District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: **Enterprise Field Services, LLC**	OGRID: **151618**
Contact Name: **Thomas Long**	Contact Telephone: **505-599-2286**
Contact email:**tjlong@eprod.com**	Incident # *(assigned by OCD)*: **NCS1910928416**
Contact mailing address: **614 Reilly Ave, Farmington, NM 87401**	

Location of Release Source

Latitude **36.713375** Longitude **-108.105496** *(NAD 83 in decimal degrees to 5 decimal places)*

Site Name **Lateral #3A-2 Pipeline**	Site Type **Natural Gas Gathering Pipeline**
Date Release Discovered: **3/25/2019**	Serial Number *(if applicable)*: **NM 0 024892**

Unit Letter	Section	Township	Range	County
F	**21**	**29N**	**12W**	**San Juan**

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (*Name*: BLM)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls):	Volume Recovered (bbls):
☐ Natural Gas	Volume Released (Mcf):	Volume Recovered (Mcf):
☒ Other (describe)	Volume/Weight Released (provide units): **Estimated 80 BBLs of Hydro-Static Test Water (Potable Water)**	Volume/Weight Recovered (provide units)

Cause of Release: At approximately 4:00 p.m. on March 25, 2019, a rupture occurred during hydro-static testing of the Lateral 3A-2 pipeline. Approximately 80 barrels of potable water was released to the ground surface and flowed south along an ephemeral wash (blue line on a USGS topo map) approximately 200 feet. The released fluids were contained as much as practicable. Remediation activities were completed on April 25, 2019. The final excavation dimensions measured approximately 85 feet long by 28 feet wide by approximately 15 feet deep. Approximately 136 cubic yards of hydrocarbon impacted soil were excavated and transported to a New Mexico Oil Conservation Division approved land farm facility. A third party closure report is included with this "Final." C-141.

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: ***Each of the following items must be included in the closure report.***

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Jon E. Fields Title: Director, Environmental

Signature: Jon E. Fields Date: 10/2/19

email: jefields@eprod.com Telephone: (713) 381-6684

OCD Only

Received by: OCD Date: 10/8/16

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Cory Date: 12/10/19

Printed Name: Cory Title: Environmental Specalist

CLOSURE REPORT

Property:

Lateral 3A-2 Hydro-Test Release
NW ¼, S21 T29N R12W
San Juan County, New Mexico

August 9, 2019
Ensolum Project No. 05A1226052

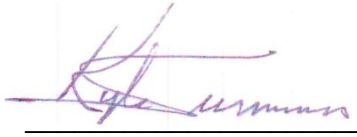
Prepared for:

Enterprise Field Services, LLC
614 Reilly Avenue
Farmington, NM 87401
Attn: Mr. Thomas Long

Prepared by:

Ranee Deechilly
Environmental Scientist

Chad D'Aponti
Field Environmental Scientist



Kyle Summers, CPG
Sr. Project Manager

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LIST OF APPENDICES

CLOSURE REPORT

Lateral 3A-2 Hydro-Test Release
NW ¼, S21 T29N R12W
San Juan County, New Mexico

Ensolum Project No. 05A1226052

1.0 INTRODUCTION

1.1 Site Description & Background

Operator:	Enterprise Field Services, LLC / Enterprise Products Operating LLC (Enterprise)
Site Name:	Lateral 3A-2 Hydro-Test Release (Site)
Location:	36.713368° North, 108.105419° West Northwest (NW) ¼ of Section 21, Township 29 North, Range 12 West San Juan County, New Mexico
Property:	United States Bureau of Land Management (BLM)
Regulatory:	New Mexico Energy, Minerals and Natural Resources Department (EMNRD) Oil Conservation Division (OCD)

During March 2019, Enterprise performed hydrostatic pressure testing on the Lateral 3A-2 pipeline to evaluate the integrity of the pipeline. During the pressure test, a leak was identified. The resulting release was characterized by discoloration on the ground surface and a flow path that traveled south from the point of release. Enterprise subsequently initiated activities to facilitate the repair of the pipeline and to remediate potential petroleum hydrocarbon impact resulting from the release.

A **Topographic Map** depicting the location of the Site is included as **Figure 1**, and a **Site Vicinity Map** is included as **Figure 2** in **Appendix A**.

1.2 Project Objective

The primary objective of the closure activities was to reduce constituent of concern (COC) concentrations in the on-Site soils to below the applicable New Mexico EMNRD OCD closure criteria.

2.0 CLOSURE CRITERIA

The Site is subject to regulatory oversight by the New Mexico EMNRD OCD. In order to address activities related to exempt oil and gas releases, the New Mexico EMNRD OCD references New Mexico Administrative Code (NMAC) 19.15.29 *Releases*, which establishes investigation and abatement action requirements for oil and gas release sites subject to reporting and/or corrective action. Ensolum, LLC (Ensolum) utilized information provided by Enterprise, the general site characteristics, and information available from the New Mexico Office of the State Engineer (OSE) and the New Mexico EMNRD OCD Imaging database to determine the appropriate closure criteria for the Site.

- No water wells were identified within a one-half mile radius of the Site on the OSE Water Rights Reporting System (WRRS) database.

- Two (2) cathodic-protection wells were identified within a mile of the Site. Cathodic-protection well Gallegos Unit 152 E (Unit O, Sex 21 T29N R12W), located approximately 0.5 miles from the Site and at a lower elevation, indicates a depth to water of approximately 80 feet below grade surface (bgs). Cathodic-protection well Moncrief Fed 1E (Unit D, Sec 22 T29N R12W), located approximately 0.8 miles from the Site and at a lower elevation, indicates a depth to water of 180 feet bgs.

- The Site is located within 300 feet of a New Mexico ENMRD OCD-defined continuously flowing watercourse or significant watercourse.

- The Site is not located within 200 feet of a lakebed, sinkhole or playa lake.

- The Site is not located within 300 feet of a permanent residence, school, hospital, institution or church.

- No springs, or private domestic fresh water wells used by less than five (5) households for domestic or stock watering purposes were identified within 500 feet of the Site.

- No fresh water wells or springs were identified within 1,000 feet of the Site.

- The Site is not located within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3.

- The Site is not located within 300 feet of a wetland.

- Based on information identified on the New Mexico Mining and Minerals Division's GIS, Maps and Mine Data database, the Site is not located within an area overlying a subsurface mine.

- The Site is not located within an unstable area.

- The Site is not located within a 100-year floodplain.

Based on the identified siting criteria, cleanup goals for soils remaining in place at the Site include:

Closure Criteria for Petroleum Hydrocarbon Impacted Soils		
Constituent	**Method**	**Limit**
Chloride	EPA 300.0 or SM4500 Cl B	600 mg/kg
TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015M	100 mg/kg
BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg

3.0 SOIL REMEDIATION ACTIVITIES

During March 2019, Enterprise initiated activities to facilitate the repair of the pipeline, and to remediate potential petroleum hydrocarbon impact resulting from the release. During the remediation and corrective action activities Sunland Construction, Inc. (Sunland), provided heavy equipment and labor support, while Ensolum provided environmental consulting support.

The final primary excavation measured approximately 85 feet long and 28 feet wide at the maximum extents. The maximum depth of the excavation measured approximately 15 feet bgs. The final flow path excavation measured approximately 163.5 feet long and four (4) feet wide, with a maximum depth of approximately three (3) feet bgs.

The lithology encountered during the completion of remediation activities consisted primarily of cobbles and unconsolidated silty sand underlain by sandstone.

A total of approximately 136 cubic yards (yd^3) of petroleum hydrocarbon affected soils were transported to the Industrial Ecosystems, Inc. (IEI) landfarm on Crouch Mesa near Aztec, New Mexico for disposal/remediation. The executed C-138 solid waste acceptance form is provided in **Appendix B**. The excavation was backfilled with a combination of imported fill and the segregated, laboratory-confirmed, unaffected stockpiled soils, and was then contoured to surrounding grade.

Figure 3A is a map that identifies approximate soil sample locations and depicts the approximate dimensions of the excavation with respect to the pipeline (**Appendix A**). **Figure 3B** is a map that identifies approximate soil sample locations and depicts the approximate dimensions of the flow path excavation with respect to the site features and the pipeline (**Appendix A**). Photographic documentation of the field activities is included in **Appendix C**.

4.0 SOIL SAMPLING PROGRAM

Ensolum field screened soil samples from the excavation utilizing a photoionization detector (PID) fitted with a 10.6 eV lamp and a calibrated Dexsil PetroFLAG® hydrocarbon analyzer system to guide excavation extents.

Ensolum's soil sampling program included the collection of 21 composite soil samples (CS-1 through CS-21, and FP-1 through FP-10), comprised of five (5) aliquots each, from the primary excavation and flow path for laboratory analyses. In addition, four (4) composite stockpiled soil samples (SP-1 through SP-4), consisting of five (5) aliquots each, were collected from the soils that were segregated for potential reuse to confirm the material was suitable to remain on-Site. A clean shovel was utilized to obtain fresh aliquots from each accessible area of the excavation. An excavator, operated by Sunland, was utilized to obtain fresh aliquots from areas of the excavation that exceeded depths greater than six (6) feet bgs. The New Mexico EMNRD OCD provided verbal approval to proceed with the sampling events, although a New Mexico EMNRD OCD representative was not on-Site during the sampling events. A BLM representative was on-Site during the April 23, 2019 sampling event.

First Sampling Event

During the first sampling event, three (3) composite soil samples FP-1 (0'-0.25'), FP-2 (0'-0.25'), and FP-3 (0'-0.25') were collected from the flow path to evaluate the level of petroleum hydrocarbon impact in that area prior to excavation. Analytical results from each of these samples indicated New Mexico EMNRD OCD closure standard exceedances. Soils associated with composite soil samples FP-1, FP-2, and FP-3 were subsequently removed and transported to disposal during excavation activities.

The initial pipeline repair excavation was sampled during the first sampling event to evaluate petroleum hydrocarbon impact. Composite soil samples CS-1 (5'), CS-2 (5'), CS-3 (5'), and CS-4 (5') were collected

from the floor of the excavation. Composite soil samples CS-5 (0'-15'), CS-6 (0'-15'), CS-7 (0'-15'), CS-8 (0'-15'), CS-9 (0'-15'), CS-10 (0'-15'), CS-11 (0'-15'), and CS-12 (0'-15') were collected from the sidewalls of the initial repair excavation. Analytical results from composite soil samples CS-2, CS-3, and CS-9 from the initial repair excavation indicated New Mexico EMNRD OCD closure standard exceedances. In response to the data exceedances, the excavation was extended to remove petroleum hydrocarbon impact. Soils associated with composite soil samples CS-2, CS-3, CS-6, CS-9, and CS-10 were removed by excavation and transported to the landfarm for disposal/remediation.

Second Sampling Event
After the excavation was deepened and extended to the north and south, a second sampling event was performed. Composite soil samples CS-13 (15'), CS-14 (15'), CS-15 (15'), and CS-21 (6') were collected from the floor of the extended excavation to replace composite soil samples CS-2 and CS-3 which had exhibited closure standard exceedances and were removed by excavation. Composite soil samples CS-16 (3'-15'), CS-17 (3'-15'), CS-18 (3'-15'), and CS-19 (3'-15') were collected from sidewalls in areas that had been extended to accommodate the deeper excavation, but already exhibited acceptable analytical results. Composite soil sample CS-20 (0'-5') was collected from the extended sidewall to replace previous sidewall composite soil sample CS-9 which had exhibited a closure standard exceedance and was removed by excavation.

Third Sampling Event
To address the petroleum hydrocarbon impact identified within soils along the surface flow path of the release, the entire flow path was excavated to a total depth ranging from 1.5 feet to three (3) feet bgs at which point field analyses indicated that the impact had been removed. Composite soil samples FP-4 through FP-10 were collected along the length of the flow path by combining aliquots from the floor and sidewalls of the resulting excavation.

Soil samples were collected and placed in laboratory prepared glassware, labeled/sealed using the laboratory supplied labels and custody seals, and stored on ice in a cooler. The samples were relinquished to the courier for Hall Environmental Analysis Laboratory of Albuquerque, New Mexico, under proper chain-of-custody procedures.

Soil associated with composite soil samples CS-2, CS-3, CS-6, CS-9, CS-10, and FP-1 through FP-3 were removed from the Site during additional excavation activities and were subsequently transported to the IEI landfarm for disposal/remediation.

5.0 SOIL LABORATORY ANALYTICAL METHODS

The composite soil samples were analyzed for benzene, toluene, ethylbenzene and total xylenes (BTEX) using Environmental Protection Agency (EPA) SW-846 Method #8021/8260, total petroleum hydrocarbon (TPH) gasoline range organics (GRO), diesel range organics (DRO), and motor oil/lube oil range organics (MRO) using EPA SW-846 Method #8015, and chlorides using EPA Method #300.0.

Laboratory analytical results are summarized in **Table 1** in **Appendix D**. The executed chain-of-custody forms and laboratory data sheets are provided in **Appendix E**.

6.0 DATA EVALUATION

Ensolum compared the BTEX, TPH, and chloride laboratory analytical results or laboratory practical quantitation limits (PQLs) associated with the composite soil samples (CS-1, CS-4, CS-5, CS-7, CS-8, CS-11 through CS-21, FP-4 through FP-10, and SP-1 through SP-4) to the applicable New Mexico EMNRD OCD closure criteria. Soil associated with composite soil samples CS-2, CS-3, CS-6, CS-9, CS-10, and

FP-1 through FP-3 were removed from the Site by excavation and transported to the landfarm for disposal/remediation and are not included in the following discussion.

- The laboratory analytical results for the composite soil samples collected from soils remaining in place indicate benzene is not present in concentrations greater than the laboratory PQLs, which are less than the New Mexico EMNRD OCD closure criteria of 10 milligrams per kilogram (mg/kg).

- The laboratory analytical results for the composite soil samples collected from soils remaining in place indicate total BTEX is not present in concentrations greater than the laboratory PQLs, which are less than the New Mexico EMNRD OCD closure criteria of 50 mg/kg.

- The laboratory analytical results for composite soil samples CS-13, FP-6, and SP-3 collected from soils remaining in place, indicate combined TPH GRO/DRO/MRO concentrations ranging from 11 mg/kg (SP-3) to 63 mg/kg (CS-13), which do not exceed the New Mexico EMNRD OCD closure criteria of 100 mg/kg. The laboratory analytical results for the remaining composite soil samples collected from soils remaining at the Site indicate combined TPH GRO/DRO/MRO is not present in concentrations greater than the laboratory PQLs, which are less than the New Mexico EMNRD OCD closure criteria of 100 mg/kg.

- The laboratory analytical results for composite soil samples CS-4, CS-7, CS-8, SP-1 and SP-4 collected from soils remaining in place, indicate combined chloride concentrations ranging from 75 mg/kg (SP-1) to 400 mg/kg (CS-7), which do not exceed the New Mexico EMNRD OCD closure criteria of 600 mg/kg. The laboratory analytical results for the remaining composite soil samples collected from soils remaining at the Site indicate chloride is not present in concentrations greater than laboratory PQLs, which are less than the New Mexico EMNRD OCD closure criteria of 600 mg/kg for chlorides.

Laboratory analytical results are summarized in **Table 1** (**Appendix D**).

7.0 RECLAMATION AND RE-VEGETATION

The excavation was backfilled with a combination of imported fill and the segregated, laboratory-confirmed, unaffected stockpiled soils, and was then contoured to surrounding grade. Enterprise will re-seed the Site with a BLM Farmington Field Office approved seeding mixture.

8.0 FINDINGS AND RECOMMENDATION

During March 2019, Enterprise performed hydrostatic pressure testing on the Lateral 3A-2 pipeline to evaluate the integrity of the pipeline. During the pressure test, a leak was identified. The resulting release was characterized by discoloration on the ground surface and a flow path that traveled south from the point of release. Enterprise subsequently initiated activities to facilitate the repair of the pipeline and to remediate potential petroleum hydrocarbon impact resulting from the release.

- The primary objective of the closure activities was to reduce COC concentrations in the on-Site soils to below the applicable New Mexico EMNRD OCD closure criteria using the New Mexico EMNRD OCD's NMAC 19.15.29 *Releases* as guidance.

- A total of 21 composite soil samples were collected from the walls and floor of the final excavation for laboratory analysis. In addition, 10 composite soil samples were collected from the flow path and four (4) composite stockpiled soil samples were collected from stockpiled soils. Based on soil laboratory analytical results, soils remaining in place do not exhibit COC concentrations above the New Mexico EMNRD OCD closure criteria.

- A total of approximately 136 yd^3 of petroleum hydrocarbon affected soils were transported to the IEI landfarm on Crouch Mesa near Aztec, New Mexico for disposal/remediation. The excavation was backfilled with a combination of imported fill and the segregated, laboratory-confirmed, unaffected stockpiled soils, and was then contoured to surrounding grade.

Based on field observations and laboratory analytical results, no additional investigation or corrective action appears warranted at this time.

9.0 STANDARDS OF CARE, LIMITATIONS, AND RELIANCE

9.1 Standard of Care

Ensolum's services were performed in accordance with standards customarily provided by a firm rendering the same or similar services in the area during the same time period. Ensolum makes no warranties, express or implied, as to the services performed hereunder. Additionally, Ensolum does not warrant the work of third parties supplying information used in the report (e.g. laboratories, regulatory agencies, or other third parties). This scope of services was performed in accordance with the scope of work agreed with the client, as detailed in our proposal.

9.2 Additional Limitations

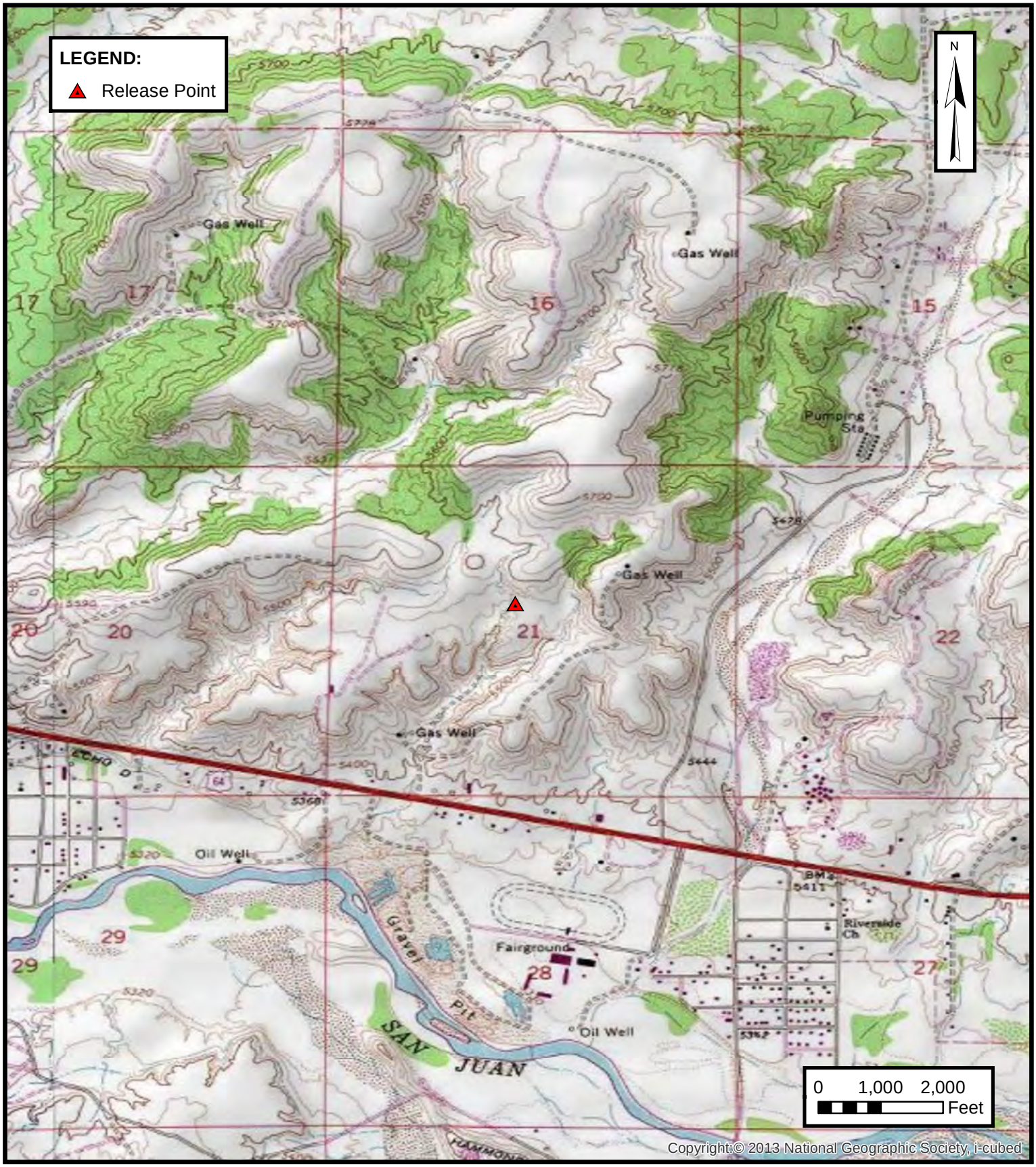
Findings, conclusions, and recommendations resulting from these services are based upon information derived from the on-site activities and other services performed under this scope of work and it should be noted that this information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, or not present during these services, and Ensolum cannot represent that the Site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during the investigation. Environmental conditions at other areas or portions of the Site may vary from those encountered at actual sample locations. Ensolum's findings, and recommendations are based solely upon data available to Ensolum at the time of these services.

9.3 Reliance

This report has been prepared for the exclusive use of Enterprise Products Operating LLC, 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 Enterprise Products Operating LLC and Ensolum. Any unauthorized distribution or reuse is at the client's sole risk. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions and limitations stated in the Closure Report, and Ensolum's Master Services Agreement. The limitation of liability defined in the agreement is the aggregate limit of Ensolum's liability to the client.

APPENDIX A

Figures



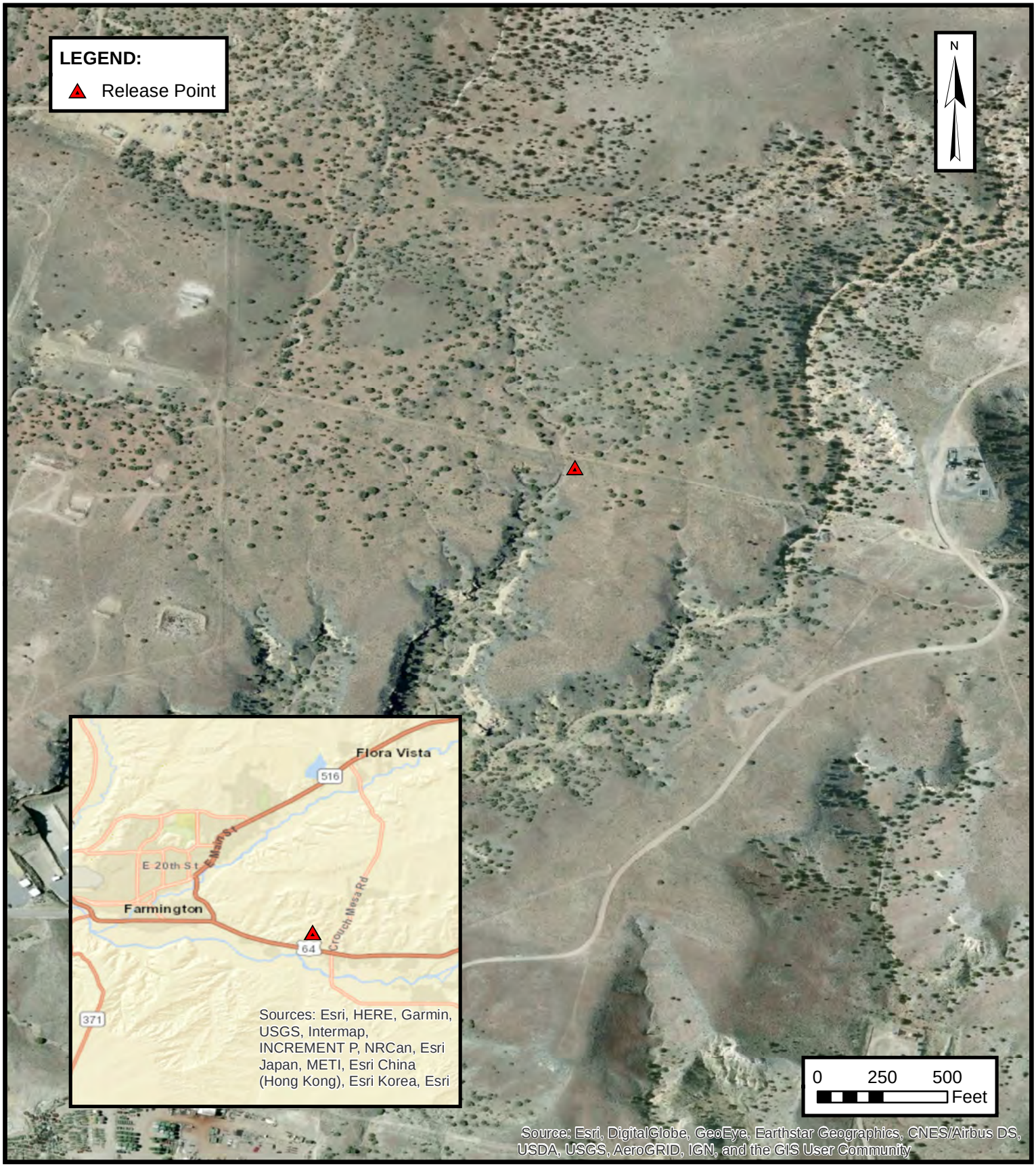
ENSOLUM
Environmental & Hydrogeologic Consultants

TOPOGRAPHIC MAP

ENTERPRISE FIELD SERVICES, LLC
LATERAL 3A-2 HYDRO-TEST RELEASE
NW ¼, S21 T29N R12W, San Juan County, New Mexico
36.713368° N, 108.105419° W

PROJECT NUMBER: 05A1226052

FIGURE
1



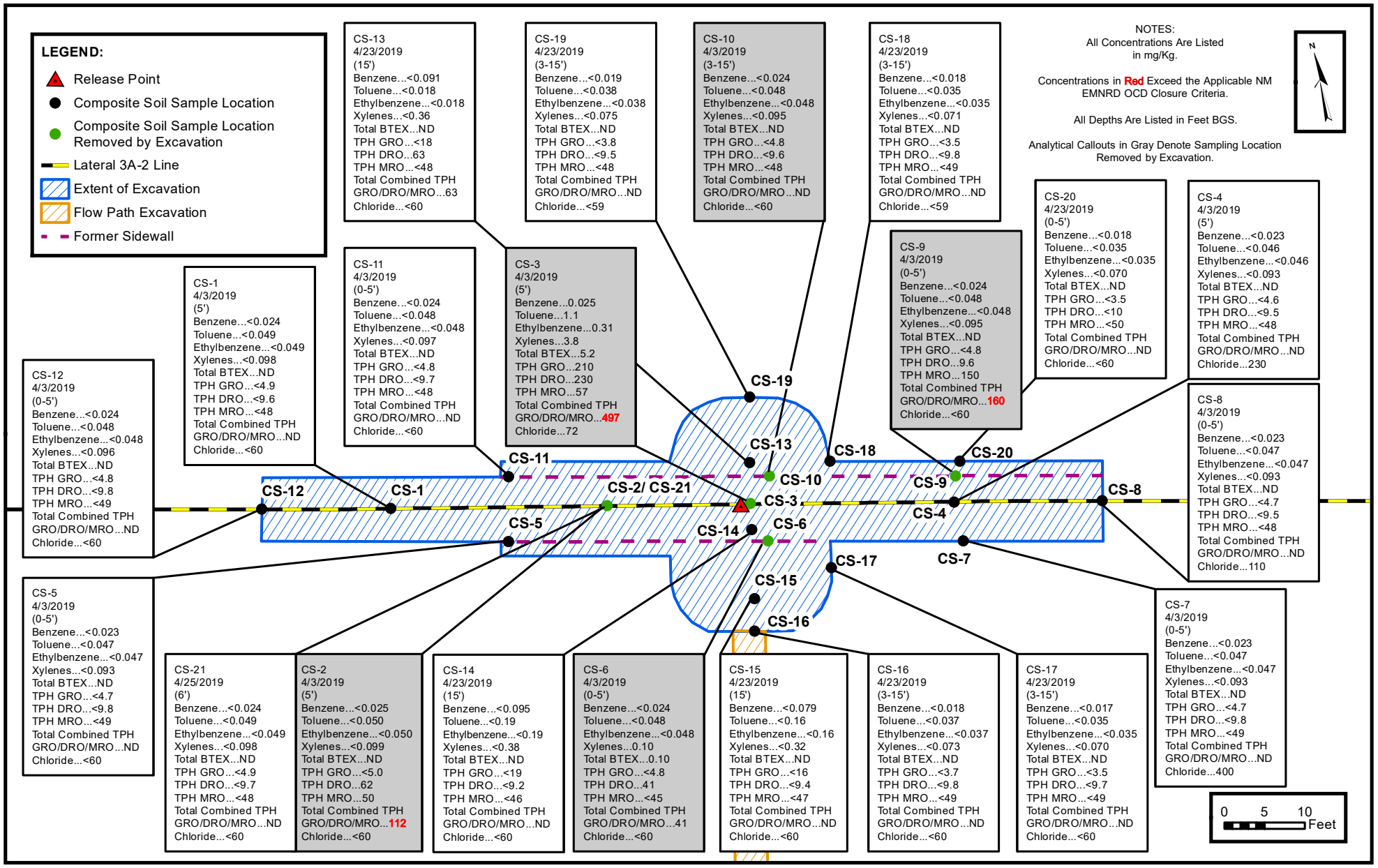
ENSOLUM
Environmental & Hydrogeologic Consultants

SITE VICINITY MAP

ENTERPRISE FIELD SERVICES, LLC
LATERAL 3A-2 HYDRO-TEST RELEASE
NW ¼, S21 T29N R12W, San Juan County, New Mexico
36.713368° N, 108.105419° W

PROJECT NUMBER: 05A1226052

FIGURE
2



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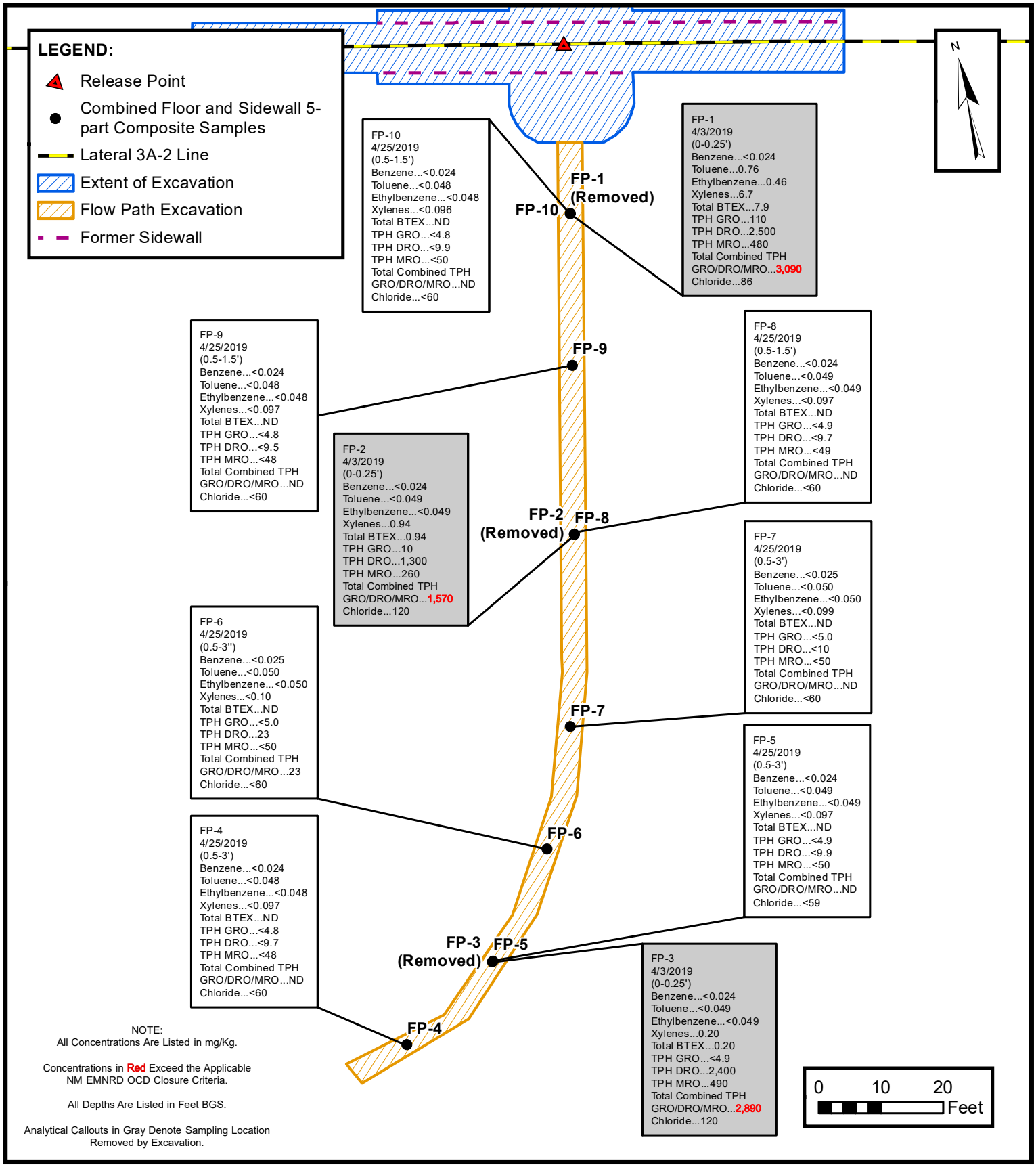
Environmental & Hydrogeologic Consultants

PRIMARY EXCAVATION WITH SOIL ANALYTICAL RESULTS

ENTERPRISE FIELD SERVICES, LLC
LATERAL 3A-2 HYDRO-TEST RELEASE
NW ¼, S21 T29N R12W, San Juan County, New Mexico
36.713368° N, 108.105419° W

PROJECT NUMBER: 05A1226052

FIGURE
3A



NOTE:
All Concentrations Are Listed in mg/Kg.

Concentrations in **Red** Exceed the Applicable NM EMNRD OCD Closure Criteria.

All Depths Are Listed in Feet BGS.

Analytical Callouts in Gray Denote Sampling Location Removed by Excavation.

ENSOLUM
Environmental & Hydrogeologic Consultants

FLOW PATH EXCAVATION WITH SOIL ANALYITCAL RESULTS

ENTERPRISE FIELD SERVICES, LLC
LATERAL 3A-2 HYDRO-TEST RELEASE
NW ¼, S21 T29N R12W, San Juan County, New Mexico
36.713368° N, 108.105419° W

PROJECT NUMBER: 05A1226052

FIGURE
3B

APPENDIX B

Executed C-138 Solid Waste Acceptance Form

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural R
Oil Conservation Divis
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-138
Revised 08/01/11

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. Generator Name and Address:
Enterprise Field Services, LLC, 614 Reilly Ave, Farmington NM 87401

2. Originating Site:
Lateral 3A-2

3. Location of Material (Street Address, City, State or ULSTR):
Unit Letter F Section 21 T29N R 12W; 36.713375, -108.713375

4/26/19 - 36yd
4/25/19 - 12yd
60 yds 4-24-19

4. Source and Description of Waste:
Source: Lateral 3A-2 Pipeline
Description: Hydrocarbon/water soil from a Natural Gas pipeline release.
Estimated Volume 50 yd³ / bbls Known Volume (to be entered by the operator at the end of the haul) 28 (yd³) bbls

5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS

I, Thomas Long Thomas Long, representative or authorized agent for Enterprise Products Operating do hereby
Generator Signature
certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification)

☒ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste. ***Operator Use Only: Waste Acceptance Frequency*** ☒ ***Monthly*** ☐ ***Weekly*** ☐ ***Per Load***

☐ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items)

☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description in Box 4)

GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS

I, Thomas Long Thomas Long 4-22-19, representative for Enterprise Products Operating authorizes IEI, Inc. to complete
Generator Signature
the required testing/sign the Generator Waste Testing Certification.

I, Celia S representative for IEI, Inc. do hereby certify that representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.

5. Transporter: Inland Trucking Sunland

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: *JFJ Landfarm/Industrial Ecosystems, Inc. * **Permit #: NM 01-0010B**
Address of Facility: **#49 CR 2150 Aztec, New Mexico**

CL-4568
PH-7

Method of Treatment and/or Disposal:
☐ Evaporation ☐ Injection ☐ Treating Plant ☒ Landfarm ☐ Landfill ☐ Other

Waste Acceptance Status:
☑ **APPROVED** ☐ **DENIED** (Must Be Maintained As Permanent Record)

PRINT NAME: Celia Sanchez TITLE: Clerk DATE: 4/22/19
SIGNATURE: Celia Sanchez TELEPHONE NO.: 505-632-1782
Surface Waste Management Facility Authorized Agent

4/22/19

APPENDIX C

Photographic Documentation

Photograph 1 Photograph Description: View of the initial excavation.	
Photograph 2 Photograph Description: View of the in process excavation activities.	
Photograph 3 Photograph Description: View of the excavated mid-section, near release area, of the excavation.	

Photograph 4 Photograph Description: View of the excavated western mid-section of the excavation.	
Photograph 5 Photograph Description: View of initial release flow path.	
Photograph 6 Photograph Description: View of initial release flow path.	

Photograph 7 Photograph Description: View of initial release flow path.	
Photograph 8 Photograph Description: View of the final excavated flow path.	
Photograph 9 Photograph Description: View of the final excavated flow path.	

Photograph 10 Photograph Description: View of the final excavated flow path.	
Photograph 11 Photograph Description: View of the final excavation after initial restoration.	

APPENDIX D

Table 1 – Soil Analytical Summary

ENSOLUM

TABLE 1
Lateral 3A-3 Hydro-Test Release
SOIL ANALYTICAL SUMMARY

Sample I.D.	Date	Sample Type C- Composite G - Grab	Sample Depth (feet)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH MRO (mg/kg)	Total Combined TPH (GRO/DRO/MRO) (mg/kg)	Chloride (mg/kg)
New Mexico Energy, Mineral & Natural Resources Department, Oil Conservation Division, Closure Criteria				10	NE	NE	NE	50				100	600
Preliminary Composite Soil Samples Removed by Excavation													
CS-2	04.03.19	C	5	<0.025	<0.050	<0.050	<0.099	ND	<5.0	62	50	**112**	<60
CS-3	04.03.19	C	5	0.025	1.1	0.31	3.8	5.2	210	230	57	**497**	72
CS-6	04.03.19	C	0 to 5	<0.024	<0.048	<0.048	0.10	0.10	<4.8	41	<45	41	<60
CS-9	04.03.19	C	0 to 5	<0.024	<0.048	<0.048	<0.095	ND	<4.8	9.6	150	**160**	<60
CS-10	04.03.19	C	0 to 5	<0.024	<0.048	<0.048	<0.095	ND	<4.8	<9.6	<48	ND	<60
FP-1	04.03.19	C	0 to 0.25	<0.024	0.76	0.46	6.7	7.9	110	2,500	480	**3,090**	86
FP-2	04.03.19	C	0 to 0.25	<0.024	<0.049	<0.049	0.94	0.94	10	1,300	260	**1,570**	120
FP-3	04.03.19	C	0 to 0.25	<0.024	<0.049	<0.049	0.20	0.20	<4.9	2,400	490	**2,890**	120
Final Flow Path Composite Soil Samples													
FP-4	04.25.19	C	0.5 to 3	<0.024	<0.048	<0.048	<0.097	ND	<4.8	<9.7	<48	ND	<60
FP-5	04.25.19	C	0.5 to 3	<0.024	<0.049	<0.049	<0.097	ND	<4.9	<9.9	<50	ND	<59
FP-6	04.25.19	C	0.5 to 3	<0.025	<0.050	<0.050	<0.10	ND	<5.0	23	<50	23	<60
FP-7	04.25.19	C	0.5 to 3	<0.025	<0.050	<0.050	<0.099	ND	<5.0	<10	<50	ND	<60
FP-8	04.25.19	C	0.5 to 1.5	<0.024	<0.049	<0.049	<0.097	ND	<4.9	<9.7	<49	ND	<60
FP-9	04.25.19	C	0.5 to 1.5	<0.024	<0.048	<0.048	<0.097	ND	<4.8	<9.5	<48	ND	<60
FP-10	04.25.19	C	0.5 to 1.5	<0.024	<0.048	<0.048	<0.096	ND	<4.8	<9.9	<50	ND	<60
Stockpile Composite Soil Samples													
SP-1	04.03.19	C	Stockpile	<0.024	<0.048	<0.048	<0.095	ND	<4.8	<9.7	<48	ND	75
SP-2	04.03.19	C	Stockpile	<0.024	<0.047	<0.047	<0.095	ND	<4.7	<9.7	<49	ND	<60
SP-3	04.03.19	C	Stockpile	<0.023	<0.047	<0.047	<0.093	ND	<4.7	11	<50	11	<60
SP-4	04.03.19	C	Stockpile	<0.023	<0.047	<0.047	<0.093	ND	<4.7	<9.3	<46	ND	230
Final Confirmation Composite Soil Samples													
CS-1	04.03.19	C	5	<0.024	<0.049	<0.049	<0.098	ND	<4.9	<9.6	<48	ND	<60
CS-4	04.03.19	C	5	<0.023	<0.046	<0.046	<0.093	ND	<4.6	<9.5	<48	ND	230
CS-5	04.03.19	C	0 to 5	<0.023	<0.047	<0.047	<0.093	ND	<4.7	<9.8	<49	ND	<60
CS-7	04.03.19	C	0 to 5	<0.023	<0.047	<0.047	<0.093	ND	<4.7	<9.8	<49	ND	400
CS-8	04.03.19	C	0 to 5	<0.023	<0.047	<0.047	<0.093	ND	<4.7	<9.5	<48	ND	110
CS-11	04.03.19	C	0 to 5	<0.024	<0.048	<0.048	<0.097	ND	<4.8	<9.7	<48	ND	<60
CS-12	04.03.19	C	0 to 5	<0.024	<0.048	<0.048	<0.096	ND	<4.8	<9.8	<49	ND	<60
CS-13	04.23.19	C	15	<0.091	<0.18	<0.18	<0.36	ND	<18	63	<48	63	<60
CS-14	04.23.19	C	15	<0.095	<0.19	<0.19	<0.38	ND	<19	<9.2	<46	ND	<60
CS-15	04.23.19	C	15	<0.079	<0.16	<0.16	<0.32	ND	<16	<9.4	<47	ND	<60
CS-16	04.23.19	C	3 to 15	<0.018	<0.037	<0.037	<0.073	ND	<3.7	<9.8	<49	ND	<60
CS-17	04.23.19	C	3 to 15	<0.017	<0.035	<0.035	<0.070	ND	<3.5	<9.7	<49	ND	<60
CS-18	04.23.19	C	3 to 15	<0.018	<0.035	<0.035	<0.071	ND	<3.5	<9.8	<49	ND	<59
CS-19	04.23.19	C	3 to 15	<0.019	<0.038	<0.038	<0.075	ND	<3.8	<9.5	<48	ND	<59
CS-20	04.23.19	C	0 to 5	<0.018	<0.035	<0.035	<0.070	ND	<3.5	<10	<50	ND	<60
CS-21	04.25.19	C	6	<0.024	<0.049	<0.049	<0.098	ND	<4.9	<9.7	<48	ND	<60

Note: Concentrations in **bold** and yellow exceed the applicable NM EMNRD Closure Criteria

ND = Not Detected above the Practical Quantitation Limits

NA = Not Analyzed

NE = Not established

mg/kg = milligram per kilogram

BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes

GRO = Gasoline Range Organics

DRO = Diesel Range Organics

MRO = Motor Oil/Lube Oil Range Organics

TPH = Total Petroleum Hydrocarbon

APPENDIX E

Laboratory Data Sheets & Chain of Custody Documentation

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

April 08, 2019

Kyle Summers
ENSOLUM
606 S. Rio Grande Suite A
Aztec, NM 87410
TEL: (903) 821-5603
FAX

RE: Lateral 3A 2 OrderNo.: 1904255

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 4 sample(s) on 4/4/2019 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: SP-1
Project: Lateral 3A 2
Collection Date: 4/3/2019 11:10:00 AM
Lab ID: 1904255-001
Matrix: SOIL
Received Date: 4/4/2019 8:14:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	75	60		mg/Kg	20	4/5/2019 4:03:27 PM	44147
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	4/5/2019 9:24:10 PM	44128
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/5/2019 9:24:10 PM	44128
Surr: DNOP	106	70-130		%Rec	1	4/5/2019 9:24:10 PM	44128
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/6/2019 7:19:07 PM	44112
Surr: BFB	87.2	73.8-119		%Rec	1	4/6/2019 7:19:07 PM	44112
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	4/6/2019 7:19:07 PM	44112
Toluene	ND	0.048		mg/Kg	1	4/6/2019 7:19:07 PM	44112
Ethylbenzene	ND	0.048		mg/Kg	1	4/6/2019 7:19:07 PM	44112
Xylenes, Total	ND	0.095		mg/Kg	1	4/6/2019 7:19:07 PM	44112
Surr: 4-Bromofluorobenzene	88.8	80-120		%Rec	1	4/6/2019 7:19:07 PM	44112

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified at testcode

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: SP-2
Project: Lateral 3A 2
Collection Date: 4/3/2019 11:15:00 AM
Lab ID: 1904255-002 **Matrix:** SOIL **Received Date:** 4/4/2019 8:14:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	4/5/2019 6:19:57 PM	44165
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	4/5/2019 10:30:42 PM	44128
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/5/2019 10:30:42 PM	44128
Surr: DNOP	100	70-130		%Rec	1	4/5/2019 10:30:42 PM	44128
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/6/2019 7:42:46 PM	44112
Surr: BFB	88.0	73.8-119		%Rec	1	4/6/2019 7:42:46 PM	44112
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	4/6/2019 7:42:46 PM	44112
Toluene	ND	0.047		mg/Kg	1	4/6/2019 7:42:46 PM	44112
Ethylbenzene	ND	0.047		mg/Kg	1	4/6/2019 7:42:46 PM	44112
Xylenes, Total	ND	0.095		mg/Kg	1	4/6/2019 7:42:46 PM	44112
Surr: 4-Bromofluorobenzene	90.0	80-120		%Rec	1	4/6/2019 7:42:46 PM	44112

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified at testcode

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: SP-3
Project: Lateral 3A 2
Collection Date: 4/3/2019 11:20:00 AM
Lab ID: 1904255-003 **Matrix:** SOIL **Received Date:** 4/4/2019 8:14:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	4/5/2019 6:57:11 PM	44165
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	11	10		mg/Kg	1	4/5/2019 10:52:51 PM	44128
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/5/2019 10:52:51 PM	44128
Surr: DNOP	110	70-130		%Rec	1	4/5/2019 10:52:51 PM	44128
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/6/2019 8:06:24 PM	44112
Surr: BFB	89.4	73.8-119		%Rec	1	4/6/2019 8:06:24 PM	44112
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.023		mg/Kg	1	4/6/2019 8:06:24 PM	44112
Toluene	ND	0.047		mg/Kg	1	4/6/2019 8:06:24 PM	44112
Ethylbenzene	ND	0.047		mg/Kg	1	4/6/2019 8:06:24 PM	44112
Xylenes, Total	ND	0.093		mg/Kg	1	4/6/2019 8:06:24 PM	44112
Surr: 4-Bromofluorobenzene	90.8	80-120		%Rec	1	4/6/2019 8:06:24 PM	44112

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified at testcode

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: SP-4
Project: Lateral 3A 2
Collection Date: 4/3/2019 11:25:00 AM
Lab ID: 1904255-004 **Matrix:** SOIL **Received Date:** 4/4/2019 8:14:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	230	60		mg/Kg	20	4/5/2019 7:09:36 PM	44165
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	4/5/2019 11:14:49 PM	44128
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/5/2019 11:14:49 PM	44128
Surr: DNOP	100	70-130		%Rec	1	4/5/2019 11:14:49 PM	44128
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/6/2019 8:30:01 PM	44112
Surr: BFB	89.0	73.8-119		%Rec	1	4/6/2019 8:30:01 PM	44112
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.023		mg/Kg	1	4/6/2019 8:30:01 PM	44112
Toluene	ND	0.047		mg/Kg	1	4/6/2019 8:30:01 PM	44112
Ethylbenzene	ND	0.047		mg/Kg	1	4/6/2019 8:30:01 PM	44112
Xylenes, Total	ND	0.093		mg/Kg	1	4/6/2019 8:30:01 PM	44112
Surr: 4-Bromofluorobenzene	90.2	80-120		%Rec	1	4/6/2019 8:30:01 PM	44112

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified at testcode

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904255**

08-Apr-19

Client: ENSOLUM

Project: Lateral 3A 2

Sample ID: **MB-44147** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**

Client ID: **PBS** Batch ID: **44147** RunNo: **58920**

Prep Date: **4/5/2019** Analysis Date: **4/5/2019** SeqNo: **1982048** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-44147** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**

Client ID: **LCSS** Batch ID: **44147** RunNo: **58920**

Prep Date: **4/5/2019** Analysis Date: **4/5/2019** SeqNo: **1982049** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.7	90	110			

Sample ID: **MB-44165** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**

Client ID: **PBS** Batch ID: **44165** RunNo: **58920**

Prep Date: **4/5/2019** Analysis Date: **4/5/2019** SeqNo: **1982078** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-44165** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**

Client ID: **LCSS** Batch ID: **44165** RunNo: **58920**

Prep Date: **4/5/2019** Analysis Date: **4/5/2019** SeqNo: **1982079** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.3	90	110			

Qualifiers:

H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified at testcode

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1904255**
08-Apr-19

Client: ENSOLUM
Project: Lateral 3A 2

Sample ID: **LCS-44142** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **44142** RunNo: **58917**
Prep Date: **4/5/2019** Analysis Date: **4/5/2019** SeqNo: **1981087** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.4		5.000		87.5	70	130			

Sample ID: **MB-44142** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **44142** RunNo: **58917**
Prep Date: **4/5/2019** Analysis Date: **4/5/2019** SeqNo: **1981088** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	10		10.00		101	70	130			

Sample ID: **LCS-44128** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **44128** RunNo: **58917**
Prep Date: **4/4/2019** Analysis Date: **4/5/2019** SeqNo: **1982023** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	95.0	63.9	124			
Surr: DNOP	4.3		5.000		86.1	70	130			

Sample ID: **MB-44128** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **44128** RunNo: **58917**
Prep Date: **4/4/2019** Analysis Date: **4/5/2019** SeqNo: **1982024** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.8		10.00		98.1	70	130			

Sample ID: **1904255-001AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **SP-1** Batch ID: **44128** RunNo: **58917**
Prep Date: **4/4/2019** Analysis Date: **4/5/2019** SeqNo: **1982026** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54	9.8	48.92	0	110	53.5	126			
Surr: DNOP	5.0		4.892		103	70	130			

Sample ID: **1904255-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **SP-1** Batch ID: **44128** RunNo: **58917**
Prep Date: **4/4/2019** Analysis Date: **4/5/2019** SeqNo: **1982027** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	9.7	48.36	0	104	53.5	126	6.42	21.7	

Qualifiers:

H Holding times for preparation or analysis exceeded
PQL Practical Quanitative Limit
S % Recovery outside of range due to dilution or matrix
ND Not Detected at the Reporting Limit
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified at testcode

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904255**

08-Apr-19

Client: ENSOLUM

Project: Lateral 3A 2

Sample ID: **1904255-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **SP-1**	Batch ID: **44128**	RunNo: **58917**
Prep Date: **4/4/2019**	Analysis Date: **4/5/2019**	SeqNo: **1982027** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.7		4.836		97.7	70	130	0	0	

Sample ID: **LCS-44110**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **44110**	RunNo: **58917**
Prep Date: **4/4/2019**	Analysis Date: **4/6/2019**	SeqNo: **1983117** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.4		5.000		88.3	70	130			

Sample ID: **MB-44110**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **44110**	RunNo: **58917**
Prep Date: **4/4/2019**	Analysis Date: **4/6/2019**	SeqNo: **1983118** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.1		10.00		90.9	70	130			

Qualifiers:

H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified at testcode

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904255**

08-Apr-19

Client: ENSOLUM

Project: Lateral 3A 2

Sample ID: **LCS-44112** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **LCSS** Batch ID: **44112** RunNo: **58955**

Prep Date: **4/4/2019** Analysis Date: **4/6/2019** SeqNo: **1982861** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	90.1	80.1	123			
Surr: BFB	1000		1000		104	73.8	119			

Sample ID: **LCS-44113** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **LCSS** Batch ID: **44113** RunNo: **58955**

Prep Date: **4/4/2019** Analysis Date: **4/7/2019** SeqNo: **1982863** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		101	73.8	119			

Sample ID: **LCS-44114** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **LCSS** Batch ID: **44114** RunNo: **58955**

Prep Date: **4/4/2019** Analysis Date: **4/7/2019** SeqNo: **1982864** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	990		1000		98.9	73.8	119			

Sample ID: **MB-44112** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **PBS** Batch ID: **44112** RunNo: **58955**

Prep Date: **4/4/2019** Analysis Date: **4/6/2019** SeqNo: **1982865** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	940		1000		94.0	73.8	119			

Sample ID: **MB-44113** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **PBS** Batch ID: **44113** RunNo: **58955**

Prep Date: **4/4/2019** Analysis Date: **4/7/2019** SeqNo: **1982866** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	910		1000		90.8	73.8	119			

Sample ID: **MB-44114** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **PBS** Batch ID: **44114** RunNo: **58955**

Prep Date: **4/4/2019** Analysis Date: **4/7/2019** SeqNo: **1982867** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	890		1000		89.0	73.8	119			

Qualifiers:

H Holding times for preparation or analysis exceeded

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix

ND Not Detected at the Reporting Limit

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified at testcode

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904255**

08-Apr-19

Client: ENSOLUM

Project: Lateral 3A 2

Sample ID: **LCS-44112**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **44112**	RunNo: **58955**
Prep Date: **4/4/2019**	Analysis Date: **4/6/2019**	SeqNo: **1982924** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.84	0.025	1.000	0	83.7	80	120			
Toluene	0.90	0.050	1.000	0	90.1	80	120			
Ethylbenzene	0.89	0.050	1.000	0	89.3	80	120			
Xylenes, Total	2.7	0.10	3.000	0	90.5	80	120			
Surr: 4-Bromofluorobenzene	0.94		1.000		93.9	80	120			

Sample ID: **LCS-44113**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **44113**	RunNo: **58955**
Prep Date: **4/4/2019**	Analysis Date: **4/7/2019**	SeqNo: **1982925** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.92		1.000		92.1	80	120			

Sample ID: **LCS-44114**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **44114**	RunNo: **58955**
Prep Date: **4/4/2019**	Analysis Date: **4/7/2019**	SeqNo: **1982926** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.89		1.000		89.3	80	120			

Sample ID: **MB-44112**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **44112**	RunNo: **58955**
Prep Date: **4/4/2019**	Analysis Date: **4/6/2019**	SeqNo: **1982927** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.95		1.000		95.0	80	120			

Sample ID: **MB-44113**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **44113**	RunNo: **58955**
Prep Date: **4/4/2019**	Analysis Date: **4/7/2019**	SeqNo: **1982928** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.93		1.000		93.0	80	120			

Qualifiers:

- H Holding times for preparation or analysis exceeded
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- ND Not Detected at the Reporting Limit
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified at testcode

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904255**

08-Apr-19

Client: ENSOLUM

Project: Lateral 3A 2

Sample ID: **MB-44114** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBS** Batch ID: **44114** RunNo: **58955**

Prep Date: **4/4/2019** Analysis Date: **4/7/2019** SeqNo: **1982929** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.90		1.000		89.9	80	120			

Qualifiers:

H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **ENSOLUM AZTEC** Work Order Number: **1904255** RcptNo: **1**

Received By: **Yazmine Garduno** **4/4/2019 8:14:00 AM**

Completed By: **Erin Melendrez** **4/4/2019 9:30:21 AM**

Reviewed By: LB 4/4/19

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: (<2 or >12 unless noted)

Adjusted?

Checked by: YG 4/4/19

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.3	Good	Yes			
2	3.1	Good	Yes			

Chain-of-Custody Record

Client: Ensolum, LLC

Mailing Address: 606 S Rio Grande Suite A, Aztec, NM 87410

Phone #:

email or Fax#: KSummers@ensolum.com

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☐ Standard ☒ Rush 4/8/19

Project Name: Lateral 3A-2

Project #: 05A122605Z

Project Manager: KSummers

Sampler: BDeechilly

On Ice: ☒ Yes ☐ No

Sample Temperature: 2.3°, 3.1°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1904255	BTEX + ~~MTBE + TMB's~~ (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Chlorides				Air Bubbles (Y or N)
4/3/19	1110	S	SP-1	(1) 250 4oz Jar	cool	-001	X	~~X~~	X									X				
4/3/19	1115	S	SP-2	(1) 4oz Jar	cool	-002	X	~~X~~	X									X				
4/3/19	1120	S	SP-3	(1) 4oz Jar	cool	-003	X	~~X~~	X									X				
4/3/19	1125	S	SP-4	(1) 4oz Jar	cool	-004	X	~~X~~	X									X				

NFS

Date:	Time:	Relinquished by:	Received by:	Date	Time
4/3/19	1414			4/3/19	1414
Date:	Time:	Relinquished by:	Received by:	Date	Time
4/3/19	1810		courier	4/4/19	8:14

Remarks: PM-Tom Long
PayKey- CM22355

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

April 09, 2019

Kyle Summers

ENSOLUM
606 S. Rio Grande Suite A
Aztec, NM 87410
TEL: (903) 821-5603
FAX:

RE: Lateral 3A 2 OrderNo.: 1904250

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 12 sample(s) on 4/4/2019 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: CS-1
Project: Lateral 3A 2
Collection Date: 4/3/2019 10:00:00 AM
Lab ID: 1904250-001
Matrix: SOIL
Received Date: 4/4/2019 8:14:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	4/5/2019 11:42:52 AM	44147
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/6/2019 11:46:17 AM	44111
Surr: BFB	107	70-130		%Rec	1	4/6/2019 11:46:17 AM	44111
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	4/5/2019 9:22:33 AM	44127
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/5/2019 9:22:33 AM	44127
Surr: DNOP	109	70-130		%Rec	1	4/5/2019 9:22:33 AM	44127
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	4/7/2019 2:56:04 AM	44111
Toluene	ND	0.049		mg/Kg	1	4/7/2019 2:56:04 AM	44111
Ethylbenzene	ND	0.049		mg/Kg	1	4/7/2019 2:56:04 AM	44111
Xylenes, Total	ND	0.098		mg/Kg	1	4/7/2019 2:56:04 AM	44111
Surr: 1,2-Dichloroethane-d4	85.6	70-130		%Rec	1	4/7/2019 2:56:04 AM	44111
Surr: 4-Bromofluorobenzene	104	70-130		%Rec	1	4/7/2019 2:56:04 AM	44111
Surr: Dibromofluoromethane	89.2	70-130		%Rec	1	4/7/2019 2:56:04 AM	44111
Surr: Toluene-d8	95.7	70-130		%Rec	1	4/7/2019 2:56:04 AM	44111

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: CS-2
Project: Lateral 3A 2
Collection Date: 4/3/2019 10:05:00 AM
Lab ID: 1904250-002
Matrix: SOIL
Received Date: 4/4/2019 8:14:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	4/5/2019 11:55:17 AM	44147
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/6/2019 12:14:55 PM	44111
Surr: BFB	103	70-130		%Rec	1	4/6/2019 12:14:55 PM	44111
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	62	9.7		mg/Kg	1	4/5/2019 2:41:57 PM	44127
Motor Oil Range Organics (MRO)	50	48		mg/Kg	1	4/5/2019 2:41:57 PM	44127
Surr: DNOP	109	70-130		%Rec	1	4/5/2019 2:41:57 PM	44127
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**	
Benzene	ND	0.025		mg/Kg	1	4/7/2019 3:24:37 AM	44111
Toluene	ND	0.050		mg/Kg	1	4/7/2019 3:24:37 AM	44111
Ethylbenzene	ND	0.050		mg/Kg	1	4/7/2019 3:24:37 AM	44111
Xylenes, Total	ND	0.099		mg/Kg	1	4/7/2019 3:24:37 AM	44111
Surr: 1,2-Dichloroethane-d4	85.7	70-130		%Rec	1	4/7/2019 3:24:37 AM	44111
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	4/7/2019 3:24:37 AM	44111
Surr: Dibromofluoromethane	90.4	70-130		%Rec	1	4/7/2019 3:24:37 AM	44111
Surr: Toluene-d8	95.3	70-130		%Rec	1	4/7/2019 3:24:37 AM	44111

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: CS-3
Project: Lateral 3A 2
Collection Date: 4/3/2019 10:10:00 AM
Lab ID: 1904250-003
Matrix: SOIL
Received Date: 4/4/2019 8:14:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	72	60		mg/Kg	20	4/5/2019 12:57:20 PM	44147
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	210	4.8		mg/Kg	1	4/6/2019 12:43:38 PM	44111
Surr: BFB	108	70-130		%Rec	1	4/6/2019 12:43:38 PM	44111
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	230	10		mg/Kg	1	4/5/2019 10:13:47 AM	44127
Motor Oil Range Organics (MRO)	57	50		mg/Kg	1	4/5/2019 10:13:47 AM	44127
Surr: DNOP	104	70-130		%Rec	1	4/5/2019 10:13:47 AM	44127
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**	
Benzene	0.025	0.024		mg/Kg	1	4/7/2019 3:53:14 AM	44111
Toluene	1.1	0.048		mg/Kg	1	4/7/2019 3:53:14 AM	44111
Ethylbenzene	0.31	0.048		mg/Kg	1	4/7/2019 3:53:14 AM	44111
Xylenes, Total	3.8	0.095		mg/Kg	1	4/7/2019 3:53:14 AM	44111
Surr: 1,2-Dichloroethane-d4	89.0	70-130		%Rec	1	4/7/2019 3:53:14 AM	44111
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	4/7/2019 3:53:14 AM	44111
Surr: Dibromofluoromethane	92.6	70-130		%Rec	1	4/7/2019 3:53:14 AM	44111
Surr: Toluene-d8	92.9	70-130		%Rec	1	4/7/2019 3:53:14 AM	44111

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: CS-4
Project: Lateral 3A 2
Collection Date: 4/3/2019 10:15:00 AM
Lab ID: 1904250-004
Matrix: SOIL
Received Date: 4/4/2019 8:14:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Chloride	230	60		mg/Kg	20	4/5/2019 1:09:44 PM	44147
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst:	**RAA**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	4/7/2019 4:21:49 AM	44111
Surr: BFB	105	70-130		%Rec	1	4/7/2019 4:21:49 AM	44111
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**CLP**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	4/5/2019 10:37:42 AM	44127
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/5/2019 10:37:42 AM	44127
Surr: DNOP	106	70-130		%Rec	1	4/5/2019 10:37:42 AM	44127
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst:	**RAA**
Benzene	ND	0.023		mg/Kg	1	4/7/2019 4:21:49 AM	44111
Toluene	ND	0.046		mg/Kg	1	4/7/2019 4:21:49 AM	44111
Ethylbenzene	ND	0.046		mg/Kg	1	4/7/2019 4:21:49 AM	44111
Xylenes, Total	ND	0.093		mg/Kg	1	4/7/2019 4:21:49 AM	44111
Surr: 1,2-Dichloroethane-d4	86.3	70-130		%Rec	1	4/7/2019 4:21:49 AM	44111
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	4/7/2019 4:21:49 AM	44111
Surr: Dibromofluoromethane	90.2	70-130		%Rec	1	4/7/2019 4:21:49 AM	44111
Surr: Toluene-d8	95.3	70-130		%Rec	1	4/7/2019 4:21:49 AM	44111

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: CS-5
Project: Lateral 3A 2
Collection Date: 4/3/2019 10:20:00 AM
Lab ID: 1904250-005
Matrix: SOIL
Received Date: 4/4/2019 8:14:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	4/5/2019 1:22:09 PM	44147
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/7/2019 7:41:49 AM	44111
Surr: BFB	102	70-130		%Rec	1	4/7/2019 7:41:49 AM	44111
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	4/5/2019 11:01:39 AM	44127
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/5/2019 11:01:39 AM	44127
Surr: DNOP	102	70-130		%Rec	1	4/5/2019 11:01:39 AM	44127
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**	
Benzene	ND	0.023		mg/Kg	1	4/7/2019 7:41:49 AM	44111
Toluene	ND	0.047		mg/Kg	1	4/7/2019 7:41:49 AM	44111
Ethylbenzene	ND	0.047		mg/Kg	1	4/7/2019 7:41:49 AM	44111
Xylenes, Total	ND	0.093		mg/Kg	1	4/7/2019 7:41:49 AM	44111
Surr: 1,2-Dichloroethane-d4	85.6	70-130		%Rec	1	4/7/2019 7:41:49 AM	44111
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	4/7/2019 7:41:49 AM	44111
Surr: Dibromofluoromethane	90.1	70-130		%Rec	1	4/7/2019 7:41:49 AM	44111
Surr: Toluene-d8	95.8	70-130		%Rec	1	4/7/2019 7:41:49 AM	44111

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: CS-6
Project: Lateral 3A 2
Collection Date: 4/3/2019 10:25:00 AM
Lab ID: 1904250-006
Matrix: SOIL
Received Date: 4/4/2019 8:14:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	4/5/2019 1:34:33 PM	44147
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/7/2019 8:10:23 AM	44111
Surr: BFB	103	70-130		%Rec	1	4/7/2019 8:10:23 AM	44111
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	41	9.1		mg/Kg	1	4/5/2019 11:25:38 AM	44127
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	4/5/2019 11:25:38 AM	44127
Surr: DNOP	122	70-130		%Rec	1	4/5/2019 11:25:38 AM	44127
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	4/7/2019 8:10:23 AM	44111
Toluene	ND	0.048		mg/Kg	1	4/7/2019 8:10:23 AM	44111
Ethylbenzene	ND	0.048		mg/Kg	1	4/7/2019 8:10:23 AM	44111
Xylenes, Total	0.10	0.096		mg/Kg	1	4/7/2019 8:10:23 AM	44111
Surr: 1,2-Dichloroethane-d4	87.2	70-130		%Rec	1	4/7/2019 8:10:23 AM	44111
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	4/7/2019 8:10:23 AM	44111
Surr: Dibromofluoromethane	89.1	70-130		%Rec	1	4/7/2019 8:10:23 AM	44111
Surr: Toluene-d8	95.4	70-130		%Rec	1	4/7/2019 8:10:23 AM	44111

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: CS-7
Project: Lateral 3A 2
Collection Date: 4/3/2019 10:30:00 AM
Lab ID: 1904250-007
Matrix: SOIL
Received Date: 4/4/2019 8:14:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Chloride	400	60		mg/Kg	20	4/5/2019 1:46:58 PM	44147
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst:	**RAA**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/7/2019 8:38:59 AM	44111
Surr: BFB	102	70-130		%Rec	1	4/7/2019 8:38:59 AM	44111
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**CLP**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	4/5/2019 11:49:36 AM	44127
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/5/2019 11:49:36 AM	44127
Surr: DNOP	143	70-130	S	%Rec	1	4/5/2019 11:49:36 AM	44127
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst:	**RAA**
Benzene	ND	0.023		mg/Kg	1	4/7/2019 8:38:59 AM	44111
Toluene	ND	0.047		mg/Kg	1	4/7/2019 8:38:59 AM	44111
Ethylbenzene	ND	0.047		mg/Kg	1	4/7/2019 8:38:59 AM	44111
Xylenes, Total	ND	0.093		mg/Kg	1	4/7/2019 8:38:59 AM	44111
Surr: 1,2-Dichloroethane-d4	88.9	70-130		%Rec	1	4/7/2019 8:38:59 AM	44111
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	4/7/2019 8:38:59 AM	44111
Surr: Dibromofluoromethane	93.0	70-130		%Rec	1	4/7/2019 8:38:59 AM	44111
Surr: Toluene-d8	94.3	70-130		%Rec	1	4/7/2019 8:38:59 AM	44111

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: CS-8
Project: Lateral 3A 2
Collection Date: 4/3/2019 10:35:00 AM
Lab ID: 1904250-008
Matrix: SOIL
Received Date: 4/4/2019 8:14:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	110	60		mg/Kg	20	4/5/2019 1:59:22 PM	44147
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/7/2019 9:07:35 AM	44111
Surr: BFB	103	70-130		%Rec	1	4/7/2019 9:07:35 AM	44111
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	4/5/2019 12:13:39 PM	44127
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/5/2019 12:13:39 PM	44127
Surr: DNOP	103	70-130		%Rec	1	4/5/2019 12:13:39 PM	44127
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**	
Benzene	ND	0.023		mg/Kg	1	4/7/2019 9:07:35 AM	44111
Toluene	ND	0.047		mg/Kg	1	4/7/2019 9:07:35 AM	44111
Ethylbenzene	ND	0.047		mg/Kg	1	4/7/2019 9:07:35 AM	44111
Xylenes, Total	ND	0.093		mg/Kg	1	4/7/2019 9:07:35 AM	44111
Surr: 1,2-Dichloroethane-d4	88.1	70-130		%Rec	1	4/7/2019 9:07:35 AM	44111
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	4/7/2019 9:07:35 AM	44111
Surr: Dibromofluoromethane	90.8	70-130		%Rec	1	4/7/2019 9:07:35 AM	44111
Surr: Toluene-d8	95.6	70-130		%Rec	1	4/7/2019 9:07:35 AM	44111

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: CS-9
Project: Lateral 3A 2
Collection Date: 4/3/2019 10:40:00 AM
Lab ID: 1904250-009
Matrix: SOIL
Received Date: 4/4/2019 8:14:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	4/5/2019 2:11:46 PM	44147
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/7/2019 9:36:15 AM	44111
Surr: BFB	102	70-130		%Rec	1	4/7/2019 9:36:15 AM	44111
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	9.6	9.2		mg/Kg	1	4/5/2019 12:37:48 PM	44127
Motor Oil Range Organics (MRO)	150	46		mg/Kg	1	4/5/2019 12:37:48 PM	44127
Surr: DNOP	128	70-130		%Rec	1	4/5/2019 12:37:48 PM	44127
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	4/7/2019 9:36:15 AM	44111
Toluene	ND	0.048		mg/Kg	1	4/7/2019 9:36:15 AM	44111
Ethylbenzene	ND	0.048		mg/Kg	1	4/7/2019 9:36:15 AM	44111
Xylenes, Total	ND	0.095		mg/Kg	1	4/7/2019 9:36:15 AM	44111
Surr: 1,2-Dichloroethane-d4	85.5	70-130		%Rec	1	4/7/2019 9:36:15 AM	44111
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	4/7/2019 9:36:15 AM	44111
Surr: Dibromofluoromethane	89.1	70-130		%Rec	1	4/7/2019 9:36:15 AM	44111
Surr: Toluene-d8	95.5	70-130		%Rec	1	4/7/2019 9:36:15 AM	44111

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: CS-10
Project: Lateral 3A 2
Collection Date: 4/3/2019 10:45:00 AM
Lab ID: 1904250-010
Matrix: SOIL
Received Date: 4/4/2019 8:14:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	4/5/2019 2:24:11 PM	44147
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/7/2019 10:04:53 AM	44111
Surr: BFB	102	70-130		%Rec	1	4/7/2019 10:04:53 AM	44111
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	4/5/2019 3:30:08 PM	44127
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/5/2019 3:30:08 PM	44127
Surr: DNOP	106	70-130		%Rec	1	4/5/2019 3:30:08 PM	44127
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	4/7/2019 10:04:53 AM	44111
Toluene	ND	0.048		mg/Kg	1	4/7/2019 10:04:53 AM	44111
Ethylbenzene	ND	0.048		mg/Kg	1	4/7/2019 10:04:53 AM	44111
Xylenes, Total	ND	0.095		mg/Kg	1	4/7/2019 10:04:53 AM	44111
Surr: 1,2-Dichloroethane-d4	85.4	70-130		%Rec	1	4/7/2019 10:04:53 AM	44111
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	4/7/2019 10:04:53 AM	44111
Surr: Dibromofluoromethane	89.1	70-130		%Rec	1	4/7/2019 10:04:53 AM	44111
Surr: Toluene-d8	95.1	70-130		%Rec	1	4/7/2019 10:04:53 AM	44111

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: CS-11
Project: Lateral 3A 2
Collection Date: 4/3/2019 10:50:00 AM
Lab ID: 1904250-011
Matrix: SOIL
Received Date: 4/4/2019 8:14:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	4/5/2019 3:01:25 PM	44147
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/7/2019 10:33:33 AM	44111
Surr: BFB	103	70-130		%Rec	1	4/7/2019 10:33:33 AM	44111
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	4/5/2019 1:52:01 PM	44127
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/5/2019 1:52:01 PM	44127
Surr: DNOP	121	70-130		%Rec	1	4/5/2019 1:52:01 PM	44127
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	4/7/2019 10:33:33 AM	44111
Toluene	ND	0.048		mg/Kg	1	4/7/2019 10:33:33 AM	44111
Ethylbenzene	ND	0.048		mg/Kg	1	4/7/2019 10:33:33 AM	44111
Xylenes, Total	ND	0.097		mg/Kg	1	4/7/2019 10:33:33 AM	44111
Surr: 1,2-Dichloroethane-d4	85.5	70-130		%Rec	1	4/7/2019 10:33:33 AM	44111
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	4/7/2019 10:33:33 AM	44111
Surr: Dibromofluoromethane	89.3	70-130		%Rec	1	4/7/2019 10:33:33 AM	44111
Surr: Toluene-d8	95.5	70-130		%Rec	1	4/7/2019 10:33:33 AM	44111

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: CS-12
Project: Lateral 3A 2
Collection Date: 4/3/2019 11:00:00 AM
Lab ID: 1904250-012
Matrix: SOIL
Received Date: 4/4/2019 8:14:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Chloride	ND	60		mg/Kg	20	4/5/2019 3:13:50 PM	44147
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst:	**RAA**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/7/2019 11:02:14 AM	44111
Surr: BFB	102	70-130		%Rec	1	4/7/2019 11:02:14 AM	44111
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**CLP**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	4/5/2019 2:17:51 PM	44127
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/5/2019 2:17:51 PM	44127
Surr: DNOP	137	70-130	S	%Rec	1	4/5/2019 2:17:51 PM	44127
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst:	**RAA**
Benzene	ND	0.024		mg/Kg	1	4/7/2019 11:02:14 AM	44111
Toluene	ND	0.048		mg/Kg	1	4/7/2019 11:02:14 AM	44111
Ethylbenzene	ND	0.048		mg/Kg	1	4/7/2019 11:02:14 AM	44111
Xylenes, Total	ND	0.096		mg/Kg	1	4/7/2019 11:02:14 AM	44111
Surr: 1,2-Dichloroethane-d4	86.4	70-130		%Rec	1	4/7/2019 11:02:14 AM	44111
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	4/7/2019 11:02:14 AM	44111
Surr: Dibromofluoromethane	89.8	70-130		%Rec	1	4/7/2019 11:02:14 AM	44111
Surr: Toluene-d8	94.9	70-130		%Rec	1	4/7/2019 11:02:14 AM	44111

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904250**

09-Apr-19

Client: ENSOLUM

Project: Lateral 3A 2

Sample ID: **MB-44147**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **44147**	RunNo: **58920**
Prep Date: **4/5/2019**	Analysis Date: **4/5/2019**	SeqNo: **1982048** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-44147**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **44147**	RunNo: **58920**
Prep Date: **4/5/2019**	Analysis Date: **4/5/2019**	SeqNo: **1982049** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.7	90	110			

Qualifiers:

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904250**

09-Apr-19

Client: ENSOLUM

Project: Lateral 3A 2

Sample ID: **MB-44127**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **44127**	RunNo: **58929**
Prep Date: **4/4/2019**	Analysis Date: **4/5/2019**	SeqNo: **1981904** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		101	70	130			

Sample ID: **LCS-44127**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **44127**	RunNo: **58929**
Prep Date: **4/4/2019**	Analysis Date: **4/5/2019**	SeqNo: **1981905** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	93.6	63.9	124			
Surr: DNOP	4.8		5.000		95.3	70	130			

Sample ID: **1904250-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **CS-1**	Batch ID: **44127**	RunNo: **58929**
Prep Date: **4/4/2019**	Analysis Date: **4/5/2019**	SeqNo: **1983929** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	57	9.4	46.77	2.614	117	53.5	126			
Surr: DNOP	5.9		4.677		126	70	130			

Sample ID: **1904250-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **CS-1**	Batch ID: **44127**	RunNo: **58929**
Prep Date: **4/4/2019**	Analysis Date: **4/5/2019**	SeqNo: **1983930** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	56	9.8	48.83	2.614	109	53.5	126	2.95	21.7	
Surr: DNOP	5.6		4.883		114	70	130	0	0	

Sample ID: **MB-44133**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **44133**	RunNo: **58929**
Prep Date: **4/4/2019**	Analysis Date: **4/5/2019**	SeqNo: **1983932** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	13		10.00		130	70	130			S

Sample ID: **LCS-44133**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **44133**	RunNo: **58929**
Prep Date: **4/4/2019**	Analysis Date: **4/5/2019**	SeqNo: **1983933** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix
- W Sample container temperature is out of limit as specified at testcode

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904250**

09-Apr-19

Client: ENSOLUM

Project: Lateral 3A 2

Sample ID: **LCS-44133**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **44133**	RunNo: **58929**
Prep Date: **4/4/2019**	Analysis Date: **4/5/2019**	SeqNo: **1983933** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.7		5.000		94.6	70	130			

Qualifiers:

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904250**

09-Apr-19

Client: ENSOLUM

Project: Lateral 3A 2

Sample ID: **lcs-44098**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **LCSS**	Batch ID: **44098**	RunNo: **58934**
Prep Date: **4/4/2019**	Analysis Date: **4/5/2019**	SeqNo: **1982755** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.44		0.5000		88.2	70	130			
Surr: 4-Bromofluorobenzene	0.51		0.5000		102	70	130			
Surr: Dibromofluoromethane	0.44		0.5000		88.1	70	130			
Surr: Toluene-d8	0.47		0.5000		95.0	70	130			

Sample ID: **mb-44098**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **PBS**	Batch ID: **44098**	RunNo: **58934**
Prep Date: **4/4/2019**	Analysis Date: **4/5/2019**	SeqNo: **1982756** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.5	70	130			
Surr: 4-Bromofluorobenzene	0.52		0.5000		103	70	130			
Surr: Dibromofluoromethane	0.45		0.5000		89.8	70	130			
Surr: Toluene-d8	0.46		0.5000		93.0	70	130			

Sample ID: **lcs-44111**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **LCSS**	Batch ID: **44111**	RunNo: **58962**
Prep Date: **4/4/2019**	Analysis Date: **4/6/2019**	SeqNo: **1983547** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.73	0.025	1.000	0	73.1	70	130			
Toluene	0.91	0.050	1.000	0	91.4	70	130			
Ethylbenzene	0.92	0.050	1.000	0	91.8	70	130			
Xylenes, Total	2.8	0.10	3.000	0	94.1	70	130			
Surr: 1,2-Dichloroethane-d4	0.43		0.5000		86.5	70	130			
Surr: 4-Bromofluorobenzene	0.52		0.5000		103	70	130			
Surr: Dibromofluoromethane	0.44		0.5000		89.0	70	130			
Surr: Toluene-d8	0.47		0.5000		94.0	70	130			

Sample ID: **mb-44111**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **PBS**	Batch ID: **44111**	RunNo: **58962**
Prep Date: **4/4/2019**	Analysis Date: **4/6/2019**	SeqNo: **1983548** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 1,2-Dichloroethane-d4	0.43		0.5000		85.3	70	130			
Surr: 4-Bromofluorobenzene	0.52		0.5000		104	70	130			

Qualifiers:

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904250**

09-Apr-19

Client: ENSOLUM

Project: Lateral 3A 2

Sample ID: **mb-44111** SampType: **MBLK** TestCode: **EPA Method 8260B: Volatiles Short List**

Client ID: **PBS** Batch ID: **44111** RunNo: **58962**

Prep Date: **4/4/2019** Analysis Date: **4/6/2019** SeqNo: **1983548** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Dibromofluoromethane	0.43		0.5000		86.9	70	130			
Surr: Toluene-d8	0.47		0.5000		93.3	70	130			

Qualifiers:

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904250**

09-Apr-19

Client: ENSOLUM

Project: Lateral 3A 2

Sample ID: **lcs-44098** SampType: **LCS** TestCode: **EPA Method 8015D Mod: Gasoline Range**

Client ID: **LCSS** Batch ID: **44098** RunNo: **58934**

Prep Date: **4/4/2019** Analysis Date: **4/5/2019** SeqNo: **1982789** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	500		500.0		100	70	130			

Sample ID: **lcs-44111** SampType: **LCS** TestCode: **EPA Method 8015D Mod: Gasoline Range**

Client ID: **LCSS** Batch ID: **44111** RunNo: **58934**

Prep Date: **4/4/2019** Analysis Date: **4/6/2019** SeqNo: **1982790** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	82.8	70	130			
Surr: BFB	510		500.0		103	70	130			

Sample ID: **mb-44111** SampType: **MBLK** TestCode: **EPA Method 8015D Mod: Gasoline Range**

Client ID: **PBS** Batch ID: **44111** RunNo: **58934**

Prep Date: **4/4/2019** Analysis Date: **4/6/2019** SeqNo: **1982791** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	520		500.0		105	70	130			

Sample ID: **mb-44098** SampType: **MBLK** TestCode: **EPA Method 8015D Mod: Gasoline Range**

Client ID: **PBS** Batch ID: **44098** RunNo: **58934**

Prep Date: **4/4/2019** Analysis Date: **4/5/2019** SeqNo: **1982792** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	500		500.0		99.8	70	130			

Qualifiers:

- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix
- W Sample container temperature is out of limit as specified at testcode

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **ENSOLUM AZTEC** Work Order Number: **1904250** RcptNo: **1**

Received By: **Yazmine Garduno** **4/4/2019 8:14:00 AM**

Completed By: **Erin Melendrez** **4/4/2019 9:13:05 AM**

Reviewed By: LB 4/4/19

LB: YG 4/4/19

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: YG 4/4/19

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.3	Good	Yes			
2	3.1	Good	Yes			

Chain-of-Custody Record

Client: Ensolum, LLC

Mailing Address: 606 S Rio Grande, Suite A
Aztec, NM 87410

Phone #:

email or Fax#: KSummers@ensolum.com

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☐ Standard ☒ Rush 3-DAY 4/8/19

Project Name: Lateral 3A-2

Project #: 05A1226052

Project Manager: KSummers

Sampler: JDeechilly
On Ice: ☒ Yes ☐ No
Sample Temperature: 2.3, 3.1

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1904250	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Chlorides				Air Bubbles (Y or N)
4/3/19	1000	S	CS-1	(1) 4oz Jar	cool	-001	X		X									X				
4/3/19	1005	S	CS-2	(1) 4oz Jar	cool	-002	X		X									X				
4/3/19	1010	S	CS-3	(1) 4oz Jar	cool	-003	X		X									X				
4/3/19	1015	S	CS-4	(1) 4oz Jar	cool	-004	X		X									X				
4/3/19	1020	S	CS-5	(1) 4oz Jar	cool	-005	X		X									X				
4/3/19	1025	S	CS-6	(1) 4oz Jar	cool	-006	X		X									X				
4/3/19	1030	S	CS-7	(1) 4oz Jar	cool	-007	X		X									X				
4/3/19	1035	S	CS-8	(1) 4oz Jar	cool	-008	X		X									X				
4/3/19	1040	S	CS-9	(1) 4oz Jar	cool	-009	X		X									X				
4/3/19	1045	S	CS-10	(1) 4oz Jar	cool	-010	X		X									X				
4/3/19	1050	S	CS-11	(1) 4oz Jar	cool	-011	X		X									X				
4/3/19	1100	S	CS-12	(1) 4oz Jar	cool	-012	X		X									X				

Date:	Time:	Relinquished by:	Received by:	Date	Time
4/3/19	1414			4/3/19	1417
Date:	Time:	Relinquished by:	Received by:	Date	Time
4/3/19	1814			4/4/19	8:14

Remarks: PM-Tom Long
Pay Key - CNM 2355

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

April 26, 2019

Kyle Summers
ENSOLUM
606 S. Rio Grande Suite A
Aztec, NM 87410
TEL: (903) 821-5603
FAX:

RE: Lateral 3A-2 OrderNo.: 1904B43

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 8 sample(s) on 4/24/2019 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: CS-13
Project: Lateral 3A-2
Collection Date: 4/23/2019 1:05:00 PM
Lab ID: 1904B43-001 **Matrix:** SOIL **Received Date:** 4/24/2019 8:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	60		mg/Kg	20	4/24/2019 11:03:24 AM	44510
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	63	9.5		mg/Kg	1	4/24/2019 10:41:13 AM	44501
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/24/2019 10:41:13 AM	44501
Surr: DNOP	103	70-130		%Rec	1	4/24/2019 10:41:13 AM	44501
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	18		mg/Kg	5	4/24/2019 8:55:57 AM	G59391
Surr: BFB	110	73.8-119		%Rec	5	4/24/2019 8:55:57 AM	G59391
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.091		mg/Kg	5	4/24/2019 8:55:57 AM	B59391
Toluene	ND	0.18		mg/Kg	5	4/24/2019 8:55:57 AM	B59391
Ethylbenzene	ND	0.18		mg/Kg	5	4/24/2019 8:55:57 AM	B59391
Xylenes, Total	ND	0.36		mg/Kg	5	4/24/2019 8:55:57 AM	B59391
Surr: 4-Bromofluorobenzene	92.4	80-120		%Rec	5	4/24/2019 8:55:57 AM	B59391

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: CS-14
Project: Lateral 3A-2
Collection Date: 4/23/2019 1:10:00 PM
Lab ID: 1904B43-002
Matrix: SOIL
Received Date: 4/24/2019 8:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	60		mg/Kg	20	4/24/2019 11:15:49 AM	44510
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	4/24/2019 11:05:14 AM	44501
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/24/2019 11:05:14 AM	44501
Surr: DNOP	105	70-130		%Rec	1	4/24/2019 11:05:14 AM	44501
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	19		mg/Kg	5	4/24/2019 9:19:21 AM	G59391
Surr: BFB	89.5	73.8-119		%Rec	5	4/24/2019 9:19:21 AM	G59391
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.095		mg/Kg	5	4/24/2019 9:19:21 AM	B59391
Toluene	ND	0.19		mg/Kg	5	4/24/2019 9:19:21 AM	B59391
Ethylbenzene	ND	0.19		mg/Kg	5	4/24/2019 9:19:21 AM	B59391
Xylenes, Total	ND	0.38		mg/Kg	5	4/24/2019 9:19:21 AM	B59391
Surr: 4-Bromofluorobenzene	88.2	80-120		%Rec	5	4/24/2019 9:19:21 AM	B59391

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: CS-15
Project: Lateral 3A-2
Collection Date: 4/23/2019 1:15:00 PM
Lab ID: 1904B43-003
Matrix: SOIL
Received Date: 4/24/2019 8:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	60		mg/Kg	20	4/24/2019 11:28:14 AM	44510
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	4/24/2019 10:18:45 AM	44501
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	4/24/2019 10:18:45 AM	44501
Surr: DNOP	98.3	70-130		%Rec	1	4/24/2019 10:18:45 AM	44501
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	16		mg/Kg	5	4/24/2019 9:42:55 AM	G59391
Surr: BFB	86.8	73.8-119		%Rec	5	4/24/2019 9:42:55 AM	G59391
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.079		mg/Kg	5	4/24/2019 9:42:55 AM	B59391
Toluene	ND	0.16		mg/Kg	5	4/24/2019 9:42:55 AM	B59391
Ethylbenzene	ND	0.16		mg/Kg	5	4/24/2019 9:42:55 AM	B59391
Xylenes, Total	ND	0.32		mg/Kg	5	4/24/2019 9:42:55 AM	B59391
Surr: 4-Bromofluorobenzene	85.9	80-120		%Rec	5	4/24/2019 9:42:55 AM	B59391

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: CS-16
Project: Lateral 3A-2
Collection Date: 4/23/2019 1:20:00 PM
Lab ID: 1904B43-004 **Matrix:** SOIL **Received Date:** 4/24/2019 8:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	60		mg/Kg	20	4/24/2019 11:40:38 AM	44510
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	4/24/2019 10:42:59 AM	44501
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/24/2019 10:42:59 AM	44501
Surr: DNOP	93.6	70-130		%Rec	1	4/24/2019 10:42:59 AM	44501
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.7		mg/Kg	1	4/24/2019 10:06:35 AM	G59391
Surr: BFB	88.1	73.8-119		%Rec	1	4/24/2019 10:06:35 AM	G59391
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.018		mg/Kg	1	4/24/2019 10:06:35 AM	B59391
Toluene	ND	0.037		mg/Kg	1	4/24/2019 10:06:35 AM	B59391
Ethylbenzene	ND	0.037		mg/Kg	1	4/24/2019 10:06:35 AM	B59391
Xylenes, Total	ND	0.073		mg/Kg	1	4/24/2019 10:06:35 AM	B59391
Surr: 4-Bromofluorobenzene	86.8	80-120		%Rec	1	4/24/2019 10:06:35 AM	B59391

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: CS-17
Project: Lateral 3A-2
Collection Date: 4/23/2019 1:25:00 PM
Lab ID: 1904B43-005 **Matrix:** SOIL **Received Date:** 4/24/2019 8:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	60		mg/Kg	20	4/24/2019 11:53:03 AM	44510
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	4/24/2019 11:07:15 AM	44501
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/24/2019 11:07:15 AM	44501
Surr: DNOP	97.8	70-130		%Rec	1	4/24/2019 11:07:15 AM	44501
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	4/24/2019 10:30:10 AM	G59391
Surr: BFB	94.3	73.8-119		%Rec	1	4/24/2019 10:30:10 AM	G59391
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.017		mg/Kg	1	4/24/2019 10:30:10 AM	B59391
Toluene	ND	0.035		mg/Kg	1	4/24/2019 10:30:10 AM	B59391
Ethylbenzene	ND	0.035		mg/Kg	1	4/24/2019 10:30:10 AM	B59391
Xylenes, Total	ND	0.070		mg/Kg	1	4/24/2019 10:30:10 AM	B59391
Surr: 4-Bromofluorobenzene	94.2	80-120		%Rec	1	4/24/2019 10:30:10 AM	B59391

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: CS-18
Project: Lateral 3A-2
Collection Date: 4/23/2019 1:30:00 PM
Lab ID: 1904B43-006
Matrix: SOIL
Received Date: 4/24/2019 8:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	59		mg/Kg	20	4/24/2019 12:05:28 PM	44510
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	4/24/2019 11:31:31 AM	44501
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/24/2019 11:31:31 AM	44501
Surr: DNOP	100	70-130		%Rec	1	4/24/2019 11:31:31 AM	44501
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	4/24/2019 10:53:37 AM	G59391
Surr: BFB	89.7	73.8-119		%Rec	1	4/24/2019 10:53:37 AM	G59391
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.018		mg/Kg	1	4/24/2019 10:53:37 AM	B59391
Toluene	ND	0.035		mg/Kg	1	4/24/2019 10:53:37 AM	B59391
Ethylbenzene	ND	0.035		mg/Kg	1	4/24/2019 10:53:37 AM	B59391
Xylenes, Total	ND	0.071		mg/Kg	1	4/24/2019 10:53:37 AM	B59391
Surr: 4-Bromofluorobenzene	88.5	80-120		%Rec	1	4/24/2019 10:53:37 AM	B59391

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: CS-19
Project: Lateral 3A-2
Collection Date: 4/23/2019 1:35:00 PM
Lab ID: 1904B43-007
Matrix: SOIL
Received Date: 4/24/2019 8:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	59		mg/Kg	20	4/24/2019 12:17:52 PM	44510
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	4/24/2019 11:55:56 AM	44501
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/24/2019 11:55:56 AM	44501
Surr: DNOP	101	70-130		%Rec	1	4/24/2019 11:55:56 AM	44501
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	4/24/2019 11:17:10 AM	G59391
Surr: BFB	86.8	73.8-119		%Rec	1	4/24/2019 11:17:10 AM	G59391
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.019		mg/Kg	1	4/24/2019 11:17:10 AM	B59391
Toluene	ND	0.038		mg/Kg	1	4/24/2019 11:17:10 AM	B59391
Ethylbenzene	ND	0.038		mg/Kg	1	4/24/2019 11:17:10 AM	B59391
Xylenes, Total	ND	0.075		mg/Kg	1	4/24/2019 11:17:10 AM	B59391
Surr: 4-Bromofluorobenzene	86.6	80-120		%Rec	1	4/24/2019 11:17:10 AM	B59391

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: CS-20
Project: Lateral 3A-2
Collection Date: 4/23/2019 1:40:00 PM
Lab ID: 1904B43-008
Matrix: SOIL
Received Date: 4/24/2019 8:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	60		mg/Kg	20	4/24/2019 12:30:17 PM	44510
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/24/2019 11:29:19 AM	44501
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/24/2019 11:29:19 AM	44501
Surr: DNOP	107	70-130		%Rec	1	4/24/2019 11:29:19 AM	44501
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	4/24/2019 11:40:54 AM	G59391
Surr: BFB	89.0	73.8-119		%Rec	1	4/24/2019 11:40:54 AM	G59391
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.018		mg/Kg	1	4/24/2019 11:40:54 AM	B59391
Toluene	ND	0.035		mg/Kg	1	4/24/2019 11:40:54 AM	B59391
Ethylbenzene	ND	0.035		mg/Kg	1	4/24/2019 11:40:54 AM	B59391
Xylenes, Total	ND	0.070		mg/Kg	1	4/24/2019 11:40:54 AM	B59391
Surr: 4-Bromofluorobenzene	89.1	80-120		%Rec	1	4/24/2019 11:40:54 AM	B59391

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1904B43**
26-Apr-19

Client: ENSOLUM
Project: Lateral 3A-2

Sample ID: **MB-44510**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **44510**	RunNo: **59384**
Prep Date: **4/24/2019**	Analysis Date: **4/24/2019**	SeqNo: **2001543** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-44510**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **44510**	RunNo: **59384**
Prep Date: **4/24/2019**	Analysis Date: **4/24/2019**	SeqNo: **2001544** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.0	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904B43**

26-Apr-19

Client: ENSOLUM

Project: Lateral 3A-2

Sample ID: **MB-44501**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **44501**	RunNo: **59378**
Prep Date: **4/24/2019**	Analysis Date: **4/24/2019**	SeqNo: **2000142** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.9		10.00		99.1	70	130			

Sample ID: **LCS-44501**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **44501**	RunNo: **59378**
Prep Date: **4/24/2019**	Analysis Date: **4/24/2019**	SeqNo: **2000143** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	91.3	63.9	124			
Surr: DNOP	4.4		5.000		87.5	70	130			

Sample ID: **1904B43-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **CS-13**	Batch ID: **44501**	RunNo: **59379**
Prep Date: **4/24/2019**	Analysis Date: **4/24/2019**	SeqNo: **2000419** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	82	9.2	45.83	62.69	42.1	53.5	126			S
Surr: DNOP	4.1		4.583		88.6	70	130			

Sample ID: **1904B43-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **CS-13**	Batch ID: **44501**	RunNo: **59379**
Prep Date: **4/24/2019**	Analysis Date: **4/24/2019**	SeqNo: **2000855** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	79	9.5	47.53	62.69	33.9	53.5	126	3.96	21.7	S
Surr: DNOP	4.5		4.753		94.5	70	130	0	0	

Sample ID: **MB-44521**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **44521**	RunNo: **59378**
Prep Date: **4/24/2019**	Analysis Date: **4/25/2019**	SeqNo: **2001614** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.5		10.00		95.4	70	130			

Sample ID: **LCS-44521**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **44521**	RunNo: **59378**
Prep Date: **4/24/2019**	Analysis Date: **4/25/2019**	SeqNo: **2001615** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904B43**

26-Apr-19

Client: ENSOLUM

Project: Lateral 3A-2

Sample ID: **LCS-44521**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **44521**	RunNo: **59378**
Prep Date: **4/24/2019**	Analysis Date: **4/25/2019**	SeqNo: **2001615** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	3.8		5.000		76.9	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904B43**

26-Apr-19

Client: ENSOLUM

Project: Lateral 3A-2

Sample ID: **RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **G59391**	RunNo: **59391**
Prep Date:	Analysis Date: **4/24/2019**	SeqNo: **2000940** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	900		1000		90.0	73.8	119			

Sample ID: **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **G59391**	RunNo: **59391**
Prep Date:	Analysis Date: **4/24/2019**	SeqNo: **2000941** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.5	80.1	123			
Surr: BFB	1000		1000		100	73.8	119			

Sample ID: **1904B43-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **CS-13**	Batch ID: **G59391**	RunNo: **59391**
Prep Date:	Analysis Date: **4/24/2019**	SeqNo: **2000942** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	87	18	91.04	0	95.2	69.1	142			
Surr: BFB	4500		3642		122	73.8	119			S

Sample ID: **1904B43-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **CS-13**	Batch ID: **G59391**	RunNo: **59391**
Prep Date:	Analysis Date: **4/24/2019**	SeqNo: **2000943** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	120	18	91.04	0	136	69.1	142	35.5	20	R
Surr: BFB	4600		3642		127	73.8	119	0	0	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904B43**

26-Apr-19

Client: ENSOLUM

Project: Lateral 3A-2

Sample ID: **RB**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **B59391**	RunNo: **59391**
Prep Date:	Analysis Date: **4/24/2019**	SeqNo: **2000972** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.89		1.000		88.6	80	120			

Sample ID: **100NG BTEX LCS**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **B59391**	RunNo: **59391**
Prep Date:	Analysis Date: **4/24/2019**	SeqNo: **2000973** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.025	1.000	0	88.1	80	120			
Toluene	0.92	0.050	1.000	0	91.9	80	120			
Ethylbenzene	0.91	0.050	1.000	0	91.3	80	120			
Xylenes, Total	2.8	0.10	3.000	0	92.2	80	120			
Surr: 4-Bromofluorobenzene	0.88		1.000		87.5	80	120			

Sample ID: **1904B43-002AMS**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **CS-14**	Batch ID: **B59391**	RunNo: **59391**
Prep Date:	Analysis Date: **4/24/2019**	SeqNo: **2000974** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	3.1	0.095	3.794	0	81.8	63.9	127			
Toluene	3.2	0.19	3.794	0.03945	84.0	69.9	131			
Ethylbenzene	3.1	0.19	3.794	0	82.6	71	132			
Xylenes, Total	9.5	0.38	11.38	0	83.6	71.8	131			
Surr: 4-Bromofluorobenzene	3.5		3.794		91.7	80	120			

Sample ID: **1904B43-002AMSD**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **CS-14**	Batch ID: **B59391**	RunNo: **59391**
Prep Date:	Analysis Date: **4/24/2019**	SeqNo: **2000975** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	4.3	0.095	3.794	0	114	63.9	127	32.6	20	R
Toluene	4.5	0.19	3.794	0.03945	118	69.9	131	33.2	20	R
Ethylbenzene	4.5	0.19	3.794	0	117	71	132	34.9	20	R
Xylenes, Total	14	0.38	11.38	0	119	71.8	131	35.3	20	R
Surr: 4-Bromofluorobenzene	3.3		3.794		88.1	80	120	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **ENSOLUM AZTEC** Work Order Number: **1904B43** RcptNo: **1**

Received By: **Erin Melendrez** **4/24/2019 8:20:00 AM**

Completed By: **Anne Thorne** **4/24/2019 8:30:20 AM**

Reviewed By: ENM 4/24/19

Labeled by: 04/24/19

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

CUSTODY SEAL INTACT ON SOIL JARS/at 4/24/19

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.1	Good	Yes			

Chain-of-Custody Record

Client: Ensolum, LLC

Mailing Address: 6060 S. Rio Grande Suite A
Aztec, NM 87410

Phone #:

email or Fax#: KSummers@ensolum.com

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other
☐ EDD (Type)

Turn-Around Time: 4/24/19
☐ Standard ☒ Rush SAME DAY

Project Name: Lateral 3A-2

Project #: 05A1226052

Project Manager: KSummers

Sampler: RDeechilly
On Ice: ☒ Yes ☐ No
# of Coolers: 1
Cooler Temp (including CF): 2.1°c

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and # (4 04/24/19)	Preservative Type	HEAL No. 1904343	BTEX / ~~MTBE~~ / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Chlorides
4/23/19	1305	S	CS-13	MeOH Kit 1 4oz Jar	cool	001	X	X									X
4/23/19	1310	S	CS-14	1 4oz Jar	cool	002	X	X									X
4/23/19	1315	S	CS-15	1 4oz Jar	cool	003	X	X									X
4/23/19	1320	S	CS-16	1 4oz Jar	cool	004	X	X									X
4/23/19	1325	S	CS-17	1 4oz Jar	cool	005	X	X									X
4/23/19	1330	S	CS-18	1 4oz Jar	cool	006	X	X									X
4/23/19	1335	S	CS-19	1 4oz Jar	cool	007	X	X									X
4/23/19	1340	S	CS-20	1 4oz Jar	cool	008	X	X									X

NAS

Date	Time	Relinquished by	Received by	Via	Date	Time
4/23/19	1432				4/23/19	1432
4/23/19	1807			Courier	4/24/19	0820

Remarks: PM - Tom Long (EPROD)
PayKey - RB21200
SAMEDAY Non AFE NM2167

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

April 30, 2019

Kyle Summers
ENSOLUM
606 S. Rio Grande Suite A
Aztec, NM 87410
TEL: (903) 821-5603
FAX

RE: Lateral 3A 2 OrderNo.: 1904C94

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 1 sample(s) on 4/26/2019 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: CS-21
Project: Lateral 3A 2
Collection Date: 4/25/2019 1:40:00 PM
Lab ID: 1904C94-001
Matrix: SOIL
Received Date: 4/26/2019 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	4/26/2019 6:52:18 PM	44579
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	4/30/2019 2:35:19 AM	44564
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/30/2019 2:35:19 AM	44564
Surr: DNOP	102	70-130		%Rec	1	4/30/2019 2:35:19 AM	44564
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/28/2019 10:05:41 AM	44558
Surr: BFB	94.3	73.8-119		%Rec	1	4/28/2019 10:05:41 AM	44558
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	4/28/2019 10:05:41 AM	44558
Toluene	ND	0.049		mg/Kg	1	4/28/2019 10:05:41 AM	44558
Ethylbenzene	ND	0.049		mg/Kg	1	4/28/2019 10:05:41 AM	44558
Xylenes, Total	ND	0.098		mg/Kg	1	4/28/2019 10:05:41 AM	44558
Surr: 4-Bromofluorobenzene	93.7	80-120		%Rec	1	4/28/2019 10:05:41 AM	44558

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904C94**

30-Apr-19

Client: ENSOLUM

Project: Lateral 3A 2

Sample ID: **MB-44579**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **44579**	RunNo: **59463**
Prep Date: **4/26/2019**	Analysis Date: **4/26/2019**	SeqNo: **2003545** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-44579**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **44579**	RunNo: **59463**
Prep Date: **4/26/2019**	Analysis Date: **4/26/2019**	SeqNo: **2003546** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.2	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904C94**

30-Apr-19

Client: ENSOLUM

Project: Lateral 3A 2

Sample ID: **LCS-44564**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **44564**	RunNo: **59489**
Prep Date: **4/26/2019**	Analysis Date: **4/29/2019**	SeqNo: **2004951** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54	10	50.00	0	107	63.9	124			
Surr: DNOP	5.2		5.000		105	70	130			

Sample ID: **MB-44564**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **44564**	RunNo: **59489**
Prep Date: **4/26/2019**	Analysis Date: **4/29/2019**	SeqNo: **2004952** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		108	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904C94**

30-Apr-19

Client: ENSOLUM

Project: Lateral 3A 2

Sample ID: **MB-44558**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **44558**	RunNo: **59477**
Prep Date: **4/26/2019**	Analysis Date: **4/27/2019**	SeqNo: **2003634** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	910		1000		91.0	73.8	119			

Sample ID: **LCS-44558**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **44558**	RunNo: **59477**
Prep Date: **4/26/2019**	Analysis Date: **4/27/2019**	SeqNo: **2003635** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	89.6	80.1	123			
Surr: BFB	1000		1000		104	73.8	119			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904C94**

30-Apr-19

Client: ENSOLUM

Project: Lateral 3A 2

Sample ID: **MB-44558**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **44558**	RunNo: **59477**
Prep Date: **4/26/2019**	Analysis Date: **4/27/2019**	SeqNo: **2003680** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.90		1.000		89.8	80	120			

Sample ID: **LCS-44558**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **44558**	RunNo: **59477**
Prep Date: **4/26/2019**	Analysis Date: **4/27/2019**	SeqNo: **2003681** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.025	1.000	0	91.4	80	120			
Toluene	0.94	0.050	1.000	0	93.8	80	120			
Ethylbenzene	0.93	0.050	1.000	0	93.1	80	120			
Xylenes, Total	2.8	0.10	3.000	0	94.0	80	120			
Surr: 4-Bromofluorobenzene	0.93		1.000		92.6	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **ENSOLUM AZTEC** Work Order Number: **1904C94** RcptNo: **1**

Received By: **Anne Thorne** **4/26/2019 8:15:00 AM**

Completed By: **Erin Melendrez** **4/26/2019 9:04:02 AM** 4/26/19

Reviewed By: ENM

LB, DAD 4/26/19

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☑
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: DAD 4/26/19

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.9	Good	Yes			
2	3.9	Good	Yes			

Chain-of-Custody Record

Client: Ensolum, LLC

Mailing Address: 606 S. Rio Grande Suite A
Aztec, NM 87410

Phone #:

email or Fax#: KSummers@ensolum.com

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other_____
☐ EDD (Type) _____

Turn-Around Time: 3 day Results by 4/26/19 CD
☐ Standard ☒ Rush 4/30 ~~SAMEDAY~~ CD

Project Name: Lateral 3A-2

Project #: 05A1226052

Project Manager: KSummers

Sampler: RDecchilly
On Ice: ☒ Yes ☐ No
# of Coolers: 2
Cooler Temp(including CF): 1.9°C, 3.9°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 1904C94	BTEX / ~~MTBE / TMB's~~ (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Chlorides
4/25/19	1340	S	CS-21	1402 Jar	Cool	-001	X	X									X

NFS

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
4/25/19	1330				4/25/19	1330
4/25/19	1840				04/25/19	2015

Remarks: PM - Tom Long (EPROD)
Pay Key - RB21200
Non AFE - N42167
3 ~~SAME~~ CD DAY

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

April 09, 2019

Kyle Summers
ENSOLUM
606 S. Rio Grande Suite A
Aztec, NM 87410
TEL: (903) 821-5603
FAX:

RE: Lateral 3A 2 OrderNo.: 1904254

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 3 sample(s) on 4/4/2019 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: FP-1
Project: Lateral 3A 2
Collection Date: 4/3/2019 11:35:00 AM
Lab ID: 1904254-001
Matrix: SOIL
Received Date: 4/4/2019 8:14:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	86	60		mg/Kg	20	4/5/2019 3:26:14 PM	44147
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	110	4.7		mg/Kg	1	4/7/2019 11:30:41 AM	44111
Surr: BFB	105	70-130		%Rec	1	4/7/2019 11:30:41 AM	44111
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	2500	46		mg/Kg	5	4/8/2019 12:12:18 PM	44127
Motor Oil Range Organics (MRO)	480	230		mg/Kg	5	4/8/2019 12:12:18 PM	44127
Surr: DNOP	148	70-130	S	%Rec	5	4/8/2019 12:12:18 PM	44127
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	4/7/2019 11:30:41 AM	44111
Toluene	0.76	0.047		mg/Kg	1	4/7/2019 11:30:41 AM	44111
Ethylbenzene	0.46	0.047		mg/Kg	1	4/7/2019 11:30:41 AM	44111
Xylenes, Total	6.7	0.095		mg/Kg	1	4/7/2019 11:30:41 AM	44111
Surr: 1,2-Dichloroethane-d4	89.2	70-130		%Rec	1	4/7/2019 11:30:41 AM	44111
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	1	4/7/2019 11:30:41 AM	44111
Surr: Dibromofluoromethane	93.7	70-130		%Rec	1	4/7/2019 11:30:41 AM	44111
Surr: Toluene-d8	92.2	70-130		%Rec	1	4/7/2019 11:30:41 AM	44111

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: FP-2
Project: Lateral 3A 2
Collection Date: 4/3/2019 11:40:00 AM
Lab ID: 1904254-002
Matrix: SOIL
Received Date: 4/4/2019 8:14:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	120	60		mg/Kg	20	4/5/2019 3:38:38 PM	44147
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	1300	19		mg/Kg	2	4/5/2019 5:16:29 PM	44127
Motor Oil Range Organics (MRO)	260	97		mg/Kg	2	4/5/2019 5:16:29 PM	44127
Surr: DNOP	110	70-130		%Rec	2	4/5/2019 5:16:29 PM	44127
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	10	4.9		mg/Kg	1	4/6/2019 4:58:46 PM	44112
Surr: BFB	153	73.8-119	S	%Rec	1	4/6/2019 4:58:46 PM	44112
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	4/6/2019 4:58:46 PM	44112
Toluene	ND	0.049		mg/Kg	1	4/6/2019 4:58:46 PM	44112
Ethylbenzene	ND	0.049		mg/Kg	1	4/6/2019 4:58:46 PM	44112
Xylenes, Total	0.94	0.097		mg/Kg	1	4/6/2019 4:58:46 PM	44112
Surr: 4-Bromofluorobenzene	97.3	80-120		%Rec	1	4/6/2019 4:58:46 PM	44112

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: FP-3
Project: Lateral 3A 2
Collection Date: 4/3/2019 11:45:00 AM
Lab ID: 1904254-003
Matrix: SOIL
Received Date: 4/4/2019 8:14:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	120	60		mg/Kg	20	4/5/2019 3:51:03 PM	44147
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	2400	47		mg/Kg	5	4/5/2019 6:05:04 PM	44127
Motor Oil Range Organics (MRO)	490	240		mg/Kg	5	4/5/2019 6:05:04 PM	44127
Surr: DNOP	141	70-130	S	%Rec	5	4/5/2019 6:05:04 PM	44127
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/6/2019 6:08:42 PM	44112
Surr: BFB	97.7	73.8-119		%Rec	1	4/6/2019 6:08:42 PM	44112
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	4/6/2019 6:08:42 PM	44112
Toluene	ND	0.049		mg/Kg	1	4/6/2019 6:08:42 PM	44112
Ethylbenzene	ND	0.049		mg/Kg	1	4/6/2019 6:08:42 PM	44112
Xylenes, Total	0.20	0.097		mg/Kg	1	4/6/2019 6:08:42 PM	44112
Surr: 4-Bromofluorobenzene	87.6	80-120		%Rec	1	4/6/2019 6:08:42 PM	44112

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904254**

09-Apr-19

Client: ENSOLUM

Project: Lateral 3A 2

Sample ID: **MB-44147**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **44147**	RunNo: **58920**
Prep Date: **4/5/2019**	Analysis Date: **4/5/2019**	SeqNo: **1982048** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-44147**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **44147**	RunNo: **58920**
Prep Date: **4/5/2019**	Analysis Date: **4/5/2019**	SeqNo: **1982049** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.7	90	110			

Qualifiers:

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904254**

09-Apr-19

Client: ENSOLUM

Project: Lateral 3A 2

Sample ID: **MB-44127**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **44127**	RunNo: **58929**
Prep Date: **4/4/2019**	Analysis Date: **4/5/2019**	SeqNo: **1981904** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		101	70	130			

Sample ID: **LCS-44127**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **44127**	RunNo: **58929**
Prep Date: **4/4/2019**	Analysis Date: **4/5/2019**	SeqNo: **1981905** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	93.6	63.9	124			
Surr: DNOP	4.8		5.000		95.3	70	130			

Sample ID: **MB-44133**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **44133**	RunNo: **58929**
Prep Date: **4/4/2019**	Analysis Date: **4/5/2019**	SeqNo: **1983932** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	13		10.00		130	70	130			S

Sample ID: **LCS-44133**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **44133**	RunNo: **58929**
Prep Date: **4/4/2019**	Analysis Date: **4/5/2019**	SeqNo: **1983933** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.7		5.000		94.6	70	130			

Qualifiers:

- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix
- W Sample container temperature is out of limit as specified at testcode

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904254**

09-Apr-19

Client: ENSOLUM

Project: Lateral 3A 2

Sample ID: **1904254-002AMS** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **FP-2** Batch ID: **44112** RunNo: **58955**

Prep Date: **4/4/2019** Analysis Date: **4/6/2019** SeqNo: **1982804** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	29	4.7	23.65	10.09	78.1	69.1	142			
Surr: BFB	1500		946.1		155	73.8	119			S

Sample ID: **1904254-002AMSD** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **FP-2** Batch ID: **44112** RunNo: **58955**

Prep Date: **4/4/2019** Analysis Date: **4/6/2019** SeqNo: **1982805** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	30	4.6	23.00	10.09	84.7	69.1	142	3.49	20	
Surr: BFB	1400		920.0		155	73.8	119	0	0	S

Sample ID: **LCS-44112** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **LCSS** Batch ID: **44112** RunNo: **58955**

Prep Date: **4/4/2019** Analysis Date: **4/6/2019** SeqNo: **1982861** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	90.1	80.1	123			
Surr: BFB	1000		1000		104	73.8	119			

Sample ID: **LCS-44113** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **LCSS** Batch ID: **44113** RunNo: **58955**

Prep Date: **4/4/2019** Analysis Date: **4/7/2019** SeqNo: **1982863** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		101	73.8	119			

Sample ID: **LCS-44114** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **LCSS** Batch ID: **44114** RunNo: **58955**

Prep Date: **4/4/2019** Analysis Date: **4/7/2019** SeqNo: **1982864** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	990		1000		98.9	73.8	119			

Sample ID: **MB-44112** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **PBS** Batch ID: **44112** RunNo: **58955**

Prep Date: **4/4/2019** Analysis Date: **4/6/2019** SeqNo: **1982865** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	940		1000		94.0	73.8	119			

Qualifiers:

- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix
- W Sample container temperature is out of limit as specified at testcode

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904254**

09-Apr-19

Client: ENSOLUM

Project: Lateral 3A 2

Sample ID: **MB-44113**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **44113**	RunNo: **58955**
Prep Date: **4/4/2019**	Analysis Date: **4/7/2019**	SeqNo: **1982866** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	910		1000		90.8	73.8	119			

Sample ID: **MB-44114**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **44114**	RunNo: **58955**
Prep Date: **4/4/2019**	Analysis Date: **4/7/2019**	SeqNo: **1982867** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	890		1000		89.0	73.8	119			

Qualifiers:

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1904254**
09-Apr-19

Client: ENSOLUM
Project: Lateral 3A 2

Sample ID: **1904254-003AMS** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **FP-3** Batch ID: **44112** RunNo: **58955**
Prep Date: **4/4/2019** Analysis Date: **4/6/2019** SeqNo: **1982870** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.76	0.023	0.9276	0	82.0	63.9	127			
Toluene	0.83	0.046	0.9276	0.01940	87.0	69.9	131			
Ethylbenzene	0.83	0.046	0.9276	0.01754	87.1	71	132			
Xylenes, Total	2.7	0.093	2.783	0.2048	88.3	71.8	131			
Surr: 4-Bromofluorobenzene	0.87		0.9276		93.7	80	120			

Sample ID: **1904254-003AMSD** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **FP-3** Batch ID: **44112** RunNo: **58955**
Prep Date: **4/4/2019** Analysis Date: **4/6/2019** SeqNo: **1982871** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.76	0.023	0.9242	0	82.2	63.9	127	0.115	20	
Toluene	0.83	0.046	0.9242	0.01940	87.4	69.9	131	0.0441	20	
Ethylbenzene	0.83	0.046	0.9242	0.01754	87.9	71	132	0.513	20	
Xylenes, Total	2.7	0.092	2.773	0.2048	89.3	71.8	131	0.784	20	
Surr: 4-Bromofluorobenzene	0.81		0.9242		87.7	80	120	0	0	

Sample ID: **LCS-44112** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **44112** RunNo: **58955**
Prep Date: **4/4/2019** Analysis Date: **4/6/2019** SeqNo: **1982924** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.84	0.025	1.000	0	83.7	80	120			
Toluene	0.90	0.050	1.000	0	90.1	80	120			
Ethylbenzene	0.89	0.050	1.000	0	89.3	80	120			
Xylenes, Total	2.7	0.10	3.000	0	90.5	80	120			
Surr: 4-Bromofluorobenzene	0.94		1.000		93.9	80	120			

Sample ID: **LCS-44113** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **44113** RunNo: **58955**
Prep Date: **4/4/2019** Analysis Date: **4/7/2019** SeqNo: **1982925** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.92		1.000		92.1	80	120			

Sample ID: **LCS-44114** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **44114** RunNo: **58955**
Prep Date: **4/4/2019** Analysis Date: **4/7/2019** SeqNo: **1982926** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix
- W Sample container temperature is out of limit as specified at testcode

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904254**

09-Apr-19

Client: ENSOLUM

Project: Lateral 3A 2

Sample ID: **LCS-44114**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **44114**	RunNo: **58955**
Prep Date: **4/4/2019**	Analysis Date: **4/7/2019**	SeqNo: **1982926** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.89		1.000		89.3	80	120			

Sample ID: **MB-44112**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **44112**	RunNo: **58955**
Prep Date: **4/4/2019**	Analysis Date: **4/6/2019**	SeqNo: **1982927** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.95		1.000		95.0	80	120			

Sample ID: **MB-44113**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **44113**	RunNo: **58955**
Prep Date: **4/4/2019**	Analysis Date: **4/7/2019**	SeqNo: **1982928** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.93		1.000		93.0	80	120			

Sample ID: **MB-44114**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **44114**	RunNo: **58955**
Prep Date: **4/4/2019**	Analysis Date: **4/7/2019**	SeqNo: **1982929** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.90		1.000		89.9	80	120			

Qualifiers:

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904254**

09-Apr-19

Client: ENSOLUM

Project: Lateral 3A 2

Sample ID: **lcs-44098**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **LCSS**	Batch ID: **44098**	RunNo: **58934**
Prep Date: **4/4/2019**	Analysis Date: **4/5/2019**	SeqNo: **1982755** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.44		0.5000		88.2	70	130			
Surr: 4-Bromofluorobenzene	0.51		0.5000		102	70	130			
Surr: Dibromofluoromethane	0.44		0.5000		88.1	70	130			
Surr: Toluene-d8	0.47		0.5000		95.0	70	130			

Sample ID: **mb-44098**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **PBS**	Batch ID: **44098**	RunNo: **58934**
Prep Date: **4/4/2019**	Analysis Date: **4/5/2019**	SeqNo: **1982756** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.5	70	130			
Surr: 4-Bromofluorobenzene	0.52		0.5000		103	70	130			
Surr: Dibromofluoromethane	0.45		0.5000		89.8	70	130			
Surr: Toluene-d8	0.46		0.5000		93.0	70	130			

Sample ID: **lcs-44111**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **LCSS**	Batch ID: **44111**	RunNo: **58962**
Prep Date: **4/4/2019**	Analysis Date: **4/6/2019**	SeqNo: **1983547** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.73	0.025	1.000	0	73.1	70	130			
Toluene	0.91	0.050	1.000	0	91.4	70	130			
Ethylbenzene	0.92	0.050	1.000	0	91.8	70	130			
Xylenes, Total	2.8	0.10	3.000	0	94.1	70	130			
Surr: 1,2-Dichloroethane-d4	0.43		0.5000		86.5	70	130			
Surr: 4-Bromofluorobenzene	0.52		0.5000		103	70	130			
Surr: Dibromofluoromethane	0.44		0.5000		89.0	70	130			
Surr: Toluene-d8	0.47		0.5000		94.0	70	130			

Sample ID: **mb-44111**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **PBS**	Batch ID: **44111**	RunNo: **58962**
Prep Date: **4/4/2019**	Analysis Date: **4/6/2019**	SeqNo: **1983548** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 1,2-Dichloroethane-d4	0.43		0.5000		85.3	70	130			
Surr: 4-Bromofluorobenzene	0.52		0.5000		104	70	130			

Qualifiers:

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904254**

09-Apr-19

Client: ENSOLUM

Project: Lateral 3A 2

Sample ID: **mb-44111** SampType: **MBLK** TestCode: **EPA Method 8260B: Volatiles Short List**

Client ID: **PBS** Batch ID: **44111** RunNo: **58962**

Prep Date: **4/4/2019** Analysis Date: **4/6/2019** SeqNo: **1983548** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Dibromofluoromethane	0.43		0.5000		86.9	70	130			
Surr: Toluene-d8	0.47		0.5000		93.3	70	130			

Sample ID: **lcs-44148** SampType: **LCS** TestCode: **EPA Method 8260B: Volatiles Short List**

Client ID: **LCSS** Batch ID: **44148** RunNo: **58990**

Prep Date: **4/5/2019** Analysis Date: **4/8/2019** SeqNo: **1984861** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.44		0.5000		87.6	70	130			
Surr: 4-Bromofluorobenzene	0.52		0.5000		104	70	130			
Surr: Dibromofluoromethane	0.45		0.5000		90.1	70	130			
Surr: Toluene-d8	0.48		0.5000		95.5	70	130			

Sample ID: **mb-44148** SampType: **MBLK** TestCode: **EPA Method 8260B: Volatiles Short List**

Client ID: **PBS** Batch ID: **44148** RunNo: **58990**

Prep Date: **4/5/2019** Analysis Date: **4/8/2019** SeqNo: **1984862** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.43		0.5000		86.8	70	130			
Surr: 4-Bromofluorobenzene	0.51		0.5000		102	70	130			
Surr: Dibromofluoromethane	0.45		0.5000		90.1	70	130			
Surr: Toluene-d8	0.47		0.5000		93.6	70	130			

Qualifiers:

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904254**

09-Apr-19

Client: ENSOLUM

Project: Lateral 3A 2

Sample ID: **lcs-44098**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **44098**	RunNo: **58934**
Prep Date: **4/4/2019**	Analysis Date: **4/5/2019**	SeqNo: **1982789** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	500		500.0		100	70	130			

Sample ID: **lcs-44111**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **44111**	RunNo: **58934**
Prep Date: **4/4/2019**	Analysis Date: **4/6/2019**	SeqNo: **1982790** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	82.8	70	130			
Surr: BFB	510		500.0		103	70	130			

Sample ID: **mb-44111**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **44111**	RunNo: **58934**
Prep Date: **4/4/2019**	Analysis Date: **4/6/2019**	SeqNo: **1982791** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	520		500.0		105	70	130			

Sample ID: **mb-44098**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **44098**	RunNo: **58934**
Prep Date: **4/4/2019**	Analysis Date: **4/5/2019**	SeqNo: **1982792** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	500		500.0		99.8	70	130			

Sample ID: **lcs-44148**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **44148**	RunNo: **58990**
Prep Date: **4/5/2019**	Analysis Date: **4/8/2019**	SeqNo: **1984917** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	500		500.0		100	70	130			

Sample ID: **mb-44148**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **44148**	RunNo: **58990**
Prep Date: **4/5/2019**	Analysis Date: **4/8/2019**	SeqNo: **1984918** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	510		500.0		102	70	130			

Qualifiers:

- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix
- W Sample container temperature is out of limit as specified at testcode

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **ENSOLUM AZTEC** Work Order Number: **1904254** RcptNo: **1**

Received By: **Yazmine Garduno** **4/4/2019 8:14:00 AM** Yazmine Garduno

Completed By: **Erin Melendrez** **4/4/2019 9:23:35 AM** 4/4/19

Reviewed By: LB 4/4/19

LB: 4/4/19

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: YG 4/4/19

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.3	Good	Yes			
2	3.1	Good	Yes			

Chain-of-Custody Record

Client: Ensolum, LLC

Mailing Address: 606 S Rio Grande Suite A

Aztec, NM 87410

Phone #:

email or Fax#: KSummers@ensolum.com

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☐ Standard ☒ Rush 4/8/19

Project Name: Lateral 3A-2

Project #: 05A122605a

Project Manager: KSummers

Sampler: RDeechilly

On Ice: ☒ Yes ☐ No

# of Coolers: 2

Cooler Temp(including CF): 2.3, 3.1

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 1904254	BTEX / ~~MTBE~~ / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Chlorides
4/3/19	1135	S	FP-1	(1) 4oz Jar	cool	-001	X	X									X
4/3/19	1140	S	FP-2	(1) 4oz Jar	cool	-002	X	X									X
4/3/19	1145	S	FP-3	(1) 4oz Jar	cool	-003	X	X									X

NFS

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
4/3/19	1414				4/3/19	1414
4/3/19	1810			courier	4/4/19	8:14

Remarks: PM - Tom Long
PaxKey - CM 22355

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

May 01, 2019

Kyle Summers

ENSOLUM
606 S. Rio Grande Suite A
Aztec, NM 87410
TEL: (903) 821-5603
FAX

RE: Lateral 3A 2 OrderNo.: 1904C93

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 7 sample(s) on 4/26/2019 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: FP-4
Project: Lateral 3A 2
Collection Date: 4/25/2019 1:00:00 PM
Lab ID: 1904C93-001
Matrix: SOIL
Received Date: 4/26/2019 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	60		mg/Kg	20	4/28/2019 1:01:22 PM	44582
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	4/30/2019 10:45:09 AM	44584
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/30/2019 10:45:09 AM	44584
Surr: DNOP	153	70-130	S	%Rec	1	4/30/2019 10:45:09 AM	44584
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/28/2019 12:03:19 PM	44568
Surr: BFB	91.1	73.8-119		%Rec	1	4/28/2019 12:03:19 PM	44568
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	4/28/2019 12:03:19 PM	44568
Toluene	ND	0.048		mg/Kg	1	4/28/2019 12:03:19 PM	44568
Ethylbenzene	ND	0.048		mg/Kg	1	4/28/2019 12:03:19 PM	44568
Xylenes, Total	ND	0.097		mg/Kg	1	4/28/2019 12:03:19 PM	44568
Surr: 4-Bromofluorobenzene	89.6	80-120		%Rec	1	4/28/2019 12:03:19 PM	44568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: FP-5
Project: Lateral 3A 2
Collection Date: 4/25/2019 1:05:00 PM
Lab ID: 1904C93-002
Matrix: SOIL
Received Date: 4/26/2019 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	59		mg/Kg	20	4/28/2019 1:38:37 PM	44582
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	4/30/2019 11:07:22 AM	44584
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/30/2019 11:07:22 AM	44584
Surr: DNOP	156	70-130	S	%Rec	1	4/30/2019 11:07:22 AM	44584
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/28/2019 1:13:53 PM	44568
Surr: BFB	89.2	73.8-119		%Rec	1	4/28/2019 1:13:53 PM	44568
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	4/28/2019 1:13:53 PM	44568
Toluene	ND	0.049		mg/Kg	1	4/28/2019 1:13:53 PM	44568
Ethylbenzene	ND	0.049		mg/Kg	1	4/28/2019 1:13:53 PM	44568
Xylenes, Total	ND	0.097		mg/Kg	1	4/28/2019 1:13:53 PM	44568
Surr: 4-Bromofluorobenzene	88.7	80-120		%Rec	1	4/28/2019 1:13:53 PM	44568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: FP-6
Project: Lateral 3A 2
Collection Date: 4/25/2019 1:10:00 PM
Lab ID: 1904C93-003
Matrix: SOIL
Received Date: 4/26/2019 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	60		mg/Kg	20	4/28/2019 1:51:01 PM	44582
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	23	10		mg/Kg	1	4/30/2019 12:58:27 PM	44584
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/30/2019 12:58:27 PM	44584
Surr: DNOP	123	70-130		%Rec	1	4/30/2019 12:58:27 PM	44584
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/28/2019 1:37:22 PM	44568
Surr: BFB	97.0	73.8-119		%Rec	1	4/28/2019 1:37:22 PM	44568
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	4/28/2019 1:37:22 PM	44568
Toluene	ND	0.050		mg/Kg	1	4/28/2019 1:37:22 PM	44568
Ethylbenzene	ND	0.050		mg/Kg	1	4/28/2019 1:37:22 PM	44568
Xylenes, Total	ND	0.10		mg/Kg	1	4/28/2019 1:37:22 PM	44568
Surr: 4-Bromofluorobenzene	90.3	80-120		%Rec	1	4/28/2019 1:37:22 PM	44568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: FP-7
Project: Lateral 3A 2
Collection Date: 4/25/2019 1:15:00 PM
Lab ID: 1904C93-004
Matrix: SOIL
Received Date: 4/26/2019 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	60		mg/Kg	20	4/28/2019 2:03:25 PM	44582
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/30/2019 11:51:43 AM	44584
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/30/2019 11:51:43 AM	44584
Surr: DNOP	128	70-130		%Rec	1	4/30/2019 11:51:43 AM	44584
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/28/2019 2:00:44 PM	44568
Surr: BFB	91.4	73.8-119		%Rec	1	4/28/2019 2:00:44 PM	44568
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	4/28/2019 2:00:44 PM	44568
Toluene	ND	0.050		mg/Kg	1	4/28/2019 2:00:44 PM	44568
Ethylbenzene	ND	0.050		mg/Kg	1	4/28/2019 2:00:44 PM	44568
Xylenes, Total	ND	0.099		mg/Kg	1	4/28/2019 2:00:44 PM	44568
Surr: 4-Bromofluorobenzene	89.9	80-120		%Rec	1	4/28/2019 2:00:44 PM	44568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: FP-8
Project: Lateral 3A 2
Collection Date: 4/25/2019 1:20:00 PM
Lab ID: 1904C93-005
Matrix: SOIL
Received Date: 4/26/2019 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	60		mg/Kg	20	4/28/2019 2:40:39 PM	44582
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	4/30/2019 10:55:19 AM	44584
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/30/2019 10:55:19 AM	44584
Surr: DNOP	82.5	70-130		%Rec	1	4/30/2019 10:55:19 AM	44584
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/28/2019 2:24:21 PM	44568
Surr: BFB	88.1	73.8-119		%Rec	1	4/28/2019 2:24:21 PM	44568
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	4/28/2019 2:24:21 PM	44568
Toluene	ND	0.049		mg/Kg	1	4/28/2019 2:24:21 PM	44568
Ethylbenzene	ND	0.049		mg/Kg	1	4/28/2019 2:24:21 PM	44568
Xylenes, Total	ND	0.097		mg/Kg	1	4/28/2019 2:24:21 PM	44568
Surr: 4-Bromofluorobenzene	86.3	80-120		%Rec	1	4/28/2019 2:24:21 PM	44568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: FP-9
Project: Lateral 3A 2
Collection Date: 4/25/2019 1:25:00 PM
Lab ID: 1904C93-006 **Matrix:** SOIL **Received Date:** 4/26/2019 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	60		mg/Kg	20	4/28/2019 2:53:04 PM	44582
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	4/30/2019 11:19:44 AM	44584
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/30/2019 11:19:44 AM	44584
Surr: DNOP	73.3	70-130		%Rec	1	4/30/2019 11:19:44 AM	44584
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/28/2019 3:34:47 PM	44568
Surr: BFB	90.4	73.8-119		%Rec	1	4/28/2019 3:34:47 PM	44568
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	4/28/2019 3:34:47 PM	44568
Toluene	ND	0.048		mg/Kg	1	4/28/2019 3:34:47 PM	44568
Ethylbenzene	ND	0.048		mg/Kg	1	4/28/2019 3:34:47 PM	44568
Xylenes, Total	ND	0.097		mg/Kg	1	4/28/2019 3:34:47 PM	44568
Surr: 4-Bromofluorobenzene	88.3	80-120		%Rec	1	4/28/2019 3:34:47 PM	44568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: FP-10
Project: Lateral 3A 2
Collection Date: 4/25/2019 1:30:00 PM
Lab ID: 1904C93-007
Matrix: SOIL
Received Date: 4/26/2019 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	60		mg/Kg	20	4/28/2019 3:05:28 PM	44582
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	4/30/2019 11:44:01 AM	44584
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/30/2019 11:44:01 AM	44584
Surr: DNOP	81.0	70-130		%Rec	1	4/30/2019 11:44:01 AM	44584
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/29/2019 2:08:16 AM	44576
Surr: BFB	88.6	73.8-119		%Rec	1	4/29/2019 2:08:16 AM	44576
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	4/29/2019 2:08:16 AM	44576
Toluene	ND	0.048		mg/Kg	1	4/29/2019 2:08:16 AM	44576
Ethylbenzene	ND	0.048		mg/Kg	1	4/29/2019 2:08:16 AM	44576
Xylenes, Total	ND	0.096		mg/Kg	1	4/29/2019 2:08:16 AM	44576
Surr: 4-Bromofluorobenzene	87.0	80-120		%Rec	1	4/29/2019 2:08:16 AM	44576

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1904C93**
01-May-19

Client: ENSOLUM
Project: Lateral 3A 2

Sample ID: **MB-44582**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **44582**	RunNo: **59494**
Prep Date: **4/28/2019**	Analysis Date: **4/28/2019**	SeqNo: **2004472** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-44582**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **44582**	RunNo: **59494**
Prep Date: **4/28/2019**	Analysis Date: **4/28/2019**	SeqNo: **2004473** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.5	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904C93**

01-May-19

Client: ENSOLUM

Project: Lateral 3A 2

Sample ID: **LCS-44584**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **44584**	RunNo: **59489**
Prep Date: **4/29/2019**	Analysis Date: **4/30/2019**	SeqNo: **2005373** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	10	50.00	0	104	63.9	124			
Surr: DNOP	5.0		5.000		101	70	130			

Sample ID: **MB-44584**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **44584**	RunNo: **59489**
Prep Date: **4/29/2019**	Analysis Date: **4/30/2019**	SeqNo: **2005374** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	14		10.00		135	70	130			S

Sample ID: **1904C93-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **FP-4**	Batch ID: **44584**	RunNo: **59489**
Prep Date: **4/29/2019**	Analysis Date: **4/30/2019**	SeqNo: **2005589** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	64	9.9	49.65	0	129	53.5	126			S
Surr: DNOP	5.5		4.965		111	70	130			

Sample ID: **1904C93-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **FP-4**	Batch ID: **44584**	RunNo: **59489**
Prep Date: **4/29/2019**	Analysis Date: **4/30/2019**	SeqNo: **2005590** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	9.8	49.16	0	107	53.5	126	19.5	21.7	
Surr: DNOP	4.6		4.916		94.2	70	130	0	0	

Sample ID: **MB-44585**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **44585**	RunNo: **59489**
Prep Date: **4/29/2019**	Analysis Date: **4/30/2019**	SeqNo: **2005592** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	13		10.00		126	70	130			

Sample ID: **LCS-44585**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **44585**	RunNo: **59489**
Prep Date: **4/29/2019**	Analysis Date: **4/30/2019**	SeqNo: **2005598** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1904C93**
01-May-19

Client: ENSOLUM
Project: Lateral 3A 2

Sample ID: **LCS-44585** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **44585** RunNo: **59489**
Prep Date: **4/29/2019** Analysis Date: **4/30/2019** SeqNo: **2005598** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.6		5.000		111	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904C93**

01-May-19

Client: ENSOLUM

Project: Lateral 3A 2

Sample ID: **MB-44568**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **44568**	RunNo: **59480**
Prep Date: **4/26/2019**	Analysis Date: **4/28/2019**	SeqNo: **2003986** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	900		1000		90.0	73.8	119			

Sample ID: **LCS-44568**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **44568**	RunNo: **59480**
Prep Date: **4/26/2019**	Analysis Date: **4/28/2019**	SeqNo: **2003987** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	95.5	80.1	123			
Surr: BFB	1000		1000		101	73.8	119			

Sample ID: **MB-44576**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **44576**	RunNo: **59480**
Prep Date: **4/26/2019**	Analysis Date: **4/28/2019**	SeqNo: **2004012** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	920		1000		92.1	73.8	119			

Sample ID: **LCS-44576**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **44576**	RunNo: **59480**
Prep Date: **4/26/2019**	Analysis Date: **4/28/2019**	SeqNo: **2004013** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	89.6	80.1	123			
Surr: BFB	1000		1000		103	73.8	119			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904C93**

01-May-19

Client: ENSOLUM

Project: Lateral 3A 2

Sample ID: **MB-44568** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBS** Batch ID: **44568** RunNo: **59480**

Prep Date: **4/26/2019** Analysis Date: **4/28/2019** SeqNo: **2004042** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.88		1.000		88.2	80	120			

Sample ID: **LCS-44568** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **LCSS** Batch ID: **44568** RunNo: **59480**

Prep Date: **4/26/2019** Analysis Date: **4/28/2019** SeqNo: **2004043** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.025	1.000	0	93.8	80	120			
Toluene	0.96	0.050	1.000	0	95.8	80	120			
Ethylbenzene	0.96	0.050	1.000	0	95.5	80	120			
Xylenes, Total	2.9	0.10	3.000	0	96.1	80	120			
Surr: 4-Bromofluorobenzene	0.91		1.000		91.4	80	120			

Sample ID: **1904C93-001AMS** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **FP-4** Batch ID: **44568** RunNo: **59480**

Prep Date: **4/26/2019** Analysis Date: **4/28/2019** SeqNo: **2004045** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.024	0.9794	0	91.4	63.9	127			
Toluene	0.93	0.049	0.9794	0.01075	93.8	69.9	131			
Ethylbenzene	0.94	0.049	0.9794	0	95.5	71	132			
Xylenes, Total	2.8	0.098	2.938	0	95.6	71.8	131			
Surr: 4-Bromofluorobenzene	0.91		0.9794		92.9	80	120			

Sample ID: **1904C93-001AMSD** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **FP-4** Batch ID: **44568** RunNo: **59480**

Prep Date: **4/26/2019** Analysis Date: **4/28/2019** SeqNo: **2004046** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.025	0.9921	0	93.7	63.9	127	3.79	20	
Toluene	0.96	0.050	0.9921	0.01075	95.6	69.9	131	3.16	20	
Ethylbenzene	0.96	0.050	0.9921	0	97.1	71	132	2.96	20	
Xylenes, Total	2.9	0.099	2.976	0	97.6	71.8	131	3.38	20	
Surr: 4-Bromofluorobenzene	0.90		0.9921		91.2	80	120	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904C93**

01-May-19

Client: ENSOLUM

Project: Lateral 3A 2

Sample ID: **MB-44576**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **44576**	RunNo: **59480**
Prep Date: **4/26/2019**	Analysis Date: **4/28/2019**	SeqNo: **2004052** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.90		1.000		90.3	80	120			

Sample ID: **LCS-44576**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **44576**	RunNo: **59480**
Prep Date: **4/26/2019**	Analysis Date: **4/28/2019**	SeqNo: **2004053** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.025	1.000	0	91.9	80	120			
Toluene	0.95	0.050	1.000	0	95.2	80	120			
Ethylbenzene	0.94	0.050	1.000	0	94.4	80	120			
Xylenes, Total	2.8	0.10	3.000	0	94.8	80	120			
Surr: 4-Bromofluorobenzene	0.90		1.000		90.4	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **ENSOLUM AZTEC** Work Order Number: **1904C93** RcptNo: **1**

Received By: **Anne Thorne** **4/26/2019 8:15:00 AM**

Completed By: **Erin Melendrez** **4/26/2019 8:56:13 AM**

Reviewed By: ENM 4/26/19

LB: DAD 4/26/19

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: DAD 4/26/19

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.9	Good	Yes			
2	3.9	Good	Yes			

Chain-of-Custody Record

Client: Ensolum, LLC

Mailing Address: 606 S. Rio Grande Suite A
Aztec, NM 87410

Phone #:

email or Fax#: KSummers@ensolum.com

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: 3 Day Results by 4/30 ~~4/26/19~~
☐ Standard ☒ Rush ~~SAME DAY~~

Project Name: Lateral 3A-2

Project #: 05A1226052

Project Manager: KSummers

Sampler: RDeechilly
On Ice: ☒ Yes ☐ No
# of Coolers: 2
Cooler Temp(including CF): 1.9°C, 3.9°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 1904C93	BTEX / ~~MTBE~~ / ~~TMBs~~ (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Chlorides
4/25/19	1300	S	FP-4	1 4oz Jar	cool	-001	X	X									X
4/25/19	1305	S	FP-5	1 4oz Jar	cool	-002	X	X									X
4/25/19	1310	S	FP-6	1 4oz Jar	cool	-003	X	X									X
4/25/19	1315	S	FP-7	1 4oz Jar	cool	-004	X	X									X
4/25/19	1320	S	FP-8	1 4oz Jar	cool	-005	X	X									X
4/25/19	1325	S	FP-9	1 4oz Jar	cool	-006	X	X									X
4/25/19	1330	S	FP-10	1 4oz Jar	cool	-007	X	X									X

NFS

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
4/25/19	1330				4/25/19	1330
4/25/19	1840				04/26/19	0815

Remarks: PM - Tom Long (EPROD)
PayKey - RB21200
Non AFE - N42167
3 ~~SAME DAY~~

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.