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

State of New Mexico
Energy Minerals and Natural Resources Department

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

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

Incident ID	NAPP2310247349
District RP	
Facility ID	
Application ID	

I Release Notification

Responsible Party

Responsible Party: Hilcorp Energy	OGRID 372171
Contact Name: Kate Kaufman	Contact Telephone: 346-237-2275
Contact email: kkaufman@hilcorp.com	Incident # *(assigned by OCD)* nAPP2310247349
Contact mailing address: 1111 Travis St. Houston, TX 77471	

Location of Release Source

Latitude 36.497281 Longitude -107.907811
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Huerfano Unit HZMC #1H	Site Type: Well Site
Date Release Discovered: 3/29/2023	API# *(if applicable)* 30-045-35370

Unit Letter	Section	Township	Range	County
M	09	026N	09W	San Juan

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

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) 7.3	Volume Recovered (bbls) 0
☒ Produced Water	Volume Released (bbls) 2.0	Volume Recovered (bbls) 2
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☒ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls) 0
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe) Unknown hydrocarbon	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release
During routine inspections, the operator identified a stuffing box on a pumping unit was leaking. All leaked fluids remained on location around the base of the pumping unit. Approximately 2 bbls of free liquids were recovered from the surface and containment around the pumping unit and transported offsite for disposal. The pumping unit was washed and impacted soils were recovered and sent off site for disposal. The unit was shut in and the stuffing box was repaired prior to being put back into service. Soil samples will be collected to determination remediation requirements.

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2310247349
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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?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? N/A	

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: __Kate Kaufman_____ Title: __Environmental Specialist_____

Signature: Kathryn Kaufman _____ Date: __4/12/2023_____

email: __kkaufman@hilcorp.com_____ Telephone: _____346-237-2275_____

OCD Only

Received by: _____ Date: _____

Incident ID	NAPP2310247349
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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?	125 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: ***Each of the following items must be included in the report.***

- ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☐ Field data
- ☒ Data table of soil contaminant concentration data
- ☒ Depth to water determination
- ☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- ☐ Boring or excavation logs
- ☒ Photographs including date and GIS information
- ☒ Topographic/Aerial maps
- ☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2310247349
District RP	
Facility ID	
Application ID	

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: ____Kathryn H Kaufman_____ Title: ____Environmental Specialist_____

Signature:___  _____ Date: __8-10-2023_____

email: ___kkaufman@hilcorp.com_____ Telephone: __346-237-2275_____

OCD Only

Received by: __Shelly Wells_____ Date: 8/10/2023_____

Incident ID	NAPP2310247349
District RP	
Facility ID	
Application ID	

Closure

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

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

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

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

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

☒ Description of remediation activities

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

Printed Name: _Kathryn H. Kaufman_____ Title: _Environmental Specialist_____

Signature: _ Kathryn H Kaufman _____ Date: ____8-10-2023_____

email: kkaufman@hilcorp.com_____ Telephone: _346-237-2275_____

OCD Only

Received by: _Shelly Wells_____ Date: _8/10/2023_____

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

Closure Approved by: Nelson Velez Date: 08/14/2023

Printed Name: Nelson Velez Title: Environmental Specialist – Adv

Executive Summary – Incident #nAPP2310831128

A Hilcorp operator identified a leaking stuffing box on a pumping unit at the Huerfano Unit HZMC #1H well site (API 30-045-35370) on 3/29/2023. The unit was shut in and the stuffing box was repaired prior to being put back into service. All leaked fluids remained on location around the base of the pumping unit. Approximately 2 bbls of free liquids were recovered from the surface and containment around the pumping unit and transported offsite for disposal. The pumping unit was washed and impacted soils were recovered and sent off site for disposal.

Samples were collected to delineate the extent of impacts on the pad. Based on delineation sample results, impacted soil was removed from the pad and transported offsite for disposal. Excavation area is shown in the field sample diagrams below.

Fourteen 5-point composite samples were collected on July 5, 2023, and July 28, 2023. Analytical results from this sampling event were below NMOCD action criteria noted in NMAC 19.15.29 Table 1. Sample results are included at the end of this summary report.

Scaled Site Map

Lat: 36.497281
Long: -107.907811

Huerfano Unit HZMC #1H
Wellsite
API: 30-045-35370

Release Area

N

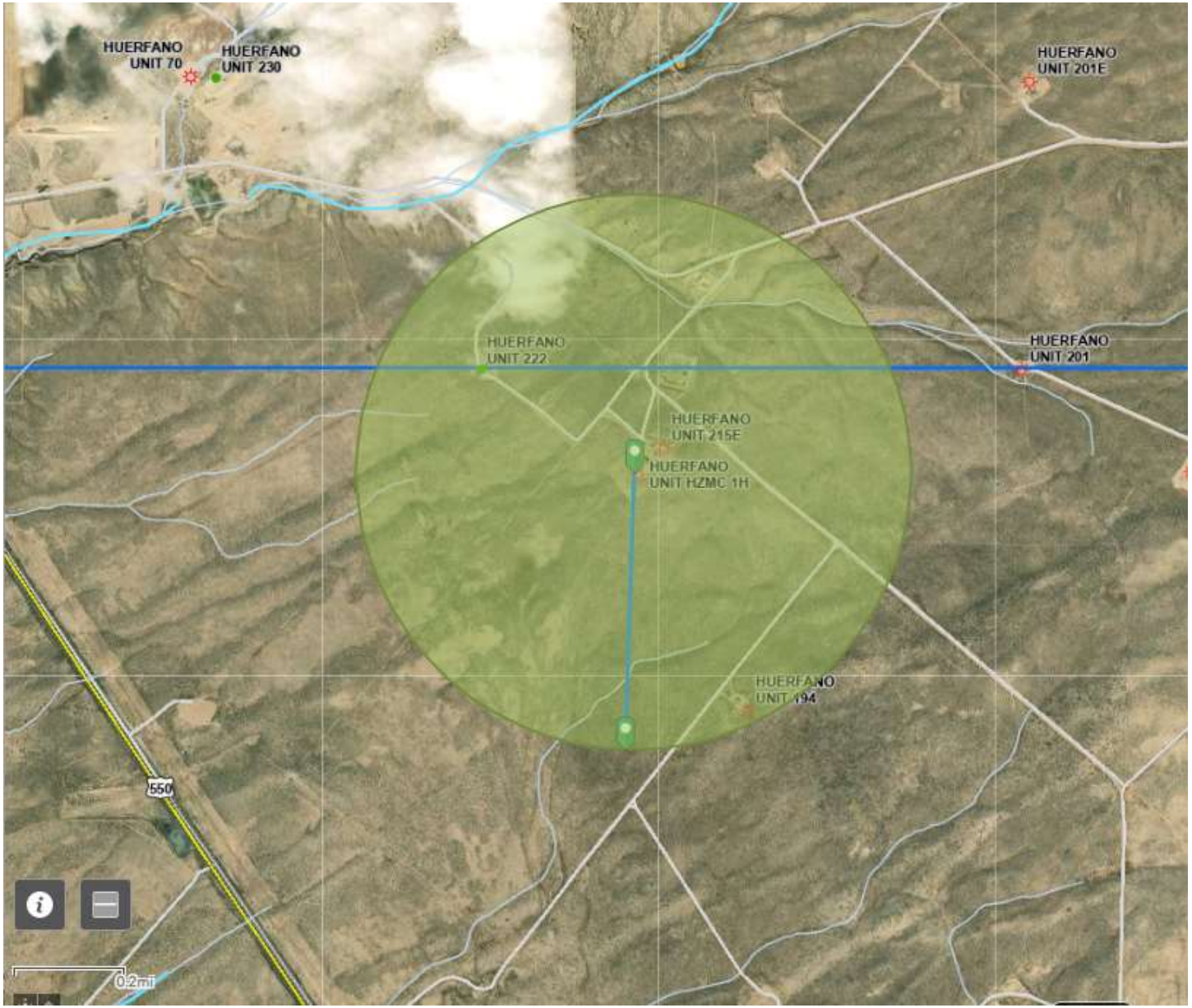
Depth to groundwater determination.

BGT Siting Criteria for Huerfano HZMC #1H; estimated depth to groundwater is approximately 125’.

Siting Criteria Compliance Demonstration & Hydro Geologic Analysis

The HUERFANOT UNIT HZMC 1H is not located in an unstable area. The location is not over a mine and is not on the side of a hill as indicated on the Mines, Mills and Quarries Map and Topographic Map. The location of the excavated pit material will not be located within 300’ of any continuously flowing watercourse or 200’ from any other watercourse as indicated on the Topographic Map. The location is not within a 100-year floodplain area as indicated on the FEMA Map. The Cathdic well data came from the Huerfano Unit 215e has an elevation of 6664’and groundwater depth of 120’. The subject well has an elevation of 6669’which is greater then the Huerfano Unit HZMC 1H therefore the groundwater is greater then 125’. There are no iWATERS data points located in the area as indicated on the TOPO Map. The hydro geologic analysis indicates the groundwater depth and the Nacimiento formation will create a stable area for this new location.

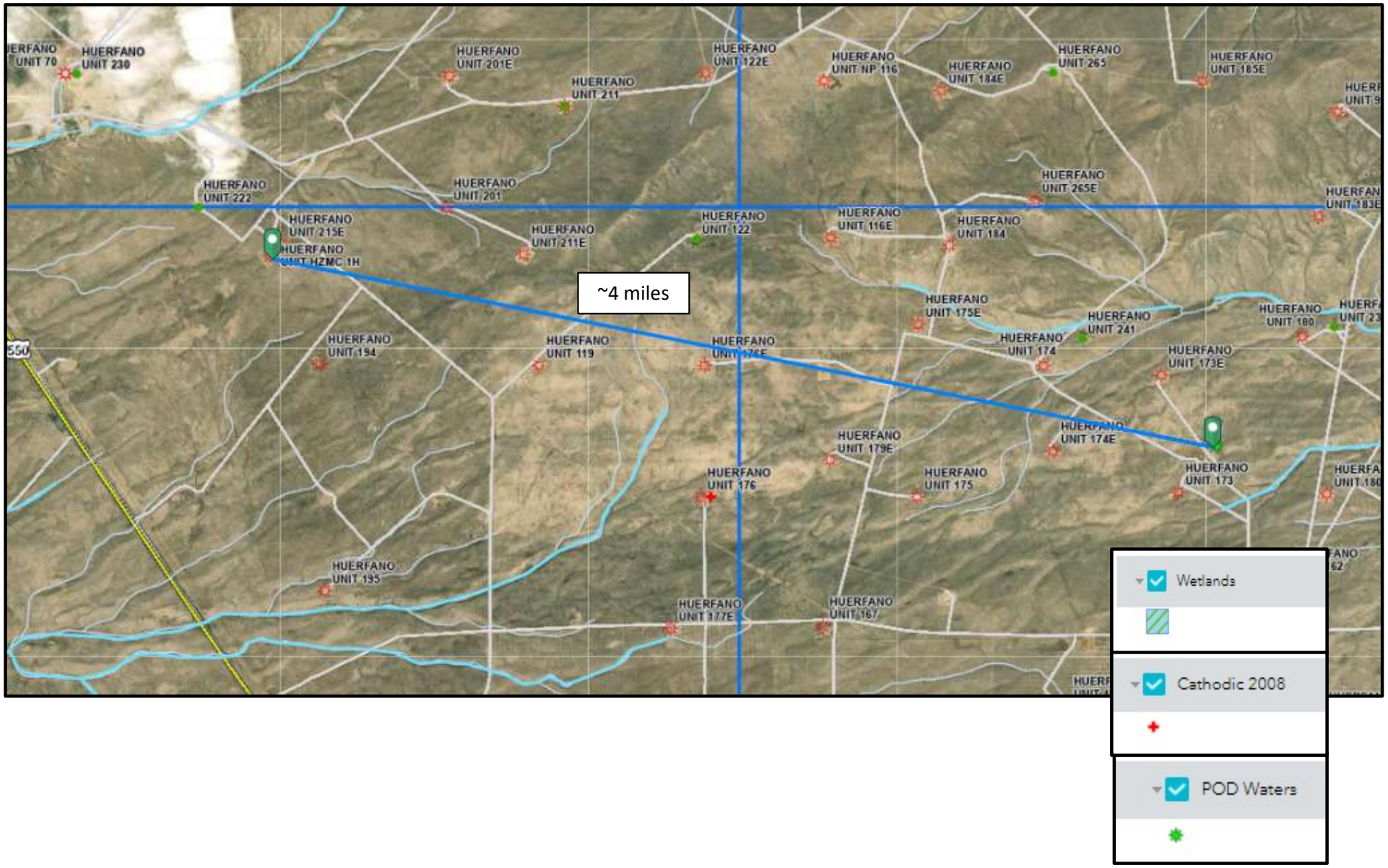
Determination of water sources and significant watercourses within ½ mile of the lateral extent of the release



Note 1: Release point is not within 300 ft of a continuously flowing watercourse or other significant water course.

Note 2: The lateral extents of the release point are not within 300 feet of a mapped wetland.

Distance to mapped water wells.



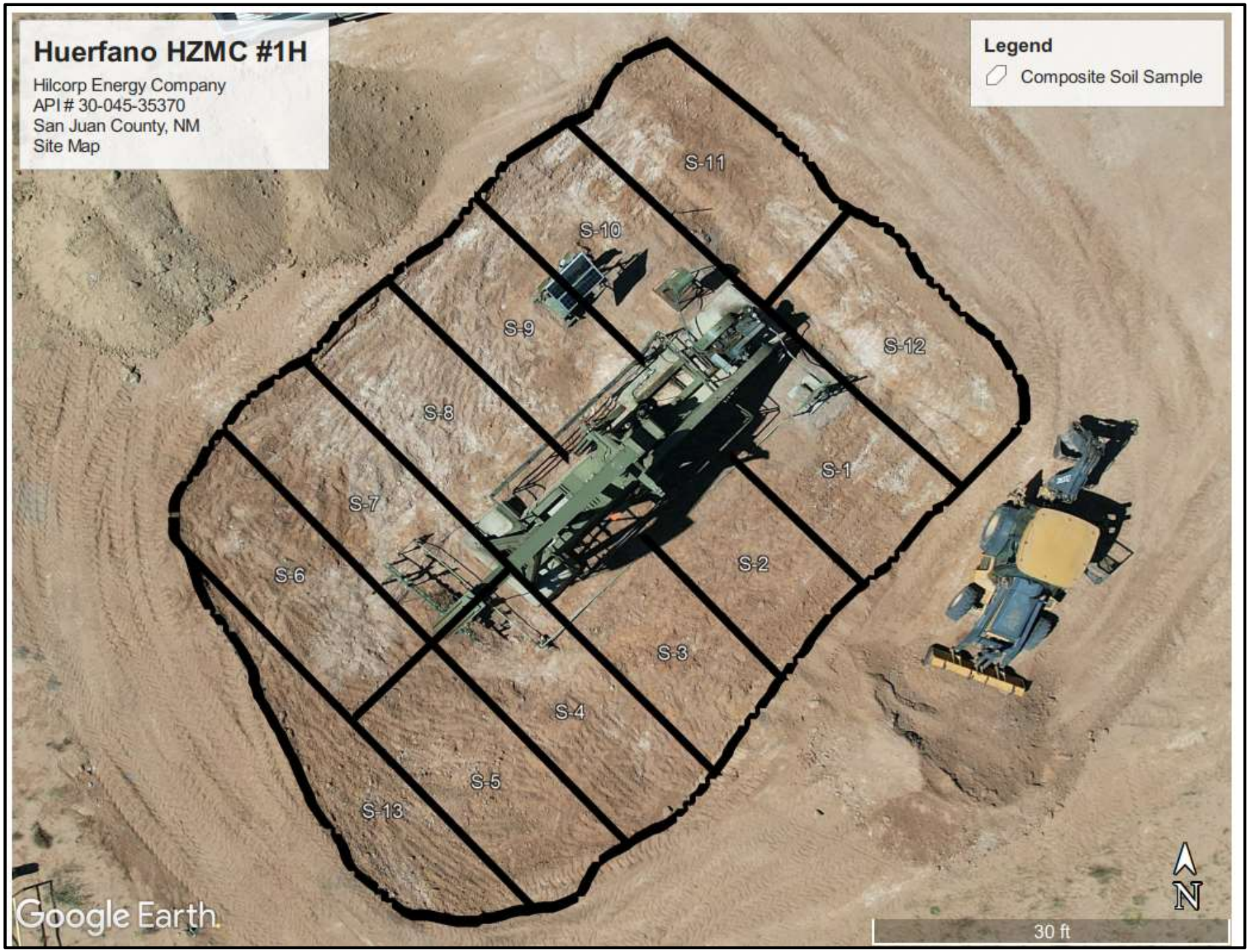
Note: The lateral extents of the release point are not shown to be within 500 ft of a spring or domestic freshwater well used by less than 5 households (or stock watering) or within 1,000 ft of any freshwater water well or spring.

Data table of soil contaminant concentrations

Sample Name	Sample Date	Huerfano HZMC 1H Laboratory Results										
		Chloride (mg/kg)	TPH as DRO (mg/kg)	TPH as GRO (mg/kg)	TPH as MRO (mg/kg)	Total TPH (mg/kg)	TPH as GRO + DRO (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylene (mg/kg)	Total BTEX (mg/kg)
19.15.29 Table 1 Closure Criteria		**20,000**	-	-	-	**2,500**	**1,000**	**10**	-	-	-	**50**
S-1 1'	7/5/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
S-2 1'	7/5/2023	ND	60	ND	ND	60	60	ND	ND	ND	ND	ND
S-3 1'	7/5/2023	ND	45	ND	ND	45	45	ND	ND	ND	ND	ND
S-4 1'	7/5/2023	ND	62	ND	ND	62	62	ND	ND	ND	ND	ND
S-5 1'	7/5/2023	ND	340	ND	220	560	340	ND	ND	ND	ND	ND
S-6 1'	7/5/2023	ND	53	ND	ND	53	53	ND	ND	ND	ND	ND
S-7 1'	7/5/2023	ND	2200	230	500	2930	2430	ND	ND	1.7	8.7	10.4
S-8 1'	7/5/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
S-9 1'	7/5/2023	ND	47	ND	ND	ND	ND	ND	ND	ND	ND	ND
S-10 1'	7/5/2023	ND	150	ND	77	227	150	ND	ND	ND	ND	ND
S-11 1'	7/5/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
S-12 1'	7/5/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
S-13 1'	7/5/2023	ND	61	ND	ND	61	61	ND	ND	ND	ND	ND
S-7 2'	7/28/2023	NA	20	ND	ND	20	20	NA	NA	NA	NA	NA

NA = Not analyzed.
ND = Not detected
Confirmation samples were collected on 7/5/2023 and 7/28/2023 by Hilcorp personnel and all results were below NMOCD 19.15.29.12.D Table 1 closure criteria. Impacted soil at Sample Point 7 (1' BGS) was removed for disposal. Sample results subsequently collected on 7/28/2023 at 2' BGS were clean.

Field Sample Diagram

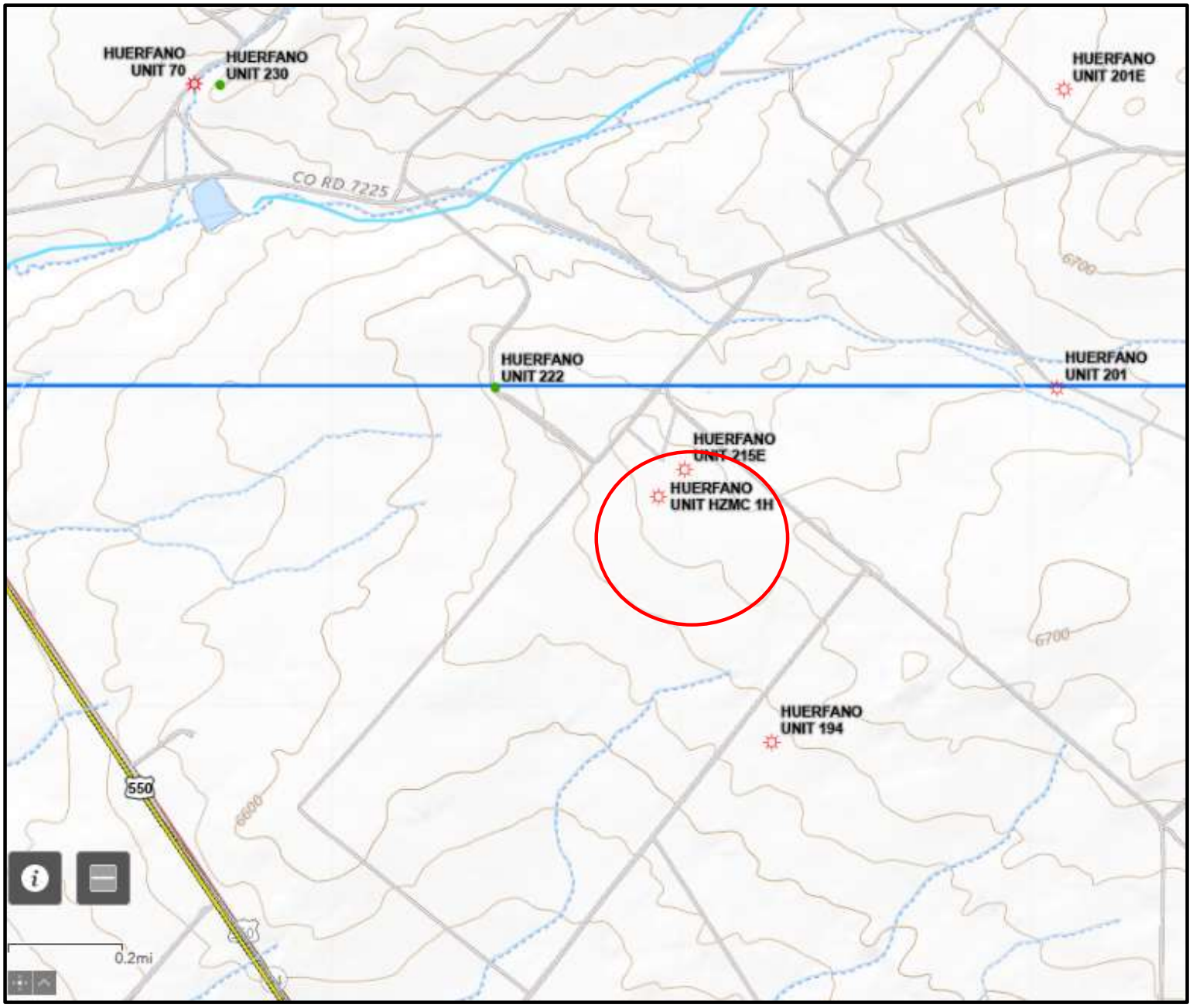


Site Photos

Site Photos

Site Photos

Topographic Map



Analytical Data, Sample Collected 7/5/2023 and 7/28/2023.

See attached Lab Reports.

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

July 17, 2023

Kate Kaufman
HILCORP ENERGY
PO Box 4700
Farmington, NM 87499
TEL: (505) 564-0733
FAX:

RE: Huerfano HZMC 1H OrderNo.: 2307077

Dear Kate Kaufman:

Hall Environmental Analysis Laboratory received 13 sample(s) on 7/6/2023 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 **2307077**
Date Reported: **7/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: S-1 1'
Project: Huerfano HZMC 1H
Collection Date: 7/5/2023 11:55:00 AM
Lab ID: 2307077-001 **Matrix:** SOIL **Received Date:** 7/6/2023 6:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	7/7/2023 3:32:27 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/7/2023 3:32:27 PM
Surr: DNOP	91.3	69-147		%Rec	1	7/7/2023 3:32:27 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/10/2023 6:38:00 PM
Surr: BFB	95.4	15-244		%Rec	1	7/10/2023 6:38:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	7/10/2023 6:38:00 PM
Toluene	ND	0.048		mg/Kg	1	7/10/2023 6:38:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	7/10/2023 6:38:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	7/10/2023 6:38:00 PM
Surr: 4-Bromofluorobenzene	95.0	39.1-146		%Rec	1	7/10/2023 6:38:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	7/7/2023 2:12:48 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 **2307077**
Date Reported: **7/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: S-2 1'
Project: Huerfano HZMC 1H
Collection Date: 7/5/2023 11:50:00 AM
Lab ID: 2307077-002 **Matrix:** SOIL **Received Date:** 7/6/2023 6:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	60	9.4		mg/Kg	1	7/7/2023 3:51:34 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	7/7/2023 3:51:34 PM
Surr: DNOP	93.0	69-147		%Rec	1	7/7/2023 3:51:34 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	7/10/2023 7:00:00 PM
Surr: BFB	96.3	15-244		%Rec	1	7/10/2023 7:00:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.023		mg/Kg	1	7/10/2023 7:00:00 PM
Toluene	ND	0.047		mg/Kg	1	7/10/2023 7:00:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	7/10/2023 7:00:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	7/10/2023 7:00:00 PM
Surr: 4-Bromofluorobenzene	93.8	39.1-146		%Rec	1	7/10/2023 7:00:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	7/7/2023 2:49:50 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 **2307077**
Date Reported: **7/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: S-3 1'
Project: Huerfano HZMC 1H
Collection Date: 7/5/2023 11:45:00 AM
Lab ID: 2307077-003 **Matrix:** SOIL **Received Date:** 7/6/2023 6:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	45	9.2		mg/Kg	1	7/7/2023 4:10:44 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	7/7/2023 4:10:44 PM
Surr: DNOP	94.8	69-147		%Rec	1	7/7/2023 4:10:44 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	7/10/2023 7:22:00 PM
Surr: BFB	96.7	15-244		%Rec	1	7/10/2023 7:22:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.023		mg/Kg	1	7/10/2023 7:22:00 PM
Toluene	ND	0.047		mg/Kg	1	7/10/2023 7:22:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	7/10/2023 7:22:00 PM
Xylenes, Total	ND	0.093		mg/Kg	1	7/10/2023 7:22:00 PM
Surr: 4-Bromofluorobenzene	95.4	39.1-146		%Rec	1	7/10/2023 7:22:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	7/7/2023 3:02:11 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 **2307077**
Date Reported: **7/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: S-4 1'
Project: Huerfano HZMC 1H
Collection Date: 7/5/2023 11:10:00 AM
Lab ID: 2307077-004 **Matrix:** SOIL **Received Date:** 7/6/2023 6:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	62	9.4		mg/Kg	1	7/7/2023 4:29:23 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	7/7/2023 4:29:23 PM
Surr: DNOP	92.7	69-147		%Rec	1	7/7/2023 4:29:23 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/10/2023 7:43:00 PM
Surr: BFB	93.8	15-244		%Rec	1	7/10/2023 7:43:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	7/10/2023 7:43:00 PM
Toluene	ND	0.049		mg/Kg	1	7/10/2023 7:43:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	7/10/2023 7:43:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	7/10/2023 7:43:00 PM
Surr: 4-Bromofluorobenzene	95.1	39.1-146		%Rec	1	7/10/2023 7:43:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	7/7/2023 3:39:13 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 **2307077**
Date Reported: **7/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: S-5 1'
Project: Huerfano HZMC 1H
Collection Date: 7/5/2023 11:00:00 AM
Lab ID: 2307077-005 **Matrix:** SOIL **Received Date:** 7/6/2023 6:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	340	9.3		mg/Kg	1	7/12/2023 7:09:03 PM
Motor Oil Range Organics (MRO)	220	46		mg/Kg	1	7/12/2023 7:09:03 PM
Surr: DNOP	89.0	69-147		%Rec	1	7/12/2023 7:09:03 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/10/2023 9:54:00 PM
Surr: BFB	92.9	15-244		%Rec	1	7/10/2023 9:54:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	7/10/2023 9:54:00 PM
Toluene	ND	0.049		mg/Kg	1	7/10/2023 9:54:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	7/10/2023 9:54:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	7/10/2023 9:54:00 PM
Surr: 4-Bromofluorobenzene	93.2	39.1-146		%Rec	1	7/10/2023 9:54:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	ND	60		mg/Kg	20	7/10/2023 2:35:36 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 **2307077**
Date Reported: **7/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: S-6 1'
Project: Huerfano HZMC 1H
Collection Date: 7/5/2023 2:10:00 PM
Lab ID: 2307077-006 **Matrix:** SOIL **Received Date:** 7/6/2023 6:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	53	10		mg/Kg	1	7/12/2023 9:12:59 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/12/2023 9:12:59 PM
Surr: DNOP	90.0	69-147		%Rec	1	7/12/2023 9:12:59 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/10/2023 11:00:00 PM
Surr: BFB	99.7	15-244		%Rec	1	7/10/2023 11:00:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	7/10/2023 11:00:00 PM
Toluene	ND	0.049		mg/Kg	1	7/10/2023 11:00:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	7/10/2023 11:00:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	7/10/2023 11:00:00 PM
Surr: 4-Bromofluorobenzene	94.9	39.1-146		%Rec	1	7/10/2023 11:00:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	ND	60		mg/Kg	20	7/10/2023 2:48:00 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 **2307077**
Date Reported: **7/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: S-7 1'
Project: Huerfano HZMC 1H
Collection Date: 7/5/2023 2:20:00 PM
Lab ID: 2307077-007 **Matrix:** SOIL **Received Date:** 7/6/2023 6:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	2200	96		mg/Kg	10	7/12/2023 9:54:24 PM
Motor Oil Range Organics (MRO)	500	480		mg/Kg	10	7/12/2023 9:54:24 PM
Surr: DNOP	0	69-147	S	%Rec	10	7/12/2023 9:54:24 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	230	4.8		mg/Kg	1	7/11/2023 12:05:00 AM
Surr: BFB	603	15-244	S	%Rec	1	7/11/2023 12:05:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	7/11/2023 12:05:00 AM
Toluene	ND	0.048		mg/Kg	1	7/11/2023 12:05:00 AM
Ethylbenzene	1.7	0.048		mg/Kg	1	7/11/2023 12:05:00 AM
Xylenes, Total	8.7	0.097		mg/Kg	1	7/11/2023 12:05:00 AM
Surr: 4-Bromofluorobenzene	217	39.1-146	S	%Rec	1	7/11/2023 12:05:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	ND	60		mg/Kg	20	7/10/2023 3:00:25 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 **2307077**
Date Reported: **7/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: S-8 1'
Project: Huerfano HZMC 1H
Collection Date: 7/5/2023 2:25:00 PM
Lab ID: 2307077-008 **Matrix:** SOIL **Received Date:** 7/6/2023 6:15:00 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	7/12/2023 10:05:19 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/12/2023 10:05:19 PM
Surr: DNOP	89.8	69-147		%Rec	1	7/12/2023 10:05:19 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/11/2023 12:27:00 AM
Surr: BFB	121	15-244		%Rec	1	7/11/2023 12:27:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	7/11/2023 12:27:00 AM
Toluene	ND	0.048		mg/Kg	1	7/11/2023 12:27:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	7/11/2023 12:27:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	7/11/2023 12:27:00 AM
Surr: 4-Bromofluorobenzene	98.2	39.1-146		%Rec	1	7/11/2023 12:27:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	ND	60		mg/Kg	20	7/10/2023 3:12:50 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 **2307077**
Date Reported: **7/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: S-9 1'
Project: Huerfano HZMC 1H
Collection Date: 7/5/2023 2:30:00 PM
Lab ID: 2307077-009 **Matrix:** SOIL **Received Date:** 7/6/2023 6:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	47	9.8		mg/Kg	1	7/12/2023 10:16:16 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/12/2023 10:16:16 PM
Surr: DNOP	88.4	69-147		%Rec	1	7/12/2023 10:16:16 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/11/2023 12:49:00 AM
Surr: BFB	101	15-244		%Rec	1	7/11/2023 12:49:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	7/11/2023 12:49:00 AM
Toluene	ND	0.050		mg/Kg	1	7/11/2023 12:49:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	7/11/2023 12:49:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	7/11/2023 12:49:00 AM
Surr: 4-Bromofluorobenzene	93.5	39.1-146		%Rec	1	7/11/2023 12:49:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	ND	60		mg/Kg	20	7/11/2023 7:33:54 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 **2307077**
Date Reported: **7/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: S-10 1'
Project: Huerfano HZMC 1H
Collection Date: 7/5/2023 2:35:00 PM
Lab ID: 2307077-010 **Matrix:** SOIL **Received Date:** 7/6/2023 6:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	150	9.5		mg/Kg	1	7/12/2023 10:27:10 PM
Motor Oil Range Organics (MRO)	77	47		mg/Kg	1	7/12/2023 10:27:10 PM
Surr: DNOP	91.4	69-147		%Rec	1	7/12/2023 10:27:10 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/11/2023 1:10:00 AM
Surr: BFB	95.6	15-244		%Rec	1	7/11/2023 1:10:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	7/11/2023 1:10:00 AM
Toluene	ND	0.049		mg/Kg	1	7/11/2023 1:10:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	7/11/2023 1:10:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	7/11/2023 1:10:00 AM
Surr: 4-Bromofluorobenzene	92.9	39.1-146		%Rec	1	7/11/2023 1:10:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	ND	60		mg/Kg	20	7/11/2023 7:46:19 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 **2307077**
Date Reported: **7/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: S-11 1'
Project: Huerfano HZMC 1H
Collection Date: 7/5/2023 3:10:00 PM
Lab ID: 2307077-011 **Matrix:** SOIL **Received Date:** 7/6/2023 6:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	7/12/2023 10:38:02 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	7/12/2023 10:38:02 PM
Surr: DNOP	87.4	69-147		%Rec	1	7/12/2023 10:38:02 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/11/2023 1:32:00 AM
Surr: BFB	93.4	15-244		%Rec	1	7/11/2023 1:32:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	7/11/2023 1:32:00 AM
Toluene	ND	0.050		mg/Kg	1	7/11/2023 1:32:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	7/11/2023 1:32:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	7/11/2023 1:32:00 AM
Surr: 4-Bromofluorobenzene	94.0	39.1-146		%Rec	1	7/11/2023 1:32:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	ND	60		mg/Kg	20	7/11/2023 8:48:23 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.		

Analytical Report
Lab Order **2307077**
Date Reported: **7/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: S-12 1'
Project: Huerfano HZMC 1H
Collection Date: 7/5/2023 3:15:00 PM
Lab ID: 2307077-012 **Matrix:** SOIL **Received Date:** 7/6/2023 6:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	7/12/2023 10:48:53 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/12/2023 10:48:53 PM
Surr: DNOP	86.9	69-147		%Rec	1	7/12/2023 10:48:53 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/11/2023 1:54:00 AM
Surr: BFB	94.2	15-244		%Rec	1	7/11/2023 1:54:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	7/11/2023 1:54:00 AM
Toluene	ND	0.048		mg/Kg	1	7/11/2023 1:54:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	7/11/2023 1:54:00 AM
Xylenes, Total	ND	0.095		mg/Kg	1	7/11/2023 1:54:00 AM
Surr: 4-Bromofluorobenzene	94.4	39.1-146		%Rec	1	7/11/2023 1:54:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	ND	60		mg/Kg	20	7/11/2023 9:00:47 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 **2307077**
Date Reported: **7/17/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: S-13 1'
Project: Huerfano HZMC 1H
Collection Date: 7/5/2023 12:50:00 PM
Lab ID: 2307077-013 **Matrix:** SOIL **Received Date:** 7/6/2023 6:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	61	9.9		mg/Kg	1	7/12/2023 10:59:46 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/12/2023 10:59:46 PM
Surr: DNOP	98.9	69-147		%Rec	1	7/12/2023 10:59:46 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/11/2023 2:15:00 AM
Surr: BFB	103	15-244		%Rec	1	7/11/2023 2:15:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	7/11/2023 2:15:00 AM
Toluene	ND	0.050		mg/Kg	1	7/11/2023 2:15:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	7/11/2023 2:15:00 AM
Xylenes, Total	ND	0.10		mg/Kg	1	7/11/2023 2:15:00 AM
Surr: 4-Bromofluorobenzene	94.1	39.1-146		%Rec	1	7/11/2023 2:15:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	ND	60		mg/Kg	20	7/11/2023 9:13:11 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#: **2307077**

17-Jul-23

Client: HILCORP ENERGY

Project: Huerfano HZMC 1H

Sample ID: **MB-76052**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**								
Client ID: **PBS**	Batch ID: **76052**	RunNo: **98004**								
Prep Date: **7/7/2023**	Analysis Date: **7/7/2023**	SeqNo: **3566373**	Units: **mg/Kg**							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-76052**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**								
Client ID: **LCSS**	Batch ID: **76052**	RunNo: **98004**								
Prep Date: **7/7/2023**	Analysis Date: **7/7/2023**	SeqNo: **3566374**	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			

Sample ID: **MB-76077**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**								
Client ID: **PBS**	Batch ID: **76077**	RunNo: **98079**								
Prep Date: **7/10/2023**	Analysis Date: **7/10/2023**	SeqNo: **3569027**	Units: **mg/Kg**							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-76077**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**								
Client ID: **LCSS**	Batch ID: **76077**	RunNo: **98079**								
Prep Date: **7/10/2023**	Analysis Date: **7/10/2023**	SeqNo: **3569028**	Units: **mg/Kg**							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.7	90	110			

Sample ID: **MB-76110**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**								
Client ID: **PBS**	Batch ID: **76110**	RunNo: **98114**								
Prep Date: **7/11/2023**	Analysis Date: **7/11/2023**	SeqNo: **3570295**	Units: **mg/Kg**							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-76110**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**								
Client ID: **LCSS**	Batch ID: **76110**	RunNo: **98114**								
Prep Date: **7/11/2023**	Analysis Date: **7/11/2023**	SeqNo: **3570296**	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#: **2307077**

17-Jul-23

Client: HILCORP ENERGY

Project: Huerfano HZMC 1H

Sample ID: **2307077-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **S-1 1'**	Batch ID: **76038**	RunNo: **98033**
Prep Date: **7/6/2023**	Analysis Date: **7/7/2023**	SeqNo: **3567146** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	41	9.3	46.38	0	88.4	54.2	135			
Surr: DNOP	4.3		4.638		93.2	69	147			

Sample ID: **2307077-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **S-1 1'**	Batch ID: **76038**	RunNo: **98033**
Prep Date: **7/6/2023**	Analysis Date: **7/7/2023**	SeqNo: **3567147** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	38	9.7	48.36	0	78.2	54.2	135	8.00	29.2	
Surr: DNOP	4.6		4.836		96.0	69	147	0	0	

Sample ID: **MB-76038**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **76038**	RunNo: **98033**
Prep Date: **7/6/2023**	Analysis Date: **7/7/2023**	SeqNo: **3567169** 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		97.2	69	147			

Sample ID: **LCS-76038**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **76038**	RunNo: **98033**
Prep Date: **7/6/2023**	Analysis Date: **7/7/2023**	SeqNo: **3567170** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	93.1	61.9	130			
Surr: DNOP	4.6		5.000		92.7	69	147			

Sample ID: **2307077-005AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **S-5 1'**	Batch ID: **76114**	RunNo: **98153**
Prep Date: **7/11/2023**	Analysis Date: **7/12/2023**	SeqNo: **3571459** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	280	9.9	49.65	336.8	-120	54.2	135			S
Surr: DNOP	4.4		4.965		89.5	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#: **2307077**

17-Jul-23

Client: HILCORP ENERGY

Project: Huerfano HZMC 1H

Sample ID: **2307077-005AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **S-5 1'**	Batch ID: **76114**	RunNo: **98153**
Prep Date: **7/11/2023**	Analysis Date: **7/12/2023**	SeqNo: **3571460** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	290	9.6	47.85	336.8	-105	54.2	135	3.42	29.2	S
Surr: DNOP	4.6		4.785		96.9	69	147	0	0	

Sample ID: **LCS-76114**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **76114**	RunNo: **98153**
Prep Date: **7/11/2023**	Analysis Date: **7/12/2023**	SeqNo: **3571520** 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	4.6		5.000		93.0	69	147			

Sample ID: **MB-76114**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **76114**	RunNo: **98153**
Prep Date: **7/11/2023**	Analysis Date: **7/12/2023**	SeqNo: **3571523** 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	9.1		10.00		91.3	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#: **2307077**

17-Jul-23

Client: HILCORP ENERGY

Project: Huerfano HZMC 1H

Sample ID: **lcs-76031**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **76031**	RunNo: **98074**
Prep Date: **7/6/2023**	Analysis Date: **7/10/2023**	SeqNo: **3568737** 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	88.2	70	130			
Surr: BFB	2100		1000		206	15	244			

Sample ID: **mb-76031**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **76031**	RunNo: **98074**
Prep Date: **7/6/2023**	Analysis Date: **7/10/2023**	SeqNo: **3568738** 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	960		1000		95.7	15	244			

Sample ID: **lcs-76060**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **76060**	RunNo: **98074**
Prep Date: **7/7/2023**	Analysis Date: **7/10/2023**	SeqNo: **3568761** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	5.0	25.00	0	81.8	70	130			
Surr: BFB	2000		1000		199	15	244			

Sample ID: **mb-76060**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **76060**	RunNo: **98074**
Prep Date: **7/7/2023**	Analysis Date: **7/10/2023**	SeqNo: **3568762** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	940		1000		94.5	15	244			

Sample ID: **2307077-005ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **S-5 1'**	Batch ID: **76060**	RunNo: **98074**
Prep Date: **7/7/2023**	Analysis Date: **7/10/2023**	SeqNo: **3568764** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	4.9	24.70	0	85.0	70	130			
Surr: BFB	2000		988.1		204	15	244			

Sample ID: **2307077-005amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **S-5 1'**	Batch ID: **76060**	RunNo: **98074**
Prep Date: **7/7/2023**	Analysis Date: **7/10/2023**	SeqNo: **3568765** Units: **mg/Kg**

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical 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#: **2307077**

17-Jul-23

Client: HILCORP ENERGY

Project: Huerfano HZMC 1H

Sample ID: **2307077-005amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **S-5 1'**	Batch ID: **76060**	RunNo: **98074**
Prep Date: **7/7/2023**	Analysis Date: **7/10/2023**	SeqNo: **3568765** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	4.9	24.70	0	84.3	70	130	0.851	20	
Surr: BFB	2000		988.1		205	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#: **2307077**

17-Jul-23

Client: HILCORP ENERGY

Project: Huerfano HZMC 1H

Sample ID: **lcs-76031**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **76031**	RunNo: **98074**
Prep Date: **7/6/2023**	Analysis Date: **7/10/2023**	SeqNo: **3568778** 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	0.89	0.050	1.000	0	89.4	70	130			
Ethylbenzene	0.90	0.050	1.000	0	90.1	70	130			
Xylenes, Total	2.7	0.10	3.000	0	89.7	70	130			
Surr: 4-Bromofluorobenzene	0.95		1.000		95.5	39.1	146			

Sample ID: **mb-76031**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **76031**	RunNo: **98074**
Prep Date: **7/6/2023**	Analysis Date: **7/10/2023**	SeqNo: **3568779** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.94		1.000		94.4	39.1	146			

Sample ID: **lcs-76060**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **76060**	RunNo: **98074**
Prep Date: **7/7/2023**	Analysis Date: **7/10/2023**	SeqNo: **3568802** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.87	0.025	1.000	0	86.7	70	130			
Toluene	0.89	0.050	1.000	0	89.4	70	130			
Ethylbenzene	0.91	0.050	1.000	0	91.1	70	130			
Xylenes, Total	2.7	0.10	3.000	0	91.2	70	130			
Surr: 4-Bromofluorobenzene	0.95		1.000		95.2	39.1	146			

Sample ID: **mb-76060**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **76060**	RunNo: **98074**
Prep Date: **7/7/2023**	Analysis Date: **7/10/2023**	SeqNo: **3568803** 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	0.93		1.000		93.1	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.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2307077**

17-Jul-23

Client: HILCORP ENERGY

Project: Huerfano HZMC 1H

Sample ID: **2307077-006ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **S-6 1'**	Batch ID: **76060**	RunNo: **98074**
Prep Date: **7/7/2023**	Analysis Date: **7/10/2023**	SeqNo: **3568806** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.80	0.024	0.9718	0	82.5	70	130			
Toluene	0.83	0.049	0.9718	0	85.8	70	130			
Ethylbenzene	0.85	0.049	0.9718	0	87.2	70	130			
Xylenes, Total	2.5	0.097	2.915	0	86.8	70	130			
Surr: 4-Bromofluorobenzene	0.93		0.9718		96.1	39.1	146			

Sample ID: **2307077-006amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **S-6 1'**	Batch ID: **76060**	RunNo: **98074**
Prep Date: **7/7/2023**	Analysis Date: **7/10/2023**	SeqNo: **3568807** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.78	0.024	0.9718	0	80.5	70	130	2.47	20	
Toluene	0.82	0.049	0.9718	0	84.1	70	130	2.11	20	
Ethylbenzene	0.83	0.049	0.9718	0	85.6	70	130	1.82	20	
Xylenes, Total	2.5	0.097	2.915	0	85.5	70	130	1.54	20	
Surr: 4-Bromofluorobenzene	0.92		0.9718		94.2	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: HILCORP ENERGY Work Order Number: 2307077 RcptNo: 1

Received By: Tracy Casarrubias 7/6/2023 6:15:00 AM

Completed By: Tracy Casarrubias 7/6/2023 7:52:21 AM

Reviewed By: MB 7/6/23

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: TMC 7/6/23

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: Mailing address and phone number are missing on COC- TMC 7/6/23

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.5	Good	Yes	Yogi		

Chain-of-Custody Record

Client: Hilcorp

Mailing Address:

Phone #:

email or Fax#: brandon.sinclair@hilcorp.com

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

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

Turn-Around Time:
☑ Standard 5day ☐ Rush

Project Name: Huerfano HZMC 1H

Project #:

Project Manager: Kate Kaufman

Sampler: Brandon Sinclair

On Ice: ☒ Yes ☐ No 4001

# of Coolers: 1

Cooler Temp(including CF): 5.6-0.1=5.5 (°C)

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2307077	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)
7-5	1155	soil	S-1 1'	4oz jar	cool	001	✓	✓					✓			
	1150		S-2 1'			002										
	1145		S-3 1'			003										
	1140		S-4 1'			004										
	1100		S-5 1'			005										
	1410		S-6 1'			006										
	1420		S-7 1'			007										
	1425		S-8 1'			008										
	1430		S-9 1'			009										
	1435		S-10 1'			010										
	1510		S-11 1'			011										
	1515		S-12 1'			012										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
7-5	1734				7/5/23	1734
7/6	840			Courier	7/6/23	6:15

Remarks:

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.

Chain-of-Custody Record

Client: Hilcorp

Mailing Address:

Phone #:

email or Fax#: brandon.sinclair@hilcorp.com

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☑ Standard ☐ Rush 5 day

Project Name: Huerfano HZMC 1H

Project #:

Project Manager: Kate Kaufman

Sampler: Brandon Sinclair

On Ice: ☑ Yes ☐ No yogi

# of Coolers: 1

Cooler Temp(Including CF): 5.6-0.1=5.5 (°C)

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2307077	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)
7-5	1250	soil	S-13 1'	4oz jar	cool	013	✓	✓					✓			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
7-5	1734				7/5/23	1734
7/5/23	1840			Courier	7/6/23	6:15

Remarks:

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

August 02, 2023

Kate Kaufman
HILCORP ENERGY
PO Box 4700
Farmington, NM 87499
TEL: (505) 564-0733
FAX:

RE: Huerfano H2MC 1H OrderNo.: 2307E48

Dear Kate Kaufman:

Hall Environmental Analysis Laboratory received 1 sample(s) on 7/29/2023 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 **2307E48**
Date Reported: **8/2/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY **Client Sample ID:** S-7 2'
Project: Huerfano H2MC 1H **Collection Date:** 7/28/2023 11:30:00 AM
Lab ID: 2307E48-001 **Matrix:** MEOH (SOIL) **Received Date:** 7/29/2023 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	20	9.6		mg/Kg	1	7/29/2023 3:45:52 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/29/2023 3:45:52 PM
Surr: DNOP	107	69-147		%Rec	1	7/29/2023 3:45:52 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	3.6		mg/Kg	1	7/31/2023 5:35:31 PM
Surr: BFB	94.9	15-244		%Rec	1	7/31/2023 5:35:31 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
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#: **2307E48**

02-Aug-23

Client: HILCORP ENERGY

Project: Huerfano H2MC 1H

Sample ID: **LCS-76555**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **76555**	RunNo: **98594**
Prep Date: **7/29/2023**	Analysis Date: **7/29/2023**	SeqNo: **3590225** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	10	50.00	0	107	61.9	130			
Surr: DNOP	5.1		5.000		103	69	147			

Sample ID: **MB-76555**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **76555**	RunNo: **98594**
Prep Date: **7/29/2023**	Analysis Date: **7/29/2023**	SeqNo: **3590227** 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		111	69	147			

Sample ID: **LCS-76556**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **76556**	RunNo: **98603**
Prep Date: **7/29/2023**	Analysis Date: **7/31/2023**	SeqNo: **3590881** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.3		5.000		106	69	147			

Sample ID: **MB-76556**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **76556**	RunNo: **98603**
Prep Date: **7/29/2023**	Analysis Date: **7/31/2023**	SeqNo: **3590882** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	11		10.00		109	69	147			

Sample ID: **LCS-76550**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **76550**	RunNo: **98603**
Prep Date: **7/28/2023**	Analysis Date: **7/31/2023**	SeqNo: **3591743** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.7		5.000		94.4	69	147			

Sample ID: **MB-76550**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **76550**	RunNo: **98603**
Prep Date: **7/28/2023**	Analysis Date: **7/31/2023**	SeqNo: **3591744** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.5		10.00		95.0	69	147			

Qualifiers:

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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#: **2307E48**

02-Aug-23

Client: HILCORP ENERGY

Project: Huerfano H2MC 1H

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **GS98601**	RunNo: **98601**
Prep Date:	Analysis Date: **7/31/2023**	SeqNo: **3590782** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	89.2	70	130			
Surr: BFB	2000		1000		195	15	244			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **GS98601**	RunNo: **98601**
Prep Date:	Analysis Date: **7/31/2023**	SeqNo: **3590783** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	900		1000		90.4	15	244			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
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ND	Not Detected at the Reporting Limit
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Sample Log-In Check List

Client Name: HILCORP ENERGY Work Order Number: 2307E48 RcptNo: 1

Received By: Juan Rojas 7/29/2023 7:05:00 AM

Completed By: Tracy Casarrubias 7/29/2023 8:39:37 AM

Reviewed By: JR 7/29/23

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 ☐	# 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: TMC 7/29/23

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: Mailing address and phone number are missing on COC - TMC 7/29/23

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.7	Good	Yes	Morty		

Chain-of-Custody Record

Client: Hilcorp

Mailing Address:

Phone #:

email or Fax#: brandon.sinclair@hilcorp.com

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☑ Rush 8-1-23

Project Name: Huerfano HZMC 1H

Project #:

Project Manager: Kate Kaufman

Sampler: Brandon Sinclair

On Ice: ~~☐ Yes~~ ☐ No

# of Coolers: 1 Marty

Cooler Temp(Including CF): 0.9-0.1=0.7 (°C)

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2307E48	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)
7-28	1130	Soil	S-7 2'	4oz jar	cool	001		✓								

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
7-28	1428				7/28/23	1428
7/28/23	1807			courier	7/29/23	705

Remarks: Seal Intact 7/29/23

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
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

CONDITIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 250451
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
nvelez	Remediation has met rule requirements. Impacts above the reclamation standards has been left in place and is required to be addressed once site is no longer reasonably needed for production or drilling ops.	8/14/2023