Limited Soil, Groundwater, and Soil Gas Investigation

Tabor #7 Oil and Gas Well Site
Longmont, Colorado

December 14, 2017
Terracon Project No. 22177040

Prepared for:
City of Longmont
Longmont, Colorado

Prepared by:
Terracon Consultants, Inc.
Longmont, Colorado

December 14, 2017

City of Longmont
385 Kimbark Street
Longmont, Colorado 80501

Attn: Mr. Jason Elkins
P: (303) 651-8310
E: Jason.Elkins@longmontcolorado.gov

Re: Limited Soil, Groundwater, and Soil Gas Investigation
Tabor #7 Oil and Gas Well Site
Longmont, Colorado
Terracon Project No. 22177040

Dear Mr. Elkins:

Terracon Consultants, Inc. (Terracon) is pleased to submit our report of Limited Soil and Soil Gas Investigation activities completed at the site referenced above. Terracon conducted the Investigation in general accordance with our proposal (P22177040), dated September 28, 2017.

Terracon appreciates this opportunity to provide environmental consulting services to The City of Longmont. Should you have any questions or require additional information, please do not hesitate to contact our office.

Sincerely,
Terracon Consultants, Inc.

Michael J. Skridulis
Project Manager

John C. Graves, P.G.
Senior Principal/Regional Manager

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EXECUTIVE SUMMARY

This Limited Soil and Soil Gas Investigation was performed in accordance with the scope of services outlined in Terracon Proposal No. P22177040, dated September 28, 2017. A total of three soil borings (SB-01 through SB-03), which were converted to groundwater monitoring wells (MW-01 through MW-03), and two soil vapor points (SVP-01 and SVP-02) were installed at the site to evaluate potential petroleum impacted soil, groundwater, and soil gas based on historical and ongoing oil and gas (O&G) recovery operations at the site. Soil, groundwater, and soil vapor samples were collected and analyzed in accordance with the procedures outlined in Section 3 of this report.

A summary of our findings, conclusions, and recommendations is provided below. It should be recognized that details were not included or fully developed in this section, and the report must be read in its entirety for a comprehensive understanding of the items contained herein.

Findings

The lithology encountered at the site consists of soft silt from approximately 0 to 15 feet below grade surface (bgs), underlain by well graded sand to termination of the soil borings at approximately 18 to 20 feet bgs. The depth to groundwater ranged from 14 to 15 feet bgs observed during drilling activities.

Volatile organic compounds (VOCs) and total petroleum hydrocarbons (TPH) as gasoline, diesel, and oil range organics (GRO/DRO/ORO) constituents were not detected at concentrations above laboratory detection limits in any of the soil samples collected during this investigation.

The sulfate concentrations detected in the groundwater samples collected from monitoring wells MW-01, MW-02 and MW-03 exceeded the laboratory detection limits and the CDPHE Regulation 41 Standard, but were below the calculated COGCC standard for groundwater.

VOC constituents detected in the soil gas samples were compared to the 2016 Colorado Department of Public Health and Environment (CDPHE) Indoor Air Screening Concentrations (ASC) – Residential and Worker Remediation Goals, and the June 2017 United States Environmental Protection Agency (EPA) Residential and Industrial Indoor Air Regional Screening Levels (RSLs), after applying a 3% attenuation factor for subslab soil gas per the USEPA Office of Solid Waste and Emergency Response (OSWER) Technical Guide for Assessing and Mitigating the Gas Intrusion Pathway from Subsurface Gas Sources to Indoor Air (OSWER Guidance, June 2015). Reference to the OSWER guidance is not meant to imply that the scope of this soil gas investigation was designed to include the guidance's subsurface characterization criteria or that Terracon conducted a detailed vapor intrusion risk assessment. Reported concentrations are also summarized in Table 2 of Appendix A and the laboratory report is provided in Appendix D of this report.

A number of VOCs were detected across the site above Residential and Industrial RSLs. After applying the 3% attenuation factor, only chloroform in soil gas was detected at a concentration above the EPA Residential RSL of 4.0 micrograms per meters cubed (µg/m^3) in SVP-01 with a reported concentration of 4.9 (µg/m^3). Methane was not detected in any of the soil gas samples collected as part of this investigation above its respective laboratory detection limit.

Chloroform is a by-product to the use of chlorine, which is commonly used as a sterilizer found in potable water from water treatment processes.

Conclusions

Based on laboratory analytical detections and field observations, soil, groundwater, and soil gas at the site do not appear to have been impacted by potential constituents of concern related to O&G operations at the site.

Recommendations

The objective of the Investigation was to evaluate the presence of constituents of concern in the on-site soils, groundwater, and soil vapor (gas) above relevant laboratory detection limits and/or regulatory limits associated with historical and ongoing O&G operations at the site.

Based on the scope of services, limitations, and conclusions of this assessment, additional investigation does not appear warranted at this time.

1.0 SITE DESCRIPTION

Site Name	Tabor #7 O&G Well Site
Site Location	South of 11700 Quail Road, Longmont, Colorado

A Topographic Map showing the site location is included as Exhibit 1 and a Site Diagram is included as Exhibit 2 in Appendix A.

2.0 SCOPE OF SERVICES

In 2012, Terracon was retained by the City of Longmont (COL) to assess seventeen plugged and abandoned oil and gas wells located within the City of Longmont limits. The objective of the 2012 assessment was to provide information concerning the plugging and abandoning of 17 O&G wellheads located within the City of Longmont and to assess the potential presence of surficial soil impacts, methane and other gasses in the subsurface near the surveyed well locations.

On May 2, 2017, the Colorado Oil and Gas Conservation Commission (COGCC) issued a statewide Notice to Operators (NTO) directing operators to inspect their inventory of existing flowlines and verify that any existing flowline not in active use, regardless of when it was installed or taken out of service, is abandoned pursuant to COGCC Rule 1103. Terracon understands that the City of Longmont would like to expand the scope of work from the 2012 project to include assessing the condition of soil, groundwater, and soil gas at select locations.

The objective of the environmental services were to provide information concerning the Tabor #7 O&G well located within the City of Longmont and to assess the potential presence of surficial/subsurface soil and groundwater impacts and presence of methane and other gasses in the subsurface near the reported well location.

2.1 Standard of Care

Terracon's services were performed in a manner consistent with generally accepted practices of the profession undertaken in similar studies in the same geographical area during the same time. Terracon makes no warranties, express or implied, regarding the findings, conclusions, or recommendations. Terracon does not warrant the work of laboratories, regulatory agencies, or other third parties supplying information used in the preparation of the report. These Investigation services were performed in accordance with the scope of work agreed with you, our client, as reflected in our proposal and were not intended to be in strict conformance with ASTM E1903-11.

2.2 Additional Scope Limitations

Findings, conclusions, and recommendations resulting from these services are based upon information derived from the on-site activities and other services performed under this scope of work; such information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, nondetectable, or not present during these services. We cannot represent that the site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during this Investigation. Subsurface conditions may vary from those encountered at specific borings or wells or during other surveys, tests, assessments, investigations, or exploratory services. The data, interpretations, findings, and our recommendations are based solely upon data obtained at the time and within the scope of these services.

2.3 Reliance

This report has been prepared for the exclusive use of the City of Longmont, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the site) is prohibited without the express written authorization of the City of Longmont and Terracon. Any unauthorized distribution or reuse is at the City of Longmont's sole risk. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions, and limitations stated in the proposal, Investigation report, and Terracon's Master Services Agreement (MSA) with the City of Longmont. The limitation of liability defined in the terms and conditions of the MSA is the aggregate limit of Terracon's liability to the City of Longmont and all relying parties unless otherwise agreed in writing.

3.0 FIELD INVESTIGATION

3.1 Safety and Subsurface Utilities

Terracon is committed to the safety of all its employees. As such, and in accordance with our Incident and Injury Free® safety goals, Terracon conducted the fieldwork under a site-specific health and safety plan. The plan identified site-specific job hazards and proper pre-task planning procedures. Work was performed using Occupational Safety & Health Administration (OSHA) Level D work attire consisting of hard hats, high-visibility attire, safety glasses, protective gloves, and protective boots. Terracon contacted Colorado 811 and requested location and markings for subsurface utilities that the service was responsible for before commencing intrusive activities at the site.

3.2 Sampling and Analytical Program Summary

On October 30, 2017, a total of three soil borings (SB-01 through SB-03), which were converted to groundwater monitoring wells (MW-01 through MW-03), and two soil vapor points (SVP-01 and SVP-02) were installed at the site. The sample locations were selected to generally represent the area with the highest potential for detecting constituents of concern based on the locations of equipment used in previous oil and gas production at the site. Refer to the attached Site Diagram (Exhibit 2, Appendix A) for a depiction of the sample locations and pertinent site features. The sampling and analytical program is outlined below.

Soil and groundwater samples were collected and placed in laboratory-prepared glassware, labeled, and placed on ice in a sample cooler. Soil gas samples were collected in laboratory-prepared Summa® canisters, labeled and placed in a shipping box. The sample cooler/box were released via chain-of-custody and secured with a custody seal and shipped to the selected analytical laboratory. The sample cooler/box and completed chain-of-custody forms were relinquished to ESC Lab Sciences (ESC) in Mt. Juliet, Tennessee, a National Environmental Laboratory Accreditation Program (NELAP) laboratory, for analysis on normal turnaround.

Sampling personnel wore dedicated nitrile gloves to minimize the potential for sample cross-contamination. Non-expendable sampling equipment (e.g., drilling equipment) was decontaminated at the beginning of the project and decontaminated between each sampling location. The equipment was hand-scrubbed in an Alconoxä and potable water solution and rinsed with potable water.

SAMPLING AND ANALYTICAL PROGRAM	
Area of Concern	**Tabor #7 O&G Well Site**
Soil Borings **(Total Depth)**	SB-01 through SB-03 (18 to 20 feet)
Groundwater	MW-01 through MW-03
Soil Vapor Points	SVP-01 and SVP-02
Soil Analysis	VOCs/TPH-GRO – EPA 8260 TPH-DRO/ORO – EPA 8015
Groundwater Analysis	VOCs – EPA 8260 Dissolved Gasses – RSK 175 Major Cations, Dissolved – EPA 6010B Nitrite, Nitrate, Bromide, Chloride, Sulfate – EPA 300.0 Alkalinity – SM 2320B Strontium – EPA 6020
Soil Gas Analysis	VOCs – EPA TO-15 Methane – EPA D1946

EPA = Environmental Protection Agency; SW-846 analytical methods
VOCs = volatile organic compounds
TPH = total petroleum hydrocarbons
G/D/ORO = gasoline, diesel, and oil range organics

Additionally, temperature, pH, specific conductivity, dissolved oxygen and oxygen reducing potential measurements were collected in the field during groundwater sampling.

3.3 Field Procedures

3.3.1 Soil Boring Advancement

Drilling services were performed using a direct-push technology (DPT) Geoprobe® drilling rig. Oversight of the drilling activities was conducted by a Terracon field professional. Soil samples were collected using 4-foot direct-push sampling tubes lined with dedicated PVC liners. Drilling equipment was cleaned using a high-pressure washer prior to beginning the project. Non-dedicated sampling equipment was cleaned using an Alconox® wash and potable water rinse prior to the beginning of the project and before collecting each soil sample.

Soil samples were collected continuously and observed to document soil lithology, color, moisture content and sensory evidence of impairment. The soil samples were field-screened at 4-foot intervals using a photoionization detector (PID) equipped with a 10.6 electron volt ultraviolet lamp source to qualitatively evaluate the potential volatile organic vapors to indicate the presence of VOCs. Terracon calibrated the PID in accordance with the manufacturer's recommendations before the field activities. The boring logs attached in Appendix C include the lithology and field screening results for each soil boring completed as part of this investigation.

Terracon's soil sampling program involved assigning one soil sample from each soil boring for laboratory analysis. The soil sample selected for laboratory analysis was collected from the interval exhibiting the highest PID reading and/or highest likelihood of a release based on the field professional’s judgment. The soil samples were collected using Terracon standard operating procedures (SOPs) and field methods. Soil sample intervals for each boring are presented on the soil boring logs included in Appendix C.

3.3.2 Groundwater Monitoring Well Installation

After soil borings were completed to depth and soil samples were collected, the soil borings were completed as groundwater monitoring wells. The wells were constructed to approximately 18 to 20 feet bgs using 2.0-inch diameter polyvinyl chloride (PVC) with 10 feet of factory slotted well screen and 8 to 10 feet of blank PVC casing to surface. A silica sand filter pack was placed around the well screen to approximately one foot above the top of well screen, followed by a hydrated bentonite seal, and approximately 0.5 feet of sand to the surface. The monitoring wells were fitted with J-plug well caps and bolt-down, flush-mounted well covers set in concrete. The well construction details are provided on the soil boring logs presented in Appendix C.

On November 1, 2017, Terracon personnel visited the site to collect static groundwater levels, develop the monitoring wells, and collect groundwater samples for laboratory analysis. Depth to groundwater ranged from 12.88 feet below top of monitoring well casing (TOC) in MW-03 to 13.45 feet below TOC in MW-01. Monitoring wells MW-01 through MW-03 were developed by repeatedly surging the wells with a 2-inch diameter PVC surge block and purging the groundwater from the wells with a single-use PVC bailer in accordance with the Terracon SOP 10 – *Monitor Well Development.* Monitoring wells MW-01 through MW-03 were immediately sampled after development.

The TOCs were surveyed in accordance with Terracon SOP *E.1800 Physical Field Measurements*. For this project, Terracon used a level, tripod and rod to establish the relative elevation of ground surface and TOC at each monitoring well constructed onsite.

3.3.3 Soil Vapor Point Installation

Terracon installed two SVPs at the site. SVP-01 in the vicinity of the existing tank battery and SVP-02 downgradient of the existing O&G well head for collection of soil gas samples for laboratory analysis. The soil gas points, consisting of 8.0-inch long stainless steel screened points and Teflon tubing, were placed into each boring at an approximate depth of 5 feet bgs and backfilled with silica sand to approximately 6 inches above the top of the screen, followed by hydrated bentonite to near surface. Locations are depicted on Exhibit 2 in Appendix A.

Sampling of the soil gas points was performed by an Environmental Professional on November 1, 2017 (SVP-01 and SVP-02), allowing the soil gas points time to equilibrate. Soil gas sampling was conducted within a polyethylene shroud placed over the sample point. Extracted soil gas was screened in the field utilizing a Multi-Rae, which was calibrated prior to use in accordance with the manufacturer's specifications. The Multi-Rae was used to assess potential explosive gas (methane) and VOCs. Sample tubing was connected to the sampling point and routed to the exterior of the shroud. Leak detection was conducted by introducing helium tracer gas into the sampling shroud through a separate port prior to sampling and using a portable helium gas detector to monitor for potential leaks in the sampling train. A peristaltic pump was utilized to purge the sample train tubing prior to collecting the laboratory sample within laboratory supplied 1-liter summa canisters. Field measurements by the portable helium gas detector were within acceptable levels (less than [<]5 percent [%] of the helium concentration in the shroud was detected through the sampling train).

After purging the sampling point of approximately three sampling train volumes and observing that there were no detected leaks, a laboratory-supplied 1-liter summa canister was filled with soil gas for laboratory analysis. The canister was connected to the sampling point using dedicated nylon sample tubing and was equipped with a laboratory-supplied flow regulator allowing for sample collection at a low-flow rate (i.e. <200 milliliters per minute [ml/min]).

Upon completion of sample collection, the summa canister valve was closed, secured, and appropriately labeled with pertinent sample information. Canister pressures were recorded prior to and after sample collection. The sample canisters were placed into a shipping container and transported under chain-of-custody to ESC Lab Sciences (ESC) located in Mt. Juliet, Tennessee for analysis.

4.0 FIELD INVESTIGATION RESULTS

4.1 Geology/Hydrogeology

The boring logs contained in Appendix C detail the observed soil stratigraphy. In general, Terracon encountered soft silt from approximately 0 to 15 feet bgs, underlain by well graded sand to termination of soil borings to approximately 18 to 20 feet bgs. The depth to groundwater ranged from approximately 12 to 15 feet bgs observed during drilling activities.

4.2 Field Screening

The field screening results are summarized on the boring logs contained in Appendix C. PID readings were not observed above 1 ppm in the soil samples collected from the soil borings as part of this investigation.

5.0 ANALYTICAL RESULTS

The laboratory analytical reports and chain-of-custody records are attached in Appendix D. The following sections describe the results of the analytical testing performed as part of this limited investigation. The constituents of concern concentrations were compared to the May 2016, EPA Residential and Industrial RSLs, and EPA May 2016 Residential and Industrial Indoor Air RSLs, January 2015 COGCC Table 910-1 (Concentration Levels) for soil. Groundwater analytical results were compared to June 30, 2016 CDPHE Groundwater Quality Standards (GWQSs) and January 2015 COGCC Table 910-1 Groundwater Concentration Levels (910-1 Levels). CDPHE January 2016 Residential and Industrial ASCs and the June 2017 USEPA Residential and Industrial Indoor Air RSLs, after applying a 3% attenuation factor for subslab soil gas per the USEPA OSWER Technical Guide for Assessing and Mitigating the Gas Intrusion Pathway from Subsurface Gas Sources to Indoor Air (OSWER Guidance, June 2015) were used for soil gas comparison.

5.1 Soil Sample Results

VOC and TPH-GRO/DRO/ORO constituents were not reported at concentrations above laboratory detection limits in any of the soil samples collected during this investigation.

5.2 Groundwater Sample Results

The groundwater analytical data and corresponding action levels are summarized in Table 1 (Appendix B).

VOC constituents were not reported at concentrations above laboratory detection limits in the groundwater samples collected during this investigation.

Inorganic cations and anions can be secondary indicators of well site releases associated with produced water. Neither CDPHE nor the COGCC have developed groundwater standards for the following indicator parameters: dissolved calcium, dissolved magnesium, dissolved potassium, dissolved sodium, strontium, alkalinity species, or bromide.

The COGCC has defined the groundwater standard exceedance concentrations for chloride and sulfate to be a regional background concentration with a multiplier of 1.25. Terracon utilized 2017 analytical data for chloride and sulfate from the sites sampled during the City of Longmont 2017 Annual Groundwater Quality Monitoring sampling event (Terracon Project No. 22177002) to calculate respective regional background concentrations.

Terracon used the USEPA's statistical software (ProUCL), Version 5.1, to determine if the dataset used to calculate the mean was statistically normal. The ProUCL software can be downloaded at https://www.epa.gov/land-research/proucl-software. After eliminating monitoring well analytical data that was not representative of normal conditions, the data was inputted into ProUCL. Analysis was conducted to evaluate if there are additional outlying data points and if the data set adhered to a normal distribution (normal Q-Q Plot). Several sulfate analytical results were removed from the data set based on the results of the initial outlier test. The outlier test does state that there is a potential outlier. However, based on a 1% and 5% significance level, there were no potential outliers; therefore, no additional analytical results were removed from the data set. A normal Q-Q plot was then generated to evaluate if the data set for chloride and sulfate adhered to a normal distribution. The normal Q-Q plot illustrates that both data sets are normal. The mean and standard deviation were also calculated using ProUCL.

The COGCC cleanup goal was calculated by multiplying the mean (from background well data) times 1.25 per Table 910-1 from the COGCC rules. A summary of pertinent statistical results and the calculated COGCC cleanup levels for chloride and sulfate are listed below:

Statistical Analysis	Chloride (µg/L)	Sulfate (µg/L)
Mean (from background well data)	41.73	665.9
COGCC cleanup goal (1.25 x background)	52.16	832.4
Standard Deviation	6.24	148.6
Sample Size	44	21

The sulfate concentrations reported in groundwater samples collected from monitoring wells MW-01, MW-02 and MW-03 exceeded the CDPHE Regulation 41 Standard of 250,000 µg/L, but were below the calculated COGCC standard of 832,400 µg/L.

Specific conductance was reported in the groundwater samples ranging from 1,245 to 1,543 micro Siemens per centimeter (µmhos/cm). Generally, relatively higher concentrations of specific conductance were reported in groundwater samples with higher concentrations of alkalinity, bromide, chloride, nitrate, nitrite, sulfate and sulfide. Higher concentrations of specific conductance generally correspond to more turbid samples which have more sediment and subsequently more inorganics from the sediment. This occurs when monitoring wells do not recharge sufficiently during purging and the formation contains clays.

Groundwater samples were reported to have a neutral pH (i.e. near 7.0). The pH values in all of the other wells measured during purging were reported in a range from 7.64 to 7.94, which is within the range of CDPHE's basic standard for groundwater (i.e. pH of 6.5 to 8.5).

5.3 Soil Gas Sample Results

VOC constituents reported in the soil gas samples were compared to the 2016 Colorado Department of Public Health and Environment (CDPHE) Indoor Air Screening Concentrations (ASC) – Residential and Worker Remediation Goals, and the June 2017 USEPA Residential and Industrial Indoor Air RSLs, after applying a 3% attenuation factor for subslab soil gas per the USEPA Office of Solid Waste and Emergency Response (OSWER) Technical Guide for Assessing and Mitigating the Gas Intrusion Pathway from Subsurface Gas Sources to Indoor Air (OSWER Guidance, June 2015). Reference to the OSWER guidance is not meant to imply that the scope of this soil gas investigation was designed to include the guidance's subsurface characterization criteria or that Terracon conducted a detailed vapor intrusion risk assessment. A summary of the analytical results is provided below. The soil gas analytical data reported above laboratory detection limits and corresponding action levels are summarized in Table 2 (Appendix B).

A number of VOCs were reported across the site above Residential and Industrial RSLs. After applying the 3% attenuation factor, only chloroform in soil gas was detected at a concentration

above the EPA Residential RSL of 4.0 micrograms per meters cubed (µg/m^3) in SVP-01 with a reported concentration of 4.9 (µg/m^3).

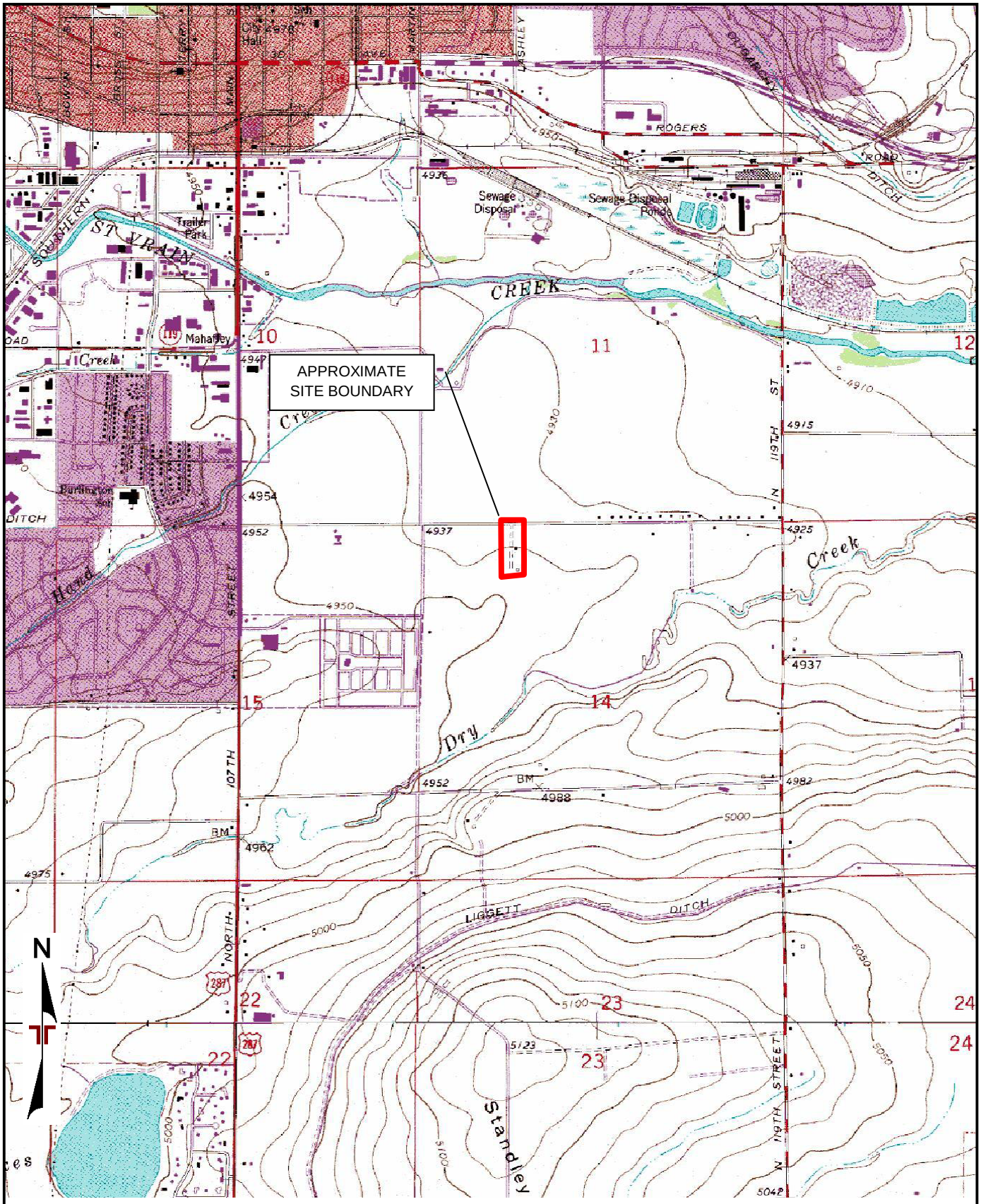
Methane was not detected in any of the soil gas samples collected as part of this investigation above its respective laboratory detection limit.

APPENDIX A – EXHIBITS

Exhibit 1 – Topographic Map

Exhibit 2 – Site Diagram

Exhibit 3 – Groundwater Contour Map



TOPOGRAPHIC MAP IMAGE COURTESY OF THE U.S. GEOLOGICAL SURVEY
QUADRANGLES INCLUDE: LONGMONT, CO (1/1/1979) and ERIE, CO (1/1/1979).

Project Manager: MJS	Project No. 22177040	Terracon 1242 Bramwood Pl Longmont, CO 80501-6100	TOPOGRAPHIC MAP	Exhibit
Drawn by: MJS	Scale: 1"=2,000'		Tabor #7 O&G Well Site Investigation Longmont, CO	1
Checked by: DAB	File Name: 22177040			
Approved by: JCG	Date: 12/05/2017			

0 15' 30' 60'

DIAGRAM IS INTENDED FOR GENERAL USE ONLY, AND IS NOT FOR CONSTRUCTION PURPOSES. LOCATIONS ARE APPROXIMATE.

Project Mngr:	MJS
Drawn By:	CPD
Checked By:	MJS
Approved By:	DAB
Project No.	22177040
Scale:	AS-SHOWN
File No.	22177040.DWG
Date:	12.08.2017

Terracon
Consulting Engineers and Scientists
1242 BRAMWOOD PLACE LONGMONT, CO 80501
PH. (303) 776-3921 FAX. (303) 776-4041

SITE DIAGRAM

TABOR #7
CITY OF LONGMONT
LONGMONT, COLORADO

EXHIBIT No.
2

0 15' 30' 60'

DIAGRAM IS INTENDED FOR GENERAL USE ONLY, AND IS NOT FOR CONSTRUCTION PURPOSES. LOCATIONS ARE APPROXIMATE.

Project Mngr:	MJS
Drawn By:	CPD
Checked By:	MJS
Approved By:	DAB

Project No.	22177040
Scale:	AS-SHOWN
File No.	22177040.DWG
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POTENTIOMETRIC SURFACE MAP (4Q 2017)

TABOR #7
CITY OF LONGMONT
LONGMONT, COLORADO

EXHIBIT No.
3

APPENDIX B – TABLES

Table 1 – Groundwater Analytical Summary
Table 2 – Soil Vapor Analytical Summary

Table 1
Groundwater Analytical Summary
Tabor #7 Oil and Gas Well Site
Longmont, Colorado
Terracon Project No. 22177040

Sample ID			MW-01	MW-02	MW-03
Collect Date			11/1/17	11/1/17	11/1/17
Parameter	CDPHE Reg. 41 Groundwater Standard[1]	COGCC Concentration Levels[2]	µg/L	µg/L	µg/L
Inorganic Parameters					
Calcium, Dissolved	NE	NE	148,000	140,000	141,000
Magnesium, Dissolved	NE	NE	100,000	104,000	105,000
Potassium, Dissolved	NE	NE	3,980	2,810	2,830
Sodium, Dissolved	NE	NE	95,800	95,100	95,300
Strontium	NE	NE	2,260	2,290	2,490
Alkalinity, Carbonate (CaCO3)	NE	NE	326,000	338,000	354,000
Chloride	250,000	52,160*	42,400	41,600	43,100
Nitrogen as Nitrate	10,000	NE	5,500	3,950	4,700
Sulfate	250,000	832,400*	536,000	477,000	473,000
General Parameters					
Specific Conductance (mmhos)	NE	NE	1,543	1,496	1,245
Temperature (°C)	NE	NE	16.83	16.56	16.64
Dissolved Oxygen (mg/L)	NE	NE	4.95	5.21	7.12
ORP	NE	NE	-151.8	-64.5	-47.2
pH	6.5-8.5	NE	7.75	7.94	7.64

1) CDPHE GW Quality Standards – Regulation 41 Table A, Ground Water Organic Chemical Standards (June 30, 2016)
2) COGCC Concentration Levels = COGCC Table 910-1 (January 2015)
*) The COGCC cleanup standard for chloride and sulfate is 1.25 x background. Background concentrations from unimpacted wells were used to average and calculate an appropriate background concentration for this area.
Only detected analytes shown (detected concentrations are **bold**)
NE = Not Established
COGCC = Colorado Oil and Gas Conservation Comission

Table 2
Soil Vapor Analytical Summary
Tabor #7 Oil and Gas Well Site
Longmont, Colorado
Terracon Project No. 22177040

Sample ID			SVP-01	SVP-02
Collect Date			11/1/2017	11/1/2017
Parameter	Residential RSL	Residential VISL[1]	µg/m^3	µg/m^3
VOC (TO-15)				
Acetone	**32,000**	**1,066,667**	**46.3**	**38**
Benzene	**0.36**	**12**	**3.67**	<1.28
Carbon disulfide	**73**	**2,433**	**9.28**	<1.24
Chloroform	**0.12**	**4**	**4.9**	**2.56**
Cyclohexane	**630**	**21,000**	**2.28**	<1.38
1,3-Dichlorobenzene	**NE**	**NE**	**3.62**	**3.69**
Ethanol	**NE**	**NE**	**7.51**	**5.14**
Ethylbenzene	**1.1**	**37**	**15.7**	**1.98**
4-Ethyltoluene	**NE**	**NE**	**10.4**	<1.96
Heptane	**NE**	**NE**	**11.1**	<1.64
n-Hexane	**730**	**24,333**	**4.8**	<1.41
Methyl Butyl Ketone	**31**	**1,033**	**22.7**	<10.2
2-Propanol	**210**	**7,000**	**13**	**16.1**
Tetrahydrofuran	**2,100**	**70,000**	**3.31**	<1.18
Toluene	**5,200**	**173,333**	**43.7**	**5.88**
Trichloroethylene	**0.48**	**16**	<2.14	**5.38**
1,2,4-Trimethylbenzene	**7.3**	**243**	**11.6**	**2.4**
1,3,5-Trimethylbenzene	**NE**	**NE**	**5.14**	<1.96
2,2,4-Trimethylpentane	**NE**	**NE**	**6.17**	<1.87
m&p-Xylene	**100**	**3,333**	**62.3**	**8.16**
o-Xylene	**100**	**3,333**	**17.9**	**2.96**
Methane by D1946 (%)				
Methane	**NE**	**NE**	<0.4	<0.4

1) VISL - Vapor Intrusion Screening Level (calculated by dividing the RSL for residential indoor air by the State approved 3% [0.03] attenuation factor).
RSL = USEPA Indoor Air Regional Screening Level (HQ=0.1 June 2017)
ASC = CDPHE Air Screening Concentrations, Remediation Goals (January 2016)
ND = Not Detected
NE = Not Established
NA = Not Applicable
Only detected analytes shown (detected concentrations are **bold**)

APPENDIX C – SOIL BORING LOGS

WELL LOG NO. SB-01/MW-01

PROJECT: Tabor #7 O&G Well Site

CLIENT: City of Longmont
Longmont, CO

SITE:
Longmont, Colorado

LOCATION See Exhibit A-2

Latitude: 40.14212° Longitude: -105.08923°

DEPTH	MATERIAL DESCRIPTION	INSTALLATION DETAILS (Well Completion)	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
	ELASTIC SILT (MH), tan, moist, soft	Flushmount; Bentonite chips with riser pipe; Solid pipe in sand	5			<1	
8.0						<1	
	CL-ML - SILTY CLAY (CL-ML), tan, moist, soft		10			<1	SB-01 (10-11)
12.0				▽			
	CL-ML - SILTY CLAY (CL-ML), sandy, fine to coarse grained, tan, wet	Screen pack in sand		▽			
16.0			15				
	WELL GRADED SAND (SW), fine to coarse grained, tan, wet						
18.0							
	Boring Terminated at 18 Feet						

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Hammer Type: Automatic

Advancement Method:
Direct Push

Abandonment Method:
Boring completed as a monitoring well

Notes:

WATER LEVEL OBSERVATIONS

▽ *12.0, during exploration*

▽ *13.33 during well development*

Terracon
1901 Sharp Point Dr Ste C
Fort Collins, CO

Well Started: 10-30-2017 | Well Completed: 10-30-2017

Drill Rig: Geoprobe | Driller: Drill Pro

Project No.: 22177040 | Exhibit: B-1

WELL LOG NO. SB-02/MW-02

PROJECT: Tabor #7 O&G Well Site

CLIENT: City of Longmont
Longmont, CO

SITE:
Longmont, Colorado

LOCATION See Exhibit A-2

Latitude: 40.1425° Longitude: -105.08938°

DEPTH	MATERIAL DESCRIPTION
	ELASTIC SILT (MH), tan, dry, soft
8.0	**ELASTIC SILT (MH)**, tan, moist, soft
15.0	**WELL GRADED SAND (SW)**, fine to coarse grained, tan, wet
20.0	***Boring Terminated at 20 Feet***

INSTALLATION DETAILS

Well Completion:

Flushmount

Bentonite chips with riser pipe

Solid pipe in sand

Screen pack in sand

DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
			<1	
5			<1	
10			<1	SB-02 (10-11)
	▽		<1	
15	▽			
20				

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Hammer Type: Automatic

Advancement Method:
Direct Push

Abandonment Method:
Boring completed as a monitoring well

Notes:

WATER LEVEL OBSERVATIONS

▽ *15.0, during exploration*

▽ *12.88 during well development*

Terracon
1901 Sharp Point Dr Ste C
Fort Collins, CO

Well Started: 10-30-2017	Well Completed: 10-30-2017
Drill Rig: Geoprobe	Driller: Drill Pro
Project No.: 22177040	Exhibit: B-2

WELL LOG NO. SB-03/MW-03

PROJECT: Tabor #7 O&G Well Site

CLIENT: City of Longmont
Longmont, CO

SITE:
Longmont, Colorado

LOCATION See Exhibit A-2

Latitude: 40.14259° Longitude: -105.08952°

DEPTH	MATERIAL DESCRIPTION	INSTALLATION DETAILS (Well Completion)	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
	ELASTIC SILT (MH), tan, dry, soft	Flushmount				<1	
		Bentonite chips with riser pipe	5			<1	
8.0							
	SILTY CLAY (CL-ML), tan, moist, soft	Solid pipe in sand	10			<1	SB-03 (9-10)
14.0				▽			
	WELL GRADED SAND (SW), fine to coarse grained, tan, wet	Screen pack in sand	15	▽		<1	
19.5							
	Boring Terminated at 19.5 Feet						

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Hammer Type: Automatic

Advancement Method:
Direct Push

Abandonment Method:
Boring completed as a monitoring well

Notes:

WATER LEVEL OBSERVATIONS

▽ *14.0, during exploration*

▽ *13.45 during well development*

Terracon
1901 Sharp Point Dr Ste C
Fort Collins, CO

Well Started: 10-30-2017 | Well Completed: 10-30-2017

Drill Rig: Geoprobe | Driller: Drill Pro

Project No.: 22177040 | Exhibit: B-3

WELL LOG NO. SVP-01

PROJECT: Tabor #7 O&G Well Site

CLIENT: City of Longmont
Longmont, CO

SITE:
Longmont, Colorado

LOCATION See Exhibit A-2

Latitude: 40.1421° Longitude: -105.08932°

GRAPHIC LOG	DEPTH	MATERIAL DESCRIPTION	INSTALLATION DETAILS	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
		ELASTIC SILT (MH), tan, dry, soft	Well Completion: Top cap; Screen pack in sand					
	5.0	***Boring Terminated at 5 Feet***		5				

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Hammer Type: Automatic

Advancement Method:
Direct Push

Abandonment Method:
Boring completed as soil vapor point

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1901 Sharp Point Dr Ste C
Fort Collins, CO

Well Started: 10-30-2017 | Well Completed: 10-30-2017

Drill Rig: Geoprobe | Driller: Drill Pro

Project No.: 22177040 | Exhibit: B-4

WELL LOG NO. SVP-02

PROJECT: Tabor #7 O&G Well Site

CLIENT: City of Longmont
Longmont, CO

SITE:
Longmont, Colorado

LOCATION See Exhibit A-2

Latitude: 40.14246° Longitude: -105.08951°

GRAPHIC LOG	DEPTH	MATERIAL DESCRIPTION	INSTALLATION DETAILS	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	PID (ppm)	SAMPLE SENT TO LAB (ID NUMBER)
		ELASTIC SILT (MH), tan, dry, soft	Well Completion: Top cap; Screen pack in sand					
	5.0	***Boring Terminated at 5 Feet***		5				

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Hammer Type: Automatic

Advancement Method:
Direct Push

Abandonment Method:
Boring completed as soil vapor point

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1901 Sharp Point Dr Ste C
Fort Collins, CO

Well Started: 10-30-2017 | Well Completed: 10-30-2017

Drill Rig: Geoprobe | Driller: Drill Pro

Project No.: 22177040 | Exhibit: B-5

APPENDIX D – ANALYTICAL REPORTS AND CHAINS OF CUSTODY

ANALYTICAL REPORT

November 09, 2017

Terracon Consultants, Inc - Longmont, CO

Sample Delivery Group:	L947771
Samples Received:	11/01/2017
Project Number:	22177040
Description:	Tabor #7

Report To: Mike Skridulis
1242 Bramwood Place
Longmont, CO 80501

Entire Report Reviewed By:

Daphne R Richards

Daphne Richards
Technical Service Representative

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 ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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SB-01(10-11) L947771-01 Solid

Collected by	Collected date/time	Received date/time
M. Skridulis	10/31/17 08:50	11/01/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1038182	1	11/01/17 21:36	11/02/17 08:35	BMB
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1038308	1	11/01/17 21:36	11/02/17 13:35	ACG
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1039664	1	11/08/17 00:16	11/08/17 19:11	MTJ

SB-02(10-11) L947771-02 Solid

Collected by	Collected date/time	Received date/time
M. Skridulis	10/31/17 09:50	11/01/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1038182	1	11/01/17 21:36	11/02/17 09:04	BMB
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1038308	1	11/01/17 21:36	11/02/17 13:56	ACG
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1039664	1	11/08/17 00:16	11/08/17 19:28	MTJ

SB-03(9-10) L947771-03 Solid

Collected by	Collected date/time	Received date/time
M. Skridulis	10/31/17 10:30	11/01/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1038182	1	11/01/17 21:36	11/02/17 09:26	BMB
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1038308	1	11/01/17 21:36	11/02/17 14:17	ACG
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1039664	1	11/08/17 00:16	11/08/17 19:45	MTJ

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. 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.

Daphne R Richards

Daphne Richards
Technical Service Representative

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		0.100	1	11/02/2017 08:35	WG1038182
(S) a,a,a-Trifluorotoluene(FID)	*100*		*77.0-120*		*11/02/2017 08:35*	WG1038182

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	11/02/2017 13:35	WG1038308
Acrylonitrile	ND		0.0100	1	11/02/2017 13:35	WG1038308
Benzene	ND		0.00100	1	11/02/2017 13:35	WG1038308
Bromobenzene	ND		0.00100	1	11/02/2017 13:35	WG1038308
Bromodichloromethane	ND		0.00100	1	11/02/2017 13:35	WG1038308
Bromoform	ND		0.00100	1	11/02/2017 13:35	WG1038308
Bromomethane	ND		0.00500	1	11/02/2017 13:35	WG1038308
n-Butylbenzene	ND		0.00100	1	11/02/2017 13:35	WG1038308
sec-Butylbenzene	ND		0.00100	1	11/02/2017 13:35	WG1038308
tert-Butylbenzene	ND		0.00100	1	11/02/2017 13:35	WG1038308
Carbon tetrachloride	ND		0.00100	1	11/02/2017 13:35	WG1038308
Chlorobenzene	ND		0.00100	1	11/02/2017 13:35	WG1038308
Chlorodibromomethane	ND		0.00100	1	11/02/2017 13:35	WG1038308
Chloroethane	ND		0.00500	1	11/02/2017 13:35	WG1038308
Chloroform	ND		0.00500	1	11/02/2017 13:35	WG1038308
Chloromethane	ND		0.00250	1	11/02/2017 13:35	WG1038308
2-Chlorotoluene	ND		0.00100	1	11/02/2017 13:35	WG1038308
4-Chlorotoluene	ND		0.00100	1	11/02/2017 13:35	WG1038308
1,2-Dibromo-3-Chloropropane	ND		0.00500	1	11/02/2017 13:35	WG1038308
1,2-Dibromoethane	ND		0.00100	1	11/02/2017 13:35	WG1038308
Dibromomethane	ND		0.00100	1	11/02/2017 13:35	WG1038308
1,2-Dichlorobenzene	ND		0.00100	1	11/02/2017 13:35	WG1038308
1,3-Dichlorobenzene	ND		0.00100	1	11/02/2017 13:35	WG1038308
1,4-Dichlorobenzene	ND		0.00100	1	11/02/2017 13:35	WG1038308
Dichlorodifluoromethane	ND		0.00500	1	11/02/2017 13:35	WG1038308
1,1-Dichloroethane	ND		0.00100	1	11/02/2017 13:35	WG1038308
1,2-Dichloroethane	ND		0.00100	1	11/02/2017 13:35	WG1038308
1,1-Dichloroethene	ND		0.00100	1	11/02/2017 13:35	WG1038308
cis-1,2-Dichloroethene	ND		0.00100	1	11/02/2017 13:35	WG1038308
trans-1,2-Dichloroethene	ND		0.00100	1	11/02/2017 13:35	WG1038308
1,2-Dichloropropane	ND		0.00100	1	11/02/2017 13:35	WG1038308
1,1-Dichloropropene	ND		0.00100	1	11/02/2017 13:35	WG1038308
1,3-Dichloropropane	ND		0.00100	1	11/02/2017 13:35	WG1038308
cis-1,3-Dichloropropene	ND		0.00100	1	11/02/2017 13:35	WG1038308
trans-1,3-Dichloropropene	ND		0.00100	1	11/02/2017 13:35	WG1038308
2,2-Dichloropropane	ND		0.00100	1	11/02/2017 13:35	WG1038308
Di-isopropyl ether	ND		0.00100	1	11/02/2017 13:35	WG1038308
Ethylbenzene	ND		0.00100	1	11/02/2017 13:35	WG1038308
Hexachloro-1,3-butadiene	ND		0.00100	1	11/02/2017 13:35	WG1038308
Isopropylbenzene	ND		0.00100	1	11/02/2017 13:35	WG1038308
p-Isopropyltoluene	ND		0.00100	1	11/02/2017 13:35	WG1038308
2-Butanone (MEK)	ND		0.0100	1	11/02/2017 13:35	WG1038308
Methylene Chloride	ND		0.00500	1	11/02/2017 13:35	WG1038308
4-Methyl-2-pentanone (MIBK)	ND		0.0100	1	11/02/2017 13:35	WG1038308
Methyl tert-butyl ether	ND		0.00100	1	11/02/2017 13:35	WG1038308
Naphthalene	ND		0.00500	1	11/02/2017 13:35	WG1038308
n-Propylbenzene	ND		0.00100	1	11/02/2017 13:35	WG1038308
Styrene	ND		0.00100	1	11/02/2017 13:35	WG1038308
1,1,1,2-Tetrachloroethane	ND		0.00100	1	11/02/2017 13:35	WG1038308

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
1,1,2,2-Tetrachloroethane	ND		0.00100	1	11/02/2017 13:35	WG1038308
1,1,2-Trichlorotrifluoroethane	ND		0.00100	1	11/02/2017 13:35	WG1038308
Tetrachloroethene	ND		0.00100	1	11/02/2017 13:35	WG1038308
Toluene	ND		0.00500	1	11/02/2017 13:35	WG1038308
1,2,3-Trichlorobenzene	ND		0.00100	1	11/02/2017 13:35	WG1038308
1,2,4-Trichlorobenzene	ND		0.00100	1	11/02/2017 13:35	WG1038308
1,1,1-Trichloroethane	ND		0.00100	1	11/02/2017 13:35	WG1038308
1,1,2-Trichloroethane	ND		0.00100	1	11/02/2017 13:35	WG1038308
Trichloroethene	ND		0.00100	1	11/02/2017 13:35	WG1038308
Trichlorofluoromethane	ND		0.00500	1	11/02/2017 13:35	WG1038308
1,2,3-Trichloropropane	ND		0.00250	1	11/02/2017 13:35	WG1038308
1,2,4-Trimethylbenzene	ND		0.00100	1	11/02/2017 13:35	WG1038308
1,2,3-Trimethylbenzene	ND		0.00100	1	11/02/2017 13:35	WG1038308
1,3,5-Trimethylbenzene	ND		0.00100	1	11/02/2017 13:35	WG1038308
Vinyl chloride	ND		0.00100	1	11/02/2017 13:35	WG1038308
Xylenes, Total	ND		0.00300	1	11/02/2017 13:35	WG1038308
(S) Toluene-d8	*98.6*		*80.0-120*		*11/02/2017 13:35*	WG1038308
(S) Dibromofluoromethane	*108*		*74.0-131*		*11/02/2017 13:35*	WG1038308
(S) 4-Bromofluorobenzene	*102*		*64.0-132*		*11/02/2017 13:35*	WG1038308

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND	J3	4.00	1	11/08/2017 19:11	WG1039664
C28-C40 Oil Range	ND		4.00	1	11/08/2017 19:11	WG1039664
(S) o-Terphenyl	*79.2*		*18.0-148*		*11/08/2017 19:11*	WG1039664

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		0.100	1	11/02/2017 09:04	WG1038182
(S) a,a,a-Trifluorotoluene(FID)	*100*		*77.0-120*		*11/02/2017 09:04*	WG1038182

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	11/02/2017 13:56	WG1038308
Acrylonitrile	ND		0.0100	1	11/02/2017 13:56	WG1038308
Benzene	ND		0.00100	1	11/02/2017 13:56	WG1038308
Bromobenzene	ND		0.00100	1	11/02/2017 13:56	WG1038308
Bromodichloromethane	ND		0.00100	1	11/02/2017 13:56	WG1038308
Bromoform	ND		0.00100	1	11/02/2017 13:56	WG1038308
Bromomethane	ND		0.00500	1	11/02/2017 13:56	WG1038308
n-Butylbenzene	ND		0.00100	1	11/02/2017 13:56	WG1038308
sec-Butylbenzene	ND		0.00100	1	11/02/2017 13:56	WG1038308
tert-Butylbenzene	ND		0.00100	1	11/02/2017 13:56	WG1038308
Carbon tetrachloride	ND		0.00100	1	11/02/2017 13:56	WG1038308
Chlorobenzene	ND		0.00100	1	11/02/2017 13:56	WG1038308
Chlorodibromomethane	ND		0.00100	1	11/02/2017 13:56	WG1038308
Chloroethane	ND		0.00500	1	11/02/2017 13:56	WG1038308
Chloroform	ND		0.00500	1	11/02/2017 13:56	WG1038308
Chloromethane	ND		0.00250	1	11/02/2017 13:56	WG1038308
2-Chlorotoluene	ND		0.00100	1	11/02/2017 13:56	WG1038308
4-Chlorotoluene	ND		0.00100	1	11/02/2017 13:56	WG1038308
1,2-Dibromo-3-Chloropropane	ND		0.00500	1	11/02/2017 13:56	WG1038308
1,2-Dibromoethane	ND		0.00100	1	11/02/2017 13:56	WG1038308
Dibromomethane	ND		0.00100	1	11/02/2017 13:56	WG1038308
1,2-Dichlorobenzene	ND		0.00100	1	11/02/2017 13:56	WG1038308
1,3-Dichlorobenzene	ND		0.00100	1	11/02/2017 13:56	WG1038308
1,4-Dichlorobenzene	ND		0.00100	1	11/02/2017 13:56	WG1038308
Dichlorodifluoromethane	ND		0.00500	1	11/02/2017 13:56	WG1038308
1,1-Dichloroethane	ND		0.00100	1	11/02/2017 13:56	WG1038308
1,2-Dichloroethane	ND		0.00100	1	11/02/2017 13:56	WG1038308
1,1-Dichloroethene	ND		0.00100	1	11/02/2017 13:56	WG1038308
cis-1,2-Dichloroethene	ND		0.00100	1	11/02/2017 13:56	WG1038308
trans-1,2-Dichloroethene	ND		0.00100	1	11/02/2017 13:56	WG1038308
1,2-Dichloropropane	ND		0.00100	1	11/02/2017 13:56	WG1038308
1,1-Dichloropropene	ND		0.00100	1	11/02/2017 13:56	WG1038308
1,3-Dichloropropane	ND		0.00100	1	11/02/2017 13:56	WG1038308
cis-1,3-Dichloropropene	ND		0.00100	1	11/02/2017 13:56	WG1038308
trans-1,3-Dichloropropene	ND		0.00100	1	11/02/2017 13:56	WG1038308
2,2-Dichloropropane	ND		0.00100	1	11/02/2017 13:56	WG1038308
Di-isopropyl ether	ND		0.00100	1	11/02/2017 13:56	WG1038308
Ethylbenzene	ND		0.00100	1	11/02/2017 13:56	WG1038308
Hexachloro-1,3-butadiene	ND		0.00100	1	11/02/2017 13:56	WG1038308
Isopropylbenzene	ND		0.00100	1	11/02/2017 13:56	WG1038308
p-Isopropyltoluene	ND		0.00100	1	11/02/2017 13:56	WG1038308
2-Butanone (MEK)	ND		0.0100	1	11/02/2017 13:56	WG1038308
Methylene Chloride	ND		0.00500	1	11/02/2017 13:56	WG1038308
4-Methyl-2-pentanone (MIBK)	ND		0.0100	1	11/02/2017 13:56	WG1038308
Methyl tert-butyl ether	ND		0.00100	1	11/02/2017 13:56	WG1038308
Naphthalene	ND		0.00500	1	11/02/2017 13:56	WG1038308
n-Propylbenzene	ND		0.00100	1	11/02/2017 13:56	WG1038308
Styrene	ND		0.00100	1	11/02/2017 13:56	WG1038308
1,1,1,2-Tetrachloroethane	ND		0.00100	1	11/02/2017 13:56	WG1038308

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
1,1,2,2-Tetrachloroethane	ND		0.00100	1	11/02/2017 13:56	WG1038308
1,1,2-Trichlorotrifluoroethane	ND		0.00100	1	11/02/2017 13:56	WG1038308
Tetrachloroethene	ND		0.00100	1	11/02/2017 13:56	WG1038308
Toluene	ND		0.00500	1	11/02/2017 13:56	WG1038308
1,2,3-Trichlorobenzene	ND		0.00100	1	11/02/2017 13:56	WG1038308
1,2,4-Trichlorobenzene	ND		0.00100	1	11/02/2017 13:56	WG1038308
1,1,1-Trichloroethane	ND		0.00100	1	11/02/2017 13:56	WG1038308
1,1,2-Trichloroethane	ND		0.00100	1	11/02/2017 13:56	WG1038308
Trichloroethene	ND		0.00100	1	11/02/2017 13:56	WG1038308
Trichlorofluoromethane	ND		0.00500	1	11/02/2017 13:56	WG1038308
1,2,3-Trichloropropane	ND		0.00250	1	11/02/2017 13:56	WG1038308
1,2,4-Trimethylbenzene	ND		0.00100	1	11/02/2017 13:56	WG1038308
1,2,3-Trimethylbenzene	ND		0.00100	1	11/02/2017 13:56	WG1038308
1,3,5-Trimethylbenzene	ND		0.00100	1	11/02/2017 13:56	WG1038308
Vinyl chloride	ND		0.00100	1	11/02/2017 13:56	WG1038308
Xylenes, Total	ND		0.00300	1	11/02/2017 13:56	WG1038308
(S) Toluene-d8	*97.6*		*80.0-120*		*11/02/2017 13:56*	WG1038308
(S) Dibromofluoromethane	*108*		*74.0-131*		*11/02/2017 13:56*	WG1038308
(S) 4-Bromofluorobenzene	*98.6*		*64.0-132*		*11/02/2017 13:56*	WG1038308

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND	J3	4.00	1	11/08/2017 19:28	WG1039664
C28-C40 Oil Range	ND		4.00	1	11/08/2017 19:28	WG1039664
(S) o-Terphenyl	*67.9*		*18.0-148*		*11/08/2017 19:28*	WG1039664

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		0.100	1	11/02/2017 09:26	WG1038182
(S) a,a,a-Trifluorotoluene(FID)	*101*		*77.0-120*		*11/02/2017 09:26*	WG1038182

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	11/02/2017 14:17	WG1038308
Acrylonitrile	ND		0.0100	1	11/02/2017 14:17	WG1038308
Benzene	ND		0.00100	1	11/02/2017 14:17	WG1038308
Bromobenzene	ND		0.00100	1	11/02/2017 14:17	WG1038308
Bromodichloromethane	ND		0.00100	1	11/02/2017 14:17	WG1038308
Bromoform	ND		0.00100	1	11/02/2017 14:17	WG1038308
Bromomethane	ND		0.00500	1	11/02/2017 14:17	WG1038308
n-Butylbenzene	ND		0.00100	1	11/02/2017 14:17	WG1038308
sec-Butylbenzene	ND		0.00100	1	11/02/2017 14:17	WG1038308
tert-Butylbenzene	ND		0.00100	1	11/02/2017 14:17	WG1038308
Carbon tetrachloride	ND		0.00100	1	11/02/2017 14:17	WG1038308
Chlorobenzene	ND		0.00100	1	11/02/2017 14:17	WG1038308
Chlorodibromomethane	ND		0.00100	1	11/02/2017 14:17	WG1038308
Chloroethane	ND		0.00500	1	11/02/2017 14:17	WG1038308
Chloroform	ND		0.00500	1	11/02/2017 14:17	WG1038308
Chloromethane	ND		0.00250	1	11/02/2017 14:17	WG1038308
2-Chlorotoluene	ND		0.00100	1	11/02/2017 14:17	WG1038308
4-Chlorotoluene	ND		0.00100	1	11/02/2017 14:17	WG1038308
1,2-Dibromo-3-Chloropropane	ND		0.00500	1	11/02/2017 14:17	WG1038308
1,2-Dibromoethane	ND		0.00100	1	11/02/2017 14:17	WG1038308
Dibromomethane	ND		0.00100	1	11/02/2017 14:17	WG1038308
1,2-Dichlorobenzene	ND		0.00100	1	11/02/2017 14:17	WG1038308
1,3-Dichlorobenzene	ND		0.00100	1	11/02/2017 14:17	WG1038308
1,4-Dichlorobenzene	ND		0.00100	1	11/02/2017 14:17	WG1038308
Dichlorodifluoromethane	ND		0.00500	1	11/02/2017 14:17	WG1038308
1,1-Dichloroethane	ND		0.00100	1	11/02/2017 14:17	WG1038308
1,2-Dichloroethane	ND		0.00100	1	11/02/2017 14:17	WG1038308
1,1-Dichloroethene	ND		0.00100	1	11/02/2017 14:17	WG1038308
cis-1,2-Dichloroethene	ND		0.00100	1	11/02/2017 14:17	WG1038308
trans-1,2-Dichloroethene	ND		0.00100	1	11/02/2017 14:17	WG1038308
1,2-Dichloropropane	ND		0.00100	1	11/02/2017 14:17	WG1038308
1,1-Dichloropropene	ND		0.00100	1	11/02/2017 14:17	WG1038308
1,3-Dichloropropane	ND		0.00100	1	11/02/2017 14:17	WG1038308
cis-1,3-Dichloropropene	ND		0.00100	1	11/02/2017 14:17	WG1038308
trans-1,3-Dichloropropene	ND		0.00100	1	11/02/2017 14:17	WG1038308
2,2-Dichloropropane	ND		0.00100	1	11/02/2017 14:17	WG1038308
Di-isopropyl ether	ND		0.00100	1	11/02/2017 14:17	WG1038308
Ethylbenzene	ND		0.00100	1	11/02/2017 14:17	WG1038308
Hexachloro-1,3-butadiene	ND		0.00100	1	11/02/2017 14:17	WG1038308
Isopropylbenzene	ND		0.00100	1	11/02/2017 14:17	WG1038308
p-Isopropyltoluene	ND		0.00100	1	11/02/2017 14:17	WG1038308
2-Butanone (MEK)	ND		0.0100	1	11/02/2017 14:17	WG1038308
Methylene Chloride	ND		0.00500	1	11/02/2017 14:17	WG1038308
4-Methyl-2-pentanone (MIBK)	ND		0.0100	1	11/02/2017 14:17	WG1038308
Methyl tert-butyl ether	ND		0.00100	1	11/02/2017 14:17	WG1038308
Naphthalene	ND		0.00500	1	11/02/2017 14:17	WG1038308
n-Propylbenzene	ND		0.00100	1	11/02/2017 14:17	WG1038308
Styrene	ND		0.00100	1	11/02/2017 14:17	WG1038308
1,1,1,2-Tetrachloroethane	ND		0.00100	1	11/02/2017 14:17	WG1038308

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
1,1,2,2-Tetrachloroethane	ND		0.00100	1	11/02/2017 14:17	WG1038308
1,1,2-Trichlorotrifluoroethane	ND		0.00100	1	11/02/2017 14:17	WG1038308
Tetrachloroethene	ND		0.00100	1	11/02/2017 14:17	WG1038308
Toluene	ND		0.00500	1	11/02/2017 14:17	WG1038308
1,2,3-Trichlorobenzene	ND		0.00100	1	11/02/2017 14:17	WG1038308
1,2,4-Trichlorobenzene	ND		0.00100	1	11/02/2017 14:17	WG1038308
1,1,1-Trichloroethane	ND		0.00100	1	11/02/2017 14:17	WG1038308
1,1,2-Trichloroethane	ND		0.00100	1	11/02/2017 14:17	WG1038308
Trichloroethene	ND		0.00100	1	11/02/2017 14:17	WG1038308
Trichlorofluoromethane	ND		0.00500	1	11/02/2017 14:17	WG1038308
1,2,3-Trichloropropane	ND		0.00250	1	11/02/2017 14:17	WG1038308
1,2,4-Trimethylbenzene	ND		0.00100	1	11/02/2017 14:17	WG1038308
1,2,3-Trimethylbenzene	ND		0.00100	1	11/02/2017 14:17	WG1038308
1,3,5-Trimethylbenzene	ND		0.00100	1	11/02/2017 14:17	WG1038308
Vinyl chloride	ND		0.00100	1	11/02/2017 14:17	WG1038308
Xylenes, Total	ND		0.00300	1	11/02/2017 14:17	WG1038308
(S) Toluene-d8	*94.8*		*80.0-120*		*11/02/2017 14:17*	WG1038308
(S) Dibromofluoromethane	*112*		*74.0-131*		*11/02/2017 14:17*	WG1038308
(S) 4-Bromofluorobenzene	*99.6*		*64.0-132*		*11/02/2017 14:17*	WG1038308

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND	J3	4.00	1	11/08/2017 19:45	WG1039664
C28-C40 Oil Range	ND		4.00	1	11/08/2017 19:45	WG1039664
(S) o-Terphenyl	*73.8*		*18.0-148*		*11/08/2017 19:45*	WG1039664

Method Blank (MB)

(MB) R3263438-3 11/01/17 23:45

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)	*103*			*77.0-120*

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

(LCS) R3263438-1 11/01/17 22:38 • (LCSD) R3263438-2 11/01/17 23:01

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 %
TPH (GC/FID) Low Fraction	5.50	5.50	5.81	100	106	70.0-136			5.46	20
(S) a,a,a-Trifluorotoluene(FID)				*109*	*111*	*77.0-120*				

Method Blank (MB)

(MB) R3263476-3 11/02/17 10:39

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acetone	U		0.0100	0.0500
Acrylonitrile	U		0.00179	0.0100
Benzene	U		0.000270	0.00100
Bromobenzene	U		0.000284	0.00100
Bromodichloromethane	U		0.000254	0.00100
Bromoform	U		0.000424	0.00100
Bromomethane	U		0.00134	0.00500
n-Butylbenzene	U		0.000258	0.00100
sec-Butylbenzene	U		0.000201	0.00100
tert-Butylbenzene	U		0.000206	0.00100
Carbon tetrachloride	U		0.000328	0.00100
Chlorobenzene	U		0.000212	0.00100
Chlorodibromomethane	U		0.000373	0.00100
Chloroethane	U		0.000946	0.00500
Chloroform	U		0.000229	0.00500
Chloromethane	U		0.000375	0.00250
2-Chlorotoluene	U		0.000301	0.00100
4-Chlorotoluene	U		0.000240	0.00100
1,2-Dibromo-3-Chloropropane	U		0.00105	0.00500
1,2-Dibromoethane	U		0.000343	0.00100
Dibromomethane	U		0.000382	0.00100
1,2-Dichlorobenzene	U		0.000305	0.00100
1,3-Dichlorobenzene	U		0.000239	0.00100
1,4-Dichlorobenzene	U		0.000226	0.00100
Dichlorodifluoromethane	U		0.000713	0.00500
1,1-Dichloroethane	U		0.000199	0.00100
1,2-Dichloroethane	U		0.000265	0.00100
1,1-Dichloroethene	U		0.000303	0.00100
cis-1,2-Dichloroethene	U		0.000235	0.00100
trans-1,2-Dichloroethene	U		0.000264	0.00100
1,2-Dichloropropane	U		0.000358	0.00100
1,1-Dichloropropene	U		0.000317	0.00100
1,3-Dichloropropane	U		0.000207	0.00100
cis-1,3-Dichloropropene	U		0.000262	0.00100
trans-1,3-Dichloropropene	U		0.000267	0.00100
2,2-Dichloropropane	U		0.000279	0.00100
Di-isopropyl ether	U		0.000248	0.00100
Ethylbenzene	U		0.000297	0.00100
Hexachloro-1,3-butadiene	U		0.000342	0.00100
Isopropylbenzene	U		0.000243	0.00100

Method Blank (MB)

(MB) R3263476-3 11/02/17 10:39

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
p-Isopropyltoluene	U		0.000204	0.00100
2-Butanone (MEK)	U		0.00468	0.0100
Methylene Chloride	U		0.00100	0.00500
4-Methyl-2-pentanone (MIBK)	U		0.00188	0.0100
Methyl tert-butyl ether	U		0.000212	0.00100
Naphthalene	U		0.00100	0.00500
n-Propylbenzene	U		0.000206	0.00100
Styrene	U		0.000234	0.00100
1,1,1,2-Tetrachloroethane	U		0.000264	0.00100
1,1,2,2-Tetrachloroethane	U		0.000365	0.00100
Tetrachloroethene	U		0.000276	0.00100
Toluene	U		0.000434	0.00500
1,1,2-Trichlorotrifluoroethane	U		0.000365	0.00100
1,2,3-Trichlorobenzene	U		0.000306	0.00100
1,2,4-Trichlorobenzene	U		0.000388	0.00100
1,1,1-Trichloroethane	U		0.000286	0.00100
1,1,2-Trichloroethane	U		0.000277	0.00100
Trichloroethene	U		0.000279	0.00100
Trichlorofluoromethane	U		0.000382	0.00500
1,2,3-Trichloropropane	U		0.000741	0.00250
1,2,3-Trimethylbenzene	U		0.000287	0.00100
1,2,4-Trimethylbenzene	U		0.000211	0.00100
1,3,5-Trimethylbenzene	U		0.000266	0.00100
Vinyl chloride	U		0.000291	0.00100
Xylenes, Total	U		0.000698	0.00300
(S) Toluene-d8	*107*			*80.0-120*
(S) Dibromofluoromethane	*103*			*74.0-131*
(S) 4-Bromofluorobenzene	*92.8*			*64.0-132*

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

(LCS) R3263476-1 11/02/17 09:35 • (LCSD) R3263476-2 11/02/17 09:56

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	0.125	0.163	0.169	130	135	11.0-160			3.53	23
Acrylonitrile	0.125	0.139	0.141	111	113	61.0-143			1.45	20
Benzene	0.0250	0.0252	0.0247	101	98.8	71.0-124			1.96	20
Bromobenzene	0.0250	0.0232	0.0227	92.9	90.8	78.0-120			2.32	20
Bromodichloromethane	0.0250	0.0258	0.0250	103	100	75.0-120			3.11	20

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

(LCS) R3263476-1 11/02/17 09:35 • (LCSD) R3263476-2 11/02/17 09:56

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 %
Bromoform	0.0250	0.0256	0.0266	102	106	65.0-133			3.72	20
Bromomethane	0.0250	0.0302	0.0291	121	116	26.0-160			3.77	20
n-Butylbenzene	0.0250	0.0296	0.0298	118	119	73.0-126			0.900	20
sec-Butylbenzene	0.0250	0.0275	0.0278	110	111	75.0-121			1.00	20
tert-Butylbenzene	0.0250	0.0275	0.0271	110	109	74.0-122			1.54	20
Carbon tetrachloride	0.0250	0.0203	0.0202	81.1	80.9	66.0-123			0.300	20
Chlorobenzene	0.0250	0.0247	0.0250	98.7	100	79.0-121			1.38	20
Chlorodibromomethane	0.0250	0.0262	0.0271	105	108	74.0-128			3.61	20
Chloroethane	0.0250	0.0285	0.0270	114	108	51.0-147			5.42	20
Chloroform	0.0250	0.0248	0.0243	99.2	97.4	73.0-123			1.83	20
Chloromethane	0.0250	0.0242	0.0237	96.8	94.8	51.0-138			2.11	20
2-Chlorotoluene	0.0250	0.0251	0.0250	101	100	72.0-124			0.430	20
4-Chlorotoluene	0.0250	0.0250	0.0244	99.9	97.4	78.0-120			2.52	20
1,2-Dibromo-3-Chloropropane	0.0250	0.0210	0.0218	84.0	87.0	65.0-126			3.49	20
1,2-Dibromoethane	0.0250	0.0238	0.0241	95.3	96.3	78.0-122			1.09	20
Dibromomethane	0.0250	0.0250	0.0244	100	97.5	79.0-120			2.55	20
1,2-Dichlorobenzene	0.0250	0.0252	0.0256	101	102	80.0-120			1.46	20
1,3-Dichlorobenzene	0.0250	0.0251	0.0252	100	101	72.0-123			0.480	20
1,4-Dichlorobenzene	0.0250	0.0259	0.0262	104	105	77.0-120			0.960	20
Dichlorodifluoromethane	0.0250	0.0253	0.0274	101	110	49.0-155			8.08	20
1,1-Dichloroethane	0.0250	0.0259	0.0255	104	102	70.0-128			1.55	20
1,2-Dichloroethane	0.0250	0.0246	0.0251	98.3	100	69.0-128			1.99	20
1,1-Dichloroethene	0.0250	0.0234	0.0223	93.7	89.1	63.0-131			4.97	20
cis-1,2-Dichloroethene	0.0250	0.0250	0.0246	100	98.5	74.0-123			1.60	20
trans-1,2-Dichloroethene	0.0250	0.0245	0.0237	98.0	94.6	72.0-122			3.57	20
1,2-Dichloropropane	0.0250	0.0260	0.0254	104	102	75.0-126			2.18	20
1,1-Dichloropropene	0.0250	0.0258	0.0257	103	103	72.0-130			0.460	20
1,3-Dichloropropane	0.0250	0.0239	0.0248	95.5	99.2	80.0-121			3.82	20
cis-1,3-Dichloropropene	0.0250	0.0251	0.0258	100	103	80.0-125			2.84	20
trans-1,3-Dichloropropene	0.0250	0.0237	0.0248	94.7	99.2	75.0-129			4.66	20
2,2-Dichloropropane	0.0250	0.0172	0.0175	68.9	69.9	60.0-129			1.47	20
Di-isopropyl ether	0.0250	0.0259	0.0252	103	101	62.0-133			2.45	20
Ethylbenzene	0.0250	0.0247	0.0253	98.7	101	77.0-120			2.48	20
Hexachloro-1,3-butadiene	0.0250	0.0295	0.0307	118	123	68.0-128			3.69	20
Isopropylbenzene	0.0250	0.0268	0.0261	107	104	75.0-120			2.52	20
p-Isopropyltoluene	0.0250	0.0280	0.0283	112	113	74.0-125			0.780	20
2-Butanone (MEK)	0.125	0.154	0.156	123	124	37.0-159			0.840	20
Methylene Chloride	0.0250	0.0237	0.0220	94.7	88.1	67.0-123			7.20	20
4-Methyl-2-pentanone (MIBK)	0.125	0.127	0.133	102	106	60.0-144			4.06	20
Methyl tert-butyl ether	0.0250	0.0229	0.0226	91.7	90.5	66.0-125			1.36	20

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

(LCS) R3263476-1 11/02/17 09:35 • (LCSD) R3263476-2 11/02/17 09:56

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 %
Naphthalene	0.0250	0.0252	0.0266	101	106	64.0-125			5.23	20
n-Propylbenzene	0.0250	0.0275	0.0270	110	108	78.0-120			1.54	20
Styrene	0.0250	0.0268	0.0265	107	106	78.0-124			1.31	20
1,1,1,2-Tetrachloroethane	0.0250	0.0236	0.0230	94.4	91.9	74.0-124			2.75	20
1,1,2,2-Tetrachloroethane	0.0250	0.0238	0.0235	95.3	93.9	73.0-120			1.55	20
Tetrachloroethene	0.0250	0.0249	0.0246	99.8	98.5	70.0-127			1.36	20
Toluene	0.0250	0.0243	0.0249	97.1	99.6	77.0-120			2.49	20
1,1,2-Trichlorotrifluoroethane	0.0250	0.0184	0.0189	73.7	75.4	64.0-135			2.28	20
1,2,3-Trichlorobenzene	0.0250	0.0259	0.0271	104	108	68.0-126			4.38	20
1,2,4-Trichlorobenzene	0.0250	0.0268	0.0279	107	112	70.0-127			3.97	20
1,1,1-Trichloroethane	0.0250	0.0219	0.0212	87.4	84.8	69.0-125			3.03	20
1,1,2-Trichloroethane	0.0250	0.0233	0.0232	93.0	92.8	78.0-120			0.270	20
Trichloroethene	0.0250	0.0245	0.0242	98.0	96.9	79.0-120			1.12	20
Trichlorofluoromethane	0.0250	0.0257	0.0283	103	113	59.0-136			9.60	20
1,2,3-Trichloropropane	0.0250	0.0247	0.0245	98.8	98.0	73.0-124			0.810	20
1,2,3-Trimethylbenzene	0.0250	0.0257	0.0254	103	102	76.0-120			1.24	20
1,2,4-Trimethylbenzene	0.0250	0.0265	0.0269	106	108	75.0-120			1.46	20
1,3,5-Trimethylbenzene	0.0250	0.0264	0.0262	105	105	75.0-120			0.490	20
Vinyl chloride	0.0250	0.0281	0.0275	112	110	63.0-134			2.27	20
Xylenes, Total	0.0750	0.0777	0.0788	104	105	77.0-120			1.41	20
(S) Toluene-d8				*100*	*102*	*80.0-120*				
(S) Dibromofluoromethane				*103*	*102*	*74.0-131*				
(S) 4-Bromofluorobenzene				*94.8*	*94.9*	*64.0-132*				

L947788-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L947788-01 11/02/17 17:32 • (MS) R3263476-4 11/02/17 19:18 • (MSD) R3263476-5 11/02/17 19:39

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acetone	0.146	U	10.1	11.0	137	149	50.5	10.0-160			8.76	36
Acrylonitrile	0.146	U	8.17	8.54	111	116	50.5	14.0-160			4.52	33
Benzene	0.0291	U	1.19	1.22	80.7	82.9	50.5	13.0-146			2.76	27
Bromobenzene	0.0291	U	1.26	1.38	85.9	93.5	50.5	10.0-149			8.45	33
Bromodichloromethane	0.0291	U	1.28	1.38	86.8	93.8	50.5	15.0-142			7.74	28
Bromoform	0.0291	U	1.29	1.40	87.8	94.9	50.5	10.0-147			7.67	31
Bromomethane	0.0291	U	0.965	0.979	65.6	66.5	50.5	10.0-160			1.47	32
n-Butylbenzene	0.0291	U	1.55	1.68	105	114	50.5	10.0-154			8.08	37
sec-Butylbenzene	0.0291	U	1.50	1.63	102	111	50.5	10.0-151			8.58	36
tert-Butylbenzene	0.0291	U	1.44	1.55	98.1	106	50.5	10.0-152			7.30	35

L947788-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L947788-01 11/02/17 17:32 • (MS) R3263476-4 11/02/17 19:18 • (MSD) R3263476-5 11/02/17 19:39

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Carbon tetrachloride	0.0291	U	0.782	0.860	53.1	58.4	50.5	13.0-140			9.43	30
Chlorobenzene	0.0291	U	1.19	1.30	81.2	88.1	50.5	10.0-149			8.21	31
Chlorodibromomethane	0.0291	U	1.25	1.36	85.1	92.1	50.5	12.0-147			7.91	29
Chloroethane	0.0291	U	0.258	0.234	17.6	15.9	50.5	10.0-159			9.99	33
Chloroform	0.0291	U	1.31	1.38	88.7	93.5	50.5	18.0-148			5.30	28
Chloromethane	0.0291	U	0.729	0.780	49.5	53.0	50.5	10.0-146			6.75	29
2-Chlorotoluene	0.0291	U	1.36	1.46	92.6	99.4	50.5	10.0-151			7.08	35
4-Chlorotoluene	0.0291	U	1.35	1.47	91.9	99.7	50.5	10.0-150			8.11	35
1,2-Dibromo-3-Chloropropane	0.0291	U	1.02	1.15	69.4	78.1	50.5	10.0-149			11.8	34
1,2-Dibromoethane	0.0291	U	1.19	1.29	80.7	87.3	50.5	14.0-145			7.86	28
Dibromomethane	0.0291	U	1.29	1.43	88.0	97.1	50.5	18.0-144			9.82	27
1,2-Dichlorobenzene	0.0291	U	1.38	1.51	94.0	103	50.5	10.0-153			9.02	34
1,3-Dichlorobenzene	0.0291	U	1.35	1.46	91.5	99.3	50.5	10.0-150			8.21	35
1,4-Dichlorobenzene	0.0291	U	1.41	1.55	96.0	105	50.5	10.0-148			8.96	34
Dichlorodifluoromethane	0.0291	U	0.816	0.846	55.4	57.5	50.5	10.0-160			3.67	30
1,1-Dichloroethane	0.0291	U	1.26	1.32	85.9	89.4	50.5	19.0-148			4.03	28
1,2-Dichloroethane	0.0291	U	1.31	1.34	89.2	91.3	50.5	17.0-147			2.33	27
1,1-Dichloroethene	0.0291	U	0.957	0.973	65.0	66.1	50.5	10.0-150			1.68	31
cis-1,2-Dichloroethene	0.0291	U	1.27	1.29	86.2	87.5	50.5	16.0-145			1.48	28
trans-1,2-Dichloroethene	0.0291	U	0.931	0.952	63.2	64.7	50.5	11.0-142			2.20	29
1,2-Dichloropropane	0.0291	U	1.35	1.44	91.6	97.6	50.5	17.0-148			6.33	28
1,1-Dichloropropene	0.0291	U	1.14	1.18	77.6	80.0	50.5	10.0-150			3.10	30
1,3-Dichloropropane	0.0291	U	1.24	1.35	84.2	91.9	50.5	16.0-148			8.76	27
cis-1,3-Dichloropropene	0.0291	U	1.20	1.33	81.4	90.3	50.5	13.0-150			10.4	28
trans-1,3-Dichloropropene	0.0291	U	1.22	1.35	82.6	91.4	50.5	10.0-152			10.2	29
2,2-Dichloropropane	0.0291	U	0.757	0.847	51.5	57.5	50.5	16.0-143			11.1	30
Di-isopropyl ether	0.0291	U	1.30	1.35	88.1	91.5	50.5	16.0-149			3.75	28
Ethylbenzene	0.0291	U	1.20	1.29	81.7	87.9	50.5	10.0-147			7.27	31
Hexachloro-1,3-butadiene	0.0291	U	1.63	1.70	110	116	50.5	10.0-154			4.64	40
Isopropylbenzene	0.0291	U	1.36	1.47	92.4	99.8	50.5	10.0-147			7.77	33
p-Isopropyltoluene	0.0291	0.0169	1.51	1.62	102	109	50.5	10.0-156			7.14	37
2-Butanone (MEK)	0.146	U	9.99	10.9	136	148	50.5	10.0-160			8.93	33
Methylene Chloride	0.0291	U	0.912	1.00	62.0	68.0	50.5	16.0-139			9.32	29
4-Methyl-2-pentanone (MIBK)	0.146	U	6.97	7.68	94.8	104	50.5	12.0-160			9.60	32
Methyl tert-butyl ether	0.0291	U	0.965	1.08	65.6	73.5	50.5	21.0-145			11.4	29
Naphthalene	0.0291	U	1.30	1.43	88.4	97.1	50.5	10.0-153			9.41	36
n-Propylbenzene	0.0291	U	1.43	1.51	96.9	103	50.5	10.0-151			6.00	34
Styrene	0.0291	U	1.38	1.55	93.5	105	50.5	10.0-155			11.8	34
1,1,1,2-Tetrachloroethane	0.0291	U	1.07	1.16	72.7	78.7	50.5	10.0-147			7.99	30

L947788-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L947788-01 11/02/17 17:32 • (MS) R3263476-4 11/02/17 19:18 • (MSD) R3263476-5 11/02/17 19:39

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
1,1,2,2-Tetrachloroethane	0.0291	U	1.24	1.32	84.2	89.9	50.5	10.0-155			6.54	31
Tetrachloroethene	0.0291	U	1.03	1.12	70.1	76.3	50.5	10.0-144			8.51	32
Toluene	0.0291	U	1.13	1.20	76.5	81.3	50.5	10.0-144			6.18	28
1,1,2-Trichlorotrifluoroethane	0.0291	U	0.945	1.01	64.2	68.5	50.5	10.0-153			6.37	33
1,2,3-Trichlorobenzene	0.0291	U	1.39	1.55	94.2	105	50.5	10.0-153			11.1	40
1,2,4-Trichlorobenzene	0.0291	U	1.42	1.54	96.5	104	50.5	10.0-156			7.82	40
1,1,1-Trichloroethane	0.0291	U	0.958	1.02	65.1	69.0	50.5	18.0-145			5.89	29
1,1,2-Trichloroethane	0.0291	U	1.23	1.29	83.8	87.8	50.5	12.0-151			4.72	28
Trichloroethene	0.0291	U	1.17	1.25	79.2	85.2	50.5	11.0-148			7.34	29
Trichlorofluoromethane	0.0291	U	0.961	0.830	65.3	56.4	50.5	10.0-157			14.7	34
1,2,3-Trichloropropane	0.0291	U	1.35	1.47	92.0	100	50.5	10.0-154			8.34	32
1,2,3-Trimethylbenzene	0.0291	U	1.47	1.59	99.9	108	50.5	10.0-150			7.72	33
1,2,4-Trimethylbenzene	0.0291	U	1.43	1.52	97.3	103	50.5	10.0-151			5.97	34
1,3,5-Trimethylbenzene	0.0291	U	1.41	1.52	95.7	103	50.5	10.0-150			7.62	33
Vinyl chloride	0.0291	U	0.795	0.807	54.0	54.9	50.5	10.0-150			1.61	29
Xylenes, Total	0.0874	U	3.70	3.91	83.7	88.4	50.5	10.0-150			5.52	31
(S) Toluene-d8					*95.8*	*97.2*		*80.0-120*				
(S) Dibromofluoromethane					*105*	*102*		*74.0-131*				
(S) 4-Bromofluorobenzene					*99.2*	*98.5*		*64.0-132*				

Method Blank (MB)

(MB) R3264170-1 11/08/17 14:38

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-C40 Oil Range	U		0.274	4.00
(S) o-Terphenyl	*70.6*			*18.0-148*

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

(LCS) R3264170-2 11/08/17 14:55 • (LCSD) R3264170-3 11/08/17 15:13

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 %
C10-C28 Diesel Range	60.0	40.2	49.7	66.9	82.9	50.0-150		J3	21.3	20
(S) o-Terphenyl				*60.2*	*75.2*	*18.0-148*				

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.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
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, 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.
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
J3	The associated batch QC was outside the established quality control range for precision.

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**
***** Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Conneticut	PH-0197	North Carolina [1]	DW21704
Florida	E87487	North Carolina [2]	41
Georgia	NELAP	North Dakota	R-140
Georgia [1]	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky [1]	90010	South Dakota	n/a
Kentucky [2]	16	Tennessee [1 4]	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

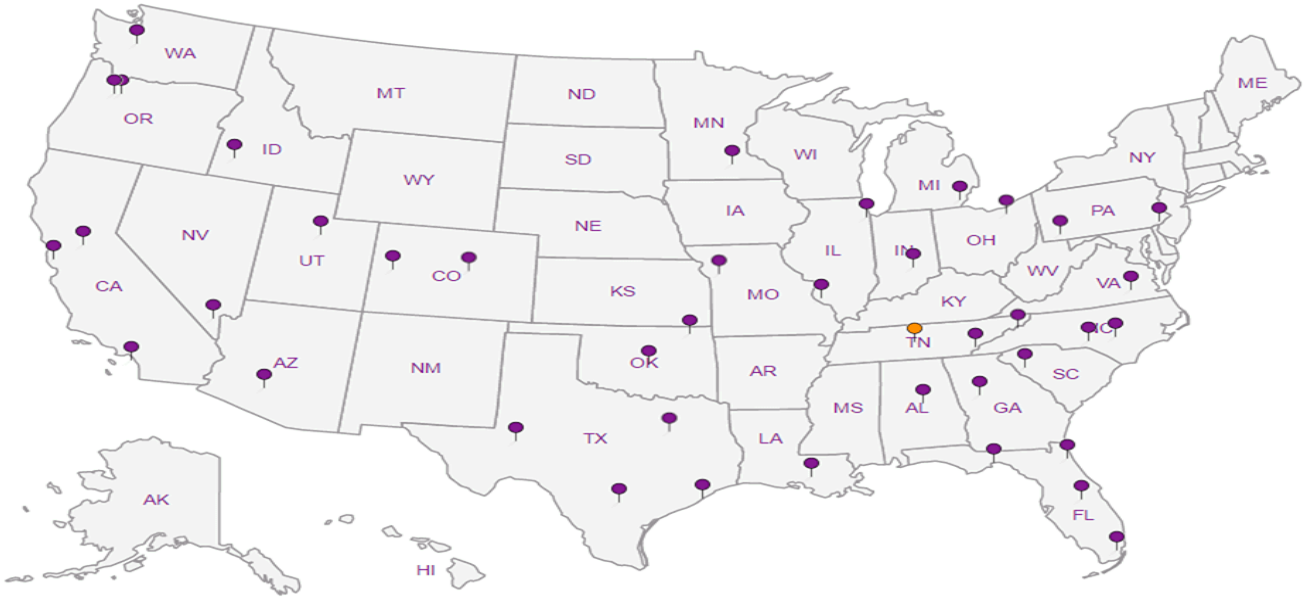
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

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

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



Company Name/Address:
Terracon - Longmont
1242 Bramwood Pl.
Longmont, CO 80501

Billing Information:
SAME

Report to:
Michael Skridulis

Email To:
mjskridulis@terracon.com

Project Description: Tabor #7

City/State Collected:

Phone: **303-776-3921**
Fax: **303-776-4041**

Client Project #
22177040

Lab Project #

Collected by (print):
M. Skridulis

Site/Facility ID #

P.O. #

Collected by (signature):
M. S

Immediately Packed on Ice N___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed
STANDARD

Email? ___No ✓Yes
FAX? ___No ___Yes

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260 - 4oz Soil Jar	TPH-GRO - 2oz Soil Jar	TPH-DRO - 4oz Soil Jar	TPH-ORO - 4oz Soil Jar	Rem./Contaminant	Sample # (lab only)
SB-01 (10-11)	G	SS		10/30/17	0850	4	X	X	X	X		-01
SB-02 (10-11)	↓	SS			0950	4	X	X	X	X		-02
SB-03 (9-10)	↓	SS		↓	1030	4	X	X	X	X		-03

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

Remarks: Fed ex: 4094 8307 3825 Tracking #: 7422 5604 0626

pH _____ Temp _____
Flow _____ Other _____

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
M. S	10/31/17	1500	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			Kelly Mew 841

Samples returned via: ☐ UPS ☒ FedEx ☐ Courier ☐ _____
Temp: 1.1 °C Bottles Received: 12
Date: 11/1/17 Time: 0845

Hold #
Condition: (lab use only)
COC Seal Intact: ___Y ___N ___NA
pH Checked: NCF: OK

Chain of Custody Page 1 of 1

ESC LABORATORY SCIENCES
YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# 947771
Table C192
Acctnum: TERRALCO
Template:
Prelogin:
TSR:
PB:
Shipped Via:

ESC LAB SCIENCES
Cooler Receipt Form

Client: TERRACON	SDG#	947771
Cooler Received/Opened On: 11/ 1 /17	Temperature:	1.1
Received by : Kelly Mercer		
Signature: Kelly Mercer 841		

Receipt Check List	NP	Yes	No
COC Seal Present / Intact?			
COC Signed / Accurate?			
Bottles arrive intact?			
Correct bottles used?			
Sufficient volume sent?			
If Applicable			
VOA Zero headspace?			
Preservation Correct / Checked?			

ANALYTICAL REPORT

November 07, 2017

Terracon Consultants, Inc - Longmont, CO

Sample Delivery Group:	L947818
Samples Received:	11/02/2017
Project Number:	22177040
Description:	Tabor #7

Report To: Mike Skridulis
1242 Bramwood Place
Longmont, CO 80501

Entire Report Reviewed By:

Daphne R Richards

Daphne Richards
Technical Service Representative

TABLE OF CONTENTS

MW-01 L947818-01 GW

Collected by: M. Skridulis
Collected date/time: 11/01/17 12:30
Received date/time: 11/02/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG1038940	1	11/06/17 14:58	11/06/17 14:58	MCG
Wet Chemistry by Method 4500CO2 D-2011	WG1038940	1	11/06/17 14:58	11/06/17 14:58	MCG
Wet Chemistry by Method 9056A	WG1038293	1	11/02/17 13:36	11/02/17 13:36	DR
Wet Chemistry by Method 9056A	WG1038626	10	11/03/17 19:00	11/03/17 19:00	KCF
Metals (ICP) by Method 6010B	WG1038471	1	11/04/17 10:03	11/04/17 16:17	ST
Volatile Organic Compounds (GC) by Method RSK175	WG1038522	1	11/03/17 08:58	11/03/17 08:58	BG
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1038395	1	11/02/17 17:05	11/02/17 17:05	BMB

MW-02 L947818-02 GW

Collected by: M. Skridulis
Collected date/time: 11/01/17 13:00
Received date/time: 11/02/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG1038940	1	11/06/17 15:14	11/06/17 15:14	MCG
Wet Chemistry by Method 4500CO2 D-2011	WG1038940	1	11/06/17 15:14	11/06/17 15:14	MCG
Wet Chemistry by Method 9056A	WG1038293	1	11/02/17 14:04	11/02/17 14:04	DR
Wet Chemistry by Method 9056A	WG1038293	5	11/02/17 14:19	11/02/17 14:19	DR
Metals (ICP) by Method 6010B	WG1038471	1	11/04/17 10:03	11/04/17 16:20	ST
Volatile Organic Compounds (GC) by Method RSK175	WG1038522	1	11/03/17 09:01	11/03/17 09:01	BG
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1038395	1	11/02/17 17:25	11/02/17 17:25	BMB

MW-03 L947818-03 GW

Collected by: M. Skridulis
Collected date/time: 11/01/17 13:30
Received date/time: 11/02/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG1038940	1	11/06/17 15:21	11/06/17 15:21	MCG
Wet Chemistry by Method 4500CO2 D-2011	WG1038940	1	11/06/17 15:21	11/06/17 15:21	MCG
Wet Chemistry by Method 9056A	WG1038293	1	11/02/17 14:33	11/02/17 14:33	DR
Wet Chemistry by Method 9056A	WG1038293	5	11/02/17 14:48	11/02/17 14:48	DR
Metals (ICP) by Method 6010B	WG1038471	1	11/04/17 10:03	11/04/17 16:23	ST
Volatile Organic Compounds (GC) by Method RSK175	WG1038522	1	11/03/17 09:03	11/03/17 09:03	BG
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1038395	1	11/02/17 17:44	11/02/17 17:44	BMB

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. 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.

Daphne R Richards

Daphne Richards
Technical Service Representative

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Alkalinity	326		20.0	1	11/06/2017 14:58	WG1038940

Sample Narrative:
L947818-01 WG1038940: Endpoint pH 4.5

Wet Chemistry by Method 4500CO2 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Free Carbon Dioxide	ND	T8	20.0	1	11/06/2017 14:58	WG1038940

Sample Narrative:
L947818-01 WG1038940: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Bromide	ND		1.00	1	11/02/2017 13:36	WG1038293
Chloride	42.4		1.00	1	11/02/2017 13:36	WG1038293
Nitrate as (N)	5.50		0.100	1	11/02/2017 13:36	WG1038293
Nitrite as (N)	ND		0.100	1	11/02/2017 13:36	WG1038293
Sulfate	536		50.0	10	11/03/2017 19:00	WG1038626

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Calcium,Dissolved	148		1.00	1	11/04/2017 16:17	WG1038471
Iron,Dissolved	ND		0.100	1	11/04/2017 16:17	WG1038471
Magnesium,Dissolved	100		1.00	1	11/04/2017 16:17	WG1038471
Potassium,Dissolved	3.98		1.00	1	11/04/2017 16:17	WG1038471
Sodium,Dissolved	95.8		1.00	1	11/04/2017 16:17	WG1038471
Strontium,Dissolved	2.26		0.0100	1	11/04/2017 16:17	WG1038471

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Methane	ND		0.0100	1	11/03/2017 08:58	WG1038522
Ethane	ND		0.0130	1	11/03/2017 08:58	WG1038522
Ethene	ND		0.0130	1	11/03/2017 08:58	WG1038522

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Acetone	ND		0.0500	1	11/02/2017 17:05	WG1038395
Acrolein	ND	J4	0.0500	1	11/02/2017 17:05	WG1038395
Acrylonitrile	ND		0.0100	1	11/02/2017 17:05	WG1038395
Benzene	ND		0.00100	1	11/02/2017 17:05	WG1038395
Bromobenzene	ND		0.00100	1	11/02/2017 17:05	WG1038395
Bromodichloromethane	ND		0.00100	1	11/02/2017 17:05	WG1038395
Bromoform	ND		0.00100	1	11/02/2017 17:05	WG1038395
Bromomethane	ND		0.00500	1	11/02/2017 17:05	WG1038395
n-Butylbenzene	ND		0.00100	1	11/02/2017 17:05	WG1038395
sec-Butylbenzene	ND		0.00100	1	11/02/2017 17:05	WG1038395
tert-Butylbenzene	ND		0.00100	1	11/02/2017 17:05	WG1038395

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Carbon tetrachloride	ND		0.00100	1	11/02/2017 17:05	WG1038395
Chlorobenzene	ND		0.00100	1	11/02/2017 17:05	WG1038395
Chlorodibromomethane	ND		0.00100	1	11/02/2017 17:05	WG1038395
Chloroethane	ND		0.00500	1	11/02/2017 17:05	WG1038395
Chloroform	ND		0.00500	1	11/02/2017 17:05	WG1038395
Chloromethane	ND		0.00250	1	11/02/2017 17:05	WG1038395
2-Chlorotoluene	ND		0.00100	1	11/02/2017 17:05	WG1038395
4-Chlorotoluene	ND		0.00100	1	11/02/2017 17:05	WG1038395
1,2-Dibromo-3-Chloropropane	ND		0.00500	1	11/02/2017 17:05	WG1038395
1,2-Dibromoethane	ND		0.00100	1	11/02/2017 17:05	WG1038395
Dibromomethane	ND		0.00100	1	11/02/2017 17:05	WG1038395
1,2-Dichlorobenzene	ND		0.00100	1	11/02/2017 17:05	WG1038395
1,3-Dichlorobenzene	ND		0.00100	1	11/02/2017 17:05	WG1038395
1,4-Dichlorobenzene	ND		0.00100	1	11/02/2017 17:05	WG1038395
Dichlorodifluoromethane	ND		0.00500	1	11/02/2017 17:05	WG1038395
1,1-Dichloroethane	ND		0.00100	1	11/02/2017 17:05	WG1038395
1,2-Dichloroethane	ND		0.00100	1	11/02/2017 17:05	WG1038395
1,1-Dichloroethene	ND		0.00100	1	11/02/2017 17:05	WG1038395
cis-1,2-Dichloroethene	ND		0.00100	1	11/02/2017 17:05	WG1038395
trans-1,2-Dichloroethene	ND		0.00100	1	11/02/2017 17:05	WG1038395
1,2-Dichloropropane	ND		0.00100	1	11/02/2017 17:05	WG1038395
1,1-Dichloropropene	ND		0.00100	1	11/02/2017 17:05	WG1038395
1,3-Dichloropropane	ND		0.00100	1	11/02/2017 17:05	WG1038395
cis-1,3-Dichloropropene	ND		0.00100	1	11/02/2017 17:05	WG1038395
trans-1,3-Dichloropropene	ND		0.00100	1	11/02/2017 17:05	WG1038395
2,2-Dichloropropane	ND		0.00100	1	11/02/2017 17:05	WG1038395
Di-isopropyl ether	ND		0.00100	1	11/02/2017 17:05	WG1038395
Ethylbenzene	ND		0.00100	1	11/02/2017 17:05	WG1038395
Hexachloro-1,3-butadiene	ND		0.00100	1	11/02/2017 17:05	WG1038395
Isopropylbenzene	ND		0.00100	1	11/02/2017 17:05	WG1038395
p-Isopropyltoluene	ND		0.00100	1	11/02/2017 17:05	WG1038395
2-Butanone (MEK)	ND		0.0100	1	11/02/2017 17:05	WG1038395
Methylene Chloride	ND		0.00500	1	11/02/2017 17:05	WG1038395
4-Methyl-2-pentanone (MIBK)	ND		0.0100	1	11/02/2017 17:05	WG1038395
Methyl tert-butyl ether	ND		0.00100	1	11/02/2017 17:05	WG1038395
Naphthalene	ND		0.00500	1	11/02/2017 17:05	WG1038395
n-Propylbenzene	ND		0.00100	1	11/02/2017 17:05	WG1038395
Styrene	ND		0.00100	1	11/02/2017 17:05	WG1038395
1,1,1,2-Tetrachloroethane	ND		0.00100	1	11/02/2017 17:05	WG1038395
1,1,2,2-Tetrachloroethane	ND		0.00100	1	11/02/2017 17:05	WG1038395
1,1,2-Trichlorotrifluoroethane	ND		0.00100	1	11/02/2017 17:05	WG1038395
Tetrachloroethene	ND		0.00100	1	11/02/2017 17:05	WG1038395
Toluene	ND		0.00100	1	11/02/2017 17:05	WG1038395
1,2,3-Trichlorobenzene	ND		0.00100	1	11/02/2017 17:05	WG1038395
1,2,4-Trichlorobenzene	ND		0.00100	1	11/02/2017 17:05	WG1038395
1,1,1-Trichloroethane	ND		0.00100	1	11/02/2017 17:05	WG1038395
1,1,2-Trichloroethane	ND		0.00100	1	11/02/2017 17:05	WG1038395
Trichloroethene	ND		0.00100	1	11/02/2017 17:05	WG1038395
Trichlorofluoromethane	ND		0.00500	1	11/02/2017 17:05	WG1038395
1,2,3-Trichloropropane	ND		0.00250	1	11/02/2017 17:05	WG1038395
1,2,4-Trimethylbenzene	ND		0.00100	1	11/02/2017 17:05	WG1038395
1,2,3-Trimethylbenzene	ND		0.00100	1	11/02/2017 17:05	WG1038395
1,3,5-Trimethylbenzene	ND		0.00100	1	11/02/2017 17:05	WG1038395
Vinyl chloride	ND		0.00100	1	11/02/2017 17:05	WG1038395
Xylenes, Total	ND		0.00300	1	11/02/2017 17:05	WG1038395
(S) Toluene-d8	*107*		*80.0-120*		*11/02/2017 17:05*	WG1038395

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
(S) Dibromofluoromethane	*99.2*		*76.0-123*		*11/02/2017 17:05*	WG1038395
(S) 4-Bromofluorobenzene	*92.1*		*80.0-120*		*11/02/2017 17:05*	WG1038395

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Alkalinity	338		20.0	1	11/06/2017 15:14	WG1038940

Sample Narrative:
L947818-02 WG1038940: Endpoint pH 4.5

Wet Chemistry by Method 4500CO2 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Free Carbon Dioxide	ND	T8	20.0	1	11/06/2017 15:14	WG1038940

Sample Narrative:
L947818-02 WG1038940: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Bromide	ND		1.00	1	11/02/2017 14:04	WG1038293
Chloride	41.6		1.00	1	11/02/2017 14:04	WG1038293
Nitrate as (N)	3.95		0.100	1	11/02/2017 14:04	WG1038293
Nitrite as (N)	ND		0.100	1	11/02/2017 14:04	WG1038293
Sulfate	477		25.0	5	11/02/2017 14:19	WG1038293

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Calcium,Dissolved	140		1.00	1	11/04/2017 16:20	WG1038471
Iron,Dissolved	ND		0.100	1	11/04/2017 16:20	WG1038471
Magnesium,Dissolved	104		1.00	1	11/04/2017 16:20	WG1038471
Potassium,Dissolved	2.81		1.00	1	11/04/2017 16:20	WG1038471
Sodium,Dissolved	95.1		1.00	1	11/04/2017 16:20	WG1038471
Strontium,Dissolved	2.29		0.0100	1	11/04/2017 16:20	WG1038471

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Methane	ND		0.0100	1	11/03/2017 09:01	WG1038522
Ethane	ND		0.0130	1	11/03/2017 09:01	WG1038522
Ethene	ND		0.0130	1	11/03/2017 09:01	WG1038522

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Acetone	ND		0.0500	1	11/02/2017 17:25	WG1038395
Acrolein	ND	J4	0.0500	1	11/02/2017 17:25	WG1038395
Acrylonitrile	ND		0.0100	1	11/02/2017 17:25	WG1038395
Benzene	ND		0.00100	1	11/02/2017 17:25	WG1038395
Bromobenzene	ND		0.00100	1	11/02/2017 17:25	WG1038395
Bromodichloromethane	ND		0.00100	1	11/02/2017 17:25	WG1038395
Bromoform	ND		0.00100	1	11/02/2017 17:25	WG1038395
Bromomethane	ND		0.00500	1	11/02/2017 17:25	WG1038395
n-Butylbenzene	ND		0.00100	1	11/02/2017 17:25	WG1038395
sec-Butylbenzene	ND		0.00100	1	11/02/2017 17:25	WG1038395
tert-Butylbenzene	ND		0.00100	1	11/02/2017 17:25	WG1038395

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Carbon tetrachloride	ND		0.00100	1	11/02/2017 17:25	WG1038395
Chlorobenzene	ND		0.00100	1	11/02/2017 17:25	WG1038395
Chlorodibromomethane	ND		0.00100	1	11/02/2017 17:25	WG1038395
Chloroethane	ND		0.00500	1	11/02/2017 17:25	WG1038395
Chloroform	ND		0.00500	1	11/02/2017 17:25	WG1038395
Chloromethane	ND		0.00250	1	11/02/2017 17:25	WG1038395
2-Chlorotoluene	ND		0.00100	1	11/02/2017 17:25	WG1038395
4-Chlorotoluene	ND		0.00100	1	11/02/2017 17:25	WG1038395
1,2-Dibromo-3-Chloropropane	ND		0.00500	1	11/02/2017 17:25	WG1038395
1,2-Dibromoethane	ND		0.00100	1	11/02/2017 17:25	WG1038395
Dibromomethane	ND		0.00100	1	11/02/2017 17:25	WG1038395
1,2-Dichlorobenzene	ND		0.00100	1	11/02/2017 17:25	WG1038395
1,3-Dichlorobenzene	ND		0.00100	1	11/02/2017 17:25	WG1038395
1,4-Dichlorobenzene	ND		0.00100	1	11/02/2017 17:25	WG1038395
Dichlorodifluoromethane	ND		0.00500	1	11/02/2017 17:25	WG1038395
1,1-Dichloroethane	ND		0.00100	1	11/02/2017 17:25	WG1038395
1,2-Dichloroethane	ND		0.00100	1	11/02/2017 17:25	WG1038395
1,1-Dichloroethene	ND		0.00100	1	11/02/2017 17:25	WG1038395
cis-1,2-Dichloroethene	ND		0.00100	1	11/02/2017 17:25	WG1038395
trans-1,2-Dichloroethene	ND		0.00100	1	11/02/2017 17:25	WG1038395
1,2-Dichloropropane	ND		0.00100	1	11/02/2017 17:25	WG1038395
1,1-Dichloropropene	ND		0.00100	1	11/02/2017 17:25	WG1038395
1,3-Dichloropropane	ND		0.00100	1	11/02/2017 17:25	WG1038395
cis-1,3-Dichloropropene	ND		0.00100	1	11/02/2017 17:25	WG1038395
trans-1,3-Dichloropropene	ND		0.00100	1	11/02/2017 17:25	WG1038395
2,2-Dichloropropane	ND		0.00100	1	11/02/2017 17:25	WG1038395
Di-isopropyl ether	ND		0.00100	1	11/02/2017 17:25	WG1038395
Ethylbenzene	ND		0.00100	1	11/02/2017 17:25	WG1038395
Hexachloro-1,3-butadiene	ND		0.00100	1	11/02/2017 17:25	WG1038395
Isopropylbenzene	ND		0.00100	1	11/02/2017 17:25	WG1038395
p-Isopropyltoluene	ND		0.00100	1	11/02/2017 17:25	WG1038395
2-Butanone (MEK)	ND		0.0100	1	11/02/2017 17:25	WG1038395
Methylene Chloride	ND		0.00500	1	11/02/2017 17:25	WG1038395
4-Methyl-2-pentanone (MIBK)	ND		0.0100	1	11/02/2017 17:25	WG1038395
Methyl tert-butyl ether	ND		0.00100	1	11/02/2017 17:25	WG1038395
Naphthalene	ND		0.00500	1	11/02/2017 17:25	WG1038395
n-Propylbenzene	ND		0.00100	1	11/02/2017 17:25	WG1038395
Styrene	ND		0.00100	1	11/02/2017 17:25	WG1038395
1,1,1,2-Tetrachloroethane	ND		0.00100	1	11/02/2017 17:25	WG1038395
1,1,2,2-Tetrachloroethane	ND		0.00100	1	11/02/2017 17:25	WG1038395
1,1,2-Trichlorotrifluoroethane	ND		0.00100	1	11/02/2017 17:25	WG1038395
Tetrachloroethene	ND		0.00100	1	11/02/2017 17:25	WG1038395
Toluene	ND		0.00100	1	11/02/2017 17:25	WG1038395
1,2,3-Trichlorobenzene	ND		0.00100	1	11/02/2017 17:25	WG1038395
1,2,4-Trichlorobenzene	ND		0.00100	1	11/02/2017 17:25	WG1038395
1,1,1-Trichloroethane	ND		0.00100	1	11/02/2017 17:25	WG1038395
1,1,2-Trichloroethane	ND		0.00100	1	11/02/2017 17:25	WG1038395
Trichloroethene	ND		0.00100	1	11/02/2017 17:25	WG1038395
Trichlorofluoromethane	ND		0.00500	1	11/02/2017 17:25	WG1038395
1,2,3-Trichloropropane	ND		0.00250	1	11/02/2017 17:25	WG1038395
1,2,4-Trimethylbenzene	ND		0.00100	1	11/02/2017 17:25	WG1038395
1,2,3-Trimethylbenzene	ND		0.00100	1	11/02/2017 17:25	WG1038395
1,3,5-Trimethylbenzene	ND		0.00100	1	11/02/2017 17:25	WG1038395
Vinyl chloride	ND		0.00100	1	11/02/2017 17:25	WG1038395
Xylenes, Total	ND		0.00300	1	11/02/2017 17:25	WG1038395
(S) Toluene-d8	*110*		*80.0-120*		*11/02/2017 17:25*	WG1038395

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
(S) Dibromofluoromethane	*100*		*76.0-123*		*11/02/2017 17:25*	WG1038395
(S) 4-Bromofluorobenzene	*92.5*		*80.0-120*		*11/02/2017 17:25*	WG1038395

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Alkalinity	354		20.0	1	11/06/2017 15:21	WG1038940

Sample Narrative:
L947818-03 WG1038940: Endpoint pH 4.5

Wet Chemistry by Method 4500CO2 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Free Carbon Dioxide	ND	T8	20.0	1	11/06/2017 15:21	WG1038940

Sample Narrative:
L947818-03 WG1038940: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Bromide	ND		1.00	1	11/02/2017 14:33	WG1038293
Chloride	43.1		1.00	1	11/02/2017 14:33	WG1038293
Nitrate as (N)	4.70		0.100	1	11/02/2017 14:33	WG1038293
Nitrite as (N)	ND		0.100	1	11/02/2017 14:33	WG1038293
Sulfate	473		25.0	5	11/02/2017 14:48	WG1038293

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Calcium,Dissolved	141		1.00	1	11/04/2017 16:23	WG1038471
Iron,Dissolved	ND		0.100	1	11/04/2017 16:23	WG1038471
Magnesium,Dissolved	105		1.00	1	11/04/2017 16:23	WG1038471
Potassium,Dissolved	2.83		1.00	1	11/04/2017 16:23	WG1038471
Sodium,Dissolved	95.3		1.00	1	11/04/2017 16:23	WG1038471
Strontium,Dissolved	2.49		0.0100	1	11/04/2017 16:23	WG1038471

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Methane	ND		0.0100	1	11/03/2017 09:03	WG1038522
Ethane	ND		0.0130	1	11/03/2017 09:03	WG1038522
Ethene	ND		0.0130	1	11/03/2017 09:03	WG1038522

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Acetone	ND		0.0500	1	11/02/2017 17:44	WG1038395
Acrolein	ND	J4	0.0500	1	11/02/2017 17:44	WG1038395
Acrylonitrile	ND		0.0100	1	11/02/2017 17:44	WG1038395
Benzene	ND		0.00100	1	11/02/2017 17:44	WG1038395
Bromobenzene	ND		0.00100	1	11/02/2017 17:44	WG1038395
Bromodichloromethane	ND		0.00100	1	11/02/2017 17:44	WG1038395
Bromoform	ND		0.00100	1	11/02/2017 17:44	WG1038395
Bromomethane	ND		0.00500	1	11/02/2017 17:44	WG1038395
n-Butylbenzene	ND		0.00100	1	11/02/2017 17:44	WG1038395
sec-Butylbenzene	ND		0.00100	1	11/02/2017 17:44	WG1038395
tert-Butylbenzene	ND		0.00100	1	11/02/2017 17:44	WG1038395

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Carbon tetrachloride	ND		0.00100	1	11/02/2017 17:44	WG1038395
Chlorobenzene	ND		0.00100	1	11/02/2017 17:44	WG1038395
Chlorodibromomethane	ND		0.00100	1	11/02/2017 17:44	WG1038395
Chloroethane	ND		0.00500	1	11/02/2017 17:44	WG1038395
Chloroform	ND		0.00500	1	11/02/2017 17:44	WG1038395
Chloromethane	ND		0.00250	1	11/02/2017 17:44	WG1038395
2-Chlorotoluene	ND		0.00100	1	11/02/2017 17:44	WG1038395
4-Chlorotoluene	ND		0.00100	1	11/02/2017 17:44	WG1038395
1,2-Dibromo-3-Chloropropane	ND		0.00500	1	11/02/2017 17:44	WG1038395
1,2-Dibromoethane	ND		0.00100	1	11/02/2017 17:44	WG1038395
Dibromomethane	ND		0.00100	1	11/02/2017 17:44	WG1038395
1,2-Dichlorobenzene	ND		0.00100	1	11/02/2017 17:44	WG1038395
1,3-Dichlorobenzene	ND		0.00100	1	11/02/2017 17:44	WG1038395
1,4-Dichlorobenzene	ND		0.00100	1	11/02/2017 17:44	WG1038395
Dichlorodifluoromethane	ND		0.00500	1	11/02/2017 17:44	WG1038395
1,1-Dichloroethane	ND		0.00100	1	11/02/2017 17:44	WG1038395
1,2-Dichloroethane	ND		0.00100	1	11/02/2017 17:44	WG1038395
1,1-Dichloroethene	ND		0.00100	1	11/02/2017 17:44	WG1038395
cis-1,2-Dichloroethene	ND		0.00100	1	11/02/2017 17:44	WG1038395
trans-1,2-Dichloroethene	ND		0.00100	1	11/02/2017 17:44	WG1038395
1,2-Dichloropropane	ND		0.00100	1	11/02/2017 17:44	WG1038395
1,1-Dichloropropene	ND		0.00100	1	11/02/2017 17:44	WG1038395
1,3-Dichloropropane	ND		0.00100	1	11/02/2017 17:44	WG1038395
cis-1,3-Dichloropropene	ND		0.00100	1	11/02/2017 17:44	WG1038395
trans-1,3-Dichloropropene	ND		0.00100	1	11/02/2017 17:44	WG1038395
2,2-Dichloropropane	ND		0.00100	1	11/02/2017 17:44	WG1038395
Di-isopropyl ether	ND		0.00100	1	11/02/2017 17:44	WG1038395
Ethylbenzene	ND		0.00100	1	11/02/2017 17:44	WG1038395
Hexachloro-1,3-butadiene	ND		0.00100	1	11/02/2017 17:44	WG1038395
Isopropylbenzene	ND		0.00100	1	11/02/2017 17:44	WG1038395
p-Isopropyltoluene	ND		0.00100	1	11/02/2017 17:44	WG1038395
2-Butanone (MEK)	ND		0.0100	1	11/02/2017 17:44	WG1038395
Methylene Chloride	ND		0.00500	1	11/02/2017 17:44	WG1038395
4-Methyl-2-pentanone (MIBK)	ND		0.0100	1	11/02/2017 17:44	WG1038395
Methyl tert-butyl ether	ND		0.00100	1	11/02/2017 17:44	WG1038395
Naphthalene	ND		0.00500	1	11/02/2017 17:44	WG1038395
n-Propylbenzene	ND		0.00100	1	11/02/2017 17:44	WG1038395
Styrene	ND		0.00100	1	11/02/2017 17:44	WG1038395
1,1,1,2-Tetrachloroethane	ND		0.00100	1	11/02/2017 17:44	WG1038395
1,1,2,2-Tetrachloroethane	ND		0.00100	1	11/02/2017 17:44	WG1038395
1,1,2-Trichlorotrifluoroethane	ND		0.00100	1	11/02/2017 17:44	WG1038395
Tetrachloroethene	ND		0.00100	1	11/02/2017 17:44	WG1038395
Toluene	ND		0.00100	1	11/02/2017 17:44	WG1038395
1,2,3-Trichlorobenzene	ND		0.00100	1	11/02/2017 17:44	WG1038395
1,2,4-Trichlorobenzene	ND		0.00100	1	11/02/2017 17:44	WG1038395
1,1,1-Trichloroethane	ND		0.00100	1	11/02/2017 17:44	WG1038395
1,1,2-Trichloroethane	ND		0.00100	1	11/02/2017 17:44	WG1038395
Trichloroethene	ND		0.00100	1	11/02/2017 17:44	WG1038395
Trichlorofluoromethane	ND		0.00500	1	11/02/2017 17:44	WG1038395
1,2,3-Trichloropropane	ND		0.00250	1	11/02/2017 17:44	WG1038395
1,2,4-Trimethylbenzene	ND		0.00100	1	11/02/2017 17:44	WG1038395
1,2,3-Trimethylbenzene	ND		0.00100	1	11/02/2017 17:44	WG1038395
1,3,5-Trimethylbenzene	ND		0.00100	1	11/02/2017 17:44	WG1038395
Vinyl chloride	ND		0.00100	1	11/02/2017 17:44	WG1038395
Xylenes, Total	ND		0.00300	1	11/02/2017 17:44	WG1038395
(S) Toluene-d8	*108*		*80.0-120*		*11/02/2017 17:44*	WG1038395

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/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
(S) Dibromofluoromethane	*98.9*		*76.0-123*		*11/02/2017 17:44*	WG1038395
(S) 4-Bromofluorobenzene	*92.8*		*80.0-120*		*11/02/2017 17:44*	WG1038395

L947611-01 Original Sample (OS) • Duplicate (DUP)

(OS) L947611-01 11/06/17 12:50 • (DUP) R3263482-1 11/06/17 12:56

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	111	110	1	1.00		20

Sample Narrative:

OS: Endpoint pH 4.5

DUP: Endpoint pH 4.5

L947745-04 Original Sample (OS) • Duplicate (DUP)

(OS) L947745-04 11/06/17 14:46 • (DUP) R3263482-6 11/06/17 14:52

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	457	458	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5

DUP: Endpoint pH 4.5

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

(LCS) R3263482-5 11/06/17 13:47 • (LCSD) R3263482-7 11/06/17 15:04

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 %
Alkalinity	100	108	105	108	105	85.0-115			3.00	20

Sample Narrative:

LCS: Endpoint pH 4.5

LCSD: Endpoint pH 4.5

Method Blank (MB)

(MB) R3262719-1 11/02/17 11:54

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Bromide	U		0.079	1.00
Chloride	U		0.0519	1.00
Nitrate	U		0.0227	0.100
Nitrite	U		0.0277	0.100
Sulfate	U		0.0774	5.00

L947833-01 Original Sample (OS) • Duplicate (DUP)

(OS) L947833-01 11/02/17 15:31 • (DUP) R3262719-4 11/02/17 15:45

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Bromide	0.324	0.328	1	1	J	15
Chloride	44.7	44.2	1	1		15
Nitrate	U	0.000	1	0		15
Nitrite	U	0.000	1	0		15
Sulfate	38.3	38.2	1	0		15

L947835-02 Original Sample (OS) • Duplicate (DUP)

(OS) L947835-02 11/02/17 18:38 • (DUP) R3262719-7 11/02/17 18:53

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Bromide	ND	0.000	1	0		15
Chloride	ND	0.121	1	0		15
Nitrate	ND	0.000	1	0		15
Nitrite	ND	0.000	1	0		15
Sulfate	ND	0.000	1	0		15

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

(LCS) R3262719-2 11/02/17 12:09 • (LCSD) R3262719-3 11/02/17 12:23

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 %
Bromide	40.0	39.1	39.1	98	98	80-120			0	15
Chloride	40.0	39.0	39.0	98	98	80-120			0	15
Nitrate	8.00	8.04	8.03	100	100	80-120			0	15
Nitrite	8.00	7.83	7.83	98	98	80-120			0	15

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

(LCS) R3262719-2 11/02/17 12:09 • (LCSD) R3262719-3 11/02/17 12:23

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 %
Sulfate	40.0	38.9	38.8	97	97	80-120			0	15

L947833-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L947833-01 11/02/17 15:31 • (MS) R3262719-5 11/02/17 16:00 • (MSD) R3262719-6 11/02/17 16:14

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Bromide	50.0	0.324	40.9	40.7	81	81	1	80-120			1	15
Chloride	50.0	44.7	93.0	92.3	97	95	1	80-120			1	15
Nitrate	5.00	U	4.28	4.31	86	86	1	80-120			1	15
Nitrite	5.00	U	4.85	4.83	97	97	1	80-120			0	15
Sulfate	50.0	38.3	81.9	81.5	87	86	1	80-120			1	15

L947835-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L947835-02 11/02/17 18:38 • (MS) R3262719-8 11/02/17 19:07

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Bromide	50.0	ND	49.2	98	1	80-120	
Chloride	50.0	ND	51.4	101	1	80-120	
Nitrate	5.00	ND	4.82	96	1	80-120	
Nitrite	5.00	ND	5.11	102	1	80-120	
Sulfate	50.0	ND	50.9	102	1	80-120	

Method Blank (MB)

(MB) R3263060-1 11/03/17 06:33

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Sulfate	U		0.0774	5.00

Original Sample (OS) • Duplicate (DUP)

(OS) • (DUP) R3263060-6 11/03/17 15:10

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
		mg/l		%		%
Sulfate		1110	20	0		15

L947610-01 Original Sample (OS) • Duplicate (DUP)

(OS) L947610-01 11/03/17 17:19 • (DUP) R3263060-7 11/03/17 17:34

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Sulfate	24.1	24.1	1	0		15

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

(LCS) R3263060-2 11/03/17 06:47 • (LCSD) R3263060-3 11/03/17 07:02

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Sulfate	40.0	38.7	38.3	97	96	80-120			1	15

L947610-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L947610-01 11/03/17 17:19 • (MS) R3263060-8 11/03/17 17:48

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
	mg/l	mg/l	mg/l	%		%	
Sulfate	50.0	24.1	71.3	94	1	80-120	

Method Blank (MB)

(MB) R3263183-1 11/04/17 14:51

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Calcium,Dissolved	0.0486	J	0.0463	1.00
Iron,Dissolved	0.0492	J	0.0141	0.100
Magnesium,Dissolved	0.0567	J	0.0111	1.00
Potassium,Dissolved	U		0.102	1.00
Sodium,Dissolved	0.106	J	0.0985	1.00
Strontium,Dissolved	0.00467	J	0.0017	0.0100

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

(LCS) R3263183-2 11/04/17 14:54 • (LCSD) R3263183-3 11/04/17 14:57

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 %
Calcium,Dissolved	10.0	10.3	9.74	103	97	80-120			6	20
Iron,Dissolved	10.0	9.84	9.39	98	94	80-120			5	20
Magnesium,Dissolved	10.0	10.5	10.0	105	100	80-120			4	20
Potassium,Dissolved	10.0	9.95	9.51	100	95	80-120			5	20
Sodium,Dissolved	10.0	10.2	9.76	102	98	80-120			4	20
Strontium,Dissolved	1.00	1.00	0.957	100	96	80-120			5	20

L947475-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L947475-01 11/04/17 15:00 • (MS) R3263183-5 11/04/17 15:07 • (MSD) R3263183-6 11/04/17 15:10

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Calcium,Dissolved	10.0	76.0	85.1	85.6	90	96	1	75-125			1	20
Iron,Dissolved	10.0	0.269	10.1	10.0	99	97	1	75-125			1	20
Magnesium,Dissolved	10.0	24.7	34.4	34.5	97	97	1	75-125			0	20
Potassium,Dissolved	10.0	6.00	15.8	15.8	98	98	1	75-125			0	20
Sodium,Dissolved	10.0	55.5	64.1	64.0	86	85	1	75-125			0	20
Strontium,Dissolved	1.00	0.502	1.50	1.49	100	99	1	75-125			1	20

Method Blank (MB)

(MB) R3262826-1 11/03/17 08:07

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Methane	U		0.00291	0.0100
Ethane	U		0.00407	0.0130
Ethene	U		0.00426	0.0130

L947609-01 Original Sample (OS) • Duplicate (DUP)

(OS) L947609-01 11/03/17 08:49 • (DUP) R3262826-2 11/03/17 09:23

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Methane	ND	0.000	1	0.000		20
Ethane	ND	0.000	1	0.000		20
Ethene	ND	0.000	1	0.000		20

L947903-05 Original Sample (OS) • Duplicate (DUP)

(OS) L947903-05 11/03/17 09:42 • (DUP) R3262826-3 11/03/17 09:54

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Methane	ND	0.000	1	0.000		20
Ethane	ND	0.000	1	0.000		20
Ethene	ND	0.000	1	0.000		20

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

(LCS) R3262826-4 11/03/17 09:57 • (LCSD) R3262826-5 11/03/17 10:01

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 %
Methane	0.0678	0.0761	0.0744	112	110	85.0-115			2.22	20
Ethane	0.129	0.122	0.120	95.0	93.4	85.0-115			1.67	20
Ethene	0.127	0.119	0.116	93.6	91.5	85.0-115			2.29	20

Method Blank (MB)

(MB) R3262683-3 11/02/17 14:32

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Acetone	U		0.0100	0.0500
Acrolein	U		0.00887	0.0500
Acrylonitrile	U		0.00187	0.0100
Benzene	U		0.000331	0.00100
Bromobenzene	U		0.000352	0.00100
Bromodichloromethane	U		0.000380	0.00100
Bromoform	U		0.000469	0.00100
Bromomethane	U		0.000866	0.00500
n-Butylbenzene	U		0.000361	0.00100
sec-Butylbenzene	U		0.000365	0.00100
tert-Butylbenzene	U		0.000399	0.00100
Carbon tetrachloride	U		0.000379	0.00100
Chlorobenzene	U		0.000348	0.00100
Chlorodibromomethane	U		0.000327	0.00100
Chloroethane	U		0.000453	0.00500
Chloroform	U		0.000324	0.00500
Chloromethane	U		0.000276	0.00250
2-Chlorotoluene	U		0.000375	0.00100
4-Chlorotoluene	U		0.000351	0.00100
1,2-Dibromo-3-Chloropropane	U		0.00133	0.00500
1,2-Dibromoethane	U		0.000381	0.00100
Dibromomethane	U		0.000346	0.00100
1,2-Dichlorobenzene	U		0.000349	0.00100
1,3-Dichlorobenzene	U		0.000220	0.00100
1,4-Dichlorobenzene	U		0.000274	0.00100
Dichlorodifluoromethane	U		0.000551	0.00500
1,1-Dichloroethane	U		0.000259	0.00100
1,2-Dichloroethane	U		0.000361	0.00100
1,1-Dichloroethene	U		0.000398	0.00100
cis-1,2-Dichloroethene	U		0.000260	0.00100
trans-1,2-Dichloroethene	U		0.000396	0.00100
1,2-Dichloropropane	U		0.000306	0.00100
1,1-Dichloropropene	U		0.000352	0.00100
1,3-Dichloropropane	U		0.000366	0.00100
cis-1,3-Dichloropropene	U		0.000418	0.00100
trans-1,3-Dichloropropene	U		0.000419	0.00100
2,2-Dichloropropane	U		0.000321	0.00100
Di-isopropyl ether	U		0.000320	0.00100
Ethylbenzene	U		0.000384	0.00100
Hexachloro-1,3-butadiene	U		0.000256	0.00100

Method Blank (MB)

(MB) R3262683-3 11/02/17 14:32

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Isopropylbenzene	U		0.000326	0.00100
p-Isopropyltoluene	U		0.000350	0.00100
2-Butanone (MEK)	U		0.00393	0.0100
Methylene Chloride	U		0.00100	0.00500
4-Methyl-2-pentanone (MIBK)	U		0.00214	0.0100
Methyl tert-butyl ether	U		0.000367	0.00100
Naphthalene	U		0.00100	0.00500
n-Propylbenzene	U		0.000349	0.00100
Styrene	U		0.000307	0.00100
1,1,1,2-Tetrachloroethane	U		0.000385	0.00100
1,1,2,2-Tetrachloroethane	U		0.000130	0.00100
Tetrachloroethene	U		0.000372	0.00100
Toluene	U		0.000412	0.00100
1,1,2-Trichlorotrifluoroethane	U		0.000303	0.00100
1,2,3-Trichlorobenzene	U		0.000230	0.00100
1,2,4-Trichlorobenzene	U		0.000355	0.00100
1,1,1-Trichloroethane	U		0.000319	0.00100
1,1,2-Trichloroethane	U		0.000383	0.00100
Trichloroethene	U		0.000398	0.00100
Trichlorofluoromethane	U		0.00120	0.00500
1,2,3-Trichloropropane	U		0.000807	0.00250
1,2,3-Trimethylbenzene	U		0.000321	0.00100
1,2,4-Trimethylbenzene	U		0.000373	0.00100
1,3,5-Trimethylbenzene	U		0.000387	0.00100
Vinyl chloride	U		0.000259	0.00100
Xylenes, Total	U		0.00106	0.00300
(S) Toluene-d8	*111*			*80.0-120*
(S) Dibromofluoromethane	*97.9*			*76.0-123*
(S) 4-Bromofluorobenzene	*91.9*			*80.0-120*

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

(LCS) R3262683-1 11/02/17 13:34 • (LCSD) R3262683-2 11/02/17 13:53

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 %
Acetone	0.125	0.141	0.145	113	116	10.0-160			3.13	23
Acrolein	0.125	0.317	0.308	254	246	10.0-160	J4	J4	2.87	20
Acrylonitrile	0.125	0.126	0.126	100	101	60.0-142			0.380	20
Benzene	0.0250	0.0227	0.0232	90.7	92.8	69.0-123			2.35	20

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

(LCS) R3262683-1 11/02/17 13:34 • (LCSD) R3262683-2 11/02/17 13:53

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 %
Bromobenzene	0.0250	0.0227	0.0232	91.0	92.6	79.0-120			1.83	20
Bromodichloromethane	0.0250	0.0234	0.0234	93.5	93.5	76.0-120			0.0600	20
Bromoform	0.0250	0.0226	0.0227	90.3	90.9	67.0-132			0.680	20
Bromomethane	0.0250	0.0265	0.0273	106	109	18.0-160			2.92	20
n-Butylbenzene	0.0250	0.0271	0.0274	108	110	72.0-126			1.22	20
sec-Butylbenzene	0.0250	0.0257	0.0266	103	106	74.0-121			3.40	20
tert-Butylbenzene	0.0250	0.0242	0.0244	96.6	97.5	75.0-122			0.860	20
Carbon tetrachloride	0.0250	0.0220	0.0226	88.1	90.4	63.0-122			2.59	20
Chlorobenzene	0.0250	0.0265	0.0253	106	101	79.0-121			4.50	20
Chlorodibromomethane	0.0250	0.0238	0.0236	95.4	94.5	75.0-125			0.920	20
Chloroethane	0.0250	0.0249	0.0248	99.4	99.1	47.0-152			0.330	20
Chloroform	0.0250	0.0234	0.0239	93.8	95.5	72.0-121			1.78	20
Chloromethane	0.0250	0.0224	0.0231	89.7	92.3	48.0-139			2.85	20
2-Chlorotoluene	0.0250	0.0266	0.0272	106	109	74.0-122			2.44	20
4-Chlorotoluene	0.0250	0.0254	0.0257	101	103	79.0-120			1.44	20
1,2-Dibromo-3-Chloropropane	0.0250	0.0241	0.0254	96.5	101	64.0-127			4.91	20
1,2-Dibromoethane	0.0250	0.0269	0.0260	108	104	77.0-123			3.50	20
Dibromomethane	0.0250	0.0231	0.0227	92.3	90.8	78.0-120			1.56	20
1,2-Dichlorobenzene	0.0250	0.0249	0.0253	99.4	101	80.0-120			1.61	20
1,3-Dichlorobenzene	0.0250	0.0243	0.0242	97.1	97.0	72.0-123			0.110	20
1,4-Dichlorobenzene	0.0250	0.0251	0.0244	100	97.7	77.0-120			2.64	20
Dichlorodifluoromethane	0.0250	0.0212	0.0228	85.0	91.2	49.0-155			7.03	20
1,1-Dichloroethane	0.0250	0.0234	0.0240	93.5	96.1	70.0-126			2.70	20
1,2-Dichloroethane	0.0250	0.0234	0.0241	93.7	96.5	67.0-126			2.87	20
1,1-Dichloroethene	0.0250	0.0224	0.0231	89.7	92.5	64.0-129			3.05	20
cis-1,2-Dichloroethene	0.0250	0.0218	0.0222	87.3	88.6	73.0-120			1.47	20
trans-1,2-Dichloroethene	0.0250	0.0223	0.0228	89.3	91.2	71.0-121			2.15	20
1,2-Dichloropropane	0.0250	0.0254	0.0251	102	100	75.0-125			1.37	20
1,1-Dichloropropene	0.0250	0.0235	0.0240	94.0	95.9	71.0-129			1.96	20
1,3-Dichloropropane	0.0250	0.0255	0.0252	102	101	80.0-121			1.24	20
cis-1,3-Dichloropropene	0.0250	0.0264	0.0252	106	101	79.0-123			4.63	20
trans-1,3-Dichloropropene	0.0250	0.0230	0.0224	91.9	89.7	74.0-127			2.39	20
2,2-Dichloropropane	0.0250	0.0219	0.0221	87.6	88.3	60.0-125			0.840	20
Di-isopropyl ether	0.0250	0.0244	0.0250	97.8	99.8	59.0-133			2.07	20
Ethylbenzene	0.0250	0.0253	0.0245	101	98.1	77.0-120			2.95	20
Hexachloro-1,3-butadiene	0.0250	0.0264	0.0270	105	108	64.0-131			2.43	20
Isopropylbenzene	0.0250	0.0244	0.0258	97.8	103	75.0-120			5.37	20
p-Isopropyltoluene	0.0250	0.0276	0.0277	110	111	74.0-126			0.200	20
2-Butanone (MEK)	0.125	0.102	0.101	81.6	80.6	37.0-158			1.30	20
Methylene Chloride	0.0250	0.0219	0.0220	87.7	87.8	66.0-121			0.150	20

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

(LCS) R3262683-1 11/02/17 13:34 • (LCSD) R3262683-2 11/02/17 13:53

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 %
4-Methyl-2-pentanone (MIBK)	0.125	0.135	0.132	108	105	59.0-143			2.61	20
Methyl tert-butyl ether	0.0250	0.0234	0.0243	93.5	97.1	64.0-123			3.84	20
Naphthalene	0.0250	0.0229	0.0253	91.6	101	62.0-128			10.0	20
n-Propylbenzene	0.0250	0.0243	0.0243	97.2	97.1	79.0-120			0.150	20
Styrene	0.0250	0.0248	0.0245	99.3	97.9	78.0-124			1.40	20
1,1,1,2-Tetrachloroethane	0.0250	0.0254	0.0244	102	97.6	75.0-122			4.18	20
1,1,2,2-Tetrachloroethane	0.0250	0.0230	0.0240	92.2	95.9	71.0-122			3.97	20
Tetrachloroethene	0.0250	0.0250	0.0245	100	97.9	70.0-127			2.21	20
Toluene	0.0250	0.0239	0.0233	95.6	93.0	77.0-120			2.70	20
1,1,2-Trichlorotrifluoroethane	0.0250	0.0230	0.0235	92.1	94.1	61.0-136			2.05	20
1,2,3-Trichlorobenzene	0.0250	0.0248	0.0264	99.2	106	61.0-133			6.32	20
1,2,4-Trichlorobenzene	0.0250	0.0251	0.0269	100	108	69.0-129			7.04	20
1,1,1-Trichloroethane	0.0250	0.0230	0.0230	92.0	91.9	68.0-122			0.120	20
1,1,2-Trichloroethane	0.0250	0.0250	0.0238	99.9	95.1	78.0-120			4.95	20
Trichloroethene	0.0250	0.0243	0.0248	97.2	99.3	78.0-120			2.20	20
Trichlorofluoromethane	0.0250	0.0249	0.0244	99.8	97.8	56.0-137			2.03	20
1,2,3-Trichloropropane	0.0250	0.0264	0.0249	105	99.7	72.0-124			5.55	20
1,2,3-Trimethylbenzene	0.0250	0.0271	0.0277	109	111	75.0-120			2.19	20
1,2,4-Trimethylbenzene	0.0250	0.0273	0.0281	109	112	75.0-120			3.03	20
1,3,5-Trimethylbenzene	0.0250	0.0245	0.0254	97.9	101	75.0-120			3.53	20
Vinyl chloride	0.0250	0.0257	0.0258	103	103	64.0-133			0.420	20
Xylenes, Total	0.0750	0.0774	0.0765	103	102	77.0-120			1.17	20
(S) Toluene-d8				*109*	*108*	*80.0-120*				
(S) Dibromofluoromethane				*98.0*	*101*	*76.0-123*				
(S) 4-Bromofluorobenzene				*94.1*	*93.4*	*80.0-120*				

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.

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, 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.
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.
J4	The associated batch QC was outside the established quality control range for accuracy.
T8	Sample(s) received past/too close to holding time expiration.

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**
***** Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Conneticut	PH-0197	North Carolina [1]	DW21704
Florida	E87487	North Carolina [2]	41
Georgia	NELAP	North Dakota	R-140
Georgia [1]	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky [1]	90010	South Dakota	n/a
Kentucky [2]	16	Tennessee [1 4]	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

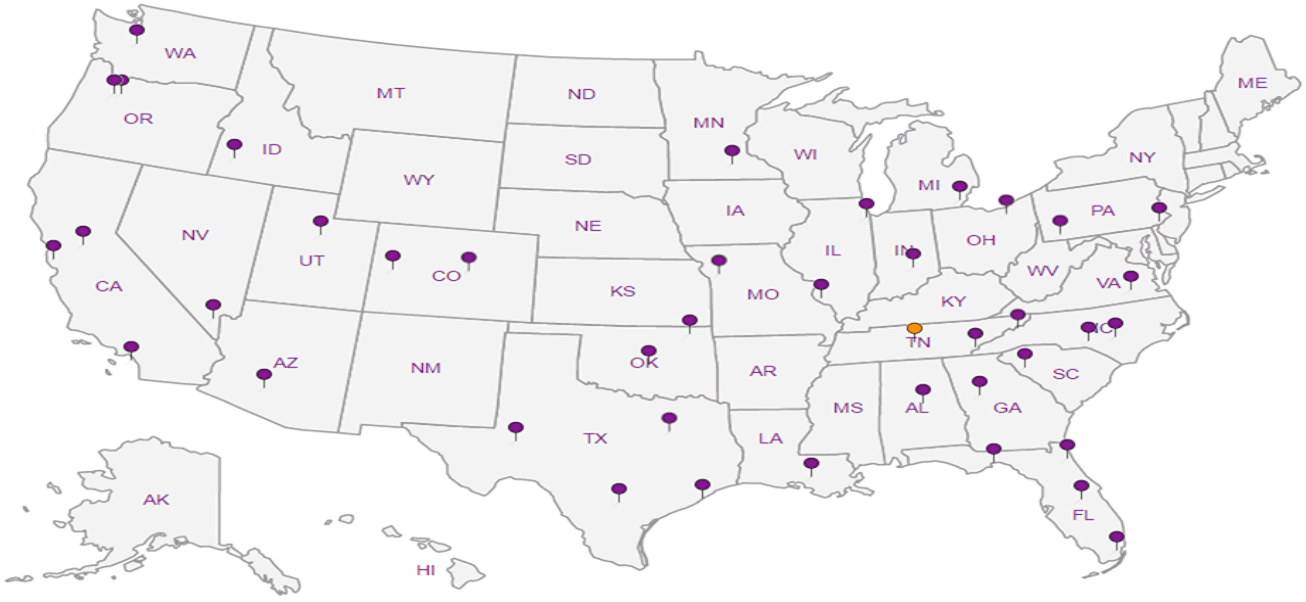
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

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

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



Company Name/Address:
Terracon - Longmont
1242 Bramwood Pl.
Longmont, CO 80501

Billing Information:
SAME

Report to:
Michael Skridulis

Email To:
mjskridulis@terracon.com

Project Description: Tabor #7

City/State Collected:

Phone: **303-776-3921**
Fax: **303-776-4041**

Client Project # 22177040

Lab Project #

Collected by (print): M. Skridulis

Site/Facility ID #

P.O. #

Collected by (signature): M. Sk

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed: STANDARD

Email? ___No ✓Yes
FAX? ___No ___Yes

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

ESC LAB SCIENCES
YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L947818
H076

Acctnum: TERRALCO
Template:
Prelogin:
TSR:
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260 (3) 40ml Amber w/HCl	RSK175 Methatne,Ethane,Ethylene (2) 40ml Amber w/HCl	Ca,Mg,Na,Fe,K Sr- 250ml HDPE No Pres	Br,Cl,S04,N02,N03 - 250ml HDPE No Pres	Alk - 125ml HDPENo PRes	CO2 - 250ml HDPE No Pres					Rem./Contaminant	Sample # (lab only)
MW-01	G	GW		11/1/17	1230	9	X	X	X	X	X	X						-01
MW-02	↓	GW		↓	1300	9	X	X	X	X	X	X						-02
MW-03	↓	GW		↓	1330	9	X	X	X	X	X	X						-03

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

pH _____ Temp _____

Flow _____ Other _____

Remarks: Fed ex: 4094 8307 3836

Hold #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
M. Sk	11/1/17	1530	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			Jennifer Floyd 836

Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐ _____

Temp: 2.8 °C Bottles Received: 27

Date: 11.2.17 Time: 8:45

Condition: (lab use only) OK

COC Seal Intact: ✓ Y ___N ___NA

pH Checked: NCF:

ESC LAB SCIENCES
Cooler Receipt Form

Client: TERRALCO	SDG#	194818	
Cooler Received/Opened On: 11/2/17	Temperature:	2.8	
Received by : Jennifer Royal			
Signature: Jennifer Royal			

Receipt Check List	NP	Yes	No
COC Seal Present / Intact?		✓	
COC Signed / Accurate?		✓	
Bottles arrive intact?		✓	
Correct bottles used?		✓	
Sufficient volume sent?		✓	
If Applicable		✓	
VOA Zero headspace?			
Preservation Correct / Checked?			

ANALYTICAL REPORT

November 20, 2017

Terracon Consultants, Inc - Longmont, CO

Sample Delivery Group:	L948477
Samples Received:	11/04/2017
Project Number:	22177040
Description:	Tabor #7

Report To: Mike Skridulis
1242 Bramwood Place
Longmont, CO 80501

Entire Report Reviewed By: Daphne R Richards

Daphne Richards
Technical Service Representative

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 ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

TABLE OF CONTENTS

SVP-02 L948477-01 Air

Collected by: M. Skridulis
Collected date/time: 11/01/17 14:00
Received date/time: 11/04/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1039319	2	11/05/17 19:36	11/05/17 19:36	AMC
Organic Compounds (GC) by Method D1946	WG1043917	1	11/17/17 14:49	11/17/17 14:49	AMC

SVP-01 L948477-02 Air

Collected by: M. Skridulis
Collected date/time: 11/01/17 14:30
Received date/time: 11/04/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1039319	2	11/05/17 20:31	11/05/17 20:31	AMC
Organic Compounds (GC) by Method D1946	WG1043917	1	11/17/17 14:56	11/17/17 14:56	AMC

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. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. 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.

Daphne R Richards

Daphne Richards
Technical Service Representative

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	2.50	5.94	16.0	38.0		2	WG1039319
Allyl chloride	107-05-1	76.53	0.400	1.25	ND	ND		2	WG1039319
Benzene	71-43-2	78.10	0.400	1.28	ND	ND		2	WG1039319
Benzyl Chloride	100-44-7	127	0.400	2.08	ND	ND		2	WG1039319
Bromodichloromethane	75-27-4	164	0.400	2.68	ND	ND		2	WG1039319
Bromoform	75-25-2	253	1.20	12.4	ND	ND		2	WG1039319
Bromomethane	74-83-9	94.90	0.400	1.55	ND	ND		2	WG1039319
1,3-Butadiene	106-99-0	54.10	4.00	8.85	ND	ND		2	WG1039319
Carbon disulfide	75-15-0	76.10	0.400	1.24	ND	ND		2	WG1039319
Carbon tetrachloride	56-23-5	154	0.400	2.52	ND	ND		2	WG1039319
Chlorobenzene	108-90-7	113	0.400	1.85	ND	ND		2	WG1039319
Chloroethane	75-00-3	64.50	0.400	1.06	ND	ND		2	WG1039319
Chloroform	67-66-3	119	0.400	1.95	0.527	2.56		2	WG1039319
Chloromethane	74-87-3	50.50	0.400	0.826	ND	ND		2	WG1039319
2-Chlorotoluene	95-49-8	126	0.400	2.06	ND	ND		2	WG1039319
Cyclohexane	110-82-7	84.20	0.400	1.38	ND	ND		2	WG1039319
Dibromochloromethane	124-48-1	208	0.400	3.40	ND	ND		2	WG1039319
1,2-Dibromoethane	106-93-4	188	0.400	3.08	ND	ND		2	WG1039319
1,2-Dichlorobenzene	95-50-1	147	0.400	2.40	ND	ND		2	WG1039319
1,3-Dichlorobenzene	541-73-1	147	0.400	2.40	0.614	3.69		2	WG1039319
1,4-Dichlorobenzene	106-46-7	147	0.400	2.40	ND	ND		2	WG1039319
1,2-Dichloroethane	107-06-2	99	0.400	1.62	ND	ND		2	WG1039319
1,1-Dichloroethane	75-34-3	98	0.400	1.60	ND	ND		2	WG1039319
1,1-Dichloroethene	75-35-4	96.90	0.400	1.59	ND	ND		2	WG1039319
cis-1,2-Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG1039319
trans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG1039319
1,2-Dichloropropane	78-87-5	113	0.400	1.85	ND	ND		2	WG1039319
cis-1,3-Dichloropropene	10061-01-5	111	0.400	1.82	ND	ND		2	WG1039319
trans-1,3-Dichloropropene	10061-02-6	111	0.400	1.82	ND	ND		2	WG1039319
1,4-Dioxane	123-91-1	88.10	0.400	1.44	ND	ND		2	WG1039319
Ethanol	64-17-5	46.10	1.26	2.38	2.73	5.14		2	WG1039319
Ethylbenzene	100-41-4	106	0.400	1.73	0.458	1.98		2	WG1039319
4-Ethyltoluene	622-96-8	120	0.400	1.96	ND	ND		2	WG1039319
Trichlorofluoromethane	75-69-4	137.40	0.400	2.25	ND	ND		2	WG1039319
Dichlorodifluoromethane	75-71-8	120.92	0.400	1.98	ND	ND		2	WG1039319
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.400	3.07	ND	ND		2	WG1039319
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.400	2.80	ND	ND		2	WG1039319
Heptane	142-82-5	100	0.400	1.64	ND	ND		2	WG1039319
Hexachloro-1,3-butadiene	87-68-3	261	1.26	13.5	ND	ND		2	WG1039319
n-Hexane	110-54-3	86.20	0.400	1.41	ND	ND		2	WG1039319
Isopropylbenzene	98-82-8	120.20	0.400	1.97	ND	ND		2	WG1039319
Methylene Chloride	75-09-2	84.90	0.400	1.39	ND	ND		2	WG1039319
Methyl Butyl Ketone	591-78-6	100	2.50	10.2	ND	ND		2	WG1039319
2-Butanone (MEK)	78-93-3	72.10	2.50	7.37	ND	ND		2	WG1039319
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	2.50	10.2	ND	ND		2	WG1039319
Methyl methacrylate	80-62-6	100.12	0.400	1.64	ND	ND		2	WG1039319
MTBE	1634-04-4	88.10	0.400	1.44	ND	ND		2	WG1039319
Naphthalene	91-20-3	128	1.26	6.60	ND	ND		2	WG1039319
2-Propanol	67-63-0	60.10	2.50	6.15	6.54	16.1		2	WG1039319
Propene	115-07-1	42.10	0.800	1.38	ND	ND		2	WG1039319
Styrene	100-42-5	104	0.400	1.70	ND	ND		2	WG1039319
1,1,2,2-Tetrachloroethane	79-34-5	168	0.400	2.75	ND	ND		2	WG1039319
Tetrachloroethylene	127-18-4	166	0.400	2.72	1.02	6.93		2	WG1039319
Tetrahydrofuran	109-99-9	72.10	0.400	1.18	ND	ND		2	WG1039319
Toluene	108-88-3	92.10	0.400	1.51	1.56	5.88		2	WG1039319
1,2,4-Trichlorobenzene	120-82-1	181	1.26	9.33	ND	ND		2	WG1039319

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.400	2.18	ND	ND		2	WG1039319
1,1,2-Trichloroethane	79-00-5	133	0.400	2.18	ND	ND		2	WG1039319
Trichloroethylene	79-01-6	131	0.400	2.14	1.00	5.38		2	WG1039319
1,2,4-Trimethylbenzene	95-63-6	120	0.400	1.96	0.488	2.40		2	WG1039319
1,3,5-Trimethylbenzene	108-67-8	120	0.400	1.96	ND	ND		2	WG1039319
2,2,4-Trimethylpentane	540-84-1	114.22	0.400	1.87	ND	ND		2	WG1039319
Vinyl chloride	75-01-4	62.50	0.400	1.02	ND	ND		2	WG1039319
Vinyl Bromide	593-60-2	106.95	0.400	1.75	ND	ND		2	WG1039319
Vinyl acetate	108-05-4	86.10	0.400	1.41	ND	ND		2	WG1039319
m&p-Xylene	1330-20-7	106	0.800	3.47	1.88	8.16		2	WG1039319
o-Xylene	95-47-6	106	0.400	1.73	0.683	2.96		2	WG1039319
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*96.6*				WG1039319

Organic Compounds (GC) by Method D1946

Analyte	CAS #	Mol. Wt.	RDL %	Result %	Qualifier	Dilution	Batch
Oxygen	7782-44-7	32	2.00	20.0		1	WG1043917
Carbon Monoxide	630-08-0	28	2.00	ND		1	WG1043917
Carbon Dioxide	124-38-9	44.01	0.500	ND		1	WG1043917
Methane	74-82-8	16	0.400	ND		1	WG1043917

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	2.50	5.94	19.5	46.3		2	WG1039319
Allyl chloride	107-05-1	76.53	0.400	1.25	ND	ND		2	WG1039319
Benzene	71-43-2	78.10	0.400	1.28	1.15	3.67		2	WG1039319
Benzyl Chloride	100-44-7	127	0.400	2.08	ND	ND		2	WG1039319
Bromodichloromethane	75-27-4	164	0.400	2.68	ND	ND		2	WG1039319
Bromoform	75-25-2	253	1.20	12.4	ND	ND		2	WG1039319
Bromomethane	74-83-9	94.90	0.400	1.55	ND	ND		2	WG1039319
1,3-Butadiene	106-99-0	54.10	4.00	8.85	ND	ND		2	WG1039319
Carbon disulfide	75-15-0	76.10	0.400	1.24	2.98	9.28		2	WG1039319
Carbon tetrachloride	56-23-5	154	0.400	2.52	ND	ND		2	WG1039319
Chlorobenzene	108-90-7	113	0.400	1.85	ND	ND		2	WG1039319
Chloroethane	75-00-3	64.50	0.400	1.06	ND	ND		2	WG1039319
Chloroform	67-66-3	119	0.400	1.95	1.01	4.90		2	WG1039319
Chloromethane	74-87-3	50.50	0.400	0.826	ND	ND		2	WG1039319
2-Chlorotoluene	95-49-8	126	0.400	2.06	ND	ND		2	WG1039319
Cyclohexane	110-82-7	84.20	0.400	1.38	0.661	2.28		2	WG1039319
Dibromochloromethane	124-48-1	208	0.400	3.40	ND	ND		2	WG1039319
1,2-Dibromoethane	106-93-4	188	0.400	3.08	ND	ND		2	WG1039319
1,2-Dichlorobenzene	95-50-1	147	0.400	2.40	ND	ND		2	WG1039319
1,3-Dichlorobenzene	541-73-1	147	0.400	2.40	0.602	3.62		2	WG1039319
1,4-Dichlorobenzene	106-46-7	147	0.400	2.40	ND	ND		2	WG1039319
1,2-Dichloroethane	107-06-2	99	0.400	1.62	ND	ND		2	WG1039319
1,1-Dichloroethane	75-34-3	98	0.400	1.60	ND	ND		2	WG1039319
1,1-Dichloroethene	75-35-4	96.90	0.400	1.59	ND	ND		2	WG1039319
cis-1,2-Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG1039319
trans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG1039319
1,2-Dichloropropane	78-87-5	113	0.400	1.85	ND	ND		2	WG1039319
cis-1,3-Dichloropropene	10061-01-5	111	0.400	1.82	ND	ND		2	WG1039319
trans-1,3-Dichloropropene	10061-02-6	111	0.400	1.82	ND	ND		2	WG1039319
1,4-Dioxane	123-91-1	88.10	0.400	1.44	ND	ND		2	WG1039319
Ethanol	64-17-5	46.10	1.26	2.38	3.99	7.51		2	WG1039319
Ethylbenzene	100-41-4	106	0.400	1.73	3.63	15.7		2	WG1039319
4-Ethyltoluene	622-96-8	120	0.400	1.96	2.13	10.4		2	WG1039319
Trichlorofluoromethane	75-69-4	137.40	0.400	2.25	ND	ND		2	WG1039319
Dichlorodifluoromethane	75-71-8	120.92	0.400	1.98	ND	ND		2	WG1039319
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.400	3.07	ND	ND		2	WG1039319
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.400	2.80	ND	ND		2	WG1039319
Heptane	142-82-5	100	0.400	1.64	2.72	11.1		2	WG1039319
Hexachloro-1,3-butadiene	87-68-3	261	1.26	13.5	ND	ND		2	WG1039319
n-Hexane	110-54-3	86.20	0.400	1.41	1.36	4.80		2	WG1039319
Isopropylbenzene	98-82-8	120.20	0.400	1.97	ND	ND		2	WG1039319
Methylene Chloride	75-09-2	84.90	0.400	1.39	ND	ND		2	WG1039319
Methyl Butyl Ketone	591-78-6	100	2.50	10.2	5.55	22.7		2	WG1039319
2-Butanone (MEK)	78-93-3	72.10	2.50	7.37	ND	ND		2	WG1039319
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	2.50	10.2	ND	ND		2	WG1039319
Methyl methacrylate	80-62-6	100.12	0.400	1.64	ND	ND		2	WG1039319
MTBE	1634-04-4	88.10	0.400	1.44	ND	ND		2	WG1039319
Naphthalene	91-20-3	128	1.26	6.60	ND	ND		2	WG1039319
2-Propanol	67-63-0	60.10	2.50	6.15	5.29	13.0		2	WG1039319
Propene	115-07-1	42.10	0.800	1.38	ND	ND		2	WG1039319
Styrene	100-42-5	104	0.400	1.70	ND	ND		2	WG1039319
1,1,2,2-Tetrachloroethane	79-34-5	168	0.400	2.75	ND	ND		2	WG1039319
Tetrachloroethylene	127-18-4	166	0.400	2.72	ND	ND		2	WG1039319
Tetrahydrofuran	109-99-9	72.10	0.400	1.18	1.12	3.31		2	WG1039319
Toluene	108-88-3	92.10	0.400	1.51	11.6	43.7		2	WG1039319
1,2,4-Trichlorobenzene	120-82-1	181	1.26	9.33	ND	ND		2	WG1039319

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.400	2.18	ND	ND		2	WG1039319
1,1,2-Trichloroethane	79-00-5	133	0.400	2.18	ND	ND		2	WG1039319
Trichloroethylene	79-01-6	131	0.400	2.14	ND	ND		2	WG1039319
1,2,4-Trimethylbenzene	95-63-6	120	0.400	1.96	2.37	11.6		2	WG1039319
1,3,5-Trimethylbenzene	108-67-8	120	0.400	1.96	1.05	5.14		2	WG1039319
2,2,4-Trimethylpentane	540-84-1	114.22	0.400	1.87	1.32	6.17		2	WG1039319
Vinyl chloride	75-01-4	62.50	0.400	1.02	ND	ND		2	WG1039319
Vinyl Bromide	593-60-2	106.95	0.400	1.75	ND	ND		2	WG1039319
Vinyl acetate	108-05-4	86.10	0.400	1.41	ND	ND		2	WG1039319
m&p-Xylene	1330-20-7	106	0.800	3.47	14.4	62.3		2	WG1039319
o-Xylene	95-47-6	106	0.400	1.73	4.14	17.9		2	WG1039319
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*99.2*				WG1039319

Organic Compounds (GC) by Method D1946

Analyte	CAS #	Mol. Wt.	RDL %	Result %	Qualifier	Dilution	Batch
Oxygen	7782-44-7	32	2.00	19.9		1	WG1043917
Carbon Monoxide	630-08-0	28	2.00	ND		1	WG1043917
Carbon Dioxide	124-38-9	44.01	0.500	ND		1	WG1043917
Methane	74-82-8	16	0.400	ND		1	WG1043917

Method Blank (MB)

(MB) R3263250-3 11/05/17 09:16

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Acetone	U		0.0569	1.25
Allyl Chloride	U		0.0546	0.200
Benzene	U		0.0460	0.200
Benzyl Chloride	U		0.0598	0.200
Bromodichloromethane	U		0.0436	0.200
Bromoform	U		0.0786	0.600
Bromomethane	U		0.0609	0.200
1,3-Butadiene	U		0.0563	2.00
Carbon disulfide	U		0.0544	0.200
Carbon tetrachloride	U		0.0585	0.200
Chlorobenzene	U		0.0601	0.200
Chloroethane	U		0.0489	0.200
Chloroform	U		0.0574	0.200
Chloromethane	U		0.0544	0.200
2-Chlorotoluene	U		0.0605	0.200
Cyclohexane	U		0.0534	0.200
Dibromochloromethane	U		0.0494	0.200
1,2-Dibromoethane	U		0.0185	0.200
1,2-Dichlorobenzene	U		0.0603	0.200
1,3-Dichlorobenzene	U		0.0597	0.200
1,4-Dichlorobenzene	U		0.0557	0.200
1,2-Dichloroethane	U		0.0616	0.200
1,1-Dichloroethane	U		0.0514	0.200
1,1-Dichloroethene	U		0.0490	0.200
cis-1,2-Dichloroethene	U		0.0389	0.200
trans-1,2-Dichloroethene	U		0.0464	0.200
1,2-Dichloropropane	U		0.0599	0.200
cis-1,3-Dichloropropene	U		0.0588	0.200
trans-1,3-Dichloropropene	U		0.0435	0.200
1,4-Dioxane	U		0.0554	0.200
Ethylbenzene	U		0.0506	0.200
4-Ethyltoluene	U		0.0666	0.200
Trichlorofluoromethane	U		0.0673	0.200
Dichlorodifluoromethane	U		0.0601	0.200
1,1,2-Trichlorotrifluoroethane	U		0.0687	0.200
1,2-Dichlorotetrafluoroethane	U		0.0458	0.200
Heptane	U		0.0626	0.200
Hexachloro-1,3-butadiene	U		0.0656	0.630
n-Hexane	U		0.0457	0.200
Isopropylbenzene	U		0.0563	0.200

Method Blank (MB)

(MB) R3263250-3 11/05/17 09:16

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Methylene Chloride	U		0.0465	0.200
Methyl Butyl Ketone	U		0.0682	1.25
2-Butanone (MEK)	U		0.0493	1.25
4-Methyl-2-pentanone (MIBK)	U		0.0650	1.25
Methyl Methacrylate	U		0.0773	0.200
MTBE	U		0.0505	0.200
Naphthalene	U		0.154	0.630
2-Propanol	U		0.0882	1.25
Propene	U		0.0932	0.400
Styrene	U		0.0465	0.200
1,1,2,2-Tetrachloroethane	U		0.0576	0.200
Tetrachloroethylene	U		0.0497	0.200
Tetrahydrofuran	U		0.0508	0.200
Toluene	U		0.0499	0.200
1,2,4-Trichlorobenzene	U		0.148	0.630
1,1,1-Trichloroethane	U		0.0665	0.200
1,1,2-Trichloroethane	U		0.0287	0.200
Trichloroethylene	U		0.0545	0.200
1,2,4-Trimethylbenzene	U		0.0483	0.200
1,3,5-Trimethylbenzene	U		0.0631	0.200
2,2,4-Trimethylpentane	U		0.0456	0.200
Vinyl chloride	U		0.0457	0.200
Vinyl Bromide	U		0.0727	0.200
Vinyl acetate	U		0.0639	0.200
m&p-Xylene	U		0.0946	0.400
o-Xylene	U		0.0633	0.200
Ethanol	U		0.0832	0.630
(S) 1,4-Bromofluorobenzene	*97.9*			*60.0-140*

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

(LCS) R3263250-1 11/05/17 07:44 • (LCSD) R3263250-2 11/05/17 08:29

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethanol	3.75	3.90	3.88	104	104	52.0-158			0.360	25
Propene	3.75	3.71	3.71	98.9	99.0	54.0-155			0.0800	25
Dichlorodifluoromethane	3.75	3.77	3.73	101	99.5	69.0-143			1.11	25
1,2-Dichlorotetrafluoroethane	3.75	3.70	3.69	98.6	98.4	70.0-130			0.180	25
Chloromethane	3.75	3.52	3.42	93.8	91.2	70.0-130			2.81	25

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

(LCS) R3263250-1 11/05/17 07:44 • (LCSD) R3263250-2 11/05/17 08:29

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Vinyl chloride	3.75	3.62	3.62	96.5	96.4	70.0-130			0.0100	25
1,3-Butadiene	3.75	3.46	3.49	92.4	93.2	70.0-130			0.850	25
Bromomethane	3.75	3.02	3.05	80.4	81.3	70.0-130			1.06	25
Chloroethane	3.75	3.64	3.72	97.2	99.2	70.0-130			2.03	25
Trichlorofluoromethane	3.75	3.77	3.75	101	100	70.0-130			0.430	25
1,1,2-Trichlorotrifluoroethane	3.75	3.79	3.77	101	101	70.0-130			0.660	25
1,1-Dichloroethene	3.75	3.68	3.67	98.2	97.8	70.0-130			0.500	25
1,1-Dichloroethane	3.75	3.65	3.63	97.4	96.9	70.0-130			0.540	25
Acetone	3.75	3.64	3.59	97.0	95.8	70.0-130			1.25	25
2-Propanol	3.75	3.71	3.69	98.9	98.4	66.0-150			0.460	25
Carbon disulfide	3.75	3.66	3.65	97.5	97.3	70.0-130			0.260	25
Methylene Chloride	3.75	3.55	3.53	94.6	94.2	70.0-130			0.380	25
MTBE	3.75	3.67	3.67	97.9	97.8	70.0-130			0.0500	25
trans-1,2-Dichloroethene	3.75	3.65	3.64	97.3	97.1	70.0-130			0.190	25
n-Hexane	3.75	3.63	3.63	96.7	96.7	70.0-130			0.000	25
Vinyl acetate	3.75	3.79	3.77	101	101	70.0-130			0.390	25
Methyl Ethyl Ketone	3.75	3.71	3.70	98.9	98.8	70.0-130			0.180	25
cis-1,2-Dichloroethene	3.75	3.65	3.64	97.2	96.9	70.0-130			0.270	25
Chloroform	3.75	3.65	3.63	97.2	96.8	70.0-130			0.420	25
Cyclohexane	3.75	3.73	3.71	99.5	99.0	70.0-130			0.600	25
1,1,1-Trichloroethane	3.75	3.73	3.71	99.4	98.8	70.0-130			0.610	25
Carbon tetrachloride	3.75	3.76	3.74	100	99.7	70.0-130			0.690	25
Benzene	3.75	3.66	3.65	97.6	97.2	70.0-130			0.360	25
1,2-Dichloroethane	3.75	3.67	3.66	97.9	97.6	70.0-130			0.320	25
Heptane	3.75	3.71	3.64	99.0	97.1	70.0-130			1.86	25
Trichloroethylene	3.75	3.70	3.69	98.7	98.3	70.0-130			0.340	25
1,2-Dichloropropane	3.75	3.61	3.61	96.3	96.4	70.0-130			0.100	25
1,4-Dioxane	3.75	3.81	3.81	102	102	70.0-152			0.210	25
Bromodichloromethane	3.75	3.73	3.72	99.6	99.2	70.0-130			0.310	25
cis-1,3-Dichloropropene	3.75	3.79	3.77	101	101	70.0-130			0.480	25
4-Methyl-2-pentanone (MIBK)	3.75	3.79	3.80	101	101	70.0-142			0.0500	25
Toluene	3.75	3.76	3.77	100	100	70.0-130			0.190	25
trans-1,3-Dichloropropene	3.75	3.85	3.82	103	102	70.0-130			0.640	25
1,1,2-Trichloroethane	3.75	3.74	3.73	99.8	99.4	70.0-130			0.340	25
Tetrachloroethylene	3.75	3.80	3.79	101	101	70.0-130			0.180	25
Methyl Butyl Ketone	3.75	4.00	4.01	107	107	70.0-150			0.140	25
Dibromochloromethane	3.75	3.84	3.84	102	103	70.0-130			0.240	25
1,2-Dibromoethane	3.75	3.77	3.79	100	101	70.0-130			0.530	25
Chlorobenzene	3.75	3.74	3.75	99.6	100	70.0-130			0.360	25
Ethylbenzene	3.75	3.88	3.88	103	103	70.0-130			0.0200	25

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

(LCS) R3263250-1 11/05/17 07:44 • (LCSD) R3263250-2 11/05/17 08:29

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
m&p-Xylene	7.50	7.75	7.76	103	103	70.0-130			0.0900	25
o-Xylene	3.75	3.93	3.92	105	104	70.0-130			0.420	25
Styrene	3.75	4.09	4.08	109	109	70.0-130			0.210	25
Bromoform	3.75	4.06	4.07	108	108	70.0-130			0.0600	25
1,1,2,2-Tetrachloroethane	3.75	3.80	3.81	101	102	70.0-130			0.280	25
4-Ethyltoluene	3.75	4.01	4.01	107	107	70.0-130			0.0300	25
1,3,5-Trimethylbenzene	3.75	4.03	4.04	107	108	70.0-130			0.140	25
1,2,4-Trimethylbenzene	3.75	4.00	4.01	107	107	70.0-130			0.270	25
1,3-Dichlorobenzene	3.75	4.03	4.03	107	107	70.0-130			0.110	25
1,4-Dichlorobenzene	3.75	4.09	4.11	109	109	70.0-130			0.400	25
Benzyl Chloride	3.75	4.19	4.22	112	112	70.0-144			0.660	25
1,2-Dichlorobenzene	3.75	3.97	3.97	106	106	70.0-130			0.210	25
1,2,4-Trichlorobenzene	3.75	4.29	4.38	114	117	70.0-155			1.91	25
Hexachloro-1,3-butadiene	3.75	4.19	4.22	112	112	70.0-145			0.640	25
Naphthalene	3.75	4.20	4.23	112	113	70.0-155			0.680	25
Allyl Chloride	3.75	3.67	3.65	97.7	97.4	70.0-130			0.390	25
2-Chlorotoluene	3.75	3.96	3.97	106	106	70.0-130			0.290	25
Methyl Methacrylate	3.75	3.71	3.71	98.9	99.0	70.0-130			0.0900	25
Tetrahydrofuran	3.75	3.59	3.60	95.8	96.0	70.0-140			0.290	25
2,2,4-Trimethylpentane	3.75	3.69	3.68	98.5	98.1	70.0-130			0.390	25
Vinyl Bromide	3.75	3.73	3.72	99.3	99.2	70.0-130			0.110	25
Isopropylbenzene	3.75	3.93	3.91	105	104	70.0-130			0.430	25
(S) 1,4-Bromofluorobenzene				*100*	*100*	*60.0-140*				

Method Blank (MB)

(MB) R3266652-3 11/17/17 14:01

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Oxygen	1.17	J	0.225	2.00
Carbon Monoxide	U		0.665	2.00
Carbon Dioxide	U		0.121	0.500
Methane	U		0.0584	0.400

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

(LCS) R3266652-1 11/17/17 13:48 • (LCSD) R3266652-2 11/17/17 13:55

Analyte	Spike Amount %	LCS Result %	LCSD Result %	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Oxygen	2.50	2.66	2.50	107	99.8	70.0-130			6.49	20
Carbon Monoxide	2.50	2.59	2.62	104	105	70.0-130			1.19	20
Carbon Dioxide	2.50	2.71	2.59	109	104	70.0-130			4.63	20
Methane	2.00	2.11	2.14	106	107	70.0-130			1.44	20

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.

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, 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.
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.
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.

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**
***** Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Conneticut	PH-0197	North Carolina [1]	DW21704
Florida	E87487	North Carolina [2]	41
Georgia	NELAP	North Dakota	R-140
Georgia [1]	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky [1]	90010	South Dakota	n/a
Kentucky [2]	16	Tennessee [1 4]	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

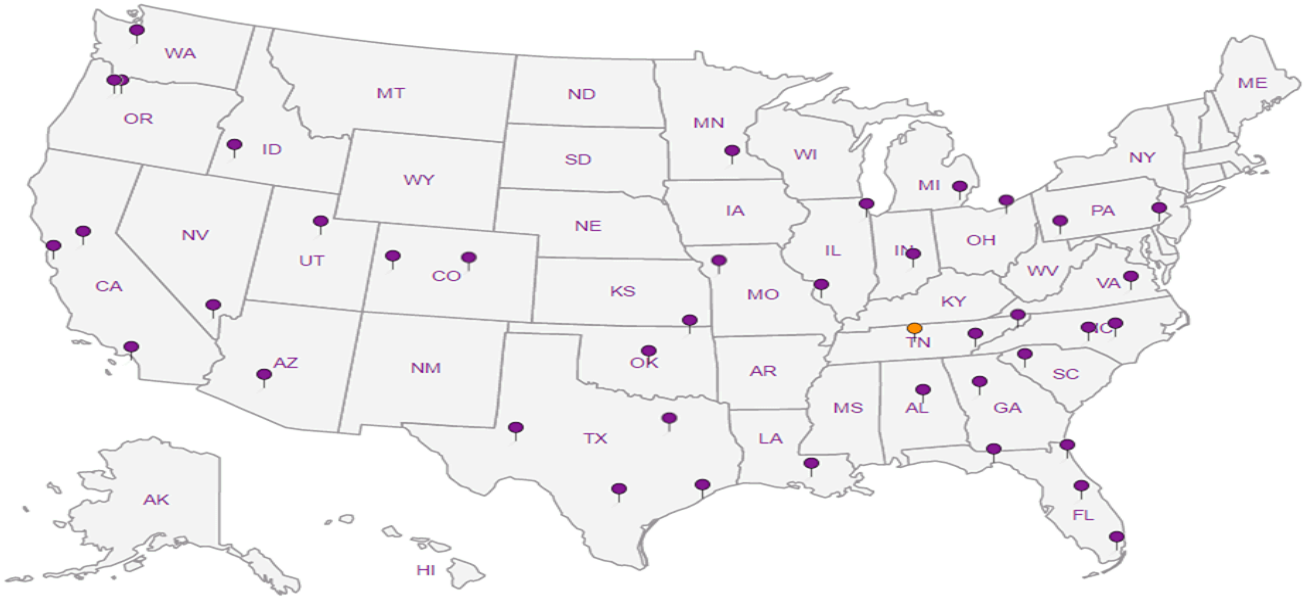
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

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

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



Company Name/Address:
Terracon - Longmont
1242 Bramwood Pl.
Longmont, CO 80501

Billing Information:
SAME

Report to: Michael Skridulis

Email To: mjskridulis@terracon.com

Project Description: Tabor #7

City/State Collected:

Phone: 303-454-5249
Fax: 303-776-4041

Client Project # 22177040

Lab Project #

Collected by (print): M. Skridulis

Site/Facility ID #

P.O. #

Collected by (signature): M. S

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed: STANDARD

Email? ___No X Yes
FAX? X No ___Yes

Canister Pressure/Vacuum

Analysis: VOC's - TO-15; Fixed Gasses - Methane

Chain of Custody Page 1 of 1

ESC LABS
a subsidiary of Pace Analytical

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L948477
M036

Acctnum:
Template:
Prelogin:
TSR:
PB:
Shipped Via:

Sample ID	Sample Description	Can #	Date	Time	Initial	Final	VOC's - TO-15	Fixed Gasses - Methane			Rem./Contaminant	Sample # (lab only)
SVP-02	Soil Gas	5212	11/1/17	1400	26	6	x	x				-01
SVP-01	↓	5428	↓	1430	25	6	x	x				02

Remarks: Fedex: 4094 8307 7176

Hold #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
M.S	11/3/17	1100	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			AMP

Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐ ____

Temp: °C Bottles Received: 2

Date: 11/4/17 Time: 8:45

Condition: (lab use only) OK

COC Seal Intact: ___ Y ___ N ___ NA

pH Checked: NCF:

ESC LAB SCIENCES
Cooler Receipt Form

Client: TERRALCO	SDG#	L948477
Cooler Received/Opened On: 11/4/17	Temperature:	4 NB
Received by : Christian Kacar		
Signature:		

Receipt Check List	NP	Yes	No
COC Seal Present / Intact?	✓		
COC Signed / Accurate?		✓	
Bottles arrive intact?		✓	
Correct bottles used?		✓	
Sufficient volume sent?		✓	
If Applicable			
VOA Zero headspace?			
Preservation Correct / Checked?			