006.D**	**Column:**	**Description: DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
91-20-3	Naphthalene		6.47	ug/L	0.0300	0.100
83-32-9	Acenaphthene		7.42	ug/L	0.0300	0.100
86-73-7	Fluorene		8.01	ug/L	0.0300	0.100
120-12-7	Anthracene		7.72	ug/L	0.0300	0.100
206-44-0	Fluoranthene		8.13	ug/L	0.0300	0.100
129-00-0	Pyrene		7.37	ug/L	0.0300	0.100
56-55-3	Benzo(a)anthracene		6.91	ug/L	0.0300	0.100
218-01-9	Chrysene		7.74	ug/L	0.0300	0.100
205-99-2	Benzo(b)fluoranthene		7.31	ug/L	0.0300	0.100
207-08-9	Benzo(k)fluoranthene		6.85	ug/L	0.0300	0.100
50-32-8	Benzo(a)pyrene		7.49	ug/L	0.0300	0.100

Miscellaneous

Prep Logbook

Automated Soxhlet Extraction

Batch ID: 2067375 **Verified by:** _____
Analyst: Staccy Grant
Method: SW846 3541

Lab SOP: GL-OA-E-066 REV# 9
Instrument: Semi-Volatiles Manual

Sample ID	Prep Date	Aliquot (g)	Prepped Aliquot (mL)	Prepped Factor (mL/g)
1204704080 MB	30-NOV-2020 10:33:00	30.43	1	0.03286
1204704081 LCS	30-NOV-2020 10:33:00	30.04	1	0.03329
527597001	30-NOV-2020 10:33:00	30.04	1	0.03329
1204704082 MS (527597001)	30-NOV-2020 10:33:00	30.12	1	0.0332
1204704083 MSD (527597001)	30-NOV-2020 10:33:00	30.27	1	0.03304
527597002	30-NOV-2020 10:33:00	30.25	1	0.03306
527597003	30-NOV-2020 10:33:00	30.18	1	0.03313
527597004	30-NOV-2020 10:33:00	30.42	1	0.03287
527597005	30-NOV-2020 10:33:00	30.17	1	0.03315
527597006	30-NOV-2020 10:33:00	30.1	1	0.03322
527597010	30-NOV-2020 10:33:00	30.39	1	0.03291
527597013	30-NOV-2020 10:33:00	30.8	1	0.03247
527597014	30-NOV-2020 10:33:00	30.45	1	0.03284
527597015	30-NOV-2020 10:33:00	30.52	1	0.03277
527597016	30-NOV-2020 10:33:00	30.35	1	0.03295
528429002	30-NOV-2020 10:33:00	30.27	1	0.03304
528429003	30-NOV-2020 10:33:00	30.07	1	0.03326
528429004	30-NOV-2020 10:33:00	30.19	1	0.03312
528429005	30-NOV-2020 10:33:00	30.13	1	0.03319
528429006	30-NOV-2020 10:33:00	30.33	1	0.03297

Type	Sample Id	Description	Serial Number	Spike Amt	Units
LCS	1204704081	PAH SIM LCS 10 mg/L	WE200918-20	1	mL
MS	1204704082	PAH SIM LCS 10 mg/L	WE200918-20	1	mL
MSD	1204704083	PAH SIM LCS 10 mg/L	WE200918-20	1	mL
SURR	All	BNASIMSURR	WE201015-77	1	mL
REGNT	All	Sandpure 40-100 mesh	3116121-A	30	g
REGNT	All	Methylene Chloride	3138096	60	mL
REGNT	All	Acetone	3140994-B4	60	mL

Comments:
Soxtherm Unit:: 7A, 8A, 9A, 10A
Final Solvent: CH2Cl2
Start Time:: 1051
End Time:: 1153
Verified by: CB

Prep Logbook

Extraction of Semivolatile and Nonvolatile Organic Compounds from Groundwater, Wastewater, and Other Aqueous Samples

Batch ID: 2067383 **Verified by:** _____
Analyst: Donna Frazier
Method: SW846 3510C

Lab SOP: GL-OA-E-013 REV# 34
Instrument: Semi-Volatiles Manual

Sample ID	Prep Date	Initial Volume (mL)	Ph 1	Ph 2	Ph 3	Final Volume (mL)	Prepped Factor (mL/mL)
1204704097 MB	30-NOV-2020 05:00:00	1000	7	1	13	1	0.001
1204704098 LCS	30-NOV-2020 05:00:00	1000	7	1	13	1	0.001
1204704099 LCSD	30-NOV-2020 05:00:00	1000	7	1	13	1	0.001
528429001	30-NOV-2020 05:00:00	1000	7	1	13	1	0.001

Type	Sample Id	Description	Serial Number	Spike Amt	Units
LCS	1204704098	PAH SIM LCS 10 mg/L	WE201015-20	1	mL
LCSD	1204704099	PAH SIM LCS 10 mg/L	WE201015-20	1	mL
SURR	All	BNASIMSURR	WE201015-77	1	mL
REGNT	All	Methylene Chloride	3138096	360	mL
REGNT	All	1:1 sulfuric acid	3149550	2	mL
REGNT	All	10 N Sodium Hydroxide	3149576	10	mL
SOURC	All	SODIUM SULFATE	3129846	30	g

Comments:
Final Solvent:CH2CL2
Verified By:SC

ORGANIC RUN LOG - INSTRUMENT ID#MSD1

11/17/2020

11/18/2020

GEL ORGANIC RUN LOG

DATE: 17-Nov-20 METHOD: See Data OPERATOR: AGS1 Sequence Number: S111720.E

Multiplier Voltage: 2188
Internal Std ID: UBN190329-01.2
Internal Std ID: WBN190913-99 (SIM)
Solvent Reference ID: 2766142

Calibration Information:
Initial Calibration Dates: See Calibration History
Initial Calibration Std ID's: See Associated Data and Run Log
GEL SOP: GL-OA-E-009

Analysis Date	Time	Data File	Lab Sample ID	Client	Batch #	Dil. Factor	AS Slot #	Analyst	Comments
11/17/2020	12:07	s1k1701.D	WBN200802-99	DFTPP	DFTPP	1	1	AGS1	√ pass C/D/E
11/17/2020	12:32	s1k1702.D	WBN200805-81	S1	ICAL	1	2	AGS1	√
11/17/2020	13:03	s1k1703.D	WBN200805-82	S2	ICAL	1	3	AGS1	√
11/17/2020	13:35	s1k1704.D	WBN200805-83	S3	ICAL	1	4	AGS1	√
11/17/2020	14:06	s1k1705.D	WBN200805-84	S4	ICAL	1	5	AGS1	√
11/17/2020	14:38	s1k1706.D	WBN200805-85	S5	ICAL	1	6	AGS1	√
11/17/2020	15:09	s1k1707.D	WBN200805-86.1	S6	ICAL	1	7	AGS1	√
11/17/2020	15:41	s1k1708.D	WBN200805-87	S7	ICAL	1	8	AGS1	√
11/17/2020	16:13	s1k1709.D	WBN200805-88	S8	ICAL	1	9	AGS1	√
11/17/2020	16:45	s1k1710.D	WBN200625-89	SICV	duse	1	10	AGS1	
11/17/2020	18:07	s1k1711.D	WBN200625-89	SICV	ICV	1	10	AGS1	√

ORGANIC RUN LOG - INSTRUMENT ID#MSD1

GEL ORGANIC RUN LOG

DATE: 30-Nov-20 METHOD: See Data OPERATOR: LXA1 Sequence Number: S113020.B

Multiplier Voltage: 2188
Internal Std ID: UBN190329-01.2
Internal Std ID: WBN190913-99 (SIM)
Solvent Reference ID: 2766142

Calibration Information:
Initial Calibration Dates: See Calibration History
Initial Calibration Std ID's: See Associated Data and Run Log
GEL SOP: GL-OA-E-009

Analysis Date	Time	Data File	Lab Sample ID	Client	Batch #	Dil. Factor	AS Slot #	Analyst	Comments
11/30/2020	13:18	s1k3001.D	WBN201120-99	DFTPP	DFTPP	1	1	LXA1	√
11/30/2020	13:36	s1k3002.D	WBN201120-86.4	S-CCV	CCV	1	2	LXA1	√
11/30/2020	14:11	s1k3003.D	1204703586	LCS	2067135	1	3	LXA1	duse istd high
11/30/2020	14:43	s1k3004.D	1204704097	MB	2067384	1	4	LXA1	duse istd high
11/30/2020	15:14	s1k3005.D	1204704098	LCS	2067384	1	5	LXA1	report spikes low narrate
11/30/2020	15:45	s1k3006.D	1204704099	LCSD	2067384	1	6	LXA1	report
11/30/2020	16:17	s1k3007.D	528429001	MCOM	2067384	1	7	LXA1	report
11/30/2020	17:17	s1k3008.D	1204704097	MB	2067384	1	4	LXA1	report
11/30/2020	17:47	s1k3009.D	WBN201120-99	DFTPP	DFTPP	1	8	LXA1	pass d,e fail c
11/30/2020	18:06	s1k3010.D	WBN201120-86.4	S-CCV	CCV	1	9	LXA1	√
11/30/2020	18:46	s1k3011.D	1204704080	MB	2067376	1	10	LXA1	report
11/30/2020	19:18	s1k3012.D	1204704081	LCS	2067376	1	11	LXA1	report
11/30/2020	19:50	s1k3013.D	527597001	TOCH	2067376	20	12	LXA1	duse - rr lower dilution see 3017
11/30/2020	20:22	s1k3014.D	528429002	MCOM	2067376	100	25	LXA1	duse - rr lower dilution see 3020
11/30/2020	20:54	s1k3015.D	527597002	TOCH	2067376	1	15	LXA1	report
11/30/2020	21:24	s1k3016.D	528429005	MCOM	2067376	4	28	LXA1	report
11/30/2020	21:56	s1k3017.D	527597001	TOCH	2067376	10	12	LXA1	report
11/30/2020	22:28	s1k3018.D	1204704082	MS	2067376	10	13	LXA1	report
11/30/2020	23:00	s1k3019.D	1204704083	MSD	2067376	10	14	LXA1	report
11/30/2020	23:32	s1k3020.D	528429002	MCOM	2067376	4	25	LXA1	report
12/01/2020	00:04	s1k3021.D	528429003	MCOM	2067376	4	26	LXA1	report
12/01/2020	00:37	s1k3022.D	528429004	MCOM	2067376	4	27	LXA1	report
12/01/2020	01:09	s1k3023.D	528429006	MCOM	2067376	4	29	LXA1	report
12/01/2020	01:40	s1k3024.D	527597003	TOCH	2067376	1	16	LXA1	report
12/01/2020	02:12	s1k3025.D	**527597004**	**TOCH**	2067376	1	17	LXA1	**ISTD high**
12/01/2020	02:44	s1k3026.D	527597005	TOCH	2067376	5	18	LXA1	report
12/01/2020	03:15	s1k3027.D	527597006	TOCH	2067376	1	19	LXA1	report - surr high no hits
12/01/2020	03:47	s1k3028.D	527597010	TOCH	2067376	1	20	LXA1	report
12/01/2020	04:18	s1k3029.D	**527597013**	**TOCH**	2067376	1	21	LXA1	**ISTD high**
12/01/2020	04:50	s1k3030.D	**527597014**	**TOCH**	2067376	1	22	LXA1	**ISTD high**
12/01/2020	05:21	s1k3031.D	527597015	TOCH	2067376	1	23	LXA1	report
12/01/2020	05:52	s1k3032.D	**527597016**	**TOCH**	2067376	1	24	LXA1	**out of tune - ISTD high**

ORGANIC RUN LOG - INSTRUMENT ID#MSD1

GEL ORGANIC RUN LOG

DATE: 1-Dec-20 METHOD: See Data OPERATOR: LXA1 Sequence Number: S120120.B

Multiplier Voltage: 2188
Internal Std ID: UBN190329-01.2
Internal Std ID: WBN190913-99 (SIM)
Solvent Reference ID: 2766142

Calibration Information:
Initial Calibration Dates: See Calibration History
Initial Calibration Std ID's: See Associated Data and Run Log
GEL SOP: GL-OA-E-009

Analysis Date Time	Data File	Lab Sample ID	Client	Batch #	Dil. Factor	AS Slot #	Analyst	Comments
12/01/2020 09:03	s1L0101.D	Screen			1	2	LXA1	
12/01/2020 09:47	s1L0102.D	WBN201120-99	DFTPP	DFTPP	1	1	LXA1	
12/01/2020 10:05	s1L0103.D	WBN201120-82.1	S-CCV	CCV	1	2	LXA1	
12/01/2020 11:31	s1L0104.D	WBN201120-99	DFTPP	DFTPP	1	1	LXA1	
12/01/2020 12:10	s1L0105.D	WBN201120-99	DFTPP	DFTPP	1	1	LXA1	
12/01/2020 12:32	s1L0106.D	WBN201120-82.1	S-CCV	CCV	1	2	LXA1	
12/01/2020 13:04	s1L0107.D	528429006	MCOM	2067376	4	3	LXA1	
12/01/2020 13:36	s1L0108.D	527597004	TOCH	2067376	1	4	LXA1	
12/01/2020 14:08	s1L0109.D	527597013	TOCH	2067376	1	5	LXA1	
12/01/2020 14:40	s1L0110.D	527597014	TOCH	2067376	1	6	LXA1	

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Appendix F
Idaho Risk Evaluation Manual for Petroleum Releases

Idaho
Risk Evaluation Manual for Petroleum Releases

Idaho Department of Environmental Quality
1410 North Hilton
Boise, Idaho 83706

August 2012

Table 2 lists the screening levels for unrestricted use. For comparison, Table 2 provides the risk-based concentrations in soil and groundwater for all the pathways and ROE listed above. The screening level values incorporated in the Rule are indicated in bold.

Because of the methods and assumptions used in the development of the screening levels and the current limitations of laboratory analytical methods, the calculated screening levels may be lower than the practical quantitation limit reported by a laboratory for selected chemicals. In these situations, site-specific review by DEQ will be required based on the criteria provided in Section 500 of the Rule and Appendix K.

Table 2. Screening Level Concentrations for Soil, Groundwater, and Soil Vapor

	SOIL (mg/kg)			GROUNDWATER (mg/L)		DEEP SOIL VAPOR (ug/m3) (>3- 5 feet bgs)	
						Unrestricted Use	Commercial/ Industrial
CHEMICAL	Vapor Intrusion	Direct Contact	Groundwater Protection	Vapor Intrusion	Ingestion	Vapor Intrusion	Vapor Intrusion
Benzene	0.08	8.3	**0.025**	0.044	**0.005**	**31**	160
Toluene	1300	7930	**6.6**	340	**1**	**520000**	2200000
Ethylbenzene	**0.25**	39	7.4	**0.05**	0.700	**97**	490
Xylenes	**27**	6170	91	**8.7**	10	**10000**	44000
Naphthalene	**0.12**	44	9.2	**0.07**	0.73	**7**	36
MTBE	2.4	340	**0.08**	6.8	**0.04**	**940**	4700
1,2-Dichloroethane	0.02	3.7	**0.013**	0.03	**0.005**	**9**	47
Ethylene Dibromide	0.001	0.27	**0.00014**	0.004	**0.00005**	**0.4**	2
Acenaphthene	NA	4470	**200**	NA	**2.2**	NA	NA
Anthracene	NA	22300	**3200**	NA	**11**	NA	NA
Benz(a)anthracene	NA	0.19	**0.09**	NA	**0.00003**	NA	NA
Benzo(a)pyrene	NA	**0.02**	2.1	NA	**0.0002**	NA	NA
Benzo(b)fluoranthene	NA	**0.19**	0.31	NA	**0.00003**	NA	NA
Benzo(k)fluoranthene	NA	**1.9**	3.1	NA	**0.0003**	NA	NA
Chrysene	NA	19	**9.5**	NA	**0.003**	NA	NA
Fluoranthene	NA	2970	**1400**	NA	**1.5**	NA	NA
Fluorene	NA	2970	**240**	NA	**1.5**	NA	NA
Pyrene	NA	2230	**1000**	NA	**1.1**	NA	NA

Values in bold are current screening level values specified in the Rule. Screening level values for deep soil vapor are equivalent to EPA Regional Screening Levels (EPA, 2012) for residential and industrial ambient air divided by an attenuation factor of 0.01.

NA: not applicable because the chemical does not meet EPA volatility criteria or does not have a Regional Screening Level for ambient air.