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	NCS1913740101
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):* **NCS1913740101**
Contact mailing address: **614 Reilly Ave, Farmington, NM 87401**	

Location of Release Source

Latitude **36.549313** Longitude **-107.549324** *(NAD 83 in decimal degrees to 5 decimal places)*

Site Name **Lateral C-7 Loop Pipeline**	Site Type **Natural Gas Gathering Pipeline**
Date Release Discovered: **4/25/2019**	Serial Number *(if applicable)*:

Unit Letter	Section	Township	Range	County
G	**25**	**27N**	**9W**	**San Juan**

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

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): **5-7 BBLS**	Volume Recovered (bbls): **None**
☒ Natural Gas	Volume Released (Mcf): **5.74 MCF**	Volume Recovered (Mcf): **None**
☐ Other (describe)	Volume/Weight Released (provide units):	Volume/Weight Recovered (provide units)

Cause of Release: On April 25, 2019, a third party notified Enterprise of a possible gas release on the Lateral C-7 Loop pipeline. A technician was dispatched and confirmed the release. An area of approximately three feet in diameter was impacted by the released fluids. The pipeline was blown down, depressurized, locked out and tagged out. Enterprise recovered the released fluids as much as practicable and barricaded off the affected area. On May 2, 2019, Enterprise began the repairs and remediation and determined this release reportable per NMOCD regulation due the volume of impacted subsurface soil. Remediation was completed on May 15, 2019. The final excavation dimensions measured approximately 33 feet long by 14 feet wide by approximately 17 feet deep. Approximately 194 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: 10/14/19

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

OCD Only

Received by: OCD Date: 10/21/19

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: 12/11/19

Printed Name: Cory Title: Environmental Specalist

ENSOLUM

CLOSURE REPORT

Property:

Lateral C-7 Loop Pipeline Release
NE ¼, S25 T27N R9W
San Juan County, New Mexico

August 12, 2019
Ensolum Project No. 05A1226055

Prepared for:

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

Prepared by:

Ranee Deechilly
Environmental Scientist

Kyle Summers, CPG
Sr. Project Manager

Table of Contents

LIST OF APPENDICES

CLOSURE REPORT

Lateral C-7 Loop Pipeline Release
NE ¼, S25 T27N R9W
San Juan County, New Mexico

Ensolum Project No. 05A1226055

1.0 INTRODUCTION

1.1 Site Description & Background

Operator:	Enterprise Field Services, LLC / Enterprise Products Operating LLC (Enterprise)
Site Name:	Lateral C-7 Loop Pipeline Release (Site)
Location:	36.549313° North, 107.736210° West Northeast (NE) ¼ of Section 25, Township 27 North, Range 9 West San Juan County, New Mexico
Property:	Navajo Nation Allotment Land
Regulatory:	Navajo Nation Environmental Protection Agency Office (NNEPA) and New Mexico Energy, Minerals and Natural Resources Department (EMNRD) Oil Conservation Division (OCD)

On April 25, 2019, a release of natural gas was identified on the Lateral C-7 Loop pipeline by a third party. Enterprise verified the release and subsequently isolated and locked the pipeline out of service. On May 1, 2019, Enterprise 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 NNEPA and the New Mexico EMNRD OCD. Ensolum, LLC (Ensolum) referenced New Mexico Administrative Code (NMAC) 19.15.29 *Releases* in order to address activities related to exempt oil and gas releases, which establishes investigation and abatement action requirements for oil and gas release sites subject to reporting and/or corrective action. Ensolum utilized 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.

- One (1) cathodic protection well was identified within a mile of the Site. Cathodic-protection well Huerfanito Unit #10, #178, #151 (Unit A, Sec 36 T27N R9W) located approximately 0.9 miles from the Site indicates a depth to water of approximately 25 feet below grade surface (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 Soils Impacted by a Release		
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

On May 1, 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, OFT Construction, Inc. (OFT), provided heavy equipment and labor support, while Ensolum provided environmental consulting support.

The final excavation measured approximately 33 feet long and 14 feet wide at the maximum extents. The maximum depth of the excavation measured approximately 17 feet bgs.

The lithology encountered during the completion of remediation activities consisted primarily of unconsolidated silty sand.

A total of approximately 194 cubic yards of petroleum hydrocarbon affected soils were transported to the Envirotech, Inc. (Envirotech) landfarm near Hilltop, 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 segregated, laboratory-confirmed, unaffected stockpiled soils, and was then contoured to surrounding grade.

Figure 3 is a map that identifies approximate soil sample locations and depicts the approximate dimensions of the excavation with respect to 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 13 composite soil samples (CS-1 through CS-13), comprised of five (5) aliquots each, from the excavation for laboratory analysis. In addition, three (3) composite stockpiled soil samples (SP-1 through SP-3) were collected from the soils that were segregated for potential reuse, to confirm the material was suitable to remain on-Site. Due to the depth of the excavation, an excavator (operated by OFT) was utilized to obtain fresh aliquots from each area of the excavation. The New Mexico EMNRD OCD provided verbal approval to proceed with the four (4) sampling events, although a New Mexico EMNRD OCD representative was not on-Site during the sampling events.

First Sampling Event
Composite soil sample CS-1 (13') was collected from the floor of the excavation. Composite soil samples CS-2 (0'-13'), CS-3 (0'-13') were collected from the west sidewall of the excavation. Composite soil sample CS-4 (0'-13') was collected from the south sidewall of the excavation and composite soil samples CS-5 (0'-13') and CS-6 (0'-13') were collected from the east sidewall of the excavation. Subsequent to receiving confirmation that the composite soil samples exhibited acceptable analytical results, the excavation was partially backfilled to provide pipeline support, allowing further excavation to the north.

Second Sampling Event
Subsequent to the excavation extension, a second sampling event was performed. Composite soil sample CS-7 (13') was collected from the floor of the extended excavation. Composite soil samples CS-8 (0'-13'), CS-9 (0'-13'), and CS-10 (0'-13) were collected from the sidewalls of the extended excavation. Analytical results from composite soil samples CS-7 (floor) and CS-10 (west sidewall) from the excavation indicated New Mexico EMNRD OCD closure standard exceedances. In response to the data exceedances, the excavation was deepened and extended west to remove petroleum hydrocarbon and chloride impact. Soils associated with composite soil samples CS-7, and CS-10 were removed by excavation and transported to the landfarm for disposal/remediation.

Third Sampling Event
After the excavation was deepened and extended to the west, composite soil samples CS-11 (15') and CS-12 (0'-15) were collected from the floor and west sidewall of the excavation, respectively. Analytical results from composite soil sample CS-11 indicated a New Mexico EMNRD OCD exceedance. The floor of the excavation was excavated an additional two (2) feet. Soil associated with composite soil sample CS-11 was removed by excavation and transported to the landfarm for disposal/remediation.

Fourth Sampling Event
Subsequent to excavation activities, composite soil sample CS-13 (17') was collected from the floor of the deepened 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.

5.0 SOIL LABORATORY ANALYTICAL METHODS

Composite soil samples SP-1 through SP-3, CS-1 through CS-10, and CS-13 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. Composite soil samples CS-11 and CS-12 were analyzed for chlorides only, 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 through CS-6, CS-8, CS-9, CS-12, CS-13, and SP-1 through SP-3) to the applicable New Mexico EMNRD OCD closure criteria. Soil associated with composite soil samples CS-7, CS-10, and CS-11 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 at the Site 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 at the Site 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 SP-2 and SP-3 collected from soils remaining at the Site, indicate combined TPH GRO/DRO/MRO concentrations of 20 mg/kg (SP-2) and 45 mg/kg (SP-3),respectively, 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 collected from soils remaining at the Site indicate chloride concentrations ranging from less than the laboratory PQL to 500 mg/kg (CS-8), which do not exceed the New Mexico EMNRD OCD closure criteria of 600 mg/kg.

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 segregated, laboratory-confirmed, unaffected stockpiled soils, and was then contoured to the surrounding grade. Enterprise will re-seed the Site with an approved seeding mixture.

8.0 FINDINGS AND RECOMMENDATION

On April 25, 2019, a release of natural gas was identified on the Lateral C-7 Loop pipeline by a third party. Enterprise verified the release and subsequently isolated and locked the pipeline out of service. On May 1, 2019, Enterprise 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 13 composite soil samples were collected from the walls and floor of the final excavation for laboratory analysis. In addition, three (3) 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 194 cubic yards of petroleum hydrocarbon affected soils were transported to the Envirotech landfarm near Hilltop, New Mexico for disposal/remediation. The excavation was backfilled with a combination of imported fill and 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

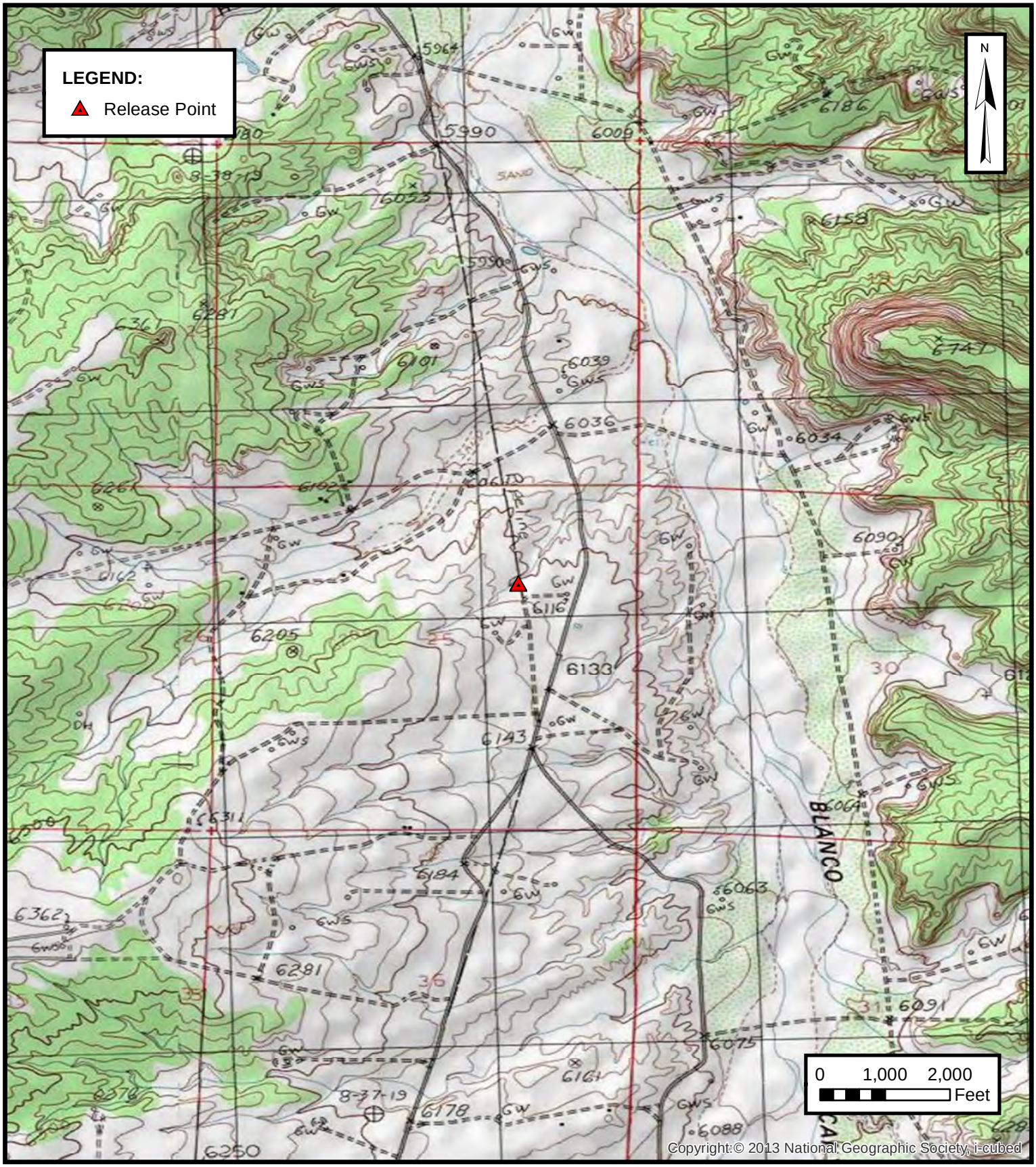
Findings, conclusions, and recommendations resulting from these services are based upon information derived from the on-site activities and other services performed under this scope of work and it should be noted that this information is subject to change over time. Certain indicators of the presence 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



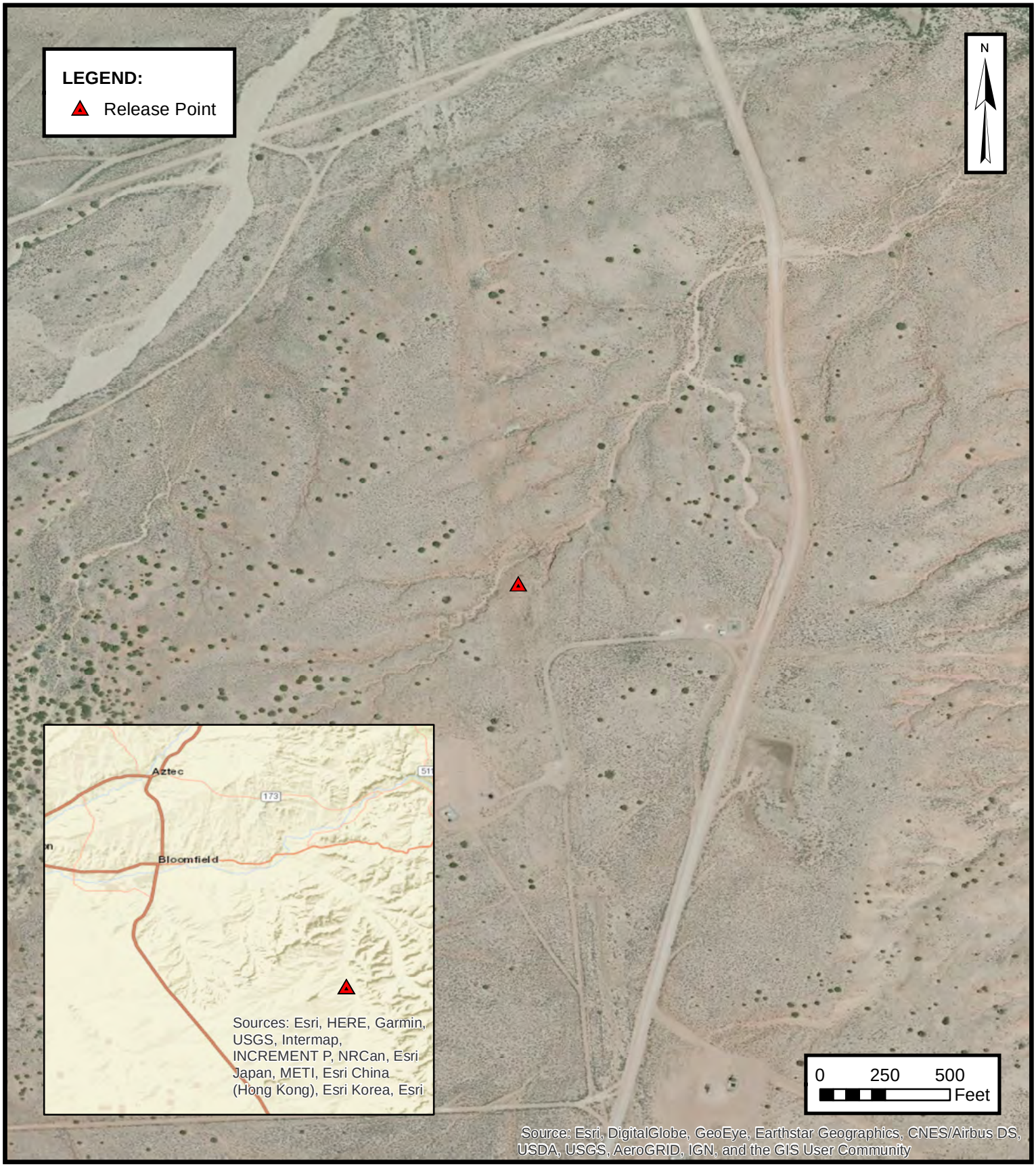
ENSOLUM
Environmental & Hydrogeologic Consultants

TOPOGRAPHIC MAP

ENTERPRISE FIELD SERVICES, LLC
LATERAL C-7 LOOP PIPELINE RELEASE
NE ¼, S25 T27N R9W San Juan County, New Mexico
36.549313° N, 107.736210° W

PROJECT NUMBER: 05A1226055

FIGURE
1



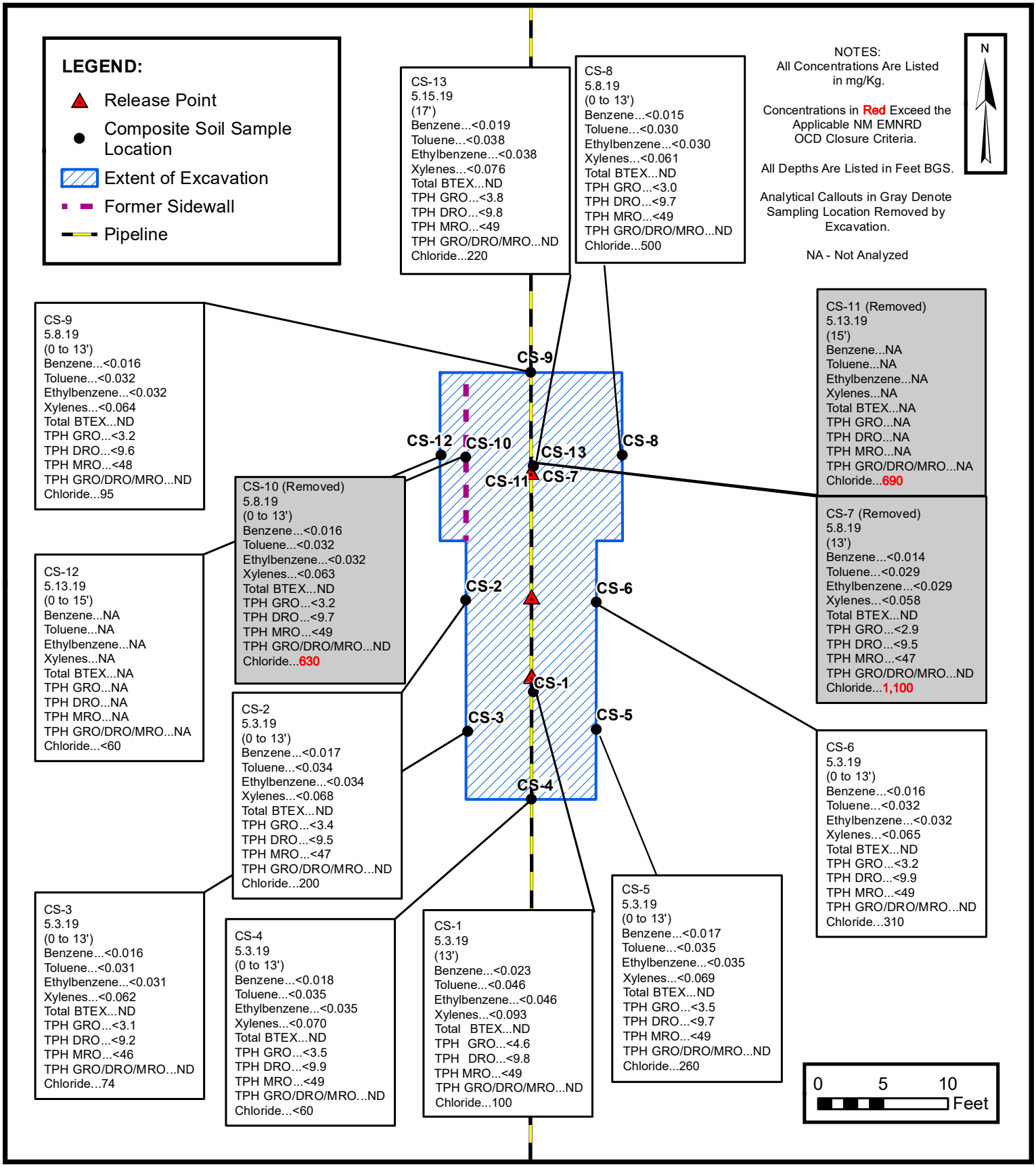
ENSOLUM
Environmental & Hydrogeologic Consultants

SITE VICINITY MAP

ENTERPRISE FIELD SERVICES, LLC
LATERAL C-7 LOOP PIPELINE RELEASE
NE ¼, S25 T27N R9W San Juan County, New Mexico
36.549313° N, 107.736210° W

PROJECT NUMBER: 05A1226055

FIGURE
2



ENSOLUM
Environmental & Hydrogeologic Consultants

SITE MAP

ENTERPRISE FIELD SERVICES, LLC
LATERAL C-7 LOOP PIPELINE RELEASE
NE ¼, S25 T27N R9W San Juan County, New Mexico
36.549313° N, 107.736210° W

PROJECT NUMBER: 05A1226055

FIGURE
3

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

97057-1004

Form C-138
Revised 08/01/11

*Surface Waste Management Facility Operator and Generator shall maintain and make this documentation available for Division inspection.

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 C-7 Loop

3. **Location of Material (Street Address, City, State or ULSTR):**
UL G Section 25 T27N R9W; 36.549313, -107.736210 and 36.549324 -107.736168 Apr: 1 / May 2019

4. **Source and Description of Waste: Hydrocarbon Impacted Soil.**
Source: Remediation activities associated with a natural gas pipeline leak.
Description: Hydrocarbon/Condensate impacted soil associated natural gas pipeline release.
Estimated Volume _10_ (yd³) bbls Known Volume (to be entered by the operator at the end of the haul) 194 (yd³) bbls

5. **GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS**

I, Thomas Long Thom 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 Thom Long 4-25-19, representative for Enterprise Products Operating authorizes Envirotech, Inc. to complete
Generator Signature
the required testing/sign the Generator Waste Testing Certification.

I, Greg Crabtree, representative for Envirotech, 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: OFT, Stan Horn, La Plata, Swearea**

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: **Envirotech Inc. Soil Remediation Facility * Permit #: NM 01-0011**
Address of Facility: **Hilltop, NM**
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: Greg Crabtree TITLE: Enviro Manager DATE: 4/25/19
SIGNATURE: _____ TELEPHONE NO.: 505-632-0615
Surface Waste Management Facility Authorized Agent

APPENDIX C

Photographic Documentation

SITE PHOTOGRAPHS

Enterprise Field Services, LLC
Closure Report
Lateral C-7 Loop Pipeline Release
Ensolum Project No. 05A1226055

ENSOLUM

Photograph 1 Photograph Description: View of the release area.	
Photograph 2 Photograph Description: View of the in-process excavation activities.	
Photograph 3 Photograph Description: View of the in-process excavation activities.	

Photograph 4 Photograph Description: View of the excavation (facing north) prior to partial backfill of the of the southern end (to provide pipeline support and allow deeper excavation of the northern portion).	
Photograph 5 Photograph Description: View of the final excavation (northern section of the excavation) after partial backfill of the southern portion.	
Photograph 6 Photograph Description: View of the final excavation after initial restoration.	

APPENDIX D

Table 1 – Soil Analytical Summary

ENSOLUM

TABLE 1
Lateral C-7 Loop Pipeline 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-7	05.08.19	C	13	<0.014	<0.029	<0.029	<0.058	ND	<2.9	<9.5	<47	ND	**1,100**
CS-10	05.08.19	C	0 to 13	<0.016	<0.032	<0.032	<0.063	ND	<3.2	<9.7	<49	ND	**630**
CS-11	05.13.19	C	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	**690**
Stockpile Composite Soil Samples													
SP-1	05.03.19	C	Stockpile	<0.017	<0.033	<0.033	<0.067	ND	<3.3	<9.7	<49	ND	160
SP-2	05.03.19	C	Stockpile	<0.017	<0.034	<0.034	<0.068	ND	6.4	14	<50	20	240
SP-3	05.03.19	C	Stockpile	<0.021	<0.042	<0.042	<0.084	ND	6.3	39	<48	45	360
Final Confirmation Composite Soil Samples													
CS-1	05.03.19	C	13	<0.023	<0.046	<0.046	<0.093	ND	<4.6	<9.8	<49	ND	100
CS-2	05.03.19	C	0 to 13	<0.017	<0.034	<0.034	<0.068	ND	<3.4	<9.5	<47	ND	200
CS-3	05.03.19	C	0 to 13	<0.016	<0.031	<0.031	<0.062	ND	<3.1	<9.2	<46	ND	74
CS-4	05.03.19	C	0 to 13	<0.018	<0.035	<0.035	<0.070	ND	<3.5	<9.9	<49	ND	<60
CS-5	05.03.19	C	0 to 13	<0.017	<0.035	<0.035	<0.069	ND	<3.5	<9.7	<49	ND	260
CS-6	05.03.19	C	0 to 13	<0.016	<0.032	<0.032	<0.065	ND	<3.2	<9.9	<49	ND	310
CS-8	05.08.19	C	0 to 13	<0.015	<0.030	<0.030	<0.061	ND	<3.0	<9.7	<49	ND	500
CS-9	05.08.19	C	0 to 13	<0.016	<0.032	<0.032	<0.064	ND	<3.2	<9.6	<48	ND	95
CS-12	05.13.19	C	0 to 15	NA	NA	NA	NA	NA	NA	NA	NA	NA	<60
CS-13	05.15.19	C	17	<0.019	<0.038	<0.038	<0.076	ND	<3.8	<9.8	<49	ND	220

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

May 08, 2019

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

RE: Lateral C-7 Loop OrderNo.: 1905232

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 3 sample(s) on 5/4/2019 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

Analytical Report
Lab Order **1905232**
Date Reported: **5/8/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: SP-1
Project: Lateral C-7 Loop
Collection Date: 5/3/2019 9:45:00 AM
Lab ID: 1905232-001
Matrix: MEOH (SOIL)
Received Date: 5/4/2019 8:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	160	60		mg/Kg	20	5/5/2019 2:25:22 PM	44722
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	5/6/2019 10:27:25 AM	44727
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/6/2019 10:27:25 AM	44727
Surr: DNOP	104	70-130		%Rec	1	5/6/2019 10:27:25 AM	44727
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	3.3		mg/Kg	1	5/6/2019 12:23:33 PM	G59659
Surr: BFB	91.7	73.8-119		%Rec	1	5/6/2019 12:23:33 PM	G59659
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.017		mg/Kg	1	5/6/2019 12:23:33 PM	R59659
Toluene	ND	0.033		mg/Kg	1	5/6/2019 12:23:33 PM	R59659
Ethylbenzene	ND	0.033		mg/Kg	1	5/6/2019 12:23:33 PM	R59659
Xylenes, Total	ND	0.067		mg/Kg	1	5/6/2019 12:23:33 PM	R59659
Surr: 4-Bromofluorobenzene	90.2	80-120		%Rec	1	5/6/2019 12:23:33 PM	R59659

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: SP-2
Project: Lateral C-7 Loop
Collection Date: 5/3/2019 9:50:00 AM
Lab ID: 1905232-002
Matrix: MEOH (SOIL)
Received Date: 5/4/2019 8:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	240	60		mg/Kg	20	5/5/2019 2:37:46 PM	44722
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	14	9.9		mg/Kg	1	5/6/2019 10:51:40 AM	44727
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/6/2019 10:51:40 AM	44727
Surr: DNOP	102	70-130		%Rec	1	5/6/2019 10:51:40 AM	44727
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	6.4	3.4		mg/Kg	1	5/6/2019 12:47:01 PM	G59659
Surr: BFB	136	73.8-119	S	%Rec	1	5/6/2019 12:47:01 PM	G59659
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.017		mg/Kg	1	5/6/2019 12:47:01 PM	R59659
Toluene	ND	0.034		mg/Kg	1	5/6/2019 12:47:01 PM	R59659
Ethylbenzene	ND	0.034		mg/Kg	1	5/6/2019 12:47:01 PM	R59659
Xylenes, Total	ND	0.068		mg/Kg	1	5/6/2019 12:47:01 PM	R59659
Surr: 4-Bromofluorobenzene	90.0	80-120		%Rec	1	5/6/2019 12:47:01 PM	R59659

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: SP-3
Project: Lateral C-7 Loop
Collection Date: 5/3/2019 9:55:00 AM
Lab ID: 1905232-003
Matrix: MEOH (SOIL)
Received Date: 5/4/2019 8:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	360	60		mg/Kg	20	5/5/2019 2:50:10 PM	44722
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	39	9.7		mg/Kg	1	5/6/2019 11:16:11 AM	44727
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/6/2019 11:16:11 AM	44727
Surr: DNOP	105	70-130		%Rec	1	5/6/2019 11:16:11 AM	44727
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	6.3	4.2		mg/Kg	1	5/6/2019 12:10:45 PM	G59658
Surr: BFB	124	73.8-119	S	%Rec	1	5/6/2019 12:10:45 PM	G59658
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.021		mg/Kg	1	5/6/2019 12:10:45 PM	R59658
Toluene	ND	0.042		mg/Kg	1	5/6/2019 12:10:45 PM	R59658
Ethylbenzene	ND	0.042		mg/Kg	1	5/6/2019 12:10:45 PM	R59658
Xylenes, Total	ND	0.084		mg/Kg	1	5/6/2019 12:10:45 PM	R59658
Surr: 4-Bromofluorobenzene	96.4	80-120		%Rec	1	5/6/2019 12:10:45 PM	R59658

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#: **1905232**

08-May-19

Client: ENSOLUM

Project: Lateral C-7 Loop

Sample ID: **MB-44722**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **44722**	RunNo: **59653**
Prep Date: **5/5/2019**	Analysis Date: **5/5/2019**	SeqNo: **2010922** Units: **mg/Kg**

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

Sample ID: **LCS-44722**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **44722**	RunNo: **59653**
Prep Date: **5/5/2019**	Analysis Date: **5/5/2019**	SeqNo: **2010923** 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#: **1905232**

08-May-19

Client: ENSOLUM

Project: Lateral C-7 Loop

Sample ID: **LCS-44647** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **44647** RunNo: **59643**

Prep Date: **5/3/2019** Analysis Date: **5/6/2019** SeqNo: **2010611** 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: **LCS-44727** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **44727** RunNo: **59643**

Prep Date: **5/6/2019** Analysis Date: **5/6/2019** SeqNo: **2010612** 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	92.9	63.9	124			
Surr: DNOP	4.3		5.000		86.8	70	130			

Sample ID: **MB-44647** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **44647** RunNo: **59643**

Prep Date: **5/3/2019** Analysis Date: **5/6/2019** SeqNo: **2010613** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	10		10.00		103	70	130			

Sample ID: **MB-44727** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **44727** RunNo: **59643**

Prep Date: **5/6/2019** Analysis Date: **5/6/2019** SeqNo: **2010614** 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	9.5		10.00		95.3	70	130			

Sample ID: **LCS-44646** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **44646** RunNo: **59644**

Prep Date: **5/3/2019** Analysis Date: **5/6/2019** SeqNo: **2010648** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.3		5.000		85.9	70	130			

Sample ID: **MB-44646** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **44646** RunNo: **59644**

Prep Date: **5/3/2019** Analysis Date: **5/6/2019** SeqNo: **2010649** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.2		10.00		92.3	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#: **1905232**

08-May-19

Client: ENSOLUM

Project: Lateral C-7 Loop

Sample ID: **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **G59658**	RunNo: **59658**
Prep Date:	Analysis Date: **5/6/2019**	SeqNo: **2011127** 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	87.5	80.1	123			
Surr: BFB	1000		1000		104	73.8	119			

Sample ID: **RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **G59658**	RunNo: **59658**
Prep Date:	Analysis Date: **5/6/2019**	SeqNo: **2011128** 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		89.9	73.8	119			

Sample ID: **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **G59659**	RunNo: **59659**
Prep Date:	Analysis Date: **5/6/2019**	SeqNo: **2011208** 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	94.7	80.1	123			
Surr: BFB	1100		1000		108	73.8	119			

Sample ID: **RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **G59659**	RunNo: **59659**
Prep Date:	Analysis Date: **5/6/2019**	SeqNo: **2011209** 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		94.5	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#: **1905232**

08-May-19

Client: ENSOLUM

Project: Lateral C-7 Loop

Sample ID: **100NG BTEX LCS** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **LCSS** Batch ID: **R59658** RunNo: **59658**

Prep Date: Analysis Date: **5/6/2019** SeqNo: **2011130** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	109	80	120			
Toluene	0.93	0.050	1.000	0	93.1	80	120			
Ethylbenzene	0.91	0.050	1.000	0	91.2	80	120			
Xylenes, Total	2.7	0.10	3.000	0	89.7	80	120			
Surr: 4-Bromofluorobenzene	0.94		1.000		93.6	80	120			

Sample ID: **RB** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBS** Batch ID: **R59658** RunNo: **59658**

Prep Date: Analysis Date: **5/6/2019** SeqNo: **2011140** 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		88.5	80	120			

Sample ID: **100NG BTEX LCS** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **LCSS** Batch ID: **R59659** RunNo: **59659**

Prep Date: Analysis Date: **5/6/2019** SeqNo: **2011244** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.025	1.000	0	89.7	80	120			
Toluene	0.92	0.050	1.000	0	91.7	80	120			
Ethylbenzene	0.91	0.050	1.000	0	91.4	80	120			
Xylenes, Total	2.8	0.10	3.000	0	91.7	80	120			
Surr: 4-Bromofluorobenzene	0.94		1.000		94.3	80	120			

Sample ID: **RB** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBS** Batch ID: **R59659** RunNo: **59659**

Prep Date: Analysis Date: **5/6/2019** SeqNo: **2011255** 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	0.92		1.000		92.0	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: 1905232 RcptNo: 1

Received By: Isaiah Ortiz 5/4/2019 8:50:00 AM I-OX

Completed By: Isaiah Ortiz 5/4/2019 10:18:10 AM I-OX

Reviewed By: CB: of MA 5/5/19

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:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.4	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

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☒ Rush 100%

Project Name: Lateral C-7 Loop

Project #: 05A1226055

Project Manager: KSummers

Sampler: RDeechilly
On Ice: ☒ Yes ☐ No
# of Coolers: 1
Cooler Temp(including CF): 2.4°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. 1905232	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
5/3/19	945	S	SP-1	1 4oz Jar	cool	-001	X	X									X
5/3/19	950	S	SP-2	1 4oz Jar	cool	-002	X	X									X
5/3/19	955	S	SP-3	1 4oz Jar	cool	-003	X	X									X

NTS

Analysis Request

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
5/3/19	1318		Christian Walker		5/3/19	1318
5/3/19	1810	Christian Walker		courier	5/4/19	0850

Remarks: PM - Tom Long (EPROD)
Pay Key - RB21200
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.

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

May 08, 2019

Kyle Summers

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

RE: Lateral C-7 Loop OrderNo.: 1905230

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 6 sample(s) on 5/4/2019 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 C-7 Loop
Collection Date: 5/3/2019 9:15:00 AM
Lab ID: 1905230-001
Matrix: MEOH (SOIL)
Received Date: 5/4/2019 8:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	100	60		mg/Kg	20	5/5/2019 1:10:54 PM	44722
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	5/6/2019 10:19:29 AM	44727
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/6/2019 10:19:29 AM	44727
Surr: DNOP	89.7	70-130		%Rec	1	5/6/2019 10:19:29 AM	44727
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	5/6/2019 9:08:54 AM	G59658
Surr: BFB	90.4	73.8-119		%Rec	1	5/6/2019 9:08:54 AM	G59658
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.023		mg/Kg	1	5/6/2019 9:08:54 AM	R59658
Toluene	ND	0.046		mg/Kg	1	5/6/2019 9:08:54 AM	R59658
Ethylbenzene	ND	0.046		mg/Kg	1	5/6/2019 9:08:54 AM	R59658
Xylenes, Total	ND	0.093		mg/Kg	1	5/6/2019 9:08:54 AM	R59658
Surr: 4-Bromofluorobenzene	88.9	80-120		%Rec	1	5/6/2019 9:08:54 AM	R59658

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-2
Project: Lateral C-7 Loop
Collection Date: 5/3/2019 9:20:00 AM
Lab ID: 1905230-002
Matrix: MEOH (SOIL)
Received Date: 5/4/2019 8:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	200	60		mg/Kg	20	5/5/2019 1:23:18 PM	44722
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	5/6/2019 10:43:32 AM	44727
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/6/2019 10:43:32 AM	44727
Surr: DNOP	97.0	70-130		%Rec	1	5/6/2019 10:43:32 AM	44727
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	3.4		mg/Kg	1	5/6/2019 9:31:38 AM	G59658
Surr: BFB	89.2	73.8-119		%Rec	1	5/6/2019 9:31:38 AM	G59658
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.017		mg/Kg	1	5/6/2019 9:31:38 AM	R59658
Toluene	ND	0.034		mg/Kg	1	5/6/2019 9:31:38 AM	R59658
Ethylbenzene	ND	0.034		mg/Kg	1	5/6/2019 9:31:38 AM	R59658
Xylenes, Total	ND	0.068		mg/Kg	1	5/6/2019 9:31:38 AM	R59658
Surr: 4-Bromofluorobenzene	85.9	80-120		%Rec	1	5/6/2019 9:31:38 AM	R59658

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-3
Project: Lateral C-7 Loop
Collection Date: 5/3/2019 9:25:00 AM
Lab ID: 1905230-003
Matrix: MEOH (SOIL)
Received Date: 5/4/2019 8:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	74	60		mg/Kg	20	5/5/2019 1:35:43 PM	44722
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	5/6/2019 11:07:46 AM	44727
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/6/2019 11:07:46 AM	44727
Surr: DNOP	97.8	70-130		%Rec	1	5/6/2019 11:07:46 AM	44727
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	3.1		mg/Kg	1	5/6/2019 9:54:17 AM	G59658
Surr: BFB	90.6	73.8-119		%Rec	1	5/6/2019 9:54:17 AM	G59658
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.016		mg/Kg	1	5/6/2019 9:54:17 AM	R59658
Toluene	ND	0.031		mg/Kg	1	5/6/2019 9:54:17 AM	R59658
Ethylbenzene	ND	0.031		mg/Kg	1	5/6/2019 9:54:17 AM	R59658
Xylenes, Total	ND	0.062		mg/Kg	1	5/6/2019 9:54:17 AM	R59658
Surr: 4-Bromofluorobenzene	87.7	80-120		%Rec	1	5/6/2019 9:54:17 AM	R59658

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-4
Project: Lateral C-7 Loop
Collection Date: 5/3/2019 9:30:00 AM
Lab ID: 1905230-004
Matrix: MEOH (SOIL)
Received Date: 5/4/2019 8:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	5/5/2019 1:48:07 PM	44722
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/6/2019 11:32:03 AM	44727
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/6/2019 11:32:03 AM	44727
Surr: DNOP	97.2	70-130		%Rec	1	5/6/2019 11:32:03 AM	44727
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	5/6/2019 10:16:56 AM	G59658
Surr: BFB	90.5	73.8-119		%Rec	1	5/6/2019 10:16:56 AM	G59658
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.018		mg/Kg	1	5/6/2019 10:16:56 AM	R59658
Toluene	ND	0.035		mg/Kg	1	5/6/2019 10:16:56 AM	R59658
Ethylbenzene	ND	0.035		mg/Kg	1	5/6/2019 10:16:56 AM	R59658
Xylenes, Total	ND	0.070		mg/Kg	1	5/6/2019 10:16:56 AM	R59658
Surr: 4-Bromofluorobenzene	89.2	80-120		%Rec	1	5/6/2019 10:16:56 AM	R59658

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-5
Project: Lateral C-7 Loop
Collection Date: 5/3/2019 9:35:00 AM
Lab ID: 1905230-005
Matrix: MEOH (SOIL)
Received Date: 5/4/2019 8:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	260	60		mg/Kg	20	5/5/2019 2:00:32 PM	44722
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	5/6/2019 11:56:19 AM	44727
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/6/2019 11:56:19 AM	44727
Surr: DNOP	97.5	70-130		%Rec	1	5/6/2019 11:56:19 AM	44727
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	5/6/2019 10:39:42 AM	G59658
Surr: BFB	90.4	73.8-119		%Rec	1	5/6/2019 10:39:42 AM	G59658
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.017		mg/Kg	1	5/6/2019 10:39:42 AM	R59658
Toluene	ND	0.035		mg/Kg	1	5/6/2019 10:39:42 AM	R59658
Ethylbenzene	ND	0.035		mg/Kg	1	5/6/2019 10:39:42 AM	R59658
Xylenes, Total	ND	0.069		mg/Kg	1	5/6/2019 10:39:42 AM	R59658
Surr: 4-Bromofluorobenzene	90.0	80-120		%Rec	1	5/6/2019 10:39:42 AM	R59658

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-6
Project: Lateral C-7 Loop
Collection Date: 5/3/2019 9:40:00 AM
Lab ID: 1905230-006
Matrix: MEOH (SOIL)
Received Date: 5/4/2019 8:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	310	60		mg/Kg	20	5/5/2019 2:12:57 PM	44722
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/6/2019 12:20:30 PM	44727
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/6/2019 12:20:30 PM	44727
Surr: DNOP	97.8	70-130		%Rec	1	5/6/2019 12:20:30 PM	44727
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	3.2		mg/Kg	1	5/6/2019 11:02:24 AM	G59658
Surr: BFB	88.2	73.8-119		%Rec	1	5/6/2019 11:02:24 AM	G59658
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.016		mg/Kg	1	5/6/2019 11:02:24 AM	R59658
Toluene	ND	0.032		mg/Kg	1	5/6/2019 11:02:24 AM	R59658
Ethylbenzene	ND	0.032		mg/Kg	1	5/6/2019 11:02:24 AM	R59658
Xylenes, Total	ND	0.065		mg/Kg	1	5/6/2019 11:02:24 AM	R59658
Surr: 4-Bromofluorobenzene	87.1	80-120		%Rec	1	5/6/2019 11:02:24 AM	R59658

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#: **1905230**

08-May-19

Client: ENSOLUM

Project: Lateral C-7 Loop

Sample ID: **MB-44722**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **44722**	RunNo: **59653**							
Prep Date: **5/5/2019**	Analysis Date: **5/5/2019**	SeqNo: **2010922**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-44722**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **44722**	RunNo: **59653**							
Prep Date: **5/5/2019**	Analysis Date: **5/5/2019**	SeqNo: **2010923**	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#: **1905230**

08-May-19

Client: ENSOLUM

Project: Lateral C-7 Loop

Sample ID: **LCS-44647** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **44647** RunNo: **59643**

Prep Date: **5/3/2019** Analysis Date: **5/6/2019** SeqNo: **2010611** 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: **LCS-44727** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **44727** RunNo: **59643**

Prep Date: **5/6/2019** Analysis Date: **5/6/2019** SeqNo: **2010612** 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	92.9	63.9	124			
Surr: DNOP	4.3		5.000		86.8	70	130			

Sample ID: **MB-44647** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **44647** RunNo: **59643**

Prep Date: **5/3/2019** Analysis Date: **5/6/2019** SeqNo: **2010613** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	10		10.00		103	70	130			

Sample ID: **MB-44727** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **44727** RunNo: **59643**

Prep Date: **5/6/2019** Analysis Date: **5/6/2019** SeqNo: **2010614** 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	9.5		10.00		95.3	70	130			

Sample ID: **LCS-44646** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **44646** RunNo: **59644**

Prep Date: **5/3/2019** Analysis Date: **5/6/2019** SeqNo: **2010648** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.3		5.000		85.9	70	130			

Sample ID: **MB-44646** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **44646** RunNo: **59644**

Prep Date: **5/3/2019** Analysis Date: **5/6/2019** SeqNo: **2010649** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.2		10.00		92.3	70	130			

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#: **1905230**

08-May-19

Client: ENSOLUM

Project: Lateral C-7 Loop

Sample ID: **MB-44648**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **44648**	RunNo: **59657**
Prep Date: **5/3/2019**	Analysis Date: **5/6/2019**	SeqNo: **2011095** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.0		10.00		89.7	70	130			

Sample ID: **LCS-44648**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **44648**	RunNo: **59657**
Prep Date: **5/3/2019**	Analysis Date: **5/6/2019**	SeqNo: **2011096** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.3		5.000		86.1	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#: **1905230**

08-May-19

Client: ENSOLUM

Project: Lateral C-7 Loop

Sample ID: **1905230-001A MS**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **CS-1**	Batch ID: **G59658**	RunNo: **59658**
Prep Date:	Analysis Date: **5/6/2019**	SeqNo: **2011117** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	4.6	23.13	0	86.2	69.1	142			
Surr: BFB	970		925.1		105	73.8	119			

Sample ID: **1905230-001A MSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **CS-1**	Batch ID: **G59658**	RunNo: **59658**
Prep Date:	Analysis Date: **5/6/2019**	SeqNo: **2011118** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	19	4.6	23.13	0	82.8	69.1	142	4.07	20	
Surr: BFB	940		925.1		101	73.8	119	0	0	

Sample ID: **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **G59658**	RunNo: **59658**
Prep Date:	Analysis Date: **5/6/2019**	SeqNo: **2011127** 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	87.5	80.1	123			
Surr: BFB	1000		1000		104	73.8	119			

Sample ID: **RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **G59658**	RunNo: **59658**
Prep Date:	Analysis Date: **5/6/2019**	SeqNo: **2011128** 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		89.9	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#: **1905230**

08-May-19

Client: ENSOLUM

Project: Lateral C-7 Loop

Sample ID: **100NG BTEX LCS** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **LCSS** Batch ID: **R59658** RunNo: **59658**

Prep Date: Analysis Date: **5/6/2019** SeqNo: **2011130** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	109	80	120			
Toluene	0.93	0.050	1.000	0	93.1	80	120			
Ethylbenzene	0.91	0.050	1.000	0	91.2	80	120			
Xylenes, Total	2.7	0.10	3.000	0	89.7	80	120			
Surr: 4-Bromofluorobenzene	0.94		1.000		93.6	80	120			

Sample ID: **RB** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBS** Batch ID: **R59658** RunNo: **59658**

Prep Date: Analysis Date: **5/6/2019** SeqNo: **2011140** 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		88.5	80	120			

Sample ID: **1905230-002A MS** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **CS-2** Batch ID: **R59658** RunNo: **59658**

Prep Date: Analysis Date: **5/6/2019** SeqNo: **2013259** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.74	0.017	0.6798	0	109	63.9	127			
Toluene	0.65	0.034	0.6798	0	96.0	69.9	131			
Ethylbenzene	0.64	0.034	0.6798	0	94.4	71	132			
Xylenes, Total	1.9	0.068	2.039	0	92.3	71.8	131			
Surr: 4-Bromofluorobenzene	0.66		0.6798		97.4	80	120			

Sample ID: **1905230-002A MSD** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **CS-2** Batch ID: **R59658** RunNo: **59658**

Prep Date: Analysis Date: **5/6/2019** SeqNo: **2013260** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.71	0.017	0.6798	0	104	63.9	127	4.66	20	
Toluene	0.61	0.034	0.6798	0	89.7	69.9	131	6.84	20	
Ethylbenzene	0.58	0.034	0.6798	0	85.5	71	132	9.89	20	
Xylenes, Total	1.7	0.068	2.039	0	82.5	71.8	131	11.3	20	
Surr: 4-Bromofluorobenzene	0.63		0.6798		92.4	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: **1905230** RcptNo: 1

Received By: **Isaiah Ortiz** **5/4/2019 8:50:00 AM** I-OK

Completed By: **Yazmine Garduno** **5/4/2019 9:57:03 AM** Yazmine Garduno

Reviewed By: af MA 5/5/19

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:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.4	Good	Yes			

Chain-of-Custody Record

Client: Ensolum, LLC

Mailing Address: 6006 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 100%

Project Name: Lateral C-7 Loop

Project #: 05A1226055

Project Manager: KSummers

Sampler: RDeechilly
On Ice: ☒ Yes ☐ No
# of Coolers: 1
Cooler Temp(including CF): 2.4°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. 1905230	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
5/3/19	915	S	CS-1	1 4oz Jar	cool	-001	X	X									X
5/3/19	920	S	CS-2	1 4oz Jar	cool	-002	X	X									X
5/3/19	925	S	CS-3	1 4oz Jar	cool	-003	X	X									X
5/3/19	930	S	CS-4	1 4oz Jar	cool	-004	X	X									X
5/3/19	935	S	CS-5	1 4oz Jar	cool	-005	X	X									X
5/3/19	940	S	CS-6	1 4oz Jar	cool	-006	X	X									X

NES

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
5/3/19	1318				5/3/19	1318
5/3/19	1820			Courier	5/4/19	0850

Remarks:
PM - Tom Long (EPROD)
Pay Key - RB21200

SAMEDAY

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

May 15, 2019

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

RE: Lateral C-7 Loop OrderNo.: 1905461

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 4 sample(s) on 5/9/2019 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-7
Project: Lateral C-7 Loop
Collection Date: 5/8/2019 9:05:00 AM
Lab ID: 1905461-001
Matrix: MEOH (SOIL)
Received Date: 5/9/2019 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	1100	60		mg/Kg	20	5/9/2019 2:17:47 PM	44826
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	2.9		mg/Kg	1	5/9/2019 1:25:03 PM	R59765
Surr: BFB	105	70-130		%Rec	1	5/9/2019 1:25:03 PM	R59765
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	5/9/2019 12:54:12 PM	44816
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/9/2019 12:54:12 PM	44816
Surr: DNOP	105	70-130		%Rec	1	5/9/2019 12:54:12 PM	44816
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**	
Benzene	ND	0.014		mg/Kg	1	5/9/2019 1:25:03 PM	S59765
Toluene	ND	0.029		mg/Kg	1	5/9/2019 1:25:03 PM	S59765
Ethylbenzene	ND	0.029		mg/Kg	1	5/9/2019 1:25:03 PM	S59765
Xylenes, Total	ND	0.058		mg/Kg	1	5/9/2019 1:25:03 PM	S59765
Surr: 1,2-Dichloroethane-d4	89.8	70-130		%Rec	1	5/9/2019 1:25:03 PM	S59765
Surr: 4-Bromofluorobenzene	91.2	70-130		%Rec	1	5/9/2019 1:25:03 PM	S59765
Surr: Dibromofluoromethane	104	70-130		%Rec	1	5/9/2019 1:25:03 PM	S59765
Surr: Toluene-d8	88.7	70-130		%Rec	1	5/9/2019 1:25:03 PM	S59765

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-8
Project: Lateral C-7 Loop
Collection Date: 5/8/2019 9:10:00 AM
Lab ID: 1905461-002
Matrix: MEOH (SOIL)
Received Date: 5/9/2019 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	500	60		mg/Kg	20	5/9/2019 2:30:11 PM	44826
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	3.0		mg/Kg	1	5/9/2019 1:53:40 PM	R59765
Surr: BFB	108	70-130		%Rec	1	5/9/2019 1:53:40 PM	R59765
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	5/9/2019 1:16:26 PM	44816
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/9/2019 1:16:26 PM	44816
Surr: DNOP	106	70-130		%Rec	1	5/9/2019 1:16:26 PM	44816
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**	
Benzene	ND	0.015		mg/Kg	1	5/9/2019 1:53:40 PM	S59765
Toluene	ND	0.030		mg/Kg	1	5/9/2019 1:53:40 PM	S59765
Ethylbenzene	ND	0.030		mg/Kg	1	5/9/2019 1:53:40 PM	S59765
Xylenes, Total	ND	0.061		mg/Kg	1	5/9/2019 1:53:40 PM	S59765
Surr: 1,2-Dichloroethane-d4	94.1	70-130		%Rec	1	5/9/2019 1:53:40 PM	S59765
Surr: 4-Bromofluorobenzene	95.6	70-130		%Rec	1	5/9/2019 1:53:40 PM	S59765
Surr: Dibromofluoromethane	109	70-130		%Rec	1	5/9/2019 1:53:40 PM	S59765
Surr: Toluene-d8	88.8	70-130		%Rec	1	5/9/2019 1:53:40 PM	S59765

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-9
Project: Lateral C-7 Loop
Collection Date: 5/8/2019 9:15:00 AM
Lab ID: 1905461-003
Matrix: MEOH (SOIL)
Received Date: 5/9/2019 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	95	60		mg/Kg	20	5/9/2019 2:42:36 PM	44826
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	3.2		mg/Kg	1	5/9/2019 2:22:17 PM	R59765
Surr: BFB	109	70-130		%Rec	1	5/9/2019 2:22:17 PM	R59765
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	5/9/2019 1:38:44 PM	44816
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/9/2019 1:38:44 PM	44816
Surr: DNOP	106	70-130		%Rec	1	5/9/2019 1:38:44 PM	44816
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**	
Benzene	ND	0.016		mg/Kg	1	5/9/2019 2:22:17 PM	S59765
Toluene	ND	0.032		mg/Kg	1	5/9/2019 2:22:17 PM	S59765
Ethylbenzene	ND	0.032		mg/Kg	1	5/9/2019 2:22:17 PM	S59765
Xylenes, Total	ND	0.064		mg/Kg	1	5/9/2019 2:22:17 PM	S59765
Surr: 1,2-Dichloroethane-d4	92.6	70-130		%Rec	1	5/9/2019 2:22:17 PM	S59765
Surr: 4-Bromofluorobenzene	95.7	70-130		%Rec	1	5/9/2019 2:22:17 PM	S59765
Surr: Dibromofluoromethane	107	70-130		%Rec	1	5/9/2019 2:22:17 PM	S59765
Surr: Toluene-d8	88.5	70-130		%Rec	1	5/9/2019 2:22:17 PM	S59765

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-10
Project: Lateral C-7 Loop
Collection Date: 5/8/2019 9:20:00 AM
Lab ID: 1905461-004
Matrix: MEOH (SOIL)
Received Date: 5/9/2019 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	630	60		mg/Kg	20	5/9/2019 2:55:00 PM	44826
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	3.2		mg/Kg	1	5/9/2019 2:50:53 PM	R59765
Surr: BFB	108	70-130		%Rec	1	5/9/2019 2:50:53 PM	R59765
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	5/9/2019 2:00:49 PM	44816
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/9/2019 2:00:49 PM	44816
Surr: DNOP	106	70-130		%Rec	1	5/9/2019 2:00:49 PM	44816
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**	
Benzene	ND	0.016		mg/Kg	1	5/9/2019 2:50:53 PM	S59765
Toluene	ND	0.032		mg/Kg	1	5/9/2019 2:50:53 PM	S59765
Ethylbenzene	ND	0.032		mg/Kg	1	5/9/2019 2:50:53 PM	S59765
Xylenes, Total	ND	0.063		mg/Kg	1	5/9/2019 2:50:53 PM	S59765
Surr: 1,2-Dichloroethane-d4	89.2	70-130		%Rec	1	5/9/2019 2:50:53 PM	S59765
Surr: 4-Bromofluorobenzene	97.0	70-130		%Rec	1	5/9/2019 2:50:53 PM	S59765
Surr: Dibromofluoromethane	107	70-130		%Rec	1	5/9/2019 2:50:53 PM	S59765
Surr: Toluene-d8	91.0	70-130		%Rec	1	5/9/2019 2:50:53 PM	S59765

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#: **1905461**
15-May-19

Client: ENSOLUM
Project: Lateral C-7 Loop

Sample ID: **MB-44826**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **44826**	RunNo: **59766**							
Prep Date: **5/9/2019**	Analysis Date: **5/9/2019**	SeqNo: **2016237**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-44826**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **44826**	RunNo: **59766**							
Prep Date: **5/9/2019**	Analysis Date: **5/9/2019**	SeqNo: **2016238**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.0	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#: **1905461**

15-May-19

Client: ENSOLUM

Project: Lateral C-7 Loop

Sample ID: **LCS-44816**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **44816**	RunNo: **59732**
Prep Date: **5/9/2019**	Analysis Date: **5/9/2019**	SeqNo: **2014933** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	90.0	63.9	124			
Surr: DNOP	4.0		5.000		79.4	70	130			

Sample ID: **MB-44816**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **44816**	RunNo: **59732**
Prep Date: **5/9/2019**	Analysis Date: **5/9/2019**	SeqNo: **2014934** 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	9.5		10.00		94.8	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#: **1905461**

15-May-19

Client: ENSOLUM

Project: Lateral C-7 Loop

Sample ID: **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: Volatiles Short List**

Client ID: **LCSS** Batch ID: **S59765** RunNo: **59765**

Prep Date: Analysis Date: **5/9/2019** SeqNo: **2015522** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	99.8	70	130			
Toluene	0.96	0.050	1.000	0	96.3	70	130			
Surr: 1,2-Dichloroethane-d4	0.44		0.5000		87.1	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		98.1	70	130			
Surr: Dibromofluoromethane	0.51		0.5000		103	70	130			
Surr: Toluene-d8	0.45		0.5000		89.7	70	130			

Sample ID: **rb** SampType: **MBLK** TestCode: **EPA Method 8260B: Volatiles Short List**

Client ID: **PBS** Batch ID: **S59765** RunNo: **59765**

Prep Date: Analysis Date: **5/9/2019** SeqNo: **2015523** 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		85.8	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		97.7	70	130			
Surr: Dibromofluoromethane	0.51		0.5000		103	70	130			
Surr: Toluene-d8	0.46		0.5000		91.9	70	130			

Sample ID: **1905461-002a ms** SampType: **MS** TestCode: **EPA Method 8260B: Volatiles Short List**

Client ID: **CS-8** Batch ID: **S59765** RunNo: **59765**

Prep Date: Analysis Date: **5/9/2019** SeqNo: **2016571** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.62	0.015	0.6098	0	101	68.9	131			
Toluene	0.57	0.030	0.6098	0	94.1	64.3	137			
Surr: 1,2-Dichloroethane-d4	0.27		0.3049		87.8	70	130			
Surr: 4-Bromofluorobenzene	0.30		0.3049		97.0	70	130			
Surr: Dibromofluoromethane	0.33		0.3049		107	70	130			
Surr: Toluene-d8	0.27		0.3049		88.3	70	130			

Sample ID: **1905461-002A MSD** SampType: **MSD** TestCode: **EPA Method 8260B: Volatiles Short List**

Client ID: **CS-8** Batch ID: **S59765** RunNo: **59765**

Prep Date: Analysis Date: **5/9/2019** SeqNo: **2016572** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.58	0.015	0.6098	0	94.9	68.9	131	6.24	20	
Toluene	0.54	0.030	0.6098	0	89.0	64.3	137	5.54	20	

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#: **1905461**
15-May-19

Client: ENSOLUM
Project: Lateral C-7 Loop

Sample ID: **1905461-002A MSD** SampType: **MSD** TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **CS-8** Batch ID: **S59765** RunNo: **59765**
Prep Date: Analysis Date: **5/9/2019** SeqNo: **2016572** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.27		0.3049		89.0	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.29		0.3049		96.1	70	130	0	0	
Surr: Dibromofluoromethane	0.32		0.3049		106	70	130	0	0	
Surr: Toluene-d8	0.27		0.3049		88.7	70	130	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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1905461**

15-May-19

Client: ENSOLUM

Project: Lateral C-7 Loop

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **R59765**	RunNo: **59765**
Prep Date:	Analysis Date: **5/9/2019**	SeqNo: **2015548** 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	93.3	70	130			
Surr: BFB	540		500.0		108	70	130			

Sample ID: **rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **R59765**	RunNo: **59765**
Prep Date:	Analysis Date: **5/9/2019**	SeqNo: **2015549** 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	550		500.0		109	70	130			

Sample ID: **1905461-001a ms**	SampType: **MS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **CS-7**	Batch ID: **R59765**	RunNo: **59765**
Prep Date:	Analysis Date: **5/9/2019**	SeqNo: **2016560** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	13	2.9	14.44	0	88.8	68.2	135			
Surr: BFB	310		288.7		108	70	130			

Sample ID: **1905461-001a msd**	SampType: **MSD**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **CS-7**	Batch ID: **R59765**	RunNo: **59765**
Prep Date:	Analysis Date: **5/9/2019**	SeqNo: **2016561** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	12	2.9	14.44	0	84.8	68.2	135	4.61	20	
Surr: BFB	310		288.7		108	70	130	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: **1905461** RcptNo: **1**

Received By: **Erin Melendrez** **5/9/2019 8:19:00 AM** 5.9.19

Completed By: **Leah Baca** **5/9/2019 8:44:21 AM** Leah SBaca

Reviewed By: AT 05/09/19

Labeled by ENM 5/9/19

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 ☑	# of preserved bottles checked for pH: (<2 or >12 unless noted)
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 ☐	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: ENM 5/9/19

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	1.8	Good	Yes			
2	3.2	Good	Yes			
3	4.1	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 5/9/19 100%

Project Name: Lateral C-7 Loop

Project #: 05A1226055

Project Manager: KSummers

Sampler: RDeechilly
On Ice: ☒ Yes ☐ No
# of Coolers: 3
Cooler Temp (including CF): 1.8°C, 3.2°C, 4.1°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 Name	Container Type and #	Preservative Type	HEAL No. 1905461	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
5/8/19	905	S	CS-7	1 4oz Jar	cool	-001	X	X									X
5/8/19	910	S	CS-8	1 4oz Jar	cool	-002	X	X									X
5/8/19	915	S	CS-9	1 4oz Jar	cool	-003	X	X									X
5/8/19	920	S	CS-10	1 4oz Jar	cool	-004	X	X									X

NPS

Analysis Request

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
5/8/19	1432		Christine Walker		5/8/19	1432
5/8/19	1900	Christine Walker		Courier	5/9/19	0815

Remarks: PM -- Tom Long (EPROD)
PO# - RB21200
SAMEDAY

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
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Website: www.hallenvironmental.com

May 15, 2019

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

RE: Lateral C-7 Loop OrderNo.: 1905662

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 2 sample(s) on 5/14/2019 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.

Analytical Report
Lab Order **1905662**
Date Reported: **5/15/2019**

CLIENT: ENSOLUM
Client Sample ID: CS-11
Project: Lateral C-7 Loop
Collection Date: 5/13/2019 1:00:00 PM
Lab ID: 1905662-001
Matrix: SOIL
Received Date: 5/14/2019 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	690	60		mg/Kg	20	5/14/2019 10:01:09 AM	44902

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-12
Project: Lateral C-7 Loop
Collection Date: 5/13/2019 1:05:00 PM
Lab ID: 1905662-002 **Matrix:** SOIL **Received Date:** 5/14/2019 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	5/14/2019 10:13:34 AM	44902

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#: **1905662**

15-May-19

Client: ENSOLUM

Project: Lateral C-7 Loop

Sample ID: **MB-44902**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **44902**	RunNo: **59859**
Prep Date: **5/14/2019**	Analysis Date: **5/14/2019**	SeqNo: **2019990** Units: **mg/Kg**

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

Sample ID: **LCS-44902**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **44902**	RunNo: **59859**
Prep Date: **5/14/2019**	Analysis Date: **5/14/2019**	SeqNo: **2019991** 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

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: 1905662 RcptNo: 1

Received By: Desiree Dominguez 5/14/2019 8:00:00 AM DD

Completed By: Anne Thorne 5/14/2019 8:09:19 AM Anne Thorne

Reviewed By: DAD 5/14/19

Labeled by: ~~AT~~ 05/14/19

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 Seals intact on Sat Jars / ~~AT~~ 05/14/19

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.9	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:
☐ Standard ☒ Rush 5/14/19 ~~5/13/19~~ FED 100%

Project Name: Lateral C-7 Loop

Project #: 05A1226055

Project Manager: ksummers

Sampler: RDeechilly
On Ice: ☒ Yes ☐ No
# of Coolers: 1
Cooler Temp(including CF): 1.9°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. 1905662	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
5/13/19	1300	S	CS-11	1402 Jar	cool	001											X
5/13/19	1305	S	CS-12	1402 Jar	cool	002											X

NFC

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
5/13/19	1456				5/13	1456
5/13/19	1700			Courier	5/14/19	8:00

Remarks: PM-Tom Long (EPROD)
Paykey- RB21200

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.

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

May 17, 2019

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

RE: Lateral C 7 Loop OrderNo.: 1905803

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 1 sample(s) on 5/16/2019 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 C 7 Loop
Collection Date: 5/15/2019 10:15:00 AM
Lab ID: 1905803-001 **Matrix:** SOIL **Received Date:** 5/16/2019 6:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	220	60		mg/Kg	20	5/16/2019 11:18:46 AM	44963
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	5/16/2019 1:36:10 PM	44961
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/16/2019 1:36:10 PM	44961
Surr: DNOP	98.7	70-130		%Rec	1	5/16/2019 1:36:10 PM	44961
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	5/16/2019 10:48:52 AM	G59933
Surr: BFB	84.4	73.8-119		%Rec	1	5/16/2019 10:48:52 AM	G59933
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.019		mg/Kg	1	5/16/2019 10:48:52 AM	B59933
Toluene	ND	0.038		mg/Kg	1	5/16/2019 10:48:52 AM	B59933
Ethylbenzene	ND	0.038		mg/Kg	1	5/16/2019 10:48:52 AM	B59933
Xylenes, Total	ND	0.076		mg/Kg	1	5/16/2019 10:48:52 AM	B59933
Surr: 4-Bromofluorobenzene	83.3	80-120		%Rec	1	5/16/2019 10:48:52 AM	B59933

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#: **1905803**

17-May-19

Client: ENSOLUM

Project: Lateral C 7 Loop

Sample ID: **MB-44963**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **44963**	RunNo: **59923**
Prep Date: **5/16/2019**	Analysis Date: **5/16/2019**	SeqNo: **2023454** Units: **mg/Kg**

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

Sample ID: **LCS-44963**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **44963**	RunNo: **59923**
Prep Date: **5/16/2019**	Analysis Date: **5/16/2019**	SeqNo: **2023455** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.7	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#: **1905803**

17-May-19

Client: ENSOLUM

Project: Lateral C 7 Loop

Sample ID: **LCS-44961** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **44961** RunNo: **59920**

Prep Date: **5/16/2019** Analysis Date: **5/16/2019** SeqNo: **2022125** 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	4.7		5.000		93.0	70	130			

Sample ID: **MB-44961** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **44961** RunNo: **59920**

Prep Date: **5/16/2019** Analysis Date: **5/16/2019** SeqNo: **2022126** 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		109	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#: **1905803**

17-May-19

Client: ENSOLUM

Project: Lateral C 7 Loop

Sample ID: **RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **G59933**	RunNo: **59933**
Prep Date:	Analysis Date: **5/16/2019**	SeqNo: **2022695** 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	880		1000		87.6	73.8	119			

Sample ID: **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **G59933**	RunNo: **59933**
Prep Date:	Analysis Date: **5/16/2019**	SeqNo: **2022696** 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	90.2	80.1	123			
Surr: BFB	1100		1000		108	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#: **1905803**

17-May-19

Client: ENSOLUM

Project: Lateral C 7 Loop

Sample ID: **RB**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **B59933**	RunNo: **59933**
Prep Date:	Analysis Date: **5/16/2019**	SeqNo: **2022707** 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		87.5	80	120			

Sample ID: **100NG BTEX LCS**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **B59933**	RunNo: **59933**
Prep Date:	Analysis Date: **5/16/2019**	SeqNo: **2022708** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	110	80	120			
Toluene	0.94	0.050	1.000	0	93.9	80	120			
Ethylbenzene	0.92	0.050	1.000	0	92.3	80	120			
Xylenes, Total	2.7	0.10	3.000	0	91.2	80	120			
Surr: 4-Bromofluorobenzene	0.95		1.000		94.6	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: 1905803 RcptNo: 1

Received By: **Anne Thorne** 5/16/2019 6:15:00 AM

Completed By: **Anne Thorne** 5/16/2019 7:04:05 AM

Reviewed By: YG 5/14/19

Labeled by: AT 05/16/19

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 JAR/at 5/16/19

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.1	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

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: 5/16/19

☐ Standard ☒ Rush 1080

Project Name: Lateral C-7 Loop

Project #: 05A1226055

Project Manager: KSummers

Sampler: RDeechilly

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 1.1

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. 1905803	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
5/15/19	1015	S	CS-13	1402 Jar	cool	201	X	X									X

NFS

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
5/15/19	1620				5/15/19	1620
5/15/19	1714				05/16/19	0615

Remarks: PM - Tom Long (EPROD)
Pay Key - RB21200

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.