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	NAPP2300937786
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)*
Contact mailing address: 1111 Travis St. Houston, TX 77471	

Location of Release Source

Latitude 36.599187 Longitude -107.771267
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Turner Hughes 15M	Site Type: Well Site
Date Release Discovered: 1/4/2023	API# *(if applicable)* 30-045-34455

Unit Letter	Section	Township	Range	County
O	03	027N	009W	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)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 15	Volume Recovered (bbls) 0
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☒ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release:
Operator was conducting routine wellsite inspections and noted a hole near the bottom of a BGT due to corrosion. The hole was approximately the size of a nickel on the lower side wall of the pit. The tank has been taken out of service. The remaining fluid in the tank will be drained and the tank inspected and repaired prior to being put back into service.

Incident ID	NAPP2300937786
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?	>300 (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.

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2300937786
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: __3/30/2023_____

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

OCD Only

Received by: __Jocelyn Harimon_____ Date: ___03/31/2023___

Incident ID	NAPP2300937786
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: 3/30/2023

email: kkaufman@hilcorp.com Telephone: 346-237-2275

OCD Only

Received by: Jocelyn Harimon Date: 03/31/2023

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: 04/28/2023

Printed Name: Nelson Velez Title: Environmental Specialist – Adv

Executive Summary – Incident #nAPP2300937786

On January 4, 2023, approximately 15 barrels of produced water was released from a small leak in the wall of a below ground tank (BGT) at the Turner Hughes #15M wellsite (30-045-34455) S03, T27N, R09W, Unit Letter O. The release was due to corrosion that created a nickel size hole on the southwest quadrant of the tank sidewall. The release was discovered at 1:55 PM MST on Wednesday January 4, 2023, and was reported to NMOCD and BLM on January 9, 2023.

The operator was conducting routine wellsite inspections and noted a small hole near the bottom of a BGT that was due to corrosion. Tank gauging records indicate approximately 15 bbls of produced water was released. No fluids were recovered. There was no immediate danger to the public and no fire occurred as a result of the release. The well was shut in and the tank drained for inspection and repair prior to being put back into service.

Three 5-point composite samples were collected on January 9, 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: 36.599187
Long: -107.771267

Turner Hughes #15M Wellsite
API: 30-045-34455

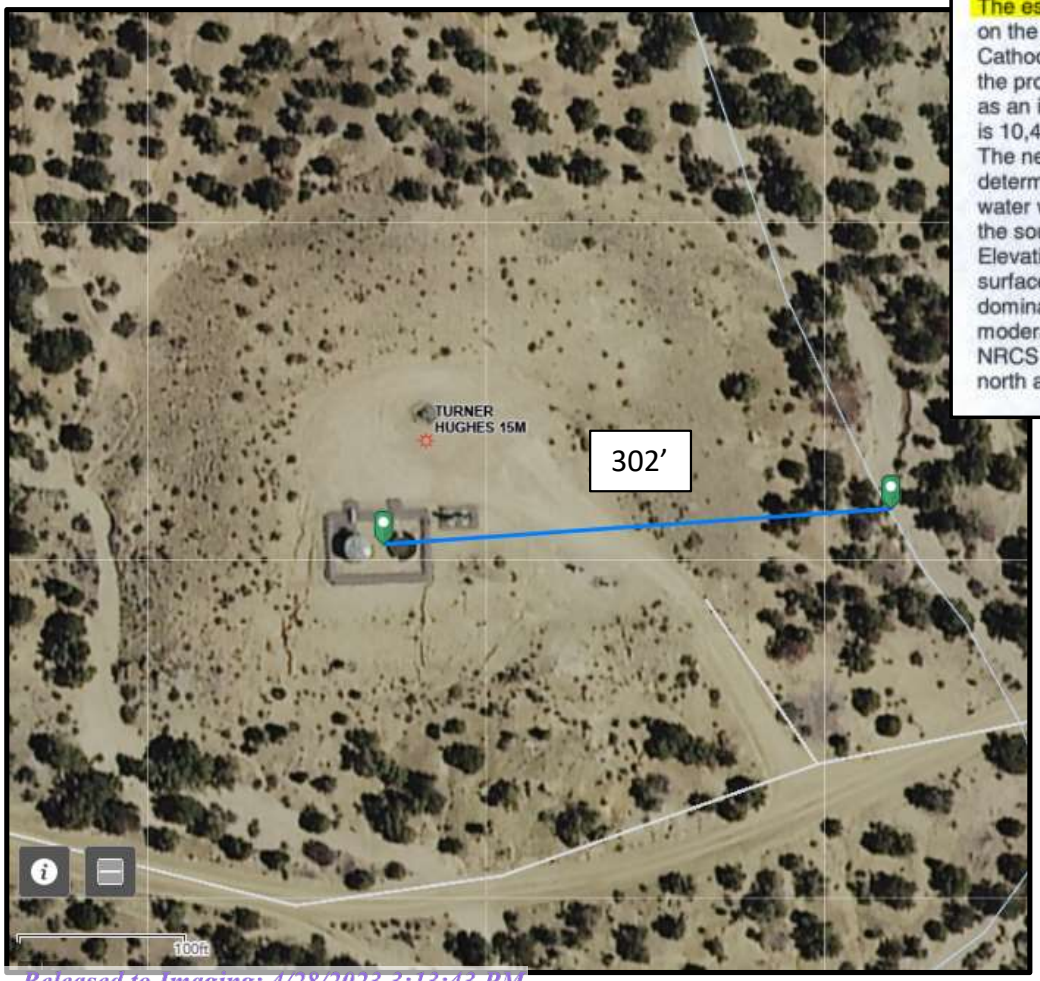
Release Area

N

Depth to groundwater determination.

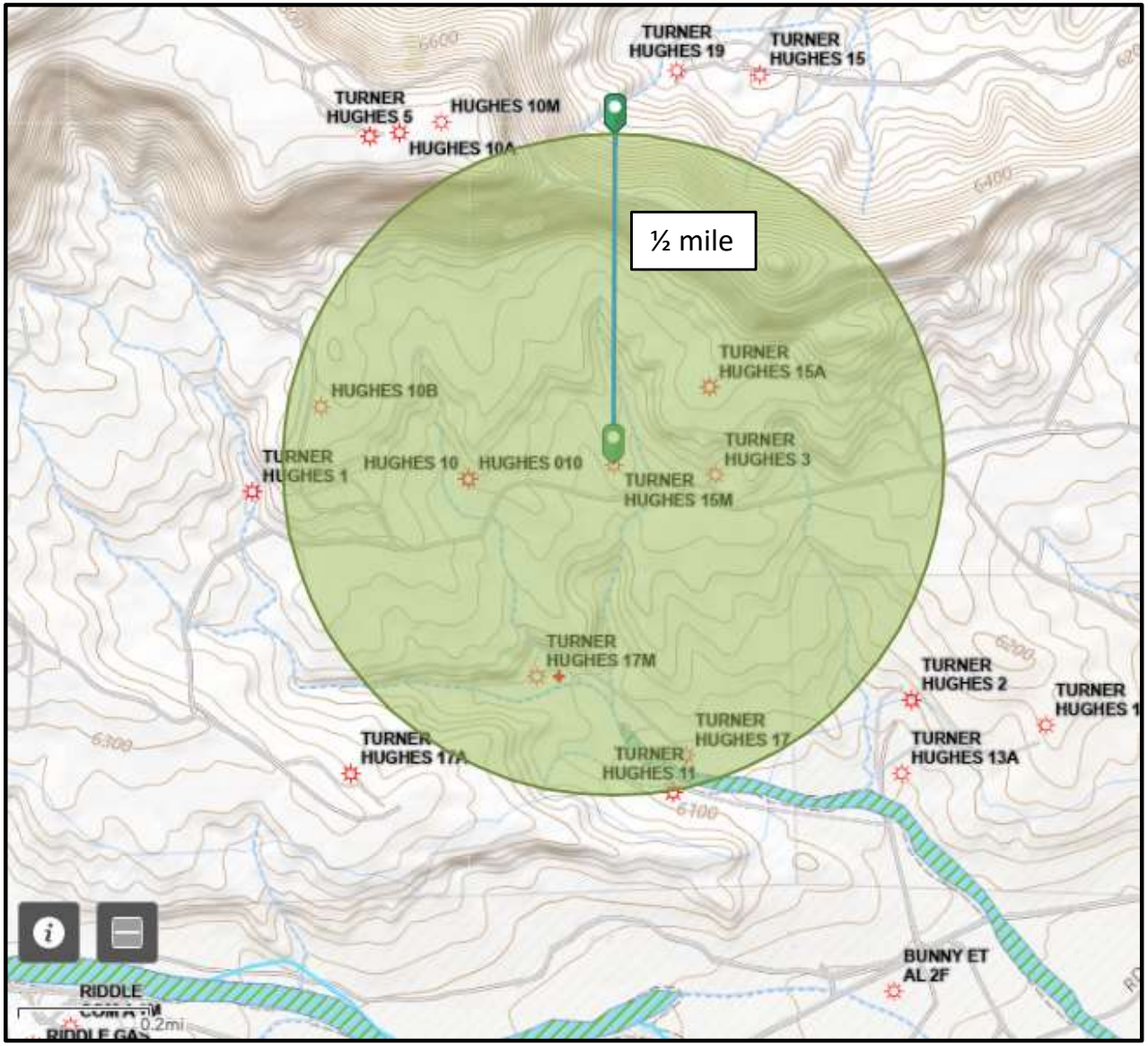
BGT Siting Criteria for Tuner Hughes #15M; estimated depth to groundwater is 320’.

The BGT Permit narrative references USGS classified intermittent stream 69’ to the northeast of the Turner Hughes 15M wellsite. Hilcorp personnel and contractors conducted a desktop evaluation of the location as well as a site visit and did not identify the referenced intermittent stream northeast of the wellsite. Directly east of the wellsite, Hilcorp contractors did identify an intermittent stream that was surveyed to be 302’ from the release location.



The estimated depth to ground water at this point is 320 feet. This estimation is based on the data published on the New Mexico Engineer's iWaters Database website and water depth data from ConocoPhillips' Cathodic wells. Groundwater data available from the NM State Engineer's iWaters Database for wells near the proposed site are attached. The nearest stream is 69 feet to the northeast and is classified by the USGS as an intermittent stream. The nearest perrenial stream is 2,087 feet to the south. The nearest water body is 10,498 feet to the northwest. It is classified by the USGS as an intermittent lake and is 0.4 acres in size. The nearest spring is 10,153 feet to the east. All stream, river, water body and spring information was determined as per the USGS Hydrographic Dataset (High Resolution), downloaded 3/2008. The nearest water well is 8,131 feet to the southwest. The nearest wetland is a 131.9 acre Ravine located 2,092 feet to the south. The slope at this location is 4 degrees to the south as calculated from USGS 30M National Elevation Dataset. This information is also discerned from the aerial and topographic map included. The surface geology at this location is NACIMIENTO FORMATION--Shale and sandstone with a Shale dominated formations of all ages substrate. The soil at this location is 'Farb-Persayo-Rock outcrop complex, moderately steep' and is excessively drained and not hydric with severe erosion potential as taken from the NRCS SSURGO map unit, downloaded January 2008. The nearest underground mine is 26.0 miles to the north as indicated on the Mines, Mills and Quarries Map of New Mexico provided.

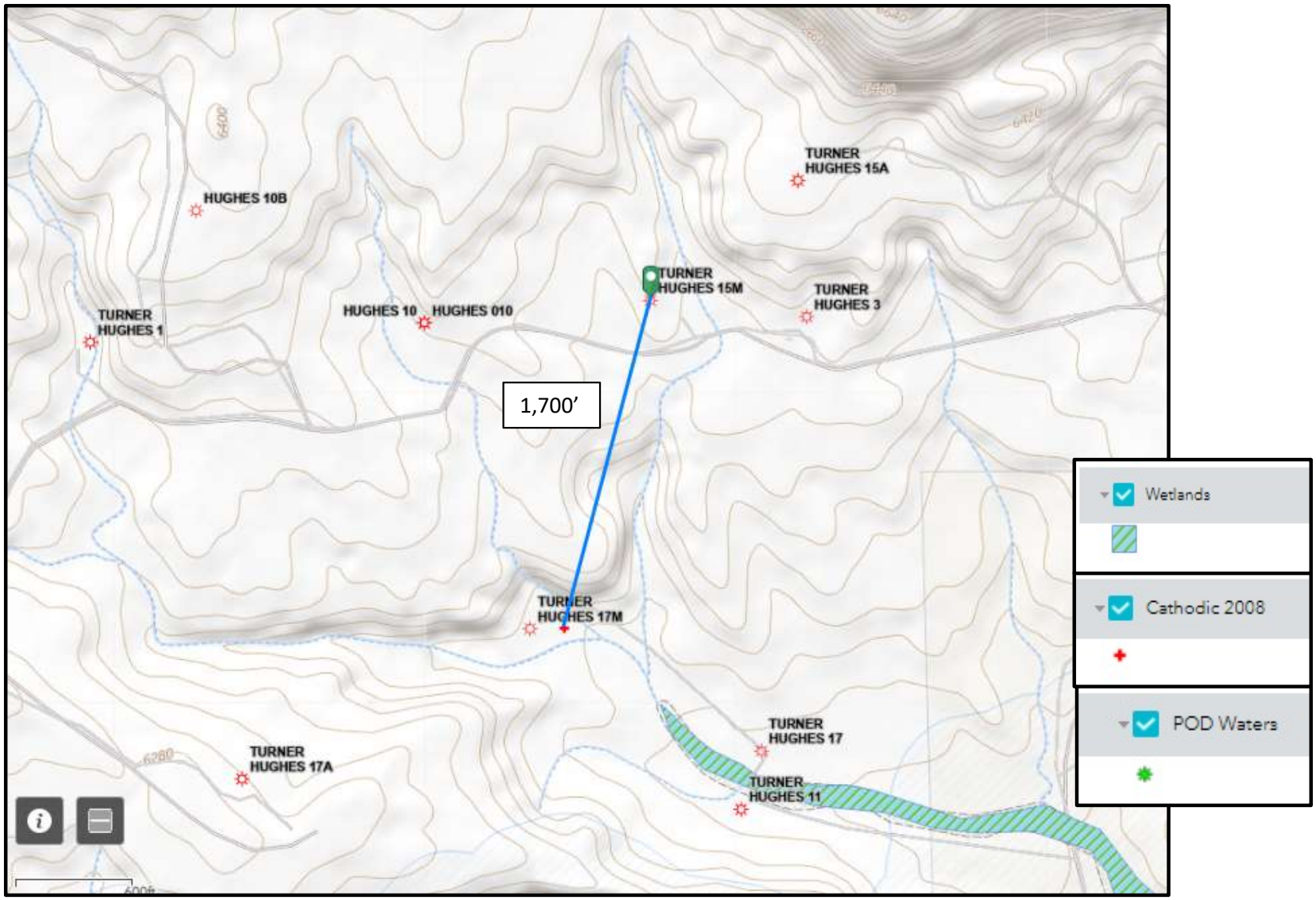
Determination of water sources and significant watercourses within ½ mile of the lateral extent of the release



Note 1: Release point is not within 300 ft of a continuously flowing watercourse or other significant water course, as discussed on the previous page.

Note 2: The lateral extents of the release point are not shown to be 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

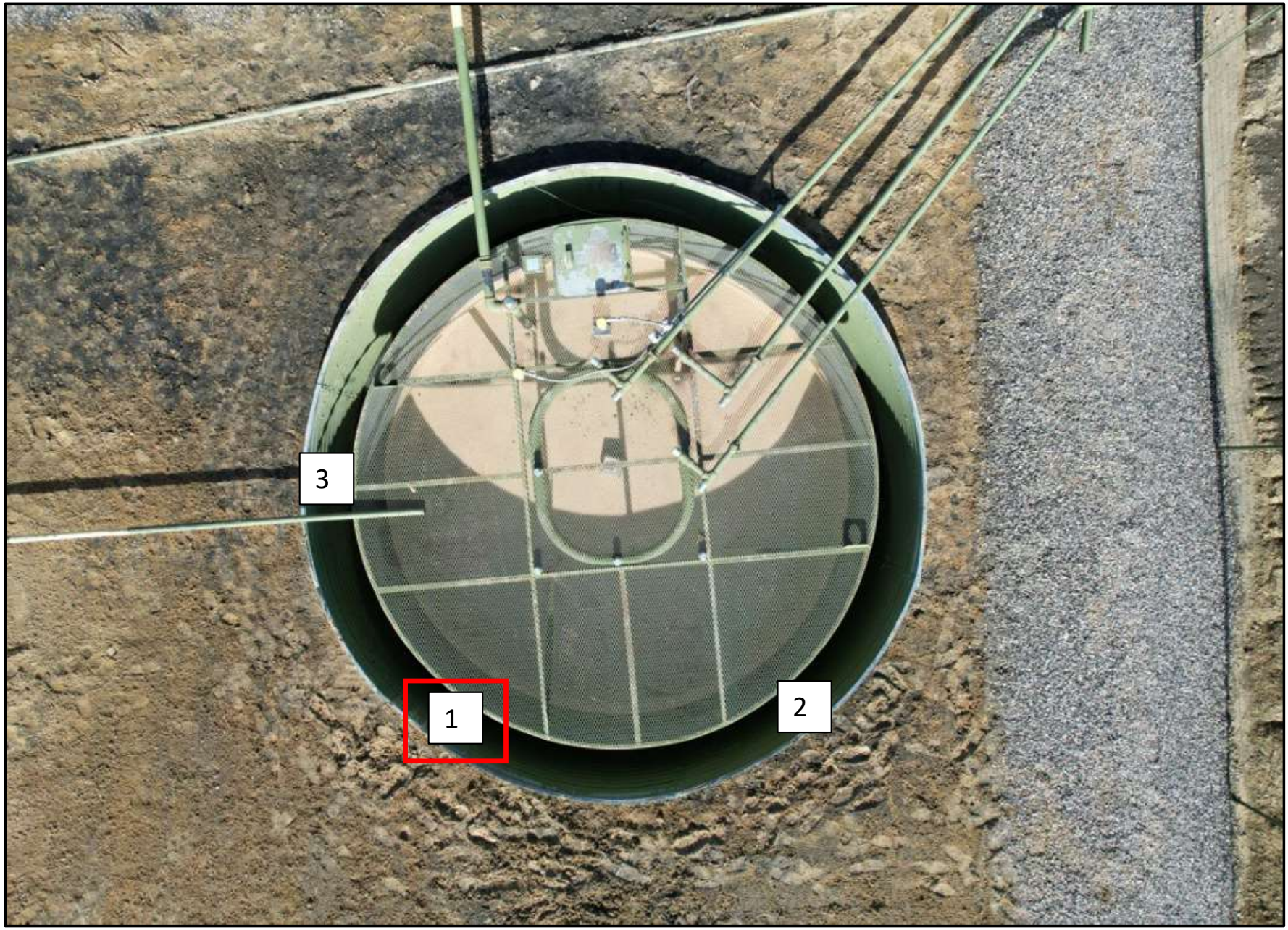
Sample Name	Sample Date	Field VOCs by PID (ppm)	Turner Hughes #15M Laboratory Results										
			Chloride (mg/kg)	TPH as DRO (mg/kg)	TPH as GRO (mg/kg)	TPH as MRO (mg/kg)	Total TPH (mg/kg)	TPH as GRO + DRO (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylene (mg/kg)	Total BTEX (mg/kg)
19.15.29 Table 1 Closure Criteria			**20,000**	-	-	-	**2,500**	**1,000**	**10**	-	-	-	**50**
Sample 1 0-6"	1/9/2023	-	310	150	ND	120	270	150	0.2	0.6	ND	0.9	2
Sample 1 2-2.5'	1/9/2023	-	190	24	ND	ND	24	24	ND	ND	ND	ND	ND
Sample 1 4-4.5'	1/9/2023	-	210	12	ND	ND	12	12	ND	ND	ND	ND	ND
Sample 1 6-6.5'	1/9/2023	-	140	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sample 2 0-6"	1/9/2023	-	110	27	ND	ND	27	27	ND	ND	ND	ND	ND
Sample 2 2-2.5'	1/9/2023	-	280	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sample 2 3-3.5'	1/9/2023	-	220	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sample 3 0-6"	1/9/2023	-	85	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sample 3 2-2.5'	1/9/2023	-	210	10	ND	ND	10	10	ND	ND	ND	ND	ND
Sample 3 2.75-3.25'	1/9/2023	-	160	23	ND	ND	23	23	ND	ND	ND	ND	ND

Confirmation samples were collected on 1/9/2023 by Hilcorp personnel and all results were below NMOCD 19.15.29.12.D Table 1 closure criteria.

Field Sample Diagram

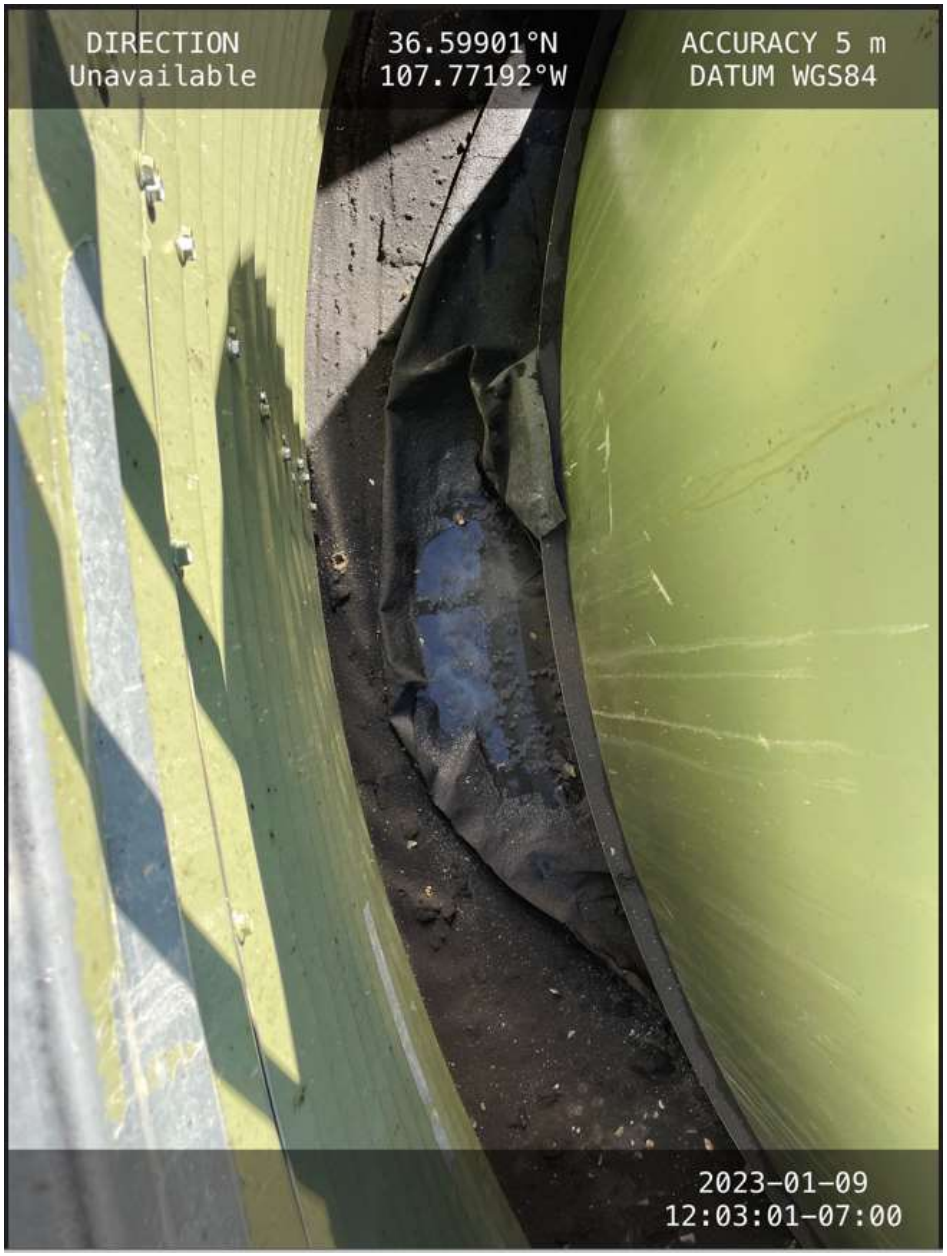
Samples were collected between the BGT and the outer ring.

Release Area



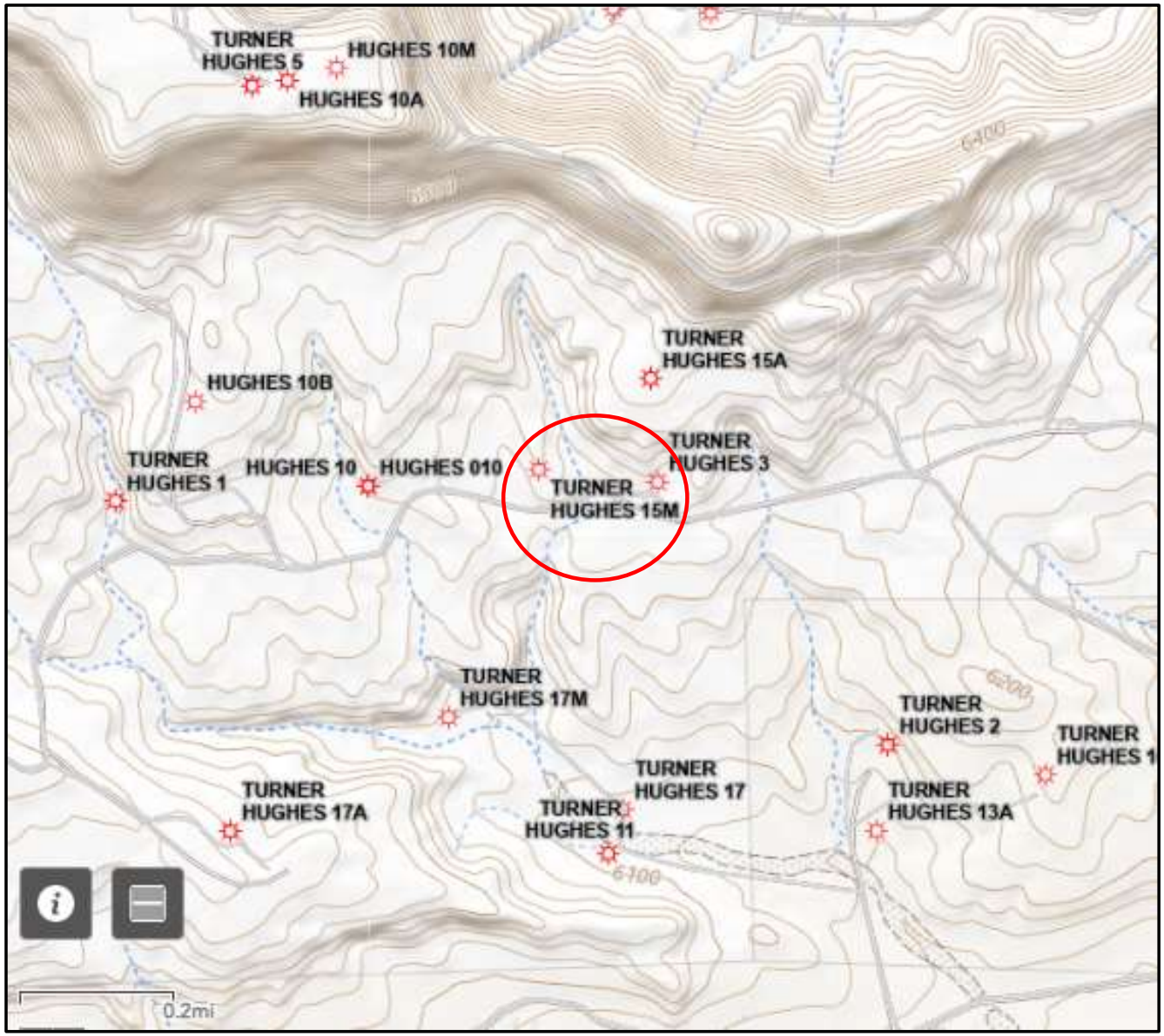
Sample Photos

Sample Photos



Sample Photos

Topographic Map



N

Analytical Data, Sample Collected 1/9/2023

See attached Lab 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

January 18, 2023

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

RE: Turner Hughes 15M OrderNo.: 2301322

Dear Kate Kaufman:

Hall Environmental Analysis Laboratory received 10 sample(s) on 1/10/2023 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 **2301322**
Date Reported: **1/18/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: S-1 0-6"
Project: Turner Hughes 15M
Collection Date: 1/9/2023 12:30:00 PM
Lab ID: 2301322-001 **Matrix:** SOIL **Received Date:** 1/10/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	150	8.4		mg/Kg	1	1/12/2023 4:33:15 AM
Motor Oil Range Organics (MRO)	120	42		mg/Kg	1	1/12/2023 4:33:15 AM
Surr: DNOP	107	21-129		%Rec	1	1/12/2023 4:33:15 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	25		mg/Kg	5	1/12/2023 5:20:34 PM
Surr: BFB	108	37.7-212		%Rec	5	1/12/2023 5:20:34 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	0.16	0.12		mg/Kg	5	1/12/2023 5:20:34 PM
Toluene	0.63	0.25		mg/Kg	5	1/12/2023 5:20:34 PM
Ethylbenzene	ND	0.25		mg/Kg	5	1/12/2023 5:20:34 PM
Xylenes, Total	0.93	0.49		mg/Kg	5	1/12/2023 5:20:34 PM
Surr: 4-Bromofluorobenzene	98.2	70-130		%Rec	5	1/12/2023 5:20:34 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	310	60		mg/Kg	20	1/12/2023 3:26:41 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 **2301322**
Date Reported: **1/18/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: S-1 2-2.5'
Project: Turner Hughes 15M
Collection Date: 1/9/2023 12:47:00 PM
Lab ID: 2301322-002 **Matrix:** SOIL **Received Date:** 1/10/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	24	9.1		mg/Kg	1	1/12/2023 9:19:28 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	1/12/2023 9:19:28 PM
Surr: DNOP	126	69-147		%Rec	1	1/12/2023 9:19:28 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/12/2023 9:15:04 PM
Surr: BFB	98.4	37.7-212		%Rec	1	1/12/2023 9:15:04 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	1/12/2023 9:15:04 PM
Toluene	ND	0.050		mg/Kg	1	1/12/2023 9:15:04 PM
Ethylbenzene	ND	0.050		mg/Kg	1	1/12/2023 9:15:04 PM
Xylenes, Total	ND	0.099		mg/Kg	1	1/12/2023 9:15:04 PM
Surr: 4-Bromofluorobenzene	96.4	70-130		%Rec	1	1/12/2023 9:15:04 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	190	60		mg/Kg	20	1/12/2023 3:39:05 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 **2301322**
Date Reported: **1/18/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: S-1 4-4.5'
Project: Turner Hughes 15M
Collection Date: 1/9/2023 1:05:00 PM
Lab ID: 2301322-003 **Matrix:** SOIL **Received Date:** 1/10/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	12	9.8		mg/Kg	1	1/12/2023 9:51:13 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	1/12/2023 9:51:13 PM
Surr: DNOP	120	69-147		%Rec	1	1/12/2023 9:51:13 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/12/2023 9:38:31 PM
Surr: BFB	102	37.7-212		%Rec	1	1/12/2023 9:38:31 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	1/12/2023 9:38:31 PM
Toluene	ND	0.050		mg/Kg	1	1/12/2023 9:38:31 PM
Ethylbenzene	ND	0.050		mg/Kg	1	1/12/2023 9:38:31 PM
Xylenes, Total	ND	0.10		mg/Kg	1	1/12/2023 9:38:31 PM
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	1/12/2023 9:38:31 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	210	60		mg/Kg	20	1/12/2023 3:51:29 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 **2301322**
Date Reported: **1/18/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: S-1 6-6.5'
Project: Turner Hughes 15M
Collection Date: 1/9/2023 1:14:00 PM
Lab ID: 2301322-004 **Matrix:** SOIL **Received Date:** 1/10/2023 7:30:00 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	1/12/2023 10:01:49 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/12/2023 10:01:49 PM
Surr: DNOP	103	69-147		%Rec	1	1/12/2023 10:01:49 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	1/12/2023 10:48:31 PM
Surr: BFB	100	37.7-212		%Rec	1	1/12/2023 10:48:31 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	1/12/2023 10:48:31 PM
Toluene	ND	0.048		mg/Kg	1	1/12/2023 10:48:31 PM
Ethylbenzene	ND	0.048		mg/Kg	1	1/12/2023 10:48:31 PM
Xylenes, Total	ND	0.097		mg/Kg	1	1/12/2023 10:48:31 PM
Surr: 4-Bromofluorobenzene	98.8	70-130		%Rec	1	1/12/2023 10:48:31 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	140	60		mg/Kg	20	1/12/2023 8:24:24 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 **2301322**
Date Reported: **1/18/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: S-2 0-6"
Project: Turner Hughes 15M
Collection Date: 1/9/2023 1:35:00 PM
Lab ID: 2301322-005 **Matrix:** SOIL **Received Date:** 1/10/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	27	9.6		mg/Kg	1	1/12/2023 10:12:26 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	1/12/2023 10:12:26 PM
Surr: DNOP	102	69-147		%Rec	1	1/12/2023 10:12:26 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	25		mg/Kg	5	1/12/2023 11:11:44 PM
Surr: BFB	99.1	37.7-212		%Rec	5	1/12/2023 11:11:44 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.12		mg/Kg	5	1/12/2023 11:11:44 PM
Toluene	ND	0.25		mg/Kg	5	1/12/2023 11:11:44 PM
Ethylbenzene	ND	0.25		mg/Kg	5	1/12/2023 11:11:44 PM
Xylenes, Total	ND	0.49		mg/Kg	5	1/12/2023 11:11:44 PM
Surr: 4-Bromofluorobenzene	97.4	70-130		%Rec	5	1/12/2023 11:11:44 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	110	60		mg/Kg	20	1/12/2023 8:36:48 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 **2301322**
Date Reported: **1/18/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: S-2 2-2.5'
Project: Turner Hughes 15M
Collection Date: 1/9/2023 1:45:00 PM
Lab ID: 2301322-006 **Matrix:** SOIL **Received Date:** 1/10/2023 7:30:00 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	1/12/2023 10:23:04 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	1/12/2023 10:23:04 PM
Surr: DNOP	111	69-147		%Rec	1	1/12/2023 10:23:04 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	1/12/2023 11:34:57 PM
Surr: BFB	99.9	37.7-212		%Rec	1	1/12/2023 11:34:57 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	1/12/2023 11:34:57 PM
Toluene	ND	0.049		mg/Kg	1	1/12/2023 11:34:57 PM
Ethylbenzene	ND	0.049		mg/Kg	1	1/12/2023 11:34:57 PM
Xylenes, Total	ND	0.097		mg/Kg	1	1/12/2023 11:34:57 PM
Surr: 4-Bromofluorobenzene	99.0	70-130		%Rec	1	1/12/2023 11:34:57 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	280	60		mg/Kg	20	1/12/2023 8:49:13 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
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 **2301322**
Date Reported: **1/18/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: S-2 3-3.5'
Project: Turner Hughes 15M
Collection Date: 1/9/2023 1:57:00 PM
Lab ID: 2301322-007 **Matrix:** SOIL **Received Date:** 1/10/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	1/12/2023 10:44:06 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	1/12/2023 10:44:06 PM
Surr: DNOP	105	69-147		%Rec	1	1/12/2023 10:44:06 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/12/2023 11:58:05 PM
Surr: BFB	99.2	37.7-212		%Rec	1	1/12/2023 11:58:05 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	1/12/2023 11:58:05 PM
Toluene	ND	0.050		mg/Kg	1	1/12/2023 11:58:05 PM
Ethylbenzene	ND	0.050		mg/Kg	1	1/12/2023 11:58:05 PM
Xylenes, Total	ND	0.10		mg/Kg	1	1/12/2023 11:58:05 PM
Surr: 4-Bromofluorobenzene	98.6	70-130		%Rec	1	1/12/2023 11:58:05 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	220	60		mg/Kg	20	1/12/2023 9:01:38 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 **2301322**
Date Reported: **1/18/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: S-3 0-6"
Project: Turner Hughes 15M
Collection Date: 1/9/2023 2:03:00 PM
Lab ID: 2301322-008 **Matrix:** SOIL **Received Date:** 1/10/2023 7:30:00 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	1/12/2023 10:54:45 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/12/2023 10:54:45 PM
Surr: DNOP	104	69-147		%Rec	1	1/12/2023 10:54:45 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	24		mg/Kg	5	1/13/2023 12:21:18 AM
Surr: BFB	99.1	37.7-212		%Rec	5	1/13/2023 12:21:18 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.12		mg/Kg	5	1/13/2023 12:21:18 AM
Toluene	ND	0.24		mg/Kg	5	1/13/2023 12:21:18 AM
Ethylbenzene	ND	0.24		mg/Kg	5	1/13/2023 12:21:18 AM
Xylenes, Total	ND	0.49		mg/Kg	5	1/13/2023 12:21:18 AM
Surr: 4-Bromofluorobenzene	98.2	70-130		%Rec	5	1/13/2023 12:21:18 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	85	60		mg/Kg	20	1/12/2023 9:14:02 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 **2301322**
Date Reported: **1/18/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: S-3 2-2.5'
Project: Turner Hughes 15M
Collection Date: 1/9/2023 2:11:00 PM
Lab ID: 2301322-009 **Matrix:** SOIL **Received Date:** 1/10/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	9.9	9.0		mg/Kg	1	1/12/2023 11:05:33 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	1/12/2023 11:05:33 PM
Surr: DNOP	110	69-147		%Rec	1	1/12/2023 11:05:33 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	1/13/2023 1:07:33 AM
Surr: BFB	97.7	37.7-212		%Rec	1	1/13/2023 1:07:33 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	1/13/2023 1:07:33 AM
Toluene	ND	0.049		mg/Kg	1	1/13/2023 1:07:33 AM
Ethylbenzene	ND	0.049		mg/Kg	1	1/13/2023 1:07:33 AM
Xylenes, Total	ND	0.099		mg/Kg	1	1/13/2023 1:07:33 AM
Surr: 4-Bromofluorobenzene	95.0	70-130		%Rec	1	1/13/2023 1:07:33 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	210	60		mg/Kg	20	1/13/2023 3:01:52 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 **2301322**
Date Reported: **1/18/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Project: Turner Hughes 15M
Lab ID: 2301322-010 **Matrix:** SOIL

Client Sample ID: S-3 2.75-3.25'
Collection Date: 1/9/2023 2:19:00 PM
Received Date: 1/10/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	23	9.6		mg/Kg	1	1/12/2023 11:16:20 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	1/12/2023 11:16:20 PM
Surr: DNOP	96.0	69-147		%Rec	1	1/12/2023 11:16:20 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	1/13/2023 1:30:39 AM
Surr: BFB	96.6	37.7-212		%Rec	1	1/13/2023 1:30:39 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	1/13/2023 1:30:39 AM
Toluene	ND	0.049		mg/Kg	1	1/13/2023 1:30:39 AM
Ethylbenzene	ND	0.049		mg/Kg	1	1/13/2023 1:30:39 AM
Xylenes, Total	ND	0.098		mg/Kg	1	1/13/2023 1:30:39 AM
Surr: 4-Bromofluorobenzene	95.9	70-130		%Rec	1	1/13/2023 1:30:39 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	160	60		mg/Kg	20	1/13/2023 3:39:05 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#: **2301322**

18-Jan-23

Client: HILCORP ENERGY

Project: Turner Hughes 15M

Sample ID: **MB-72586**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **72586**	RunNo: **93916**							
Prep Date: **1/12/2023**	Analysis Date: **1/12/2023**	SeqNo: **3390974**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-72586**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **72586**	RunNo: **93916**							
Prep Date: **1/12/2023**	Analysis Date: **1/12/2023**	SeqNo: **3390975**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.4	90	110			

Sample ID: **MB-72603**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **72603**	RunNo: **93916**							
Prep Date: **1/12/2023**	Analysis Date: **1/12/2023**	SeqNo: **3391005**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-72603**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **72603**	RunNo: **93916**							
Prep Date: **1/12/2023**	Analysis Date: **1/12/2023**	SeqNo: **3391006**	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			

Sample ID: **MB-72612**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **72612**	RunNo: **93954**							
Prep Date: **1/13/2023**	Analysis Date: **1/13/2023**	SeqNo: **3392167**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-72612**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **72612**	RunNo: **93954**							
Prep Date: **1/13/2023**	Analysis Date: **1/13/2023**	SeqNo: **3392168**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.1	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#: **2301322**

18-Jan-23

Client: HILCORP ENERGY

Project: Turner Hughes 15M

Sample ID: **LCS-72560**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **72560**	RunNo: **93869**
Prep Date: **1/10/2023**	Analysis Date: **1/11/2023**	SeqNo: **3388578** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	10	50.00	0	79.5	64.4	127			
Surr: DNOP	5.4		5.000		109	21	129			

Sample ID: **MB-72560**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **72560**	RunNo: **93869**
Prep Date: **1/10/2023**	Analysis Date: **1/11/2023**	SeqNo: **3388581** 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		113	21	129			

Sample ID: **2301322-002AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **S-1 2-2.5'**	Batch ID: **72584**	RunNo: **93911**
Prep Date: **1/11/2023**	Analysis Date: **1/12/2023**	SeqNo: **3391693** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	9.7	48.31	23.52	57.9	54.2	135			
Surr: DNOP	6.1		4.831		126	69	147			

Sample ID: **2301322-002AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **S-1 2-2.5'**	Batch ID: **72584**	RunNo: **93911**
Prep Date: **1/11/2023**	Analysis Date: **1/12/2023**	SeqNo: **3391694** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	9.7	48.45	23.52	50.3	54.2	135	7.21	33.9	S
Surr: DNOP	6.1		4.845		125	69	147	0	0	

Sample ID: **LCS-72584**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **72584**	RunNo: **93911**
Prep Date: **1/11/2023**	Analysis Date: **1/12/2023**	SeqNo: **3391719** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	41	10	50.00	0	82.0	61.9	130			
Surr: DNOP	5.3		5.000		106	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#: **2301322**

18-Jan-23

Client: HILCORP ENERGY

Project: Turner Hughes 15M

Sample ID: **MB-72584**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **72584**	RunNo: **93911**
Prep Date: **1/11/2023**	Analysis Date: **1/12/2023**	SeqNo: **3391724** 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		113	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#: **2301322**

18-Jan-23

Client: HILCORP ENERGY

Project: Turner Hughes 15M

Sample ID: **lcs-72549**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **72549**	RunNo: **93875**
Prep Date: **1/10/2023**	Analysis Date: **1/12/2023**	SeqNo: **3389715** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	85.6	72.3	137			
Surr: BFB	1900		1000		188	37.7	212			

Sample ID: **mb-72549**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **72549**	RunNo: **93875**
Prep Date: **1/10/2023**	Analysis Date: **1/12/2023**	SeqNo: **3389846** 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	970		1000		97.0	37.7	212			

Sample ID: **lcs-72577**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **72577**	RunNo: **93928**
Prep Date: **1/11/2023**	Analysis Date: **1/12/2023**	SeqNo: **3391322** 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	95.6	72.3	137			
Surr: BFB	2000		1000		195	37.7	212			

Sample ID: **mb-72577**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **72577**	RunNo: **93928**
Prep Date: **1/11/2023**	Analysis Date: **1/12/2023**	SeqNo: **3391323** 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		102	37.7	212			

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#: **2301322**

18-Jan-23

Client: HILCORP ENERGY

Project: Turner Hughes 15M

Sample ID: **LCS-72549**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **72549**	RunNo: **93875**
Prep Date: **1/10/2023**	Analysis Date: **1/12/2023**	SeqNo: **3389675** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.97	0.025	1.000	0	96.8	80	120			
Toluene	0.97	0.050	1.000	0	97.4	80	120			
Ethylbenzene	0.97	0.050	1.000	0	97.3	80	120			
Xylenes, Total	2.9	0.10	3.000	0	96.5	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	70	130			

Sample ID: **mb-72549**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **72549**	RunNo: **93875**
Prep Date: **1/10/2023**	Analysis Date: **1/12/2023**	SeqNo: **3389951** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.95		1.000		95.3	70	130			

Sample ID: **LCS-72577**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **72577**	RunNo: **93928**
Prep Date: **1/11/2023**	Analysis Date: **1/12/2023**	SeqNo: **3391519** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.025	1.000	0	95.2	80	120			
Toluene	0.97	0.050	1.000	0	96.9	80	120			
Ethylbenzene	0.96	0.050	1.000	0	96.1	80	120			
Xylenes, Total	2.9	0.10	3.000	0	96.7	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		99.9	70	130			

Sample ID: **mb-72577**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **72577**	RunNo: **93928**
Prep Date: **1/11/2023**	Analysis Date: **1/12/2023**	SeqNo: **3391520** 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	1.0		1.000		99.5	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of 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: 2301322 RcptNo: 1

Received By: Juan Rojas 1/10/2023 7:30:00 AM

Completed By: Sean Livingston 1/10/2023 7:55:05 AM

Reviewed By: DAD 1/10/23 DAD 1/10/23

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: KPC 1.10.23

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	1.2	Good				

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 (5 day) ☐ Rush

Project Name: Turner Hughes 15M

Project #:

Project Manager: Kate Kaufman

Sampler: Brandon Sinclair

On Ice: ☐ Yes ☐ No

# of Coolers: 1 (Minty)

Cooler Temp (Including CF): 1.2-0=1.2 (°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. 2301322	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)
1-9	1230	soil	S-1 0-6"	4oz jar	cool	001	✓	✓					✓			
	1247		S-1 2-2.5'			002										
	1305		S-1 4-4.5'			003										
	1314		S-1 6-6.5'			004										
	1335		S-2 0-6"			005										
	1345		S-2 2-2.5'			006										
	1357		S-2 3-3.5'			007										
	1403		S-3 0-6"			008										
	1411		S-3 2-2.5'			009										
	1419		S-3 2.75-3.25'			010										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
1-9	1528				1/9/23	1528
1/9/23	1834			courier	1/10/23	7:30

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.

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: 202384
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
nvelez	None	4/28/2023