



July 20, 2021

Mr. Blair Rollins
Environmental Specialist
Caerus Oil and Gas LLC
143 Diamond Ave
Parachute, CO 81635

Via Email

**RE N23 Balon Valve Spill – Boring and Sampling
COGCC Facility ID 478403
Garfield County, Colorado**

Mr. Rollins,

Entrada Consulting Group, Inc. (Entrada) has prepared an Investigation Report for Caerus Oil and Gas LLC (Caerus) in response to a produced water release at the N23 Pad (Site). The Site is in the SESW and SWSE, of Section 23, Township 6S, Range 97W of the 6th Principal Meridian in Garfield County, Colorado. The Site location is shown on **Figure 1**. The following narrative provides Site background information and presents the results of soil boring and sampling activities conducted by Entrada on June 14th and 15th, 2020.

BACKGROUND

On October 26, 2020 a produced water release was discovered on the N23 location due to the freezing and failure of a Balon valve in the water transfer system. Approximately 90 barrels of produced water was released. The produced water release was confined to location. The area near the point of release was excavated and contaminated soils were transported to Greenleaf Environmental Services near DeBeque Colorado for offsite disposal. The excavation location is shown on **Figure 1**. The release was reported to the Colorado Oil and Gas Conservation Commission (COGCC) in a Spill/Release Report Form 19 dated October 27, 2020.

Please see the following COGCC documents for additional information and details regarding this project:

- Form 19. Doc # 402519107
- Form 27. Doc # 402585991
- N23 Spill Response Activities and Sample Collection. Doc # 402586375.

SOIL BORING AND SVE INSTALLATION

Three soil vapor extraction (SVE) wells were installed (SVE01, SVE02, and SVE03) by Entrada and Colorado Drilling and Sampling on June 14, 2021 and June 15, 2021. The location of these SVE wells is shown on **Figure 1**. The soil borings were advanced with a solid stem auger driven by a

truck-mounted Simco drill rig. Soil samples were collected using split spoon style samplers. In each boring, the soil was visually examined for evidence of potential environmental impacts (e.g., petroleum staining and odor) and field-screened using a photo-ionization detector (PID) to evaluate the presence of volatile organic compounds (VOCs). The maximum PID reading observed during the investigations was 9.0 parts per million (ppm) at the 5 to 7 feet below ground surface (ft-bgs) and interval of SVE03. Significant screening results were not observed with the PID, and staining was not observed visually during this investigation. Soil characteristics and lithology observed during drilling is provided in the attached boring logs.

SOIL ANALYSIS

Soil samples were collected in sample containers appropriate for the specified analyses, sealed, labeled, and placed into an ice-filled cooler for preservation. Samples were submitted to Pace Analytical in Mt. Juliet, TN and analyzed for the following analyses:

- Total Petroleum Hydrocarbons – diesel range organics (TPH-DRO [C10-C28]) and Motor Oil Range (TPH-ORO [C28-C36]) by U.S. Environmental Protection Agency (EPA) Method 8015M;
- TPH-gasoline range organics (GRO) by EPA Method 8015D;
- Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) by EPA Method 8260B;
- Polycyclic Aromatic Hydrocarbons (PAHs) (COGCC Table 915-1) by EPA Method 8270C;
- pH by EPA Method 9045D;
- Metals (COGCC Table 915) by EPA Method 6010B;
 - Hexavalent chromium by EPA Method 7199;
 - Hot Water Soluble Boron by 6010B-NE493 Ch 2;
 - Arsenic by EPA Method 6020;
- Electrical conductivity (EC) by EPA Method 9050AMod;
- Sodium adsorption ratio (SAR) by calculation.

SOIL ANALYTICAL RESULTS

Soil sample analytical results are summarized in **Table 1** and are compared to COGCC Table 915-1 Residential Soil Screening Levels. Laboratory analysis reports and chain-of-custody documentation are included as an attachment. Soil analytical results are summarized below:

Soil analytical results were reported for fourteen (14) soil samples at depths ranging from 0 to 24.5 feet below ground surface (ft-bgs). Soil sample locations are presented on the attached **Figure 1** and analytical results are summarized on **Table 1**. In addition, analytical results were reported for two (2) background soil samples at depths ranging from 12 to 18 inches below ground surface (in-bgs). Results are compared to Table 915-1 Residential Soil Screening Level Concentrations.

- Total Petroleum Hydrocarbons (TPH–GRO-DRO-ORO), Toluene, Xylenes, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, Chrysene, Fluorene, 1-methylnaphthalene, 2-methylnaphthalene, Naphthalene, and Pyrene were identified in soil sampling results. However, none of these analytes exceeded COGCC Table 915-1 Residential Soil Screening Levels.
- Electrical Conductivity (EC), Sodium Adsorption Ratio (SAR), pH, and Hot Water-Soluble Boron were identified in soil sampling results. However, only pH exceeded

COGCC Table 915-1 Residential Soil Screening Levels. pH exceedances were reported in all three borings.

- Arsenic, Barium, Cadmium, Hexavalent Chromium (Chromium VI), Copper, Lead, Nickel, Selenium, and Zinc were identified in soil sampling results. However, only Arsenic and Chromium VI exceeded COGCC Table 915-1 Residential Soil Screening Levels.
 - The Arsenic values reported (3.81 to 20.2 mg/kg) were below the local background concentration of 44 mg/kg at the Mesa 22 Pad which is approximately 1.1 miles east of the Site.
 - The Chromium VI detections reported (0.33 to 1.95 mg/kg) were always associated with one of the following qualifiers: B, J, P1. Please see the attached laboratory analytical reports for additional details.

CONCLUSIONS AND RECOMMENDATIONS

Results from the soil sampling events illustrate that TPH, BTEX, and other volatile and semi-volatile organic contaminant concentrations are below COGCC Table 915-1 Residential Soil Screening Levels in the areas south, southeast, and southwest of the original excavation. However, pH values are above COGCC Table 915-1 Residential Soil Screening Levels in these areas.

Previous samples indicate COGCC Table 915-1 hydrocarbon exceedances in the north and west walls of the original excavation as well as at the point of release at the base of the excavation. Due to buried flowlines and the spill containment structure to the north and west, and shallow bedrock, additional excavation is not currently feasible in those directions.

Entrada recommends performing radius of influence (ROI) testing on the existing SVE wells to determine SVE efficacy in this area. Once ROI testing is complete, Entrada recommends the reevaluation of options for delineation and remediation of all contaminants within the spill area.

We appreciate the opportunity to assist Caerus Oil and Gas LLC. Please contact me (720) 253-2940 if you have any questions.

Sincerely,
ENTRADA CONSULTING GROUP, INC



Reed Johnson
Senior Project Geologist



Tim Dobransky
Principal Scientist

Attachments:

Table 1 – Soil Data Summary
Figure 1 – Site Map
Boring Logs
Laboratory Analytical Reports

TABLES

TABLE 1
CAERUS OPERATING LLC
N23 PAD SPILL INVESTIGATION
SOIL ANALYTICAL RESULTS
GARFIELD COUNTY, COLORADO

FIGURES

BKGND-1

SVE03

SVE02

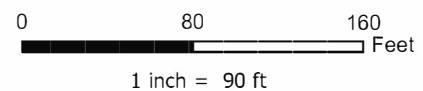
SVE01

BKGND-2

SESW
SWSE

LEGEND

● Boring Location ● Soil Sample Location ■ Excavation



Project No: 020-051

Map By: NDB

Date: 7/7/2021

N23 SITE MAP
CAERUS OIL AND GAS LLC
SESW / SWSE SEC 23 T6S R97W 6TH PM
GARFIELD COUNTY, COLORADO

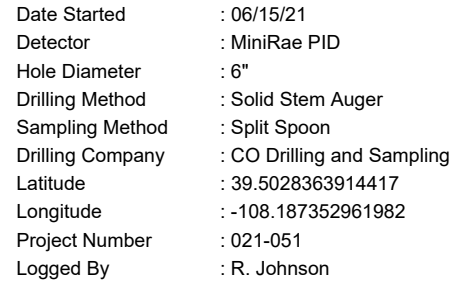
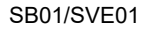


330 Grand Avenue, Unit C
Grand Junction, CO 81501
970-579-1015

Figure

1

BORING LOGS



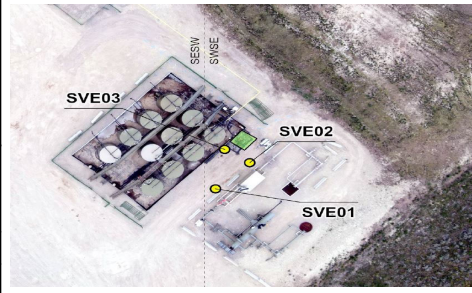
Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Moisture (%)	Fines (%)	Structure	PID (ppm)	Staining	Recovery (in)	Sample	Blow Count	SVE01:
0			4-7: Drilling like bedrock.									
5												
7-9	SH		7-9: Weathered sandy shale and sandstone. Dry. No odor.	10	50	N	1.8	N	18	7-9	25, 27, 17	Hydrated Bentonite 2" Sch-40 Solid PVC Riser
10-12	SC		10-12: Sand and weathered shale. Very slightly moist. No odor. Slow drilling.	30	50	N	1.1	N	14	10-12	50 for 13	
15-17	SH		15-17: Weathered shale and sand. Very slightly moist. No odor.	30	50	N	0.1	N	12	15-17	50 for 11	2" Sch-40 #10 Slotted PVC Screen 10-20 Silica Sand
20-22	SH		20-22: Weathered shale. Mottled. No odor. Very slightly moist.	30	70	N	0.5	N	10	20-22	50	
24-24.5	SH		24-24.5: Weathered shale.	30	90	N	0.6	N	6	24-24.5	50	Fill
Refusal at 24.5												



Caerus Oil and Gas LLC
143 Diamond Ave
Parachute, CO 81635

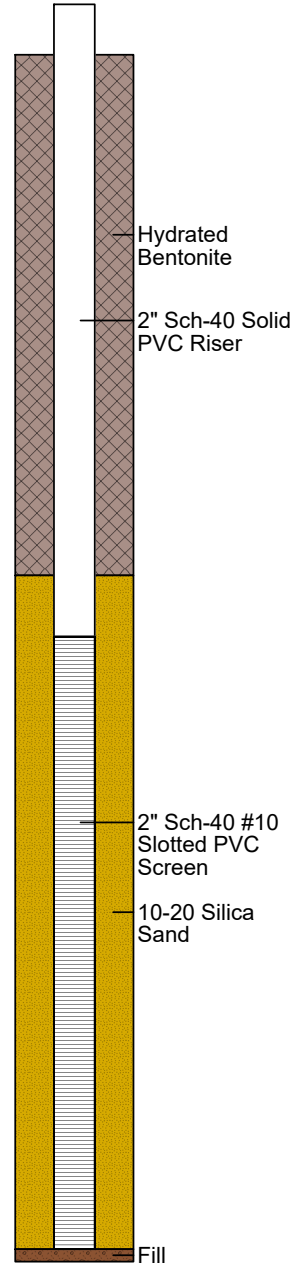
N23

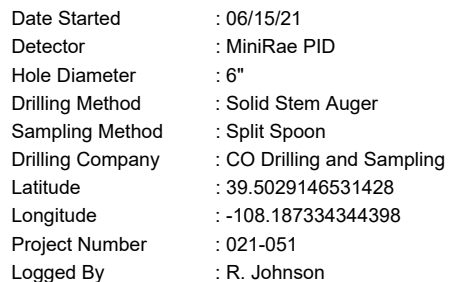
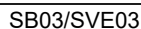
SB02/SVE02


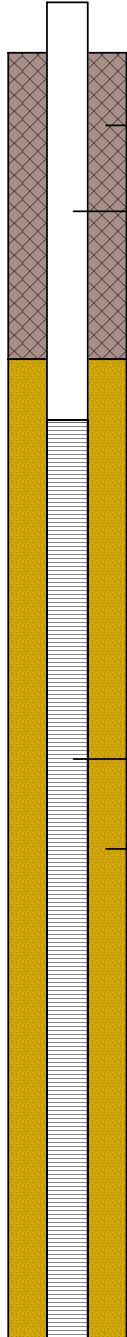








Date Started : 06/15/21
Detector : MiniRae PID
Hole Diameter : 6"
Drilling Method : Solid Stem Auger
Sampling Method : Split Spoon
Drilling Company : CO Drilling and Sampling
Latitude : 39.5028883161598
Longitude : -108.187283520414
Project Number : 021-051
Logged By : R. Johnson

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Moisture (%)	Fines (%)	Structure	PID (ppm)	Staining	Recovery (in)	Sample	Blow Count	SVE02:
0			0-2: 6" Sandy clay into weathered shale and sand. No odor.	20	60	L	1.1	N	18	0-2	7, 10, 30	
	CL											
5			5-7: Weathered sandy shale. Dry. No odor.	20	70	L	2.5	N	16	7-9	50 for 7	
	SH											
10			10-12: Weathered shale into shale. Very slightly moist.	30	90	L	0.9	N	10	10-12	50 for 9	
	SH											
15			15-17: Weathered silty and sandy shale. Very slightly moist. No odor. Sample is mixed cuttings and spoon sample due to volume.	30	80	L	1.7	N	10	15-17	50 for 7	
	SH											
	SC		19.5-19.7: Weathered sandstone. Not enough to sample. Refusal at 19.7	30	40	L	1.8	N	2	NS	50 for 1	





Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Moisture (%)	Fines (%)	Structure	PID (ppm)	Staining	Recovery (in)	Sample	Blow Count	SVE03:
0	CL		0-2: 12" Sandy and gravelly clay into weathered shale. Very slightly moist. No odor.	30	60	L	3.2	N	18	0-2	6, 7, 8, 6	
5	SH		5-7: Weathered shale and sandy clay. Very slightly moist. No odor.	30	70	L	9.0	N	10	7-9	50 for 7	
10	SH		10-12: Shale into 3" fine grained laminated sandstone. Very slightly moist. No odor.	30	70	L	2.2	N	12	10-12	50 for 7	
15	SH		15-17: Shale and fine grained sandstone. Very slightly moist. No odor.	30	70	L	1.1	N	12	15-17	50 for 11	
20	SH		20-21: Shale and sand. Dry. No odor.	20	50	L	1.0	N	8	20-21	50 for 6	

Refusal at 21

ANALYTICAL REPORTS

Caerus Oil and Gas

Sample Delivery Group: L1366412

Samples Received: 06/15/2021

Project Number:

Description: N23

Report To: Blair Rollins
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By:



Chris Ward
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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¹ Cp
² Tc
³ Ss
⁴ Cn
⁵ Sr
⁶ Qc
⁷ Gl
⁸ Al
⁹ Sc

SAMPLE SUMMARY

20210614-1023-BKGND-1 (12-18') L1366412-01 Solid

Collected by
Reed Johnson

Collected date/time
06/14/21 13:30

Received date/time
06/15/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1689575	1	06/23/21 12:42	06/23/21 12:42	KMG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1690930	1	06/18/21 12:55	06/18/21 16:00	ARM	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1690412	1	06/17/21 16:27	06/17/21 20:08	AMH	Mt. Juliet, TN

¹Cp

²Tc

³Ss

20210614-1023-BKGND-2 (12-18') L1366412-02 Solid

Collected by
Reed Johnson

Collected date/time
06/14/21 13:50

Received date/time
06/15/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1689575	1	06/23/21 12:45	06/23/21 12:45	KMG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1690930	1	06/18/21 12:55	06/18/21 16:00	ARM	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1690412	1	06/17/21 16:27	06/17/21 20:08	AMH	Mt. Juliet, TN

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Chris Ward
Project Manager



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.181		1	06/23/2021 12:42	WG1689575

¹Cp

²Tc

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.35	T8	1	06/18/2021 16:00	WG1690930

³Ss

⁴Cn

Sample Narrative:

L1366412-01 WG1690930: 7.35 at 24.1C

⁵Sr

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	124		10.0	1	06/17/2021 20:08	WG1690412

⁶Qc

⁷Gl

⁸Al

⁹Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.162		1	06/23/2021 12:45	WG1689575

¹ Cp

² Tc

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	6.98	T8	1	06/18/2021 16:00	WG1690930

³ Ss

⁴ Cn

Sample Narrative:
L1366412-02 WG1690930: 6.98 at 23.6C

⁵ Sr

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	92.5		10.0	1	06/17/2021 20:08	WG1690412

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1366319-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1366319-09 06/18/21 16:00 • (DUP) R3669233-2 06/18/21 16:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	7.26	7.27	1	0.138		1

Sample Narrative:

OS: 7.26 at 24.8C

DUP: 7.27 at 24.8C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1366545-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1366545-01 06/18/21 16:00 • (DUP) R3669233-3 06/18/21 16:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	8.21	8.21	1	0.000		1

Sample Narrative:

OS: 8.21 at 24C

DUP: 8.21 at 24.1C

Laboratory Control Sample (LCS)

(LCS) R3669233-1 06/18/21 16:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:

LCS: 10.04 at 24.2C

Method Blank (MB)

(MB) R3668771-1 06/17/21 20:08

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1366412-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1366412-02 06/17/21 20:08 • (DUP) R3668771-3 06/17/21 20:08

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	92.5	95.4	1	3.09		20

L1367002-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1367002-02 06/17/21 20:08 • (DUP) R3668771-4 06/17/21 20:08

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	274	255	1	7.17		20

Laboratory Control Sample (LCS)

(LCS) R3668771-2 06/17/21 20:08

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	274	102	85.0-115	

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

T8	Sample(s) received past/too close to holding time expiration.
----	---

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA -- ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



Caerus Oil and Gas

Sample Delivery Group: L1366418

Samples Received: 06/15/2021

Project Number:

Description: N23

Report To: Blair Rollins
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By:



Chris Ward
Project Manager

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SAMPLE SUMMARY

20210614-N23-SB1 (7-9) L1366418-01 Solid

Collected by
Reed Johnson

Collected date/time
06/14/21 10:55

Received date/time
06/15/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1689575	1	06/23/21 12:48	06/23/21 12:48	KMG	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1692440	1	06/21/21 17:45	06/22/21 17:15	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1690930	1	06/18/21 12:55	06/18/21 16:00	ARM	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1690412	1	06/17/21 16:27	06/17/21 20:08	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1691026	1	06/20/21 07:40	06/24/21 17:20	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1689573	1	06/20/21 14:30	06/23/21 14:11	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1691022	5	06/20/21 07:36	06/23/21 16:02	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1691402	25	06/14/21 10:55	06/20/21 00:20	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1691777	1	06/14/21 10:55	06/19/21 20:39	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1692431	1	06/21/21 12:33	06/22/21 08:29	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1691985	1	06/20/21 19:01	06/21/21 15:00	LEA	Mt. Juliet, TN



20210614-N23-SB1 (10-12) L1366418-02 Solid

Collected by
Reed Johnson

Collected date/time
06/14/21 11:15

Received date/time
06/15/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1689575	1	06/23/21 12:50	06/23/21 12:50	KMG	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1692440	1	06/21/21 17:45	06/22/21 17:21	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1690930	1	06/18/21 12:55	06/18/21 16:00	ARM	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1690412	1	06/17/21 16:27	06/17/21 20:08	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1691026	1	06/20/21 07:40	06/24/21 17:23	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1689573	1	06/20/21 14:30	06/23/21 14:14	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1691022	5	06/20/21 07:36	06/23/21 16:05	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1691402	26.3	06/14/21 11:15	06/20/21 00:44	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1691777	1.05	06/14/21 11:15	06/19/21 20:59	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1692431	1	06/21/21 12:33	06/22/21 08:42	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1691985	1	06/20/21 19:01	06/21/21 15:17	LEA	Mt. Juliet, TN

20210614-N23-SB1 (15-17) L1366418-03 Solid

Collected by
Reed Johnson

Collected date/time
06/14/21 11:45

Received date/time
06/15/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1689575	1	06/23/21 12:53	06/23/21 12:53	KMG	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1692440	1	06/21/21 17:45	06/22/21 17:26	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1690930	1	06/18/21 12:55	06/18/21 16:00	ARM	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1690412	1	06/17/21 16:27	06/17/21 20:08	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1691026	1	06/20/21 07:40	06/24/21 17:26	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1689573	1	06/20/21 14:30	06/23/21 14:17	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1691022	5	06/20/21 07:36	06/23/21 16:09	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1691402	25	06/14/21 11:45	06/20/21 01:08	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1692201	1	06/14/21 11:45	06/21/21 01:51	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1692431	1	06/21/21 12:33	06/22/21 08:55	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1691985	1	06/20/21 19:01	06/21/21 15:35	LEA	Mt. Juliet, TN

20210614-N23-SB1 (20-22) L1366418-04 Solid

Collected by
Reed Johnson

Collected date/time
06/14/21 12:20

Received date/time
06/15/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1689575	1	06/23/21 12:56	06/23/21 12:56	KMG	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1692440	1	06/21/21 17:45	06/22/21 17:31	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1690930	1	06/18/21 12:55	06/18/21 16:00	ARM	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1690412	1	06/17/21 16:27	06/17/21 20:08	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1691026	1	06/20/21 07:40	06/24/21 17:30	KMG	Mt. Juliet, TN

SAMPLE SUMMARY

20210614-N23-SB1 (20-22) L1366418-04 Solid

Collected by
Reed Johnson

Collected date/time
06/14/21 12:20

Received date/time
06/15/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1689573	1	06/20/21 14:30	06/23/21 14:20	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1691022	5	06/20/21 07:36	06/23/21 16:12	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1691402	27.5	06/14/21 12:20	06/20/21 01:32	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1692201	1.1	06/14/21 12:20	06/21/21 01:32	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1692431	1	06/21/21 12:33	06/22/21 09:09	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1691985	1	06/20/21 19:01	06/21/21 15:52	LEA	Mt. Juliet, TN

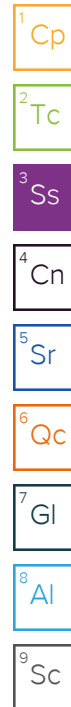
20210614-N23-SB1 (24-24.5) L1366418-05 Solid

Collected by
Reed Johnson

Collected date/time
06/14/21 12:50

Received date/time
06/15/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1689575	1	06/23/21 13:04	06/23/21 13:04	KMG	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1692440	1	06/21/21 17:45	06/22/21 17:47	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1690930	1	06/18/21 12:55	06/18/21 16:00	ARM	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1690412	1	06/17/21 16:27	06/17/21 20:08	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1691026	1	06/20/21 07:40	06/24/21 17:33	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1689573	1	06/20/21 14:30	06/23/21 13:13	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1691022	5	06/20/21 07:36	06/23/21 16:15	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1691796	26	06/14/21 12:50	06/20/21 10:41	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1692201	1.04	06/14/21 12:50	06/21/21 02:10	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1692431	1	06/21/21 12:33	06/22/21 09:22	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1691985	1	06/20/21 19:01	06/21/21 16:10	LEA	Mt. Juliet, TN



CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Chris Ward
Project Manager



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.865		1	06/23/2021 12:48	WG1689575

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	06/22/2021 17:15	WG1692440

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.56	T8	1	06/18/2021 16:00	WG1690930

Sample Narrative:

L1366418-01 WG1690930: 8.56 at 23.6C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	192		10.0	1	06/17/2021 20:08	WG1690412

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	238		0.500	1	06/24/2021 17:20	WG1691026
Cadmium	ND		0.500	1	06/24/2021 17:20	WG1691026
Copper	19.2		2.00	1	06/24/2021 17:20	WG1691026
Lead	13.7		0.500	1	06/24/2021 17:20	WG1691026
Nickel	23.7		2.00	1	06/24/2021 17:20	WG1691026
Selenium	2.09		2.00	1	06/24/2021 17:20	WG1691026
Silver	ND		1.00	1	06/24/2021 17:20	WG1691026
Zinc	64.9		5.00	1	06/24/2021 17:20	WG1691026

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	ND		0.200	1	06/23/2021 14:11	WG1689573

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	9.56		1.00	5	06/23/2021 16:02	WG1691022

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		2.50	25	06/20/2021 00:20	WG1691402
(S) a,a,a-Trifluorotoluene(FID)	99.6		77.0-120		06/20/2021 00:20	WG1691402

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acetone	ND		0.0500	1	06/19/2021 20:39	WG1691777
Acrylonitrile	ND		0.0125	1	06/19/2021 20:39	WG1691777
Benzene	ND		0.00100	1	06/19/2021 20:39	WG1691777
Bromobenzene	ND		0.0125	1	06/19/2021 20:39	WG1691777
Bromodichloromethane	ND		0.00250	1	06/19/2021 20:39	WG1691777
Bromoform	ND		0.0250	1	06/19/2021 20:39	WG1691777
Bromomethane	ND		0.0125	1	06/19/2021 20:39	WG1691777
n-Butylbenzene	ND		0.0125	1	06/19/2021 20:39	WG1691777
sec-Butylbenzene	ND		0.0125	1	06/19/2021 20:39	WG1691777
tert-Butylbenzene	ND		0.00500	1	06/19/2021 20:39	WG1691777
Carbon tetrachloride	ND		0.00500	1	06/19/2021 20:39	WG1691777
Chlorobenzene	ND		0.00250	1	06/19/2021 20:39	WG1691777
Chlorodibromomethane	ND		0.00250	1	06/19/2021 20:39	WG1691777
Chloroethane	ND		0.00500	1	06/19/2021 20:39	WG1691777
Chloroform	ND		0.00250	1	06/19/2021 20:39	WG1691777
Chloromethane	ND		0.0125	1	06/19/2021 20:39	WG1691777
2-Chlorotoluene	ND		0.00250	1	06/19/2021 20:39	WG1691777
4-Chlorotoluene	ND		0.00500	1	06/19/2021 20:39	WG1691777
1,2-Dibromo-3-Chloropropane	ND		0.0250	1	06/19/2021 20:39	WG1691777
1,2-Dibromoethane	ND		0.00250	1	06/19/2021 20:39	WG1691777
Dibromomethane	ND		0.00500	1	06/19/2021 20:39	WG1691777
1,2-Dichlorobenzene	ND		0.00500	1	06/19/2021 20:39	WG1691777
1,3-Dichlorobenzene	ND		0.00500	1	06/19/2021 20:39	WG1691777
1,4-Dichlorobenzene	ND		0.00500	1	06/19/2021 20:39	WG1691777
Dichlorodifluoromethane	ND		0.00250	1	06/19/2021 20:39	WG1691777
1,1-Dichloroethane	ND		0.00250	1	06/19/2021 20:39	WG1691777
1,2-Dichloroethane	ND		0.00250	1	06/19/2021 20:39	WG1691777
1,1-Dichloroethene	ND		0.00250	1	06/19/2021 20:39	WG1691777
cis-1,2-Dichloroethene	ND		0.00250	1	06/19/2021 20:39	WG1691777
trans-1,2-Dichloroethene	ND		0.00500	1	06/19/2021 20:39	WG1691777
1,2-Dichloropropane	ND		0.00500	1	06/19/2021 20:39	WG1691777
1,1-Dichloropropene	ND		0.00250	1	06/19/2021 20:39	WG1691777
1,3-Dichloropropane	ND		0.00500	1	06/19/2021 20:39	WG1691777
cis-1,3-Dichloropropene	ND		0.00250	1	06/19/2021 20:39	WG1691777
trans-1,3-Dichloropropene	ND		0.00500	1	06/19/2021 20:39	WG1691777
2,2-Dichloropropane	ND		0.00250	1	06/19/2021 20:39	WG1691777
Di-isopropyl ether	ND		0.00100	1	06/19/2021 20:39	WG1691777
Ethylbenzene	ND		0.00250	1	06/19/2021 20:39	WG1691777
Hexachloro-1,3-butadiene	ND		0.0250	1	06/19/2021 20:39	WG1691777
Isopropylbenzene	ND		0.00250	1	06/19/2021 20:39	WG1691777
p-Isopropyltoluene	ND		0.00500	1	06/19/2021 20:39	WG1691777
2-Butanone (MEK)	ND		0.100	1	06/19/2021 20:39	WG1691777
Methylene Chloride	ND		0.0250	1	06/19/2021 20:39	WG1691777
4-Methyl-2-pentanone (MIBK)	ND		0.0250	1	06/19/2021 20:39	WG1691777
Methyl tert-butyl ether	ND		0.00100	1	06/19/2021 20:39	WG1691777
Naphthalene	ND		0.0125	1	06/19/2021 20:39	WG1691777
n-Propylbenzene	ND		0.00500	1	06/19/2021 20:39	WG1691777
Styrene	ND		0.0125	1	06/19/2021 20:39	WG1691777
1,1,1,2-Tetrachloroethane	ND		0.00250	1	06/19/2021 20:39	WG1691777
1,1,2,2-Tetrachloroethane	ND		0.00250	1	06/19/2021 20:39	WG1691777
1,1,2-Trichlorotrifluoroethane	ND		0.00250	1	06/19/2021 20:39	WG1691777
Tetrachloroethene	ND		0.00250	1	06/19/2021 20:39	WG1691777
Toluene	ND		0.00500	1	06/19/2021 20:39	WG1691777
1,2,3-Trichlorobenzene	ND		0.0125	1	06/19/2021 20:39	WG1691777
1,2,4-Trichlorobenzene	ND		0.0125	1	06/19/2021 20:39	WG1691777
1,1,1-Trichloroethane	ND		0.00250	1	06/19/2021 20:39	WG1691777

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichloroethane	ND		0.00250	1	06/19/2021 20:39	WG1691777
Trichloroethene	ND		0.00100	1	06/19/2021 20:39	WG1691777
Trichlorofluoromethane	ND		0.00250	1	06/19/2021 20:39	WG1691777
1,2,3-Trichloropropane	ND		0.0125	1	06/19/2021 20:39	WG1691777
1,2,4-Trimethylbenzene	ND		0.00500	1	06/19/2021 20:39	WG1691777
1,2,3-Trimethylbenzene	ND		0.00500	1	06/19/2021 20:39	WG1691777
1,3,5-Trimethylbenzene	ND		0.00500	1	06/19/2021 20:39	WG1691777
Vinyl chloride	ND		0.00250	1	06/19/2021 20:39	WG1691777
Xylenes, Total	ND		0.00650	1	06/19/2021 20:39	WG1691777
(S) Toluene-d8	106		75.0-131		06/19/2021 20:39	WG1691777
(S) 4-Bromofluorobenzene	87.5		67.0-138		06/19/2021 20:39	WG1691777
(S) 1,2-Dichloroethane-d4	103		70.0-130		06/19/2021 20:39	WG1691777

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	5.74		4.00	1	06/22/2021 08:29	WG1692431
C28-C36 Motor Oil Range	13.6		4.00	1	06/22/2021 08:29	WG1692431
(S) o-Terphenyl	48.8		18.0-148		06/22/2021 08:29	WG1692431

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	06/21/2021 15:00	WG1691985
Acenaphthene	ND		0.00600	1	06/21/2021 15:00	WG1691985
Acenaphthylene	ND		0.00600	1	06/21/2021 15:00	WG1691985
Benzo(a)anthracene	ND		0.00600	1	06/21/2021 15:00	WG1691985
Benzo(a)pyrene	ND		0.00600	1	06/21/2021 15:00	WG1691985
Benzo(b)fluoranthene	ND		0.00600	1	06/21/2021 15:00	WG1691985
Benzo(g,h,i)perylene	ND		0.00600	1	06/21/2021 15:00	WG1691985
Benzo(k)fluoranthene	ND		0.00600	1	06/21/2021 15:00	WG1691985
Chrysene	ND		0.00600	1	06/21/2021 15:00	WG1691985
Dibenz(a,h)anthracene	ND		0.00600	1	06/21/2021 15:00	WG1691985
Fluoranthene	ND		0.00600	1	06/21/2021 15:00	WG1691985
Fluorene	ND		0.00600	1	06/21/2021 15:00	WG1691985
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	06/21/2021 15:00	WG1691985
Naphthalene	ND		0.0200	1	06/21/2021 15:00	WG1691985
Phenanthrene	ND		0.00600	1	06/21/2021 15:00	WG1691985
Pyrene	ND		0.00600	1	06/21/2021 15:00	WG1691985
1-Methylnaphthalene	ND		0.0200	1	06/21/2021 15:00	WG1691985
2-Methylnaphthalene	ND		0.0200	1	06/21/2021 15:00	WG1691985
2-Chloronaphthalene	ND		0.0200	1	06/21/2021 15:00	WG1691985
(S) p-Terphenyl-d14	99.9		23.0-120		06/21/2021 15:00	WG1691985
(S) Nitrobenzene-d5	69.6		14.0-149		06/21/2021 15:00	WG1691985
(S) 2-Fluorobiphenyl	66.2		34.0-125		06/21/2021 15:00	WG1691985

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.846		1	06/23/2021 12:50	WG1689575

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	1.19	B	1.00	1	06/22/2021 17:21	WG1692440

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.72	T8	1	06/18/2021 16:00	WG1690930

Sample Narrative:

L1366418-02 WG1690930: 8.72 at 23.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	135		10.0	1	06/17/2021 20:08	WG1690412

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	128		0.500	1	06/24/2021 17:23	WG1691026
Cadmium	ND		0.500	1	06/24/2021 17:23	WG1691026
Copper	15.8		2.00	1	06/24/2021 17:23	WG1691026
Lead	13.3		0.500	1	06/24/2021 17:23	WG1691026
Nickel	22.1		2.00	1	06/24/2021 17:23	WG1691026
Selenium	ND		2.00	1	06/24/2021 17:23	WG1691026
Silver	ND		1.00	1	06/24/2021 17:23	WG1691026
Zinc	74.1		5.00	1	06/24/2021 17:23	WG1691026

Metals (ICP) by Method 6010B-NE493 Ch 2

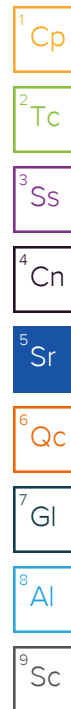
Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	ND		0.200	1	06/23/2021 14:14	WG1689573

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.81		1.00	5	06/23/2021 16:05	WG1691022

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		2.63	26.3	06/20/2021 00:44	WG1691402
(S) a,a,a-Trifluorotoluene(FID)	99.3		77.0-120		06/20/2021 00:44	WG1691402



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acetone	ND		0.0525	1.05	06/19/2021 20:59	WG1691777
Acrylonitrile	ND		0.0131	1.05	06/19/2021 20:59	WG1691777
Benzene	ND		0.00105	1.05	06/19/2021 20:59	WG1691777
Bromobenzene	ND		0.0131	1.05	06/19/2021 20:59	WG1691777
Bromodichloromethane	ND		0.00263	1.05	06/19/2021 20:59	WG1691777
Bromoform	ND		0.0263	1.05	06/19/2021 20:59	WG1691777
Bromomethane	ND		0.0131	1.05	06/19/2021 20:59	WG1691777
n-Butylbenzene	ND		0.0131	1.05	06/19/2021 20:59	WG1691777
sec-Butylbenzene	ND		0.0131	1.05	06/19/2021 20:59	WG1691777
tert-Butylbenzene	ND		0.00525	1.05	06/19/2021 20:59	WG1691777
Carbon tetrachloride	ND		0.00525	1.05	06/19/2021 20:59	WG1691777
Chlorobenzene	ND		0.00263	1.05	06/19/2021 20:59	WG1691777
Chlorodibromomethane	ND		0.00263	1.05	06/19/2021 20:59	WG1691777
Chloroethane	ND		0.00525	1.05	06/19/2021 20:59	WG1691777
Chloroform	ND		0.00263	1.05	06/19/2021 20:59	WG1691777
Chloromethane	ND		0.0131	1.05	06/19/2021 20:59	WG1691777
2-Chlorotoluene	ND		0.00263	1.05	06/19/2021 20:59	WG1691777
4-Chlorotoluene	ND		0.00525	1.05	06/19/2021 20:59	WG1691777
1,2-Dibromo-3-Chloropropane	ND		0.0263	1.05	06/19/2021 20:59	WG1691777
1,2-Dibromoethane	ND		0.00263	1.05	06/19/2021 20:59	WG1691777
Dibromomethane	ND		0.00525	1.05	06/19/2021 20:59	WG1691777
1,2-Dichlorobenzene	ND		0.00525	1.05	06/19/2021 20:59	WG1691777
1,3-Dichlorobenzene	ND		0.00525	1.05	06/19/2021 20:59	WG1691777
1,4-Dichlorobenzene	ND		0.00525	1.05	06/19/2021 20:59	WG1691777
Dichlorodifluoromethane	ND		0.00263	1.05	06/19/2021 20:59	WG1691777
1,1-Dichloroethane	ND		0.00263	1.05	06/19/2021 20:59	WG1691777
1,2-Dichloroethane	ND		0.00263	1.05	06/19/2021 20:59	WG1691777
1,1-Dichloroethene	ND		0.00263	1.05	06/19/2021 20:59	WG1691777
cis-1,2-Dichloroethene	ND		0.00263	1.05	06/19/2021 20:59	WG1691777
trans-1,2-Dichloroethene	ND		0.00525	1.05	06/19/2021 20:59	WG1691777
1,2-Dichloropropane	ND		0.00525	1.05	06/19/2021 20:59	WG1691777
1,1-Dichloropropene	ND		0.00263	1.05	06/19/2021 20:59	WG1691777
1,3-Dichloropropane	ND		0.00525	1.05	06/19/2021 20:59	WG1691777
cis-1,3-Dichloropropene	ND		0.00263	1.05	06/19/2021 20:59	WG1691777
trans-1,3-Dichloropropene	ND		0.00525	1.05	06/19/2021 20:59	WG1691777
2,2-Dichloropropane	ND		0.00263	1.05	06/19/2021 20:59	WG1691777
Di-isopropyl ether	ND		0.00105	1.05	06/19/2021 20:59	WG1691777
Ethylbenzene	ND		0.00263	1.05	06/19/2021 20:59	WG1691777
Hexachloro-1,3-butadiene	ND		0.0263	1.05	06/19/2021 20:59	WG1691777
Isopropylbenzene	ND		0.00263	1.05	06/19/2021 20:59	WG1691777
p-Isopropyltoluene	ND		0.00525	1.05	06/19/2021 20:59	WG1691777
2-Butanone (MEK)	ND		0.105	1.05	06/19/2021 20:59	WG1691777
Methylene Chloride	ND		0.0263	1.05	06/19/2021 20:59	WG1691777
4-Methyl-2-pentanone (MIBK)	ND		0.0263	1.05	06/19/2021 20:59	WG1691777
Methyl tert-butyl ether	ND		0.00105	1.05	06/19/2021 20:59	WG1691777
Naphthalene	ND		0.0131	1.05	06/19/2021 20:59	WG1691777
n-Propylbenzene	ND		0.00525	1.05	06/19/2021 20:59	WG1691777
Styrene	ND		0.0131	1.05	06/19/2021 20:59	WG1691777
1,1,1,2-Tetrachloroethane	ND		0.00263	1.05	06/19/2021 20:59	WG1691777
1,1,2,2-Tetrachloroethane	ND		0.00263	1.05	06/19/2021 20:59	WG1691777
1,1,2-Trichlorotrifluoroethane	ND		0.00263	1.05	06/19/2021 20:59	WG1691777
Tetrachloroethene	ND		0.00263	1.05	06/19/2021 20:59	WG1691777
Toluene	ND		0.00525	1.05	06/19/2021 20:59	WG1691777
1,2,3-Trichlorobenzene	ND		0.0131	1.05	06/19/2021 20:59	WG1691777
1,2,4-Trichlorobenzene	ND		0.0131	1.05	06/19/2021 20:59	WG1691777
1,1,1-Trichloroethane	ND		0.00263	1.05	06/19/2021 20:59	WG1691777

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichloroethane	ND		0.00263	1.05	06/19/2021 20:59	WG1691777
Trichloroethene	ND		0.00105	1.05	06/19/2021 20:59	WG1691777
Trichlorofluoromethane	ND		0.00263	1.05	06/19/2021 20:59	WG1691777
1,2,3-Trichloropropane	ND		0.0131	1.05	06/19/2021 20:59	WG1691777
1,2,4-Trimethylbenzene	ND		0.00525	1.05	06/19/2021 20:59	WG1691777
1,2,3-Trimethylbenzene	ND		0.00525	1.05	06/19/2021 20:59	WG1691777
1,3,5-Trimethylbenzene	ND		0.00525	1.05	06/19/2021 20:59	WG1691777
Vinyl chloride	ND		0.00263	1.05	06/19/2021 20:59	WG1691777
Xylenes, Total	ND		0.00683	1.05	06/19/2021 20:59	WG1691777
(S) Toluene-d8	104		75.0-131		06/19/2021 20:59	WG1691777
(S) 4-Bromofluorobenzene	85.3		67.0-138		06/19/2021 20:59	WG1691777
(S) 1,2-Dichloroethane-d4	102		70.0-130		06/19/2021 20:59	WG1691777

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.00	1	06/22/2021 08:42	WG1692431
C28-C36 Motor Oil Range	ND		4.00	1	06/22/2021 08:42	WG1692431
(S) o-Terphenyl	39.7		18.0-148		06/22/2021 08:42	WG1692431

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	06/21/2021 15:17	WG1691985
Acenaphthene	ND		0.00600	1	06/21/2021 15:17	WG1691985
Acenaphthylene	ND		0.00600	1	06/21/2021 15:17	WG1691985
Benzo(a)anthracene	ND		0.00600	1	06/21/2021 15:17	WG1691985
Benzo(a)pyrene	ND		0.00600	1	06/21/2021 15:17	WG1691985
Benzo(b)fluoranthene	ND		0.00600	1	06/21/2021 15:17	WG1691985
Benzo(g,h,i)perylene	ND		0.00600	1	06/21/2021 15:17	WG1691985
Benzo(k)fluoranthene	ND		0.00600	1	06/21/2021 15:17	WG1691985
Chrysene	ND		0.00600	1	06/21/2021 15:17	WG1691985
Dibenz(a,h)anthracene	ND		0.00600	1	06/21/2021 15:17	WG1691985
Fluoranthene	ND		0.00600	1	06/21/2021 15:17	WG1691985
Fluorene	ND		0.00600	1	06/21/2021 15:17	WG1691985
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	06/21/2021 15:17	WG1691985
Naphthalene	ND		0.0200	1	06/21/2021 15:17	WG1691985
Phenanthrene	ND		0.00600	1	06/21/2021 15:17	WG1691985
Pyrene	ND		0.00600	1	06/21/2021 15:17	WG1691985
1-Methylnaphthalene	ND		0.0200	1	06/21/2021 15:17	WG1691985
2-Methylnaphthalene	ND		0.0200	1	06/21/2021 15:17	WG1691985
2-Chloronaphthalene	ND		0.0200	1	06/21/2021 15:17	WG1691985
(S) p-Terphenyl-d14	97.6		23.0-120		06/21/2021 15:17	WG1691985
(S) Nitrobenzene-d5	54.6		14.0-149		06/21/2021 15:17	WG1691985
(S) 2-Fluorobiphenyl	64.9		34.0-125		06/21/2021 15:17	WG1691985

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.20		1	06/23/2021 12:53	WG1689575

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	1.05	B	1.00	1	06/22/2021 17:26	WG1692440

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.65	T8	1	06/18/2021 16:00	WG1690930

Sample Narrative:

L1366418-03 WG1690930: 8.65 at 23.8C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	146		10.0	1	06/17/2021 20:08	WG1690412

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	96.4		0.500	1	06/24/2021 17:26	WG1691026
Cadmium	ND		0.500	1	06/24/2021 17:26	WG1691026
Copper	11.3		2.00	1	06/24/2021 17:26	WG1691026
Lead	12.1		0.500	1	06/24/2021 17:26	WG1691026
Nickel	19.4		2.00	1	06/24/2021 17:26	WG1691026
Selenium	ND		2.00	1	06/24/2021 17:26	WG1691026
Silver	ND		1.00	1	06/24/2021 17:26	WG1691026
Zinc	47.4		5.00	1	06/24/2021 17:26	WG1691026

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	ND		0.200	1	06/23/2021 14:17	WG1689573

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	6.42		1.00	5	06/23/2021 16:09	WG1691022

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		2.50	25	06/20/2021 01:08	WG1691402
(S) a,a,a-Trifluorotoluene(FID)	99.5		77.0-120		06/20/2021 01:08	WG1691402

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acetone	ND		0.0500	1	06/21/2021 01:51	WG1692201
Acrylonitrile	ND		0.0125	1	06/21/2021 01:51	WG1692201
Benzene	ND		0.00100	1	06/21/2021 01:51	WG1692201
Bromobenzene	ND		0.0125	1	06/21/2021 01:51	WG1692201
Bromodichloromethane	ND		0.00250	1	06/21/2021 01:51	WG1692201
Bromoform	ND		0.0250	1	06/21/2021 01:51	WG1692201
Bromomethane	ND		0.0125	1	06/21/2021 01:51	WG1692201
n-Butylbenzene	ND		0.0125	1	06/21/2021 01:51	WG1692201
sec-Butylbenzene	ND		0.0125	1	06/21/2021 01:51	WG1692201
tert-Butylbenzene	ND		0.00500	1	06/21/2021 01:51	WG1692201
Carbon tetrachloride	ND		0.00500	1	06/21/2021 01:51	WG1692201
Chlorobenzene	ND		0.00250	1	06/21/2021 01:51	WG1692201
Chlorodibromomethane	ND		0.00250	1	06/21/2021 01:51	WG1692201
Chloroethane	ND		0.00500	1	06/21/2021 01:51	WG1692201
Chloroform	ND		0.00250	1	06/21/2021 01:51	WG1692201
Chloromethane	ND		0.0125	1	06/21/2021 01:51	WG1692201
2-Chlorotoluene	ND		0.00250	1	06/21/2021 01:51	WG1692201
4-Chlorotoluene	ND		0.00500	1	06/21/2021 01:51	WG1692201
1,2-Dibromo-3-Chloropropane	ND		0.0250	1	06/21/2021 01:51	WG1692201
1,2-Dibromoethane	ND		0.00250	1	06/21/2021 01:51	WG1692201
Dibromomethane	ND		0.00500	1	06/21/2021 01:51	WG1692201
1,2-Dichlorobenzene	ND		0.00500	1	06/21/2021 01:51	WG1692201
1,3-Dichlorobenzene	ND		0.00500	1	06/21/2021 01:51	WG1692201
1,4-Dichlorobenzene	ND		0.00500	1	06/21/2021 01:51	WG1692201
Dichlorodifluoromethane	ND		0.00250	1	06/21/2021 01:51	WG1692201
1,1-Dichloroethane	ND		0.00250	1	06/21/2021 01:51	WG1692201
1,2-Dichloroethane	ND		0.00250	1	06/21/2021 01:51	WG1692201
1,1-Dichloroethene	ND		0.00250	1	06/21/2021 01:51	WG1692201
cis-1,2-Dichloroethene	ND		0.00250	1	06/21/2021 01:51	WG1692201
trans-1,2-Dichloroethene	ND		0.00500	1	06/21/2021 01:51	WG1692201
1,2-Dichloropropane	ND		0.00500	1	06/21/2021 01:51	WG1692201
1,1-Dichloropropene	ND		0.00250	1	06/21/2021 01:51	WG1692201
1,3-Dichloropropane	ND		0.00500	1	06/21/2021 01:51	WG1692201
cis-1,3-Dichloropropene	ND		0.00250	1	06/21/2021 01:51	WG1692201
trans-1,3-Dichloropropene	ND		0.00500	1	06/21/2021 01:51	WG1692201
2,2-Dichloropropane	ND		0.00250	1	06/21/2021 01:51	WG1692201
Di-isopropyl ether	ND		0.00100	1	06/21/2021 01:51	WG1692201
Ethylbenzene	ND		0.00250	1	06/21/2021 01:51	WG1692201
Hexachloro-1,3-butadiene	ND		0.0250	1	06/21/2021 01:51	WG1692201
Isopropylbenzene	ND		0.00250	1	06/21/2021 01:51	WG1692201
p-Isopropyltoluene	ND		0.00500	1	06/21/2021 01:51	WG1692201
2-Butanone (MEK)	ND		0.100	1	06/21/2021 01:51	WG1692201
Methylene Chloride	ND		0.0250	1	06/21/2021 01:51	WG1692201
4-Methyl-2-pentanone (MIBK)	ND		0.0250	1	06/21/2021 01:51	WG1692201
Methyl tert-butyl ether	ND		0.00100	1	06/21/2021 01:51	WG1692201
Naphthalene	ND		0.0125	1	06/21/2021 01:51	WG1692201
n-Propylbenzene	ND		0.00500	1	06/21/2021 01:51	WG1692201
Styrene	ND		0.0125	1	06/21/2021 01:51	WG1692201
1,1,1,2-Tetrachloroethane	ND		0.00250	1	06/21/2021 01:51	WG1692201
1,1,2,2-Tetrachloroethane	ND		0.00250	1	06/21/2021 01:51	WG1692201
1,1,2-Trichlorotrifluoroethane	ND		0.00250	1	06/21/2021 01:51	WG1692201
Tetrachloroethene	ND		0.00250	1	06/21/2021 01:51	WG1692201
Toluene	ND		0.00500	1	06/21/2021 01:51	WG1692201
1,2,3-Trichlorobenzene	ND		0.0125	1	06/21/2021 01:51	WG1692201
1,2,4-Trichlorobenzene	ND		0.0125	1	06/21/2021 01:51	WG1692201
1,1,1-Trichloroethane	ND		0.00250	1	06/21/2021 01:51	WG1692201

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260B

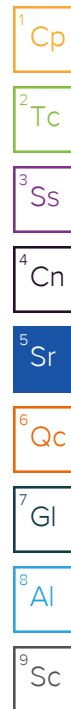
Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichloroethane	ND		0.00250	1	06/21/2021 01:51	WG1692201
Trichloroethene	ND		0.00100	1	06/21/2021 01:51	WG1692201
Trichlorofluoromethane	ND		0.00250	1	06/21/2021 01:51	WG1692201
1,2,3-Trichloropropane	ND		0.0125	1	06/21/2021 01:51	WG1692201
1,2,4-Trimethylbenzene	ND		0.00500	1	06/21/2021 01:51	WG1692201
1,2,3-Trimethylbenzene	ND		0.00500	1	06/21/2021 01:51	WG1692201
1,3,5-Trimethylbenzene	ND		0.00500	1	06/21/2021 01:51	WG1692201
Vinyl chloride	ND		0.00250	1	06/21/2021 01:51	WG1692201
Xylenes, Total	ND		0.00650	1	06/21/2021 01:51	WG1692201
(S) Toluene-d8	105		75.0-131		06/21/2021 01:51	WG1692201
(S) 4-Bromofluorobenzene	98.9		67.0-138		06/21/2021 01:51	WG1692201
(S) 1,2-Dichloroethane-d4	83.1		70.0-130		06/21/2021 01:51	WG1692201

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.00	1	06/22/2021 08:55	WG1692431
C28-C36 Motor Oil Range	ND		4.00	1	06/22/2021 08:55	WG1692431
(S) o-Terphenyl	51.5		18.0-148		06/22/2021 08:55	WG1692431

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	06/21/2021 15:35	WG1691985
Acenaphthene	ND		0.00600	1	06/21/2021 15:35	WG1691985
Acenaphthylene	ND		0.00600	1	06/21/2021 15:35	WG1691985
Benzo(a)anthracene	ND		0.00600	1	06/21/2021 15:35	WG1691985
Benzo(a)pyrene	ND		0.00600	1	06/21/2021 15:35	WG1691985
Benzo(b)fluoranthene	ND		0.00600	1	06/21/2021 15:35	WG1691985
Benzo(g,h,i)perylene	ND		0.00600	1	06/21/2021 15:35	WG1691985
Benzo(k)fluoranthene	ND		0.00600	1	06/21/2021 15:35	WG1691985
Chrysene	ND		0.00600	1	06/21/2021 15:35	WG1691985
Dibenz(a,h)anthracene	ND		0.00600	1	06/21/2021 15:35	WG1691985
Fluoranthene	ND		0.00600	1	06/21/2021 15:35	WG1691985
Fluorene	ND		0.00600	1	06/21/2021 15:35	WG1691985
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	06/21/2021 15:35	WG1691985
Naphthalene	ND		0.0200	1	06/21/2021 15:35	WG1691985
Phenanthrene	ND		0.00600	1	06/21/2021 15:35	WG1691985
Pyrene	ND		0.00600	1	06/21/2021 15:35	WG1691985
1-Methylnaphthalene	ND		0.0200	1	06/21/2021 15:35	WG1691985
2-Methylnaphthalene	ND		0.0200	1	06/21/2021 15:35	WG1691985
2-Chloronaphthalene	ND		0.0200	1	06/21/2021 15:35	WG1691985
(S) p-Terphenyl-d14	107		23.0-120		06/21/2021 15:35	WG1691985
(S) Nitrobenzene-d5	48.5		14.0-149		06/21/2021 15:35	WG1691985
(S) 2-Fluorobiphenyl	63.4		34.0-125		06/21/2021 15:35	WG1691985



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.951		1	06/23/2021 12:56	WG1689575

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	1.95	B	1.00	1	06/22/2021 17:31	WG1692440

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.65	T8	1	06/18/2021 16:00	WG1690930

Sample Narrative:

L1366418-04 WG1690930: 8.65 at 24.1C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	198		10.0	1	06/17/2021 20:08	WG1690412

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	127		0.500	1	06/24/2021 17:30	WG1691026
Cadmium	ND		0.500	1	06/24/2021 17:30	WG1691026
Copper	14.2		2.00	1	06/24/2021 17:30	WG1691026
Lead	18.3		0.500	1	06/24/2021 17:30	WG1691026
Nickel	20.5		2.00	1	06/24/2021 17:30	WG1691026
Selenium	ND		2.00	1	06/24/2021 17:30	WG1691026
Silver	ND		1.00	1	06/24/2021 17:30	WG1691026
Zinc	49.2		5.00	1	06/24/2021 17:30	WG1691026

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	ND		0.200	1	06/23/2021 14:20	WG1689573

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	12.0		1.00	5	06/23/2021 16:12	WG1691022

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		2.75	27.5	06/20/2021 01:32	WG1691402
(S) a,a,a-Trifluorotoluene(FID)	99.0		77.0-120		06/20/2021 01:32	WG1691402

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acetone	ND		0.0550	1.1	06/21/2021 01:32	WG1692201
Acrylonitrile	ND		0.0138	1.1	06/21/2021 01:32	WG1692201
Benzene	ND		0.00110	1.1	06/21/2021 01:32	WG1692201
Bromobenzene	ND		0.0138	1.1	06/21/2021 01:32	WG1692201
Bromodichloromethane	ND		0.00275	1.1	06/21/2021 01:32	WG1692201
Bromoform	ND		0.0275	1.1	06/21/2021 01:32	WG1692201
Bromomethane	ND		0.0138	1.1	06/21/2021 01:32	WG1692201
n-Butylbenzene	ND		0.0138	1.1	06/21/2021 01:32	WG1692201
sec-Butylbenzene	ND		0.0138	1.1	06/21/2021 01:32	WG1692201
tert-Butylbenzene	ND		0.00550	1.1	06/21/2021 01:32	WG1692201
Carbon tetrachloride	ND		0.00550	1.1	06/21/2021 01:32	WG1692201
Chlorobenzene	ND		0.00275	1.1	06/21/2021 01:32	WG1692201
Chlorodibromomethane	ND		0.00275	1.1	06/21/2021 01:32	WG1692201
Chloroethane	ND		0.00550	1.1	06/21/2021 01:32	WG1692201
Chloroform	ND		0.00275	1.1	06/21/2021 01:32	WG1692201
Chloromethane	ND		0.0138	1.1	06/21/2021 01:32	WG1692201
2-Chlorotoluene	ND		0.00275	1.1	06/21/2021 01:32	WG1692201
4-Chlorotoluene	ND		0.00550	1.1	06/21/2021 01:32	WG1692201
1,2-Dibromo-3-Chloropropane	ND		0.0275	1.1	06/21/2021 01:32	WG1692201
1,2-Dibromoethane	ND		0.00275	1.1	06/21/2021 01:32	WG1692201
Dibromomethane	ND		0.00550	1.1	06/21/2021 01:32	WG1692201
1,2-Dichlorobenzene	ND		0.00550	1.1	06/21/2021 01:32	WG1692201
1,3-Dichlorobenzene	ND		0.00550	1.1	06/21/2021 01:32	WG1692201
1,4-Dichlorobenzene	ND		0.00550	1.1	06/21/2021 01:32	WG1692201
Dichlorodifluoromethane	ND		0.00275	1.1	06/21/2021 01:32	WG1692201
1,1-Dichloroethane	ND		0.00275	1.1	06/21/2021 01:32	WG1692201
1,2-Dichloroethane	ND		0.00275	1.1	06/21/2021 01:32	WG1692201
1,1-Dichloroethene	ND		0.00275	1.1	06/21/2021 01:32	WG1692201
cis-1,2-Dichloroethene	ND		0.00275	1.1	06/21/2021 01:32	WG1692201
trans-1,2-Dichloroethene	ND		0.00550	1.1	06/21/2021 01:32	WG1692201
1,2-Dichloropropane	ND		0.00550	1.1	06/21/2021 01:32	WG1692201
1,1-Dichloropropene	ND		0.00275	1.1	06/21/2021 01:32	WG1692201
1,3-Dichloropropane	ND		0.00550	1.1	06/21/2021 01:32	WG1692201
cis-1,3-Dichloropropene	ND		0.00275	1.1	06/21/2021 01:32	WG1692201
trans-1,3-Dichloropropene	ND		0.00550	1.1	06/21/2021 01:32	WG1692201
2,2-Dichloropropane	ND		0.00275	1.1	06/21/2021 01:32	WG1692201
Di-isopropyl ether	ND		0.00110	1.1	06/21/2021 01:32	WG1692201
Ethylbenzene	ND		0.00275	1.1	06/21/2021 01:32	WG1692201
Hexachloro-1,3-butadiene	ND		0.0275	1.1	06/21/2021 01:32	WG1692201
Isopropylbenzene	ND		0.00275	1.1	06/21/2021 01:32	WG1692201
p-Isopropyltoluene	ND		0.00550	1.1	06/21/2021 01:32	WG1692201
2-Butanone (MEK)	ND		0.110	1.1	06/21/2021 01:32	WG1692201
Methylene Chloride	ND		0.0275	1.1	06/21/2021 01:32	WG1692201
4-Methyl-2-pentanone (MIBK)	ND		0.0275	1.1	06/21/2021 01:32	WG1692201
Methyl tert-butyl ether	ND		0.00110	1.1	06/21/2021 01:32	WG1692201
Naphthalene	ND		0.0138	1.1	06/21/2021 01:32	WG1692201
n-Propylbenzene	ND		0.00550	1.1	06/21/2021 01:32	WG1692201
Styrene	ND		0.0138	1.1	06/21/2021 01:32	WG1692201
1,1,1,2-Tetrachloroethane	ND		0.00275	1.1	06/21/2021 01:32	WG1692201
1,1,2,2-Tetrachloroethane	ND		0.00275	1.1	06/21/2021 01:32	WG1692201
1,1,2-Trichlorotrifluoroethane	ND		0.00275	1.1	06/21/2021 01:32	WG1692201
Tetrachloroethene	ND		0.00275	1.1	06/21/2021 01:32	WG1692201
Toluene	ND		0.00550	1.1	06/21/2021 01:32	WG1692201
1,2,3-Trichlorobenzene	ND		0.0138	1.1	06/21/2021 01:32	WG1692201
1,2,4-Trichlorobenzene	ND		0.0138	1.1	06/21/2021 01:32	WG1692201
1,1,1-Trichloroethane	ND		0.00275	1.1	06/21/2021 01:32	WG1692201

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichloroethane	ND		0.00275	1.1	06/21/2021 01:32	WG1692201
Trichloroethene	ND		0.00110	1.1	06/21/2021 01:32	WG1692201
Trichlorofluoromethane	ND		0.00275	1.1	06/21/2021 01:32	WG1692201
1,2,3-Trichloropropane	ND		0.0138	1.1	06/21/2021 01:32	WG1692201
1,2,4-Trimethylbenzene	ND		0.00550	1.1	06/21/2021 01:32	WG1692201
1,2,3-Trimethylbenzene	ND		0.00550	1.1	06/21/2021 01:32	WG1692201
1,3,5-Trimethylbenzene	ND		0.00550	1.1	06/21/2021 01:32	WG1692201
Vinyl chloride	ND		0.00275	1.1	06/21/2021 01:32	WG1692201
Xylenes, Total	ND		0.00715	1.1	06/21/2021 01:32	WG1692201
(S) Toluene-d8	109		75.0-131		06/21/2021 01:32	WG1692201
(S) 4-Bromofluorobenzene	99.5		67.0-138		06/21/2021 01:32	WG1692201
(S) 1,2-Dichloroethane-d4	87.3		70.0-130		06/21/2021 01:32	WG1692201

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.00	1	06/22/2021 09:09	WG1692431
C28-C36 Motor Oil Range	5.58		4.00	1	06/22/2021 09:09	WG1692431
(S) o-Terphenyl	47.7		18.0-148		06/22/2021 09:09	WG1692431

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	06/21/2021 15:52	WG1691985
Acenaphthene	ND		0.00600	1	06/21/2021 15:52	WG1691985
Acenaphthylene	ND		0.00600	1	06/21/2021 15:52	WG1691985
Benzo(a)anthracene	ND		0.00600	1	06/21/2021 15:52	WG1691985
Benzo(a)pyrene	ND		0.00600	1	06/21/2021 15:52	WG1691985
Benzo(b)fluoranthene	ND		0.00600	1	06/21/2021 15:52	WG1691985
Benzo(g,h,i)perylene	ND		0.00600	1	06/21/2021 15:52	WG1691985
Benzo(k)fluoranthene	ND		0.00600	1	06/21/2021 15:52	WG1691985
Chrysene	ND		0.00600	1	06/21/2021 15:52	WG1691985
Dibenz(a,h)anthracene	ND		0.00600	1	06/21/2021 15:52	WG1691985
Fluoranthene	ND		0.00600	1	06/21/2021 15:52	WG1691985
Fluorene	ND		0.00600	1	06/21/2021 15:52	WG1691985
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	06/21/2021 15:52	WG1691985
Naphthalene	ND		0.0200	1	06/21/2021 15:52	WG1691985
Phenanthrene	ND		0.00600	1	06/21/2021 15:52	WG1691985
Pyrene	ND		0.00600	1	06/21/2021 15:52	WG1691985
1-Methylnaphthalene	ND		0.0200	1	06/21/2021 15:52	WG1691985
2-Methylnaphthalene	ND		0.0200	1	06/21/2021 15:52	WG1691985
2-Chloronaphthalene	ND		0.0200	1	06/21/2021 15:52	WG1691985
(S) p-Terphenyl-d14	121	J1	23.0-120		06/21/2021 15:52	WG1691985
(S) Nitrobenzene-d5	71.8		14.0-149		06/21/2021 15:52	WG1691985
(S) 2-Fluorobiphenyl	71.6		34.0-125		06/21/2021 15:52	WG1691985

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.45		1	06/23/2021 13:04	WG1689575

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	1.40	B	1.00	1	06/22/2021 17:47	WG1692440

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.61	T8	1	06/18/2021 16:00	WG1690930

Sample Narrative:

L1366418-05 WG1690930: 8.61 at 23.6C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	209		10.0	1	06/17/2021 20:08	WG1690412

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	158		0.500	1	06/24/2021 17:33	WG1691026
Cadmium	ND		0.500	1	06/24/2021 17:33	WG1691026
Copper	16.1		2.00	1	06/24/2021 17:33	WG1691026
Lead	12.6		0.500	1	06/24/2021 17:33	WG1691026
Nickel	24.1		2.00	1	06/24/2021 17:33	WG1691026
Selenium	ND		2.00	1	06/24/2021 17:33	WG1691026
Silver	ND		1.00	1	06/24/2021 17:33	WG1691026
Zinc	55.7		5.00	1	06/24/2021 17:33	WG1691026

Metals (ICP) by Method 6010B-NE493 Ch 2

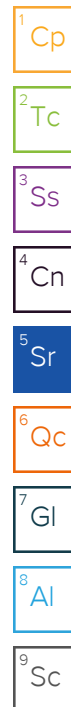
Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	ND		0.200	1	06/23/2021 13:13	WG1689573

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	20.2		1.00	5	06/23/2021 16:15	WG1691022

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		2.60	26	06/20/2021 10:41	WG1691796
(S) a,a,a-Trifluorotoluene(FID)	101		77.0-120		06/20/2021 10:41	WG1691796



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acetone	ND		0.0520	1.04	06/21/2021 02:10	WG1692201
Acrylonitrile	ND		0.0130	1.04	06/21/2021 02:10	WG1692201
Benzene	ND		0.00104	1.04	06/21/2021 02:10	WG1692201
Bromobenzene	ND		0.0130	1.04	06/21/2021 02:10	WG1692201
Bromodichloromethane	ND		0.00260	1.04	06/21/2021 02:10	WG1692201
Bromoform	ND		0.0260	1.04	06/21/2021 02:10	WG1692201
Bromomethane	ND		0.0130	1.04	06/21/2021 02:10	WG1692201
n-Butylbenzene	ND		0.0130	1.04	06/21/2021 02:10	WG1692201
sec-Butylbenzene	ND		0.0130	1.04	06/21/2021 02:10	WG1692201
tert-Butylbenzene	ND		0.00520	1.04	06/21/2021 02:10	WG1692201
Carbon tetrachloride	ND		0.00520	1.04	06/21/2021 02:10	WG1692201
Chlorobenzene	ND		0.00260	1.04	06/21/2021 02:10	WG1692201
Chlorodibromomethane	ND		0.00260	1.04	06/21/2021 02:10	WG1692201
Chloroethane	ND		0.00520	1.04	06/21/2021 02:10	WG1692201
Chloroform	ND		0.00260	1.04	06/21/2021 02:10	WG1692201
Chloromethane	ND		0.0130	1.04	06/21/2021 02:10	WG1692201
2-Chlorotoluene	ND		0.00260	1.04	06/21/2021 02:10	WG1692201
4-Chlorotoluene	ND		0.00520	1.04	06/21/2021 02:10	WG1692201
1,2-Dibromo-3-Chloropropane	ND		0.0260	1.04	06/21/2021 02:10	WG1692201
1,2-Dibromoethane	ND		0.00260	1.04	06/21/2021 02:10	WG1692201
Dibromomethane	ND		0.00520	1.04	06/21/2021 02:10	WG1692201
1,2-Dichlorobenzene	ND		0.00520	1.04	06/21/2021 02:10	WG1692201
1,3-Dichlorobenzene	ND		0.00520	1.04	06/21/2021 02:10	WG1692201
1,4-Dichlorobenzene	ND		0.00520	1.04	06/21/2021 02:10	WG1692201
Dichlorodifluoromethane	ND		0.00260	1.04	06/21/2021 02:10	WG1692201
1,1-Dichloroethane	ND		0.00260	1.04	06/21/2021 02:10	WG1692201
1,2-Dichloroethane	ND		0.00260	1.04	06/21/2021 02:10	WG1692201
1,1-Dichloroethene	ND		0.00260	1.04	06/21/2021 02:10	WG1692201
cis-1,2-Dichloroethene	ND		0.00260	1.04	06/21/2021 02:10	WG1692201
trans-1,2-Dichloroethene	ND		0.00520	1.04	06/21/2021 02:10	WG1692201
1,2-Dichloropropane	ND		0.00520	1.04	06/21/2021 02:10	WG1692201
1,1-Dichloropropene	ND		0.00260	1.04	06/21/2021 02:10	WG1692201
1,3-Dichloropropane	ND		0.00520	1.04	06/21/2021 02:10	WG1692201
cis-1,3-Dichloropropene	ND		0.00260	1.04	06/21/2021 02:10	WG1692201
trans-1,3-Dichloropropene	ND		0.00520	1.04	06/21/2021 02:10	WG1692201
2,2-Dichloropropane	ND		0.00260	1.04	06/21/2021 02:10	WG1692201
Di-isopropyl ether	ND		0.00104	1.04	06/21/2021 02:10	WG1692201
Ethylbenzene	ND		0.00260	1.04	06/21/2021 02:10	WG1692201
Hexachloro-1,3-butadiene	ND		0.0260	1.04	06/21/2021 02:10	WG1692201
Isopropylbenzene	ND		0.00260	1.04	06/21/2021 02:10	WG1692201
p-Isopropyltoluene	ND		0.00520	1.04	06/21/2021 02:10	WG1692201
2-Butanone (MEK)	ND		0.104	1.04	06/21/2021 02:10	WG1692201
Methylene Chloride	ND		0.0260	1.04	06/21/2021 02:10	WG1692201
4-Methyl-2-pentanone (MIBK)	ND		0.0260	1.04	06/21/2021 02:10	WG1692201
Methyl tert-butyl ether	ND		0.00104	1.04	06/21/2021 02:10	WG1692201
Naphthalene	ND		0.0130	1.04	06/21/2021 02:10	WG1692201
n-Propylbenzene	ND		0.00520	1.04	06/21/2021 02:10	WG1692201
Styrene	ND		0.0130	1.04	06/21/2021 02:10	WG1692201
1,1,1,2-Tetrachloroethane	ND		0.00260	1.04	06/21/2021 02:10	WG1692201
1,1,2,2-Tetrachloroethane	ND		0.00260	1.04	06/21/2021 02:10	WG1692201
1,1,2-Trichlorotrifluoroethane	ND		0.00260	1.04	06/21/2021 02:10	WG1692201
Tetrachloroethene	ND		0.00260	1.04	06/21/2021 02:10	WG1692201
Toluene	ND		0.00520	1.04	06/21/2021 02:10	WG1692201
1,2,3-Trichlorobenzene	ND		0.0130	1.04	06/21/2021 02:10	WG1692201
1,2,4-Trichlorobenzene	ND		0.0130	1.04	06/21/2021 02:10	WG1692201
1,1,1-Trichloroethane	ND		0.00260	1.04	06/21/2021 02:10	WG1692201

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260B

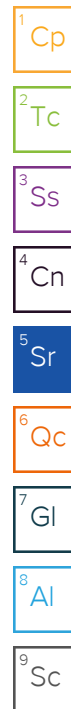
Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichloroethane	ND		0.00260	1.04	06/21/2021 02:10	WG1692201
Trichloroethene	ND		0.00104	1.04	06/21/2021 02:10	WG1692201
Trichlorofluoromethane	ND		0.00260	1.04	06/21/2021 02:10	WG1692201
1,2,3-Trichloropropane	ND		0.0130	1.04	06/21/2021 02:10	WG1692201
1,2,4-Trimethylbenzene	ND		0.00520	1.04	06/21/2021 02:10	WG1692201
1,2,3-Trimethylbenzene	ND		0.00520	1.04	06/21/2021 02:10	WG1692201
1,3,5-Trimethylbenzene	ND		0.00520	1.04	06/21/2021 02:10	WG1692201
Vinyl chloride	ND		0.00260	1.04	06/21/2021 02:10	WG1692201
Xylenes, Total	ND		0.00676	1.04	06/21/2021 02:10	WG1692201
(S) Toluene-d8	106		75.0-131		06/21/2021 02:10	WG1692201
(S) 4-Bromofluorobenzene	99.8		67.0-138		06/21/2021 02:10	WG1692201
(S) 1,2-Dichloroethane-d4	89.0		70.0-130		06/21/2021 02:10	WG1692201

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	4.75		4.00	1	06/22/2021 09:22	WG1692431
C28-C36 Motor Oil Range	11.5		4.00	1	06/22/2021 09:22	WG1692431
(S) o-Terphenyl	26.8		18.0-148		06/22/2021 09:22	WG1692431

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	06/21/2021 16:10	WG1691985
Acenaphthene	ND		0.00600	1	06/21/2021 16:10	WG1691985
Acenaphthylene	ND		0.00600	1	06/21/2021 16:10	WG1691985
Benzo(a)anthracene	ND		0.00600	1	06/21/2021 16:10	WG1691985
Benzo(a)pyrene	ND		0.00600	1	06/21/2021 16:10	WG1691985
Benzo(b)fluoranthene	ND		0.00600	1	06/21/2021 16:10	WG1691985
Benzo(g,h,i)perylene	ND		0.00600	1	06/21/2021 16:10	WG1691985
Benzo(k)fluoranthene	ND		0.00600	1	06/21/2021 16:10	WG1691985
Chrysene	ND		0.00600	1	06/21/2021 16:10	WG1691985
Dibenz(a,h)anthracene	ND		0.00600	1	06/21/2021 16:10	WG1691985
Fluoranthene	ND		0.00600	1	06/21/2021 16:10	WG1691985
Fluorene	ND		0.00600	1	06/21/2021 16:10	WG1691985
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	06/21/2021 16:10	WG1691985
Naphthalene	ND		0.0200	1	06/21/2021 16:10	WG1691985
Phenanthrene	ND		0.00600	1	06/21/2021 16:10	WG1691985
Pyrene	ND		0.00600	1	06/21/2021 16:10	WG1691985
1-Methylnaphthalene	ND		0.0200	1	06/21/2021 16:10	WG1691985
2-Methylnaphthalene	ND		0.0200	1	06/21/2021 16:10	WG1691985
2-Chloronaphthalene	ND		0.0200	1	06/21/2021 16:10	WG1691985
(S) p-Terphenyl-d14	94.6		23.0-120		06/21/2021 16:10	WG1691985
(S) Nitrobenzene-d5	60.5		14.0-149		06/21/2021 16:10	WG1691985
(S) 2-Fluorobiphenyl	69.0		34.0-125		06/21/2021 16:10	WG1691985



Method Blank (MB)

(MB) R3671199-1 06/22/21 11:32

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Hexavalent Chromium	0.484	⬇	0.255	1.00

Laboratory Control Sample (LCS)

(LCS) R3671199-2 06/22/21 11:37

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Hexavalent Chromium	10.0	10.6	106	80.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1366319-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1366319-09 06/18/21 16:00 • (DUP) R3669233-2 06/18/21 16:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.26	7.27	1	0.138		1

Sample Narrative:

OS: 7.26 at 24.8C

DUP: 7.27 at 24.8C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1366545-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1366545-01 06/18/21 16:00 • (DUP) R3669233-3 06/18/21 16:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.21	8.21	1	0.000		1

Sample Narrative:

OS: 8.21 at 24C

DUP: 8.21 at 24.1C

Laboratory Control Sample (LCS)

(LCS) R3669233-1 06/18/21 16:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:

LCS: 10.04 at 24.2C

Method Blank (MB)

(MB) R3668771-1 06/17/21 20:08

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1366412-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1366412-02 06/17/21 20:08 • (DUP) R3668771-3 06/17/21 20:08

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	92.5	95.4	1	3.09		20

L1367002-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1367002-02 06/17/21 20:08 • (DUP) R3668771-4 06/17/21 20:08

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	274	255	1	7.17		20

Laboratory Control Sample (LCS)

(LCS) R3668771-2 06/17/21 20:08

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	274	102	85.0-115	

Method Blank (MB)

(MB) R3671797-1 06/24/21 16:45

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Barium	U		0.0852	0.500
Cadmium	U		0.0471	0.500
Copper	U		0.400	2.00
Lead	U		0.208	0.500
Nickel	U		0.132	2.00
Selenium	U		0.764	2.00
Silver	U		0.127	1.00
Zinc	U		0.832	5.00

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3671797-2 06/24/21 16:48

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	98.9	98.9	80.0-120	
Cadmium	100	94.9	94.9	80.0-120	
Copper	100	95.6	95.6	80.0-120	
Lead	100	95.9	95.9	80.0-120	
Nickel	100	98.1	98.1	80.0-120	
Selenium	100	97.3	97.3	80.0-120	
Silver	20.0	17.4	87.0	80.0-120	
Zinc	100	96.5	96.5	80.0-120	

L1366954-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1366954-03 06/24/21 16:51 • (MS) R3671797-5 06/24/21 16:59 • (MSD) R3671797-6 06/24/21 17:03

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium	100	193	328	328	136	135	1	75.0-125	J5	J5	0.284	20
Cadmium	100	ND	93.1	89.1	92.8	88.8	1	75.0-125			4.44	20
Copper	100	13.3	110	107	97.0	93.6	1	75.0-125			3.08	20
Lead	100	10.6	109	106	98.0	95.9	1	75.0-125			1.95	20
Nickel	100	18.8	123	120	104	101	1	75.0-125			2.46	20
Selenium	100	ND	96.0	93.4	94.3	91.7	1	75.0-125			2.70	20
Silver	20.0	ND	16.5	15.7	82.7	78.6	1	75.0-125			5.14	20
Zinc	100	48.6	148	144	99.0	95.8	1	75.0-125			2.13	20

Method Blank (MB)

(MB) R3671005-1 06/23/21 13:55

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Hot Water Sol. Boron	U		0.0167	0.200

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3671005-2 06/23/21 13:58 • (LCSD) R3671005-3 06/23/21 14:00

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	1.01	1.02	101	102	80.0-120			1.86	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3670989-1 06/23/21 15:17

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.100	1.00

¹Cp

²Tc

³Ss

Laboratory Control Sample (LCS)

(LCS) R3670989-2 06/23/21 15:20

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	99.5	99.5	80.0-120	

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3669509-2 06/19/21 15:19

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	0.0367	⬇	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	101			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3669509-1 06/19/21 14:31

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.47	99.5	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			109	77.0-120	

L1366418-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1366418-01 06/20/21 00:20 • (MS) R3669509-3 06/20/21 01:55 • (MSD) R3669509-4 06/20/21 02:19

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	ND	3.09	2.88	30.0	26.2	1	10.0-151			7.04	28
(S) a,a,a-Trifluorotoluene(FID)					103	103		77.0-120				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3669818-2 06/20/21 04:19

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	0.0365	⬇	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	101			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3669818-1 06/20/21 03:31

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	6.02	109	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			111	77.0-120	

L1366418-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1366418-05 06/20/21 10:41 • (MS) R3669818-3 06/20/21 13:04 • (MSD) R3669818-4 06/20/21 14:07

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	143	ND	65.1	75.2	44.5	51.6	26	10.0-151			14.4	28
(S) a,a,a-Trifluorotoluene(FID)					99.4	104		77.0-120				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3670418-2 06/19/21 11:34

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acetone	U		0.0365	0.0500
Acrylonitrile	U		0.00361	0.0125
Benzene	U		0.000467	0.00100
Bromobenzene	U		0.000900	0.0125
Bromodichloromethane	U		0.000725	0.00250
Bromoform	U		0.00117	0.0250
Bromomethane	U		0.00197	0.0125
n-Butylbenzene	U		0.00525	0.0125
sec-Butylbenzene	U		0.00288	0.0125
tert-Butylbenzene	U		0.00195	0.00500
Carbon tetrachloride	U		0.000898	0.00500
Chlorobenzene	U		0.000210	0.00250
Chlorodibromomethane	U		0.000612	0.00250
Chloroethane	U		0.00170	0.00500
Chloroform	U		0.00103	0.00250
Chloromethane	U		0.00435	0.0125
2-Chlorotoluene	U		0.000865	0.00250
4-Chlorotoluene	U		0.000450	0.00500
1,2-Dibromo-3-Chloropropane	U		0.00390	0.0250
1,2-Dibromoethane	U		0.000648	0.00250
Dibromomethane	U		0.000750	0.00500
1,2-Dichlorobenzene	U		0.000425	0.00500
1,3-Dichlorobenzene	U		0.000600	0.00500
1,4-Dichlorobenzene	U		0.000700	0.00500
Dichlorodifluoromethane	U		0.00161	0.00250
1,1-Dichloroethane	U		0.000491	0.00250
1,2-Dichloroethane	U		0.000649	0.00250
1,1-Dichloroethene	U		0.000606	0.00250
cis-1,2-Dichloroethene	U		0.000734	0.00250
trans-1,2-Dichloroethene	U		0.00104	0.00500
1,2-Dichloropropane	U		0.00142	0.00500
1,1-Dichloropropene	U		0.000809	0.00250
1,3-Dichloropropane	U		0.000501	0.00500
cis-1,3-Dichloropropene	U		0.000757	0.00250
trans-1,3-Dichloropropene	U		0.00114	0.00500
2,2-Dichloropropane	U		0.00138	0.00250
Di-isopropyl ether	U		0.000410	0.00100
Ethylbenzene	U		0.000737	0.00250
Hexachloro-1,3-butadiene	U		0.00600	0.0250
Isopropylbenzene	U		0.000425	0.00250

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3670418-2 06/19/21 11:34

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
p-Isopropyltoluene	U		0.00255	0.00500
2-Butanone (MEK)	U		0.0635	0.100
Methylene Chloride	U		0.00664	0.0250
4-Methyl-2-pentanone (MIBK)	U		0.00228	0.0250
Methyl tert-butyl ether	U		0.000350	0.00100
Naphthalene	U		0.00488	0.0125
n-Propylbenzene	U		0.000950	0.00500
Styrene	U		0.000229	0.0125
1,1,1,2-Tetrachloroethane	U		0.000948	0.00250
1,1,2,2-Tetrachloroethane	U		0.000695	0.00250
Tetrachloroethene	U		0.000896	0.00250
Toluene	U		0.00130	0.00500
1,1,2-Trichlorotrifluoroethane	U		0.000754	0.00250
1,2,3-Trichlorobenzene	U		0.00733	0.0125
1,2,4-Trichlorobenzene	U		0.00440	0.0125
1,1,1-Trichloroethane	U		0.000923	0.00250
1,1,2-Trichloroethane	U		0.000597	0.00250
Trichloroethene	U		0.000584	0.00100
Trichlorofluoromethane	U		0.000827	0.00250
1,2,3-Trichloropropane	U		0.00162	0.0125
1,2,3-Trimethylbenzene	U		0.00158	0.00500
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
Vinyl chloride	U		0.00116	0.00250
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	106			75.0-131
(S) 4-Bromofluorobenzene	86.6			67.0-138
(S) 1,2-Dichloroethane-d4	99.3			70.0-130

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3670418-1 06/19/21 10:36

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	0.625	0.450	72.0	10.0-160	
Acrylonitrile	0.625	0.640	102	45.0-153	
Benzene	0.125	0.103	82.4	70.0-123	
Bromobenzene	0.125	0.110	88.0	73.0-121	
Bromodichloromethane	0.125	0.123	98.4	73.0-121	

Laboratory Control Sample (LCS)

(LCS) R3670418-1 06/19/21 10:36

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Bromoform	0.125	0.140	112	64.0-132	
Bromomethane	0.125	0.139	111	56.0-147	
n-Butylbenzene	0.125	0.111	88.8	68.0-135	
sec-Butylbenzene	0.125	0.102	81.6	74.0-130	
tert-Butylbenzene	0.125	0.100	80.0	75.0-127	
Carbon tetrachloride	0.125	0.105	84.0	66.0-128	
Chlorobenzene	0.125	0.105	84.0	76.0-128	
Chlorodibromomethane	0.125	0.124	99.2	74.0-127	
Chloroethane	0.125	0.126	101	61.0-134	
Chloroform	0.125	0.107	85.6	72.0-123	
Chloromethane	0.125	0.122	97.6	51.0-138	
2-Chlorotoluene	0.125	0.101	80.8	75.0-124	
4-Chlorotoluene	0.125	0.113	90.4	75.0-124	
1,2-Dibromo-3-Chloropropane	0.125	0.150	120	59.0-130	
1,2-Dibromoethane	0.125	0.111	88.8	74.0-128	
Dibromomethane	0.125	0.113	90.4	75.0-122	
1,2-Dichlorobenzene	0.125	0.112	89.6	76.0-124	
1,3-Dichlorobenzene	0.125	0.107	85.6	76.0-125	
1,4-Dichlorobenzene	0.125	0.113	90.4	77.0-121	
Dichlorodifluoromethane	0.125	0.130	104	43.0-156	
1,1-Dichloroethane	0.125	0.0999	79.9	70.0-127	
1,2-Dichloroethane	0.125	0.131	105	65.0-131	
1,1-Dichloroethene	0.125	0.104	83.2	65.0-131	
cis-1,2-Dichloroethene	0.125	0.0941	75.3	73.0-125	
trans-1,2-Dichloroethene	0.125	0.0965	77.2	71.0-125	
1,2-Dichloropropane	0.125	0.100	80.0	74.0-125	
1,1-Dichloropropene	0.125	0.103	82.4	73.0-125	
1,3-Dichloropropane	0.125	0.118	94.4	80.0-125	
cis-1,3-Dichloropropene	0.125	0.102	81.6	76.0-127	
trans-1,3-Dichloropropene	0.125	0.124	99.2	73.0-127	
2,2-Dichloropropane	0.125	0.112	89.6	59.0-135	
Di-isopropyl ether	0.125	0.0888	71.0	60.0-136	
Ethylbenzene	0.125	0.102	81.6	74.0-126	
Hexachloro-1,3-butadiene	0.125	0.130	104	57.0-150	
Isopropylbenzene	0.125	0.0992	79.4	72.0-127	
p-Isopropyltoluene	0.125	0.102	81.6	72.0-133	
2-Butanone (MEK)	0.625	0.805	129	30.0-160	
Methylene Chloride	0.125	0.0964	77.1	68.0-123	
4-Methyl-2-pentanone (MIBK)	0.625	0.605	96.8	56.0-143	
Methyl tert-butyl ether	0.125	0.122	97.6	66.0-132	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3670418-1 06/19/21 10:36

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Naphthalene	0.125	0.123	98.4	59.0-130	
n-Propylbenzene	0.125	0.113	90.4	74.0-126	
Styrene	0.125	0.108	86.4	72.0-127	
1,1,1,2-Tetrachloroethane	0.125	0.103	82.4	74.0-129	
1,1,2,2-Tetrachloroethane	0.125	0.0984	78.7	68.0-128	
Tetrachloroethene	0.125	0.120	96.0	70.0-136	
Toluene	0.125	0.110	88.0	75.0-121	
1,1,2-Trichlorotrifluoroethane	0.125	0.103	82.4	61.0-139	
1,2,3-Trichlorobenzene	0.125	0.125	100	59.0-139	
1,2,4-Trichlorobenzene	0.125	0.124	99.2	62.0-137	
1,1,1-Trichloroethane	0.125	0.111	88.8	69.0-126	
1,1,2-Trichloroethane	0.125	0.108	86.4	78.0-123	
Trichloroethene	0.125	0.103	82.4	76.0-126	
Trichlorofluoromethane	0.125	0.126	101	61.0-142	
1,2,3-Trichloropropane	0.125	0.123	98.4	67.0-129	
1,2,3-Trimethylbenzene	0.125	0.113	90.4	74.0-124	
1,2,4-Trimethylbenzene	0.125	0.112	89.6	70.0-126	
1,3,5-Trimethylbenzene	0.125	0.100	80.0	73.0-127	
Vinyl chloride	0.125	0.120	96.0	63.0-134	
Xylenes, Total	0.375	0.316	84.3	72.0-127	
(S) Toluene-d8			103	75.0-131	
(S) 4-Bromofluorobenzene			93.0	67.0-138	
(S) 1,2-Dichloroethane-d4			124	70.0-130	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3671645-3 06/21/21 00:19

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acetone	U		0.0365	0.0500
Acrylonitrile	U		0.00361	0.0125
Benzene	U		0.000467	0.00100
Bromobenzene	U		0.000900	0.0125
Bromodichloromethane	U		0.000725	0.00250
Bromoform	U		0.00117	0.0250
Bromomethane	U		0.00197	0.0125
n-Butylbenzene	U		0.00525	0.0125
sec-Butylbenzene	U		0.00288	0.0125
tert-Butylbenzene	U		0.00195	0.00500
Carbon tetrachloride	U		0.000898	0.00500
Chlorobenzene	U		0.000210	0.00250
Chlorodibromomethane	U		0.000612	0.00250
Chloroethane	U		0.00170	0.00500
Chloroform	U		0.00103	0.00250
Chloromethane	U		0.00435	0.0125
2-Chlorotoluene	U		0.000865	0.00250
4-Chlorotoluene	U		0.000450	0.00500
1,2-Dibromo-3-Chloropropane	U		0.00390	0.0250
1,2-Dibromoethane	U		0.000648	0.00250
Dibromomethane	U		0.000750	0.00500
1,2-Dichlorobenzene	U		0.000425	0.00500
1,3-Dichlorobenzene	U		0.000600	0.00500
1,4-Dichlorobenzene	U		0.000700	0.00500
Dichlorodifluoromethane	U		0.00161	0.00250
1,1-Dichloroethane	U		0.000491	0.00250
1,2-Dichloroethane	U		0.000649	0.00250
1,1-Dichloroethene	U		0.000606	0.00250
cis-1,2-Dichloroethene	U		0.000734	0.00250
trans-1,2-Dichloroethene	U		0.00104	0.00500
1,2-Dichloropropane	U		0.00142	0.00500
1,1-Dichloropropene	U		0.000809	0.00250
1,3-Dichloropropane	U		0.000501	0.00500
cis-1,3-Dichloropropene	U		0.000757	0.00250
trans-1,3-Dichloropropene	U		0.00114	0.00500
2,2-Dichloropropane	U		0.00138	0.00250
Di-isopropyl ether	U		0.000410	0.00100
Ethylbenzene	U		0.000737	0.00250
Hexachloro-1,3-butadiene	U		0.00600	0.0250
Isopropylbenzene	U		0.000425	0.00250

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3671645-3 06/21/21 00:19

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
p-Isopropyltoluene	U		0.00255	0.00500
2-Butanone (MEK)	U		0.0635	0.100
Methylene Chloride	U		0.00664	0.0250
4-Methyl-2-pentanone (MIBK)	U		0.00228	0.0250
Methyl tert-butyl ether	U		0.000350	0.00100
Naphthalene	U		0.00488	0.0125
n-Propylbenzene	U		0.000950	0.00500
Styrene	U		0.000229	0.0125
1,1,1,2-Tetrachloroethane	U		0.000948	0.00250
1,1,2,2-Tetrachloroethane	U		0.000695	0.00250
Tetrachloroethene	U		0.000896	0.00250
Toluene	U		0.00130	0.00500
1,1,2-Trichlorotrifluoroethane	U		0.000754	0.00250
1,2,3-Trichlorobenzene	U		0.00733	0.0125
1,2,4-Trichlorobenzene	U		0.00440	0.0125
1,1,1-Trichloroethane	U		0.000923	0.00250
1,1,2-Trichloroethane	U		0.000597	0.00250
Trichloroethene	U		0.000584	0.00100
Trichlorofluoromethane	U		0.000827	0.00250
1,2,3-Trichloropropane	U		0.00162	0.0125
1,2,3-Trimethylbenzene	U		0.00158	0.00500
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
Vinyl chloride	U		0.00116	0.00250
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	105			75.0-131
(S) 4-Bromofluorobenzene	101			67.0-138
(S) 1,2-Dichloroethane-d4	83.0			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3671645-1 06/20/21 23:03 • (LCSD) R3671645-2 06/20/21 23:22

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	0.625	0.752	0.768	120	123	10.0-160			2.11	31
Acrylonitrile	0.625	0.529	0.555	84.6	88.8	45.0-153			4.80	22
Benzene	0.125	0.119	0.122	95.2	97.6	70.0-123			2.49	20
Bromobenzene	0.125	0.122	0.121	97.6	96.8	73.0-121			0.823	20
Bromodichloromethane	0.125	0.131	0.139	105	111	73.0-121			5.93	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3671645-1 06/20/21 23:03 • (LCSD) R3671645-2 06/20/21 23:22

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Bromoform	0.125	0.115	0.119	92.0	95.2	64.0-132			3.42	20
Bromomethane	0.125	0.105	0.109	84.0	87.2	56.0-147			3.74	20
n-Butylbenzene	0.125	0.116	0.121	92.8	96.8	68.0-135			4.22	20
sec-Butylbenzene	0.125	0.118	0.120	94.4	96.0	74.0-130			1.68	20
tert-Butylbenzene	0.125	0.118	0.119	94.4	95.2	75.0-127			0.844	20
Carbon tetrachloride	0.125	0.128	0.134	102	107	66.0-128			4.58	20
Chlorobenzene	0.125	0.114	0.118	91.2	94.4	76.0-128			3.45	20
Chlorodibromomethane	0.125	0.121	0.124	96.8	99.2	74.0-127			2.45	20
Chloroethane	0.125	0.123	0.122	98.4	97.6	61.0-134			0.816	20
Chloroform	0.125	0.125	0.130	100	104	72.0-123			3.92	20
Chloromethane	0.125	0.106	0.113	84.8	90.4	51.0-138			6.39	20
2-Chlorotoluene	0.125	0.114	0.112	91.2	89.6	75.0-124			1.77	20
4-Chlorotoluene	0.125	0.127	0.124	102	99.2	75.0-124			2.39	20
1,2-Dibromo-3-Chloropropane	0.125	0.0994	0.102	79.5	81.6	59.0-130			2.58	20
1,2-Dibromoethane	0.125	0.116	0.118	92.8	94.4	74.0-128			1.71	20
Dibromomethane	0.125	0.129	0.133	103	106	75.0-122			3.05	20
1,2-Dichlorobenzene	0.125	0.115	0.118	92.0	94.4	76.0-124			2.58	20
1,3-Dichlorobenzene	0.125	0.114	0.116	91.2	92.8	76.0-125			1.74	20
1,4-Dichlorobenzene	0.125	0.118	0.119	94.4	95.2	77.0-121			0.844	20
Dichlorodifluoromethane	0.125	0.109	0.109	87.2	87.2	43.0-156			0.000	20
1,1-Dichloroethane	0.125	0.121	0.125	96.8	100	70.0-127			3.25	20
1,2-Dichloroethane	0.125	0.131	0.125	105	100	65.0-131			4.69	20
1,1-Dichloroethene	0.125	0.127	0.132	102	106	65.0-131			3.86	20
cis-1,2-Dichloroethene	0.125	0.116	0.121	92.8	96.8	73.0-125			4.22	20
trans-1,2-Dichloroethene	0.125	0.123	0.126	98.4	101	71.0-125			2.41	20
1,2-Dichloropropane	0.125	0.131	0.135	105	108	74.0-125			3.01	20
1,1-Dichloropropene	0.125	0.125	0.126	100	101	73.0-125			0.797	20
1,3-Dichloropropane	0.125	0.117	0.118	93.6	94.4	80.0-125			0.851	20
cis-1,3-Dichloropropene	0.125	0.127	0.131	102	105	76.0-127			3.10	20
trans-1,3-Dichloropropene	0.125	0.119	0.121	95.2	96.8	73.0-127			1.67	20
2,2-Dichloropropane	0.125	0.0979	0.104	78.3	83.2	59.0-135			6.04	20
Di-isopropyl ether	0.125	0.118	0.123	94.4	98.4	60.0-136			4.15	20
Ethylbenzene	0.125	0.112	0.116	89.6	92.8	74.0-126			3.51	20
Hexachloro-1,3-butadiene	0.125	0.123	0.122	98.4	97.6	57.0-150			0.816	20
Isopropylbenzene	0.125	0.111	0.116	88.8	92.8	72.0-127			4.41	20
p-Isopropyltoluene	0.125	0.117	0.121	93.6	96.8	72.0-133			3.36	20
2-Butanone (MEK)	0.625	0.480	0.495	76.8	79.2	30.0-160			3.08	24
Methylene Chloride	0.125	0.120	0.121	96.0	96.8	68.0-123			0.830	20
4-Methyl-2-pentanone (MIBK)	0.625	0.570	0.575	91.2	92.0	56.0-143			0.873	20
Methyl tert-butyl ether	0.125	0.118	0.121	94.4	96.8	66.0-132			2.51	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3671645-1 06/20/21 23:03 • (LCSD) R3671645-2 06/20/21 23:22

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Naphthalene	0.125	0.0846	0.0835	67.7	66.8	59.0-130			1.31	20
n-Propylbenzene	0.125	0.119	0.117	95.2	93.6	74.0-126			1.69	20
Styrene	0.125	0.116	0.118	92.8	94.4	72.0-127			1.71	20
1,1,1,2-Tetrachloroethane	0.125	0.109	0.113	87.2	90.4	74.0-129			3.60	20
1,1,2,2-Tetrachloroethane	0.125	0.106	0.100	84.8	80.0	68.0-128			5.83	20
Tetrachloroethene	0.125	0.117	0.120	93.6	96.0	70.0-136			2.53	20
Toluene	0.125	0.116	0.117	92.8	93.6	75.0-121			0.858	20
1,1,2-Trichlorotrifluoroethane	0.125	0.108	0.114	86.4	91.2	61.0-139			5.41	20
1,2,3-Trichlorobenzene	0.125	0.0800	0.0779	64.0	62.3	59.0-139			2.66	20
1,2,4-Trichlorobenzene	0.125	0.0904	0.0938	72.3	75.0	62.0-137			3.69	20
1,1,1-Trichloroethane	0.125	0.128	0.128	102	102	69.0-126			0.000	20
1,1,2-Trichloroethane	0.125	0.121	0.120	96.8	96.0	78.0-123			0.830	20
Trichloroethene	0.125	0.136	0.144	109	115	76.0-126			5.71	20
Trichlorofluoromethane	0.125	0.108	0.113	86.4	90.4	61.0-142			4.52	20
1,2,3-Trichloropropane	0.125	0.116	0.114	92.8	91.2	67.0-129			1.74	20
1,2,3-Trimethylbenzene	0.125	0.140	0.143	112	114	74.0-124			2.12	20
1,2,4-Trimethylbenzene	0.125	0.119	0.121	95.2	96.8	70.0-126			1.67	20
1,3,5-Trimethylbenzene	0.125	0.115	0.115	92.0	92.0	73.0-127			0.000	20
Vinyl chloride	0.125	0.123	0.128	98.4	102	63.0-134			3.98	20
Xylenes, Total	0.375	0.341	0.350	90.9	93.3	72.0-127			2.60	20
(S) Toluene-d8				101	101	75.0-131				
(S) 4-Bromofluorobenzene				102	102	67.0-138				
(S) 1,2-Dichloroethane-d4				103	103	70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3670116-1 06/21/21 21:59

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	U		0.274	4.00
(S) o-Terphenyl	53.8			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3670116-2 06/21/21 22:12

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	31.0	62.0	50.0-150	
(S) o-Terphenyl			42.8	18.0-148	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3669877-2 06/21/21 13:16

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.00230	0.00600
Acenaphthene	U		0.00209	0.00600
Acenaphthylene	U		0.00216	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(g,h,i)perylene	U		0.00177	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
Naphthalene	U		0.00408	0.0200
Phenanthrene	U		0.00231	0.00600
Pyrene	U		0.00200	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
2-Chloronaphthalene	U		0.00466	0.0200
(S) Nitrobenzene-d5	61.5			14.0-149
(S) 2-Fluorobiphenyl	65.2			34.0-125
(S) p-Terphenyl-d14	109			23.0-120

Laboratory Control Sample (LCS)

(LCS) R3669877-1 06/21/21 12:58

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0738	92.3	50.0-126	
Acenaphthene	0.0800	0.0742	92.8	50.0-120	
Acenaphthylene	0.0800	0.0745	93.1	50.0-120	
Benzo(a)anthracene	0.0800	0.0778	97.3	45.0-120	
Benzo(a)pyrene	0.0800	0.0687	85.9	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0804	101	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0786	98.2	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0771	96.4	49.0-125	
Chrysene	0.0800	0.0810	101	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0777	97.1	47.0-125	
Fluoranthene	0.0800	0.0785	98.1	49.0-129	

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Laboratory Control Sample (LCS)

(LCS) R3669877-1 06/21/21 12:58

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0719	89.9	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0773	96.6	46.0-125	
Naphthalene	0.0800	0.0679	84.9	50.0-120	
Phenanthrene	0.0800	0.0775	96.9	47.0-120	
Pyrene	0.0800	0.0833	104	43.0-123	
1-Methylnaphthalene	0.0800	0.0725	90.6	51.0-121	
2-Methylnaphthalene	0.0800	0.0676	84.5	50.0-120	
2-Chloronaphthalene	0.0800	0.0712	89.0	50.0-120	
(S) Nitrobenzene-d5			95.9	14.0-149	
(S) 2-Fluorobiphenyl			100	34.0-125	
(S) p-Terphenyl-d14			128	23.0-120	J1

L1366456-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1366456-06 06/21/21 16:27 • (MS) R3669877-3 06/21/21 16:44 • (MSD) R3669877-4 06/21/21 17:02

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0772	0.0143	0.203	0.0711	244	72.4	1	10.0-145	J5	J3	96.2	30
Acenaphthene	0.0772	0.00619	0.123	0.0705	151	82.0	1	14.0-127	J5	J3	54.3	27
Acenaphthylene	0.0772	ND	0.0683	0.0667	88.5	85.1	1	21.0-124			2.37	25
Benzo(a)anthracene	0.0772	0.0693	0.498	0.120	555	64.7	1	10.0-139	J5	J3	122	30
Benzo(a)pyrene	0.0772	0.0783	0.415	0.142	436	81.3	1	10.0-141	J5	J3	98.0	31
Benzo(b)fluoranthene	0.0772	0.137	0.611	0.207	614	89.3	1	10.0-140	J5	J3	98.8	36
Benzo(g,h,i)perylene	0.0772	0.0735	0.335	0.147	339	93.8	1	10.0-140	J5	J3	78.0	33
Benzo(k)fluoranthene	0.0772	0.0483	0.289	0.123	312	95.3	1	10.0-137	J5	J3	80.6	31
Chrysene	0.0772	0.0730	0.543	0.173	609	128	1	10.0-145	J5	J3	103	30
Dibenz(a,h)anthracene	0.0772	0.0154	0.135	0.0807	155	83.3	1	10.0-132	J5	J3	50.3	31
Fluoranthene	0.0772	0.182	1.05	0.266	1120	107	1	10.0-153	J5	J3	119	33
Fluorene	0.0772	ND	0.122	0.0669	153	80.5	1	11.0-130	J5	J3	58.3	29
Indeno(1,2,3-cd)pyrene	0.0772	0.0723	0.346	0.142	355	88.9	1	10.0-137	J5	J3	83.6	32
Naphthalene	0.0772	ND	0.0640	0.0633	82.9	80.7	1	10.0-135			1.10	27
Phenanthrene	0.0772	0.0814	0.782	0.152	908	90.1	1	10.0-144	J5	J3	135	31
Pyrene	0.0772	0.149	0.811	0.228	858	101	1	10.0-148	J5	J3	112	35
1-Methylnaphthalene	0.0772	ND	0.0730	0.0663	94.6	84.6	1	10.0-142			9.62	28
2-Methylnaphthalene	0.0772	ND	0.0666	0.0625	86.3	79.7	1	10.0-137			6.35	28
2-Chloronaphthalene	0.0772	ND	0.0643	0.0646	83.2	82.4	1	29.0-120			0.465	24
(S) Nitrobenzene-d5					82.2	68.4		14.0-149				
(S) 2-Fluorobiphenyl					87.2	78.0		34.0-125				
(S) p-Terphenyl-d14					118	107		23.0-120				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

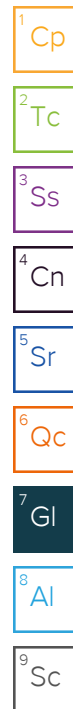
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
T8	Sample(s) received past/too close to holding time expiration.



ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA -- ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



[illegible]

988 3 008 3 883 1

Caerus Oil and Gas

Sample Delivery Group: L1366954

Samples Received: 06/16/2021

Project Number:

Description: N23

Report To: Brett Middleton
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By:



Chris Ward
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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¹ Cp
² Tc
³ Ss
⁴ Cn
⁵ Sr
⁶ Qc
⁷ Gl
⁸ Al
⁹ Sc

SAMPLE SUMMARY

20210615-N23-SB2 (0-2) L1366954-01 Solid

Collected by
Reed Johnson

Collected date/time
06/15/21 08:55

Received date/time
06/16/21 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1691951	1	06/22/21 16:42	06/22/21 16:42	KMG	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1692863	1	06/22/21 12:35	06/24/21 08:12	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1690796	1	06/18/21 11:13	06/19/21 11:00	GJA	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1690432	1	06/18/21 04:07	06/18/21 11:01	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1691026	1	06/20/21 07:40	06/24/21 17:36	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1691950	1	06/20/21 10:33	06/23/21 13:30	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1691022	5	06/20/21 07:36	06/23/21 16:18	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1693552	1	06/17/21 19:05	06/23/21 17:24	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1692403	1	06/17/21 19:05	06/21/21 12:31	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1693820	1	06/23/21 16:50	06/24/21 05:31	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1692222	1	06/21/21 11:21	06/22/21 03:24	AAT	Mt. Juliet, TN



20210615-N23-SB2 (5-7) L1366954-02 Solid

Collected by
Reed Johnson

Collected date/time
06/15/21 09:20

Received date/time
06/16/21 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1691951	1	06/22/21 16:44	06/22/21 16:44	KMG	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1692863	1	06/22/21 12:39	06/24/21 08:23	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1690796	1	06/18/21 11:13	06/19/21 11:00	GJA	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1690432	1	06/18/21 04:07	06/18/21 11:01	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1691026	1	06/20/21 07:40	06/24/21 17:39	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1691950	1	06/20/21 10:33	06/23/21 13:32	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1691022	5	06/20/21 07:36	06/23/21 16:22	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1693552	1	06/17/21 19:05	06/23/21 17:46	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1692403	1	06/17/21 19:05	06/21/21 12:50	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1693820	1	06/23/21 16:50	06/24/21 02:29	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1692222	1	06/21/21 11:21	06/22/21 03:44	AAT	Mt. Juliet, TN

20210615-N23-SB2 (10-12) L1366954-03 Solid

Collected by
Reed Johnson

Collected date/time
06/15/21 09:35

Received date/time
06/16/21 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1691951	1	06/22/21 16:47	06/22/21 16:47	KMG	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1692863	1	06/22/21 12:39	06/24/21 08:52	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1690796	1	06/18/21 11:13	06/19/21 11:00	GJA	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1690432	1	06/18/21 04:07	06/18/21 11:01	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1691026	1	06/20/21 07:40	06/24/21 16:51	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1691950	1	06/20/21 10:33	06/23/21 13:35	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1691022	5	06/20/21 07:36	06/23/21 15:24	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1693552	1	06/17/21 19:05	06/23/21 18:07	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1692403	1	06/17/21 19:05	06/21/21 13:09	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1693820	1	06/23/21 16:50	06/24/21 03:08	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1692222	1	06/21/21 11:21	06/22/21 04:44	AAT	Mt. Juliet, TN

20210615-N23-SB2 (15-17) L1366954-04 Solid

Collected by
Reed Johnson

Collected date/time
06/15/21 09:55

Received date/time
06/16/21 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1691951	1	06/22/21 16:50	06/22/21 16:50	KMG	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1692863	1	06/22/21 12:39	06/24/21 08:57	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1690796	1	06/18/21 11:13	06/19/21 11:00	GJA	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1690432	1	06/18/21 04:07	06/18/21 11:01	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1691026	1	06/20/21 07:40	06/24/21 17:43	KMG	Mt. Juliet, TN

SAMPLE SUMMARY

20210615-N23-SB2 (15-17) L1366954-04 Solid

Collected by
Reed Johnson

Collected date/time
06/15/21 09:55

Received date/time
06/16/21 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1691950	1	06/20/21 10:33	06/23/21 13:38	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1691022	5	06/20/21 07:36	06/23/21 16:25	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1693552	1	06/17/21 19:05	06/23/21 18:29	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1692403	1	06/17/21 19:05	06/21/21 13:28	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1693820	1	06/23/21 16:50	06/24/21 04:00	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1692222	1	06/21/21 11:21	06/22/21 05:04	AAT	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

20210615-N23-SB3 (0-2) L1366954-05 Solid

Collected by
Reed Johnson

Collected date/time
06/15/21 11:05

Received date/time
06/16/21 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1691951	1	06/22/21 16:53	06/22/21 16:53	KMG	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1692863	1	06/22/21 12:39	06/24/21 09:02	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1690796	1	06/18/21 11:13	06/19/21 11:00	GJA	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1690432	1	06/18/21 04:07	06/18/21 11:01	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1691026	1	06/20/21 07:40	06/24/21 17:46	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1691950	1	06/20/21 10:33	06/23/21 13:41	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1691022	5	06/20/21 07:36	06/23/21 16:41	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1693552	1	06/17/21 19:05	06/23/21 18:51	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1692403	1	06/17/21 19:05	06/21/21 13:47	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1693820	1	06/23/21 16:50	06/24/21 04:13	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1692222	1	06/21/21 11:21	06/22/21 07:43	AAT	Mt. Juliet, TN

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

20210615-N23-SB3 (5-7) L1366954-06 Solid

Collected by
Reed Johnson

Collected date/time
06/15/21 11:30

Received date/time
06/16/21 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1691951	1	06/22/21 16:56	06/22/21 16:56	KMG	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1692863	1	06/22/21 12:39	06/24/21 09:18	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1691612	1	06/21/21 11:00	06/21/21 13:00	RMR	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1690432	1	06/18/21 04:07	06/18/21 11:01	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1691026	1	06/20/21 07:40	06/24/21 17:49	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1691950	1	06/20/21 10:33	06/23/21 13:44	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1691022	5	06/20/21 07:36	06/23/21 16:44	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1693552	1	06/17/21 19:05	06/23/21 19:12	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1692403	1	06/17/21 19:05	06/21/21 14:06	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1693820	1	06/23/21 16:50	06/24/21 04:39	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1692222	1	06/21/21 11:21	06/22/21 05:24	AAT	Mt. Juliet, TN

Collected by
Reed Johnson

Collected date/time
06/15/21 11:45

Received date/time
06/16/21 08:30

20210615-N23-SB3 (10-12) L1366954-07 Solid

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1691951	1	06/22/21 16:59	06/22/21 16:59	KMG	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1692863	1	06/22/21 12:39	06/24/21 09:23	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1690930	1	06/18/21 12:55	06/18/21 16:00	ARM	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1690432	1	06/18/21 04:07	06/18/21 11:01	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1691026	1	06/20/21 07:40	06/24/21 17:58	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1691950	1	06/20/21 10:33	06/23/21 13:47	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1691022	5	06/20/21 07:36	06/23/21 16:47	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1693552	1	06/17/21 19:05	06/23/21 19:34	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1692403	1	06/17/21 19:05	06/21/21 14:25	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1693820	1	06/23/21 16:50	06/24/21 03:21	CAG	Mt. Juliet, TN

SAMPLE SUMMARY

20210615-N23-SB3 (10-12) L1366954-07 Solid

Collected by
Reed Johnson

Collected date/time
06/15/21 11:45

Received date/time
06/16/21 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1692222	1	06/21/21 11:21	06/22/21 05:44	AAT	Mt. Juliet, TN

20210615-N23-SB3 (15-17) L1366954-08 Solid

Collected by
Reed Johnson

Collected date/time
06/15/21 12:15

Received date/time
06/16/21 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1691951	1	06/22/21 17:02	06/22/21 17:02	KMG	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1692863	1	06/22/21 12:39	06/24/21 09:28	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1690796	1	06/18/21 11:13	06/19/21 11:00	GJA	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1690432	1	06/18/21 04:07	06/18/21 11:01	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1691026	1	06/20/21 07:40	06/24/21 18:01	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1691950	1	06/20/21 10:33	06/23/21 13:07	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1691022	5	06/20/21 07:36	06/23/21 16:51	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1693552	1	06/17/21 19:05	06/23/21 19:55	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1692403	1	06/17/21 19:05	06/21/21 14:44	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1693820	1	06/23/21 16:50	06/24/21 02:42	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1692222	1	06/21/21 11:21	06/22/21 06:03	AAT	Mt. Juliet, TN

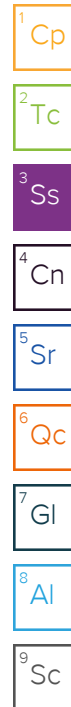
20210615-N23-SB3 (20-22) L1366954-09 Solid

Collected by
Reed Johnson

Collected date/time
06/15/21 12:30

Received date/time
06/16/21 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1691951	1	06/22/21 17:04	06/22/21 17:04	KMG	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1692863	1	06/22/21 12:39	06/24/21 09:33	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1690796	1	06/18/21 11:13	06/19/21 11:00	GJA	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1690432	1	06/18/21 04:07	06/18/21 11:01	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1691026	1	06/20/21 07:40	06/24/21 18:04	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1691950	1	06/20/21 10:33	06/23/21 13:10	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1691022	5	06/20/21 07:36	06/23/21 16:54	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1693552	1	06/17/21 19:05	06/23/21 20:17	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1692403	1	06/17/21 19:05	06/21/21 15:03	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1693820	1	06/23/21 16:50	06/24/21 02:55	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1693144	1	06/22/21 17:02	06/22/21 23:59	AMG	Mt. Juliet, TN

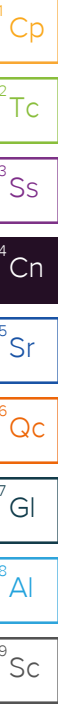


CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Chris Ward
Project Manager



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.62		1	06/22/2021 16:42	WG1691951

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.744	J P1	0.255	1.00	1	06/24/2021 08:12	WG1692863

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.25	T8	1	06/19/2021 11:00	WG1690796

Sample Narrative:

L1366954-01 WG1690796: 8.25 at 22.4C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	698		10.0	1	06/18/2021 11:01	WG1690432

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	336		0.0852	0.500	1	06/24/2021 17:36	WG1691026
Cadmium	0.513		0.0471	0.500	1	06/24/2021 17:36	WG1691026
Copper	18.7		0.400	2.00	1	06/24/2021 17:36	WG1691026
Lead	11.5		0.208	0.500	1	06/24/2021 17:36	WG1691026
Nickel	25.3		0.132	2.00	1	06/24/2021 17:36	WG1691026
Selenium	1.05	J	0.764	2.00	1	06/24/2021 17:36	WG1691026
Silver	U		0.127	1.00	1	06/24/2021 17:36	WG1691026
Zinc	60.5		0.832	5.00	1	06/24/2021 17:36	WG1691026

Metals (ICP) by Method 6010B-NE493 Ch 2

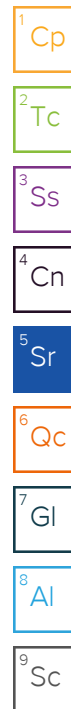
Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.170	J	0.0167	0.200	1	06/23/2021 13:30	WG1691950

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	12.1		0.100	1.00	5	06/23/2021 16:18	WG1691022

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0447	J	0.0217	0.100	1	06/23/2021 17:24	WG1693552
(S) a,a,a-Trifluorotoluene(FID)	101			77.0-120		06/23/2021 17:24	WG1693552



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	06/21/2021 12:31	WG1692403
Toluene	0.00329	U	0.00130	0.00500	1	06/21/2021 12:31	WG1692403
Ethylbenzene	U		0.000737	0.00250	1	06/21/2021 12:31	WG1692403
Xylenes, Total	0.00497	U	0.000880	0.00650	1	06/21/2021 12:31	WG1692403
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	06/21/2021 12:31	WG1692403
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	06/21/2021 12:31	WG1692403
(S) Toluene-d8	103			75.0-131		06/21/2021 12:31	WG1692403
(S) 4-Bromofluorobenzene	99.7			67.0-138		06/21/2021 12:31	WG1692403
(S) 1,2-Dichloroethane-d4	108			70.0-130		06/21/2021 12:31	WG1692403

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	49.9	J6	1.61	4.00	1	06/24/2021 05:31	WG1693820
C28-C36 Motor Oil Range	107		0.274	4.00	1	06/24/2021 05:31	WG1693820
(S) o-Terphenyl	54.7			18.0-148		06/24/2021 05:31	WG1693820

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	06/22/2021 03:24	WG1692222
Acenaphthene	U		0.00209	0.00600	1	06/22/2021 03:24	WG1692222
Acenaphthylene	U		0.00216	0.00600	1	06/22/2021 03:24	WG1692222
Benzo(a)anthracene	U		0.00173	0.00600	1	06/22/2021 03:24	WG1692222
Benzo(a)pyrene	U		0.00179	0.00600	1	06/22/2021 03:24	WG1692222
Benzo(b)fluoranthene	U		0.00153	0.00600	1	06/22/2021 03:24	WG1692222
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	06/22/2021 03:24	WG1692222
Benzo(k)fluoranthene	U		0.00215	0.00600	1	06/22/2021 03:24	WG1692222
Chrysene	U		0.00232	0.00600	1	06/22/2021 03:24	WG1692222
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	06/22/2021 03:24	WG1692222
Fluoranthene	U		0.00227	0.00600	1	06/22/2021 03:24	WG1692222
Fluorene	U		0.00205	0.00600	1	06/22/2021 03:24	WG1692222
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	06/22/2021 03:24	WG1692222
Naphthalene	0.00914	U	0.00408	0.0200	1	06/22/2021 03:24	WG1692222
Phenanthrene	0.00330	U	0.00231	0.00600	1	06/22/2021 03:24	WG1692222
Pyrene	U		0.00200	0.00600	1	06/22/2021 03:24	WG1692222
1-Methylnaphthalene	0.00747	U	0.00449	0.0200	1	06/22/2021 03:24	WG1692222
2-Methylnaphthalene	0.0148	U	0.00427	0.0200	1	06/22/2021 03:24	WG1692222
2-Chloronaphthalene	U		0.00466	0.0200	1	06/22/2021 03:24	WG1692222
(S) p-Terphenyl-d14	105			23.0-120		06/22/2021 03:24	WG1692222
(S) Nitrobenzene-d5	44.7			14.0-149		06/22/2021 03:24	WG1692222
(S) 2-Fluorobiphenyl	68.4			34.0-125		06/22/2021 03:24	WG1692222

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte					
Sodium Adsorption Ratio	0.766		1	06/22/2021 16:44	WG1691951

Wet Chemistry by Method 7199

	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Analyte							
Hexavalent Chromium	U		0.255	1.00	1	06/24/2021 08:23	WG1692863

Wet Chemistry by Method 9045D

	Result su	Qualifier	Dilution	Analysis date / time	Batch
Analyte					
pH	8.66	T8	1	06/19/2021 11:00	WG1690796

Sample Narrative:

L1366954-02 WG1690796: 8.66 at 22.4C

Wet Chemistry by Method 9050AMod

	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Analyte						
Specific Conductance	103		10.0	1	06/18/2021 11:01	WG1690432

Metals (ICP) by Method 6010B

	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Analyte							
Barium	306		0.0852	0.500	1	06/24/2021 17:39	WG1691026
Cadmium	0.760		0.0471	0.500	1	06/24/2021 17:39	WG1691026
Copper	22.1		0.400	2.00	1	06/24/2021 17:39	WG1691026
Lead	15.2		0.208	0.500	1	06/24/2021 17:39	WG1691026
Nickel	26.0		0.132	2.00	1	06/24/2021 17:39	WG1691026
Selenium	1.66	J	0.764	2.00	1	06/24/2021 17:39	WG1691026
Silver	U		0.127	1.00	1	06/24/2021 17:39	WG1691026
Zinc	89.9		0.832	5.00	1	06/24/2021 17:39	WG1691026

Metals (ICP) by Method 6010B-NE493 Ch 2

	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Analyte							
Hot Water Sol. Boron	0.223		0.0167	0.200	1	06/23/2021 13:32	WG1691950

Metals (ICPMS) by Method 6020

	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Analyte							
Arsenic	12.6		0.100	1.00	5	06/23/2021 16:22	WG1691022

Volatile Organic Compounds (GC) by Method 8015D/GRO

	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Analyte							
TPH (GC/FID) Low Fraction	0.0479	J	0.0217	0.100	1	06/23/2021 17:46	WG1693552
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	102			77.0-120		06/23/2021 17:46	WG1693552

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	06/21/2021 12:50	WG1692403
Toluene	U		0.00130	0.00500	1	06/21/2021 12:50	WG1692403
Ethylbenzene	U		0.000737	0.00250	1	06/21/2021 12:50	WG1692403
Xylenes, Total	0.00175	J	0.000880	0.00650	1	06/21/2021 12:50	WG1692403
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	06/21/2021 12:50	WG1692403
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	06/21/2021 12:50	WG1692403
(S) Toluene-d8	102			75.0-131		06/21/2021 12:50	WG1692403
(S) 4-Bromofluorobenzene	98.6			67.0-138		06/21/2021 12:50	WG1692403
(S) 1,2-Dichloroethane-d4	105			70.0-130		06/21/2021 12:50	WG1692403

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	3.05	J	1.61	4.00	1	06/24/2021 02:29	WG1693820
C28-C36 Motor Oil Range	5.60		0.274	4.00	1	06/24/2021 02:29	WG1693820
(S) o-Terphenyl	46.7			18.0-148		06/24/2021 02:29	WG1693820

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	06/22/2021 03:44	WG1692222
Acenaphthene	U		0.00209	0.00600	1	06/22/2021 03:44	WG1692222
Acenaphthylene	U		0.00216	0.00600	1	06/22/2021 03:44	WG1692222
Benzo(a)anthracene	U		0.00173	0.00600	1	06/22/2021 03:44	WG1692222
Benzo(a)pyrene	U		0.00179	0.00600	1	06/22/2021 03:44	WG1692222
Benzo(b)fluoranthene	U		0.00153	0.00600	1	06/22/2021 03:44	WG1692222
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	06/22/2021 03:44	WG1692222
Benzo(k)fluoranthene	U		0.00215	0.00600	1	06/22/2021 03:44	WG1692222
Chrysene	U		0.00232	0.00600	1	06/22/2021 03:44	WG1692222
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	06/22/2021 03:44	WG1692222
Fluoranthene	U		0.00227	0.00600	1	06/22/2021 03:44	WG1692222
Fluorene	U		0.00205	0.00600	1	06/22/2021 03:44	WG1692222
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	06/22/2021 03:44	WG1692222
Naphthalene	U		0.00408	0.0200	1	06/22/2021 03:44	WG1692222
Phenanthrene	U		0.00231	0.00600	1	06/22/2021 03:44	WG1692222
Pyrene	U		0.00200	0.00600	1	06/22/2021 03:44	WG1692222
1-Methylnaphthalene	U		0.00449	0.0200	1	06/22/2021 03:44	WG1692222
2-Methylnaphthalene	U		0.00427	0.0200	1	06/22/2021 03:44	WG1692222
2-Chloronaphthalene	U		0.00466	0.0200	1	06/22/2021 03:44	WG1692222
(S) p-Terphenyl-d14	96.6			23.0-120		06/22/2021 03:44	WG1692222
(S) Nitrobenzene-d5	57.4			14.0-149		06/22/2021 03:44	WG1692222
(S) 2-Fluorobiphenyl	72.8			34.0-125		06/22/2021 03:44	WG1692222

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.03		1	06/22/2021 16:47	WG1691951

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	06/24/2021 08:52	WG1692863

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.76	T8	1	06/19/2021 11:00	WG1690796

Sample Narrative:

L1366954-03 WG1690796: 8.76 at 22.5C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	135		10.0	1	06/18/2021 11:01	WG1690432

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	193	J5	0.0852	0.500	1	06/24/2021 16:51	WG1691026
Cadmium	0.346	J	0.0471	0.500	1	06/24/2021 16:51	WG1691026
Copper	13.3		0.400	2.00	1	06/24/2021 16:51	WG1691026
Lead	10.6		0.208	0.500	1	06/24/2021 16:51	WG1691026
Nickel	18.8		0.132	2.00	1	06/24/2021 16:51	WG1691026
Selenium	1.72	J	0.764	2.00	1	06/24/2021 16:51	WG1691026
Silver	U		0.127	1.00	1	06/24/2021 16:51	WG1691026
Zinc	48.6		0.832	5.00	1	06/24/2021 16:51	WG1691026

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.213		0.0167	0.200	1	06/23/2021 13:35	WG1691950

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	5.29		0.100	1.00	5	06/23/2021 15:24	WG1691022

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0486	J	0.0217	0.100	1	06/23/2021 18:07	WG1693552
(S) a,a,a-Trifluorotoluene(FID)	101			77.0-120		06/23/2021 18:07	WG1693552

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	06/21/2021 13:09	WG1692403
Toluene	U		0.00130	0.00500	1	06/21/2021 13:09	WG1692403
Ethylbenzene	U		0.000737	0.00250	1	06/21/2021 13:09	WG1692403
Xylenes, Total	U		0.000880	0.00650	1	06/21/2021 13:09	WG1692403
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	06/21/2021 13:09	WG1692403
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	06/21/2021 13:09	WG1692403
(S) Toluene-d8	100			75.0-131		06/21/2021 13:09	WG1692403
(S) 4-Bromofluorobenzene	99.9			67.0-138		06/21/2021 13:09	WG1692403
(S) 1,2-Dichloroethane-d4	111			70.0-130		06/21/2021 13:09	WG1692403

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	2.79	J	1.61	4.00	1	06/24/2021 03:08	WG1693820
C28-C36 Motor Oil Range	7.98		0.274	4.00	1	06/24/2021 03:08	WG1693820
(S) o-Terphenyl	50.5			18.0-148		06/24/2021 03:08	WG1693820

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	06/22/2021 04:44	WG1692222
Acenaphthene	U		0.00209	0.00600	1	06/22/2021 04:44	WG1692222
Acenaphthylene	U		0.00216	0.00600	1	06/22/2021 04:44	WG1692222
Benzo(a)anthracene	U		0.00173	0.00600	1	06/22/2021 04:44	WG1692222
Benzo(a)pyrene	U		0.00179	0.00600	1	06/22/2021 04:44	WG1692222
Benzo(b)fluoranthene	U		0.00153	0.00600	1	06/22/2021 04:44	WG1692222
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	06/22/2021 04:44	WG1692222
Benzo(k)fluoranthene	U		0.00215	0.00600	1	06/22/2021 04:44	WG1692222
Chrysene	U		0.00232	0.00600	1	06/22/2021 04:44	WG1692222
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	06/22/2021 04:44	WG1692222
Fluoranthene	U		0.00227	0.00600	1	06/22/2021 04:44	WG1692222
Fluorene	U		0.00205	0.00600	1	06/22/2021 04:44	WG1692222
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	06/22/2021 04:44	WG1692222
Naphthalene	U		0.00408	0.0200	1	06/22/2021 04:44	WG1692222
Phenanthrene	U		0.00231	0.00600	1	06/22/2021 04:44	WG1692222
Pyrene	U		0.00200	0.00600	1	06/22/2021 04:44	WG1692222
1-Methylnaphthalene	U		0.00449	0.0200	1	06/22/2021 04:44	WG1692222
2-Methylnaphthalene	U		0.00427	0.0200	1	06/22/2021 04:44	WG1692222
2-Chloronaphthalene	U		0.00466	0.0200	1	06/22/2021 04:44	WG1692222
(S) p-Terphenyl-d14	90.3			23.0-120		06/22/2021 04:44	WG1692222
(S) Nitrobenzene-d5	49.6			14.0-149		06/22/2021 04:44	WG1692222
(S) 2-Fluorobiphenyl	64.4			34.0-125		06/22/2021 04:44	WG1692222

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.14		1	06/22/2021 16:50	WG1691951

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.330	J	0.255	1.00	1	06/24/2021 08:57	WG1692863

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.78	T8	1	06/19/2021 11:00	WG1690796

Sample Narrative:

L1366954-04 WG1690796: 8.78 at 22.6C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	181		10.0	1	06/18/2021 11:01	WG1690432

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	276		0.0852	0.500	1	06/24/2021 17:43	WG1691026
Cadmium	0.516		0.0471	0.500	1	06/24/2021 17:43	WG1691026
Copper	17.1		0.400	2.00	1	06/24/2021 17:43	WG1691026
Lead	13.2		0.208	0.500	1	06/24/2021 17:43	WG1691026
Nickel	23.0		0.132	2.00	1	06/24/2021 17:43	WG1691026
Selenium	1.58	J	0.764	2.00	1	06/24/2021 17:43	WG1691026
Silver	U		0.127	1.00	1	06/24/2021 17:43	WG1691026
Zinc	63.9		0.832	5.00	1	06/24/2021 17:43	WG1691026

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.203		0.0167	0.200	1	06/23/2021 13:38	WG1691950

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	8.74		0.100	1.00	5	06/23/2021 16:25	WG1691022

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0476	J	0.0217	0.100	1	06/23/2021 18:29	WG1693552
(S) a,a,a-Trifluorotoluene(FID)	102			77.0-120		06/23/2021 18:29	WG1693552

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	06/21/2021 13:28	WG1692403
Toluene	U		0.00130	0.00500	1	06/21/2021 13:28	WG1692403
Ethylbenzene	U		0.000737	0.00250	1	06/21/2021 13:28	WG1692403
Xylenes, Total	U		0.000880	0.00650	1	06/21/2021 13:28	WG1692403
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	06/21/2021 13:28	WG1692403
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	06/21/2021 13:28	WG1692403
(S) Toluene-d8	101			75.0-131		06/21/2021 13:28	WG1692403
(S) 4-Bromofluorobenzene	102			67.0-138		06/21/2021 13:28	WG1692403
(S) 1,2-Dichloroethane-d4	110			70.0-130		06/21/2021 13:28	WG1692403

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	3.19	<u>J</u>	1.61	4.00	1	06/24/2021 04:00	WG1693820
C28-C36 Motor Oil Range	8.25		0.274	4.00	1	06/24/2021 04:00	WG1693820
(S) o-Terphenyl	50.0			18.0-148		06/24/2021 04:00	WG1693820

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	06/22/2021 05:04	WG1692222
Acenaphthene	U		0.00209	0.00600	1	06/22/2021 05:04	WG1692222
Acenaphthylene	U		0.00216	0.00600	1	06/22/2021 05:04	WG1692222
Benzo(a)anthracene	U		0.00173	0.00600	1	06/22/2021 05:04	WG1692222
Benzo(a)pyrene	U		0.00179	0.00600	1	06/22/2021 05:04	WG1692222
Benzo(b)fluoranthene	U		0.00153	0.00600	1	06/22/2021 05:04	WG1692222
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	06/22/2021 05:04	WG1692222
Benzo(k)fluoranthene	U		0.00215	0.00600	1	06/22/2021 05:04	WG1692222
Chrysene	U		0.00232	0.00600	1	06/22/2021 05:04	WG1692222
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	06/22/2021 05:04	WG1692222
Fluoranthene	U		0.00227	0.00600	1	06/22/2021 05:04	WG1692222
Fluorene	U		0.00205	0.00600	1	06/22/2021 05:04	WG1692222
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	06/22/2021 05:04	WG1692222
Naphthalene	U		0.00408	0.0200	1	06/22/2021 05:04	WG1692222
Phenanthrene	U		0.00231	0.00600	1	06/22/2021 05:04	WG1692222
Pyrene	U		0.00200	0.00600	1	06/22/2021 05:04	WG1692222
1-Methylnaphthalene	U		0.00449	0.0200	1	06/22/2021 05:04	WG1692222
2-Methylnaphthalene	U		0.00427	0.0200	1	06/22/2021 05:04	WG1692222
2-Chloronaphthalene	U		0.00466	0.0200	1	06/22/2021 05:04	WG1692222
(S) p-Terphenyl-d14	92.0			23.0-120		06/22/2021 05:04	WG1692222
(S) Nitrobenzene-d5	56.5			14.0-149		06/22/2021 05:04	WG1692222
(S) 2-Fluorobiphenyl	70.3			34.0-125		06/22/2021 05:04	WG1692222

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	3.03		1	06/22/2021 16:53	WG1691951

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.563	J	0.255	1.00	1	06/24/2021 09:02	WG1692863

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.68	T8	1	06/19/2021 11:00	WG1690796

Sample Narrative:

L1366954-05 WG1690796: 8.68 at 22.5C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	346		10.0	1	06/18/2021 11:01	WG1690432

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	309		0.0852	0.500	1	06/24/2021 17:46	WG1691026
Cadmium	0.370	J	0.0471	0.500	1	06/24/2021 17:46	WG1691026
Copper	15.1		0.400	2.00	1	06/24/2021 17:46	WG1691026
Lead	11.0		0.208	0.500	1	06/24/2021 17:46	WG1691026
Nickel	18.9		0.132	2.00	1	06/24/2021 17:46	WG1691026
Selenium	1.38	J	0.764	2.00	1	06/24/2021 17:46	WG1691026
Silver	U		0.127	1.00	1	06/24/2021 17:46	WG1691026
Zinc	49.7		0.832	5.00	1	06/24/2021 17:46	WG1691026

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.179	J	0.0167	0.200	1	06/23/2021 13:41	WG1691950

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	7.43		0.100	1.00	5	06/23/2021 16:41	WG1691022

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.103		0.0217	0.100	1	06/23/2021 18:51	WG1693552
(S) a,a,a-Trifluorotoluene(FID)	100			77.0-120		06/23/2021 18:51	WG1693552

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	06/21/2021 13:47	WG1692403
Toluene	0.00245	U	0.00130	0.00500	1	06/21/2021 13:47	WG1692403
Ethylbenzene	U		0.000737	0.00250	1	06/21/2021 13:47	WG1692403
Xylenes, Total	0.00453	U	0.000880	0.00650	1	06/21/2021 13:47	WG1692403
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	06/21/2021 13:47	WG1692403
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	06/21/2021 13:47	WG1692403
(S) Toluene-d8	103			75.0-131		06/21/2021 13:47	WG1692403
(S) 4-Bromofluorobenzene	97.2			67.0-138		06/21/2021 13:47	WG1692403
(S) 1,2-Dichloroethane-d4	106			70.0-130		06/21/2021 13:47	WG1692403

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	28.6		1.61	4.00	1	06/24/2021 04:13	WG1693820
C28-C36 Motor Oil Range	68.7		0.274	4.00	1	06/24/2021 04:13	WG1693820
(S) o-Terphenyl	52.8			18.0-148		06/24/2021 04:13	WG1693820

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	06/22/2021 07:43	WG1692222
Acenaphthene	U		0.00209	0.00600	1	06/22/2021 07:43	WG1692222
Acenaphthylene	U		0.00216	0.00600	1	06/22/2021 07:43	WG1692222
Benzo(a)anthracene	U		0.00173	0.00600	1	06/22/2021 07:43	WG1692222
Benzo(a)pyrene	U		0.00179	0.00600	1	06/22/2021 07:43	WG1692222
Benzo(b)fluoranthene	U		0.00153	0.00600	1	06/22/2021 07:43	WG1692222
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	06/22/2021 07:43	WG1692222
Benzo(k)fluoranthene	U		0.00215	0.00600	1	06/22/2021 07:43	WG1692222
Chrysene	0.00300	U	0.00232	0.00600	1	06/22/2021 07:43	WG1692222
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	06/22/2021 07:43	WG1692222
Fluoranthene	U		0.00227	0.00600	1	06/22/2021 07:43	WG1692222
Fluorene	0.00457	U	0.00205	0.00600	1	06/22/2021 07:43	WG1692222
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	06/22/2021 07:43	WG1692222
Naphthalene	0.0570		0.00408	0.0200	1	06/22/2021 07:43	WG1692222
Phenanthrene	0.0197		0.00231	0.00600	1	06/22/2021 07:43	WG1692222
Pyrene	0.00409	U	0.00200	0.00600	1	06/22/2021 07:43	WG1692222
1-Methylnaphthalene	0.0419		0.00449	0.0200	1	06/22/2021 07:43	WG1692222
2-Methylnaphthalene	0.0967		0.00427	0.0200	1	06/22/2021 07:43	WG1692222
2-Chloronaphthalene	U		0.00466	0.0200	1	06/22/2021 07:43	WG1692222
(S) p-Terphenyl-d14	97.0			23.0-120		06/22/2021 07:43	WG1692222
(S) Nitrobenzene-d5	57.2			14.0-149		06/22/2021 07:43	WG1692222
(S) 2-Fluorobiphenyl	75.3			34.0-125		06/22/2021 07:43	WG1692222

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.596		1	06/22/2021 16:56	WG1691951

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.490	J	0.255	1.00	1	06/24/2021 09:18	WG1692863

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.21	T8	1	06/21/2021 13:00	WG1691612

Sample Narrative:

L1366954-06 WG1691612: 8.21 at 24C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	220		10.0	1	06/18/2021 11:01	WG1690432

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	447		0.0852	0.500	1	06/24/2021 17:49	WG1691026
Cadmium	0.907		0.0471	0.500	1	06/24/2021 17:49	WG1691026
Copper	22.8		0.400	2.00	1	06/24/2021 17:49	WG1691026
Lead	12.7		0.208	0.500	1	06/24/2021 17:49	WG1691026
Nickel	25.0		0.132	2.00	1	06/24/2021 17:49	WG1691026
Selenium	2.30		0.764	2.00	1	06/24/2021 17:49	WG1691026
Silver	U		0.127	1.00	1	06/24/2021 17:49	WG1691026
Zinc	61.2		0.832	5.00	1	06/24/2021 17:49	WG1691026

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.105	J	0.0167	0.200	1	06/23/2021 13:44	WG1691950

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	9.41		0.100	1.00	5	06/23/2021 16:44	WG1691022

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.135		0.0217	0.100	1	06/23/2021 19:12	WG1693552
(S) a,a,a-Trifluorotoluene(FID)	102			77.0-120		06/23/2021 19:12	WG1693552

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	06/21/2021 14:06	WG1692403
Toluene	U		0.00130	0.00500	1	06/21/2021 14:06	WG1692403
Ethylbenzene	U		0.000737	0.00250	1	06/21/2021 14:06	WG1692403
Xylenes, Total	0.0164		0.000880	0.00650	1	06/21/2021 14:06	WG1692403
1,2,4-Trimethylbenzene	0.0150		0.00158	0.00500	1	06/21/2021 14:06	WG1692403
1,3,5-Trimethylbenzene	0.0198		0.00200	0.00500	1	06/21/2021 14:06	WG1692403
(S) Toluene-d8	102			75.0-131		06/21/2021 14:06	WG1692403
(S) 4-Bromofluorobenzene	98.4			67.0-138		06/21/2021 14:06	WG1692403
(S) 1,2-Dichloroethane-d4	110			70.0-130		06/21/2021 14:06	WG1692403

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	10.7		1.61	4.00	1	06/24/2021 04:39	WG1693820
C28-C36 Motor Oil Range	9.01		0.274	4.00	1	06/24/2021 04:39	WG1693820
(S) o-Terphenyl	46.7			18.0-148		06/24/2021 04:39	WG1693820

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	06/22/2021 05:24	WG1692222
Acenaphthene	U		0.00209	0.00600	1	06/22/2021 05:24	WG1692222
Acenaphthylene	U		0.00216	0.00600	1	06/22/2021 05:24	WG1692222
Benzo(a)anthracene	U		0.00173	0.00600	1	06/22/2021 05:24	WG1692222
Benzo(a)pyrene	U		0.00179	0.00600	1	06/22/2021 05:24	WG1692222
Benzo(b)fluoranthene	U		0.00153	0.00600	1	06/22/2021 05:24	WG1692222
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	06/22/2021 05:24	WG1692222
Benzo(k)fluoranthene	U		0.00215	0.00600	1	06/22/2021 05:24	WG1692222
Chrysene	U		0.00232	0.00600	1	06/22/2021 05:24	WG1692222
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	06/22/2021 05:24	WG1692222
Fluoranthene	U		0.00227	0.00600	1	06/22/2021 05:24	WG1692222
Fluorene	U		0.00205	0.00600	1	06/22/2021 05:24	WG1692222
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	06/22/2021 05:24	WG1692222
Naphthalene	0.00667	U	0.00408	0.0200	1	06/22/2021 05:24	WG1692222
Phenanthrene	U		0.00231	0.00600	1	06/22/2021 05:24	WG1692222
Pyrene	U		0.00200	0.00600	1	06/22/2021 05:24	WG1692222
1-Methylnaphthalene	0.00599	U	0.00449	0.0200	1	06/22/2021 05:24	WG1692222
2-Methylnaphthalene	0.0150	U	0.00427	0.0200	1	06/22/2021 05:24	WG1692222
2-Chloronaphthalene	U		0.00466	0.0200	1	06/22/2021 05:24	WG1692222
(S) p-Terphenyl-d14	82.4			23.0-120		06/22/2021 05:24	WG1692222
(S) Nitrobenzene-d5	48.2			14.0-149		06/22/2021 05:24	WG1692222
(S) 2-Fluorobiphenyl	61.4			34.0-125		06/22/2021 05:24	WG1692222

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.565		1	06/22/2021 16:59	WG1691951

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	06/24/2021 09:23	WG1692863

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.49	T8	1	06/18/2021 16:00	WG1690930

Sample Narrative:

L1366954-07 WG1690930: 8.49 at 24C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	161		10.0	1	06/18/2021 11:01	WG1690432

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	257		0.0852	0.500	1	06/24/2021 17:58	WG1691026
Cadmium	0.660		0.0471	0.500	1	06/24/2021 17:58	WG1691026
Copper	16.3		0.400	2.00	1	06/24/2021 17:58	WG1691026
Lead	12.2		0.208	0.500	1	06/24/2021 17:58	WG1691026
Nickel	20.6		0.132	2.00	1	06/24/2021 17:58	WG1691026
Selenium	1.65	J	0.764	2.00	1	06/24/2021 17:58	WG1691026
Silver	U		0.127	1.00	1	06/24/2021 17:58	WG1691026
Zinc	55.5		0.832	5.00	1	06/24/2021 17:58	WG1691026

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.162	J	0.0167	0.200	1	06/23/2021 13:47	WG1691950

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.99		0.100	1.00	5	06/23/2021 16:47	WG1691022

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0415	J	0.0217	0.100	1	06/23/2021 19:34	WG1693552
(S) a,a,a-Trifluorotoluene(FID)	102			77.0-120		06/23/2021 19:34	WG1693552

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	06/21/2021 14:25	WG1692403
Toluene	U		0.00130	0.00500	1	06/21/2021 14:25	WG1692403
Ethylbenzene	U		0.000737	0.00250	1	06/21/2021 14:25	WG1692403
Xylenes, Total	U		0.000880	0.00650	1	06/21/2021 14:25	WG1692403
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	06/21/2021 14:25	WG1692403
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	06/21/2021 14:25	WG1692403
(S) Toluene-d8	101			75.0-131		06/21/2021 14:25	WG1692403
(S) 4-Bromofluorobenzene	104			67.0-138		06/21/2021 14:25	WG1692403
(S) 1,2-Dichloroethane-d4	111			70.0-130		06/21/2021 14:25	WG1692403

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	2.56	J	1.61	4.00	1	06/24/2021 03:21	WG1693820
C28-C36 Motor Oil Range	7.62		0.274	4.00	1	06/24/2021 03:21	WG1693820
(S) o-Terphenyl	41.9			18.0-148		06/24/2021 03:21	WG1693820

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	06/22/2021 05:44	WG1692222
Acenaphthene	U		0.00209	0.00600	1	06/22/2021 05:44	WG1692222
Acenaphthylene	U		0.00216	0.00600	1	06/22/2021 05:44	WG1692222
Benzo(a)anthracene	U		0.00173	0.00600	1	06/22/2021 05:44	WG1692222
Benzo(a)pyrene	U		0.00179	0.00600	1	06/22/2021 05:44	WG1692222
Benzo(b)fluoranthene	U		0.00153	0.00600	1	06/22/2021 05:44	WG1692222
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	06/22/2021 05:44	WG1692222
Benzo(k)fluoranthene	U		0.00215	0.00600	1	06/22/2021 05:44	WG1692222
Chrysene	U		0.00232	0.00600	1	06/22/2021 05:44	WG1692222
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	06/22/2021 05:44	WG1692222
Fluoranthene	U		0.00227	0.00600	1	06/22/2021 05:44	WG1692222
Fluorene	U		0.00205	0.00600	1	06/22/2021 05:44	WG1692222
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	06/22/2021 05:44	WG1692222
Naphthalene	U		0.00408	0.0200	1	06/22/2021 05:44	WG1692222
Phenanthrene	U		0.00231	0.00600	1	06/22/2021 05:44	WG1692222
Pyrene	U		0.00200	0.00600	1	06/22/2021 05:44	WG1692222
1-Methylnaphthalene	U		0.00449	0.0200	1	06/22/2021 05:44	WG1692222
2-Methylnaphthalene	U		0.00427	0.0200	1	06/22/2021 05:44	WG1692222
2-Chloronaphthalene	U		0.00466	0.0200	1	06/22/2021 05:44	WG1692222
(S) p-Terphenyl-d14	75.6			23.0-120		06/22/2021 05:44	WG1692222
(S) Nitrobenzene-d5	47.6			14.0-149		06/22/2021 05:44	WG1692222
(S) 2-Fluorobiphenyl	59.2			34.0-125		06/22/2021 05:44	WG1692222

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.509		1	06/22/2021 17:02	WG1691951

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	06/24/2021 09:28	WG1692863

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.41	T8	1	06/19/2021 11:00	WG1690796

Sample Narrative:

L1366954-08 WG1690796: 8.41 at 22.8C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	203		10.0	1	06/18/2021 11:01	WG1690432

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	140		0.0852	0.500	1	06/24/2021 18:01	WG1691026
Cadmium	0.326	J	0.0471	0.500	1	06/24/2021 18:01	WG1691026
Copper	18.2		0.400	2.00	1	06/24/2021 18:01	WG1691026
Lead	11.3		0.208	0.500	1	06/24/2021 18:01	WG1691026
Nickel	30.9		0.132	2.00	1	06/24/2021 18:01	WG1691026
Selenium	1.01	J	0.764	2.00	1	06/24/2021 18:01	WG1691026
Silver	U		0.127	1.00	1	06/24/2021 18:01	WG1691026
Zinc	54.0		0.832	5.00	1	06/24/2021 18:01	WG1691026

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.125	J	0.0167	0.200	1	06/23/2021 13:07	WG1691950

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	14.0		0.100	1.00	5	06/23/2021 16:51	WG1691022

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0273	J	0.0217	0.100	1	06/23/2021 19:55	WG1693552
(S) a,a,a-Trifluorotoluene(FID)	103			77.0-120		06/23/2021 19:55	WG1693552

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	06/21/2021 14:44	WG1692403
Toluene	U		0.00130	0.00500	1	06/21/2021 14:44	WG1692403
Ethylbenzene	U		0.000737	0.00250	1	06/21/2021 14:44	WG1692403
Xylenes, Total	U		0.000880	0.00650	1	06/21/2021 14:44	WG1692403
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	06/21/2021 14:44	WG1692403
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	06/21/2021 14:44	WG1692403
(S) Toluene-d8	103			75.0-131		06/21/2021 14:44	WG1692403
(S) 4-Bromofluorobenzene	98.8			67.0-138		06/21/2021 14:44	WG1692403
(S) 1,2-Dichloroethane-d4	106			70.0-130		06/21/2021 14:44	WG1692403

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	U		1.61	4.00	1	06/24/2021 02:42	WG1693820
C28-C36 Motor Oil Range	1.05	J	0.274	4.00	1	06/24/2021 02:42	WG1693820
(S) o-Terphenyl	33.7			18.0-148		06/24/2021 02:42	WG1693820

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	06/22/2021 06:03	WG1692222
Acenaphthene	U		0.00209	0.00600	1	06/22/2021 06:03	WG1692222
Acenaphthylene	U		0.00216	0.00600	1	06/22/2021 06:03	WG1692222
Benzo(a)anthracene	U		0.00173	0.00600	1	06/22/2021 06:03	WG1692222
Benzo(a)pyrene	U		0.00179	0.00600	1	06/22/2021 06:03	WG1692222
Benzo(b)fluoranthene	U		0.00153	0.00600	1	06/22/2021 06:03	WG1692222
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	06/22/2021 06:03	WG1692222
Benzo(k)fluoranthene	U		0.00215	0.00600	1	06/22/2021 06:03	WG1692222
Chrysene	U		0.00232	0.00600	1	06/22/2021 06:03	WG1692222
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	06/22/2021 06:03	WG1692222
Fluoranthene	U		0.00227	0.00600	1	06/22/2021 06:03	WG1692222
Fluorene	U		0.00205	0.00600	1	06/22/2021 06:03	WG1692222
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	06/22/2021 06:03	WG1692222
Naphthalene	U		0.00408	0.0200	1	06/22/2021 06:03	WG1692222
Phenanthrene	U		0.00231	0.00600	1	06/22/2021 06:03	WG1692222
Pyrene	U		0.00200	0.00600	1	06/22/2021 06:03	WG1692222
1-Methylnaphthalene	U		0.00449	0.0200	1	06/22/2021 06:03	WG1692222
2-Methylnaphthalene	U		0.00427	0.0200	1	06/22/2021 06:03	WG1692222
2-Chloronaphthalene	U		0.00466	0.0200	1	06/22/2021 06:03	WG1692222
(S) p-Terphenyl-d14	96.3			23.0-120		06/22/2021 06:03	WG1692222
(S) Nitrobenzene-d5	27.6			14.0-149		06/22/2021 06:03	WG1692222
(S) 2-Fluorobiphenyl	6.73	J2		34.0-125		06/22/2021 06:03	WG1692222

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.638		1	06/22/2021 17:04	WG1691951

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	06/24/2021 09:33	WG1692863

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.57	T8	1	06/19/2021 11:00	WG1690796

Sample Narrative:

L1366954-09 WG1690796: 8.57 at 22.6C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	139		10.0	1	06/18/2021 11:01	WG1690432

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	131		0.0852	0.500	1	06/24/2021 18:04	WG1691026
Cadmium	0.511		0.0471	0.500	1	06/24/2021 18:04	WG1691026
Copper	15.7		0.400	2.00	1	06/24/2021 18:04	WG1691026
Lead	11.7		0.208	0.500	1	06/24/2021 18:04	WG1691026
Nickel	18.9		0.132	2.00	1	06/24/2021 18:04	WG1691026
Selenium	1.09	J	0.764	2.00	1	06/24/2021 18:04	WG1691026
Silver	U		0.127	1.00	1	06/24/2021 18:04	WG1691026
Zinc	57.7		0.832	5.00	1	06/24/2021 18:04	WG1691026

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.101	J	0.0167	0.200	1	06/23/2021 13:10	WG1691950

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	6.18		0.100	1.00	5	06/23/2021 16:54	WG1691022

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0438	J	0.0217	0.100	1	06/23/2021 20:17	WG1693552
(S) a,a,a-Trifluorotoluene(FID)	102			77.0-120		06/23/2021 20:17	WG1693552

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	06/21/2021 15:03	WG1692403
Toluene	U		0.00130	0.00500	1	06/21/2021 15:03	WG1692403
Ethylbenzene	U		0.000737	0.00250	1	06/21/2021 15:03	WG1692403
Xylenes, Total	U		0.000880	0.00650	1	06/21/2021 15:03	WG1692403
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	06/21/2021 15:03	WG1692403
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	06/21/2021 15:03	WG1692403
(S) Toluene-d8	101			75.0-131		06/21/2021 15:03	WG1692403
(S) 4-Bromofluorobenzene	98.8			67.0-138		06/21/2021 15:03	WG1692403
(S) 1,2-Dichloroethane-d4	106			70.0-130		06/21/2021 15:03	WG1692403

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	U		1.61	4.00	1	06/24/2021 02:55	WG1693820
C28-C36 Motor Oil Range	2.10	J	0.274	4.00	1	06/24/2021 02:55	WG1693820
(S) o-Terphenyl	37.5			18.0-148		06/24/2021 02:55	WG1693820

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	06/22/2021 23:59	WG1693144
Acenaphthene	U		0.00209	0.00600	1	06/22/2021 23:59	WG1693144
Acenaphthylene	U		0.00216	0.00600	1	06/22/2021 23:59	WG1693144
Benzo(a)anthracene	U		0.00173	0.00600	1	06/22/2021 23:59	WG1693144
Benzo(a)pyrene	U		0.00179	0.00600	1	06/22/2021 23:59	WG1693144
Benzo(b)fluoranthene	U		0.00153	0.00600	1	06/22/2021 23:59	WG1693144
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	06/22/2021 23:59	WG1693144
Benzo(k)fluoranthene	U	J4	0.00215	0.00600	1	06/22/2021 23:59	WG1693144
Chrysene	U		0.00232	0.00600	1	06/22/2021 23:59	WG1693144
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	06/22/2021 23:59	WG1693144
Fluoranthene	U		0.00227	0.00600	1	06/22/2021 23:59	WG1693144
Fluorene	U		0.00205	0.00600	1	06/22/2021 23:59	WG1693144
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	06/22/2021 23:59	WG1693144
Naphthalene	0.00563	J	0.00408	0.0200	1	06/22/2021 23:59	WG1693144
Phenanthrene	U		0.00231	0.00600	1	06/22/2021 23:59	WG1693144
Pyrene	U		0.00200	0.00600	1	06/22/2021 23:59	WG1693144
1-Methylnaphthalene	U		0.00449	0.0200	1	06/22/2021 23:59	WG1693144
2-Methylnaphthalene	U		0.00427	0.0200	1	06/22/2021 23:59	WG1693144
2-Chloronaphthalene	U		0.00466	0.0200	1	06/22/2021 23:59	WG1693144
(S) p-Terphenyl-d14	85.0			23.0-120		06/22/2021 23:59	WG1693144
(S) Nitrobenzene-d5	32.8			14.0-149		06/22/2021 23:59	WG1693144
(S) 2-Fluorobiphenyl	50.9			34.0-125		06/22/2021 23:59	WG1693144

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3671480-1 06/24/21 07:52

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Hexavalent Chromium	U		0.255	1.00

L1366954-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1366954-01 06/24/21 08:12 • (DUP) R3671480-3 06/24/21 08:18

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	0.744	0.985	1	27.9	J P1	20

L1367833-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1367833-03 06/24/21 10:41 • (DUP) R3671480-8 06/24/21 10:46

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3671480-2 06/24/21 07:57

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	10.1	101	80.0-120	

L1366954-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1366954-02 06/24/21 08:23 • (MS) R3671480-4 06/24/21 08:28 • (MSD) R3671480-5 06/24/21 08:33

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Hexavalent Chromium	20.0	U	18.1	20.7	90.6	103	1	75.0-125			13.1	20

L1366954-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1366954-02 06/24/21 08:23 • (MS) R3671480-6 06/24/21 08:39

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Hexavalent Chromium	650	U	707	109	50	75.0-125	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1365816-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1365816-02 06/19/21 11:00 • (DUP) R3669354-2 06/19/21 11:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	9.11	9.08	1	0.330		1

Sample Narrative:

OS: 9.11 at 22.4C

DUP: 9.08 at 22.3C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1365835-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1365835-01 06/19/21 11:00 • (DUP) R3669354-3 06/19/21 11:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	7.56	7.54	1	0.265		1

Sample Narrative:

OS: 7.56 at 22.6C

DUP: 7.54 at 22.5C

Laboratory Control Sample (LCS)

(LCS) R3669354-1 06/19/21 11:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	su	su	%	%	
pH	10.0	10.1	101	99.0-101	

Sample Narrative:

LCS: 10.05 at 22.7C

L1366319-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1366319-09 06/18/21 16:00 • (DUP) R3669233-2 06/18/21 16:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	7.26	7.27	1	0.138		1

Sample Narrative:

OS: 7.26 at 24.8C

DUP: 7.27 at 24.8C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1366545-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1366545-01 06/18/21 16:00 • (DUP) R3669233-3 06/18/21 16:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	8.21	8.21	1	0.000		1

Sample Narrative:

OS: 8.21 at 24C

DUP: 8.21 at 24.1C

Laboratory Control Sample (LCS)

(LCS) R3669233-1 06/18/21 16:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:

LCS: 10.04 at 24.2C

L1366954-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1366954-06 06/21/21 13:00 • (DUP) R3669879-3 06/21/21 13:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	8.21	8.24	1	0.365		1

Sample Narrative:

OS: 8.21 at 24C

DUP: 8.24 at 24.1C

Laboratory Control Sample (LCS)

(LCS) R3669879-1 06/21/21 13:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	su	su	%	%	
pH	10.0	10.1	101	99.0-101	

Sample Narrative:

LCS: 10.05 at 23.9C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3668985-1 06/18/21 11:01

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

L1366954-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1366954-07 06/18/21 11:01 • (DUP) R3668985-3 06/18/21 11:01

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	161	161	1	0.124		20

⁷Gl

⁸Al

Laboratory Control Sample (LCS)

(LCS) R3668985-2 06/18/21 11:01

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	269	100	85.0-115	

⁹Sc

Method Blank (MB)

(MB) R3671797-1 06/24/21 16:45

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Barium	U		0.0852	0.500
Cadmium	U		0.0471	0.500
Copper	U		0.400	2.00
Lead	U		0.208	0.500
Nickel	U		0.132	2.00
Selenium	U		0.764	2.00
Silver	U		0.127	1.00
Zinc	U		0.832	5.00

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3671797-2 06/24/21 16:48

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	98.9	98.9	80.0-120	
Cadmium	100	94.9	94.9	80.0-120	
Copper	100	95.6	95.6	80.0-120	
Lead	100	95.9	95.9	80.0-120	
Nickel	100	98.1	98.1	80.0-120	
Selenium	100	97.3	97.3	80.0-120	
Silver	20.0	17.4	87.0	80.0-120	
Zinc	100	96.5	96.5	80.0-120	

L1366954-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1366954-03 06/24/21 16:51 • (MS) R3671797-5 06/24/21 16:59 • (MSD) R3671797-6 06/24/21 17:03

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium	100	193	328	328	136	135	1	75.0-125	J5	J5	0.284	20
Cadmium	100	0.346	93.1	89.1	92.8	88.8	1	75.0-125			4.44	20
Copper	100	13.3	110	107	97.0	93.6	1	75.0-125			3.08	20
Lead	100	10.6	109	106	98.0	95.9	1	75.0-125			1.95	20
Nickel	100	18.8	123	120	104	101	1	75.0-125			2.46	20
Selenium	100	1.72	96.0	93.4	94.3	91.7	1	75.0-125			2.70	20
Silver	20.0	U	16.5	15.7	82.7	78.6	1	75.0-125			5.14	20
Zinc	100	48.6	148	144	99.0	95.8	1	75.0-125			2.13	20

Method Blank (MB)

(MB) R3671004-1 06/23/21 13:22

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Hot Water Sol. Boron	U		0.0167	0.200

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3671004-2 06/23/21 13:24 • (LCSD) R3671004-3 06/23/21 13:27

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	0.973	0.972	97.3	97.2	80.0-120			0.145	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3670989-1 06/23/21 15:17

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.100	1.00

Laboratory Control Sample (LCS)

(LCS) R3670989-2 06/23/21 15:20

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	99.5	99.5	80.0-120	

L1366954-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1366954-03 06/23/21 15:24 • (MS) R3670989-5 06/23/21 15:34 • (MSD) R3670989-6 06/23/21 15:37

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	5.29	98.3	96.0	93.0	90.7	5	75.0-125			2.40	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3672496-2 06/23/21 16:32

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	108			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3672496-1 06/23/21 15:49

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.93	89.6	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			98.7	77.0-120	

L1367056-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1367056-01 06/23/21 20:38 • (MS) R3672496-3 06/24/21 00:36 • (MSD) R3672496-4 06/24/21 00:57

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	141	U	95.0	87.1	88.8	81.4	25	10.0-151			8.68	28
(S) a,a,a-Trifluorotoluene(FID)					97.1	101		77.0-120				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3672511-2 06/21/21 10:35

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Ethylbenzene	U		0.000737	0.00250
Toluene	U		0.00130	0.00500
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	101			75.0-131
(S) 4-Bromofluorobenzene	100			67.0-138
(S) 1,2-Dichloroethane-d4	107			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3672511-1 06/21/21 09:38

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.127	102	70.0-123	
Ethylbenzene	0.125	0.124	99.2	74.0-126	
Toluene	0.125	0.122	97.6	75.0-121	
1,2,4-Trimethylbenzene	0.125	0.122	97.6	70.0-126	
1,3,5-Trimethylbenzene	0.125	0.124	99.2	73.0-127	
Xylenes, Total	0.375	0.361	96.3	72.0-127	
(S) Toluene-d8			102	75.0-131	
(S) 4-Bromofluorobenzene			98.6	67.0-138	
(S) 1,2-Dichloroethane-d4			112	70.0-130	

L1366954-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1366954-09 06/21/21 15:03 • (MS) R3672511-3 06/21/21 17:52 • (MSD) R3672511-4 06/21/21 18:11

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	U	0.106	0.139	84.8	111	1	10.0-149			26.9	37
Ethylbenzene	0.125	U	0.106	0.134	84.8	107	1	10.0-160			23.3	38
Toluene	0.125	U	0.104	0.133	83.2	106	1	10.0-156			24.5	38
1,2,4-Trimethylbenzene	0.125	U	0.107	0.136	85.6	109	1	10.0-160			23.9	36
1,3,5-Trimethylbenzene	0.125	U	0.108	0.138	86.4	110	1	10.0-160			24.4	38
Xylenes, Total	0.375	U	0.316	0.390	84.3	104	1	10.0-160			21.0	38
(S) Toluene-d8					101	101		75.0-131				
(S) 4-Bromofluorobenzene					100	99.1		67.0-138				
(S) 1,2-Dichloroethane-d4					105	108		70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3671267-1 06/24/21 02:03

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	U		0.274	4.00
(S) o-Terphenyl	60.1			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3671267-2 06/24/21 02:16

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	43.9	87.8	50.0-150	
(S) o-Terphenyl			86.6	18.0-148	

L1366954-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1366954-01 06/24/21 05:31 • (MS) R3671267-3 06/24/21 05:44 • (MSD) R3671267-4 06/24/21 05:57

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	48.5	49.9	39.4	47.2	0.000	0.000	1	50.0-150	J6	J6	18.0	20
(S) o-Terphenyl					57.6	67.0		18.0-148				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3670111-2 06/22/21 00:45

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.00230	0.00600
Acenaphthene	U		0.00209	0.00600
Acenaphthylene	U		0.00216	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(g,h,i)perylene	U		0.00177	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
Naphthalene	U		0.00408	0.0200
Phenanthrene	U		0.00231	0.00600
Pyrene	U		0.00200	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
2-Chloronaphthalene	U		0.00466	0.0200
(S) Nitrobenzene-d5	47.0			14.0-149
(S) 2-Fluorobiphenyl	57.3			34.0-125
(S) p-Terphenyl-d14	72.4			23.0-120

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3670111-1 06/22/21 00:25

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0600	75.0	50.0-126	
Acenaphthene	0.0800	0.0549	68.6	50.0-120	
Acenaphthylene	0.0800	0.0616	77.0	50.0-120	
Benzo(a)anthracene	0.0800	0.0628	78.5	45.0-120	
Benzo(a)pyrene	0.0800	0.0536	67.0	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0534	66.8	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0512	64.0	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0542	67.8	49.0-125	
Chrysene	0.0800	0.0600	75.0	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0503	62.9	47.0-125	
Fluoranthene	0.0800	0.0616	77.0	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3670111-1 06/22/21 00:25

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0640	80.0	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0525	65.6	46.0-125	
Naphthalene	0.0800	0.0526	65.8	50.0-120	
Phenanthrene	0.0800	0.0586	73.3	47.0-120	
Pyrene	0.0800	0.0642	80.3	43.0-123	
1-Methylnaphthalene	0.0800	0.0582	72.8	51.0-121	
2-Methylnaphthalene	0.0800	0.0554	69.3	50.0-120	
2-Chloronaphthalene	0.0800	0.0560	70.0	50.0-120	
(S) Nitrobenzene-d5			64.9	14.0-149	
(S) 2-Fluorobiphenyl			73.9	34.0-125	
(S) p-Terphenyl-d14			94.2	23.0-120	

L1366954-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1366954-02 06/22/21 03:44 • (MS) R3670111-3 06/22/21 04:04 • (MSD) R3670111-4 06/22/21 04:24

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0796	U	0.0463	0.0473	58.2	60.3	1	10.0-145			2.14	30
Acenaphthene	0.0796	U	0.0454	0.0476	57.0	60.7	1	14.0-127			4.73	27
Acenaphthylene	0.0796	U	0.0496	0.0521	62.3	66.5	1	21.0-124			4.92	25
Benzo(a)anthracene	0.0796	U	0.0439	0.0453	55.2	57.8	1	10.0-139			3.14	30
Benzo(a)pyrene	0.0796	U	0.0417	0.0428	52.4	54.6	1	10.0-141			2.60	31
Benzo(b)fluoranthene	0.0796	U	0.0398	0.0413	50.0	52.7	1	10.0-140			3.70	36
Benzo(g,h,i)perylene	0.0796	U	0.0409	0.0415	51.4	52.9	1	10.0-140			1.46	33
Benzo(k)fluoranthene	0.0796	U	0.0397	0.0405	49.9	51.7	1	10.0-137			2.00	31
Chrysene	0.0796	U	0.0456	0.0461	57.3	58.8	1	10.0-145			1.09	30
Dibenz(a,h)anthracene	0.0796	U	0.0371	0.0370	46.6	47.2	1	10.0-132			0.270	31
Fluoranthene	0.0796	U	0.0473	0.0493	59.4	62.9	1	10.0-153			4.14	33
Fluorene	0.0796	U	0.0513	0.0529	64.4	67.5	1	11.0-130			3.07	29
Indeno(1,2,3-cd)pyrene	0.0796	U	0.0400	0.0402	50.3	51.3	1	10.0-137			0.499	32
Naphthalene	0.0796	U	0.0441	0.0475	55.4	60.6	1	10.0-135			7.42	27
Phenanthrene	0.0796	U	0.0475	0.0490	59.7	62.5	1	10.0-144			3.11	31
Pyrene	0.0796	U	0.0505	0.0514	63.4	65.6	1	10.0-148			1.77	35
1-Methylnaphthalene	0.0796	U	0.0486	0.0517	61.1	65.9	1	10.0-142			6.18	28
2-Methylnaphthalene	0.0796	U	0.0458	0.0490	57.5	62.5	1	10.0-137			6.75	28
2-Chloronaphthalene	0.0796	U	0.0461	0.0485	57.9	61.9	1	29.0-120			5.07	24
(S) Nitrobenzene-d5					54.5	55.8		14.0-149				
(S) 2-Fluorobiphenyl					66.0	69.3		34.0-125				
(S) p-Terphenyl-d14					70.7	76.9		23.0-120				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3670736-2 06/22/21 23:39

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.00230	0.00600
Acenaphthene	U		0.00209	0.00600
Acenaphthylene	U		0.00216	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(g,h,i)perylene	U		0.00177	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
Naphthalene	U		0.00408	0.0200
Phenanthrene	U		0.00231	0.00600
Pyrene	U		0.00200	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
2-Chloronaphthalene	U		0.00466	0.0200
(S) Nitrobenzene-d5	34.4			14.0-149
(S) 2-Fluorobiphenyl	52.2			34.0-125
(S) p-Terphenyl-d14	87.2			23.0-120

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R3670736-1 06/22/21 23:19

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0457	57.1	50.0-126	
Acenaphthene	0.0800	0.0424	53.0	50.0-120	
Acenaphthylene	0.0800	0.0465	58.1	50.0-120	
Benzo(a)anthracene	0.0800	0.0467	58.4	45.0-120	
Benzo(a)pyrene	0.0800	0.0380	47.5	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0380	47.5	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0387	48.4	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0391	48.9	49.0-125	J4
Chrysene	0.0800	0.0470	58.7	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0397	49.6	47.0-125	
Fluoranthene	0.0800	0.0477	59.6	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3670736-1 06/22/21 23:19

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0492	61.5	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0384	48.0	46.0-125	
Naphthalene	0.0800	0.0413	51.6	50.0-120	
Phenanthrene	0.0800	0.0445	55.6	47.0-120	
Pyrene	0.0800	0.0487	60.9	43.0-123	
1-Methylnaphthalene	0.0800	0.0456	57.0	51.0-121	
2-Methylnaphthalene	0.0800	0.0429	53.6	50.0-120	
2-Chloronaphthalene	0.0800	0.0431	53.9	50.0-120	
(S) Nitrobenzene-d5			29.3	14.0-149	
(S) 2-Fluorobiphenyl			40.8	34.0-125	
(S) p-Terphenyl-d14			72.8	23.0-120	

L1367207-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1367207-07 06/23/21 01:18 • (MS) R3670736-3 06/23/21 01:38 • (MSD) R3670736-4 06/23/21 01:58

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0799	U	0.0267	0.0323	33.5	40.6	1	10.0-145			19.0	30
Acenaphthene	0.0799	U	0.0266	0.0313	33.4	39.3	1	14.0-127			16.2	27
Acenaphthylene	0.0799	U	0.0285	0.0330	35.8	41.5	1	21.0-124			14.6	25
Benzo(a)anthracene	0.0799	U	0.0236	0.0309	29.6	38.8	1	10.0-139			26.8	30
Benzo(a)pyrene	0.0799	U	0.0234	0.0301	29.4	37.8	1	10.0-141			25.0	31
Benzo(b)fluoranthene	0.0799	U	0.0219	0.0293	27.5	36.8	1	10.0-140			28.9	36
Benzo(g,h,i)perylene	0.0799	U	0.0235	0.0310	29.5	38.9	1	10.0-140			27.5	33
Benzo(k)fluoranthene	0.0799	U	0.0227	0.0290	28.5	36.4	1	10.0-137			24.4	31
Chrysene	0.0799	U	0.0258	0.0335	32.4	42.1	1	10.0-145			26.0	30
Dibenz(a,h)anthracene	0.0799	U	0.0199	0.0259	25.0	32.5	1	10.0-132			26.2	31
Fluoranthene	0.0799	U	0.0271	0.0347	34.0	43.6	1	10.0-153			24.6	33
Fluorene	0.0799	U	0.0292	0.0364	36.7	45.7	1	11.0-130			22.0	29
Indeno(1,2,3-cd)pyrene	0.0799	U	0.0208	0.0278	26.1	34.9	1	10.0-137			28.8	32
Naphthalene	0.0799	U	0.0278	0.0304	34.9	38.2	1	10.0-135			8.93	27
Phenanthrene	0.0799	U	0.0269	0.0334	33.8	42.0	1	10.0-144			21.6	31
Pyrene	0.0799	U	0.0285	0.0367	35.8	46.1	1	10.0-148			25.2	35
1-Methylnaphthalene	0.0799	U	0.0291	0.0327	36.6	41.1	1	10.0-142			11.7	28
2-Methylnaphthalene	0.0799	U	0.0277	0.0311	34.8	39.1	1	10.0-137			11.6	28
2-Chloronaphthalene	0.0799	U	0.0278	0.0316	34.9	39.7	1	29.0-120			12.8	24
(S) Nitrobenzene-d5					21.9	19.0		14.0-149				
(S) 2-Fluorobiphenyl					27.3	28.1		34.0-125	J2	J2		
(S) p-Terphenyl-d14					43.4	54.5		23.0-120				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

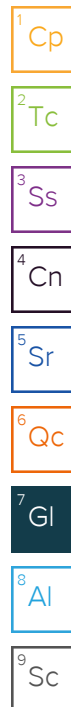
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.
J4	The associated batch QC was outside the established quality control range for accuracy.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
T8	Sample(s) received past/too close to holding time expiration.



ACCREDITATIONS & LOCATIONS

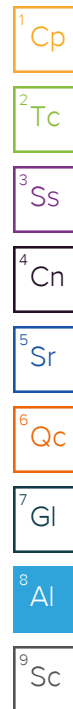
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA -- ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



Company Name/Address: Caerus Oil and Gas 143 Diamond Ave. Parachute, CO 81635				Billing Information: Caerus Oil and Gas 143 Diamond Ave. Parachute, CO 81635				Analysis / Container / Preservative						Chain of Custody Page <u>1</u> of <u>1</u> <div style="text-align: center;"> ESC <small>L.A.B S.C.I.E.N.C.E.S</small> <hr/> <small>YOUR LAB OF CHOICE</small> 12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859 </div>																					
Report to: Blair Rollins				Email To: brollins@caerusoilandgas.com				<div style="display: flex; justify-content: space-around;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Table 915 GRO/DRO/ORO</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Table 915 Metals</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Table 915 PAH's</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Table 915 VOCs</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Table 915 pH, SPCON, SAR</div> </div>						L# 1366954 J125																					
Project Description: N23				City/State Collected: Parachute, CO										Acctnum: Template: Prelogin: TSR: Cooler: Shipped Via: <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="width: 50%;">Rem./Contaminant</th> <th style="width: 50%;">Sample # (lab only)</th> </tr> <tr><td></td><td>-01</td></tr> <tr><td></td><td>-02</td></tr> <tr><td></td><td>-03</td></tr> <tr><td></td><td>-04</td></tr> <tr><td></td><td>-05</td></tr> <tr><td></td><td>-06</td></tr> <tr><td></td><td>-07</td></tr> <tr><td></td><td>-08</td></tr> <tr><td></td><td>-09</td></tr> </table>		Rem./Contaminant	Sample # (lab only)		-01		-02		-03		-04		-05		-06		-07		-08		-09
Rem./Contaminant	Sample # (lab only)																																		
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Phone: (970) 640-6919 Fax:		Client Project #		Lab Project #																															
Collected by (print): Reed Johnson		Site/Facility ID #		P.O. #																															
Collected by (signature): Immediately Packed on Ice <input type="checkbox"/> N <input checked="" type="checkbox"/> Y		Rush? (Lab MUST Be Notified) <input type="checkbox"/> Same Day200% <input type="checkbox"/> Next Day100% <input type="checkbox"/> Two Day50% <input type="checkbox"/> Three Day25%		Date Results Needed Email? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes FAX? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes		No. of Cntrs																													
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs																													
20210615-N23-S02(0-2)	6.66	SS	0-2'	6/15/21	0855	2	X	X	X	X	X				-01																				
20210615-N23-S02(5-7)			5-7'		0920	2	X	X	X	X	X				-02																				
20210615-N23-S02(10-12)			10-12'		0935	2	X	X	X	X	X				-03																				
20210615-N23-S02(15-17)			15-17'		0955	2	X	X	X	X	X				-04																				
20210615-N23-S03(0-2)			0-2'		1105	2	X	X	X	X	X				-05																				
20210615-N23-S03(5-7)			5-7'		1130	2	X	X	X	X	X				-06																				
20210615-N23-S03(10-12)			10-12'		1145	2	X	X	X	X	X				-07																				
20210615-N23-S03(15-17)			15-17'		1215	2	X	X	X	X	X				-08																				
20210615-N23-S03(20-22)			20-22'		1230	2	X	X	X	X	X				-09																				

* Matrix: **SS** - Soil **GW** - Groundwater **WW** - WasteWater **DW** - Drinking Water **OT** - Other _____

Remarks:

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	<input type="checkbox"/> FedEx <input type="checkbox"/> Courier <input type="checkbox"/>
	6/15/21	1600		
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: <u>21.1</u> °C Bottles Received: <u>18</u>
	6/15/21	1730		
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: <u>6/16/21</u> Time: <u>830</u>

COC Seal Present/Intact: ☒ Y ☐ N If Applicable

COC Signed/Accurate: ☒ Y ☐ N VOA Zero Headspace: ☐ Y ☒ N

Bottles arrive intact: ☒ Y ☐ N Pres. Correct/Check: ☐ Y ☒ N

Correct bottles used: ☒ Y ☐ N

Sufficient volume sent: ☒ Y ☐ N

RAD Screen <0.5 mR/hr: ☒ Y ☐ N

COC Seal Intact: ☐ Y ☒ N ☐ NA

pH Checked: ☐ NCF: ☐



01-Feb-2012

Herman Lucero
HRL Compliance Solutions
744 Horizon Ct. Suite 140
Grand Junction, CO 81506

Re: **PDC Mesa 16 Background 5/4/11**

Work Order: **1105150**

Dear Herman,

ALS Environmental received 5 samples on 06-May-2011 10:00 AM for the analyses presented in the following report.

This is a REVISED REPORT. The Case Narrative provides information discussing the reason for issuing a revised report. The total number of pages in this revision is 34.

If you have any questions regarding these test results, please feel free to contact me.

Sincerely,

A handwritten signature in cursive script that reads "Ann Preston".

Electronically approved by: Alex Csaszar

Ann Preston
Project Manager



ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185

ALS GROUP USA, CORP. Part of the ALS Group A Campbell Brothers Limited Company

Environmental A small icon of a stylized flame or drop inside a circle.

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RIGHT SOLUTIONS RIGHT PARTNER



Client: HRL Compliance Solutions
Project: PDC Mesa 16 Background 5/4/11
Work Order: 1105150

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1105150-01	Drill Cuttings	Soil		5/4/2011 10:30	5/6/2011 10:00	<input checked="" type="checkbox"/>
1105150-02	AS 1	Soil		5/4/2011 10:45	5/6/2011 10:00	<input type="checkbox"/>
1105150-03	AS 2	Soil		5/4/2011 10:50	5/6/2011 10:00	<input type="checkbox"/>
1105150-04	AS 3	Soil		5/6/2011 11:00	5/6/2011 10:00	<input type="checkbox"/>
1105150-05	Background	Soil		5/4/2011 11:05	5/6/2011 10:00	<input type="checkbox"/>



Client: HRL Compliance Solutions
Project: PDC Mesa 16 Background 5/4/11
Work Order: 1105150

Case Narrative

The Drill Cuttings data are not included in this revised report, per the client's request 1/11/12.

Batch 33205, Diesel Range Organics by GC-FID, Sample 1105150-01A: Surrogate recovery was above control limits due to matrix interference.

Batch 33203 MS/MSD data for Metals is not related to this project's samples.

Batch 33204 LCS/LCSD recoveries for a few Semi-volatile compounds were above control limits. All samples in this quality control batch were ND for these compounds. The MS/MSD data for Semi-Volatiles is not related to this project's samples.

Batch 33240 MS/MSD data for Hexavalent Chromium is not related to this project's samples.

A revised report was issued per client request to remove Drill Cuttings data.

Client: HRL Compliance Solutions
Project: PDC Mesa 16 Background 5/4/11
WorkOrder: 1105150

QUALIFIERS, ACRONYMS, UNITS

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

<u>Acronym</u>	<u>Description</u>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
SD	Serial Dilution
TDL	Target Detection Limit

<u>Units Reported</u>	<u>Description</u>
% of sample	Percent of Sample
mg/Kg-dry	Milligrams per Kilogram Dry Weight
s.u.	Standard Units



ALS Group USA, Corp

Date: 01-Feb-12

Client:	HRL Compliance Solutions	Work Order:	1105150
Project:	PDC Mesa 16 Background 5/4/11	Lab ID:	1105150-02
Sample ID:	AS 1	Matrix:	SOIL
Collection Date:	5/4/2011 10:45 AM		

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020A		Prep Date: 5/7/2011	Analyst: CES
Arsenic	23		0.94	mg/Kg-dry	2	5/10/2011 06:40 AM
MOISTURE			A2540 G			Analyst: JJG
Moisture	26		0.050	% of sample	1	5/6/2011 12:01 PM



Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	HRL Compliance Solutions	Work Order:	1105150
Project:	PDC Mesa 16 Background 5/4/11	Lab ID:	1105150-03
Sample ID:	AS 2	Matrix:	SOIL
Collection Date:	5/4/2011 10:50 AM		

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020A		Prep Date: 5/7/2011	Analyst: CES
Arsenic	28		1.1	mg/Kg-dry	2	5/10/2011 06:46 AM
MOISTURE			A2540 G			Analyst: JJG
Moisture	29		0.050	% of sample	1	5/6/2011 12:01 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 01-Feb-12

Client: HRL Compliance Solutions

Project: PDC Mesa 16 Background 5/4/11

Sample ID: AS 3

Collection Date: 5/6/2011 11:00 AM

Work Order: 1105150

Lab ID: 1105150-04

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020A		Prep Date: 5/7/2011	Analyst: CES
Arsenic	44		1.0	mg/Kg-dry	2	5/10/2011 06:52 AM
MOISTURE			A2540 G			Analyst: JJG
Moisture	25		0.050	% of sample	1	5/6/2011 12:01 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 01-Feb-12

Client: HRL Compliance Solutions

Project: PDC Mesa 16 Background 5/4/11

Sample ID: Background

Collection Date: 5/4/2011 11:05 AM

Work Order: 1105150

Lab ID: 1105150-05

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SUBCONTRACTED ANALYSES			SUBCONTRACT			Analyst: A&LGL
Subcontracted Analyses	Rcvd 5/11/11			attached	1	5/11/2011
MOISTURE			A2540 G			Analyst: JJG
Moisture	26		0.050	% of sample	1	5/6/2011 12:01 PM
PH			SW9045D			Analyst: JJG
pH	7.44			s.u.	1	5/6/2011 11:00 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Report Number: F11129-0258

Account Number: 91000

A & L GREAT LAKES LABORATORIES, INC.

3505 Conestoga Drive • Fort Wayne, Indiana 46808-4413 • Phone 260-483-4759 • Fax 260-483-5274
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QUALITY ANALYSES FOR INFORMED DECISIONS



REPORT PRINTED 2/1/2012

TO: ALS LABORATORY GROUP
3352 128TH AVE
HOLLAND, MI 49424-9263

RE: 1105150

DATE RECEIVED: 05/09/2011

DATE REPORTED: 02/01/2012

PAGE: 1

P.O. NUMBER: 20-122010075

ATTN: ANN PRESTON

REPORT OF ANALYSIS

LAB NO.	SAMPLE ID	ANALYSIS	RESULT	UNIT	METHOD
30107	05B	Sat'd Paste Extraction with DIW	1		USDA Handbook 60
		Conductivity (ECe)	0.21	mmho/cm	USDA Handbook 60
		Calcium (Sat'd Paste)	23	ppm	USDA Handbook 60
		Magnesium (Sat'd Paste)	8	ppm	USDA Handbook 60
		Sodium (Sat'd Paste)	16	ppm	USDA Handbook 60
		Sodium Adsorption Ratio (SAR)	0.7	-	USDA Handbook 60

ALS Group USA, Corp

Date: 01-Feb-12

Client: HRL Compliance Solutions
 Work Order: 1105150
 Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: 33205 Instrument ID GC8 Method: SW8015M

MBLK	Sample ID: DBLKS1-33205-33205				Units: mg/Kg		Analysis Date: 5/10/2011 09:15 PM			
Client ID:	Run ID: GC8_110510A				SeqNo: 1623019		Prep Date: 5/9/2011		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	ND	4.2								
Surr: 4-Terphenyl-d14	1.602	0	1.667	0	96.1	39-115	0			

LCS	Sample ID: DLCSS1-33205-33205				Units: mg/Kg		Analysis Date: 5/10/2011 07:37 PM			
Client ID:	Run ID: GC8_110510A				SeqNo: 1623016		Prep Date: 5/9/2011		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	180.9	5.0	200	0	90.4	60-130	0			
Surr: 4-Terphenyl-d14	1.756	0	2	0	87.8	39-115	0			

LCSD	Sample ID: DLCSDS1-33205-33205				Units: mg/Kg		Analysis Date: 5/10/2011 08:02 PM			
Client ID:	Run ID: GC8_110510A				SeqNo: 1623047		Prep Date: 5/9/2011		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
RO (C10-C28)	175.7	5.0	200	0	87.8	60-130	180.9	2.92	30	
Surr: 4-Terphenyl-d14	1.672	0	2	0	83.6	39-115	1.756	4.85	30	

MS	Sample ID: 1105174-04A MS				Units: mg/Kg		Analysis Date: 5/10/2011 03:57 PM			
Client ID:	Run ID: GC8_110510A				SeqNo: 1623008		Prep Date: 5/9/2011		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	299.6	8.2	328	8.159	88.9	60-130	0			
Surr: 4-Terphenyl-d14	2.175	0	3.28	0	66.3	39-115	0			

MSD	Sample ID: 1105174-04A MSD				Units: mg/Kg		Analysis Date: 5/10/2011 04:21 PM			
Client ID:	Run ID: GC8_110510A				SeqNo: 1623039		Prep Date: 5/9/2011		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	313.1	7.9	317.1	8.159	96.1	60-130	299.6	4.39	30	
Surr: 4-Terphenyl-d14	1.937	0	3.171	0	61.1	39-115	2.175	11.6	30	

The following samples were analyzed in this batch:

1105150-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
 Work Order: 1105150
 Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: R89951 Instrument ID GC9 Method: SW8015

MBLK	Sample ID: MBLK-R89951-R89951					Units: µg/L		Analysis Date: 5/10/2011 12:38 PM		
Client ID:	Run ID: GC9_110510B					SeqNo: 1622997		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	200								
Surr: Toluene-d8	94.8	0	100	0	94.8	70-130	0			

LCS	Sample ID: LCS-R89951-R89951					Units: µg/L		Analysis Date: 5/10/2011 11:15 AM		
Client ID:	Run ID: GC9_110510B				SeqNo:1622995		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	27010	200	25000	0	108	70-130	0			
Surr: Toluene-d8	104.5	0	100	0	105	70-130	0			

LCSD	Sample ID: LCSD-R89951-R89951					Units: µg/L		Analysis Date: 5/10/2011 11:41 AM		
Client ID:	Run ID: GC9_110510B				SeqNo: 1622996		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	28380	200	25000	0	114	70-130	27010	4.93	30	
Surr: Toluene-d8	103.7	0	100	0	104	70-130	104.5	0.816	30	

MS	Sample ID: 1105136-03A MS				Units: µg/Kg		Analysis Date: 5/10/2011 09:44 PM			
Client ID:	Run ID: GC9_110510B				SeqNo: 1622987		Prep Date:		DF: 100	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	2573000	5,000	2500000		0 103	70-130		0		
Surr: Toluene-d8	9665	0	10000		0 96.6	50-150		0		

MS	Sample ID: 1105174-04B MS				Units: µg/Kg		Analysis Date: 5/10/2011 10:10 PM			
Client ID:	Run ID: GC9_110510B				SeqNo: 1622988		Prep Date:		DF: 118	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	2956000	5,900	2950000	0	100	70-130	0			
Surr: Toluene-d8	11290	0	11800	0	95.7	50-150	0			

MSD	Sample ID: 1105136-03A MSD					Units: µg/Kg		Analysis Date: 5/10/2011 10:36 PM		
Client ID:	Run ID: GC9_110510B				SeqNo: 1622989		Prep Date:		DF: 100	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	2406000	5,000	2500000	0	96.3	70-130	2573000	6.68	30	
Surr: Toluene-d8	9269	0	10000	0	92.7	50-150	9665	4.18	30	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1105150
Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: **R89951** Instrument ID **GC9** Method: **SW8015**

MSD		Sample ID: 1105174-04B MSD				Units: µg/Kg		Analysis Date: 5/10/2011 11:01 PM		
Client ID:		Run ID: GC9_110510B				SeqNo: 1622990		Prep Date:		DF: 118
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	2744000	5,900	2950000	0	93	70-130	2956000	7.46	30	
Surr: Toluene-d8	11240	0	11800	0	95.2	50-150	11290	0.45	30	

The following samples were analyzed in this batch:

1105150-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
 Work Order: 1105150
 Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: 33259 Instrument ID HG1 Method: SW7471

MBLK	Sample ID: MBLK-33259-33259					Units:mg/Kg		Analysis Date: 5/12/2011 12:36 PM		
Client ID:	Run ID: HG1_110512A				SeqNo:1623668		Prep Date: 5/12/2011		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	0.020								

LCS	Sample ID: LCS-33259-33259					Units:mg/Kg		Analysis Date: 5/12/2011 12:38 PM		
Client ID:	Run ID: HG1_110512A				SeqNo:1623669		Prep Date: 5/12/2011		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1652	0.020	0.1665	0	99.2	80-120	0			

LCSD	Sample ID: LCSD-33259-33259					Units:mg/Kg		Analysis Date: 5/12/2011 12:40 PM		
Client ID:	Run ID: HG1_110512A				SeqNo: 1623670		Prep Date: 5/12/2011		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1705	0.020	0.1665	0	102	80-120	0.1652	3.13	20	

MS	Sample ID: 1105208-03BMS				Units:mg/Kg		Analysis Date: 5/12/2011 01:14 PM			
Client ID:	Run ID: HG1_110512A				SeqNo: 1623685		Prep Date: 5/12/2011		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1671	0.018	0.1516	0.006278	106	75-125	0			

MSD	Sample ID: 1105208-03BMSD					Units:mg/Kg		Analysis Date: 5/12/2011 01:16 PM		
Client ID:	Run ID: HG1_110512A				SeqNo:1623686		Prep Date: 5/12/2011		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1695	0.019	0.1611	0.006278	101	75-125	0.1671	1.41	35	

The following samples were analyzed in this batch: 1105150-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
 Work Order: 1105150
 Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: 33203 Instrument ID ICPMS1 Method: SW6020A

MBLK Sample ID: MBLK-33203-33203 Units: mg/Kg Analysis Date: 5/10/2011 04:12 AM

Client ID: Run ID: ICPMS1_110509A SeqNo: 1621165 Prep Date: 5/7/2011 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								
Barium	ND	0.25								
Cadmium	ND	0.10								
Chromium	ND	0.25								
Copper	ND	0.25								
Nickel	ND	0.25								
Selenium	ND	0.25								
Silver	ND	0.25								
Zinc	ND	0.50								

MBLK Sample ID: MBLK-33203-33203 Units: mg/Kg Analysis Date: 5/10/2011 01:17 PM

Client ID: Run ID: ICPMS1_110509A SeqNo: 1621829 Prep Date: 5/7/2011 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	ND	0.25								

CS Sample ID: LCS-33203-33203 Units: mg/Kg Analysis Date: 5/10/2011 04:18 AM

Client ID: Run ID: ICPMS1_110509A SeqNo: 1621167 Prep Date: 5/7/2011 DF: 2

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	5.132	0.50	5	0	103	80-120	0			
Barium	4.909	0.50	5	0	98.2	80-120	0			
Cadmium	4.589	0.20	5	0	91.8	80-120	0			
Chromium	5.625	0.50	5	0	112	80-120	0			
Copper	5.414	0.50	5	0	108	80-120	0			
Nickel	5.598	0.50	5	0	112	80-120	0			
Selenium	4.753	0.50	5	0	95.1	80-120	0			
Silver	4.485	0.50	5	0	89.7	80-120	0			
Zinc	5.422	1.0	5	0	108	80-120	0			

LCS Sample ID: LCS-33203-33203 Units: mg/Kg Analysis Date: 5/10/2011 01:47 PM

Client ID: Run ID: ICPMS1_110509A SeqNo: 1621832 Prep Date: 5/7/2011 DF: 2

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	4.871	0.50	5	0	97.4	80-120	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
 Work Order: 1105150
 Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: 33203 Instrument ID ICPMS1 Method: SW6020A

LCSD		Sample ID: LCSD-33203-33203		Units: mg/Kg		Analysis Date: 5/10/2011 04:24 AM				
Client ID:		Run ID: ICPMS1_110509A		SeqNo: 1621169		Prep Date: 5/7/2011		DF: 2		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.943	0.50	5	0	98.9	80-120	5.132	3.75	20	
Barium	4.747	0.50	5	0	94.9	80-120	4.909	3.36	20	
Cadmium	4.422	0.20	5	0	88.4	80-120	4.589	3.71	20	
Chromium	5.33	0.50	5	0	107	80-120	5.625	5.39	20	
Copper	5.166	0.50	5	0	103	80-120	5.414	4.69	20	
Nickel	5.33	0.50	5	0	107	80-120	5.598	4.9	20	
Selenium	4.559	0.50	5	0	91.2	80-120	4.753	4.17	20	
Silver	4.271	0.50	5	0	85.4	80-120	4.485	4.89	20	
Zinc	5.176	1.0	5	0	104	80-120	5.422	4.64	20	

LCSD		Sample ID: LCSD-33203-33203		Units: mg/Kg		Analysis Date: 5/10/2011 01:53 PM				
Client ID:		Run ID: ICPMS1_110509A		SeqNo: 1621833		Prep Date: 5/7/2011		DF: 2		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	4.738	0.50	5	0	94.8	80-120	4.871	2.77	20	

MS		Sample ID: 1105171-04BMS		Units: mg/Kg		Analysis Date: 5/10/2011 10:13 AM				
Client ID:		Run ID: ICPMS1_110509A		SeqNo: 1621291		Prep Date: 5/7/2011		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	8.409	0.41	8.157	1.531	84.3	80-120	0			
Barium	51.66	0.41	8.157	40.99	131	80-120	0			SO
Cadmium	7.184	0.16	8.157	0.03361	87.7	80-120	0			
Lead	13.59	0.41	8.157	4.057	117	80-120	0			
Selenium	6.488	0.41	8.157	0.2389	76.6	80-120	0			S
Silver	7.121	0.41	8.157	0.002449	87.3	80-120	0			
Zinc	18.16	0.82	8.157	11.3	84.1	80-120	0			

MS		Sample ID: 1105171-04BMS		Units: mg/Kg		Analysis Date: 5/10/2011 06:20 PM				
Client ID:		Run ID: ICPMS1_110509A		SeqNo: 1622158		Prep Date: 5/7/2011		DF: 2		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Copper	9.561	0.82	8.157	1.912	93.8	80-120	0			

MS		Sample ID: 1105171-04BMS		Units: mg/Kg		Analysis Date: 5/11/2011 11:00 AM				
Client ID:		Run ID: ICPMS2_110511A		SeqNo: 1622606		Prep Date: 5/7/2011		DF: 2		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium	12.8	0.82	8.157	4.15	106	80-120	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1105150
Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: 33203 Instrument ID ICPMS1 Method: SW6020A

MSD	Sample ID: 1105171-04BMSD					Units:mg/Kg		Analysis Date: 5/10/2011 10:19 AM		
Client ID:	Run ID: ICPMS1_110509A				SeqNo:1621292		Prep Date: 5/7/2011		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	8.626	0.41	8.278	1.531	85.7	80-120	8.409	2.54	25	
Barium	49.83	0.41	8.278	40.99	107	80-120	51.66	3.61	25	O
Cadmium	7.455	0.17	8.278	0.03361	89.7	80-120	7.184	3.7	25	
Lead	13.82	0.41	8.278	4.057	118	80-120	13.59	1.72	25	
Selenium	6.759	0.41	8.278	0.2389	78.8	80-120	6.488	4.1	25	S
Silver	7.342	0.41	8.278	0.002449	88.7	80-120	7.121	3.06	25	
Zinc	20.02	0.83	8.278	11.3	105	80-120	18.16	9.74	25	

MSD	Sample ID: 1105171-04BMSD					Units: mg/Kg		Analysis Date: 5/10/2011 06:26 PM		
Client ID:	Run ID: ICPMS1_110509A				SeqNo: 1622159		Prep Date: 5/7/2011		DF: 2	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Copper	9.882	0.83	8.278	1.912	96.3	80-120	9.561	3.3	25	

MSD	Sample ID: 1105171-04BMSD					Units: mg/Kg		Analysis Date: 5/11/2011 11:05 AM		
Client ID:	Run ID: ICPMS2_110511A					SeqNo: 1622607		Prep Date: 5/7/2011		DF: 2
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium	13.09	0.83	8.278	4.15	108	80-120	12.8	2.29	25	

The following samples were analyzed in this batch:

1105150-01A	1105150-02A	1105150-03A
1105150-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
 Work Order: 1105150
 Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: 33204 Instrument ID SVMS5 Method: SW8270

MBLK Sample ID: SBLKS1-33204-33204 Units: µg/Kg Analysis Date: 5/11/2011 09:02 AM

Client ID: Run ID: SVMS5_110510A SeqNo: 1622740 Prep Date: 5/9/2011 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	ND	160								
1,2-Dichlorobenzene	ND	160								
1,3-Dichlorobenzene	ND	160								
1,4-Dichlorobenzene	ND	160								
2,4,5-Trichlorophenol	ND	160								
2,4,6-Trichlorophenol	ND	160								
2,4-Dichlorophenol	ND	160								
2,4-Dimethylphenol	ND	330								
2,4-Dinitrophenol	ND	660								
2,4-Dinitrotoluene	ND	160								
2,6-Dinitrotoluene	ND	160								
2-Chloronaphthalene	ND	80								
2-Chlorophenol	ND	160								
2-Methylnaphthalene	ND	80								
2-Methylphenol	ND	160								
2-Nitroaniline	ND	660								
2-Nitrophenol	ND	160								
2,3'-Dichlorobenzidine	ND	660								
3-Nitroaniline	ND	660								
4,6-Dinitro-2-methylphenol	ND	330								
4-Bromophenyl phenyl ether	ND	160								
4-Chloro-3-methylphenol	ND	160								
4-Chloroaniline	ND	660								
4-Chlorophenyl phenyl ether	ND	160								
4-Methylphenol	ND	160								
4-Nitroaniline	ND	660								
4-Nitrophenol	ND	660								
Acenaphthene	ND	30								
Acenaphthylene	ND	30								
Anthracene	ND	30								
Benzo(a)anthracene	ND	30								
Benzo(a)pyrene	ND	30								
Benzo(b)fluoranthene	ND	30								
Benzo(g,h,i)perylene	ND	30								
Benzo(k)fluoranthene	ND	30								
Bis(2-chloroethoxy)methane	ND	160								
Bis(2-chloroethyl)ether	ND	160								
Bis(2-chloroisopropyl)ether	ND	160								
Bis(2-ethylhexyl)phthalate	ND	330								
Butyl benzyl phthalate	ND	160								
Carbazole	ND	160								
Chrysene	ND	30								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
 Work Order: 1105150
 Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: 33204	Instrument ID SVMS5	Method: SW8270						
Dibenzo(a,h)anthracene	ND	30						
Dibenzofuran	ND	160						
Diethyl phthalate	ND	330						
Dimethyl phthalate	ND	330						
Di-n-butyl phthalate	76.67	330						
Di-n-octyl phthalate	ND	160						
Famphur	ND	0						
Fluoranthene	ND	30						
Fluorene	ND	30						
Hexachlorobenzene	ND	160						
Hexachlorobutadiene	ND	160						
Hexachlorocyclopentadiene	ND	330						
Hexachloroethane	ND	160						
Indeno(1,2,3-cd)pyrene	ND	30						
Isophorone	ND	160						
Naphthalene	ND	30						
Nitrobenzene	ND	160						
N-Nitrosodi-n-propylamine	ND	160						
N-Nitrosodiphenylamine	ND	160						
Pentachlorophenol	ND	330						
Phenanthrene	ND	30						
Phenol	ND	160						
Pyrene	ND	30						
Pyridine	ND	160						
Surr: 2,4,6-Tribromophenol	1198	0	1667	0	71.9	34-140	0	
Surr: 2-Fluorobiphenyl	953	0	1667	0	57.2	12-100	0	
Surr: 2-Fluorophenol	1080	0	1667	0	64.8	33-117	0	
Surr: 4-Terphenyl-d14	1615	0	1667	0	96.9	25-137	0	
Surr: Nitrobenzene-d5	1009	0	1667	0	60.6	37-107	0	
Surr: Phenol-d6	1033	0	1667	0	62	40-106	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
 Work Order: 1105150
 Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: 33204 Instrument ID SVMS5 Method: SW8270

LCS		Sample ID: SLCSS1-33204-33204		Units: µg/Kg		Analysis Date: 5/11/2011 09:36 AM				
Client ID:		Run ID: SVMS5_110510A		SeqNo: 1622741		Prep Date: 5/9/2011		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	1021	160	1333	0	76.6	45-110	0			
1,2-Dichlorobenzene	993	160	1333	0	74.5	45-95	0			
1,3-Dichlorobenzene	960.7	160	1333	0	72.1	40-100	0			
1,4-Dichlorobenzene	978	160	1333	0	73.4	35-105	0			
2,4,5-Trichlorophenol	1066	160	1333	0	80	50-110	0			
2,4,6-Trichlorophenol	1022	160	1333	0	76.7	45-110	0			
2,4-Dichlorophenol	1030	160	1333	0	77.3	45-110	0			
2,4-Dimethylphenol	1065	330	1333	0	79.9	30-105	0			
2,4-Dinitrophenol	745	660	1333	0	55.9	15-130	0			
2,4-Dinitrotoluene	1073	160	1333	0	80.5	50-115	0			
2,6-Dinitrotoluene	1135	160	1333	0	85.1	50-110	0			
2-Chloronaphthalene	1045	80	1333	0	78.4	45-105	0			
2-Chlorophenol	976.7	160	1333	0	73.3	45-105	0			
2-Methylnaphthalene	1102	80	1333	0	82.7	45-105	0			
2-Methylphenol	1018	160	1333	0	76.3	40-105	0			
2-Nitroaniline	1348	660	1333	0	101	45-120	0			
2-Nitrophenol	1008	160	1333	0	75.6	40-110	0			
2-Nitroaniline	1197	660	1333	0	89.8	25-150	0			
4-Bromophenyl phenyl ether	1161	160	1333	0	87.1	45-115	0			
4-Chloro-3-methylphenol	1155	160	1333	0	86.6	45-115	0			
4-Chloroaniline	4827	660	1333	0	362	15-110	0			SE
4-Chlorophenyl phenyl ether	1031	160	1333	0	77.3	45-110	0			
4-Methylphenol	1058	160	1333	0	79.3	40-105	0			
4-Nitroaniline	952	660	1333	0	71.4	35-150	0			
4-Nitrophenol	1033	660	1333	0	77.5	15-140	0			
Acenaphthene	1040	30	1333	0	78	45-110	0			
Acenaphthylene	1110	30	1333	0	83.3	45-105	0			
Anthracene	1225	30	1333	0	91.9	55-105	0			
Benzo(a)anthracene	1094	30	1333	0	82.1	50-110	0			
Benzo(a)pyrene	1171	30	1333	0	87.9	50-110	0			
Benzo(b)fluoranthene	1115	30	1333	0	83.6	45-115	0			
Benzo(g,h,i)perylene	1082	30	1333	0	81.2	40-125	0			
Benzo(k)fluoranthene	1194	30	1333	0	89.6	45-115	0			
Bis(2-chloroethoxy)methane	1081	160	1333	0	81.1	45-110	0			
Bis(2-chloroethyl)ether	1010	160	1333	0	75.8	40-105	0			
Bis(2-chloroisopropyl)ether	1009	160	1333	0	75.7	20-115	0			
Bis(2-ethylhexyl)phthalate	1183	330	1333	0	88.7	45-125	0			
Butyl benzyl phthalate	1117	160	1333	0	83.8	50-125	0			
Carbazole	1909	160	1333	0	143	50-150	0			
Chrysene	1158	30	1333	0	86.9	55-110	0			
Dibenzo(a,h)anthracene	1152	30	1333	0	86.4	40-125	0			
Dibenzofuran	1128	160	1333	0	84.6	50-105	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
 Work Order: 1105150
 Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: 33204	Instrument ID SVMS5		Method: SW8270					
Diethyl phthalate	1194	330	1333	0	89.5	50-115	0	
Dimethyl phthalate	1143	330	1333	0	85.8	50-110	0	
Di-n-butyl phthalate	1105	330	1333	0	82.9	55-110	0	
Di-n-octyl phthalate	1169	160	1333	0	87.7	40-130	0	
Fluoranthene	1342	30	1333	0	101	55-115	0	
Fluorene	1127	30	1333	0	84.6	50-110	0	
Hexachlorobenzene	1162	160	1333	0	87.2	45-120	0	
Hexachlorobutadiene	1034	160	1333	0	77.5	40-115	0	
Hexachlorocyclopentadiene	812	330	1333	0	60.9	40-115	0	
Hexachloroethane	983	160	1333	0	73.7	35-110	0	
Indeno(1,2,3-cd)pyrene	1120	30	1333	0	84	40-120	0	
Isophorone	1096	160	1333	0	82.2	45-110	0	
Naphthalene	1035	30	1333	0	77.7	40-105	0	
Nitrobenzene	1063	160	1333	0	79.7	40-115	0	
N-Nitrosodi-n-propylamine	1079	160	1333	0	80.9	40-115	0	
N-Nitrosodiphenylamine	1665	160	1333	0	125	50-115	0	S
Pentachlorophenol	933.7	330	1333	0	70	25-120	0	
Phenanthrene	1199	30	1333	0	90	50-110	0	
Phenol	1040	160	1333	0	78	40-100	0	
Pyrene	1123	30	1333	0	84.2	45-125	0	
Surr: 2,4,6-Tribromophenol	1488	0	1667	0	89.3	34-140	0	
Surr: 2-Fluorobiphenyl	1260	0	1667	0	75.6	12-100	0	
Surr: 2-Fluorophenol	1255	0	1667	0	75.3	33-117	0	
Surr: 4-Terphenyl-d14	1649	0	1667	0	99	25-137	0	
Surr: Nitrobenzene-d5	1315	0	1667	0	78.9	37-107	0	
Surr: Phenol-d6	1284	0	1667	0	77	40-106	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
 Work Order: 1105150
 Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: 33204 Instrument ID SVMS5 Method: SW8270

LCSD		Sample ID: SLCSDS1-33204-33204				Units: µg/Kg		Analysis Date: 5/11/2011 10:10 AM		
Client ID:		Run ID: SVMS5_110510A				SeqNo: 1622742		Prep Date: 5/9/2011		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	1090	160	1333	0	81.7	45-110	1021	6.54	25	
1,2-Dichlorobenzene	1061	160	1333	0	79.6	45-95	993	6.65	25	
1,3-Dichlorobenzene	1039	160	1333	0	78	40-100	960.7	7.87	25	
1,4-Dichlorobenzene	1059	160	1333	0	79.4	35-105	978	7.95	25	
2,4,5-Trichlorophenol	1180	160	1333	0	88.5	50-110	1066	10.1	25	
2,4,6-Trichlorophenol	1108	160	1333	0	83.1	45-110	1022	8.04	25	
2,4-Dichlorophenol	1110	160	1333	0	83.2	45-110	1030	7.45	25	
2,4-Dimethylphenol	1026	330	1333	0	77	30-105	1065	3.67	25	
2,4-Dinitrophenol	1090	660	1333	0	81.7	15-130	745	37.6	25	R
2,4-Dinitrotoluene	1111	160	1333	0	83.4	50-115	1073	3.48	25	
2,6-Dinitrotoluene	1175	160	1333	0	88.2	50-110	1135	3.52	25	
2-Chloronaphthalene	1115	80	1333	0	83.6	45-105	1045	6.42	25	
2-Chlorophenol	1050	160	1333	0	78.8	45-105	976.7	7.24	25	
2-Methylnaphthalene	1168	80	1333	0	87.6	45-105	1102	5.79	25	
2-Methylphenol	1092	160	1333	0	81.9	40-105	1018	7.08	25	
2-Nitroaniline	1293	660	1333	0	97	45-120	1348	4.11	25	
2-Nitrophenol	1119	160	1333	0	83.9	40-110	1008	10.4	25	
3-Nitroaniline	1233	660	1333	0	92.5	25-110	1197	2.94	25	
4-Bromophenyl phenyl ether	1158	160	1333	0	86.9	45-115	1161	0.23	25	
4-Chloro-3-methylphenol	1209	160	1333	0	90.7	45-115	1155	4.57	25	
4-Chloroaniline	5039	660	1333	0	378	15-110	4827	4.3	25	SE
4-Chlorophenyl phenyl ether	1058	160	1333	0	79.4	45-110	1031	2.65	25	
4-Methylphenol	1127	160	1333	0	84.6	40-105	1058	6.38	25	
4-Nitroaniline	1004	660	1333	0	75.3	35-150	952	5.35	25	
4-Nitrophenol	1144	660	1333	0	85.8	15-140	1033	10.3	25	
Acenaphthene	1106	30	1333	0	83	45-110	1040	6.18	25	
Acenaphthylene	1171	30	1333	0	87.9	45-105	1110	5.35	25	
Anthracene	1243	30	1333	0	93.2	55-105	1225	1.46	25	
Benzo(a)anthracene	1135	30	1333	0	85.2	50-110	1094	3.68	25	
Benzo(a)pyrene	1206	30	1333	0	90.4	50-110	1171	2.89	25	
Benzo(b)fluoranthene	1158	30	1333	0	86.9	45-115	1115	3.81	25	
Benzo(g,h,i)perylene	1134	30	1333	0	85.1	40-125	1082	4.69	25	
Benzo(k)fluoranthene	1390	30	1333	0	104	45-115	1194	15.2	25	
Bis(2-chloroethoxy)methane	1169	160	1333	0	87.7	45-110	1081	7.88	25	
Bis(2-chloroethyl)ether	1102	160	1333	0	82.6	40-105	1010	8.65	25	
Bis(2-chloroisopropyl)ether	1068	160	1333	0	80.1	20-115	1009	5.68	25	
Bis(2-ethylhexyl)phthalate	1213	330	1333	0	91	45-125	1183	2.53	25	
Butyl benzyl phthalate	1162	160	1333	0	87.2	50-125	1117	3.95	25	
Carbazole	1921	160	1333	0	144	50-150	1909	0.609	25	
Chrysene	1182	30	1333	0	88.7	55-110	1158	2.08	25	
Dibenzo(a,h)anthracene	1212	30	1333	0	90.9	40-125	1152	5.08	25	
Dibenzofuran	1168	160	1333	0	87.6	50-105	1128	3.48	25	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
 Work Order: 1105150
 Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: 33204	Instrument ID SVMS5		Method: SW8270							
Diethyl phthalate	1224	330	1333	0	91.8	50-115	1194	2.54	25	
Dimethyl phthalate	1172	330	1333	0	87.9	50-110	1143	2.45	25	
Di-n-butyl phthalate	1125	330	1333	0	84.4	55-110	1105	1.76	25	
Di-n-octyl phthalate	1195	160	1333	0	89.6	40-130	1169	2.23	25	
Fluoranthene	1400	30	1333	0	105	55-115	1342	4.26	25	
Fluorene	1160	30	1333	0	87	50-110	1127	2.86	25	
Hexachlorobenzene	1186	160	1333	0	89	45-120	1162	2.04	25	
Hexachlorobutadiene	1095	160	1333	0	82.1	40-115	1034	5.73	25	
Hexachlorocyclopentadiene	932.3	330	1333	0	69.9	40-115	812	13.8	25	
Hexachloroethane	1062	160	1333	0	79.6	35-110	983	7.69	25	
Indeno(1,2,3-cd)pyrene	1175	30	1333	0	88.1	40-120	1120	4.79	25	
Isophorone	1169	160	1333	0	87.7	45-110	1096	6.45	25	
Naphthalene	1114	30	1333	0	83.6	40-105	1035	7.35	25	
Nitrobenzene	1128	160	1333	0	84.6	40-115	1063	5.96	25	
N-Nitrosodi-n-propylamine	1149	160	1333	0	86.2	40-115	1079	6.31	25	
N-Nitrosodiphenylamine	1697	160	1333	0	127	50-115	1665	1.94	25	S
Pentachlorophenol	1092	330	1333	0	81.9	25-120	933.7	15.6	25	
Phenanthrene	1220	30	1333	0	91.5	50-110	1199	1.71	25	
Phenol	1132	160	1333	0	84.9	40-100	1040	8.44	25	
Pyrene	1179	30	1333	0	88.5	45-125	1123	4.92	25	
Surr: 2,4,6-Tribromophenol	1509	0	1667	0	90.6	34-140	1488	1.42	40	
Surr: 2-Fluorobiphenyl	1376	0	1667	0	82.6	12-100	1260	8.83	40	
Surr: 2-Fluorophenol	1331	0	1667	0	79.8	33-117	1255	5.85	40	
Surr: 4-Terphenyl-d14	1723	0	1667	0	103	25-137	1649	4.35	40	
Surr: Nitrobenzene-d5	1442	0	1667	0	86.5	37-107	1315	9.21	40	
Surr: Phenol-d6	1361	0	1667	0	81.7	40-106	1284	5.82	40	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
 Work Order: 1105150
 Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: 33204 Instrument ID SVMS5 Method: SW8270

MS		Sample ID: 1105174-04A MS				Units: µg/Kg		Analysis Date: 5/11/2011 10:45 AM		
Client ID:		Run ID: SVMS5_110510A				SeqNo: 1622743		Prep Date: 5/9/2011		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	1534	320	2632	0	58.3	45-110	0			
1,2-Dichlorobenzene	1422	320	2632	0	54	45-95	0			
1,3-Dichlorobenzene	1321	320	2632	0	50.2	40-100	0			
1,4-Dichlorobenzene	1329	320	2632	0	50.5	35-105	0			
2,4,5-Trichlorophenol	2204	320	2632	0	83.7	50-110	0			
2,4,6-Trichlorophenol	2183	320	2632	0	82.9	45-110	0			
2,4-Dichlorophenol	2010	320	2632	0	76.4	45-110	0			
2,4-Dimethylphenol	1683	650	2632	0	64	30-105	0			
2,4-Dinitrophenol	625.9	1,300	2632	0	23.8	15-130	0			J
2,4-Dinitrotoluene	2061	320	2632	0	78.3	50-115	0			
2,6-Dinitrotoluene	2154	320	2632	0	81.8	50-110	0			
2-Chloronaphthalene	1817	160	2632	0	69	45-105	0			
2-Chlorophenol	1637	320	2632	0	62.2	45-105	0			
2-Methylnaphthalene	1809	160	2632	9.926	68.3	45-105	0			
2-Methylphenol	1777	320	2632	0	67.5	40-105	0			
2-Nitroaniline	2436	1,300	2632	0	92.5	45-120	0			
2-Nitrophenol	1768	320	2632	0	67.2	40-110	0			
2-Nitroaniline	2351	1,300	2632	0	89.3	25-110	0			
4-Bromophenyl phenyl ether	1906	320	2632	0	72.4	45-115	0			
4-Chloro-3-methylphenol	2288	320	2632	0	86.9	45-115	0			
4-Chloroaniline	6998	1,300	2632	0	266	15-110	0			SE
4-Chlorophenyl phenyl ether	1770	320	2632	0	67.2	45-110	0			
4-Methylphenol	1901	320	2632	0	72.2	40-105	0			
4-Nitroaniline	1619	1,300	2632	0	61.5	35-150	0			
4-Nitrophenol	2178	1,300	2632	0	82.7	15-140	0			
Acenaphthene	1949	59	2632	31.43	72.9	45-110	0			
Acenaphthylene	2013	59	2632	16.54	75.8	45-105	0			
Anthracene	2359	59	2632	100.3	85.8	55-105	0			
Benzo(a)anthracene	3552	59	2632	666.4	110	50-110	0			
Benzo(a)pyrene	3721	59	2632	654.5	116	50-110	0			S
Benzo(b)fluoranthene	3741	59	2632	759.4	113	45-115	0			
Benzo(g,h,i)perylene	2599	59	2632	307.7	87	40-125	0			
Benzo(k)fluoranthene	5017	59	2632	882.1	157	45-115	0			SE
Bis(2-chloroethoxy)methane	1906	320	2632	0	72.4	45-110	0			
Bis(2-chloroethyl)ether	1587	320	2632	0	60.3	40-105	0			
Bis(2-chloroisopropyl)ether	1568	320	2632	0	59.6	20-115	0			
Bis(2-ethylhexyl)phthalate	1915	650	2632	35.4	71.4	45-125	0			
Butyl benzyl phthalate	1747	320	2632	0	66.4	50-125	0			
Carbazole	4235	320	2632	0	161	50-150	0			SE
Chrysene	3682	59	2632	770.9	111	55-110	0			S
Dibenzo(a,h)anthracene	2195	59	2632	116.1	79	40-125	0			
Dibenzofuran	2051	320	2632	14.89	77.3	50-105	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
 Work Order: 1105150
 Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: 33204	Instrument ID SVMS5		Method: SW8270					
Diethyl phthalate	2124	650	2632	0	80.7	50-115	0	
Dimethyl phthalate	2268	650	2632	212.4	78.1	50-110	0	
Di-n-butyl phthalate	1830	650	2632	75.77	66.6	55-110	0	
Di-n-octyl phthalate	2114	320	2632	63.2	77.9	40-130	0	
Fluoranthene	8671	59	2632	2204	246	55-115	0	SE
Fluorene	2105	59	2632	45.66	78.2	50-110	0	
Hexachlorobenzene	1997	320	2632	0	75.9	45-120	0	
Hexachlorobutadiene	1443	320	2632	0	54.8	40-115	0	
Hexachlorocyclopentadiene	485	650	2632	0	18.4	40-115	0	JS
Hexachloroethane	1213	320	2632	0	46.1	35-110	0	
Indeno(1,2,3-cd)pyrene	2644	59	2632	274.6	90	40-120	0	
Isophorone	1953	320	2632	0	74.2	45-110	0	
Naphthalene	1629	59	2632	8.603	61.6	40-105	0	
Nitrobenzene	1744	320	2632	0	66.3	40-115	0	
N-Nitrosodi-n-propylamine	1874	320	2632	0	71.2	40-115	0	
N-Nitrosodiphenylamine	2458	320	2632	0	93.4	50-115	0	
Pentachlorophenol	1934	650	2632	0	73.5	25-120	0	
Phenanthrene	4681	59	2632	837.4	146	50-110	0	SE
Phenol	1797	320	2632	0	68.3	40-100	0	
Pyrene	5847	59	2632	1471	166	45-125	0	SE
Surr: 2,4,6-Tribromophenol	2791	0	3291	0	84.8	34-140	0	
Surr: 2-Fluorobiphenyl	1997	0	3291	0	60.7	12-100	0	
Surr: 2-Fluorophenol	2156	0	3291	0	65.5	33-117	0	
Surr: 4-Terphenyl-d14	2081	0	3291	0	63.2	25-137	0	
Surr: Nitrobenzene-d5	2319	0	3291	0	70.5	37-107	0	
Surr: Phenol-d6	2328	0	3291	0	70.7	40-106	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
 Work Order: 1105150
 Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: 33204 Instrument ID SVMS5 Method: SW8270

MSD Sample ID: 1105174-04A MSD Units: µg/Kg Analysis Date: 5/11/2011 11:19 AM

Client ID: Run ID: SVMS5_110510A SeqNo: 1622744 Prep Date: 5/9/2011 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	1663	310	2567	0	64.8	45-110	1534	8.07	30	
1,2-Dichlorobenzene	1516	310	2567	0	59	45-95	1422	6.35	30	
1,3-Dichlorobenzene	1376	310	2567	0	53.6	40-100	1321	4.06	30	
1,4-Dichlorobenzene	1443	310	2567	0	56.2	35-105	1329	8.19	30	
2,4,5-Trichlorophenol	2258	310	2567	0	88	50-110	2204	2.43	30	
2,4,6-Trichlorophenol	2214	310	2567	0	86.2	45-110	2183	1.41	30	
2,4-Dichlorophenol	2090	310	2567	0	81.4	45-110	2010	3.91	30	
2,4-Dimethylphenol	1814	640	2567	0	70.7	30-105	1683	7.46	30	
2,4-Dinitrophenol	415.9	1,300	2567	0	16.2	15-130	625.9	0	30	J
2,4-Dinitrotoluene	2067	310	2567	0	80.5	50-115	2061	0.275	30	
2,6-Dinitrotoluene	2180	310	2567	0	84.9	50-110	2154	1.22	30	
2-Chloronaphthalene	1955	150	2567	0	76.1	45-105	1817	7.29	30	
2-Chlorophenol	1684	310	2567	0	65.6	45-105	1637	2.83	30	
2-Methylnaphthalene	1988	150	2567	9.926	77	45-105	1809	9.42	30	
2-Methylphenol	1903	310	2567	0	74.1	40-105	1777	6.83	30	
2-Nitroaniline	2476	1,300	2567	0	96.5	45-120	2436	1.66	30	
2-Nitrophenol	1801	310	2567	0	70.2	40-110	1768	1.84	30	
3-Nitroaniline	2447	1,300	2567	0	95.3	25-110	2351	3.98	30	
4-Bromophenyl phenyl ether	2128	310	2567	0	82.9	45-115	1906	11	30	
4-Chloro-3-methylphenol	2366	310	2567	0	92.2	45-115	2288	3.34	30	
4-Chloroaniline	7413	1,300	2567	0	289	15-110	6998	5.76	30	SE
4-Chlorophenyl phenyl ether	1930	310	2567	0	75.2	45-110	1770	8.64	30	
4-Methylphenol	2048	310	2567	0	79.8	40-105	1901	7.45	30	
4-Nitroaniline	1667	1,300	2567	0	64.9	35-150	1619	2.92	30	
4-Nitrophenol	2259	1,300	2567	0	88	15-140	2178	3.69	30	
Acenaphthene	2073	58	2567	31.43	79.5	45-110	1949	6.16	30	
Acenaphthylene	2190	58	2567	16.54	84.7	45-105	2013	8.45	30	
Anthracene	2399	58	2567	100.3	89.5	55-105	2359	1.71	30	
Benzo(a)anthracene	3363	58	2567	666.4	105	50-110	3552	5.48	30	
Benzo(a)pyrene	3566	58	2567	654.5	113	50-110	3721	4.26	30	S
Benzo(b)fluoranthene	3690	58	2567	759.4	114	45-115	3741	1.36	30	
Benzo(g,h,i)perylene	2051	58	2567	307.7	67.9	40-125	2599	23.5	30	
Benzo(k)fluoranthene	4774	58	2567	882.1	152	45-115	5017	4.95	30	SE
Bis(2-chloroethoxy)methane	1976	310	2567	0	77	45-110	1906	3.63	30	
Bis(2-chloroethyl)ether	1575	310	2567	0	61.4	40-105	1587	0.769	30	
Bis(2-chloroisopropyl)ether	1668	310	2567	0	65	20-115	1568	6.14	30	
Bis(2-ethylhexyl)phthalate	2036	640	2567	35.4	77.9	45-125	1915	6.12	30	
Butyl benzyl phthalate	1873	310	2567	0	73	50-125	1747	6.98	30	
Carbazole	4375	310	2567	0	170	50-150	4235	3.26	30	SE
Chrysene	3614	58	2567	770.9	111	55-110	3682	1.85	30	S
Dibenzo(a,h)anthracene	1939	58	2567	116.1	71	40-125	2195	12.4	30	
Dibenzofuran	2172	310	2567	14.89	84	50-105	2051	5.72	30	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
 Work Order: 1105150
 Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: 33204		Instrument ID SVMS5		Method: SW8270					
Diethyl phthalate	2237	640	2567	0	87.1	50-115	2124	5.16	30
Dimethyl phthalate	2212	640	2567	212.4	77.9	50-110	2268	2.5	30
Di-n-butyl phthalate	1935	640	2567	75.77	72.4	55-110	1830	5.62	30
Di-n-octyl phthalate	2388	310	2567	63.2	90.5	40-130	2114	12.2	30
Fluoranthene	7003	58	2567	2204	187	55-115	8671	21.3	30 SE
Fluorene	2203	58	2567	45.66	84	50-110	2105	4.53	30
Hexachlorobenzene	2159	310	2567	0	84.1	45-120	1997	7.8	30
Hexachlorobutadiene	1578	310	2567	0	61.5	40-115	1443	8.95	30
Hexachlorocyclopentadiene	341.5	640	2567	0	13.3	40-115	485	0	30 JS
Hexachloroethane	1145	310	2567	0	44.6	35-110	1213	5.75	30
Indeno(1,2,3-cd)pyrene	2213	58	2567	274.6	75.5	40-120	2644	17.7	30
Isophorone	2061	310	2567	0	80.3	45-110	1953	5.37	30
Naphthalene	1794	58	2567	8.603	69.5	40-105	1629	9.62	30
Nitrobenzene	1842	310	2567	0	71.7	40-115	1744	5.44	30
N-Nitrosodi-n-propylamine	1974	310	2567	0	76.9	40-115	1874	5.2	30
N-Nitrosodiphenylamine	2284	310	2567	0	89	50-115	2458	7.35	30
Pentachlorophenol	2038	640	2567	0	79.4	25-120	1934	5.26	30
Phenanthrene	4218	58	2567	837.4	132	50-110	4681	10.4	30 SE
Phenol	1841	310	2567	0	71.7	40-100	1797	2.44	30
Pyrene	5017	58	2567	1471	138	45-125	5847	15.3	30 SE
Surr: 2,4,6-Tribromophenol	2815	0	3210	0	87.7	34-140	2791	0.866	40
Surr: 2-Fluorobiphenyl	2286	0	3210	0	71.2	12-100	1997	13.5	40
Surr: 2-Fluorophenol	2143	0	3210	0	66.8	33-117	2156	0.621	40
Surr: 4-Terphenyl-d14	2491	0	3210	0	77.6	25-137	2081	17.9	40
Surr: Nitrobenzene-d5	2337	0	3210	0	72.8	37-107	2319	0.77	40
Surr: Phenol-d6	2353	0	3210	0	73.3	40-106	2328	1.09	40

The following samples were analyzed in this batch: 1105150-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
 Work Order: 1105150
 Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: R89919 Instrument ID VMS5 Method: SW8260

MBLK Sample ID: VBLKW2-110510-R89919 Units: µg/L Analysis Date: 5/11/2011 12:16 PM

Client ID: Run ID: VMS5_110510B SeqNo: 1622018 Prep Date: DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	1.0								
Ethylbenzene	ND	1.0								
m,p-Xylene	ND	2.0								
o-Xylene	ND	1.0								
Toluene	ND	1.0								
Xylenes, Total	ND	2.0								

LCS Sample ID: VLCSW2-110510-R89919 Units: µg/L Analysis Date: 5/10/2011 10:59 PM

Client ID: Run ID: VMS5_110510B SeqNo: 1622016 Prep Date: DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	22.67	1.0	20	0	113	80-120	0			
Ethylbenzene	22.42	1.0	20	0	112	75-125	0			
m,p-Xylene	42.21	2.0	40	0	106	75-130	0			
o-Xylene	21.2	1.0	20	0	106	80-120	0			
Toluene	21.6	1.0	20	0	108	75-120	0			
Xylenes, Total	63.41	2.0	60	0	106	75-130	0			

LCSD Sample ID: VLCSDW2-110510-R89919 Units: µg/L Analysis Date: 5/10/2011 11:25 PM

Client ID: Run ID: VMS5_110510B SeqNo: 1622017 Prep Date: DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	21.8	1.0	20	0	109	80-120	22.67	3.91	30	
Ethylbenzene	21.34	1.0	20	0	107	75-125	22.42	4.94	30	
m,p-Xylene	40.57	2.0	40	0	101	75-130	42.21	3.96	30	
o-Xylene	20.4	1.0	20	0	102	80-120	21.2	3.85	30	
Toluene	20.82	1.0	20	0	104	75-120	21.6	3.68	30	
Xylenes, Total	60.97	2.0	60	0	102	75-130	63.41	3.92	30	

MS Sample ID: 1105174-04B MS Units: µg/Kg Analysis Date: 5/11/2011 08:21 AM

Client ID: Run ID: VMS5_110510B SeqNo: 1622623 Prep Date: DF: 118

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	2674	120	2360	0	113	75-125	0			
Ethylbenzene	2434	240	2360	0	103	75-125	0			
m,p-Xylene	4506	240	4720	0	95.5	80-125	0			
o-Xylene	2283	120	2360	0	96.8	75-125	0			
Toluene	2491	180	2360	0	106	70-125	0			
Xylenes, Total	6790	350	7080	0	95.9	75-125	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1105150
Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: R89919 Instrument ID VMS5 Method: SW8260

MSD Sample ID: 1105174-04B MSD Units: µg/Kg Analysis Date: 5/11/2011 08:47 AM

Client ID: Run ID: VMS5_110510B SeqNo: 1622624 Prep Date: DF: 118

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	2657	120	2360	0	113	75-125	2674	0.62	30	
Ethylbenzene	2447	240	2360	0	104	75-125	2434	0.532	30	
m,p-Xylene	4515	240	4720	0	95.6	80-125	4506	0.183	30	
o-Xylene	2259	120	2360	0	95.7	75-125	2283	1.09	30	
Toluene	2493	180	2360	0	106	70-125	2491	0.0947	30	
Xylenes, Total	6773	350	7080	0	95.7	75-125	6790	0.244	30	

The following samples were analyzed in this batch: 1105150-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
 Work Order: 1105150
 Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: 33240 Instrument ID WETCHEM Method: SW7196A

MBLK	Sample ID: MBLK-33240-33240					Units: mg/Kg		Analysis Date: 5/10/2011 04:00 PM		
Client ID:	Run ID: WETCHEM_110510H					SeqNo: 1621803		Prep Date: 5/9/2011		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	ND	0.49								

LCS	Sample ID: LCS-33240-33240					Units:mg/Kg		Analysis Date: 5/10/2011 04:00 PM		
Client ID:	Run ID: WETCHEM_110510H				SeqNo:1621804		Prep Date: 5/9/2011		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	1.667	0.48	1.938	0	86	75-110	0			

LCSD	Sample ID: LCSD-33240-33240					Units:mg/Kg		Analysis Date: 5/10/2011 04:00 PM		
Client ID:	Run ID: WETCHEM_110510H					SeqNo:1621812		Prep Date: 5/9/2011		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	1.623	0.49	1.946	0	83.4	75-110	1.667	2.68	20	

MS	Sample ID: 1105084-01B MS				Units:mg/Kg		Analysis Date: 5/10/2011 04:00 PM			
Client ID:	Run ID: WETCHEM_110510H				SeqNo:1621807		Prep Date: 5/9/2011		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	1.1	0.50	1.992	0	55.2	60-130	0			S

MSD	Sample ID: 1105084-01B MSD					Units:mg/Kg		Analysis Date: 5/10/2011 04:00 PM		
Client ID:	Run ID: WETCHEM_110510H				SeqNo:1621808		Prep Date: 5/9/2011		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	1.138	0.49	1.969	0	57.8	60-130	1.1	3.41	30	S

The following samples were analyzed in this batch:

1105150-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1105150
Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: **R89791** Instrument ID **WETCHEM** Method: **SW9040**

DUP Sample ID: **1105145-01A DUP** Units: **s.u.** Analysis Date: **5/6/2011 11:00 AM**

Client ID: Run ID: **WETCHEM_110506E** SeqNo: **1618948** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	6.85	0	0	0	0	0-0	6.85	0	20	

DUP Sample ID: **1105149-05A DUP** Units: **s.u.** Analysis Date: **5/6/2011 11:00 AM**

Client ID: Run ID: **WETCHEM_110506E** SeqNo: **1618954** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	6.45	0	0	0	0	0-0	6.45	0	20	

The following samples were analyzed in this batch:

1105150-01A 1105150-05A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
 Work Order: 1105150
 Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: R89852 Instrument ID MOIST Method: A2540 G

MBLK Sample ID: WBLKS1-R89852 Units: % of sample Analysis Date: 5/6/2011 12:01 PM

Client ID: Run ID: MOIST_110506D SeqNo: 1620089 Prep Date: DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	ND	0.050								

LCS Sample ID: LCS-R89852 Units: % of sample Analysis Date: 5/6/2011 12:01 PM

Client ID: Run ID: MOIST_110506D SeqNo: 1620085 Prep Date: DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	99.99	0.050	100	0	100	99.5-100.5	0			

DUP Sample ID: 1105138-21A DUP Units: % of sample Analysis Date: 5/6/2011 12:01 PM

Client ID: Run ID: MOIST_110506D SeqNo: 1620065 Prep Date: DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	18.18	0.050	0	0	0	0-0	18.06	0.662	20	

DUP Sample ID: 1105150-01A DUP Units: % of sample Analysis Date: 5/6/2011 12:01 PM

Client ID: Drill Cuttings Run ID: MOIST_110506D SeqNo: 1620079 Prep Date: DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	36.15	0.050	0	0	0	0-0	35.4	2.1	20	

The following samples were analyzed in this batch:

1105150-01A	1105150-02A	1105150-03A
1105150-04A	1105150-05A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



ALS Laboratory Group

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Chain-of-Custody

Form 202r8

WORKORDER
#

1105150

PROJECT NAME		PDC Mesa 16 Drill Cuttings		SAMPLER		Casey Richardson		DATE		5/4/2011		PAGE		1 of 1		
PROJECT No.				SITE ID				TURNAROUND		Standard		DISPOSAL		By Lab or Return to Client		
COMPANY NAME		HRL Compliance Solutions, Inc.		BILL TO COMPANY		PDC										
SEND REPORT TO		Herman Lucero		INVOICE ATTN TO		Adell Heneghan										
ADDRESS		744 Horizon Ct. Suite 140		ADDRESS		1775 Sherman Street #3000										
CITY / STATE / ZIP		Grand Junction, CO. 81506		CITY / STATE / ZIP		Denver, CO 80203										
PHONE		970-243-3271		PHONE		303-860-5800										
FAX		970-243-3280		FAX												
E-MAIL		hlucero@hrlcomp.com		E-MAIL		aheneghan@petd.com										
Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	BTEX	TVPH	TEPH	TOTAL METALS - TABLE 910.1	SEMI VOLS	SAR	EC	pH	ARSENIC
1	Drill Cuttings	soil	5/4/2011	1030	3	4°C		x	x	x	x	x	x	x	x	
2	AS 1	soil	5/4/2011	1045	1	4°C									x	
3	AS 2	soil	5/4/2011	1050	1	4°C									x	
4	AS 3	soil	5/4/2011	1100	1	4°C									x	
5	BACKGROUND	soil	5/4/2011	1105	1	4°C						x	x	x		

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments:	QC PACKAGE (check below)	
	<input checked="" type="checkbox"/>	LEVEL II (Standard QC)
	<input type="checkbox"/>	LEVEL III (Std QC + forms)
	<input type="checkbox"/>	LEVEL IV (Std QC + forms + raw data)
Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035		

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	<i>Casey Richardson</i>	Casey Richardson	5/4/2011	1730
RECEIVED BY	<i>Keith Wieringa</i>	Keith Wieringa	5/6/11	1000
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				



Environmental

Subcontractor:A & L Great Lakes Agricultural Lab
3505 Conesloga Dr

Ft. Wayne, IN 46808

TEL: (260) 483-4759

FAX:

Acct #: 91000

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Date: 06-May-11COC ID: 2910Due Date 12-May-11

Customer Information		Project Information		Parameter/Method Request for Analysis												
Purchase Order		Project Name	1105150	A	Subcontracted Analyses (SUBCONTRACT)											
Work Order		Project Number		B												
Company Name	ALS Group USA, Corp	Bill To Company	ALS Group USA, Corp	C												
Send Report To	Ann Preston	Inv Attn	Accounts Payable	D												
Address	3352 128th Avenue	Address	3352 128th Avenue	E												
				F												
City/State/Zip	Holland, Michigan 49424-9263	City/State/Zip	Holland, Michigan 49424-9263	G												
Phone	(616) 399-6070	Phone	(616) 399-6070	H												
Fax	(616) 399-6185	Fax	(616) 399-6185	I												
eMail Address	ann.preston@alsglobal.com	eMail CC		J												
Sample ID	Matrix	Collection Date 24hr	Bottle	A	B	C	D	E	F	G	H	I	J			
1105150-01C (Drill Cuttings)	Soll	4/May/2011 10:30	(1) MISC	X												
1105150-05B (Background)	Soll	4/May/2011 11:05	(1) 8OZGNEAT	X												

Comments:Please run for SAR-EC

Relinquished by:

Date/Time

5/6/11

Received by:

Date/Time

Cooler IDs

Report/QC Level

Std

Relinquished by:

Date/Time

Received by:

Date/Time

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: HRL
Work Order: 1105150

Date/Time Received: 06-May-11 10:00
Received by: KRW

Checklist completed by *Keith Nwanga* 06-May-11 Reviewed by: *Ann Preston* 13-May-11
eSignature Date eSignature Date

Matrices: Soil
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>2.8 C</u>		
Cooler(s)/Kit(s):			
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:
Contacted By: Regarding:

Comments:

CorrectiveAction: