ENSOLUM

CLOSURE REPORT

Property:

A-18 Lateral Gas Release

Unit F, S9, T22S, R26E
32.40828° N, 104.29963° W
Eddy County, New Mexico
NMOCD Incident ID: nAPP2325258066

December 5, 2023
Ensolum Project No. 03B1226310

Prepared for:

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Unit F, S9, T22S, R26E
32.40828° N, 104.29963° W
Eddy County, New Mexico
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Ensolum Project No. 03B1226310

1.0 INTRODUCTION

1.1 Site Description & Background

Operator:	Enterprise Field Services, LLC (Enterprise)
Site Name:	A-18 Lateral Gas Release
Location:	Unit F, Section 9, Township 22 South, Range 26 East 32.40828° N, 104.29963° W Eddy County, New Mexico
Property:	New Mexico State Trust Land (STL) managed by the New Mexico State Land Office (NMSLO)
Regulatory:	New Mexico Energy, Minerals and Natural Resources Department (EMNRD) Oil Conservation Division (OCD)

On September 9, 2023, Enterprise had a release of natural gas and natural gas liquids at the Site due to a pipeline rupture. The pipeline was isolated, depressurized, locked, and tagged out. The release resulted in a fire and the immediately surrounding soils to be ejected from the release source, creating an open bell hole. Approximately 17,000 one-thousand cubic feet (MCF) of natural gas was released to the atmosphere, along with approximately 5 to 10 barrels (bbls) of condensate released onto the ground surface, with no recovery. Enterprise reported the release to the New Mexico EMNRD OCD via a report through the online notice of release (NOR) form on September 9, 2023. The release was assigned Incident Number nAPP2325258066.

The **Topographic Map** depicting the location of the Site is included as **Figure 1**, and the **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 chemicals of concern (COC) concentrations in the on-Site soil to be in compliance with the applicable New Mexico EMNRD OCD closure criteria concentrations.

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 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. The gas portion of this release constitutes venting that occurred during an emergency or a malfunction, as authorized by the New Mexico EMNRD OCD regulations at NMAC 19.15.28.8.A and B(1). This release therefore is not prohibited by NMAC 19.15.29.8.A. Supporting documentation and figures associated with the following bullets are provided in **Appendix B**.

- No exploratory water wells were identified within a 0.5-mile radius of the Site on the OSE Water Rights Reporting System (WRRS) database.
- The Site is not located within 300 feet of a New Mexico ENMRD OCD-defined continuously flowing watercourse or significant watercourse.
- The Site is not located within 200 feet of a lakebed, sinkhole, or playa lake.
- The Site is not located within 300 feet from a permanent residence, school, hospital, institution, or church.
- According to the OSE WRSS database there are no private, domestic freshwater wells used by less than five households for domestic or stock water purposes identified within 500 feet of the Site.
- According to the OSE WRSS database there are no freshwater wells 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 New Mexico Statute Annotated (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 Geographical Information System (GIS), Maps and Mine Data database, the Site is not located within an area overlying a subsurface mine.
- Based on the Karst Occurrence Potential (.kmz) provided by the BLM, the Site is located within an unstable area, also referred to as high karst potential.
- 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			
Minimum depth below any point within horizontal boundary of the release to groundwater less than 10,000 mg/l TDS	Constituent	Method	Limit
≤ 50 feet	Chloride	EPA 300.0 or SM4500 Cl B	600 mg/kg
	TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015M	100 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg

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3.0 SOIL REMEDIATION ACTIVITIES

On September 9, 2023, Enterprise had a release of natural gas and natural gas liquids at the Site due to a pipeline rupture. The pipeline was isolated, depressurized, locked, and tagged out. The release resulted in a fire and the immediately surrounding soils to be ejected from the release source, creating an open bell hole. No injuries occurred. Approximately 17,000 MCF of natural gas was released to the atmosphere, along with approximately 5 to 10 bbls of condensate released onto the ground surface, with no recovery. Following submittal of an emergency New Mexico One-Call (NM-811), corrective action activities were commenced by New Mexico Rental Pipeline, LLC (NMR) utilizing a backhoe to excavate soils immediately surrounding the A-18 Lateral pipeline in order to repair and replace the affected pipeline.

During corrective action activities, soils were removed immediately surrounding the pipeline to the north and south of the release point in order to repair and/or replace the affected pipeline. These soils were placed in soil stockpiles on-Site to be analyzed to ensure they were in compliance with New Mexico ENMRD OCD Closure Criteria for Soils Impacted by a Release (≤ 50 feet) (NM EMNRD OCD Closure Criteria) before being utilized as backfill. On September 14, 2023, Ensolum arrived on-Site to collect four composite soil samples from the pipeline repair over excavation extent soil stockpiles staged on-Site (STP-1 through STP-4). Additionally, Ensolum collected three composite soil samples from two locations in the area where the chemical inhibitor was damaged in the fire (CI-1 and CI-2). The soil samples were collected at depths of 0.25 feet bgs (CI-1 and CI-2) and 0.5 feet bgs (CI-2).

On September 18, 2023, Ensolum arrived on-Site to collect four confirmation soil samples from the impact blowout bell hole extent, two composite soil samples from the impacted blowout bell hole floor (FS-1 and FS-2), and two composite soil samples from the impacted blowout bell hole sidewalls (SW-1 and SW-2). The bell hole floor samples were collected at a depth of 4 feet below ground surface (bgs) and the bell hole sidewall samples were collected at depths ranging from the ground surface to 4 feet bgs.

On September 27, 2023, Ensolum arrived on-Site to collect one composite soil re-sample from the bell hole floor (FS-2). The bell hole floor sample was collected at a depth of 4 feet bgs. Additionally, four delineation soil samples were collected outside of the impacted blowout bell hole area and the pipeline repair over excavation extents (North, East, South, and West) at a depth of 0.25 feet bgs. Based on laboratory analytical data, additional scraping activities were necessary.

On October 12, 2023, subsequent to completion of additional scraping activities, Ensolum arrived on-Site to collect one delineation soil sample outside of the impacted blowout bell hole area (West) at a depth of 0.25 feet bgs. Based on laboratory analytical data, no additional scraping activities or remediation activities were necessary.

The composite soil samples were analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX), total petroleum hydrocarbons (TPH), gasoline range organics (GRO), diesel range organics (DRO), motor oil/lube oil range organics (MRO), chloride, and/or methanol in accordance with the New Mexico EMNRD OCD Closure Criteria for Soils Impacted by a Release (≤ 50 feet) (NMOCD Closure Criteria).

The final excavation area measured approximately 30 feet long and 12 feet wide at the maximum extents, with a depth of 4 feet bgs.

The lithology encountered during the completion of closure activities consisted primarily of gravelly loam, with some stony loam present.

A total of approximately 528 cubic yards of the pipeline repair over excavation extent soils were excavated from the Site and, subsequent to laboratory analytical results, were utilized as backfill. Additionally, the impacted blowout bell hole was backfilled with approximately 242 cubic yards of clean imported fill and contoured to the original surrounding grade. A NMSLO-approved seed mixture will be sown into the surface area of the backfill for re-vegetation.

Figure 3 is a map that identifies approximate soil sample locations and depicts the approximate dimensions of the impacted blowout bell hole extent and the pipeline repair over excavation extent with respect to the pipeline (**Appendix A**). Photographic documentation of the field activities is included in **Appendix C**.

4.0 SOIL SAMPLING PROGRAM

Ensolum's soil sampling program from September 14, 2023 through October 12, 2023 included the collection of a total of five composite soil samples from four soil sample locations from the impacted blowout bell hole floor and sidewalls (FS-1, FS-2, and SW-1 and SW-2), five delineation soil samples from four locations outside of the bell hole area and the pipeline repair over excavation extent (North, East, South and West), four composite soil stockpile samples from the pipeline repair over excavation extent soil stockpiles staged on-Site (STP-1 through STP-4), and three composite soil samples from the chemical inhibitor area (CI-1 and CI-2) for laboratory analysis.

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

5.0 SOIL LABORATORY ANALYTICAL METHODS

The composite soil samples were analyzed for BTEX following United States Environmental Protection Agency (EPA) SW-846 Method 8021B, TPH GRO/DRO/MRO following EPA SW-846 Method 8015M/D, chloride using EPA Method 300.0, and/or methanol following EPA SW-846 Method 8015M.

Laboratory analytical results are summarized in **Table 1** and **Table 2** 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 benzene, total BTEX, TPH-GRO/DRO/MRO, and chloride concentrations to laboratory sample detection limits (SDLs) associated with the final composite soil samples from the chemical inhibitor area (CI-1 and CI-2), the final composite impacted blowout bell hole soil samples (FS-1, FS-2, SW-1 and SW-2), the final delineation soil samples (North, East, South, and West) for soils left in place at the Site, and the composite pipeline repair over excavation extent soil stockpile samples (STP-1 and STP-2) to the NMOCD Closure Criteria. It should be noted that the NMOCD does not have an established closure criteria for methanol.

- Laboratory analytical results indicated benzene concentrations for the final composite soil samples collected from the chemical inhibitor area, the impacted blowout bell hole area, and the final delineation samples outside of the impacted area did not exceed the laboratory SDLs or the NMOCD Closure Criteria of 10 milligrams per kilogram (mg/kg).

- Laboratory analytical results indicated benzene concentrations for the composite soil samples collected from the stockpiles staged on-Site did not exceed the laboratory SDLs or the NMOCD Closure Criteria.

- Laboratory analytical results indicated that total BTEX concentrations for the final composite soil samples collected from the chemical inhibitor area, the impacted blowout bell hole area, and the final delineation samples outside of the impacted area did not exceed the laboratory SDLs or the NMOCD Closure Criteria of 50 mg/kg.

- Laboratory analytical results indicated that total BTEX concentrations for the composite soil samples collected from the stockpiles staged on-Site did not exceed the laboratory SDLs or the NMOCD Closure Criteria.

- Laboratory analytical results indicated combined TPH-GRO/DRO/MRO concentrations for the final composite soil samples collected from the chemical inhibitor area, the impacted blowout bell hole area, and the final delineation samples outside of the impacted area did not exceed the laboratory SDLs or the applicable NMOCD Closure Criteria of 100 mg/kg for depth to groundwater ≤50 feet.

- Laboratory analytical results indicated combined TPH-GRO/DRO/MRO concentrations for the composite soil samples collected from the stockpiles staged on-Site did not exceed the laboratory SDLs or the applicable NMOCD Closure Criteria.

- Laboratory analytical results indicated chloride concentrations for the final composite soil samples collected from the impacted blowout bell hole area and the final confirmation samples outside of the impacted area did not exceed the laboratory SDLs and/or the NMOCD Closure Criteria of 600 mg/kg.

- Laboratory analytical results indicate chloride concentrations for the composite soil samples collected from the stockpiles staged on-Site do not exceed the NMOCD Closure Criteria.

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

7.0 RECLAMATION AND RE-VEGETATION

The release occurred off pad along the Enterprise right-of-way (ROW) and as such, a reclamation requirement of 600 mg/kg chloride and 100 mg/kg TPH was applied to the top 4 feet of the off pad area that was impacted by the release per 19.15.29.13.D (1) NMAC for the top 4 feet of areas that will be reclaimed following remediation. The following Reclamation Plan addresses reclamation of the off-pad area:

- The excavation was backfilled with locally sourced caliche and topsoil to match surrounding grade. Approximately 2 feet of topsoil has been placed on top of the caliche to support vegetative growth within the disturbed area;
- Soil in the vicinity of the release include: predominately gravelly loam,with some stony loam present;
- The backfilled areas will be seeded utilizing a weed-free seed mix designed by the NMSLO to meet reclamation standards for this region, which will be: Coarse (CS) Sites Seed Mixture as described in the NMSLO *Revegetation Guidelines Handbook for Southeastern New Mexico*, dated 2018;
- The seed mixture will be distributed with one of the following methods: push broadcaster seed spreader / tractor operated broadcast seed spreader / drill seeding / other means;
- Application of the seed mixture will be at a coverage of either 10 pounds of seeds per acre of reclaimed pasture with distrbution by a drilling method, or 20 pounds of seeds per acre of reclaimed pasture with distribution by a broadcast method, whichever is more applicable;
- Erosion control management will potentially include:
    - The placement of waddles in areas with a propensity for high run off rates;
    - Straw cover if high winds are anticipated to support moisture retention and limit wind from blowing seeds away before they have had time to germinate; and/or
    - Other erosional control best management practices (BMP) as necessary to support timely and healthy regrowth of vegetation in disturbed areas;
- Backfilling of the excavation has already been completed;
- Seeding is anticipated to be completed in the Spring when temperatures and precipitation is most conducive for vegetation growth. In general, seeding should occur approximately one month after the last frost in the Spring up until approximately one month prior to the first fall frost. NMSLO has recognized the optimal time to seed is between July and early September, which will be adhered to for this Site;

- If seeding occurs outside of the 180 days approved in the current fully executed ROE Permit, a new ROE Permit will be executed prior to entering the pasture for reclamation activities;
- Annual inspections (at a minimum), will take place on the location until revegetation is consistent with local natural vegetation density. The Site will be inspected the following Spring/Fall to assess the success of regrowth. If necessary, an additional application of the NMSLO-approved pure live seed mixture will be applied as well as any needed BMPs will be installed to support growth and limit erosion;
- Upon completion of revegetation, a copy of the C-103 submitted to NMOCD will also be submitted to NMSLO for final inspection and release.

8.0 FINDINGS AND RECOMMENDATION

- On September 9, 2023, Enterprise had a release of natural gas and natural gas liquids at the Site due to a pipeline rupture. The pipeline was isolated, depressurized, locked, and tagged out. The release resulted in a fire and the immediately surrounding soils to be ejected from the release source, creating an open bell hole. No injuries occurred. Approximately 17,000 MCF of natural gas was released to the atmosphere, along with approximately 5 to 10 bbls of condensate released onto the ground surface, with no recovery.

- Following submittal of an emergency NM-811, corrective action activities were commenced by NMR utilizing a backhoe to excavate soils immediately surrounding the A-18 Lateral pipeline in order to repair and replace the affected pipeline.

- Ensolum's soil sampling program from September 14, 2023 through October 12, 2023 included the collection of a total of five composite soil samples from four soil sample locations from the impacted blowout bell hole floor and sidewalls (FS-1, FS-2, and SW-1 and SW-2), five delineation soil samples from four locations outside of the bell hole area and the pipeline repair over excavation extent (North, East, South and West), four composite soil stockpile samples from the pipeline repair over excavation extent soil stockpiles staged on-Site (STP-1 through STP-4), and three composite soil samples from the chemical inhibitor area (CI-1 and CI-2) for laboratory analysis. The composite floor samples were collected at a depth of 4 feet bgs; the composite sidewall samples were collected at depths ranging from the ground surface to 4 feet bgs; and the composite soil samples from the chemical inhibitor area were collected at depths of 0.25 feet and 0.5 feet bgs. Additionally, the delineation samples were collected outside of the excavation area at a depth of 0.25 feet bgs.

- The primary objective of the closure activities was to reduce COC concentrations in the on-Site soil to be in compliance with applicable NMOCD Closure Criteria for Soils Impacted by a Release using the New Mexico EMNRD OCD's NMAC 19.15.29 *Releases* as guidance.

- The final excavation area measured approximately 30 feet wide and 12 feet long at the maximum extents, with a depth of 4 feet bgs.

- Based on laboratory analytical results, the final composite soil samples collected from the chemical inhibitor area, the impacted blowout bell hole area, and the final delineation samples outside of the impacted area did not exhibit benzene, total BTEX, TPH GRO/DRO/MRO or chloride concentrations above the applicable NMOCD Closure Criteria.

- Based on the laboratory analytical results, the composite soil samples collected from the pipeline repair over excavation extent soil stockpiles staged on-Site did not exhibit benzene, total BTEX, TPH GRO/DRO/MRO or chloride concentrations above the applicable NMOCD Closure Criteria.

- Subsequent to the results of the final composite soil sampling from the pipeline repair over excavation extent soil stockpiles, the excavated soils staged on-Site were utilized as backfill for the pipeline repair over excavation extents to the north and south of the impacted blowout bell hole

area. Additionally, clean fill material was brought in, and then the impacted blowout bell hole area was contoured to the original surrounding grade. Once the areas are brought back to original grade, an NMSLO-approved seed mixture will be sown into the surface of the backfill for re-vegetation per the above stated Reclamation Plan.

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

9.0 STANDARDS OF CARE, LIMITATIONS, AND RELIANCE

9.1 Standard of Care

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

9.2 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 in 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 Field Services, LLC, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the Site) is prohibited without the express written authorization Enterprise Field Services, 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.

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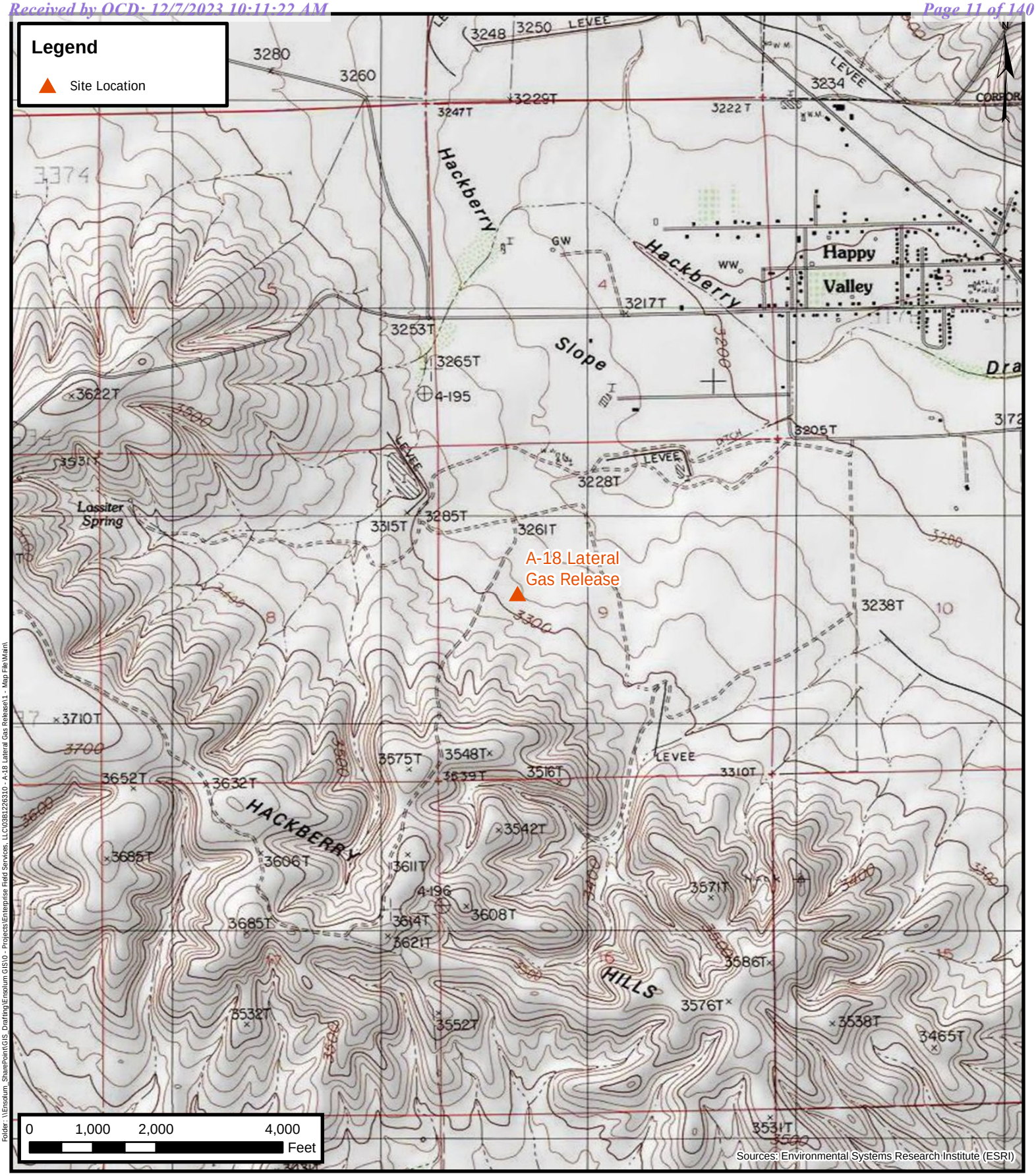
APPENDIX A

Figures



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Topographic Map

Enterprise Field Services, LLC
A-18 Lateral Gas Release
Project Number: 03B1226310
32.407540, -104.302239
Eddy County, New Mexico

FIGURE 1

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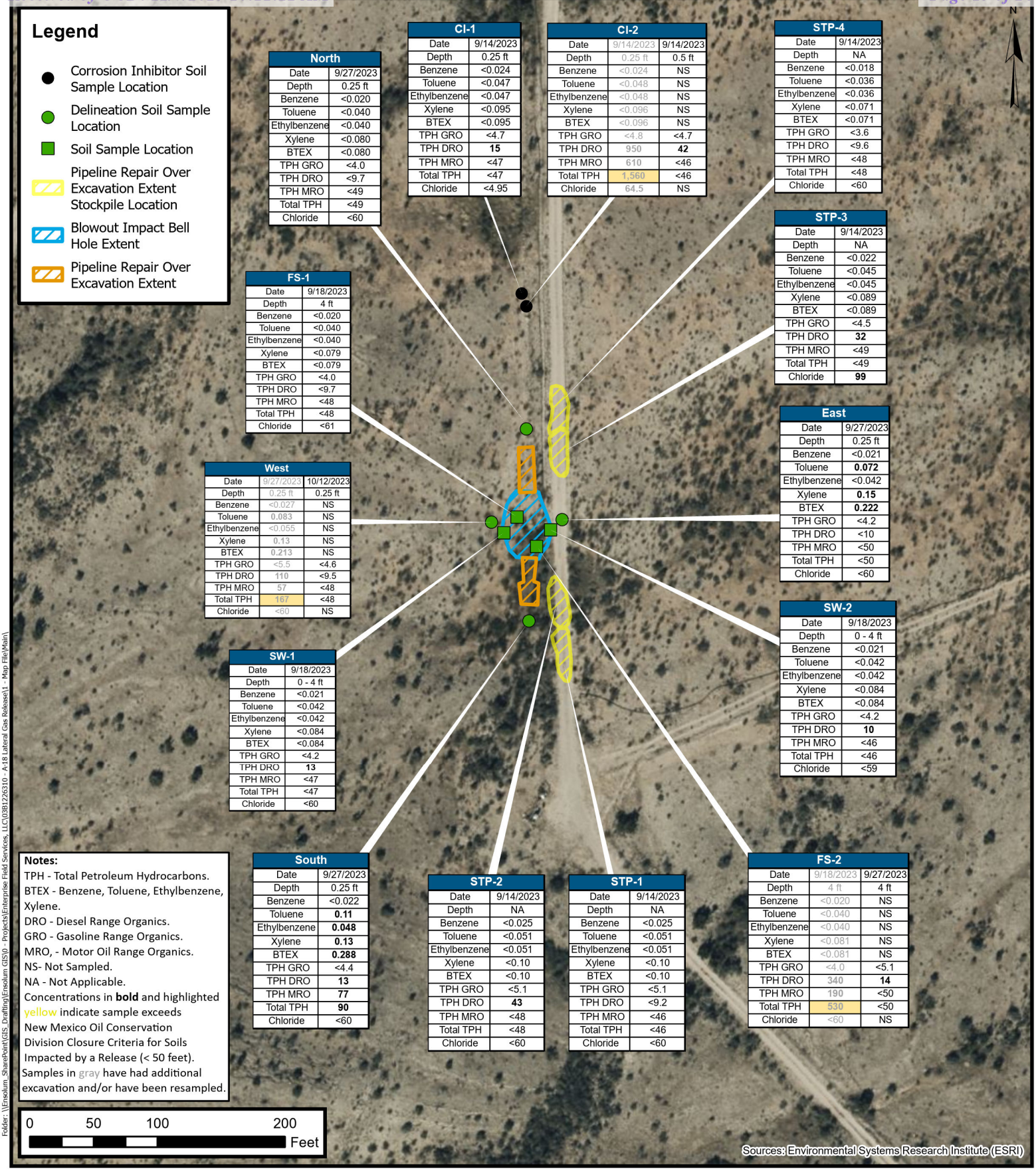
Site Vicinity Map

Enterprise Field Services, LLC
A-18 Lateral Gas Release
Project Number: 03B1226310
32.407540, -104.302239
Eddy County, New Mexico

FIGURE 2



North	
Date	9/27/2023
Depth	0.25 ft
Benzene	<0.020
Toluene	<0.040
Ethylbenzene	<0.040
Xylene	<0.080
BTEX	<0.080
TPH GRO	<4.0
TPH DRO	<9.7
TPH MRO	<49
Total TPH	<49
Chloride	<60

CI-1	
Date	9/14/2023
Depth	0.25 ft
Benzene	<0.024
Toluene	<0.047
Ethylbenzene	<0.047
Xylene	<0.095
BTEX	<0.095
TPH GRO	<4.7
TPH DRO	**15**
TPH MRO	<47
Total TPH	<47
Chloride	<4.95

CI-2		
Date	9/14/2023	9/14/2023
Depth	0.25 ft	0.5 ft
Benzene	<0.024	NS
Toluene	<0.048	NS
Ethylbenzene	<0.048	NS
Xylene	<0.096	NS
BTEX	<0.096	NS
TPH GRO	<4.8	<4.7
TPH DRO	950	**42**
TPH MRO	610	<46
Total TPH	1,560	<46
Chloride	64.5	NS

STP-4	
Date	9/14/2023
Depth	NA
Benzene	<0.018
Toluene	<0.036
Ethylbenzene	<0.036
Xylene	<0.071
BTEX	<0.071
TPH GRO	<3.6
TPH DRO	<9.6
TPH MRO	<48
Total TPH	<48
Chloride	<60

STP-3	
Date	9/14/2023
Depth	NA
Benzene	<0.022
Toluene	<0.045
Ethylbenzene	<0.045
Xylene	<0.089
BTEX	<0.089
TPH GRO	<4.5
TPH DRO	**32**
TPH MRO	<49
Total TPH	<49
Chloride	**99**

FS-1	
Date	9/18/2023
Depth	4 ft
Benzene	<0.020
Toluene	<0.040
Ethylbenzene	<0.040
Xylene	<0.079
BTEX	<0.079
TPH GRO	<4.0
TPH DRO	<9.7
TPH MRO	<48
Total TPH	<48
Chloride	<61

East	
Date	9/27/2023
Depth	0.25 ft
Benzene	<0.021
Toluene	**0.072**
Ethylbenzene	<0.042
Xylene	**0.15**
BTEX	**0.222**
TPH GRO	<4.2
TPH DRO	<10
TPH MRO	<50
Total TPH	<50
Chloride	<60

West		
Date	9/27/2023	10/12/2023
Depth	0.25 ft	0.25 ft
Benzene	<0.027	NS
Toluene	0.083	NS
Ethylbenzene	<0.055	NS
Xylene	0.13	NS
BTEX	0.213	NS
TPH GRO	<5.5	<4.6
TPH DRO	110	<9.5
TPH MRO	57	<48
Total TPH	167	<48
Chloride	<60	NS

SW-2	
Date	9/18/2023
Depth	0 - 4 ft
Benzene	<0.021
Toluene	<0.042
Ethylbenzene	<0.042
Xylene	<0.084
BTEX	<0.084
TPH GRO	<4.2
TPH DRO	**10**
TPH MRO	<46
Total TPH	<46
Chloride	<59

SW-1	
Date	9/18/2023
Depth	0 - 4 ft
Benzene	<0.021
Toluene	<0.042
Ethylbenzene	<0.042
Xylene	<0.084
BTEX	<0.084
TPH GRO	<4.2
TPH DRO	**13**
TPH MRO	<47
Total TPH	<47
Chloride	<60

South	
Date	9/27/2023
Depth	0.25 ft
Benzene	<0.022
Toluene	**0.11**
Ethylbenzene	**0.048**
Xylene	**0.13**
BTEX	**0.288**
TPH GRO	<4.4
TPH DRO	**13**
TPH MRO	**77**
Total TPH	**90**
Chloride	<60

STP-2	
Date	9/14/2023
Depth	NA
Benzene	<0.025
Toluene	<0.051
Ethylbenzene	<0.051
Xylene	<0.10
BTEX	<0.10
TPH GRO	<5.1
TPH DRO	**43**
TPH MRO	<48
Total TPH	<48
Chloride	<60

STP-1	
Date	9/14/2023
Depth	NA
Benzene	<0.025
Toluene	<0.051
Ethylbenzene	<0.051
Xylene	<0.10
BTEX	<0.10
TPH GRO	<5.1
TPH DRO	<9.2
TPH MRO	<46
Total TPH	<46
Chloride	<60

FS-2		
Date	9/18/2023	9/27/2023
Depth	4 ft	4 ft
Benzene	<0.020	NS
Toluene	<0.040	NS
Ethylbenzene	<0.040	NS
Xylene	<0.081	NS
BTEX	<0.081	NS
TPH GRO	<4.0	<5.1
TPH DRO	340	**14**
TPH MRO	190	<50
Total TPH	530	<50
Chloride	<60	NS

Notes:
TPH - Total Petroleum Hydrocarbons.
BTEX - Benzene, Toluene, Ethylbenzene, Xylene.
DRO - Diesel Range Organics.
GRO - Gasoline Range Organics.
MRO, - Motor Oil Range Organics.
NS- Not Sampled.
NA - Not Applicable.
Concentrations in **bold** and highlighted yellow indicate sample exceeds New Mexico Oil Conservation Division Closure Criteria for Soils Impacted by a Release (< 50 feet).
Samples in gray have had additional excavation and/or have been resampled.

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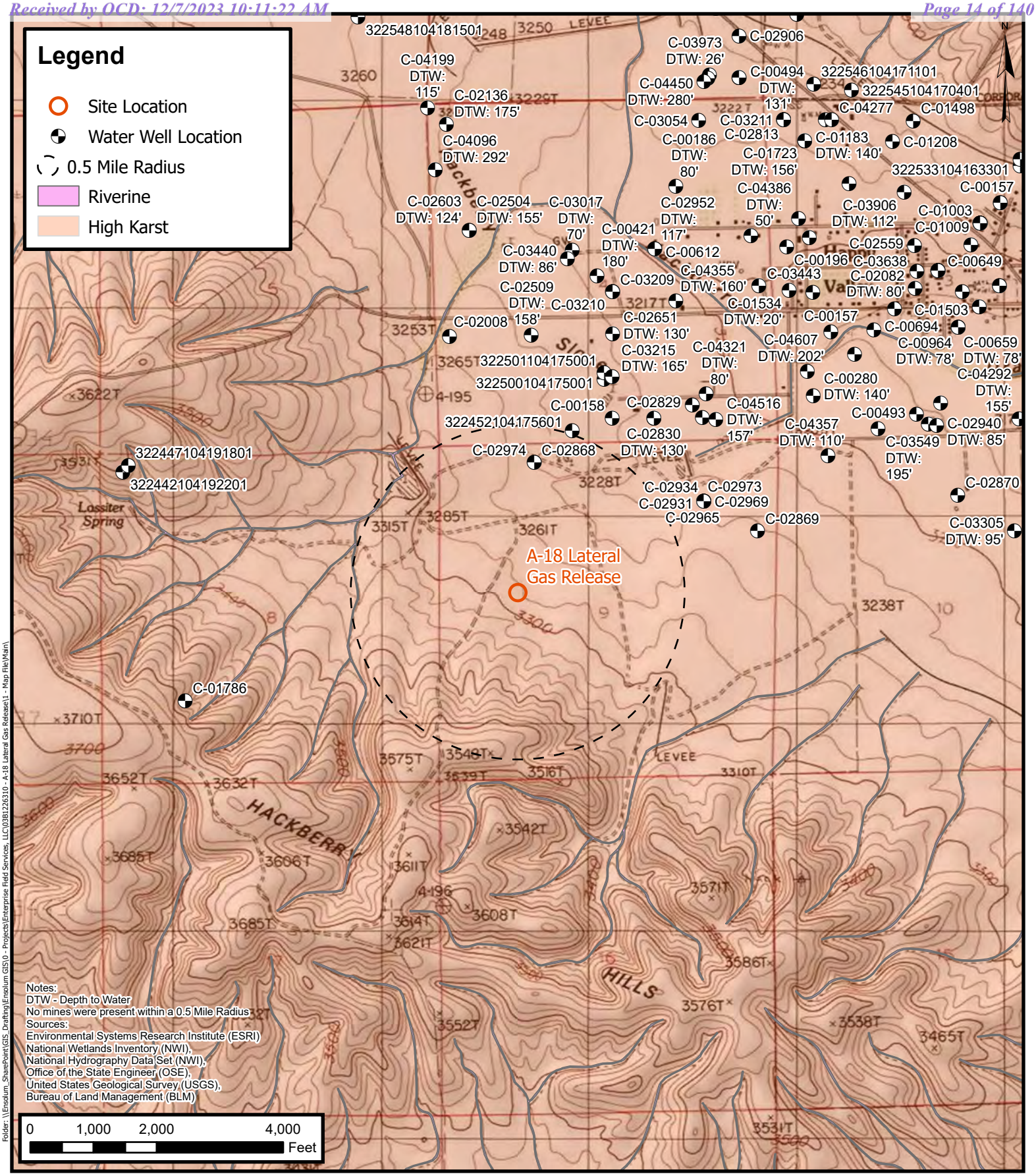
Site Map

Enterprise Field Services, LLC
A-18 Lateral Gas Release
Project Number: 03B1226310
32.407540, -104.302239
Eddy County, New Mexico

FIGURE 3



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ENSOLUM
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Topographic Map

Enterprise Field Services, LLC
A-18 Lateral Gas Release
Project Number: 03B1226310
32.407540, -104.302239
Eddy County, New Mexico

FIGURE 4

ENSOLUM

APPENDIX B

Supporting Documentation

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

QUESTIONS

Action 263499

QUESTIONS

Operator: Enterprise Field Services, LLC PO Box 4324 Houston, TX 77210	OGRID: 241602
	Action Number: 263499
	Action Type: [NOTIFY] Notification Of Release (NOR)

QUESTIONS

Location of Release Source *Please answer all the questions in this group.*	
Site Name	A-18 Lateral
Date Release Discovered	09/09/2023
Surface Owner	Private

Incident Details *Please answer all the questions in this group.*	
Incident Type	Fire
Did this release result in a fire or is the result of a fire	Yes
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	Yes
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release *Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.*	
Crude Oil Released (bbls) Details	*Not answered.*
Produced Water Released (bbls) Details	*Not answered.*
Is the concentration of dissolved chloride in the produced water >10,000 mg/l	*Not answered.*
Condensate Released (bbls) Details	*Not answered.*
Natural Gas Vented (Mcf) Details	Cause: Other | Pipeline (Any) | Natural Gas Vented | Released: 0 Mcf (Unknown Released Amount) | Recovered: 0 Mcf | Lost: 0 Mcf.
Natural Gas Flared (Mcf) Details	*Not answered.*
Other Released Details	*Not answered.*
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	*Not answered.*

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QUESTIONS (continued)

Operator: Enterprise Field Services, LLC PO Box 4324 Houston, TX 77210	OGRID: 241602
	Action Number: 263499
	Action Type: [NOTIFY] Notification Of Release (NOR)

QUESTIONS

Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	**Yes, according to supplied volumes this appears to be a "gas only" report.**
Was this a major release as defined by 19.15.29.7(A) NMAC	**Yes, major release.**
Reasons why this would be considered a submission for a notification of a major release	• Incident Type is reported as fire • This release resulted in a fire or was the result of a fire • This release endangered or has a reasonable probability of endagering public health • Unauthorized release an unknown volume (TBD) of gases exceeding 500 Mcf
If YES, was immediate notice given to the OCD, by whom	Thomas Long
If YES, was immediate notice given to the OCD, to whom	Mike Bratcher and Robert Hamlet
If YES, was immediate notice given to the OCD, when	09/09/2023
If YES, was immediate notice given to the OCD, by what means (phone, email, etc.)	*Not answered.*
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.	

Initial Response	
The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury.	
The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	The pipeline has been isolated from other pipelines. Residual gas is currently burning. Current time is 16:07.
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.	

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ACKNOWLEDGMENTS

Operator: Enterprise Field Services, LLC PO Box 4324 Houston, TX 77210	OGRID: 241602
	Action Number: 263499
	Action Type: [NOTIFY] Notification Of Release (NOR)

ACKNOWLEDGMENTS

☑	I acknowledge that I am authorized to submit notification of a releases on behalf of my operator.
☑	I acknowledge that upon submitting this application, I will be creating a new incident file (assigned to my operator) to track the notification(s) and corrective action(s) for a release, pursuant to NMAC 19.15.29.
☑	I acknowledge that creating a new incident file will require my operator to file subsequent submission(s) of form "C-141, Application for administrative approval of a release notification and corrective action", pursuant to NMAC 19.15.29.
☑	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.
☑	I acknowledge the fact that 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.
☑	I acknowledge the fact that, 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.

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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Operator:	OGRID:
Enterprise Field Services, LLC PO Box 4324 Houston, TX 77210	241602
	Action Number: 263499
	Action Type: [NOTIFY] Notification Of Release (NOR)

CONDITIONS

Created By	Condition	Condition Date
tjlong	When submitting future reports regarding this release, please submit the calculations used or specific justification for the volumes reported on the initial C-141.	9/9/2023

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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	nAPP2325258066
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: **Enterprise Field Services, LLC**	OGRID: **241602**
Contact Name: **Thomas Long**	Contact Telephone: **505-599-2286**
Contact email:**tjlong@eprod.com**	Incident # *(assigned by OCD)* **nAPP2325258066**
Contact mailing address: **614 Reilly Ave, Farmington, NM 87401**	

Location of Release Source

Latitude **32.40828** Longitude **-104.29963** *NAD 83 in decimal degrees to 5 decimal places)*

Site Name: **A-18 Lateral**	Site Type **Natural Gas Gathering Pipeline**
Date Release Discovered: **09/09/2023**	Serial # *(if applicable)* **N/A**

Unit Letter	Section	Township	Range	County
F	**9**	**22S**	**26E**	**Eddy**

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

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☒ Condensate	Volume Released (bbls): **Estimated 5-10 BBLS**	Volume Recovered (bbls): **None**
☒ Natural Gas	Volume Released (Mcf): **17,000 MCF**	Volume Recovered (Mcf): **None**
☐ Other (describe) Fire	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release: On September 9, 2023, Enterprise had a release of natural gas and natural gas liquids from the A-18 Lateral pipeline. The pipeline was isolated, depressurized, locked and tagged out. The release resulted in a fire. No injures occurred. The release was a result of a pipeline rupture. Remediation in the progress A third party corrective action report will be submitted with the "Final C-141."

	nAPP2325258066

Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? The release resulted in a fire.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Yes. Thomas Long notified Mike Bratcher and Robert Hamlet on 9-9-2023 at 16:00 via email and the NMOCD website.	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

☒ The source of the release has been stopped.

☒ The impacted area has been secured to protect human health and the environment.

☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.

☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

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.

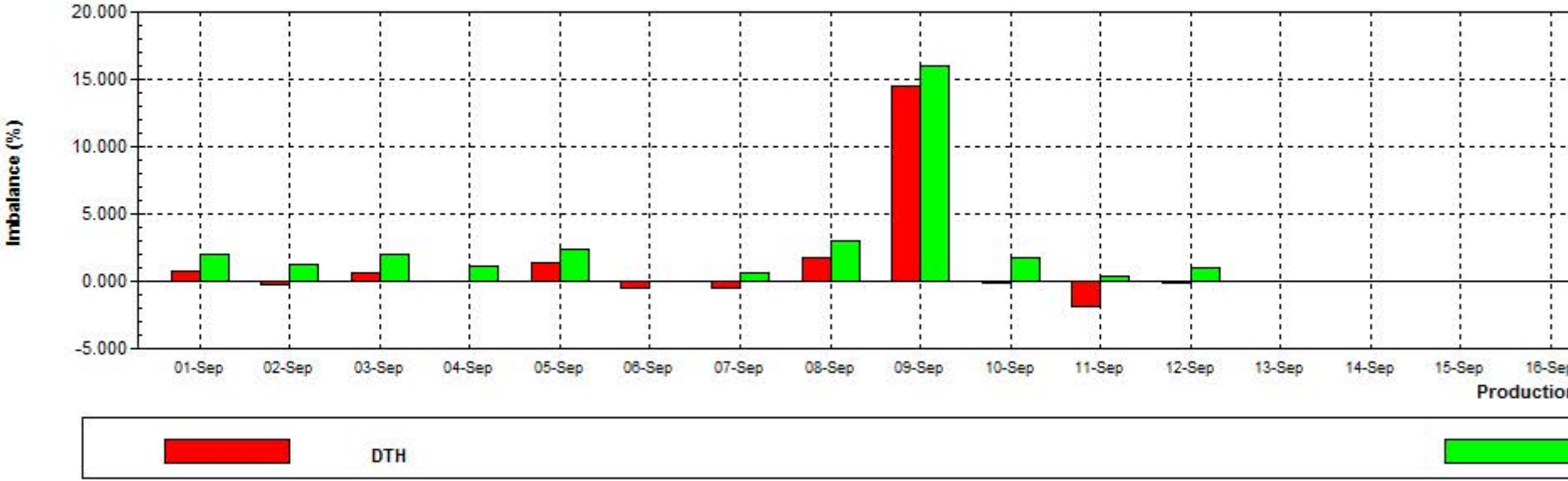
Printed Name: Thomas J. Long Title: Senior Environmental Scientist

Signature: Thomas Long Date: 09-19-2023

email: tjlong@eprod.com Telephone: 505-599-2286

OCD Only

Received by: Scott Rodgers Date: 09/19/2023


Imbalance (%)
20.000
15.000
10.000
5.000
0.000
-5.000
01-Sep
02-Sep
03-Sep
04-Sep
05-Sep
06-Sep
07-Sep
08-Sep
09-Sep
10-Sep
11-Sep
12-Sep
13-Sep
14-Sep
15-Sep
Productio
DTH

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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 266838

CONDITIONS

Operator: Enterprise Field Services, LLC PO Box 4324 Houston, TX 77210	OGRID: 241602
	Action Number: 266838
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
scott.rodgers	When submitting future reports regarding this release, please submit the calculations used or specific justification for the volumes reported on the initial C-141	9/19/2023

Kelly Lowery

From: Long, Thomas <tjlong@eprod.com>
Sent: Tuesday, September 12, 2023 10:14 AM
To: Kelly Lowery
Cc: Stone, Brian; Zamarripa, Roland
Subject: FW: [EXTERNAL] FW: A-18 Lateral - UL F Section 9 T22S R26E; 32.40828, -104.29963; NMOCD Incident # nAPP2325258066,

[**EXTERNAL EMAIL**]

Kelly,

Please find the attached sampling approval from NMOCD.

Thomas J. Long
Senior Environmental Scientist
Enterprise Products Company
614 Reilly Ave.
Farmington, New Mexico 87401
505-599-2286 (office)
505-215-4727 (Cell)
tjlong@eprod.com

Enterprise Products

From: Wells, Shelly, EMNRD <Shelly.Wells@emnrd.nm.gov>
Sent: Tuesday, September 12, 2023 8:47 AM
To: Long, Thomas <tjlong@eprod.com>
Cc: Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>; Hamlet, Robert, EMNRD <Robert.Hamlet@emnrd.nm.gov>
Subject: RE: [EXTERNAL] FW: A-18 Lateral - UL F Section 9 T22S R26E; 32.40828, -104.29963; NMOCD Incident # nAPP2325258066,

[Use caution with links/attachments]
Good morning Thomas,

The OCD has received your notification. Include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

Thank you,

Shelly

Shelly Wells * Environmental Specialist-Advanced
Environmental Bureau
EMNRD-Oil Conservation Division
1220 S. St. Francis Drive|Santa Fe, NM 87505
(505)469-7520|Shelly.Wells@emnrd.nm.gov
http://www.emnrd.state.nm.us/OCD/

From: Long, Thomas <tjlong@eprod.com>
Sent: Tuesday, September 12, 2023 7:44 AM
To: Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>; Hamlet, Robert, EMNRD <Robert.Hamlet@emnrd.nm.gov>; spills@slo.state.nm.us; Wells, Shelly, EMNRD <Shelly.Wells@emnrd.nm.gov>
Cc: Stone, Brian <bmstone@eprod.com>; Kelly Lowery <klowery@ensolum.com>; Zamarripa, Roland <RZAMARRIPA@eprod.com>
Subject: [EXTERNAL] FW: A-18 Lateral - UL F Section 9 T22S R26E; 32.40828, -104.29963; NMOCD Incident # nAPP2325258066,

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Mike/Robert/Shelly,

This email is a notification that Enterprise will collect closure soil samples for laboratory analysis at the A-18 Lateral release site on Thursday, September 14, 2023 at 10:00 a.m. If you have any questions, please call or email.

Thomas J. Long
Senior Environmental Scientist
Enterprise Products Company
614 Reilly Ave.
Farmington, New Mexico 87401
505-599-2286 (office)
505-215-4727 (Cell)
tjlong@eprod.com

Enterprise Products

From: Long, Thomas
Sent: Saturday, September 9, 2023 4:00 PM
To: Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>; ''Robert Hamlet' <Robert.Hamlet@state.nm.us>
Cc: Stone, Brian <bmstone@eprod.com>
Subject: A-18 Lateral - UL F Section 9 T22S R26E; 32.40828, -104.29963

Mike/Robert,

This email is a notification that Enterprise had release of natural gas from the A-18 Lateral 12" pipeline this afternoon. This release has resulted in a fire. The fire is currently ongoing. Local fire department has responded. No injuries have been reported. There has been one road closure. No evacuations. Gas loss is being evaluated. Cause is

unknown. The release is located at UL F Section 9 T22S R26E; 32.40828, -104.29963. I will submit the NOR and subsequent C-141 via the OCD website. If you have any questions, please call or email.

Thomas J. Long
Senior Environmental Scientist
Enterprise Products Company
614 Reilly Ave.
Farmington, New Mexico 87401
505-599-2286 (office)
505-215-4727 (Cell)
tjlong@eprod.com

Kelly Lowery

From: Hamlet, Robert, EMNRD <Robert.Hamlet@emnrd.nm.gov>
Sent: Tuesday, September 26, 2023 11:03 AM
To: Long, Thomas; Rodgers, Scott, EMNRD; Wells, Shelly, EMNRD
Cc: Kelly Lowery; Bratcher, Michael, EMNRD; Bachman, Kody; Stone, Brian
Subject: RE: [EXTERNAL] A-18 Lateral - UL F Section 9 T22S R26E; 32.40828, -104.29963; NMOCD Incident #nAPP2325258066

[**EXTERNAL EMAIL**]

Thomas,

Please proceed with collection of soil samples. In the future, please make sure 2 full business days notification is given to the OCD in case an environmental representative would like to meet you on site. Please include this e-mail correspondence in the remediation and/or closure report.

Regards,

Robert Hamlet • Environmental Specialist - Advanced
Environmental Bureau
EMNRD - Oil Conservation Division
506 W. Texas Ave.| Artesia, NM 88210
575.909.0302 | robert.hamlet@state.nm.us
http://www.emnrd.state.nm.us/OCD/

From: Long, Thomas <tjlong@eprod.com>
Sent: Tuesday, September 26, 2023 9:30 AM
To: Rodgers, Scott, EMNRD <Scott.Rodgers@emnrd.nm.gov>; Wells, Shelly, EMNRD <Shelly.Wells@emnrd.nm.gov>
Cc: Kelly Lowery <klowery@ensolum.com>; Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>; Hamlet, Robert, EMNRD <Robert.Hamlet@emnrd.nm.gov>; Bachman, Kody <KRBachman@eprod.com>; Stone, Brian <bmstone@eprod.com>
Subject: RE: [EXTERNAL] A-18 Lateral - UL F Section 9 T22S R26E; 32.40828, -104.29963; NMOCD Incident #nAPP2325258066

Scott/ Shelly,

This email is a notification and variance request. Enterprise requesting a variance for required 48-hour notification per 19.15.29.12D (1a) NMAC. Enterprise would like to collect soil samples for laboratory analysis tomorrow September 27, 2023, at 10:00 a.m. at the A-18 Lateral excavation. I am aware the notification requires two business days. There is a little more soil removal that is required and then the remediation of this release will be complete. With the difficult schedules and availability of contractors, it would be optimal to complete the remediation of the release tomorrow. Please acknowledge acceptance of this variance request. If you have any questions, please call or email.

Thank you,

Thomas J. Long
Senior Environmental Scientist
Enterprise Products Company
614 Reilly Ave.
Farmington, New Mexico 87401
505-599-2286 (office)
505-215-4727 (Cell)
tjlong@eprod.com

Enterprise Products

From: Rodgers, Scott, EMNRD <Scott.Rodgers@emnrd.nm.gov>
Sent: Thursday, September 14, 2023 3:07 PM
To: Beaux Jennings <bjennings@ensolum.com>
Cc: Long, Thomas <tjlong@eprod.com>; Kelly Lowery <klowery@ensolum.com>; Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>; Hamlet, Robert, EMNRD <Robert.Hamlet@emnrd.nm.gov>
Subject: RE: [EXTERNAL] A-18 Lateral - UL F Section 9 T22S R26E; 32.40828, -104.29963; NMOCD Incident #nAPP2325258066

[Use caution with links/attachments]

Notification requirements are **two business days**, per rule. You may proceed on your schedule. This, and all correspondence, should be included in the closure report to ensure inclusion in the project file.

Thanks,
Scott

Scott Rodgers ● Environmental Specialist
Environmental Bureau
EMNRD - Oil Conservation Division
8801 Horizon Blvd. NE, Suite 260 | Albuquerque, NM 87113
505.469.1830 | scott.rodgers@emnrd.nm.gov
http://www.emnrd.nm.gov/ocd

From: Beaux Jennings <bjennings@ensolum.com>
Sent: Thursday, September 14, 2023 1:57 PM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Cc: 'tjlong@eprod.com' <tjlong@eprod.com>; Kelly Lowery <klowery@ensolum.com>
Subject: [EXTERNAL] A-18 Lateral - UL F Section 9 T22S R26E; 32.40828, -104.29963; NMOCD Incident #nAPP2325258066

Good afternoon,

This email is a notification and a variance request. Ensolum, LLC, on behalf of Enterprise Field Services, LLC, is requesting a variance for required 48 hour notification per 19.15.29.12D (1a) NMAC. Ensolum would like to collect soil samples for laboratory analysis Friday, September 15, 2023 at the A-18 Lateral (nAPP2325258066) Site. Sampling activities could not be conducted until H2S and/or LEL concentrations were below the permissible limits. Please acknowledge acceptance of this variance request. If you have any questions, please call or email. The samples may be used for closure, providing that they meet applicable closure limits.

Thank you,

Beaux Jennings
Senior Project Manager
210-219-8858
Ensolum, LLC

Kelly Lowery

From: Long, Thomas <tjlong@eprod.com>
Sent: Monday, October 9, 2023 8:07 PM
To: Hamlet, Robert, EMNRD; Rodgers, Scott, EMNRD; Wells, Shelly, EMNRD
Cc: Kelly Lowery; Bratcher, Michael, EMNRD; Bachman, Kody; Stone, Brian
Subject: RE: [EXTERNAL] A-18 Lateral - UL F Section 9 T22S R26E; 32.40828, -104.29963; NMOCD Incident #nAPP2325258066

[**EXTERNAL EMAIL**]

Robert/Scott/Shelly,

This email is a notification that Enterprise will collect closure samples at the A-18 Lateral on Thursday, October 12, 2023 at 11:00 a.m. If you have any questions, please call or email.

Thomas J. Long
Senior Environmental Scientist
Enterprise Products Company
614 Reilly Ave.
Farmington, New Mexico 87401
505-599-2286 (office)
505-215-4727 (Cell)
tjlong@eprod.com

Enterprise Products

From: Hamlet, Robert, EMNRD <Robert.Hamlet@emnrd.nm.gov>
Sent: Tuesday, September 26, 2023 10:03 AM
To: Long, Thomas <tjlong@eprod.com>; Rodgers, Scott, EMNRD <Scott.Rodgers@emnrd.nm.gov>; Wells, Shelly, EMNRD <Shelly.Wells@emnrd.nm.gov>
Cc: Kelly Lowery <klowery@ensolum.com>; Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>; Bachman, Kody <KRBachman@eprod.com>; Stone, Brian <bmstone@eprod.com>
Subject: RE: [EXTERNAL] A-18 Lateral - UL F Section 9 T22S R26E; 32.40828, -104.29963; NMOCD Incident #nAPP2325258066

[Use caution with links/attachments]
Thomas,

Please proceed with collection of soil samples. In the future, please make sure 2 full business days notification is given to the OCD in case an environmental representative would like to meet you on site. Please include this e-mail correspondence in the remediation and/or closure report.

Regards,

Robert Hamlet ● Environmental Specialist - Advanced
Environmental Bureau
EMNRD - Oil Conservation Division
506 W. Texas Ave.| Artesia, NM 88210
575.909.0302 | robert.hamlet@state.nm.us
http://www.emnrd.state.nm.us/OCD/

From: Long, Thomas <tjlong@eprod.com>
Sent: Tuesday, September 26, 2023 9:30 AM
To: Rodgers, Scott, EMNRD <Scott.Rodgers@emnrd.nm.gov>; Wells, Shelly, EMNRD <Shelly.Wells@emnrd.nm.gov>
Cc: Kelly Lowery <klowery@ensolum.com>; Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>; Hamlet, Robert, EMNRD <Robert.Hamlet@emnrd.nm.gov>; Bachman, Kody <KRBachman@eprod.com>; Stone, Brian <bmstone@eprod.com>
Subject: RE: [EXTERNAL] A-18 Lateral - UL F Section 9 T22S R26E; 32.40828, -104.29963; NMOCD Incident #nAPP2325258066

Scott/ Shelly,

This email is a notification and variance request. Enterprise requesting a variance for required 48-hour notification per 19.15.29.12D (1a) NMAC. Enterprise would like to collect soil samples for laboratory analysis tomorrow September 27, 2023, at 10:00 a.m. at the A-18 Lateral excavation. I am aware the notification requires two business days. There is a little more soil removal that is required and then the remediation of this release will be complete. With the difficult schedules and availability of contractors, it would be optimal to complete the remediation of the release tomorrow. Please acknowledge acceptance of this variance request. If you have any questions, please call or email.

Thank you,

Thomas J. Long
Senior Environmental Scientist
Enterprise Products Company
614 Reilly Ave.
Farmington, New Mexico 87401
505-599-2286 (office)
505-215-4727 (Cell)
tjlong@eprod.com

Enterprise Products

From: Rodgers, Scott, EMNRD <Scott.Rodgers@emnrd.nm.gov>
Sent: Thursday, September 14, 2023 3:07 PM
To: Beaux Jennings <bjennings@ensolum.com>

Cc: Long, Thomas <tjlong@eprod.com>; Kelly Lowery <klowery@ensolum.com>; Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>; Hamlet, Robert, EMNRD <Robert.Hamlet@emnrd.nm.gov>
Subject: RE: [EXTERNAL] A-18 Lateral - UL F Section 9 T22S R26E; 32.40828, -104.29963; NMOCD Incident #nAPP2325258066

[Use caution with links/attachments]

Notification requirements are **two business days**, per rule. You may proceed on your schedule. This, and all correspondence, should be included in the closure report to ensure inclusion in the project file.

Thanks,
Scott

Scott Rodgers ● Environmental Specialist
Environmental Bureau
EMNRD - Oil Conservation Division
8801 Horizon Blvd. NE, Suite 260 | Albuquerque, NM 87113
505.469.1830 | scott.rodgers@emnrd.nm.gov
http://www.emnrd.nm.gov/ocd

From: Beaux Jennings <bjennings@ensolum.com>
Sent: Thursday, September 14, 2023 1:57 PM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Cc: 'tjlong@eprod.com' <tjlong@eprod.com>; Kelly Lowery <klowery@ensolum.com>
Subject: [EXTERNAL] A-18 Lateral - UL F Section 9 T22S R26E; 32.40828, -104.29963; NMOCD Incident #nAPP2325258066

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Good afternoon,

This email is a notification and a variance request. Ensolum, LLC, on behalf of Enterprise Field Services, LLC, is requesting a variance for required 48 hour notification per 19.15.29.12D (1a) NMAC. Ensolum would like to collect soil samples for laboratory analysis Friday, September 15, 2023 at the A-18 Lateral (nAPP2325258066) Site. Sampling activities could not be conducted until H2S and/or LEL concentrations were below the permissible limits. Please acknowledge acceptance of this variance request. If you have any questions, please call or email. The samples may be used for closure, providing that they meet applicable closure limits.

Thank you,

Beaux Jennings
Senior Project Manager
210-219-8858
Ensolum, LLC

ENSOLUM

New Mexico Site Characterization

REFERENCE	SITE INFORMATION		COMMENTS
C-141	Site Name:	A-18 Lateral Release	
C-141	Cordinates:	32.407540, -104.302239	
C-141	Incident Number:	nAPP2325258066	
C-141	Land Owner:	STATE	
NMOCD O&G Map	Site Elevation (ft):	3,285	

CLOSEST SIGNIFICANT WATER SOURCE

NMOCD O&G Map	Type:	Riverine	
	Distance (ft):	2,510	
	Direction:	west	

SITE RECEPTORS

C-141	NO	Did this release impact groundwater or surface water?	
NMOCD O&G Map	NO	≤ 200 ft of any lakebed, sinkhole, or playa lake?	
NMOCD O&G Map	NO	≤ 300 ft of a continuously flowing watercourse or any other significant watercourse?	
FEMA map	NO	≤ 300 ft of an occupied permanent residence, school, hospital, institution, or church?	
Wetlands map	NO	≤ 300 ft of a wetland?	
USGS map	NO	≤ 500 ft of a spring or a private water well used by < 5 houses for domestic or stock watering?	
USGS map	NO	≤ 1000 ft of any other fresh water well or spring?	
FEMA map	NO	in a 100-year floodplain?	
NMOCD O&G Map	YES	overlying unstable geology (HIGH KARST)?	
NMOCD O&G Map	HIGH	karst potential	
NMOCD O&G Map	NO	water well within half a mile from Site drilled and with data ≤ 20 years?	

DTW INFORMATION

Cross reference USGS Map, NMOCD Map, and NMOSE Database

Closest USGS Well		Closest NM OSE Well	
CLOSER		~~FALSE~~	
Name:	322452104175601	Name:	C03215
Distance from Site (ft):	2,703	Distance from Site (ft):	3,733
Direction from Site:	northeast	Direction from Site:	northeast
Elevation:	3,235	Elevation:	3,222
DTW (ft):	130.73	DTW (ft):	165
Total Depth (ft):	NA	Total Depth (ft):	215
Coordinates:	32.4146, -104.2994	Coordinates:	32.416946, -104.297361
50 feet lower in elevation than the Site		63 feet lower in elevation than the Site	

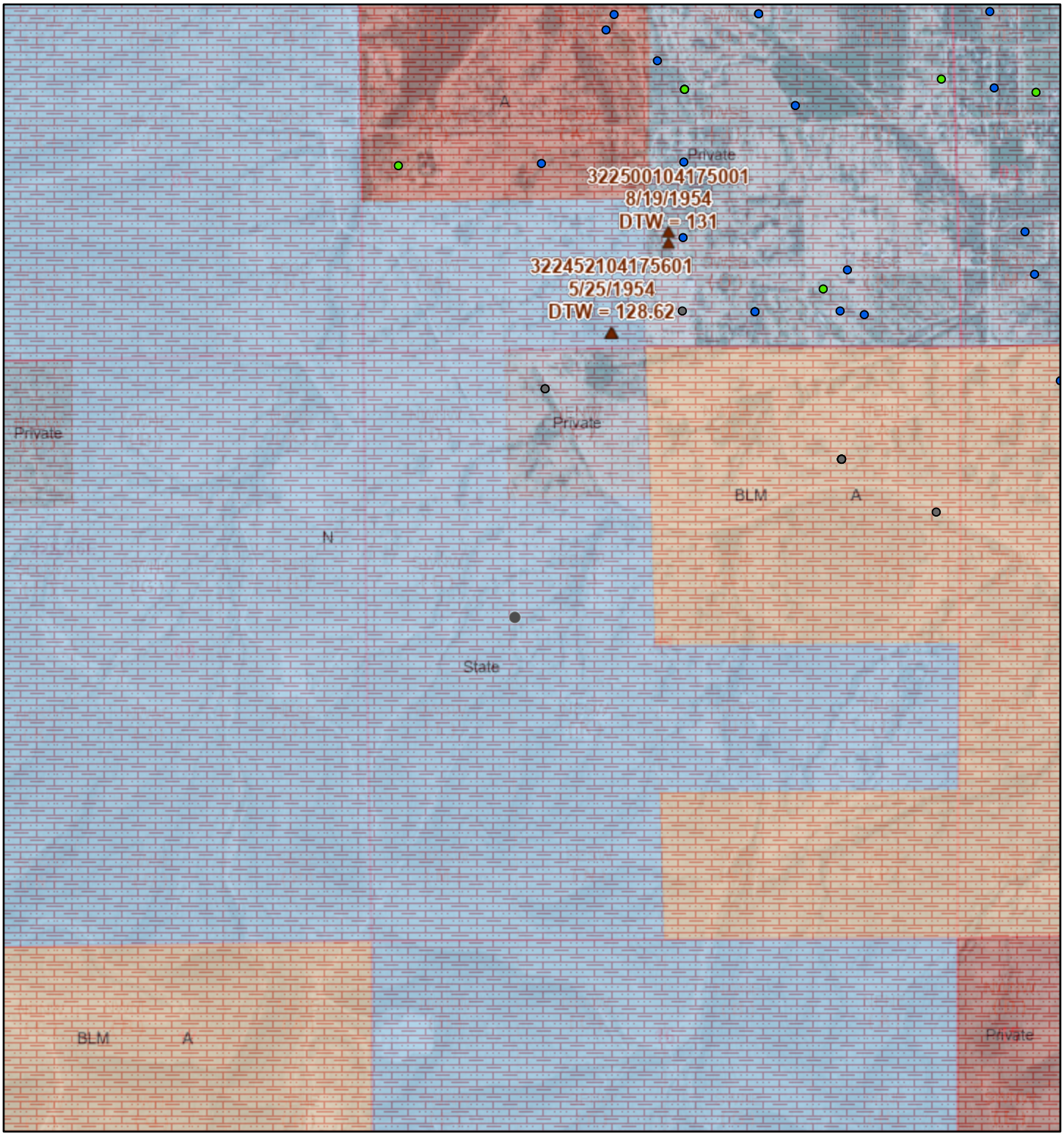
ESTIMATED DTW @ SITE:
>100'

NMOCD TABLE 1 CLOSURE CRITERIA

TPH: 100 mg/kg Chlorides: 600 mg/kg

FALSE

OCD Well Locations



9/12/2023, 11:34:32 AM

1:18,056

0 0.13 0.25 0.5 mi

0 0.2 0.4 0.8 km

OSE Water PODs
- Active
- Pending
- Unknown
- USGS Historical GW Wells
- Critical Karst Resource Area

Karst Occurrence Potential
- High

Mineral Ownership
- A-All minerals are owned by U.S.
- N-No minerals are owned by the U.S.

Land Ownership
- BLM

U.S. BLM, BLM, OCD, New Mexico Tech, USGS, OCD, Esri, HERE, Garmin, iPC, Maxar, BLM

agency_cd	site_no	station_nm	dec_lat_va	dec_long_va	dec_coord_datun	state_cd	county_cd	Altitude_ft	alt_datum_cd	well_depth_va	gw_count_nu	lev_dt	lev_va	
USGS	3.22452E+14	22S.26E.09.12213	32.41456116	-104.2993958	NAD83		35	15	3235	NAVD88		5	1/11/1983	130.73

DA

2-21324
$125

File Number: C-3215

NEW MEXICO OFFICE OF THE STATE ENGINEER
APPLICATION FOR PERMIT TO USE UNDERGROUND WATERS
IN ACCORDANCE WITH SECTION 72-12-1 NEW MEXICO STATUTES

Date rec'd March 20, 2006

1. APPLICANT
Name: Terry & Janice Redden
Contact:
Address: 3314 Joshua Court
City: Carlsbad State: NM Zip: 88220
Work Phone:
Home Phone:

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)
A. NW 1/4 SW 1/4 SE 1/4 Section: 4 Township: 22S Range: 26E N.M.P.M. in Eddy County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: _____d _____m _____s Longitude: _____d _____m _____s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD ___ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the _____ Subdivision recorded in _____ County.

G. Is this well within a municipality? ___ if yes, where? _____

H. Give State Engineer File Number if existing well: _____

I. On land owned by (required): Redden

STATE ENGINEER ROSWELL, NEW MEXICO 2006 MAR 20 PM 4 15

3. USE OF WATER (check use applied for)
___ One household, non-commercial trees, lawn and garden not to exceed a total of one acre.

✓ Livestock watering.

METER REQUIRED
See CONDITION of Approval No. 5B

Note: If any of the following items are marked, give the name and nature of business or use under item 5 of the additional statements or explanations section.

✓ More than one household, non-commercial trees, lawns and gardens not to exceed a total of one acre.

___ Drinking and sanitary purposes and the irrigation of non-commercial trees, shrubs and lawns not to exceed one acre in conjunction with a commercial operation.

___ Prospecting, mining or drilling operations to discover or develop natural resources.

___ Construction of public works, highways and roads.

Trn Desc: Multi
Log Due Date: 3.31.07
Form: wr-01

File Number: C-3215
Trn Number: 354765

File Number: _____

NEW MEXICO OFFICE OF THE STATE ENGINEER
APPLICATION FOR PERMIT TO USE UNDERGROUND WATERS
IN ACCORDANCE WITH SECTION 72-12-1 NEW MEXICO STATUTES

4. WELL INFORMATION (Change, Repair, Drill, Test, Supplement)

Name of well driller and driller license number:
Not Contracted
Approximate depth 250 feet; Outside diameter of casing 7 inches.

___ Change Location of existing well or replacement well

___ Repair or Deepen:
___ Clean out well to original depth
___ Deepen well from _____ to _____ feet
___ Other _____

___ Drill and test a well for _____ use.

___ Supplemental well

5. ADDITIONAL STATEMENTS OR EXPLANATIONS:
This Application is to Change permit # C-3215 to more than one household use

ACKNOWLEDGEMENT

(I, We) Terry Redden (Please Print) affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Terry Redden
Applicant Signature

_____
Applicant Signature

Trn Desc: _____ File Number: _____
Log Due Date: _____ Trn Number: 354755
Form: wr-01 page 2 of 4

DF

NEW MEXICO STATE ENGINEER OFFICE
APPLICATION FOR PERMIT TO USE UNDERGROUND WATERS
IN ACCORDANCE WITH SECTION 72-12-1 NEW MEXICO STATUTES

GENERAL CONDITIONS OF APPROVAL (A thru I)

A The maximum amount of water that may be appropriated under this permit is 3.000 acre-feet in any year.

B The well shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-12 New Mexico Statutes Annotated. A licensed driller shall not be required for the construction of a driven well; provided, that the casing shall not exceed two and three-eighths (2 3/8) inches outside diameter (Section 72-12-12).

C Driller's well record must be filed with the State Engineer within 10 days after the well is drilled or driven. Well record forms will be provided by the State Engineer upon request.

D The casing shall not exceed 7 inches outside diameter except under specific conditions in which reasons satisfactory to the State Engineer are shown.

E If the well under this permit is used at any time to serve more than one household or livestock in a commercial feed lot operation, or for drinking and sanitation purposes in conjunction with a commercial operation, the permittee shall notify the State Engineer Office in writing.

F In the event this well is combined with other wells permitted under Section 72-12-1 New Mexico Statutes Annotated, the total outdoor use shall not exceed the irrigation of one acre of non-commercial trees, lawn, and garden, or the equivalent outside consumptive use, and the total appropriation for household and outdoor use from the entire water distribution system shall not exceed 3.000 acre-feet in any year.

G If artesian water is encountered, all rules and regulations pertaining to the drilling and casing of artesian wells shall be complied with.

H The amount and uses of water permitted under this Application are subject to such limitations as may be imposed by the courts or by lawful municipal and county ordinances which are more restrictive than applicable State Engineer Regulations and the conditions of this permit.

Trn Desc: C 03215 File Number: C 03215
Log Due Date: 03/31/2007 Trn Number: 354755
Form: wr-01 page: 1

NEW MEXICO STATE ENGINEER OFFICE
APPLICATION FOR PERMIT TO USE UNDERGROUND WATERS
IN ACCORDANCE WITH SECTION 72-12-1 NEW MEXICO STATUTES

GENERAL CONDITIONS OF APPROVAL (Continued)

I The permittee shall utilize the highest and best technology available to ensure conservation of water to the maximum extent practical.

SPECIFIC CONDITIONS OF APPROVAL

2 The well shall be constructed to artesian well specifications and the State Engineer shall be notified before casing is landed or cemented.

5B A totalizing meter shall be installed before the first branch of the discharge line from the well and the installation shall be acceptable to the State Engineer; the Engineer shall be advised of the make, model, serial number, date of installation, and initial reading of the meter prior to appropriation of water; pumping records shall be submitted to the District Supervisor on or before the 10th of Jan., April, July and Oct. of each year for the 3 preceeding calendar months.

4 Use shall be limited to household, non-commercial trees, lawn and garden not to exceed one acre and/or stock use.

LOG This permit will automatically expire unless the well C 03215 is completed and the well record filed on or before 03/31/2007.

ACTION OF STATE ENGINEER

This application is approved for the use indicated, subject to all general conditions and to specific conditions listed above.

Witness my hand and seal this 22 day of Mar A.D., 2006

John R. D Antonio, Jr., P.E. , State Engineer

By: _____
Claudia Stapleton

The amount, uses and locations of domestic water wells permitted under 72-12-1 (NMSA) are subject to such limitations as may be imposed by the courts or by lawful municipal and county ordinances which are more restrictive than applicable State Engineer Regulations and the conditions of this permit.

Trn Desc: C 03215 File Number: C 03215
Log Due Date: 03/31/2007 Trn Number: 354755
Form: wr-01 page: 2

Report: summ001 STATE ENGINEER OFFICE Date: 05/04/2006
WATER RIGHT DATABASE REPORT Time: 15:02:27
Basin [C] Nbr [03215] Suffix [ ] [Carlsbad] [208548]

---------- SUMMARY ----------

Trans_Desc [C 03215] System Date [03/22/2006]
Status [PMT] [Permit]
Doc_Code [72124] [All Applications Under Statute] File_Date [03/20/2006]
Action_Date [03/22/2006] Use [MUL] [72-12-1 MULTIPLE DOMESTIC HOUS]
Specific_Use [ ]
Source [ ] Period_of_Div[01]
Reading_Freq [ ][ ] Fld_Date [ ] Storage [ ]
Rsv_Ord_Date [ ] Total_Div [3.000] Total_Cu [ ]
Total_Acres [ ] Div Rate [ ] Misc_Amt [ ]
Cond1 [2] [ ] Cond2 [5B] [QUARTERLY METER REQU]
Cond3 [4] [ ] Cond4 [ ] [ ]
Cond5 [ ] [ ] Cond6 [ ] [ ]
Cond7 [ ] [ ] Cond8 [ ] [ ]
[redacted]_File [ ] Ditch [ ]
A[redacted]_Group [ ] [ ]

---------- OWNER ----------

[redacted]r Last [REDDEN]
First [JANICE]

Address [3314 JOSHUA COURT] Work Phone [5053617397]
[ ] Home Phone [5058877397]
City [CARLSBAD]
State [NM] [New Mexico] Zip [88220]

Contact Last [ ]
First [ ]

Owner Class [O] [270113]

---------- OWNER ----------

Owner Last [REDDEN]
First [TERRY]
Address [3314 JOSHUA COURT] Work Phone [5053617397]
[ ] Home Phone [5058877397]
City [CARLSBAD]
State [NM] [New Mexico] Zip [88220]
C[redacted] Last [ ]
[redacted] First [ ]
[redacted] Class [O] [267768]

page: 1

Artesian Specs, Waivered

Report: summ001 STATE ENGINEER OFFICE Date: 05/04/2006
WATER RIGHT DATABASE REPORT Time: 15:02:27
Basin [C] Nbr [03215] Suffix [ ] [Carlsbad] [208548]

---------- POD INFORMATION ----------

Pod_Basin [C] Pod_Nbr [03215] Pod_Suffix [ ] [Carlsbad]

Other_Pods [ ]
Pod_Name [ ]
License_Nbr [ ] [ ]
Driller [NM LICENSED WELL DRILLER]
Start_Date [ ] Finish_Date [ ] Plug_Date [ ]
PCW_Rcv_Date [ ] Elevation [ ] Depth_Well [250]
Grnd_Wtr_Src [ ] % Shallow [ ] Depth_Water [ ]
Log_File_Dte [ ] Well_Sched [ ] Use [ ]
Pump_Type [ ] [ ] Pump_Serial [ ]
Dschrg_Size [ ] Aquifer [ ] Measure [ ]
River_Course [ ] [ ] Est_yield [ ]
Casing_Size [7.00] Ditch_Name [ ]
Div_Max [ ] Pod_Status [PEN] [Pending] [03/22/2006] [212367]
cfs_cnv [ ] cfs_start_mday [ ] cfs_end_mday [ ]

---------- POD LOCATION ----------

Qtrs [ ] [ ] [ ] [1] [3] [4] Sec [04] Tws [22S] Rng [26E] Blk [ ]
Coord System [ ] [ ] X [ ] Y [
Grant [ ]
Legal
[ ]
County [ED] [Eddy] code suffix quad1 quad2
USGS_Pod_Nbr [ ] USGS_Map_Code [ ] [ ] [ ] [ ] [ ]
Photo_Nbr [ ] Photo_Date [ ] Photo_Punch [ ]
Tract No. [ ] Map No. [ ] Survey Map [ ]
Subdiv_Name [ ] Subdiv_Loc [ ]
Other Loc [ ]

Latitude [32] [24] [50.74] Longitude [104] [17] [52.43]
UTM_Zone [13] Easting [566119.0] Northing [3586664.0] Datum [NAD27]
UTM_Source [A] XY_Source [ ] Lat_Lon_Source [A]
UTM_Accuracy [M] XY_Accuracy [ ] Lat_Lon_Accuracy [M] [212367]

page: 2

Report: summ001 STATE ENGINEER OFFICE Date: 05/04/2006
WATER RIGHT DATABASE REPORT Time: 15:16:45
Basin [C] Nbr [03215] Suffix [ ] [Carlsbad] [208548]

---------- SUMMARY ----------

Trans_Desc [C 03215] System Date [03/22/2006]
Status [PMT] [Permit]
Doc_Code [72121] [All Applications Under Statute] File_Date [03/20/2006]
Action_Date [03/22/2006] Use [MUL] [72-12-1 MULTIPLE DOMESTIC HOUS]
Specific_Use [ ]
Source [ ] Period_of_Div[01]
Reading_Freq [ ][ ] Fld_Date [ ] Storage [ ]
Rsv_Ord_Date [ ] Total_Div [3.000] Total_Cu [ ]
Total_Acres [ ] Div Rate [ ] Misc_Amt [ ]
Cond1 [2] [ ] Cond2 [5B] [QUARTERLY METER REQU]
Cond3 [4] [ ] Cond4 [ ] [ ]
Cond5 [ ] [ ] Cond6 [ ] [ ]
Cond7 [ ] [ ] Cond8 [ ] [ ]
[redacted]b_File [ ] Ditch [ ]
[redacted]_Group [ ] [ ]

---------- OWNER ----------

[redacted]r Last [REDDEN]
First [JANICE]

Address [3314 JOSHUA COURT] Work Phone [5053617397]
[ ] Home Phone [5058877397]
City [CARLSBAD]
State [NM] [New Mexico] Zip [88220]

Contact Last [ ]
First [ ]

Owner Class [O] [270113]

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State [NM] [New Mexico] Zip [88220]
[redacted]t Last [ ]
First [ ]
[redacted]r Class [O] [267768]

page: 1

Report: summ001 STATE ENGINEER OFFICE Date: 05/04/2006
WATER RIGHT DATABASE REPORT Time: 15:16:45
Basin [C] Nbr [03215] Suffix [ ] [Carlsbad] [208548]

---------- POD INFORMATION ----------

Pod_Basin [C] Pod_Nbr [03215] Pod_Suffix [ ] [Carlsbad]

Other_Pods [ ]
Pod_Name [ ]
License_Nbr [ ] [ ]
Driller [NM LICENSED WELL DRILLER]
Start_Date [ ] Finish_Date [ ] Plug_Date [ ]
PCW_Rcv_Date [ ] Elevation [ ] Depth_Well [250]
Grnd_Wtr_Src [ ] % Shallow [ ] Depth_Water [ ]
Log_File_Dte [ ] Well_Sched [ ] Use [ ]
Pump_Type [ ] [ ] Pump_Serial [ ]
Dschrg_Size [ ] Aquifer [ ] Measure [ ]
River_Course [ ] [ ] Est_yield [ ]
Casing_Size [7.00] Ditch_Name [ ]
Div_Max [ ] Pod_Status [PEN] [Pending] [03/22/2006] [212367]
cfs_cnv [ ] cfs_start_mday [ ] cfs_end_mday [ ]

---------- POD LOCATION ----------

Qtrs [ ] [ ] [ ] [1] [3] [4] Sec [04] Tws [22S] Rng [26E] Blk [ ]
Coord System [ ] [ ] X [ ] Y [
Grant [ ]
Legal
[ ]
County [ED] [Eddy] code suffix quad1 quad2
USGS_Pod_Nbr [ ] USGS_Map_Code [ ] [ ] [ ] [ ]
Photo_Nbr [ ] Photo_Date [ ] Photo_Punch [ ]
Tract No. [ ] Map No. [ ] Survey Map [ ]
Subdiv_Name [ ] Subdiv_Loc [ ]
Other Loc [ ]

Latitude [32][24][50.74] Longitude [104][17][52.43]
UTM_Zone [13] Easting [566119.0] Northing [3586664.0] Datum [NAD27]
UTM_Source [A] XY_Source [ ] Lat_Lon_Source[A]
UTM_Accuracy [M] XY_Accuracy [ ] Lat_Lon_Accuracy [M] [212367]

page: 2

John R. D Antonio, Jr., P.E.
State Engineer

Roswell Office
1900 WEST SECOND STREET
ROSWELL, NM 88201

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER

Trn Nbr: 354755
File Nbr: C 03215

Mar. 22, 2006

TERRY REDDEN
3314 JOSHUA COURT
CARLSBAD, NM 88220

Greetings:

Enclosed is your copy of the 72-12-1 Permit which has been approved. Your attention is called to the approval page of this permit to General Conditions of Approval and Specific Conditions of Approval which states that "the well be constructed to Artesian specifications and the State Engineer Office shall be notified a minimum of 48 hours prior to the casing being landed and/or cemented."

Well Record shall be filed in this office within ten (10) days after completion of drilling.

This permit will expire, unless this well is drilled and the well driller files the well record in this office on or before 03/31/2007.

Sincerely,

Claudia Stapleton
(505)622-6521

Encls: Approved Permit

cc: Santa Fe Office

artapp

John R. D Antonio, Jr., P.E.
State Engineer

Roswell Office
1900 WEST SECOND STREET
ROSWELL, NM 88201

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER

Trn Nbr: 354755
File Nbr: C 03215

Mar. 22, 2006

JANICE REDDEN
3314 JOSHUA COURT
CARLSBAD, NM 88220

Greetings:

Enclosed is your copy of the 72-12-1 Permit which has been approved. Your attention is called to the approval page of this permit to General Conditions of Approval and Specific Conditions of Approval which states that "the well be constructed to Artesian specifications and the State Engineer Office shall be notified a minimum of 48 hours prior to the casing being landed and/or cemented."

Well Record shall be filed in this office within ten (10) days after completion of drilling.

This permit will expire, unless this well is drilled and the well driller files the well record in this office on or before 03/31/2007.

Sincerely,

Claudia Stapleton
(505)622-6521

Encls: Approved Permit

cc: Santa Fe Office

artapp

National Flood Hazard Layer FIRMette

FEMA

104°18'27"W 32°24'42"N

104°17'49"W 32°24'12"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 9/12/2023 at 12:37 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

U.S. Fish and Wildlife Service

National Wetlands Inventory

A-18 Lateral Gas Release Wetlands Map

September 12, 2023

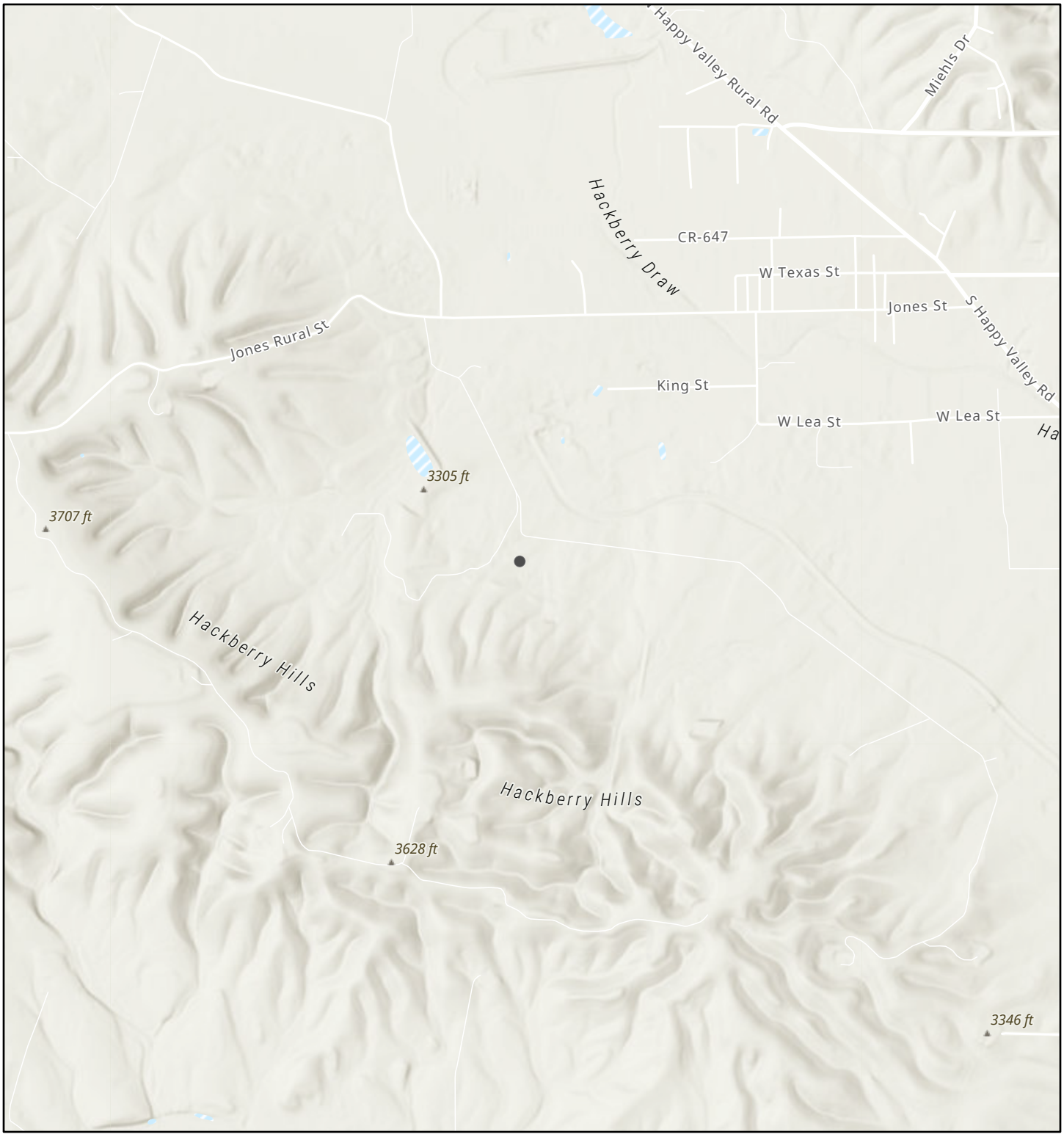
Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

Coal Mines in New Mexico



9/12/2023, 11:55:35 AM

1:36,112

0 0.25 0.5 1 mi

0 0.4 0.8 1.6 km

Esri, NASA, NGA, USGS, FEMA, NM Coal Mine Reclamation Program, NM EMNRD, New Mexico State University, Texas Parks & Wildlife, CONANP, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA

EMNRD MMD GIS Coordinator

New Energy, Minerals and Natural Resources Department (http://nm-emnrd.maps.arcgis.com/apps/webappbuilder/index.html?id=7ebfa3c432db42978d66c99a9cc8311a)

Stephanie Garcia Richard, Commissioner of Public Lands
State of New Mexico

NMSLO Cultural Resources Cover Sheet Exhibit

NMCRIS Activity Number:

Exhibit Type (select one)

ARMS Inspection/Review - Summarize the results (select one):

(A) The entire area of potential effect or project area has been previously surveyed to current standards and **no cultural properties** were found within the survey area.
(B) The entire area of potential effect or project area has been previously surveyed to current standards and **cultural properties were found** within the survey area.
(C) The entire area of potential effect or project area has **not** been previously surveyed or **has not been surveyed** to current standards. A complete archaeological survey will be conducted and submitted for review.

Archaeological Survey

Findings:

Negative - No further archaeological review is required.

Positive - Have avoidance and protection measures been devised? Select one:

Comments:

Project Details:

NMSLO Lease Number (if available):

Project Proponent (Applicant):

Project Title/Description:

Cultural Resources Consultant:

Project Location:

County(ies):

Section/Township/Range:

For NMSLO Agency Use Only:

NMSLO Lease Number:

Lease Analyst:

Date Exhibit Routed to Cultural Resources Office:

No change in wording should occur in this legal document under any circumstances. The completion of this Cover Sheet does not allow for any ground disturbance before official approval of the proposed lease activity, nor does it guarantee that no further steps will be required for the approval of your application or project.

Form Revised 6.2.22

Report run on: Oct 23, 2023 02:49 PM

NMCRIS Investigation Abstract Form (NIAF)

NMCRIS Activity No. 154026 **HPD Log No(s).**

Registration

Lead Agency: NM State Land Office

Performing Agency: SWCA Environmental Consultants

Activity ID: 84748

Performing Agency Report No: 23-705

Other Agencies:

Report Recipient (Your Client): Enterprise Products Company

Activity Types:
- ☐ Research Design
- ☑ Archaeological Survey/Inventory
- ☐ Architectural Survey/Inventory
- ☐ Test Excavation
- ☐ Monitoring
- ☐ Collections/Non-Field Study
- ☐ Compliance Decision
- ☐ Literature Review Overview
- ☐ Excavation
- ☐ Ethnographic Study
- ☐ Resource/Property Visit
- ☐ Historic Structures Report
- ☐ Other:

Total Survey Acreage: 10.95

Total Tribal Acreage: 0.00

Total Resources Visited: 0

Report run on: Oct 23, 2023 02:49 PM

NMCRIS Investigation Abstract Form (NIAF)

NMCRIS Activity No. 154026 **HPD Log No(s).**

Associate/Register Resources

Prefix	Number	Field Site/Other Number	In GIS	Resource Type	Collections Made?	Revisit

Report run on: Oct 23, 2023 02:49 PM

NMCRIS Investigation Abstract Form (NIAF)

NMCRIS Activity No. 154026 **HPD Log No(s).**

Report Details

Lead Agency

Lead Agency: NM State Land Office

Lead Agency Report No.

Report Number:

Title of Report

Title of Report: A Class III Cultural Resources Survey for the A-18 Lateral, NMOCD Incident #nAPP2325258066, Project in Eddy County, NM

Authors: Ad A. Muniz

Type of Report

Publication Type: Report, Monograph, or Book

Negative

Description of Undertaking (what does the project entail?)

Description: Enterprise Products Company (Enterprise) proposes to repair the A-18 Lateral following a pipeline fire incident, NMOCD Incident #nAPP2325258066, in Eddy County, New Mexico. The project consisted of 2.27 hectares (5.57 acres) of burned area and is located approximately 6.8 kilometers (4.2 miles) southwest of Carlsbad, New Mexico. The repairs and burn were located entirely on lands managed by the New Mexico State Land Office (NMSLO).

Dates of Investigation

From: 06-Oct-2023 **To:** 06-Oct-2023

Report Date

Report Date: 23-Oct-2023

Performing Agency/Consultant

Name: SWCA Environmental Consultants

Principal Investigator: Alissa K. Healy

Field Supervisor: Thea Stehlik-Barry

Field Personnel Names: N/A

Historian/Other N/A

Performing Agency Report Number

Report Number: 23-705

Client/Customer (project proponent)

Report run on: Oct 23, 2023 02:49 PM

NMCRIS Investigation Abstract Form (NIAF)

NMCRIS Activity No. 154026 **HPD Log No(s).**

Report Details

Name: Enterprise Products Company

Contact: Thomas J. Long

Address: 614 Reilly Ave, Farmington, NM 87401

Phone 505-599-2286

Client/Customer Project Number

Project Number: 84748

Report run on: Oct 23, 2023 02:49 PM

NMCRIS Investigation Abstract Form (NIAF)

NMCRIS Activity No. 154026 **HPD Log No(s).**

Ownership & Location

Land Ownership Status (Must be indicated on Project Map)

Owner/Manager List:

Land Owner/Manager	Protocol	Acres Surveyed	Acres in APE
NM State Land Office	Class III	10.95	10.95

Total Survey Acreage: 10.95

Total Tribal Acreage: 0.00

Record Search(es)

Date of HPD/ARMS File Review: 27-Sep-2023

Date of Other Agency File Review

Survey Data

Source Graphics: NAD 83

☑ USGS 7.5' (1:24,000) topo map ☐ Other Topo Map Scale:

☑ GPS Unit <1M

☐ Aerial Photos Other Source Graphic(s):

The following tables (b,c,& e) are calculated by the NMCRIS Map Service

USGS 7.5' Topographic Map(s)

Map Name	USGS Quad Code
Carlsbad West, NM	32104-D3

County(ies)

County	FIPS
EDDY	35015

Legal Description

Unplatted	Township (N/S)	Range (E/W)	Section
No	T22S	R26E	9

Projected Legal Description

Nearest City or Town: Carlsbad

Other Description:

Report run on: Oct 23, 2023 02:49 PM

NMCRIS Investigation Abstract Form (NIAF)

NMCRIS Activity No. 154026 **HPD Log No(s).**

GIS

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Report run on: Oct 23, 2023 02:49 PM

NMCRIS Investigation Abstract Form (NIAF)

NMCRIS Activity No. 154026 **HPD Log No(s).**

Methodology

Survey Field Methods

Intensity: 100% coverage

Configuration: ☑ Block Survey Units ☐ Linear Survey Units (l x y)

Other Survey Units

Scope: All Resources

Coverage Method: ☑ Systematic Pedestrian Coverage **Other Method:**

Survey Interval (m): 15 **Crew Size** 1

Fieldwork Dates **From** 06-Oct-2023 **To** 06-Oct-2023

Survey Person Hours: 1.50 **Recording Person Hours**

Additional Narrative: SWCA surveyed a 100-foot (30.4-m) buffer around the burn area on NMSLO-managed land to provide sufficient area for repair activities that may occur.

Environmental Setting (NRCS soil designation; vegetative community; elevation; etc.)

Environmental Setting: The project area falls within the Chihuahuan Desert Grasslands (24b) Environmental Protection Agency Level III ecoregion (Griffith et al. 2006). The average elevation of the project area is 3,291 feet (1,003 m) above mean sea level. The ecoregion is composed of deep depressions or grabens filled with sediment to form flat to rolling basins. Basins are either alluvial fans, internally drained basins, or river valleys internally drained with ephemeral streams. The project is within the desert grasslands setting. Typical vegetation includes creosote, tarbush, mesquite, fourwing saltbush, acacias, gyp grama, and alkali sacaton (Griffith et al. 2006). Plants observed during the survey include yucca, crucifixion thorn, cholla cactus, agave, horse crippler and other smaller burnt plants. Mesquite was an important resource for people in prehistoric times. Many of the other typical grasses and plants were also collected prehistorically for subsistence and to provide material for non-subsistence use.

Wildlife in the area includes mule deer and coyotes. Also typical to the area are bobcat, gopher, cottontail rabbit, jackrabbit, peccary, and various species of field mice, striped skunk, and pack rat (Biota Information System of New Mexico 2023). Important animal species prehistorically include deer, jackrabbit, and cottontail rabbit. Prehistorically, bison were in the region during at least some periods. Bison, pronghorn, deer, and rabbit were important food resources for the prehistoric inhabitants of the region.

Geology underlying the project area comprises Holocene to lower Pleistocene piedmont alluvial deposits (Qp). Included are deposits of higher gradient tributaries bordering major stream valleys, alluvial veneers of the piedmont slope, and alluvial fans. At a local level, uppermost Pliocene deposits may be present.

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NMCRIS Investigation Abstract Form (NIAF)

NMCRIS Activity No. 154026 **HPD Log No(s).**

Methodology

Ector stony loam, 0 to 9 percent slopes (EC) and Upton gravelly loam, 0 to 9 percent slopes (UG), are the two soil types that occur in the survey area. Ector stony loam consists of very cobbly loam over unweathered bedrock. These soils have a runoff class that is medium, are well drained and are not hydric. Upton gravelly loam are slightly alkaline, have a runoff class that is high, are well drained, annual flooding and ponding is none, and are not a hydric soil (Natural Resources Conservation Service 2023).

The climate information for the survey area was compiled using the Carlsbad, New Mexico (291469), climate station data (period of record February 1, 1900, to June 10, 2016). Rainfall for the general project area is most abundant from May through October, averaging 4.14 cm (1.63 inches), with September having the heaviest average precipitation. Snowfall is expectedly heaviest between December and January, with an average of 3.10 cm (1.2 inches) and can fall from November through April; annual snowfall averages 11.18 cm (4.4 inches). The average temperatures are coldest in January at -2.33 degrees Celsius (?C) (27.8 degrees Fahrenheit [?F]) and warmest in July at 35.33?C (95.6?F) (Western Regional Climate Center 2023).

References:

Biota Information System of New Mexico
2023 Database Query for Eddy County. Available at: http://www.bison-m.org/. Accessed October 2023.

Griffith, G. E., J. M. Omernik, M. M. McGraw, G. Z. Jacobi, C. M. Canavan, T. S. Schrader, D. Mercer, R. Hill, and B. C. Moran
2006 Ecoregions of New Mexico (color poster with map, descriptive text, summary tables, and photographs). Reston, Virginia: U.S.
Geological Survey (map scale 1:1,400,000).

Natural Resources Conservation Service
2023 Web Soil Survey. Available at:
http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm. Accessed October 2023.

Western Regional Climate Center
2023 Climate summary for Carlsbad, New Mexico (291469). Available at:
https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?nm1469. Accessed October 2023.

Percent Ground Visibility

Ground Visibility: 76-99%

Condition of Survey Area: Observed disturbances include oil and gas activities, wind and water erosion, and modern trash. Surface flowlines, buried pipelines, an access road, and open trenches are present in

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NMCRIS Investigation Abstract Form (NIAF)

NMCRIS Activity No. 154026 **HPD Log No(s).**

Methodology

the survey and burn area. Sheet washing and ephemeral drainages were also observed.

Attachments (check all appropriate boxes)

- [x] USGS 7.5 Topographic Map with sites, isolates, and survey area clearly drawn (required)
- [x] Copy of NMCRIS Map Check (required)
- [ ] LA Site Forms - new sites (with sketch map & topographic map) if applicable
- [ ] LA Site Forms (update) - previously recorded & un-relocated sites (first 2 pages minimum)
- [ ] Historic Cultural Property Inventory Forms, if applicable
- [ ] List and Description of Isolates, if applicable
- [ ] List and Description of Collections, if applicable

Other Attachments

- [x] Photographs and Log
- [x] Other attachments **Describe:** Previous site and survey tables

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NMCRIS Investigation Abstract Form (NIAF)

NMCRIS Activity No. 154026 **HPD Log No(s).**

Cultural Resource Findings

Investigation Results

Archaeological Sites Discovered and Registered:	0
Archaeological Sites Discovered and NOT Registered:	0
Previously Recorded Archaeological Sites Revisited (site update form required):	0
Previously Recorded Archaeological Sites Not Relocated (site update form required):	0
Total Archaeological Sites (visited & recorded):	0
Total Isolates Recorded:	0
	☑ Non-Selective Isolate Recording
HCPI Properties Discovered and Registered:	0
HCPI Properties Discovered And NOT Registered:	0
Previously Recorded HCPI Properties Revisited:	0
Previously Recorded HCPI Properties NOT Relocated:	0
Total HCPI Properties (visited & recorded, including acequias):	0

If No Cultural Resources Found, Discuss Why: The size of the survey area was small, and the area has been disturbed by both previous oil and gas activities and the existing caliche road.

Management Summary

Summary: Enterprise contracted with SWCA to complete an intensive pedestrian survey for the A-18 Lateral pipeline burn. The survey area consisted of 10.95 acres (4.42 hectares), which includes a 100-ft (30.4-m) cultural resources buffer around the burn area on lands managed by the NMSLO in Eddy County, New Mexico. No archaeological sites or historic properties were observed during the current investigation. No additional investigation or treatment is recommended regarding the current undertaking. If subsurface cultural materials are encountered during remediation, all work should cease, and the State Land Office should be notified immediately.

NMSLO cultural resources preservation efforts requires that an archaeological survey be conducted to current standards for the APE pursuant to and in compliance with New Mexico Administrative Code (NMAC) 4.10.15 and 19.2.24 to ensure that cultural properties are not inadvertently excavated, harmed, or destroyed by any person.

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NMCRIS Investigation Abstract Form (NIAF)

NMCRIS Activity No. 154026 **HPD Log No(s).**

Attachments

Documents

Attachment Type	Description	Name	File Type	Size	Upload Date	Upload By
Report/Manuscript	NIAF_154026	NMCRIS_154026	PDF document	3003 KB	23-Oct-2023	Adolfo Muniz

NMCRIS Investigation Abstract Form (NIAF)

NMCRIS Activity No. 1 5 4 0 2 6

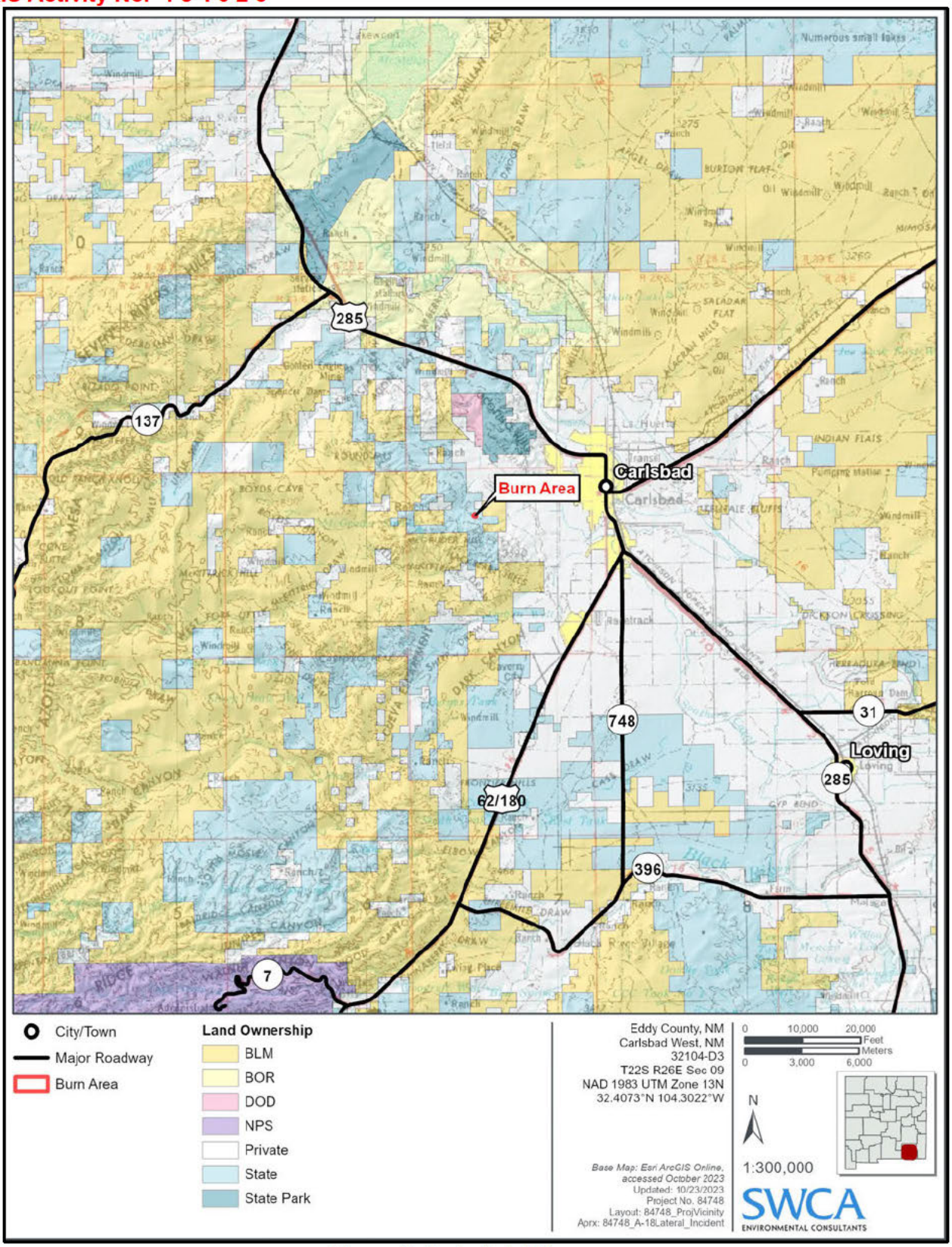


Figure 1. Project vicinity map.

NMCRIS Investigation Abstract Form (NIAF)

NMCRIS Activity No. 1 5 4 0 2 6

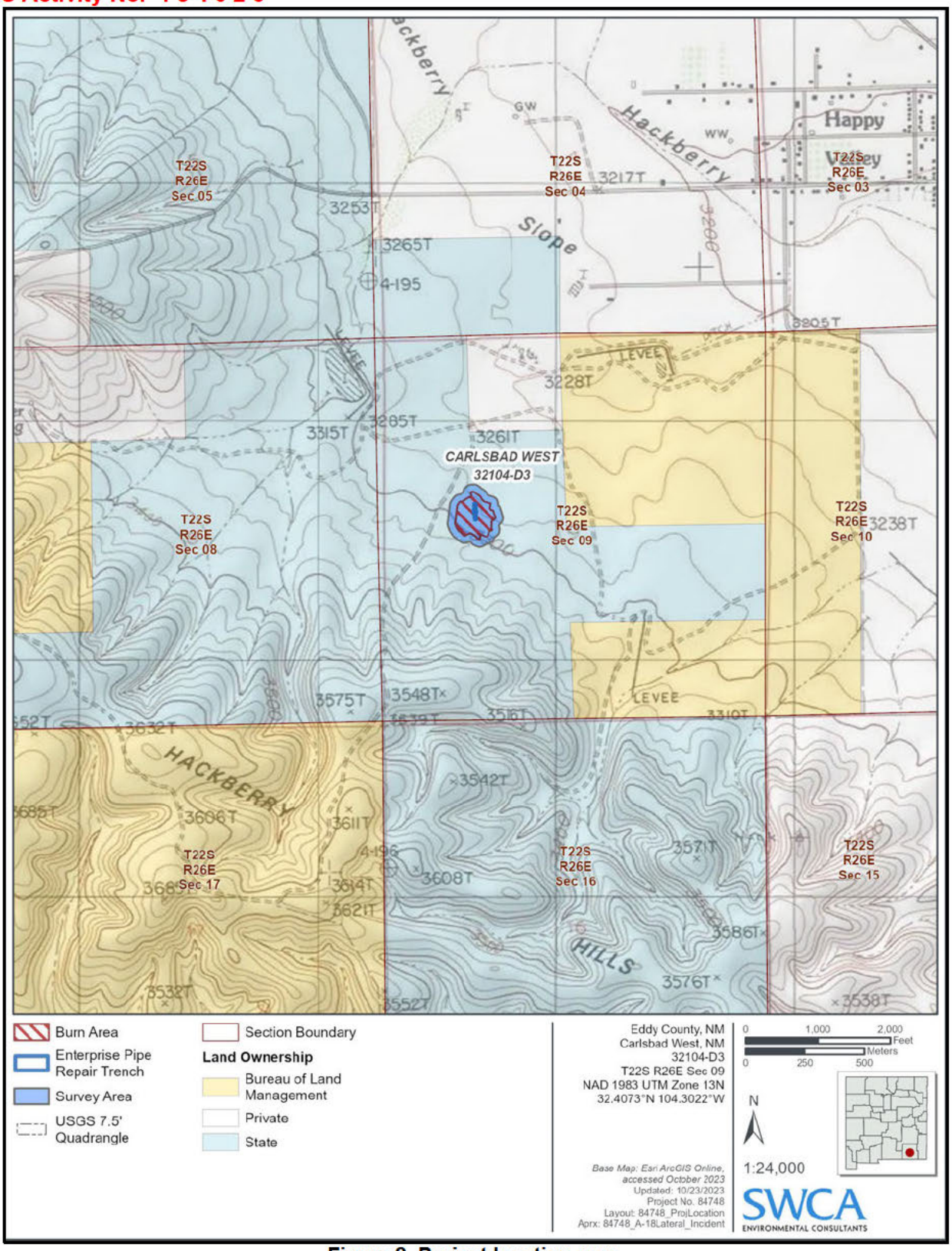


Figure 2. Project location map.

NMCRIS Investigation Abstract Form (NIAF)

NMCRIS Activity No. 1 5 4 0 2 6

Figure 3. Overview of survey area from south boundary, facing north (Frame 2791).

Figure 4. Overview of survey area from west boundary, facing east (Frame 4475).

NMCRIS Investigation Abstract Form (NIAF)

NMCRIS Activity No. 1 5 4 0 2 6

Figure 5. Overview of survey area from east boundary, facing west (Frame 5241).

Figure 6. Overview of trench area, facing south (Frame 3269).

NMCRIS Investigation Abstract Form (NIAF)

NMCRIS Activity No. 1 5 4 0 2 6

Figure 7. NMCRIS records search showing project area in pink. The brown polygon represents the previous surveys.

Table 1. Archaeological Surveys Conducted within 500 m (0.31 mile) of the Survey Area

NMCRIS No.	Performing Agency	Activity Start Date	Acres Surveyed	Resources Visited
496	Environmental Assessment, Inc.	10/26/1981	-	2
10145	Agency for Conservation Archaeology Eastern New Mexico University	6/12/1981	7.07	0
27700	Agency for Conservation Archaeology Eastern New Mexico University	8/4/1980	1.61	0
27731	Agency for Conservation Archaeology Eastern New Mexico University	12/15/1980	6.75	0
75511	Archaeological Survey Consultants	7/23/2001	11.81	0
80783	Southern NM Archaeological Services	10/7/2002	33.8	3
84174	Taos Archaeological Research Assoc.	5/1/1982	368	9
85898	Southern NM Archaeological Services	10/14/2003	30.96	1
104678	Boone Archaeological Services, LLC	4/3/2007	53.78	7
133384	Lone Mountain Archaeological Services	2/3/2015	39174.25	594
141130	US Bureau of Land Management Carlsbad Field Office	8/6/2018	147	2
142866	Black River Consulting, LLC	3/21/2019	317.21	7

Table 2. Previously Recorded Sites within 500 m (0.31 mile) of the Survey Area.

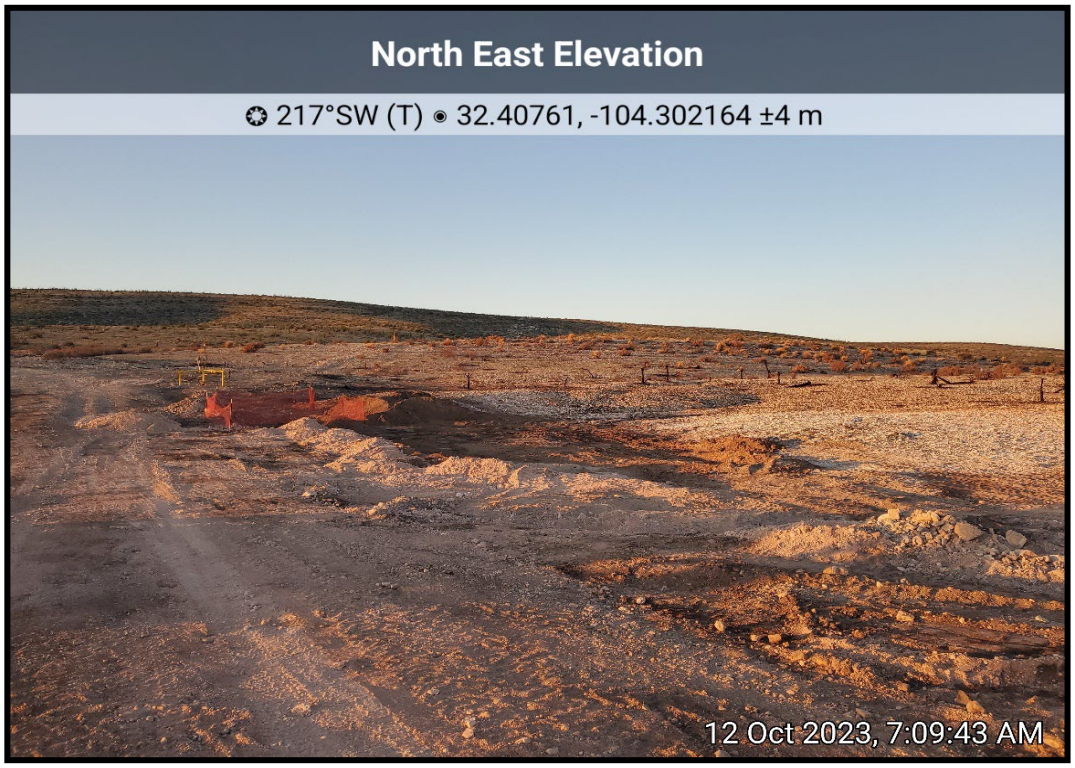
ENSOLUM

APPENDIX C

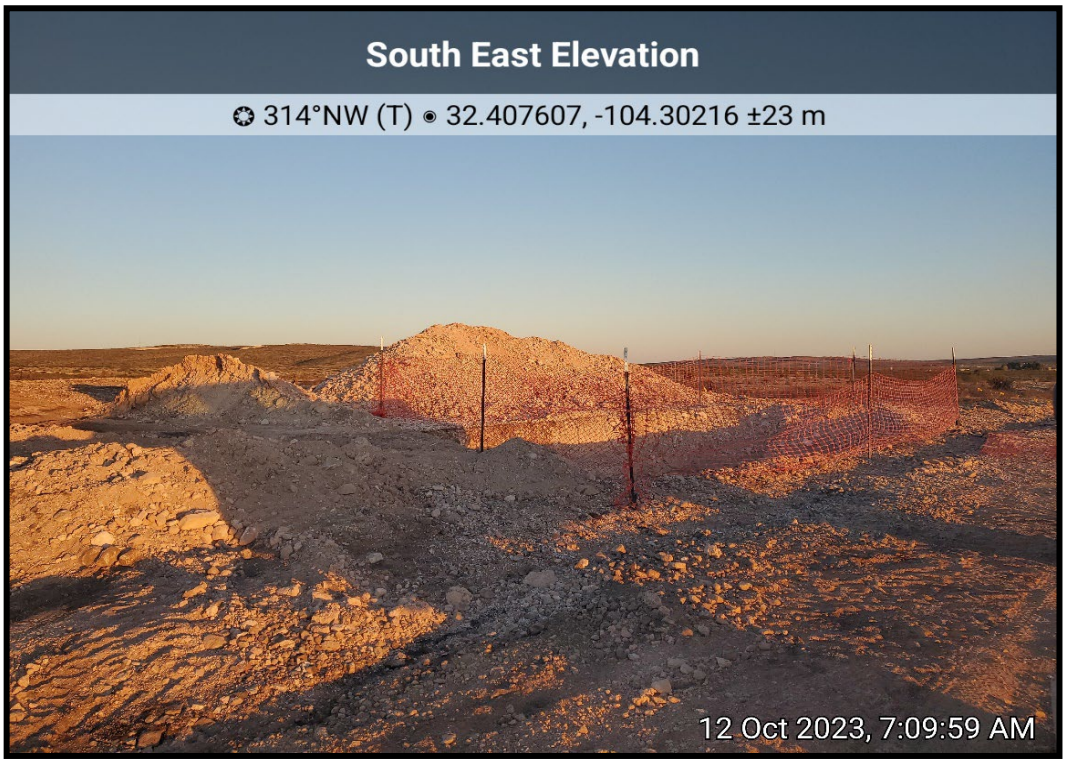
Photographic Documentation

View of excavation extent during remediation activities, facing northwest.

View of excavation extent and soil stockpiles during remediation activities, facing northwest.



View of partially backfilled excavation extent during remediation activities, facing southwest.



View of partially backfilled excavation extent and soil stockpiles during remediation activities, facing northwest.

ENSOLUM

APPENDIX D

Table

ENSOLUM

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
A-18 Lateral Gas Release
Enterprise Field Services, LLC
Eddy County, New Mexico
Ensolum Project No. 03B1226310

Sample Designation	Date	Depth (feet bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH MRO (mg/kg)	Total TPH (GRO+DRO+MRO) (mg/kg)	Chloride (mg/kg)
New Mexico Oil Conservation Division Closure Criteria for Soils Impacted by a Release (≤ 50 feet)			**10**	**NE**	**NE**	**NE**	**50**	**NE**	**NE**	**NE**	**100**	**600**
Composite Excavation Floor Soil Sample Analytical Results												
FS-1	09/18/2023	4	<0.020	<0.040	<0.040	<0.079	<0.079	<4.0	<9.7	<48	<48	<61
FS-2	09/18/2023	4	<0.020	<0.040	<0.040	<0.081	<0.081	<4.0	**340**	**190**	**530**	<60
	09/27/2023	4	NS					<5.1	**14**	<50	<50	NS
Composite Excavation Sidewall Soil Sample Analytical Results												
SW-1	09/18/2023	0 - 4	<0.021	<0.042	<0.042	<0.084	<0.084	<4.2	**13**	<47	<47	<60
SW-2	09/18/2023	0 - 4	<0.021	<0.042	<0.042	<0.084	<0.084	<4.2	**10**	<46	<46	<59
Confirmation Delineation Soil Sample Analytical Results												
North	09/27/2023	0.25	<0.020	<0.040	<0.040	<0.080	<0.080	<4.0	<9.7	<49	<49	<60
East	09/27/2023	0.25	<0.021	**0.072**	<0.042	**0.15**	**0.222**	<4.2	<10	<50	<50	<60
South	09/27/2023	0.25	<0.022	**0.11**	**0.048**	**0.13**	**0.288**	<4.4	**13**	**77**	**90**	<60
West	09/27/2023	0.25	<0.027	**0.083**	<0.055	**0.13**	**0.213**	<5.5	**110**	**57**	**167**	<60
	10/12/2023	0.25	NS					<4.6	<9.5	<48	<48	NS
Composite Stockpile Soil Sample Analytical Results												
STP-1	09/14/2023	NA	<0.025	<0.051	<0.051	<0.10	<0.10	<5.1	<9.2	<46	<46	<60
STP-2	09/14/2023	NA	<0.025	<0.051	<0.051	<0.10	<0.10	<5.1	**43**	<48	<48	<60
STP-3	09/14/2023	NA	<0.022	<0.045	<0.045	<0.089	<0.089	<4.5	**32**	<49	<49	**99**
STP-4	09/14/2023	NA	<0.018	<0.036	<0.036	<0.071	<0.071	<3.6	<9.6	<48	<48	<60

*Concentrations in **bold** and yellow exceed the New Mexico Oil Conservation Division Closure Criteria for Soils Impacted by a Release (≤ 50 feet)*

Additional Excavation and/or Re-Sample

bgs - below ground surface
mg/kg - milligrams per kilogram
NA - Not Applicable
NE - Not Established
NS - Not Sampled
BTEX - Benzene, Toluene, Ethylbenzene, and Xylenes
GRO - Gasoline Range Organics
DRO - Diesel Range Organics
MRO - Motor Oil/Lube Oil Range Organics
TPH - Total Petroleum Hydrocarbon

ENSOLUM

TABLE 2
CORROSION INHIBITOR SOIL SAMPLE ANALYTICAL RESULTS
A-18 Lateral Gas Release
Enterprise Field Services, LLC
Eddy County, New Mexico
Ensolum Project No. 03B1226310

Sample Designation	Date	Depth (feet bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH MRO (mg/kg)	Total TPH (GRO+DRO+MRO) (mg/kg)	Methanol* (mg/kg)
New Mexico Oil Conservation Division Closure Criteria for Soils Impacted by a Release (≤ 50 feet)			**10**	**NE**	**NE**	**NE**	**50**	**NE**	**NE**	**NE**	**100**	**NE**
Composite Excavation Floor Soil Sample Analytical Results												
CI-1	09/14/2023	0.25	<0.024	<0.047	<0.047	<0.095	<0.095	<4.7	**15**	<47	<47	<4.95
CI-2	09/14/2023	0.25	<0.024	<0.048	<0.048	<0.096	<0.096	<4.8	**950**	**610**	**1,560**	**64.5**
	09/14/2023	0.50	NS					<4.7	**42**	<46	<46	NS

*Concentrations in **bold** and yellow exceed the New Mexico Oil Conservation Division Closure Criteria for Soils Impacted by a Release (≤ 50 feet)*

Additional Excavation and/or Re-Sample

bgs - below ground surface
mg/kg - milligrams per kilogram
NA - Not Applicable
NE - Not Established
BTEX - Benzene, Toluene, Ethylbenzene, and Xylenes
GRO - Gasoline Range Organics
DRO - Diesel Range Organics
MRO - Motor Oil/Lube Oil Range Organics
TPH - Total Petroleum Hydrocarbon
** - Per NMAC 20.006.002.4106, Section T, Subsection 2, Methanol is not considered a "Toxic Pollutant" to ground and surface water, and therefore does not have a regulatory limit.*

ENSOLUM

APPENDIX E

Laboratory Analytical Reports & Chain-of-Custody Documentation

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

September 21, 2023

Kelly Lowery

Ensolum LLC
601 Marrenfield #400
Midland, TX 79701
TEL: (214) 733-3165
FAX:

RE: A 18 Lateral Gas Release OrderNo.: 2309915

Dear Kelly Lowery:

Hall Environmental Analysis Laboratory received 4 sample(s) on 9/16/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2309915**
Date Reported: **9/21/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum LLC
Client Sample ID: STP-1
Project: A 18 Lateral Gas Release
Collection Date: 9/14/2023 9:25:00 AM
Lab ID: 2309915-001 **Matrix:** SOIL **Received Date:** 9/16/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	9/18/2023 3:49:33 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	9/18/2023 3:49:33 PM
Surr: DNOP	94.5	69-147		%Rec	1	9/18/2023 3:49:33 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	5.1		mg/Kg	1	9/18/2023 12:30:00 PM
Surr: BFB	100	15-244		%Rec	1	9/18/2023 12:30:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	9/18/2023 12:30:00 PM
Toluene	ND	0.051		mg/Kg	1	9/18/2023 12:30:00 PM
Ethylbenzene	ND	0.051		mg/Kg	1	9/18/2023 12:30:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	9/18/2023 12:30:00 PM
Surr: 4-Bromofluorobenzene	90.0	39.1-146		%Rec	1	9/18/2023 12:30:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	9/18/2023 6:59:38 PM

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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2309915**
Date Reported: **9/21/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum LLC
Client Sample ID: STP-2
Project: A 18 Lateral Gas Release
Collection Date: 9/14/2023 9:28:00 AM
Lab ID: 2309915-002 **Matrix:** SOIL **Received Date:** 9/16/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**
Diesel Range Organics (DRO)	43	9.7		mg/Kg	1	9/19/2023 10:19:08 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	9/19/2023 10:19:08 AM
Surr: DNOP	111	69-147		%Rec	1	9/19/2023 10:19:08 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	5.1		mg/Kg	1	9/18/2023 1:35:00 PM
Surr: BFB	94.7	15-244		%Rec	1	9/18/2023 1:35:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	9/18/2023 1:35:00 PM
Toluene	ND	0.051		mg/Kg	1	9/18/2023 1:35:00 PM
Ethylbenzene	ND	0.051		mg/Kg	1	9/18/2023 1:35:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	9/18/2023 1:35:00 PM
Surr: 4-Bromofluorobenzene	87.7	39.1-146		%Rec	1	9/18/2023 1:35:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	9/18/2023 7:12:03 PM

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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2309915**
Date Reported: **9/21/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum LLC
Client Sample ID: STP-3
Project: A 18 Lateral Gas Release
Collection Date: 9/14/2023 9:31:00 AM
Lab ID: 2309915-003 **Matrix:** SOIL **Received Date:** 9/16/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	32	9.8		mg/Kg	1	9/18/2023 4:10:48 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	9/18/2023 4:10:48 PM
Surr: DNOP	103	69-147		%Rec	1	9/18/2023 4:10:48 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.5		mg/Kg	1	9/18/2023 2:40:00 PM
Surr: BFB	114	15-244		%Rec	1	9/18/2023 2:40:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.022		mg/Kg	1	9/18/2023 2:40:00 PM
Toluene	ND	0.045		mg/Kg	1	9/18/2023 2:40:00 PM
Ethylbenzene	ND	0.045		mg/Kg	1	9/18/2023 2:40:00 PM
Xylenes, Total	ND	0.089		mg/Kg	1	9/18/2023 2:40:00 PM
Surr: 4-Bromofluorobenzene	91.3	39.1-146		%Rec	1	9/18/2023 2:40:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	99	60		mg/Kg	20	9/18/2023 7:49:17 PM

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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2309915**
Date Reported: **9/21/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum LLC
Client Sample ID: STP-4
Project: A 18 Lateral Gas Release
Collection Date: 9/14/2023 9:34:00 AM
Lab ID: 2309915-004 **Matrix:** SOIL **Received Date:** 9/16/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	9/18/2023 4:31:53 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	9/18/2023 4:31:53 PM
Surr: DNOP	75.8	69-147		%Rec	1	9/18/2023 4:31:53 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	3.6		mg/Kg	1	9/18/2023 3:01:00 PM
Surr: BFB	99.0	15-244		%Rec	1	9/18/2023 3:01:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.018		mg/Kg	1	9/18/2023 3:01:00 PM
Toluene	ND	0.036		mg/Kg	1	9/18/2023 3:01:00 PM
Ethylbenzene	ND	0.036		mg/Kg	1	9/18/2023 3:01:00 PM
Xylenes, Total	ND	0.071		mg/Kg	1	9/18/2023 3:01:00 PM
Surr: 4-Bromofluorobenzene	87.9	39.1-146		%Rec	1	9/18/2023 3:01:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	9/18/2023 8:26:31 PM

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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2309915**

21-Sep-23

Client: Ensolum LLC

Project: A 18 Lateral Gas Release

Sample ID: **MB-77578**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **77578**	RunNo: **99788**
Prep Date: **9/18/2023**	Analysis Date: **9/18/2023**	SeqNo: **3647812** Units: **mg/Kg**

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

Sample ID: **LCS-77578**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **77578**	RunNo: **99788**
Prep Date: **9/18/2023**	Analysis Date: **9/18/2023**	SeqNo: **3647813** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.6	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2309915**

21-Sep-23

Client: Ensolum LLC

Project: A 18 Lateral Gas Release

Sample ID: **2309915-004AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **STP-4**	Batch ID: **77561**	RunNo: **99781**
Prep Date: **9/18/2023**	Analysis Date: **9/18/2023**	SeqNo: **3647245** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	9.2	45.96	0	95.1	54.2	135			
Surr: DNOP	4.6		4.596		100	69	147			

Sample ID: **2309915-004AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **STP-4**	Batch ID: **77561**	RunNo: **99781**
Prep Date: **9/18/2023**	Analysis Date: **9/18/2023**	SeqNo: **3647246** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	9.5	47.30	0	91.3	54.2	135	1.19	29.2	
Surr: DNOP	4.7		4.730		98.5	69	147	0	0	

Sample ID: **LCS-77561**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **77561**	RunNo: **99781**
Prep Date: **9/18/2023**	Analysis Date: **9/18/2023**	SeqNo: **3647268** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	10	50.00	0	97.6	61.9	130			
Surr: DNOP	4.8		5.000		95.3	69	147			

Sample ID: **MB-77561**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **77561**	RunNo: **99781**
Prep Date: **9/18/2023**	Analysis Date: **9/18/2023**	SeqNo: **3647272** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.3		10.00		92.7	69	147			

Sample ID: **MB-77579**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **77579**	RunNo: **99809**
Prep Date: **9/18/2023**	Analysis Date: **9/19/2023**	SeqNo: **3649079** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	12		10.00		118	69	147			

Sample ID: **LCS-77579**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **77579**	RunNo: **99809**
Prep Date: **9/18/2023**	Analysis Date: **9/19/2023**	SeqNo: **3649081** Units: **%Rec**

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2309915**

21-Sep-23

Client: Ensolum LLC

Project: A 18 Lateral Gas Release

Sample ID: **LCS-77579**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **77579**	RunNo: **99809**
Prep Date: **9/18/2023**	Analysis Date: **9/19/2023**	SeqNo: **3649081** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.5		5.000		110	69	147			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2309915**

21-Sep-23

Client: Ensolum LLC

Project: A 18 Lateral Gas Release

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **R99784**	RunNo: **99784**
Prep Date:	Analysis Date: **9/18/2023**	SeqNo: **3647475** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	94.8	70	130			
Surr: BFB	2100		1000		214	15	244			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **R99784**	RunNo: **99784**
Prep Date:	Analysis Date: **9/18/2023**	SeqNo: **3647476** 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		101	15	244			

Sample ID: **2309915-001ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **STP-1**	Batch ID: **R99784**	RunNo: **99784**
Prep Date:	Analysis Date: **9/18/2023**	SeqNo: **3647478** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.1	25.33	0	92.6	70	130			
Surr: BFB	2100		1013		205	15	244			

Sample ID: **2309915-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **STP-1**	Batch ID: **R99784**	RunNo: **99784**
Prep Date:	Analysis Date: **9/18/2023**	SeqNo: **3647479** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.1	25.33	0	91.3	70	130	1.44	20	
Surr: BFB	2100		1013		208	15	244	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2309915**

21-Sep-23

Client: Ensolum LLC

Project: A 18 Lateral Gas Release

Sample ID: **100ng btex lcs**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **B99784**	RunNo: **99784**
Prep Date:	Analysis Date: **9/18/2023**	SeqNo: **3647439** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.86	0.025	1.000	0	86.4	70	130			
Toluene	0.88	0.050	1.000	0	87.9	70	130			
Ethylbenzene	0.91	0.050	1.000	0	90.6	70	130			
Xylenes, Total	2.7	0.10	3.000	0	90.8	70	130			
Surr: 4-Bromofluorobenzene	0.98		1.000		98.1	39.1	146			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **B99784**	RunNo: **99784**
Prep Date:	Analysis Date: **9/18/2023**	SeqNo: **3647440** 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		91.1	39.1	146			

Sample ID: **2309915-002ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **STP-2**	Batch ID: **B99784**	RunNo: **99784**
Prep Date:	Analysis Date: **9/18/2023**	SeqNo: **3647443** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.87	0.025	1.013	0	86.2	70	130			
Toluene	0.89	0.051	1.013	0	87.9	70	130			
Ethylbenzene	0.92	0.051	1.013	0	90.8	70	130			
Xylenes, Total	2.8	0.10	3.040	0	90.5	70	130			
Surr: 4-Bromofluorobenzene	0.88		1.013		86.5	39.1	146			

Sample ID: **2309915-002amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **STP-2**	Batch ID: **B99784**	RunNo: **99784**
Prep Date:	Analysis Date: **9/18/2023**	SeqNo: **3647444** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.87	0.025	1.013	0	85.9	70	130	0.399	20	
Toluene	0.88	0.051	1.013	0	87.3	70	130	0.716	20	
Ethylbenzene	0.91	0.051	1.013	0	89.8	70	130	1.12	20	
Xylenes, Total	2.7	0.10	3.040	0	89.3	70	130	1.36	20	
Surr: 4-Bromofluorobenzene	0.91		1.013		89.3	39.1	146	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: Ensolum LLC | Work Order Number: 2309915 | RcptNo: 1

Received By: Juan Rojas 9/16/2023 7:30:00 AM

Completed By: Juan Rojas 9/16/2023 8:02:33 AM

Reviewed By: 9/18/23

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

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

Adjusted? _____

Checked by: JNA 9/16/23

Special Handling (if applicable)

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

Person Notified: _____ Date _____

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

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.1	Good	No	Yogi		

Chain-of-Custody Record

Client: Ensolum, LLC

Mailing Address: 601 N Marienfeld St Suite 400

Phone #: 214-733-3165

email or Fax#: klowery@ensolum.com

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☐ Standard ☒ Rush 24 hrs

Project Name: A-18 Lateral Gas Release

Project #: 03B1226310

Project Manager: Kelly Lowery

Sampler: SAM INKD

On Ice: ☒ Yes ☐ No

# of Coolers: 1 4 oz

Cooler Temp (Including CF): 0.2-0.1=0.1 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Name	Depth (ft)	Container Type and #	Preservative Type	HEAL No. 2309915	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Chlorides 300.0
9/14/23	0925	Soil	STP-1	-	4oz 1	Ice	-001	X	X									X
9/14/23	0928	Soil	STP-2	-	4oz 1	Ice	-002	X	X									X
9/14/23	0931	Soil	STP-3	-	4oz 1	Ice	-003	X	X									X
9/14/23	0934	Soil	STP-4	-	4oz 1	Ice	-004	X	X									X
			AFE															
			Sam				9/14/23											

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
9/14/23	1250				9/15/23	945
9/15/23	1900			courier	9/16/23	7:30

Remarks: AFE: AB74463

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

September 27, 2023

Kelly Lowery

Ensolum LLC
601 Marrenfield #400
Midland, TX 79701
TEL: (214) 733-3165
FAX:

RE: A 18 Lateral Gas Release OrderNo.: 2309916

Dear Kelly Lowery:

Hall Environmental Analysis Laboratory received 4 sample(s) on 9/16/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2309916**
Date Reported: **9/27/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum LLC
Client Sample ID: CI-1 0.25'
Project: A 18 Lateral Gas Release
Collection Date: 9/14/2023 9:37:00 AM
Lab ID: 2309916-001 **Matrix:** SOIL **Received Date:** 9/16/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	15	9.4		mg/Kg	1	9/19/2023 2:24:19 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	9/19/2023 2:24:19 PM
Surr: DNOP	117	69-147		%Rec	1	9/19/2023 2:24:19 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	9/19/2023 12:13:00 PM
Surr: BFB	106	15-244		%Rec	1	9/19/2023 12:13:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	9/19/2023 12:13:00 PM
Toluene	ND	0.047		mg/Kg	1	9/19/2023 12:13:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	9/19/2023 12:13:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	9/19/2023 12:13:00 PM
Surr: 4-Bromofluorobenzene	87.3	39.1-146		%Rec	1	9/19/2023 12:13:00 PM

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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2309916**
Date Reported: **9/27/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum LLC
Client Sample ID: CI-2 0.25'
Project: A 18 Lateral Gas Release
Collection Date: 9/14/2023 9:50:00 AM
Lab ID: 2309916-003 **Matrix:** SOIL **Received Date:** 9/16/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	950	50		mg/Kg	5	9/19/2023 3:37:57 PM
Motor Oil Range Organics (MRO)	610	250		mg/Kg	5	9/19/2023 3:37:57 PM
Surr: DNOP	131	69-147		%Rec	5	9/19/2023 3:37:57 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	9/19/2023 12:35:00 PM
Surr: BFB	99.9	15-244		%Rec	1	9/19/2023 12:35:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	9/19/2023 12:35:00 PM
Toluene	ND	0.048		mg/Kg	1	9/19/2023 12:35:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	9/19/2023 12:35:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	9/19/2023 12:35:00 PM
Surr: 4-Bromofluorobenzene	86.0	39.1-146		%Rec	1	9/19/2023 12:35:00 PM

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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2309916**
Date Reported: **9/27/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum LLC
Client Sample ID: CI-2 0.5'
Project: A 18 Lateral Gas Release
Collection Date: 9/14/2023 9:55:00 AM
Lab ID: 2309916-004 **Matrix:** SOIL **Received Date:** 9/16/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	42	9.3		mg/Kg	1	9/22/2023 11:08:38 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	9/22/2023 11:08:38 AM
Surr: DNOP	125	69-147		%Rec	1	9/22/2023 11:08:38 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	9/21/2023 11:45:20 AM
Surr: BFB	92.6	15-244		%Rec	1	9/21/2023 11:45:20 AM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Pace Analytical®

ANALYTICAL REPORT

September 27, 2023

Hall Environmental Analysis Laboratory

Sample Delivery Group:	L1657341
Samples Received:	09/19/2023
Project Number:	
Description:	

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

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

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

2309916-001B Cl-1 0.25' L1657341-01 Solid

			Collected by	Collected date/time	Received date/time
				09/14/23 09:37	09/19/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8015M	WG2138254	1	09/14/23 09:37	09/26/23 15:49	JAP	Mt. Juliet, TN

2309916-003B Cl-2 0.25' L1657341-02 Solid

			Collected by	Collected date/time	Received date/time
				09/14/23 09:50	09/19/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8015M	WG2139350	1	09/14/23 09:50	09/26/23 13:23	BAW	Mt. Juliet, TN

CASE NARRATIVE

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

John Hawkins
Project Manager

Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Methanol	U		4.95	10.0	1	09/26/2023 15:49	WG2138254
Ethanol	U		4.76	10.0	1	09/26/2023 15:49	WG2138254

Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Methanol	64.5	Q	4.95	10.0	1	09/26/2023 13:23	WG2139350
Ethanol	U	Q	4.76	10.0	1	09/26/2023 13:23	WG2139350

Method Blank (MB)

(MB) R3978176-2 09/26/23 15:16

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Methanol	U		4.95	10.0
Ethanol	U		4.76	10.0

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

(LCS) R3978176-1 09/26/23 15:10 • (LCSD) R3978176-3 09/26/23 15:22

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Methanol	50.0	48.2	46.6	96.4	93.2	55.0-133			3.38	25
Ethanol	50.0	47.8	47.3	95.6	94.6	64.0-124			1.05	20

Method Blank (MB)

(MB) R3977820-2 09/26/23 12:30

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Methanol	U		4.95	10.0
Ethanol	U		4.76	10.0

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

(LCS) R3977820-1 09/26/23 12:24 • (LCSD) R3977820-3 09/26/23 12:36

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Methanol	50.0	52.4	52.0	105	104	55.0-133			0.766	25
Ethanol	50.0	49.1	48.9	98.2	97.8	64.0-124			0.408	20

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
Q	Sample was prepared and/or analyzed past holding time as defined in the method. Concentrations should be considered minimum values.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

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

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

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

ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

H020

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

SUB CONTRATOR: Pace TN	COMPANY: PACE TN	PHONE: (800) 767-5859	FAX: (615) 758-5859
ADDRESS: 12065 Lebanon Rd		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: Mt. Juliet, TN 37122			

L1657341

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2309916-001B	CI-1 0.25'	4OZGU	Soil	9/14/2023 9:37:00 AM	1	Methanol ** 1 day TAT ** -01
2	2309916-003B	CI-2 0.25'	4OZGU	Soil	9/14/2023 9:50:00 AM	1	Methanol ** 1 day TAT ** -02

Sample Receipt Checklist

COC Seal Present/Intact: ✓Y__N
COC Signed/Accurate: ✓Y__N
Bottles arrive intact: ✓Y__N
Correct bottles used: ✓Y__N
Sufficeient volume sent: ✓Y__N
RA Screen <0.5 mR/hr: ✓Y__N

If Applicable
VOA Zero Headspace: __Y__N
Pres. Correct/Check: __Y__N

CCA7 1.7+0=1.7
8841 8348 3407

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date: 9/18/2023	Time: 12:13 PM	Received By:	Date: 9-19-23	Time: 900
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☐ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples ____ °C Attempt to Cool ? ____
Comments: ____

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2309916**

27-Sep-23

Client: Ensolum LLC

Project: A 18 Lateral Gas Release

Sample ID: **MB-77580**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **77580**	RunNo: **99810**
Prep Date: **9/19/2023**	Analysis Date: **9/19/2023**	SeqNo: **3648794** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		114	69	147			

Sample ID: **LCS-77580**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **77580**	RunNo: **99810**
Prep Date: **9/19/2023**	Analysis Date: **9/19/2023**	SeqNo: **3648795** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54	10	50.00	0	109	61.9	130			
Surr: DNOP	5.4		5.000		108	69	147			

Sample ID: **MB-77647**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **77647**	RunNo: **99915**
Prep Date: **9/20/2023**	Analysis Date: **9/22/2023**	SeqNo: **3654242** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	14		10.00		138	69	147			

Sample ID: **LCS-77647**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **77647**	RunNo: **99915**
Prep Date: **9/20/2023**	Analysis Date: **9/22/2023**	SeqNo: **3654243** 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	115	61.9	130			
Surr: DNOP	5.9		5.000		119	69	147			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2309916**

27-Sep-23

Client: Ensolum LLC

Project: A 18 Lateral Gas Release

Sample ID: **lcs-77575**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **77575**	RunNo: **99813**							
Prep Date: **9/18/2023**	Analysis Date: **9/19/2023**	SeqNo: **3648847**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	95.0	70	130			
Surr: BFB	2200		1000		216	15	244			

Sample ID: **mb-77575**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBS**	Batch ID: **77575**	RunNo: **99813**							
Prep Date: **9/18/2023**	Analysis Date: **9/19/2023**	SeqNo: **3648848**	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	990		1000		99.1	15	244			

Sample ID: **lcs-77644**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **77644**	RunNo: **99886**							
Prep Date: **9/20/2023**	Analysis Date: **9/21/2023**	SeqNo: **3652636**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	86.8	70	130			
Surr: BFB	2000		1000		195	15	244			

Sample ID: **mb-77644**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBS**	Batch ID: **77644**	RunNo: **99886**							
Prep Date: **9/20/2023**	Analysis Date: **9/21/2023**	SeqNo: **3652637**	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	950		1000		95.0	15	244			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2309916**

27-Sep-23

Client: Ensolum LLC

Project: A 18 Lateral Gas Release

Sample ID: **lcs-77575**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **77575**	RunNo: **99813**
Prep Date: **9/18/2023**	Analysis Date: **9/19/2023**	SeqNo: **3648857** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.025	1.000	0	89.7	70	130			
Toluene	0.90	0.050	1.000	0	90.4	70	130			
Ethylbenzene	0.93	0.050	1.000	0	92.6	70	130			
Xylenes, Total	2.8	0.10	3.000	0	93.2	70	130			
Surr: 4-Bromofluorobenzene	0.89		1.000		88.9	39.1	146			

Sample ID: **mb-77575**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **77575**	RunNo: **99813**
Prep Date: **9/18/2023**	Analysis Date: **9/19/2023**	SeqNo: **3648858** 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		89.3	39.1	146			

Sample ID: **LCS-77644**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **77644**	RunNo: **99886**
Prep Date: **9/20/2023**	Analysis Date: **9/21/2023**	SeqNo: **3652639** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		104	39.1	146			

Sample ID: **mb-77644**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **77644**	RunNo: **99886**
Prep Date: **9/20/2023**	Analysis Date: **9/21/2023**	SeqNo: **3652640** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		103	39.1	146			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: Ensolum LLC | Work Order Number: 2309916 | RcptNo: 1

Received By: Juan Rojas 9/16/2023 7:30:00 AM

Completed By: Juan Rojas 9/16/2023 8:10:00 AM

Reviewed By: 9/18/23

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

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

Adjusted? _____

Checked by: JNA 9/16/23

Special Handling (if applicable)

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

Person Notified: _____ Date _____

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

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.1	Good	No	Yogi		

Chain-of-Custody Record

Client: Ensolum, LLC

Mailing Address: 601 N. Marienfeld St. Suite 400

Phone #: 214-733-3165

email or Fax#: klowery@ensolum.com

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☒ Rush 24 hrs

Project Name: A-18 Lateral Gas Release

Project #: 03B1226310

Project Manager: Kelly Lowery

Sampler: SAM LUKE

On Ice: ☐ Yes ☐ No

# of Coolers: 1 Yoyi

Cooler Temp(including CF): 0.2-0.1=0.1 (°C)

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

Date	Time	Matrix	Sample Name	Pres. (1) Hold	Container Type and #	Preservative Type	HEAL No. 7309916	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Methanol
9/14/23	0937	Soil	CI-1	0.25	4oz 1	Ice		X	X									X
9/14/23	0940	Soil	CI-1	0.5	4oz Hold 1	Ice		X	X									X
9/14/23	0950	Soil	CI-2	0.25	4oz 1	Ice		X	X									X
9/14/23	0955	Soil	CI-2	0.5	4oz Hold 1	Ice		X	X									X

NFE

Sam 9/14/23

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
9/14/23	1250				9/15/23	945
9/15/23	1900			Courier	9/16/23	730

Remarks: Hold CI-1 0.5', CI-2 0.5'

AFE: A67463

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

September 25, 2023

Kelly Lowery

Ensolum LLC
601 Marrenfield #400
Midland, TX 79701
TEL: (214) 733-3165
FAX:

RE: A 18 Lateral Gas Release OrderNo.: 2309A64

Dear Kelly Lowery:

Hall Environmental Analysis Laboratory received 4 sample(s) on 9/20/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2309A64**
Date Reported: **9/25/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum LLC **Client Sample ID:** FS-1
Project: A 18 Lateral Gas Release **Collection Date:** 9/18/2023 10:30:00 AM
Lab ID: 2309A64-001 **Matrix:** MEOH (SOIL) **Received Date:** 9/20/2023 6:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	9/20/2023 1:15:31 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	9/20/2023 1:15:31 PM
Surr: DNOP	88.9	69-147		%Rec	1	9/20/2023 1:15:31 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.0		mg/Kg	1	9/20/2023 2:19:00 PM
Surr: BFB	93.3	15-244		%Rec	1	9/20/2023 2:19:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.020		mg/Kg	1	9/20/2023 2:19:00 PM
Toluene	ND	0.040		mg/Kg	1	9/20/2023 2:19:00 PM
Ethylbenzene	ND	0.040		mg/Kg	1	9/20/2023 2:19:00 PM
Xylenes, Total	ND	0.079		mg/Kg	1	9/20/2023 2:19:00 PM
Surr: 4-Bromofluorobenzene	86.6	39.1-146		%Rec	1	9/20/2023 2:19:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	ND	61		mg/Kg	20	9/20/2023 6:29:22 PM

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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2309A64**
Date Reported: **9/25/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum LLC **Client Sample ID:** FS-2
Project: A 18 Lateral Gas Release **Collection Date:** 9/18/2023 10:31:00 AM
Lab ID: 2309A64-002 **Matrix:** MEOH (SOIL) **Received Date:** 9/20/2023 6:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	340	9.4		mg/Kg	1	9/20/2023 7:09:44 PM
Motor Oil Range Organics (MRO)	190	47		mg/Kg	1	9/20/2023 7:09:44 PM
Surr: DNOP	112	69-147		%Rec	1	9/20/2023 7:09:44 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.0		mg/Kg	1	9/20/2023 2:40:00 PM
Surr: BFB	101	15-244		%Rec	1	9/20/2023 2:40:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.020		mg/Kg	1	9/20/2023 2:40:00 PM
Toluene	ND	0.040		mg/Kg	1	9/20/2023 2:40:00 PM
Ethylbenzene	ND	0.040		mg/Kg	1	9/20/2023 2:40:00 PM
Xylenes, Total	ND	0.081		mg/Kg	1	9/20/2023 2:40:00 PM
Surr: 4-Bromofluorobenzene	86.9	39.1-146		%Rec	1	9/20/2023 2:40:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	ND	60		mg/Kg	20	9/20/2023 6:41:42 PM

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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2309A64**
Date Reported: **9/25/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum LLC **Client Sample ID:** SW-1
Project: A 18 Lateral Gas Release **Collection Date:** 9/18/2023 10:32:00 AM
Lab ID: 2309A64-003 **Matrix:** MEOH (SOIL) **Received Date:** 9/20/2023 6:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	13	9.3		mg/Kg	1	9/20/2023 1:36:55 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	9/20/2023 1:36:55 PM
Surr: DNOP	98.6	69-147		%Rec	1	9/20/2023 1:36:55 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.2		mg/Kg	1	9/20/2023 3:02:00 PM
Surr: BFB	98.9	15-244		%Rec	1	9/20/2023 3:02:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.021		mg/Kg	1	9/20/2023 3:02:00 PM
Toluene	ND	0.042		mg/Kg	1	9/20/2023 3:02:00 PM
Ethylbenzene	ND	0.042		mg/Kg	1	9/20/2023 3:02:00 PM
Xylenes, Total	ND	0.084		mg/Kg	1	9/20/2023 3:02:00 PM
Surr: 4-Bromofluorobenzene	84.2	39.1-146		%Rec	1	9/20/2023 3:02:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	ND	60		mg/Kg	20	9/20/2023 6:54:03 PM

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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2309A64**
Date Reported: **9/25/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum LLC **Client Sample ID:** SW-2
Project: A 18 Lateral Gas Release **Collection Date:** 9/18/2023 10:33:00 AM
Lab ID: 2309A64-004 **Matrix:** MEOH (SOIL) **Received Date:** 9/20/2023 6:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	10	9.3		mg/Kg	1	9/20/2023 1:47:41 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	9/20/2023 1:47:41 PM
Surr: DNOP	97.7	69-147		%Rec	1	9/20/2023 1:47:41 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.2		mg/Kg	1	9/20/2023 3:24:00 PM
Surr: BFB	97.6	15-244		%Rec	1	9/20/2023 3:24:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.021		mg/Kg	1	9/20/2023 3:24:00 PM
Toluene	ND	0.042		mg/Kg	1	9/20/2023 3:24:00 PM
Ethylbenzene	ND	0.042		mg/Kg	1	9/20/2023 3:24:00 PM
Xylenes, Total	ND	0.084		mg/Kg	1	9/20/2023 3:24:00 PM
Surr: 4-Bromofluorobenzene	86.6	39.1-146		%Rec	1	9/20/2023 3:24:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	ND	59		mg/Kg	20	9/20/2023 7:06:23 PM

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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2309A64**

25-Sep-23

Client: Ensolum LLC

Project: A 18 Lateral Gas Release

Sample ID: **MB-77642** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**

Client ID: **PBS** Batch ID: **77642** RunNo: **99854**

Prep Date: **9/20/2023** Analysis Date: **9/20/2023** SeqNo: **3651989** Units: **mg/Kg**

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

Sample ID: **LCS-77642** SampType: **LCS** TestCode: **EPA Method 300.0: Anions**

Client ID: **LCSS** Batch ID: **77642** RunNo: **99854**

Prep Date: **9/20/2023** Analysis Date: **9/20/2023** SeqNo: **3651990** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.3	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2309A64**

25-Sep-23

Client: Ensolum LLC

Project: A 18 Lateral Gas Release

Sample ID: **LCS-77633**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **77633**	RunNo: **99836**
Prep Date: **9/20/2023**	Analysis Date: **9/20/2023**	SeqNo: **3649952** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	89.2	61.9	130			
Surr: DNOP	4.7		5.000		94.0	69	147			

Sample ID: **MB-77633**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **77633**	RunNo: **99836**
Prep Date: **9/20/2023**	Analysis Date: **9/20/2023**	SeqNo: **3649955** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.7		10.00		97.3	69	147			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2309A64**

25-Sep-23

Client: Ensolum LLC

Project: A 18 Lateral Gas Release

Sample ID: **100ng btex lcs**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **R99842**	RunNo: **99842**
Prep Date:	Analysis Date: **9/20/2023**	SeqNo: **3650210** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.86	0.025	1.000	0	85.9	70	130			
Toluene	0.87	0.050	1.000	0	86.7	70	130			
Ethylbenzene	0.89	0.050	1.000	0	89.1	70	130			
Xylenes, Total	2.7	0.10	3.000	0	89.5	70	130			
Surr: 4-Bromofluorobenzene	0.92		1.000		91.9	39.1	146			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **R99842**	RunNo: **99842**
Prep Date:	Analysis Date: **9/20/2023**	SeqNo: **3650212** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.90		1.000		90.5	39.1	146			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: Ensolum LLC | Work Order Number: 2309A64 | RcptNo: 1

Received By: Tracy Casarrubias 9/20/2023 6:20:00 AM

Completed By: Tracy Casarrubias 9/20/2023 8:30:48 AM

Reviewed By: 9-20-23

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: mg 9/20/23

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

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

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.2	Good	Yes	Yogi		

Chain-of-Custody Record

Client: Ensolum, LLC

Mailing Address: 601 N. Marienfeld St. Suite 400

Phone #: 214-733-3165

email or Fax#: klowery@ensolum.com

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☐ Standard ☑ Rush 24 hours

Project Name: A-18 Lateral Gas Release

Project #: 03B1226310

Project Manager: Kelly Lowery

Sampler: SHANE DICKER

On Ice: ☑ Yes ☐ No Yoqi

# of Coolers: 1

Cooler Temp(including CF): 3.3-0.1=3.2°c

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Date	Time	Matrix	Sample Name	Depth	Container Type and #	Preservative Type	HEAL No. 2309A04	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Chlorides
9-18-23	1030	S	FS-1	4'	4oz	Ice	001	X	X									X
9-18-23	1031	S	FS-2	4'	4oz	Ice	002	X	X									X
9-18-23	1032	S	SW-1	0-4'	4oz	Ice	003	X	X									X
9-18-23	1033	S	SW-2	0-4'	4oz	Ice	004	X	X									X

NPE 9-18-23

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
					9/19/23	845
9/19/23	1910			Courier	9/20/23	6:20

Remarks: Bill to: Tom Long
Email: tjlong@epord.com
Enterprise Field Services, LLC

Paykey/AFE/NonAFE:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

October 06, 2023

Kelly Lowery

Ensolum LLC
601 Marrenfield #400
Midland, TX 79701
TEL: (214) 733-3165
FAX:

RE: A 18 Lateral Gas Release OrderNo.: 2309G77

Dear Kelly Lowery:

Hall Environmental Analysis Laboratory received 5 sample(s) on 9/29/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2309G77**
Date Reported: **10/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum LLC **Client Sample ID:** FS-02
Project: A 18 Lateral Gas Release **Collection Date:** 9/27/2023 7:59:00 AM
Lab ID: 2309G77-001 **Matrix:** MEOH (SOIL) **Received Date:** 9/29/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	14	10		mg/Kg	1	9/29/2023 4:36:09 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	9/29/2023 4:36:09 PM
Surr: DNOP	110	69-147		%Rec	1	9/29/2023 4:36:09 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	5.1		mg/Kg	1	9/29/2023 4:22:00 PM
Surr: BFB	102	15-244		%Rec	1	9/29/2023 4:22:00 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2309G77**
Date Reported: **10/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum LLC **Client Sample ID:** N
Project: A 18 Lateral Gas Release **Collection Date:** 9/27/2023 8:18:00 AM
Lab ID: 2309G77-002 **Matrix:** MEOH (SOIL) **Received Date:** 9/29/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	9/29/2023 5:00:03 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	9/29/2023 5:00:03 PM
Surr: DNOP	109	69-147		%Rec	1	9/29/2023 5:00:03 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.0		mg/Kg	1	9/29/2023 4:44:00 PM
Surr: BFB	98.5	15-244		%Rec	1	9/29/2023 4:44:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.020		mg/Kg	1	9/29/2023 4:44:00 PM
Toluene	ND	0.040		mg/Kg	1	9/29/2023 4:44:00 PM
Ethylbenzene	ND	0.040		mg/Kg	1	9/29/2023 4:44:00 PM
Xylenes, Total	ND	0.080		mg/Kg	1	9/29/2023 4:44:00 PM
Surr: 4-Bromofluorobenzene	88.9	39.1-146		%Rec	1	9/29/2023 4:44:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	ND	60		mg/Kg	20	9/30/2023 4:33:34 PM

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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2309G77**
Date Reported: **10/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum LLC **Client Sample ID:** S
Project: A 18 Lateral Gas Release **Collection Date:** 9/27/2023 8:16:00 AM
Lab ID: 2309G77-003 **Matrix:** MEOH (SOIL) **Received Date:** 9/29/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	13	9.7		mg/Kg	1	9/29/2023 5:24:02 PM
Motor Oil Range Organics (MRO)	77	48		mg/Kg	1	9/29/2023 5:24:02 PM
Surr: DNOP	111	69-147		%Rec	1	9/29/2023 5:24:02 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.4		mg/Kg	1	9/29/2023 5:06:00 PM
Surr: BFB	101	15-244		%Rec	1	9/29/2023 5:06:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.022		mg/Kg	1	9/29/2023 5:06:00 PM
Toluene	0.11	0.044		mg/Kg	1	9/29/2023 5:06:00 PM
Ethylbenzene	0.048	0.044		mg/Kg	1	9/29/2023 5:06:00 PM
Xylenes, Total	0.13	0.089		mg/Kg	1	9/29/2023 5:06:00 PM
Surr: 4-Bromofluorobenzene	87.9	39.1-146		%Rec	1	9/29/2023 5:06:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	ND	60		mg/Kg	20	9/30/2023 4:45:55 PM

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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2309G77**
Date Reported: **10/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum LLC **Client Sample ID:** E
Project: A 18 Lateral Gas Release **Collection Date:** 9/27/2023 8:14:00 AM
Lab ID: 2309G77-004 **Matrix:** MEOH (SOIL) **Received Date:** 9/29/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	9/29/2023 5:48:19 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	9/29/2023 5:48:19 PM
Surr: DNOP	107	69-147		%Rec	1	9/29/2023 5:48:19 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.2		mg/Kg	1	9/29/2023 5:27:00 PM
Surr: BFB	102	15-244		%Rec	1	9/29/2023 5:27:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.021		mg/Kg	1	9/29/2023 5:27:00 PM
Toluene	0.072	0.042		mg/Kg	1	9/29/2023 5:27:00 PM
Ethylbenzene	ND	0.042		mg/Kg	1	9/29/2023 5:27:00 PM
Xylenes, Total	0.15	0.083		mg/Kg	1	9/29/2023 5:27:00 PM
Surr: 4-Bromofluorobenzene	89.3	39.1-146		%Rec	1	9/29/2023 5:27:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	ND	60		mg/Kg	20	9/30/2023 4:58:16 PM

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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2309G77**
Date Reported: **10/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum LLC **Client Sample ID:** W
Project: A 18 Lateral Gas Release **Collection Date:** 9/27/2023 8:20:00 AM
Lab ID: 2309G77-005 **Matrix:** MEOH (SOIL) **Received Date:** 9/29/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	110	9.6		mg/Kg	1	10/2/2023 1:53:13 PM
Motor Oil Range Organics (MRO)	57	48		mg/Kg	1	10/2/2023 1:53:13 PM
Surr: DNOP	105	69-147		%Rec	1	10/2/2023 1:53:13 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	5.5		mg/Kg	1	9/29/2023 5:49:00 PM
Surr: BFB	102	15-244		%Rec	1	9/29/2023 5:49:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.027		mg/Kg	1	9/29/2023 5:49:00 PM
Toluene	0.083	0.055		mg/Kg	1	9/29/2023 5:49:00 PM
Ethylbenzene	ND	0.055		mg/Kg	1	9/29/2023 5:49:00 PM
Xylenes, Total	0.13	0.11		mg/Kg	1	9/29/2023 5:49:00 PM
Surr: 4-Bromofluorobenzene	89.3	39.1-146		%Rec	1	9/29/2023 5:49:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	ND	60		mg/Kg	20	9/30/2023 5:35:18 PM

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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2309G77**

06-Oct-23

Client: Ensolum LLC

Project: A 18 Lateral Gas Release

Sample ID: **MB-77859**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **77859**	RunNo: **100130**
Prep Date: **9/29/2023**	Analysis Date: **9/30/2023**	SeqNo: **3664468** Units: **mg/Kg**

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

Sample ID: **LCS-77859**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **77859**	RunNo: **100130**
Prep Date: **9/29/2023**	Analysis Date: **9/30/2023**	SeqNo: **3664469** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.8	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2309G77**

06-Oct-23

Client: Ensolum LLC

Project: A 18 Lateral Gas Release

Sample ID: **MB-77845**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **77845**	RunNo: **100098**
Prep Date: **9/29/2023**	Analysis Date: **9/29/2023**	SeqNo: **3663152** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		101	69	147			

Sample ID: **LCS-77845**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **77845**	RunNo: **100098**
Prep Date: **9/29/2023**	Analysis Date: **9/29/2023**	SeqNo: **3663153** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	102	61.9	130			
Surr: DNOP	4.9		5.000		97.6	69	147			

Sample ID: **LCS-77867**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **77867**	RunNo: **100132**
Prep Date: **9/29/2023**	Analysis Date: **10/2/2023**	SeqNo: **3665778** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.1		5.000		102	69	147			

Sample ID: **MB-77867**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **77867**	RunNo: **100132**
Prep Date: **9/29/2023**	Analysis Date: **10/2/2023**	SeqNo: **3665781** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	10		10.00		101	69	147			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2309G77**

06-Oct-23

Client: Ensolum LLC

Project: A 18 Lateral Gas Release

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **R100117**	RunNo: **100117**
Prep Date:	Analysis Date: **9/29/2023**	SeqNo: **3663853** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	105	70	130			
Surr: BFB	2300		1000		227	15	244			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **R100117**	RunNo: **100117**
Prep Date:	Analysis Date: **9/29/2023**	SeqNo: **3663854** 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		103	15	244			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2309G77**

06-Oct-23

Client: Ensolum LLC

Project: A 18 Lateral Gas Release

Sample ID: **100ng btex lcs**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **B100117**	RunNo: **100117**
Prep Date:	Analysis Date: **9/29/2023**	SeqNo: **3663818** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.025	1.000	0	90.2	70	130			
Toluene	0.91	0.050	1.000	0	91.2	70	130			
Ethylbenzene	0.94	0.050	1.000	0	93.6	70	130			
Xylenes, Total	2.8	0.10	3.000	0	93.9	70	130			
Surr: 4-Bromofluorobenzene	0.94		1.000		93.8	39.1	146			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **B100117**	RunNo: **100117**
Prep Date:	Analysis Date: **9/29/2023**	SeqNo: **3663819** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.92		1.000		91.6	39.1	146			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: Ensolum LLC | Work Order Number: 2309G77 | RcptNo: 1

Received By: Tracy Casarrubias 9/29/2023 7:40:00 AM

Completed By: Tracy Casarrubias 9/29/2023 8:29:07 AM

Reviewed By: 9/29/23

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☐ No ☐ NA ☑
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

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

Adjusted?

Checked by: 9/29/23

Special Handling (if applicable)

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

Person Notified: Date:

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

Regarding:

Client Instructions:

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.1	Good	Yes	Yogi		

Chain-of-Custody Record

Client: Ensolum, LLC

Mailing Address: 601 N. Marienfeld St. Suite 400

Phone #: 214-733-3165

email or Fax#: klowery@ensolum.com

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☐ Standard ☑ Rush 24hrs

Project Name: A-18 Lateral Gas Releas

Project #: 03B1226370

Project Manager: Kelly Lowery

Sampler: Kaoru Shimada/Kelly Lowery

On Ice: ☒ Yes ☐ No 409:

# of Coolers: 1

Cooler Temp(including CF): 4.1 - Ø = 4.1°c

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Name	Depth	Container Type and #	Preservative Type	HEAL No. 2309677	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Chloride (300)
9/27/23	Ø759	Soil	FS-B2	4'	2oz 1	ice	001		X									
9/27/23	Ø818	Soil	N	0.25'	4oz 1	ice	002	X	X									X
9/27/23	Ø816	Soil	S	0.25'	4oz 1	ice	003	X	X									X
9/27/23	Ø814	Soil	E	0.25'	4oz 1	ice	004	X	X									X
9/27/23	Ø820	Soil	W	0.25'	4oz 1	ice	005	X	X									X

Sept 27/2023 SK

AFE

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
9/27/23	10:01				9/28/23	750
9/28/23	1900			courier	9/29/23	7:40

Remarks: Bill to: Tom Long
Email: tjlong@epord.com
Enterprise Field Services, LLC

Paykey/AFE/NonAFE: A67463

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

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Website: www.hallenvironmental.com

October 17, 2023

Kelly Lowery

Ensolum LLC
601 Marrenfield #400
Midland, TX 79701
TEL: (214) 733-3165
FAX:

RE: A 18 Lateral 1 Gas Release OrderNo.: 2310674

Dear Kelly Lowery:

Hall Environmental Analysis Laboratory received 1 sample(s) on 10/13/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2310674**
Date Reported: **10/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum LLC
Client Sample ID: West
Project: A 18 Lateral 1 Gas Release
Collection Date: 10/12/2023 7:11:00 AM
Lab ID: 2310674-001 **Matrix:** SOIL **Received Date:** 10/13/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	10/13/2023 6:58:14 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/13/2023 6:58:14 PM
Surr: DNOP	95.9	69-147		%Rec	1	10/13/2023 6:58:14 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	10/13/2023 2:03:06 PM
Surr: BFB	92.6	15-244		%Rec	1	10/13/2023 2:03:06 PM

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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2310674**

17-Oct-23

Client: Ensolum LLC

Project: A 18 Lateral 1 Gas Release

Sample ID: **LCS-78148**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **78148**	RunNo: **100445**
Prep Date: **10/13/2023**	Analysis Date: **10/13/2023**	SeqNo: **3681185** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.00	0	87.4	61.9	130			
Surr: DNOP	3.8		5.000		76.5	69	147			

Sample ID: **MB-78148**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **78148**	RunNo: **100445**
Prep Date: **10/13/2023**	Analysis Date: **10/13/2023**	SeqNo: **3681186** 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	8.4		10.00		83.9	69	147			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2310674**

17-Oct-23

Client: Ensolum LLC

Project: A 18 Lateral 1 Gas Release

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **GS100442**	RunNo: **100442**
Prep Date:	Analysis Date: **10/13/2023**	SeqNo: **3680172** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	98.6	70	130			
Surr: BFB	2000		1000		197	15	244			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **GS100442**	RunNo: **100442**
Prep Date:	Analysis Date: **10/13/2023**	SeqNo: **3680173** 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	950		1000		95.0	15	244			

Sample ID: **2310674-001ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **West**	Batch ID: **GS100442**	RunNo: **100442**
Prep Date:	Analysis Date: **10/13/2023**	SeqNo: **3680963** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	4.6	22.83	0	92.8	70	130			
Surr: BFB	1800		913.2		197	15	244			

Sample ID: **2310674-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **West**	Batch ID: **GS100442**	RunNo: **100442**
Prep Date:	Analysis Date: **10/13/2023**	SeqNo: **3680964** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	4.6	22.83	0	96.0	70	130	3.31	20	
Surr: BFB	1800		913.2		198	15	244	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

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TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Ensolum LLC | Work Order Number: 2310674 | RcptNo: 1

Received By: Tracy Casarrubias 10/13/2023 7:30:00 AM

Completed By: Cheyenne Cason 10/13/2023 8:17:08 AM

Reviewed By: 10.13.23

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

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

Adjusted? _____

Checked by: YM 10/13/23

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

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

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.6	Good	Not Present	Yogi		

Chain-of-Custody Record

Client: Ensolum, LLC

Mailing Address: 601 N. Marienfeld St. Suite 400

Phone #: 214-733-3165

email or Fax#: klowery@ensolum.com

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☐ Standard ☑ Rush 24 hours

Project Name: A-18 Lateral Gas Release

Project #: 03B1726370

Project Manager: Kelly Lowery

Sampler: Kaoru Shimada

On Ice: ☑ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 0.6 - 0 = 0.6 °C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Name	Depth (ft)	Container Type and #	Preservative Type	HEAL No. 2310674	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	
10/12	7:17	soil	West	0.25'	Jar 1	ice/cool	001		X									2
				NFE									NPE					
				SF												SF		

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
Oct 12	1115				10/12/23	1115
10/12/23	1900				10/13/23	7:30

Remarks: Bill to: Tom Long
Email: tjlong@epord.com
Enterprise Field Services, LLC

Paykey/AFE/NonAFE: AFE: A67463

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

District I
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811 S. First St., Artesia, NM 88210
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1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

QUESTIONS

Action 292220

QUESTIONS

Operator: Enterprise Field Services, LLC PO Box 4324 Houston, TX 77210	OGRID: 241602
	Action Number: 292220
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Prerequisites	
Incident ID (n#)	**nAPP2325258066**
Incident Name	**NAPP2325258066 A-18 LATERAL @ 0**
Incident Type	**Fire**
Incident Status	**Reclamation Report Received**

Location of Release Source	
Please answer all the questions in this group.	
Site Name	A-18 LATERAL
Date Release Discovered	09/09/2023
Surface Owner	Private

Incident Details	
Please answer all the questions in this group.	
Incident Type	Fire
Did this release result in a fire or is the result of a fire	Yes
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	Yes
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release	
Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.	
Crude Oil Released (bbls) Details	*Not answered.*
Produced Water Released (bbls) Details	*Not answered.*
Is the concentration of chloride in the produced water >10,000 mg/l	*Not answered.*
Condensate Released (bbls) Details	*Not answered.*
Natural Gas Vented (Mcf) Details	*Not answered.*
Natural Gas Flared (Mcf) Details	*Not answered.*
Other Released Details	Cause: | | Other (Specify) | Released: 0 (Unknown Released Amount) | Recovered: 0 | Lost: 0 .
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	*Not answered.*

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QUESTIONS (continued)

Operator: Enterprise Field Services, LLC PO Box 4324 Houston, TX 77210	OGRID: 241602
	Action Number: 292220
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	**More info needed to determine if this will be treated as a "gas only" report.**
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	**Yes**
Reasons why this would be considered a submission for a notification of a major release	**From paragraph A. "Major release" determine using:** **(2) an unauthorized release of a volume that:** **(a) results in a fire or is the result of a fire;** **(c) may with reasonable probability endanger public health.**
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.	

Initial Response	
The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury.	
The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	The pipeline has been isolated from other pipelines. Residual gas is currently burning. Current time is 16:07.
Per Paragraph (4) of Subsection B of 19.15.29.8 NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.	

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.

I hereby agree and sign off to the above statement	Name: Thomas Long Title: Sr Field Environmental Scientist Email: tjlong@eprod.com Date: 12/07/2023

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QUESTIONS (continued)

Operator: Enterprise Field Services, LLC PO Box 4324 Houston, TX 77210	OGRID: 241602
	Action Number: 292220
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Site Characterization	
Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 26 and 50 (ft.)
What method was used to determine the depth to ground water	U.S. Geological Survey
Did this release impact groundwater or surface water	No
What is the minimum distance, between the closest lateral extents of the release and the following surface areas:	
A continuously flowing watercourse or any other significant watercourse	Between 1000 (ft.) and ½ (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between 200 and 300 (ft.)
An occupied permanent residence, school, hospital, institution, or church	Between 1000 (ft.) and ½ (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 1000 (ft.) and ½ (mi.)
Any other fresh water well or spring	Between 1000 (ft.) and ½ (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Between 1 and 5 (mi.)
A wetland	Between ½ and 1 (mi.)
A subsurface mine	Between ½ and 1 (mi.)
An (non-karst) unstable area	Zero feet, overlying, or within area
Categorize the risk of this well / site being in a karst geology	High
A 100-year floodplain	Between ½ and 1 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	Yes

Remediation Plan	
Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
Requesting a remediation plan approval with this submission	Yes
Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
Soil Contamination Sampling: (Provide the highest observable value for each, in milligrams per kilograms.)	
Chloride (EPA 300.0 or SM4500 Cl B)	99
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	90
GRO+DRO (EPA SW-846 Method 8015M)	48.1
BTEX (EPA SW-846 Method 8021B or 8260B)	0.2
Benzene (EPA SW-846 Method 8021B or 8260B)	0.1
Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.	
On what estimated date will the remediation commence	09/14/2023
On what date will (or did) the final sampling or liner inspection occur	09/27/2023
On what date will (or was) the remediation complete(d)	09/27/2023
What is the estimated surface area (in square feet) that will be reclaimed	360
What is the estimated volume (in cubic yards) that will be reclaimed	0
What is the estimated surface area (in square feet) that will be remediated	360
What is the estimated volume (in cubic yards) that will be remediated	0
These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.	
The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.	

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QUESTIONS (continued)

Operator: Enterprise Field Services, LLC PO Box 4324 Houston, TX 77210	OGRID: 241602
	Action Number: 292220
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Remediation Plan (continued)	
Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:	
(Select all answers below that apply.)	
(Ex Situ) Excavation and **off-site** disposal (i.e. dig and haul, hydrovac, etc.)	*Not answered.*
(Ex Situ) Excavation and **on-site** remediation (i.e. On-Site Land Farms)	*Not answered.*
(In Situ) Soil Vapor Extraction	*Not answered.*
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	*Not answered.*
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	*Not answered.*
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	*Not answered.*
Ground Water Abatement pursuant to 19.15.30 NMAC	*Not answered.*
OTHER (Non-listed remedial process)	Yes
Other Non-listed Remedial Process. Please specify	No contaminants of concern exceeding NMOCD remediation standards were detected in the stockpiled soils.
Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.	

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The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.

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QUESTIONS (continued)

Operator: Enterprise Field Services, LLC PO Box 4324 Houston, TX 77210	OGRID: 241602
	Action Number: 292220
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Deferral Requests Only	
Only answer the questions in this group if seeking a deferral upon approval this submission. Each of the following items must be confirmed as part of any request for deferral of remediation.	
Requesting a deferral of the remediation closure due date with the approval of this submission	No

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QUESTIONS (continued)

Operator: Enterprise Field Services, LLC PO Box 4324 Houston, TX 77210	OGRID: 241602
	Action Number: 292220
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	**292223**
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	**09/14/2023**
What was the (estimated) number of samples that were to be gathered	**14**
What was the sampling surface area in square feet	**200**

Remediation Closure Request	
Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.	
Requesting a remediation closure approval with this submission	Yes
Have the lateral and vertical extents of contamination been fully delineated	**Yes**
Was this release entirely contained within a lined containment area	**No**
All areas reasonably needed for production or subsequent drilling operations have been stabilized, returned to the sites existing grade, and have a soil cover that prevents ponding of water, minimizing dust and erosion	Yes
What was the total surface area (in square feet) remediated	360
What was the total volume (cubic yards) remediated	0
All areas not reasonably needed for production or subsequent drilling operations have been reclaimed to contain a minimum of four feet of non-waste contain earthen material with concentrations less than 600 mg/kg chlorides, 100 mg/kg TPH, 50 mg/kg BTEX, and 10 mg/kg Benzene	Yes
What was the total surface area (in square feet) reclaimed	360
What was the total volume (in cubic yards) reclaimed	0
Summarize any additional remediation activities not included by answers (above)	None

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 (in .pdf format) 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.

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QUESTIONS (continued)

Operator: Enterprise Field Services, LLC PO Box 4324 Houston, TX 77210	OGRID: 241602
	Action Number: 292220
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Reclamation Report	
Only answer the questions in this group if all reclamation steps have been completed.	
Requesting a reclamation approval with this submission	Yes
What was the total reclamation surface area (in square feet) for this site	360
What was the total volume of replacement material (in cubic yards) for this site	0
Per Paragraph (1) of Subsection D of 19.15.29.13 NMAC the reclamation must contain a minimum of four feet of non-waste containing, uncontaminated, earthen material with chloride concentrations less than 600 mg/kg as analyzed by EPA Method 300.0, or other test methods approved by the division. The soil cover must include a top layer, which is either the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater.	
Is the soil top layer complete and is it suitable material to establish vegetation	Yes
On what (estimated) date will (or was) the reseeding commence(d)	06/01/2024
Summarize any additional reclamation activities not included by answers (above)	None
The responsible party must attach information demonstrating they have complied with all applicable reclamation requirements and any conditions or directives of the OCD. This demonstration should be in the form of attachments (in .pdf format) including a scaled site map, any proposed reseeding plans or relevant field notes, photographs of reclaimed area, and a narrative of the reclamation activities. Refer to 19.15.29.13 NMAC.	
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.	
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QUESTIONS (continued)

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	Action Number: 292220
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Revegetation Report	
Only answer the questions in this group if all surface restoration, reclamation and re-vegetation obligations have been satisfied.	
Requesting a restoration complete approval with this submission	No
Per Paragraph (4) of Subsection (D) of 19.15.29.13 NMAC for any major or minor release containing liquids, the responsible party must notify the division when reclamation and re-vegetation are complete.	

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CONDITIONS

Action 292220

CONDITIONS

Operator:	OGRID:
Enterprise Field Services, LLC PO Box 4324 Houston, TX 77210	241602
	Action Number: 292220
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

CONDITIONS

Created By	Condition	Condition Date
amaxwell	Remediation and reclamation report approved.	2/19/2024
amaxwell	When submitting a revegetation report, include an Executive Summary of the revegetation activities including: Seed mix; Method of seeding; Dates of when the release area was reseeded; Information pertinent to inspections; Information about any amendments added to the soil; Information on how the vegetative cover established meets the life-form ratio of plus or minus fifty percent of pre-disturbance levels and a total percent plant cover of at least seventy percent of pre-disturbance levels, excluding noxious weeds per 19.15.29.13 D.(3) NMAC; and any additional information. Scaled Site Map including area that was revegetated in square feet; Pictures of the revegetated areas during reseeding activities, inspections, and final pictures when revegetation is achieved.	2/19/2024