

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

State of New Mexico
Energy Minerals and Natural
Resources Department

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

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

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: Enterprise Field Services, LLC	OGRID: 151618
Contact Name: Thomas Long	Contact Telephone: 505-599-2286
Contact email: tjlong@eprod.com	Incident # (assigned by OCD): NCS1920536036
Contact mailing address: 614 Reilly Ave, Farmington, NM 87401	

Location of Release Source

Latitude **36.540996** Longitude **-107.924768** (NAD 83 in decimal degrees to 5 decimal places)

Site Name Huerfano #24R P&A	Site Type Natural Gas Gathering Pipeline
Date Release Discovered: 6/28/2019	Serial Number (if applicable): NM 099883

Unit Letter	Section	Township	Range	County
M	29	27N	10W	San Juan

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

Nature and Volume of Release

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

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input checked="" type="checkbox"/> Condensate	Volume Released (bbls): 5-10 bbls	Volume Recovered (bbls): None
<input checked="" type="checkbox"/> Natural Gas	Volume Released (Mcf): 4.5 MCF	Volume Recovered (Mcf): None
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units):	Volume/Weight Recovered (provide units)

Cause of Release: On June 28, 2019, Enterprise discovered a release of natural gas and natural gas liquids Huerfano #24R P&A. No washes were affected. An area of approximately 15 feet in diameter was impacted by the release fluids. The pipeline was isolated, depressurized, locked out and tagged out. Enterprise completed the repairs and remediation on July 25, 2019. The final excavation dimensions measured approximately 30 feet long by 20 feet wide by approximately 5 feet deep. Approximately 192 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.

Form C-141

State of New Mexico
Oil Conservation Division

Page 2

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: 

Date: 1/6/20

email: jefields@eprod.com

Telephone: (713) 381-6684

OCD Only

Received by: OCD

Date: 1/8/2020

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: 

Date: 3/27/2020

Printed Name: Cory Smith

Title: Environmental Specialist



CLOSURE REPORT

Property:

**Huerfano #24R P&A Pipeline Release
SW ¼, S29 T27N R10W
San Juan County, New Mexico**

December 5, 2019
Ensolum Project No. 05A1226064

Prepared for:

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

Prepared by:

A handwritten signature in blue ink, reading "Rane Deechilly".

Rane Deechilly
Environmental Scientist

A handwritten signature in blue ink, reading "Chad D'Apointi".

Chad D'Apointi
Field Environmental Scientist

A handwritten signature in blue ink, reading "Kyle Summers".

Kyle Summers, CPG
Sr. Project Manager

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CLOSURE REPORT

Huerfano #24R P&A Pipeline Release SW ¼, S29 T27N R10W San Juan County, New Mexico

Ensolum Project No. 05A1226064

1.0 INTRODUCTION

1.1 Site Description & Background

Operator:	Enterprise Field Services, LLC / Enterprise Products Operating LLC (Enterprise)
Site Name:	Huerfano #24R P&A Pipeline Release (Site)
Location:	36.540991° North, 107.924770° West Southwest (SW) ¼ of Section 29, Township 27 North, Range 10 West San Juan County, New Mexico
Property:	United States Bureau of Land Management (BLM)
Regulatory:	New Mexico Energy, Minerals and Natural Resources Department (EMNRD) Oil Conservation Division (OCD)

On June 28, 2019, Enterprise personnel identified a release of natural gas on the Huerfano #24R (an out of service line that was still connected to the gathering system). Enterprise subsequently isolated and locked the pipeline out of service. On July 18, 2019, Enterprise initiated response activities to remediate petroleum hydrocarbon impact resulting from the release.

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

1.2 Project Objective

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

2.0 CLOSURE CRITERIA

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

- No water wells were identified within a one-half mile radius of the Site on the OSE Water Rights Reporting System (WRRS) database.
- Two (2) cathodic-protection wells were identified near the Site. Data for the cathodic protection well located at the Site well pad (Huerfano 24R (Unit M, Sec 29 T27N R10W)) indicates depth to water

Enterprise Field Services, LLC
 Closure Report
 Huerfano #24R P&A Pipeline Release
 December 5, 2019



between 235 and 250 feet below grade surface (bgs). Data for the Huerfano Unit #105E cathodic protection well (Unit L, Sec 29 T27N R10W), located approximately 0.2 miles from the Site indicates a depth to water of 50 feet bgs.

- The Site is located within 300 feet of a New Mexico ENMRD OCD-defined continuously flowing watercourse or significant watercourse. An ephemeral wash is located less than 300 feet from the terminus of the release flow path.
- 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 #8015	100 mg/kg
BTEX	EPA SW-846 Method #8021 or #8260	50 mg/kg
Benzene	EPA SW-846 Method #8021 or #8260	10 mg/kg

3.0 SOIL REMEDIATION ACTIVITIES

On July 18, 2019, Enterprise performed initial response clean-up of the affected soils at the location to mitigate potential safety hazards and remove the out of service part of the pipeline. During the remediation and corrective action activities Industrial Mechanical, Inc. (IMI), provided heavy equipment and labor support, while Ensolum provided environmental consulting support.

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The final pipeline remediation excavation measured approximately 30 feet long and 20 feet wide at the maximum extents. The average depth of the excavation measured approximately five (5) feet bgs. The final flow path excavation measured approximately 240 feet long by eight (8) feet wide, with an average depth of three (3) inches bgs.

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

A total of approximately 192 cubic yards (yd³) of petroleum hydrocarbon affected soils were transported to 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 imported fill and 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 calibrated Dexsil PetroFLAG[®] hydrocarbon analyzer and a photoionization detector (PID) fitted with a 10.6 eV lamp to guide excavation extents.

Ensolum's soil sampling program included the collection of 16 composite soil samples (S-1 through S-6 and FP-1 through FP-10), comprised of five (5) aliquots each, from the pipeline remediation and flow path excavations for laboratory analyses. A clean hand shovel was utilized to obtain fresh aliquots from each area of the excavation and flow path. The New Mexico EMNRD OCD provided verbal approval to proceed with the sampling events, although a New Mexico EMNRD OCD representative was not on-Site.

First Sampling Event

On July 22, 2019, composite soil samples FP-1 (0.25'), FP-2 (0.25'), FP-3 (0.25'), FP-4 (0.25'), FP-5 (0.25'), FP-6 (0.25'), FP-7 (0.25'), FP-8 (0.25'), FP-9 (0.25'), and FP-10 (0.25') were collected from the excavated flow path.

The pipeline excavation was also sampled during the first sampling event. Composite soil samples S-1 (0'-4'), S-2 (0'-4'), S-3 (0'-2'), S-4 (0'-4'), were collected from the sidewalls of the pipeline excavation. Composite soil sample S-5 (4') was collected from the floor of the pipeline excavation. Analytical results from composite soil sample S-5 indicated a New Mexico EMNRD OCD closure standard exceedance. In response to the data exceedance, the excavation was deepened to removed petroleum hydrocarbon impact. Soil associated with composite soil sample S-5 was removed by excavation and transported to the landfarm for disposal/remediation.

Second Sampling Event

On July 25, 2019, after the pipeline excavation was deepened, a second sampling event was performed. Composite soil sample S-6 (5') was collected from the floor of the excavation to replace composite soil sample S-5.

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.

Enterprise Field Services, LLC
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5.0 SOIL LABORATORY ANALYTICAL METHODS

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

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

6.0 DATA EVALUATION

Ensolum compared the BTEX, TPH, and chloride laboratory analytical results or laboratory practical quantitation limits (PQLs) / reporting limits (RLs) associated with the composite soil samples (S-1 through S-4, S-6, and FP-1 through FP-10) to the applicable New Mexico EMNRD OCD closure criteria. Soil associated with composite soil sample S-5 was removed from the Site by excavation and transported to the landfarm for disposal/remediation and is not included in the following discussion.

- The laboratory analytical results for the composite soil samples S-2 and S-3, collected from soils remaining at the Site, indicate total benzene concentrations of 0.027 mg/kg and 0.032 mg/kg, respectively, which do not exceed the New Mexico EMNRD OCD closure criteria of 10 milligrams per kilogram (mg/kg). The laboratory analytical results for the remaining composite soil samples collected from soils remaining at the Site indicate benzene is not present in concentrations greater than the laboratory PQLs/RLs, which are less than the New Mexico EMNRD OCD closure criteria of 10 mg/kg.
- The laboratory analytical results for composite soil samples S-2, S-3, and S-4, collected from soils remaining at the Site, indicate total BTEX concentrations ranging from 0.124 mg/kg (S-4) to 0.92 mg/kg (S-3), which do not exceed the New Mexico EMNRD OCD closure criteria of 50 mg/kg. The laboratory analytical results for the remaining composite soil samples collected from soils remaining at the Site indicate total BTEX is not present in concentrations greater than the laboratory PQLs/RLs, which are less than the New Mexico EMNRD OCD closure criteria of 50 mg/kg.
- The laboratory analytical results for composite soil samples S-2, S-3, and S-4, collected from soils remaining at the Site, indicate combined TPH GRO/DRO/MRO concentrations ranging from 11 mg/kg (S-4) to 30 mg/kg (S-3), 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/RLs, which are less than the New Mexico EMNRD OCD closure criteria of 100 mg/kg.
- The laboratory analytical results for composite soil samples FP-1 through FP-10, collected from soils remaining at the Site, indicate chloride concentrations ranging from 300 mg/kg (FP-1 and FP-4) to 480 mg/kg (FP-7), which do not exceed the New Mexico EMNRD OCD closure criteria of 600 mg/kg. The laboratory analytical results for the remaining composite soil samples collected from soils remaining at the Site indicate chloride is not present in concentrations greater than laboratory PQLs/RLs, which are less than the New Mexico EMNRD OCD closure criteria of 600 mg/kg for chlorides.

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

Enterprise Field Services, LLC
Closure Report
Huerfano #24R P&A Pipeline Release
December 5, 2019



7.0 RECLAMATION AND RE-VEGETATION

The excavation was backfilled with imported fill and then contoured to the surrounding grade.

8.0 FINDINGS AND RECOMMENDATION

On June 28, 2019, Enterprise personnel identified a release of natural gas on the Huerfano #24R (an out of service line that was still connected to the gathering system). Enterprise subsequently isolated and locked the pipeline out of service. On July 18, 2019, Enterprise initiated response activities to remediate 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 16 composite soil samples were collected from the walls and floor of the pipeline and flow path excavations for laboratory analysis. 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 192 yd³ of petroleum hydrocarbon affected soils were transported to Envirotech landfarm near Hilltop, New Mexico for disposal/remediation. The excavation was backfilled with imported fill and 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).

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

Enterprise Field Services, LLC
Closure Report
Huerfano #24R P&A Pipeline Release
December 5, 2019

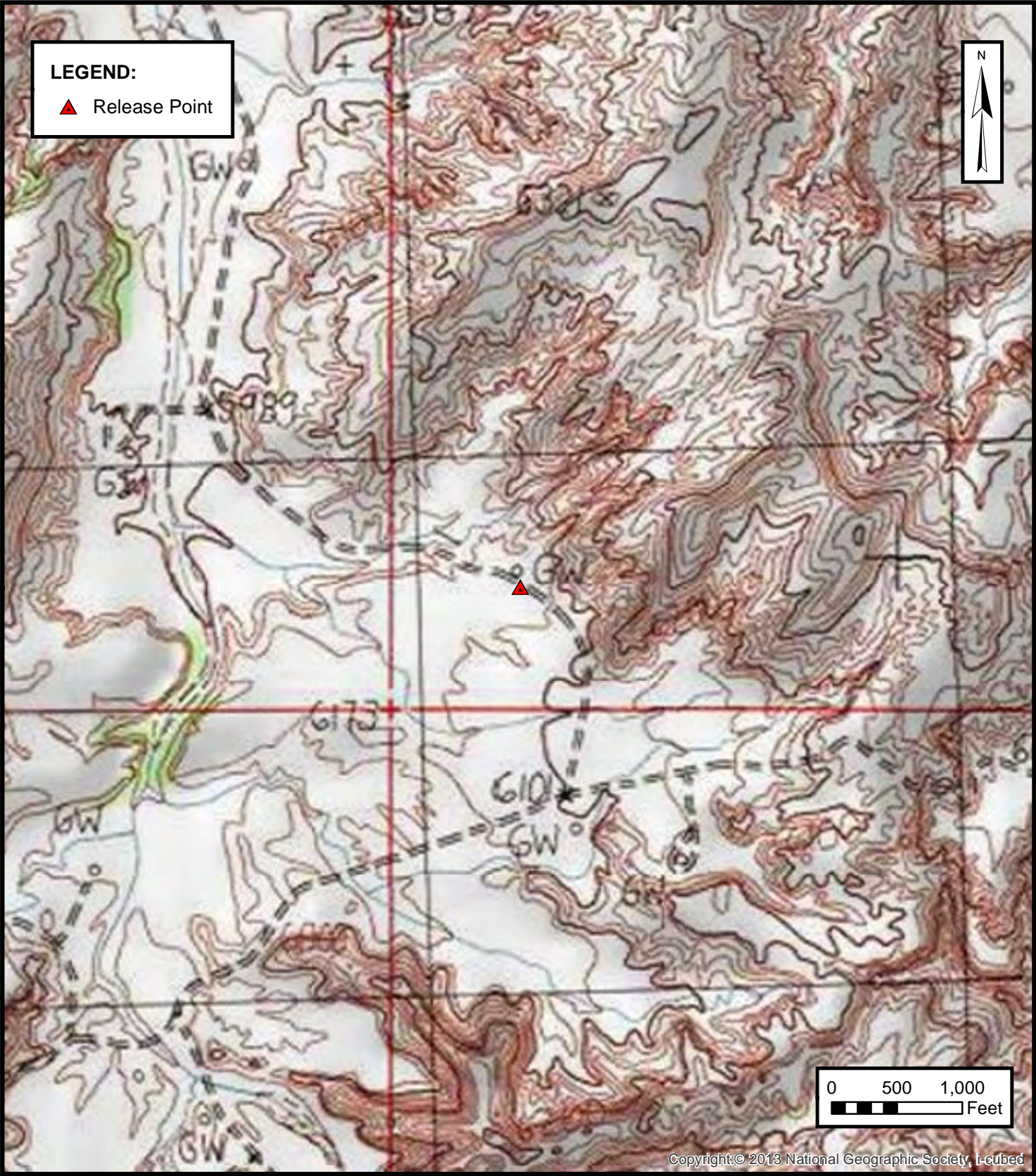


the Site) is prohibited without the express written authorization Enterprise Products Operating LLC and Ensolum. Any unauthorized distribution or reuse is at the client's sole risk. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions and limitations 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



Copyright © 2013 National Geographic Society, i-cubed

**ENSOLUM**
Environmental & Hydrogeologic Consultants

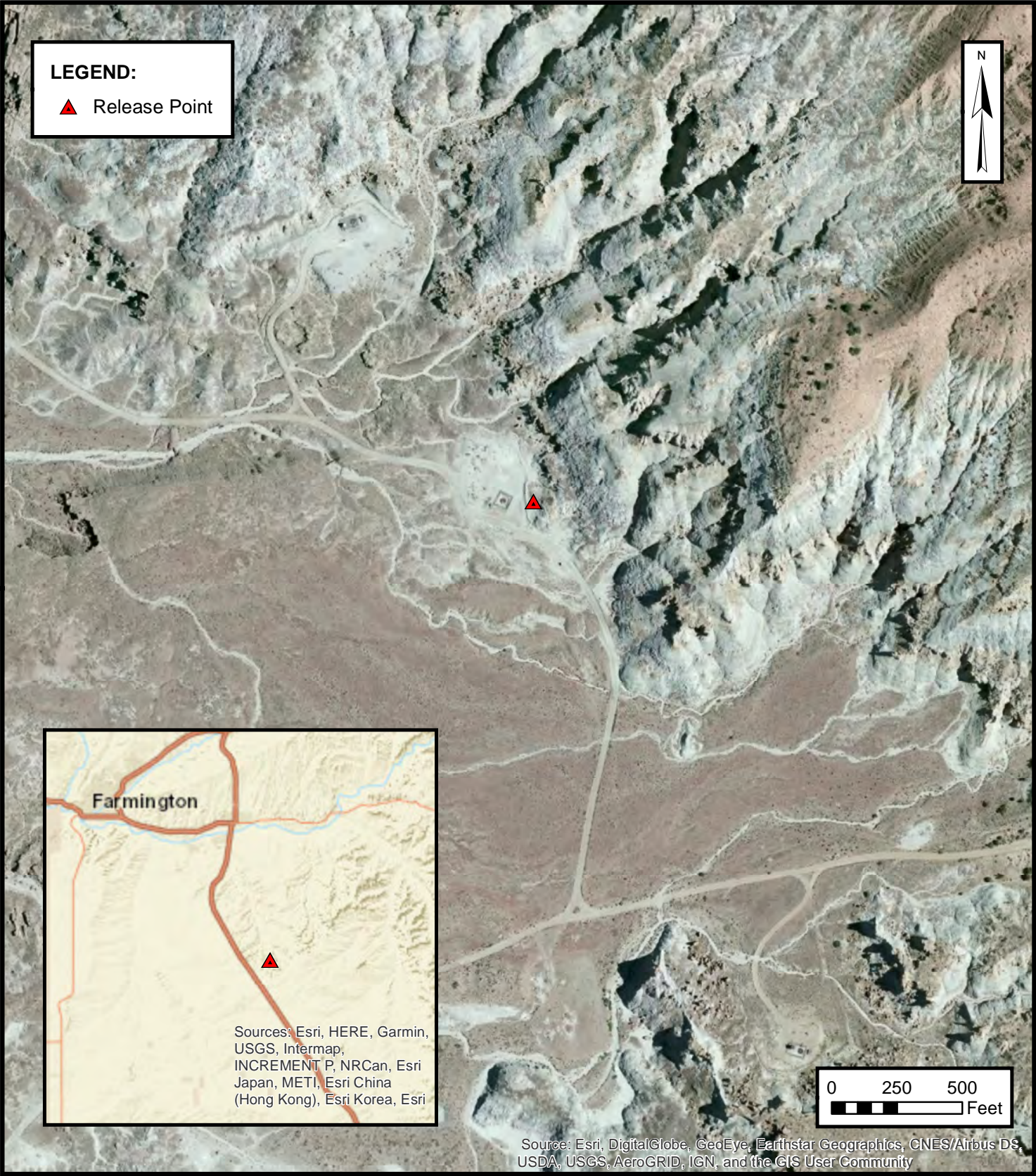
TOPOGRAPHIC MAP

ENTERPRISE FIELD SERVICES, LLC
HUERFANO #24R P&A PIPELINE RELEASE
SW ¼ , S29 T27N R10W, San Juan County, New Mexico
36.540991° N, 107.924770° W

PROJECT NUMBER: 05A1226064

FIGURE

1



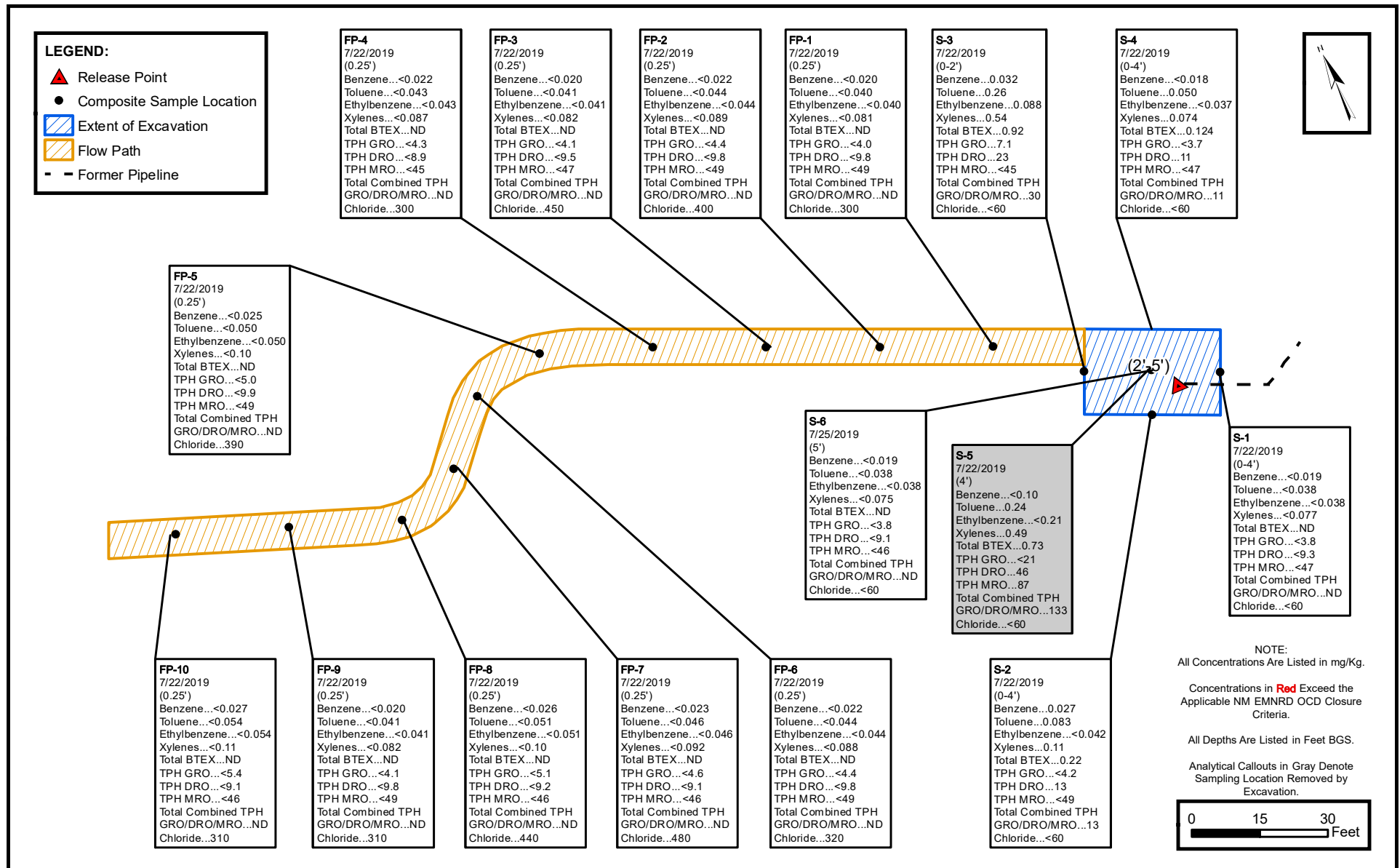
SITE VICINITY MAP

ENTERPRISE FIELD SERVICES, LLC
HUERFANO #24R P&A PIPELINE RELEASE
SW ¼ , S29 T27N R10W, San Juan County, New Mexico
36.540991° N, 107.924770° W

PROJECT NUMBER: 05A1226064

FIGURE

2



SITE MAP WITH SOIL ANALYTICAL RESULTS

ENTERPRISE FIELD SERVICES, LLC
HUERFANO #24R P&A PIPELINE RELEASE
SW ¼, S29 T27N R10W, San Juan County, New Mexico
36.540991° N, 107.924770° W

PROJECT NUMBER: 05A1226064

FIGURE
3



APPENDIX B

Executed C-138 Solid Waste Acceptance Form

corveDistrict 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 **97057-1020**
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-138

Revised August 1, 2011

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

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

<p>1. Generator Name and Address: 2. Enterprise Field Services, LLC, 614 Reilly Avenue, Farmington, NM 87401</p>	<p>Invoice Information: PM: Aron Lucero Pay Key: RB21200-15404</p>
<p>3. Originating Site: Huerfano #24R P&A (6-28-19 release)</p>	
<p>4. Location of Material (Street Address, City, State or ULSTR): UL M Section 29 T29N R10W; 36.540996, -107.924768</p>	
<p>4. Source and Description of Waste: Hydrocarbon impacted soil/sludge from remediation activities associated with a natural gas pipeline release. Estimated Volume <u>25</u> <u>yd³</u> bbls Known Volume (to be entered by the operator at the end of the haul) <u>192</u> <u>yd³</u> bbls</p>	
<p>5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS</p> <p>I, <u>Brian Stone</u> representative or authorized agent for <u>Enterprise Field Services, LLC</u> do hereby PRINT & SIGN NAME COMPANY NAME 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)</p> <p><input checked="" type="checkbox"/> RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste. <i>Operator Use Only: Waste Acceptance Frequency</i> <input type="checkbox"/> Monthly <input type="checkbox"/> Weekly <input type="checkbox"/> Per Load</p> <p><input type="checkbox"/> 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)</p> <p><input type="checkbox"/> MSDS Information <input type="checkbox"/> RCRA Hazardous Waste Analysis <input type="checkbox"/> Process Knowledge <input type="checkbox"/> Other (Provide description in Box 4)</p> <p style="text-align: center;">GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS</p> <p>I, <u>7-19-19</u>, representative for <u>Enterprise Field Services, LLC</u> authorize Envirotech, Inc. to Generator Signature complete the required testing/sign the Generator Waste Testing Certification.</p> <p>I, <u>Greg Crabtree</u>, representative for <u>Envirotech, Inc.</u> 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.</p> <p>Transporter: <u>TBD</u></p>	

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: 7/18/19

SIGNATURE: [Signature]
Surface Waste Management Facility Authorized Agent

TELEPHONE NO.: 505-632-0615



APPENDIX C

Photographic Documentation

SITE PHOTOGRAPHS

Enterprise Field Services, LLC
Closure Report
Huerfano #24R P&A Pipeline Release
Ensolum Project No. 05A1226064

**Photograph 1**

Photograph Description: View of the release area.

**Photograph 2**

Photograph Description: View of the flow path.

**Photograph 3**

Photograph Description: View of the flow path.



SITE PHOTOGRAPHS

Enterprise Field Services, LLC
Closure Report
Huerfano #24R P&A Pipeline Release
Ensolum Project No. 05A1226064

**Photograph 4**

Photograph Description: View of in-process excavation activities.

**Photograph 5**

Photograph Description: View of in-process excavation activities.

**Photograph 6**

Photograph Description: View of in-process excavation activities.



SITE PHOTOGRAPHS

Enterprise Field Services, LLC
Closure Report
Huerfano #24R P&A Pipeline Release
Ensolum Project No. 05A1226064

**Photograph 7**

Photograph Description: View of in-process flow path excavation activities.

**Photograph 8**

Photograph Description: View of in-process flow path excavation activities.

**Photograph 9**

Photograph Description: View of the final excavation after initial restoration.





APPENDIX D

Table 1 – Soil Analytical Summary



TABLE 1
Huerfano #24R P&A 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
Composite Soil Samples Removed by Excavation													
S-5	7.22.19	C	4	<0.10	0.24	<0.21	0.49	0.73	<21	46	87	133	<60
Excavation Composite Flow Path Samples													
FP-1	7.22.19	C	0.25	<0.020	<0.040	<0.040	<0.081	ND	<4.0	<9.8	<49	ND	300
FP-2	7.22.19	C	0.25	<0.022	<0.044	<0.044	<0.089	ND	<4.4	<9.8	<49	ND	400
FP-3	7.22.19	C	0.25	<0.020	<0.041	<0.041	<0.082	ND	<4.1	<9.5	<47	ND	450
FP-4	7.22.19	C	0.25	<0.022	<0.043	<0.043	<0.087	ND	<4.3	<8.9	<45	ND	300
FP-5	7.22.19	C	0.25	<0.025	<0.050	<0.050	<0.10	ND	<5.0	<9.9	<49	ND	390
FP-6	7.22.19	C	0.25	<0.022	<0.044	<0.044	<0.088	ND	<4.4	<9.8	<49	ND	320
FP-7	7.22.19	C	0.25	<0.023	<0.046	<0.046	<0.092	ND	<4.6	<9.1	<46	ND	480
FP-8	7.22.19	C	0.25	<0.026	<0.051	<0.051	<0.10	ND	<5.1	<9.2	<46	ND	440
FP-9	7.22.19	C	0.25	<0.020	<0.041	<0.041	<0.082	ND	<4.1	<9.8	<49	ND	310
FP-10	7.22.19	C	0.25	<0.027	<0.054	<0.054	<0.11	ND	<5.4	<9.1	<46	ND	310
Excavation Composite Soil Samples													
S-1	7.22.19	C	0 to 4	<0.019	<0.038	<0.038	<0.077	ND	<3.8	<9.3	<47	ND	<60
S-2	7.22.19	C	0 to 4	0.027	0.083	<0.042	0.11	0.22	<4.2	13	<49	13	<60
S-3	7.22.19	C	0 to 2	0.032	0.26	0.088	0.54	0.92	7.1	23	<45	30	<60
S-4	7.22.19	C	0 to 4	<0.018	0.050	<0.037	0.074	0.124	<3.7	11	<47	11	<60
S-6	7.25.19	C	5	<0.019	<0.038	<0.038	<0.075	ND	<3.8	<9.1	<46	ND	<60

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

ND = Not Detected above the Practical Quantitation Limits or Reporting Limits

NA = Not Analyzed

NE = Not established

mg/kg = milligram per kilogram

BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes

TPH = Total Petroleum Hydrocarbon

GRO = Gasoline Range Organics

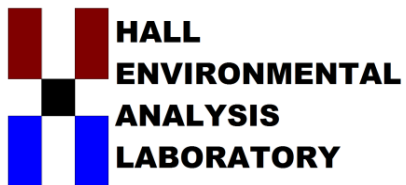
DRO = Diesel Range Organics

MRO = Motor Oil/Lube Oil Range Organics



APPENDIX E

Laboratory Data Sheets & Chain of Custody Documentation



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

July 25, 2019

Kyle Summers

ENSOLUM

606 S. Rio Grande Suite A

Aztec, NM 87410

TEL: (903) 821-5603

FAX:

RE: Huerfano 24 RA

OrderNo.: 1907B33

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 15 sample(s) on 7/23/2019 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,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 1907B33

Date Reported: 7/25/2019

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM

Client Sample ID: S-1

Project: Huerfano 24 RA

Collection Date: 7/22/2019 9:30:00 AM

Lab ID: 1907B33-001

Matrix: SOIL

Received Date: 7/23/2019 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	7/23/2019 11:06:34 AM	46326
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	7/23/2019 1:08:39 PM	46324
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	7/23/2019 1:08:39 PM	46324
Surr: DNOP	78.7	70-130		%Rec	1	7/23/2019 1:08:39 PM	46324
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	7/23/2019 9:30:14 AM	G61589
Surr: BFB	104	73.8-119		%Rec	1	7/23/2019 9:30:14 AM	G61589
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.019		mg/Kg	1	7/23/2019 9:30:14 AM	B61589
Toluene	ND	0.038		mg/Kg	1	7/23/2019 9:30:14 AM	B61589
Ethylbenzene	ND	0.038		mg/Kg	1	7/23/2019 9:30:14 AM	B61589
Xylenes, Total	ND	0.077		mg/Kg	1	7/23/2019 9:30:14 AM	B61589
Surr: 4-Bromofluorobenzene	89.1	80-120		%Rec	1	7/23/2019 9:30:14 AM	B61589

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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 1907B33

Date Reported: 7/25/2019

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM

Client Sample ID: S-2

Project: Huerfano 24 RA

Collection Date: 7/22/2019 9:35:00 AM

Lab ID: 1907B33-002

Matrix: SOIL

Received Date: 7/23/2019 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	7/23/2019 11:18:58 AM	46326
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	13	9.8		mg/Kg	1	7/23/2019 1:33:02 PM	46324
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/23/2019 1:33:02 PM	46324
Surr: DNOP	86.6	70-130		%Rec	1	7/23/2019 1:33:02 PM	46324
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.2		mg/Kg	1	7/23/2019 9:52:49 AM	G61589
Surr: BFB	101	73.8-119		%Rec	1	7/23/2019 9:52:49 AM	G61589
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	0.027	0.021		mg/Kg	1	7/24/2019 10:48:50 AM	B61628
Toluene	0.083	0.042		mg/Kg	1	7/24/2019 10:48:50 AM	B61628
Ethylbenzene	ND	0.042		mg/Kg	1	7/24/2019 10:48:50 AM	B61628
Xylenes, Total	0.11	0.085		mg/Kg	1	7/24/2019 10:48:50 AM	B61628
Surr: 4-Bromofluorobenzene	103	80-120		%Rec	1	7/24/2019 10:48:50 AM	B61628

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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 1907B33

Date Reported: 7/25/2019

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM

Client Sample ID: S-3

Project: Huerfano 24 RA

Collection Date: 7/22/2019 9:40:00 AM

Lab ID: 1907B33-003

Matrix: SOIL

Received Date: 7/23/2019 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	7/23/2019 11:31:23 AM	46326
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	23	9.1		mg/Kg	1	7/23/2019 2:46:26 PM	46324
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	7/23/2019 2:46:26 PM	46324
Surr: DNOP	74.0	70-130		%Rec	1	7/23/2019 2:46:26 PM	46324
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	7.1	3.9		mg/Kg	1	7/23/2019 10:15:27 AM	G61589
Surr: BFB	145	73.8-119	S	%Rec	1	7/23/2019 10:15:27 AM	G61589
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	0.032	0.019		mg/Kg	1	7/24/2019 11:12:17 AM	B61628
Toluene	0.26	0.039		mg/Kg	1	7/24/2019 11:12:17 AM	B61628
Ethylbenzene	0.088	0.039		mg/Kg	1	7/24/2019 11:12:17 AM	B61628
Xylenes, Total	0.54	0.077		mg/Kg	1	7/24/2019 11:12:17 AM	B61628
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	7/24/2019 11:12:17 AM	B61628

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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 1907B33

Date Reported: 7/25/2019

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM

Client Sample ID: S-4

Project: Huerfano 24 RA

Collection Date: 7/22/2019 9:45:00 AM

Lab ID: 1907B33-004

Matrix: SOIL

Received Date: 7/23/2019 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	7/23/2019 12:08:36 PM	46326
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	11	9.4		mg/Kg	1	7/23/2019 1:57:29 PM	46324
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	7/23/2019 1:57:29 PM	46324
Surr: DNOP	87.3	70-130		%Rec	1	7/23/2019 1:57:29 PM	46324
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.7		mg/Kg	1	7/23/2019 10:38:11 AM	G61589
Surr: BFB	105	73.8-119		%Rec	1	7/23/2019 10:38:11 AM	G61589
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.018		mg/Kg	1	7/24/2019 11:35:47 AM	B61628
Toluene	0.050	0.037		mg/Kg	1	7/24/2019 11:35:47 AM	B61628
Ethylbenzene	ND	0.037		mg/Kg	1	7/24/2019 11:35:47 AM	B61628
Xylenes, Total	0.074	0.074		mg/Kg	1	7/24/2019 11:35:47 AM	B61628
Surr: 4-Bromofluorobenzene	92.0	80-120		%Rec	1	7/24/2019 11:35:47 AM	B61628

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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 1907B33

Date Reported: 7/25/2019

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM

Client Sample ID: S-5

Project: Huerfano 24 RA

Collection Date: 7/22/2019 9:50:00 AM

Lab ID: 1907B33-005

Matrix: SOIL

Received Date: 7/23/2019 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	7/23/2019 12:21:01 PM	46326
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	46	9.8		mg/Kg	1	7/23/2019 12:09:34 PM	46324
Motor Oil Range Organics (MRO)	87	49		mg/Kg	1	7/23/2019 12:09:34 PM	46324
Surr: DNOP	72.5	70-130		%Rec	1	7/23/2019 12:09:34 PM	46324
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	21		mg/Kg	5	7/23/2019 11:00:53 AM	G61589
Surr: BFB	113	73.8-119		%Rec	5	7/23/2019 11:00:53 AM	G61589
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.10		mg/Kg	5	7/24/2019 11:59:21 AM	B61628
Toluene	0.24	0.21		mg/Kg	5	7/24/2019 11:59:21 AM	B61628
Ethylbenzene	ND	0.21		mg/Kg	5	7/24/2019 11:59:21 AM	B61628
Xylenes, Total	0.49	0.41		mg/Kg	5	7/24/2019 11:59:21 AM	B61628
Surr: 4-Bromofluorobenzene	93.2	80-120		%Rec	5	7/24/2019 11:59:21 AM	B61628

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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 1907B33

Date Reported: 7/25/2019

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM

Client Sample ID: FP-1

Project: Huerfano 24 RA

Collection Date: 7/22/2019 9:55:00 AM

Lab ID: 1907B33-006

Matrix: SOIL

Received Date: 7/23/2019 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	300	60		mg/Kg	20	7/23/2019 12:33:25 PM	46326
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	7/23/2019 12:31:47 PM	46324
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/23/2019 12:31:47 PM	46324
Surr: DNOP	73.8	70-130		%Rec	1	7/23/2019 12:31:47 PM	46324
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.0		mg/Kg	1	7/23/2019 11:23:33 AM	G61589
Surr: BFB	103	73.8-119		%Rec	1	7/23/2019 11:23:33 AM	G61589
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.020		mg/Kg	1	7/23/2019 11:23:33 AM	B61589
Toluene	ND	0.040		mg/Kg	1	7/23/2019 11:23:33 AM	B61589
Ethylbenzene	ND	0.040		mg/Kg	1	7/23/2019 11:23:33 AM	B61589
Xylenes, Total	ND	0.081		mg/Kg	1	7/23/2019 11:23:33 AM	B61589
Surr: 4-Bromofluorobenzene	87.5	80-120		%Rec	1	7/23/2019 11:23:33 AM	B61589

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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 1907B33

Date Reported: 7/25/2019

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM

Client Sample ID: FP-2

Project: Huerfano 24 RA

Collection Date: 7/22/2019 10:00:00 AM

Lab ID: 1907B33-007

Matrix: SOIL

Received Date: 7/23/2019 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	400	60		mg/Kg	20	7/23/2019 12:45:50 PM	46326
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	7/23/2019 10:16:38 AM	46324
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/23/2019 10:16:38 AM	46324
Surr: DNOP	85.9	70-130		%Rec	1	7/23/2019 10:16:38 AM	46324
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.4		mg/Kg	1	7/23/2019 11:46:15 AM	G61589
Surr: BFB	95.8	73.8-119		%Rec	1	7/23/2019 11:46:15 AM	G61589
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.022		mg/Kg	1	7/23/2019 11:46:15 AM	B61589
Toluene	ND	0.044		mg/Kg	1	7/23/2019 11:46:15 AM	B61589
Ethylbenzene	ND	0.044		mg/Kg	1	7/23/2019 11:46:15 AM	B61589
Xylenes, Total	ND	0.089		mg/Kg	1	7/23/2019 11:46:15 AM	B61589
Surr: 4-Bromofluorobenzene	80.6	80-120		%Rec	1	7/23/2019 11:46:15 AM	B61589

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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 1907B33

Date Reported: 7/25/2019

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM

Client Sample ID: FP-3

Project: Huerfano 24 RA

Collection Date: 7/22/2019 10:05:00 AM

Lab ID: 1907B33-008

Matrix: SOIL

Received Date: 7/23/2019 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	450	60		mg/Kg	20	7/23/2019 11:22:31 AM	46329
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: JME
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	7/23/2019 2:21:59 PM	46324
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	7/23/2019 2:21:59 PM	46324
Surr: DNOP	88.0	70-130		%Rec	1	7/23/2019 2:21:59 PM	46324
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.1		mg/Kg	1	7/23/2019 12:08:57 PM	G61589
Surr: BFB	101	73.8-119		%Rec	1	7/23/2019 12:08:57 PM	G61589
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.020		mg/Kg	1	7/23/2019 12:08:57 PM	B61589
Toluene	ND	0.041		mg/Kg	1	7/23/2019 12:08:57 PM	B61589
Ethylbenzene	ND	0.041		mg/Kg	1	7/23/2019 12:08:57 PM	B61589
Xylenes, Total	ND	0.082		mg/Kg	1	7/23/2019 12:08:57 PM	B61589
Surr: 4-Bromofluorobenzene	84.4	80-120		%Rec	1	7/23/2019 12:08:57 PM	B61589

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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 1907B33

Date Reported: 7/25/2019

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM

Client Sample ID: FP-4

Project: Huerfano 24 RA

Collection Date: 7/22/2019 10:10:00 AM

Lab ID: 1907B33-009

Matrix: SOIL

Received Date: 7/23/2019 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	300	60		mg/Kg	20	7/23/2019 11:34:55 AM	46329
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	8.9		mg/Kg	1	7/23/2019 11:05:46 AM	46324
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	7/23/2019 11:05:46 AM	46324
Surr: DNOP	80.9	70-130		%Rec	1	7/23/2019 11:05:46 AM	46324
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.3		mg/Kg	1	7/23/2019 9:33:41 AM	G61588
Surr: BFB	93.8	73.8-119		%Rec	1	7/23/2019 9:33:41 AM	G61588
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.022		mg/Kg	1	7/23/2019 9:33:41 AM	B61588
Toluene	ND	0.043		mg/Kg	1	7/23/2019 9:33:41 AM	B61588
Ethylbenzene	ND	0.043		mg/Kg	1	7/23/2019 9:33:41 AM	B61588
Xylenes, Total	ND	0.087		mg/Kg	1	7/23/2019 9:33:41 AM	B61588
Surr: 4-Bromofluorobenzene	92.8	80-120		%Rec	1	7/23/2019 9:33:41 AM	B61588

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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 1907B33

Date Reported: 7/25/2019

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM

Client Sample ID: FP-5

Project: Huerfano 24 RA

Collection Date: 7/22/2019 10:15:00 AM

Lab ID: 1907B33-010

Matrix: SOIL

Received Date: 7/23/2019 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	390	60		mg/Kg	20	7/23/2019 11:47:20 AM	46329
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	7/23/2019 11:30:30 AM	46324
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/23/2019 11:30:30 AM	46324
Surr: DNOP	83.1	70-130		%Rec	1	7/23/2019 11:30:30 AM	46324
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/23/2019 9:57:10 AM	G61588
Surr: BFB	88.5	73.8-119		%Rec	1	7/23/2019 9:57:10 AM	G61588
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	7/23/2019 9:57:10 AM	B61588
Toluene	ND	0.050		mg/Kg	1	7/23/2019 9:57:10 AM	B61588
Ethylbenzene	ND	0.050		mg/Kg	1	7/23/2019 9:57:10 AM	B61588
Xylenes, Total	ND	0.10		mg/Kg	1	7/23/2019 9:57:10 AM	B61588
Surr: 4-Bromofluorobenzene	88.8	80-120		%Rec	1	7/23/2019 9:57:10 AM	B61588

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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 1907B33

Date Reported: 7/25/2019

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM

Client Sample ID: FP-6

Project: Huerfano 24 RA

Collection Date: 7/22/2019 10:20:00 AM

Lab ID: 1907B33-011

Matrix: SOIL

Received Date: 7/23/2019 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	320	60		mg/Kg	20	7/23/2019 11:59:45 AM	46329
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	7/23/2019 11:55:23 AM	46324
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/23/2019 11:55:23 AM	46324
Surr: DNOP	89.8	70-130		%Rec	1	7/23/2019 11:55:23 AM	46324
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.4		mg/Kg	1	7/23/2019 10:20:31 AM	G61588
Surr: BFB	90.3	73.8-119		%Rec	1	7/23/2019 10:20:31 AM	G61588
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.022		mg/Kg	1	7/23/2019 10:20:31 AM	B61588
Toluene	ND	0.044		mg/Kg	1	7/23/2019 10:20:31 AM	B61588
Ethylbenzene	ND	0.044		mg/Kg	1	7/23/2019 10:20:31 AM	B61588
Xylenes, Total	ND	0.088		mg/Kg	1	7/23/2019 10:20:31 AM	B61588
Surr: 4-Bromofluorobenzene	90.7	80-120		%Rec	1	7/23/2019 10:20:31 AM	B61588

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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 1907B33

Date Reported: 7/25/2019

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM

Client Sample ID: FP-7

Project: Huerfano 24 RA

Collection Date: 7/22/2019 10:25:00 AM

Lab ID: 1907B33-012

Matrix: SOIL

Received Date: 7/23/2019 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	480	60		mg/Kg	20	7/23/2019 12:36:58 PM	46329
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	7/23/2019 12:20:15 PM	46324
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	7/23/2019 12:20:15 PM	46324
Surr: DNOP	86.0	70-130		%Rec	1	7/23/2019 12:20:15 PM	46324
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	7/23/2019 10:44:06 AM	G61588
Surr: BFB	88.9	73.8-119		%Rec	1	7/23/2019 10:44:06 AM	G61588
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	7/23/2019 10:44:06 AM	B61588
Toluene	ND	0.046		mg/Kg	1	7/23/2019 10:44:06 AM	B61588
Ethylbenzene	ND	0.046		mg/Kg	1	7/23/2019 10:44:06 AM	B61588
Xylenes, Total	ND	0.092		mg/Kg	1	7/23/2019 10:44:06 AM	B61588
Surr: 4-Bromofluorobenzene	90.1	80-120		%Rec	1	7/23/2019 10:44:06 AM	B61588

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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 1907B33

Date Reported: 7/25/2019

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM

Client Sample ID: FP-8

Project: Huerfano 24 RA

Collection Date: 7/22/2019 10:30:00 AM

Lab ID: 1907B33-013

Matrix: SOIL

Received Date: 7/23/2019 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	440	60		mg/Kg	20	7/23/2019 12:49:23 PM	46329
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	7/23/2019 12:44:50 PM	46324
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	7/23/2019 12:44:50 PM	46324
Surr: DNOP	86.9	70-130		%Rec	1	7/23/2019 12:44:50 PM	46324
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.1		mg/Kg	1	7/23/2019 11:07:33 AM	G61588
Surr: BFB	101	73.8-119		%Rec	1	7/23/2019 11:07:33 AM	G61588
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.026		mg/Kg	1	7/23/2019 11:07:33 AM	B61588
Toluene	ND	0.051		mg/Kg	1	7/23/2019 11:07:33 AM	B61588
Ethylbenzene	ND	0.051		mg/Kg	1	7/23/2019 11:07:33 AM	B61588
Xylenes, Total	ND	0.10		mg/Kg	1	7/23/2019 11:07:33 AM	B61588
Surr: 4-Bromofluorobenzene	102	80-120		%Rec	1	7/23/2019 11:07:33 AM	B61588

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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 1907B33

Date Reported: 7/25/2019

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM

Client Sample ID: FP-9

Project: Huerfano 24 RA

Collection Date: 7/22/2019 10:35:00 AM

Lab ID: 1907B33-014

Matrix: SOIL

Received Date: 7/23/2019 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	310	60		mg/Kg	20	7/23/2019 1:01:47 PM	46329
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	7/23/2019 1:09:48 PM	46324
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/23/2019 1:09:48 PM	46324
Surr: DNOP	87.6	70-130		%Rec	1	7/23/2019 1:09:48 PM	46324
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.1		mg/Kg	1	7/23/2019 12:31:39 PM	G61589
Surr: BFB	105	73.8-119		%Rec	1	7/23/2019 12:31:39 PM	G61589
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.020		mg/Kg	1	7/23/2019 12:31:39 PM	B61589
Toluene	ND	0.041		mg/Kg	1	7/23/2019 12:31:39 PM	B61589
Ethylbenzene	ND	0.041		mg/Kg	1	7/23/2019 12:31:39 PM	B61589
Xylenes, Total	ND	0.082		mg/Kg	1	7/23/2019 12:31:39 PM	B61589
Surr: 4-Bromofluorobenzene	88.0	80-120		%Rec	1	7/23/2019 12:31:39 PM	B61589

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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 1907B33

Date Reported: 7/25/2019

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM

Client Sample ID: FP-10

Project: Huerfano 24 RA

Collection Date: 7/22/2019 10:40:00 AM

Lab ID: 1907B33-015

Matrix: SOIL

Received Date: 7/23/2019 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	310	60		mg/Kg	20	7/23/2019 1:14:12 PM	46329
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	7/23/2019 12:53:55 PM	46324
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	7/23/2019 12:53:55 PM	46324
Surr: DNOP	74.6	70-130		%Rec	1	7/23/2019 12:53:55 PM	46324
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.4		mg/Kg	1	7/23/2019 12:54:21 PM	G61589
Surr: BFB	105	73.8-119		%Rec	1	7/23/2019 12:54:21 PM	G61589
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.027		mg/Kg	1	7/23/2019 12:54:21 PM	B61589
Toluene	ND	0.054		mg/Kg	1	7/23/2019 12:54:21 PM	B61589
Ethylbenzene	ND	0.054		mg/Kg	1	7/23/2019 12:54:21 PM	B61589
Xylenes, Total	ND	0.11		mg/Kg	1	7/23/2019 12:54:21 PM	B61589
Surr: 4-Bromofluorobenzene	90.0	80-120		%Rec	1	7/23/2019 12:54:21 PM	B61589

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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**WO#: **1907B33****25-Jul-19**

Client: ENSOLUM
Project: Huerfano 24 RA

Sample ID: MB-46329	SampType: MBLK	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 46329	RunNo: 61585								
Prep Date: 7/23/2019	Analysis Date: 7/23/2019	SeqNo: 2088289 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-46329	SampType: LCS	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 46329	RunNo: 61585								
Prep Date: 7/23/2019	Analysis Date: 7/23/2019	SeqNo: 2088290 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.4	90	110			

Sample ID: MB-46326	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 46326	RunNo: 61584								
Prep Date: 7/23/2019	Analysis Date: 7/23/2019	SeqNo: 2088375 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-46326	SampType: lcs	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 46326	RunNo: 61584								
Prep Date: 7/23/2019	Analysis Date: 7/23/2019	SeqNo: 2088376 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.0	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 Quantitative 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#: 1907B33

25-Jul-19

Client: ENSOLUM
Project: Huerfano 24 RA

Sample ID: LCS-46324	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 46324	RunNo: 61573								
Prep Date: 7/23/2019	Analysis Date: 7/23/2019	SeqNo: 2087301 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	94.2	63.9	124			
Surr: DNOP	4.1		5.000		82.0	70	130			

Sample ID: MB-46324	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 46324	RunNo: 61573								
Prep Date: 7/23/2019	Analysis Date: 7/23/2019	SeqNo: 2087302 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	8.0		10.00		80.2	70	130			

Sample ID: 1907B33-001AMS	SampType: MS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: S-1	Batch ID: 46324	RunNo: 61582								
Prep Date: 7/23/2019	Analysis Date: 7/23/2019	SeqNo: 2087991 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	9.7	48.50	6.893	73.5	57	142			
Surr: DNOP	3.6		4.850		74.3	70	130			

Sample ID: 1907B33-001AMSD	SampType: MSD	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: S-1	Batch ID: 46324	RunNo: 61582								
Prep Date: 7/23/2019	Analysis Date: 7/23/2019	SeqNo: 2087992 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	10	49.80	6.893	66.8	57	142	5.74	20	
Surr: DNOP	3.8		4.980		76.2	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 Quantitative 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#: **1907B33**

25-Jul-19

Client: ENSOLUM
Project: Huerfano 24 RA

Sample ID: RB	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: G61588	RunNo: 61588								
Prep Date:	Analysis Date: 7/23/2019	SeqNo: 2087819 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	890		1000		89.0	73.8	119			

Sample ID: 2.5UG GRO LCS	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID: G61588	RunNo: 61588								
Prep Date:	Analysis Date: 7/23/2019	SeqNo: 2087820 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	90.8	80.1	123			
Surr: BFB	1000		1000		103	73.8	119			

Sample ID: 1907B33-009AMS	SampType: MS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: FP-4	Batch ID: G61588	RunNo: 61588								
Prep Date:	Analysis Date: 7/23/2019	SeqNo: 2087821 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	18	4.3	21.66	0	84.8	69.1	142			
Surr: BFB	880		866.6		102	73.8	119			

Sample ID: RB	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: G61589	RunNo: 61589								
Prep Date:	Analysis Date: 7/23/2019	SeqNo: 2087877 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	1000		1000		105	73.8	119			

Sample ID: 2.5UG GRO LCS	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID: G61589	RunNo: 61589								
Prep Date:	Analysis Date: 7/23/2019	SeqNo: 2087878 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	92.0	80.1	123			
Surr: BFB	1200		1000		119	73.8	119			S

Sample ID: 1907B33-001AMS	SampType: MS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: S-1	Batch ID: G61589	RunNo: 61589								
Prep Date:	Analysis Date: 7/23/2019	SeqNo: 2087879 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative 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#: **1907B33**

25-Jul-19

Client: ENSOLUM
Project: Huerfano 24 RA

Sample ID: 1907B33-001AMS	SampType: MS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: S-1	Batch ID: G61589	RunNo: 61589								
Prep Date:	Analysis Date: 7/23/2019	SeqNo: 2087879 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	19	3.8	19.23	0	96.2	69.1	142			
Surr: BFB	910		769.2		118	73.8	119			

Sample ID: 1907B33-001AMSD	SampType: MSD	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: S-1	Batch ID: G61589	RunNo: 61589								
Prep Date:	Analysis Date: 7/23/2019	SeqNo: 2087880 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	16	3.8	19.23	0	85.8	69.1	142	11.5	20	
Surr: BFB	900		769.2		117	73.8	119	0	0	

Sample ID: 1907B33-009AMSD	SampType: MSD	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: FP-4	Batch ID: G61588	RunNo: 61628								
Prep Date:	Analysis Date: 7/24/2019	SeqNo: 2088898 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	4.3	21.66	0	93.5	69.1	142	9.78	20	
Surr: BFB	920		866.6		107	73.8	119	0	0	

Sample ID: RB	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: G61628	RunNo: 61628								
Prep Date:	Analysis Date: 7/24/2019	SeqNo: 2088899 Units: %Rec								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	900		1000		89.6	73.8	119			

Sample ID: 2.5UG GRO LCS	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID: G61628	RunNo: 61628								
Prep Date:	Analysis Date: 7/24/2019	SeqNo: 2088900 Units: %Rec								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		105	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 Quantitative 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#: **1907B33**

25-Jul-19

Client: ENSOLUM
Project: Huerfano 24 RA

Sample ID: RB	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBS	Batch ID: B61588	RunNo: 61588								
Prep Date:	Analysis Date: 7/23/2019	SeqNo: 2087844 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		89.0	80	120			

Sample ID: 100NG BTEX LCS	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch ID: B61588	RunNo: 61588								
Prep Date:	Analysis Date: 7/23/2019	SeqNo: 2087845 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.025	1.000	0	93.9	80	120			
Toluene	0.98	0.050	1.000	0	97.9	80	120			
Ethylbenzene	0.98	0.050	1.000	0	98.4	80	120			
Xylenes, Total	2.9	0.10	3.000	0	98.1	80	120			
Surr: 4-Bromofluorobenzene	0.91		1.000		90.6	80	120			

Sample ID: RB	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBS	Batch ID: B61589	RunNo: 61589								
Prep Date:	Analysis Date: 7/23/2019	SeqNo: 2087926 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	0.91		1.000		91.2	80	120			

Sample ID: 100NG BTEX LCS	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch ID: B61589	RunNo: 61589								
Prep Date:	Analysis Date: 7/23/2019	SeqNo: 2087927 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.025	1.000	0	89.4	80	120			
Toluene	0.88	0.050	1.000	0	88.2	80	120			
Ethylbenzene	0.87	0.050	1.000	0	87.4	80	120			
Xylenes, Total	2.6	0.10	3.000	0	87.9	80	120			
Surr: 4-Bromofluorobenzene	0.94		1.000		94.2	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 Quantitative 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#: **1907B33**

25-Jul-19

Client: ENSOLUM
Project: Huerfano 24 RA

Sample ID: 1907B33-002AMS	SampType: MS	TestCode: EPA Method 8021B: Volatiles								
Client ID: S-2	Batch ID: B61589	RunNo: 61589								
Prep Date:	Analysis Date: 7/23/2019	SeqNo: 2087928	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.80	0.021	0.8460	0.01511	93.1	63.9	127			
Toluene	0.84	0.042	0.8460	0.06481	91.8	69.9	131			
Ethylbenzene	0.78	0.042	0.8460	0.01386	90.6	71	132			
Xylenes, Total	2.4	0.085	2.538	0.08469	91.0	71.8	131			
Surr: 4-Bromofluorobenzene	0.82		0.8460		97.5	80	120			

Sample ID: 1907B33-002AMSD	SampType: MSD	TestCode: EPA Method 8021B: Volatiles								
Client ID: S-2	Batch ID: B61589	RunNo: 61589								
Prep Date:	Analysis Date: 7/23/2019	SeqNo: 2087929	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.77	0.021	0.8460	0.01511	88.8	63.9	127	4.66	20	
Toluene	0.81	0.042	0.8460	0.06481	88.1	69.9	131	3.86	20	
Ethylbenzene	0.75	0.042	0.8460	0.01386	87.2	71	132	3.75	20	
Xylenes, Total	2.3	0.085	2.538	0.08469	87.0	71.8	131	4.38	20	
Surr: 4-Bromofluorobenzene	0.82		0.8460		96.6	80	120	0	0	

Sample ID: 1907B33-010AMS	SampType: MS	TestCode: EPA Method 8021B: Volatiles								
Client ID: FP-5	Batch ID: B61588	RunNo: 61628								
Prep Date:	Analysis Date: 7/24/2019	SeqNo: 2088917	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.025	0.9990	0	93.9	63.9	127			
Toluene	0.99	0.050	0.9990	0.009990	98.2	69.9	131			
Ethylbenzene	0.99	0.050	0.9990	0	99.2	71	132			
Xylenes, Total	3.0	0.10	2.997	0.01938	99.1	71.8	131			
Surr: 4-Bromofluorobenzene	0.91		0.9990		91.5	80	120			

Sample ID: 1907B33-010AMSD	SampType: MSD	TestCode: EPA Method 8021B: Volatiles								
Client ID: FP-5	Batch ID: B61588	RunNo: 61628								
Prep Date:	Analysis Date: 7/24/2019	SeqNo: 2088918	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.025	0.9990	0	91.7	63.9	127	2.37	20	
Toluene	0.98	0.050	0.9990	0.009990	96.6	69.9	131	1.63	20	
Ethylbenzene	0.98	0.050	0.9990	0	98.0	71	132	1.28	20	
Xylenes, Total	3.0	0.10	2.997	0.01938	97.8	71.8	131	1.27	20	
Surr: 4-Bromofluorobenzene	0.91		0.9990		91.3	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 Quantitative 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#: **1907B33****25-Jul-19**

Client: ENSOLUM
Project: Huerfano 24 RA

Sample ID: RB	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBS	Batch ID: B61628	RunNo: 61628								
Prep Date:	Analysis Date: 7/24/2019	SeqNo: 2088919	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		89.0	80	120			

Sample ID: 100NG BTEX LCS	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch ID: B61628	RunNo: 61628								
Prep Date:	Analysis Date: 7/24/2019	SeqNo: 2088920	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.97	0.025	1.000	0	96.9	80	120			
Toluene	0.99	0.050	1.000	0	99.3	80	120			
Ethylbenzene	0.96	0.050	1.000	0	96.3	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.7	80	120			
Surr: 4-Bromofluorobenzene	0.90		1.000		89.5	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 Quantitative 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
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: 1907B33

RcptNo: 1

Received By: Anne Thorne

7/23/2019 8:00:00 AM

Completed By: Anne Thorne

7/23/2019 8:21:44 AM

Reviewed By: DAD 7/23/19

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 $>0^{\circ}\text{C}$ 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: 12
(<2 or >12 unless noted)

Adjusted? Yes

Checked by: AD 7/23/19

Special Handling (if applicable)

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

Person Notified:	CW	Date:	7/23/2019
By Whom:	Anne Thorne	Via:	<input type="checkbox"/> eMail <input checked="" type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	#2 COOLER 6.8-SAMPLES FP-5, FP-6, FP-7, FP-8, FP-9, FP-10		
Client Instructions:	PROCEED WITH ANALYSIS		

16. Additional remarks:

CUSTODY SEALS ON SOIL JARS/at 7/23/19

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.7	Good	Yes			
2	6.8	Good	Yes			



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

July 30, 2019

Kyle Summers

ENSOLUM

606 S. Rio Grande Suite A

Aztec, NM 87410

TEL: (903) 821-5603

FAX:

RE: Huerfano 24 RA

OrderNo.: 1907D43

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 1 sample(s) on 7/26/2019 for the analyses presented in the following report.

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

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

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

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 1907D43

Date Reported: 7/30/2019

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM

Client Sample ID: S-6

Project: Huerfano 24 RA

Collection Date: 7/25/2019 10:30:00 AM

Lab ID: 1907D43-001

Matrix: SOIL

Received Date: 7/26/2019 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: CAS
Chloride	ND	60		mg/Kg	20	7/26/2019 11:18:33 AM	46414
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	7/26/2019 10:11:47 AM	46413
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	7/26/2019 10:11:47 AM	46413
Surr: DNOP	93.8	70-130		%Rec	1	7/26/2019 10:11:47 AM	46413
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	7/26/2019 9:33:02 AM	G61677
Surr: BFB	90.0	73.8-119		%Rec	1	7/26/2019 9:33:02 AM	G61677
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.019		mg/Kg	1	7/26/2019 9:33:02 AM	B61677
Toluene	ND	0.038		mg/Kg	1	7/26/2019 9:33:02 AM	B61677
Ethylbenzene	ND	0.038		mg/Kg	1	7/26/2019 9:33:02 AM	B61677
Xylenes, Total	ND	0.075		mg/Kg	1	7/26/2019 9:33:02 AM	B61677
Surr: 4-Bromofluorobenzene	90.0	80-120		%Rec	1	7/26/2019 9:33:02 AM	B61677

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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**WO#: **1907D43****30-Jul-19**

Client: ENSOLUM
Project: Huerfano 24 RA

Sample ID: MB-46414	SampType: MBLK	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 46414	RunNo: 61674								
Prep Date: 7/26/2019	Analysis Date: 7/26/2019	SeqNo: 2091616 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-46414	SampType: LCS	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 46414	RunNo: 61674								
Prep Date: 7/26/2019	Analysis Date: 7/26/2019	SeqNo: 2091617 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.7	90	110			

Qualifiers:

*	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 Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 1907D43

30-Jul-19

Client: ENSOLUM
Project: Huerfano 24 RA

Sample ID: LCS-46413	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 46413	RunNo: 61668								
Prep Date: 7/26/2019	Analysis Date: 7/26/2019	SeqNo: 2090616 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	57	10	50.00	0	114	63.9	124			
Surr: DNOP	5.3		5.000		107	70	130			

Sample ID: MB-46413	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 46413	RunNo: 61668								
Prep Date: 7/26/2019	Analysis Date: 7/26/2019	SeqNo: 2090617 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		103	70	130			

Sample ID: LCS-46394	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 46394	RunNo: 61668								
Prep Date: 7/25/2019	Analysis Date: 7/26/2019	SeqNo: 2091169 Units: %Rec								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.4		5.000		88.6	70	130			

Sample ID: MB-46394	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 46394	RunNo: 61668								
Prep Date: 7/25/2019	Analysis Date: 7/26/2019	SeqNo: 2091171 Units: %Rec								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.1		10.00		90.7	70	130			

Sample ID: 1907D43-001AMS	SampType: MS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: S-6	Batch ID: 46413	RunNo: 61669								
Prep Date: 7/26/2019	Analysis Date: 7/26/2019	SeqNo: 2091393 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	9.6	47.85	3.008	97.2	57	142			
Surr: DNOP	4.5		4.785		93.7	70	130			

Sample ID: 1907D43-001AMSD	SampType: MSD	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: S-6	Batch ID: 46413	RunNo: 61669								
Prep Date: 7/26/2019	Analysis Date: 7/26/2019	SeqNo: 2091394 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	9.6	47.89	3.008	98.6	57	142	1.42	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 Quantitative 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#: **1907D43****30-Jul-19**

Client: ENSOLUM
Project: Huerfano 24 RA

Sample ID: 1907D43-001AMSD	SampType: MSD	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: S-6	Batch ID: 46413	RunNo: 61669								
Prep Date: 7/26/2019	Analysis Date: 7/26/2019	SeqNo: 2091394 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.5		4.789		93.2	70	130	0	0	

Sample ID: LCS-46401	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 46401	RunNo: 61669								
Prep Date: 7/25/2019	Analysis Date: 7/26/2019	SeqNo: 2091395 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-46401	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 46401	RunNo: 61669								
Prep Date: 7/25/2019	Analysis Date: 7/26/2019	SeqNo: 2091396 Units: %Rec								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	10		10.00		103	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 Quantitative 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#: **1907D43****30-Jul-19**

Client: ENSOLUM
Project: Huerfano 24 RA

Sample ID: RB	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: G61677	RunNo: 61677								
Prep Date:	Analysis Date: 7/26/2019	SeqNo: 2091146 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		93.9	73.8	119			

Sample ID: 2.5UG GRO LCS	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID: G61677	RunNo: 61677								
Prep Date:	Analysis Date: 7/26/2019	SeqNo: 2091147 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	93.8	80.1	123			
Surr: BFB	1200		1000		116	73.8	119			

Sample ID: 1907D43-001AMS	SampType: MS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: S-6	Batch ID: G61677	RunNo: 61677								
Prep Date:	Analysis Date: 7/26/2019	SeqNo: 2091148 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	17	3.8	18.76	0	89.6	69.1	142			
Surr: BFB	780		750.2		104	73.8	119			

Sample ID: 1907D43-001AMSD	SampType: MSD	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: S-6	Batch ID: G61677	RunNo: 61677								
Prep Date:	Analysis Date: 7/26/2019	SeqNo: 2091149 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	17	3.8	18.76	0	88.2	69.1	142	1.62	20	
Surr: BFB	770		750.2		103	73.8	119	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 Quantitative 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#: **1907D43****30-Jul-19**

Client: ENSOLUM
Project: Huerfano 24 RA

Sample ID: RB	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBS	Batch ID: B61677	RunNo: 61677								
Prep Date:	Analysis Date: 7/26/2019	SeqNo: 2091155		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	0.94		1.000		93.6	80	120			

Sample ID: 100NG BTEX LCS	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch ID: B61677	RunNo: 61677								
Prep Date:	Analysis Date: 7/26/2019	SeqNo: 2091156		Units: mg/Kg						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.025	1.000	0	94.1	80	120			
Toluene	1.0	0.050	1.000	0	100	80	120			
Ethylbenzene	1.0	0.050	1.000	0	102	80	120			
Xylenes, Total	3.0	0.10	3.000	0	102	80	120			
Surr: 4-Bromofluorobenzene	0.95		1.000		94.9	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 Quantitative 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
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: 1907D43

RcptNo: 1

Received By: Anne Thorne 7/26/2019 8:00:00 AM

Completed By: Anne Thorne 7/26/2019 8:13:24 AM

Reviewed By: DAD 7/26/19

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of $>0^{\circ}\text{C}$ 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:

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:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:			
Client Instructions:			

16. Additional remarks:

CUSTODY SEAL INTACT ON SOIL JAR/at 7/26/19

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.6	Good	Yes			

