

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	nAPP2110654878
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party Hilcorp Energy Company	OGRID 372171
Contact Name Mitch Killough	Contact Telephone 713-757-5247
Contact email mkillough@hilcorp.com	Incident # nAPP2110654878
Contact mailing address 1111 Travis Street, Houston, Texas 77002	

Location of Release Source

Latitude 36.9598312 Longitude -108.0700531
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Moore LS 2A	Site Type Well
Date Release Discovered 4/1/2021 @ 11:00am (MT)	API# 30-045-22827

Unit Letter	Section	Township	Range	County
E	26	32N	12W	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)

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input checked="" type="checkbox"/> Condensate	Volume Released (bbls) 20 bbls	Volume Recovered (bbls) 0 bbls
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

A release of approximately 20 bbls condensate was released from a hole in the production storage tank that developed due to corrosion. The spill amount was determined by operator's monthly tank gauging data. The released fluids remained on location and inside the bermed area. 0 bbls were recovered. OCD will be notified 48 hours prior to sampling.

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Oil Conservation Division

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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?	<u>75</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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.

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Oil Conservation Division

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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: Mitch Killough Title: Environmental SpecialistSignature:  Date: 6/30/2021email: mkillough@hilcorp.com Telephone: (713) 757-5247**OCD Only**

Received by: _____ Date: _____

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Oil Conservation Division

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Incident ID	nAPP2110654878
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 OCD 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: Mitch Killough Title: Environmental SpecialistSignature:  Date: 06/30/2021email: mkillough@hilcorp.com Telephone: 713-757-5247**OCD Only**

Received by: _____ Date: _____

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: 06/15/2022Printed Name: Nelson Velez Title: Environmental Specialist – Adv

Executive Summary

On April 1, 2021 at 11:00 am MT, Hilcorp Energy Company (Hilcorp) had a release of 20 bbls condensate at the Moore LS 2A (API No. 30-045-22827). The release was due to a hole that had developed in the condensate production storage tank as a result of corrosion. Upon discovery, the oil dump line for the condensate storage tank was shut-in pending an incident investigation. The released fluids remained inside secondary containment and visibly-impacted gravel/soil was observed in the northern portion of the bermed area. The visibly-impacted surface area measured approximately 15 ft x 20 ft (300 ft²) on the surface. No fluids were recovered at the time of the incident.

Following the initial investigation, Hilcorp chose to remediate the site via dig/haul with the use of a backhoe. Prior to commencing any excavation activities, the condensate production storage tank was removed from the bermed area and a one-call was made. A total of two excavation events occurred during the weeks of May 24 and May 31. A total of 56 cubic yards (yd³) was excavated from the release area. However, with expansion, the actual amount hauled to EnviroTech equated to 75 yd³.

Confirmation sampling was then scheduled for Wednesday, June 16th at 9:30 am in accordance with NMAC 19.15.29.12.D. However, no representation from NMOCD was present at the time of the scheduled sampling. Hilcorp's Bobby Spearman proceeded with the confirmation sampling event as scheduled. This site is ranked 51 ft – 100 ft per NMAC 19.15.29.12.E. Five (5) five-point composite samples were collected from the base and sidewalls of the excavated area. Results for all five composite soil samples were shown to be below the applicable clean up action levels. Approximately 80 yd³ of clean material was then brought in from Four Corners (40 yd³) and EnviroTech (40 yd³) for backfilling the excavation. Refer to sample field notes for additional excavation information.

Initial Release Photographs



Scaled Map



Note 1: The surface extent of the Moore LS 2A release is represented by the red rectangle shown in image above. Note that all spilled liquids remained within secondary containment.

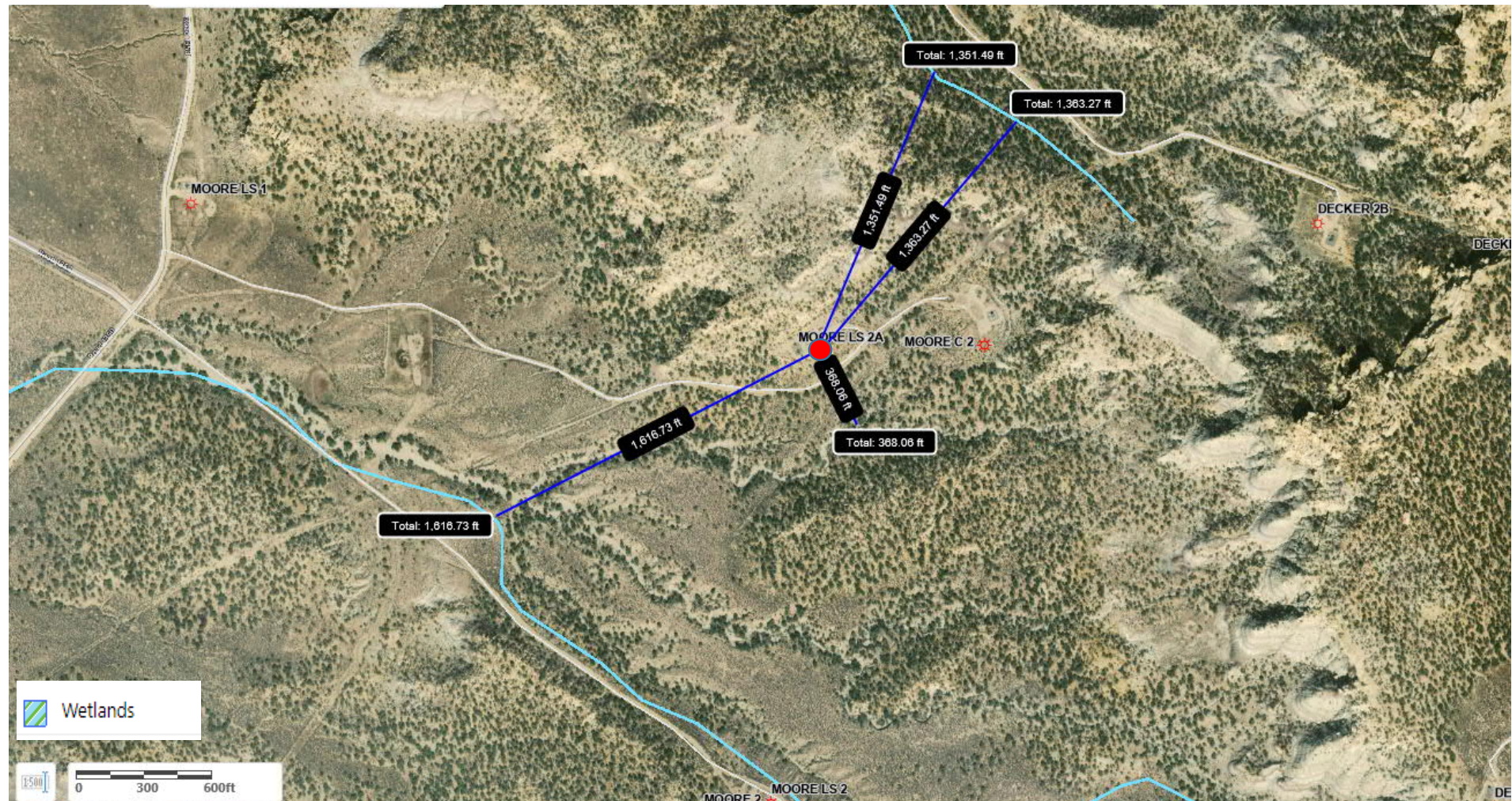
Note 2: Prior to excavation, the condensate production storage tank was removed at north portion of bermed area.

Scaled Map – Close-up



Note 1: The total impacted material excavated was approximately 56 cubic yards (or 75 cubic yards with expansion).

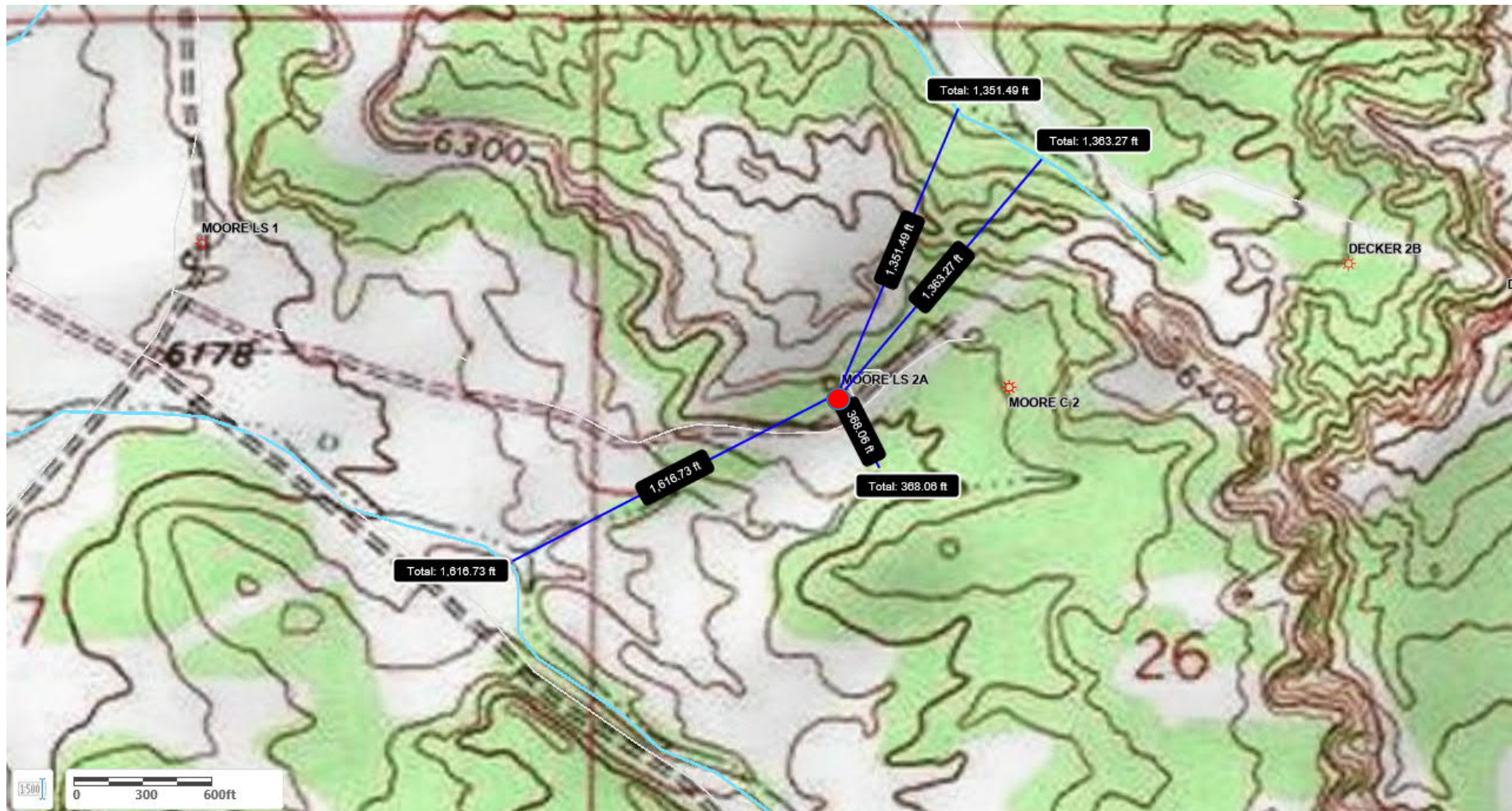
Determination of water sources and significant watercourses within ½ mile of the lateral extent of the release



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

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

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



Note: Release point is not shown to be within 300 ft of any continuously flowing watercourse or any other significant water course. It should also be noted that the water feature denoted on the topographic layer to the southeast is outside of the 300 ft buffer and is not a continuously flowing water feature (also refer to the C-144 BGT Pit Permit discussed further below).

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.

Depth to groundwater

Note: Groundwater information taken from the registered Form C-144 for Below-Grade Tank at the Moore LS 2A. The estimated groundwater depth is shown to be 75 ft.

Source: Page extracted from Registered Pit Closure Permit (Form C-144) for the Moore LS 2A. Found on OCD's website under Moore LS 2A (30-045-22827) – Associated Images – Well File Search (12/2/2019).

MOORE LS 2A

Site Specific Hydrogeology

A visual site inspection confirming the information contained herein was performed on the well 'MOORE LS 2A', which is located at 36.959751 degrees North latitude and 108.06938 degrees West longitude. This location is located on the Abode Downs Ranch 7.5' USGS topographic quadrangle. This location is in section 26 of Township 32 North Range 12 West of the Public Land Survey System (New Mexico Principal Meridian). This location is located in San Juan County, New Mexico. The nearest town is La Plata, located 7.2 miles to the west. The nearest large town (population greater than 10,000) is Farmington, located 17.3 miles to the southwest (National Atlas). The nearest highway is State Highway 574, located 3.2 miles to the southwest. The location is on BLM land and is 1,499 feet from the edge of the parcel as notated in the BLM land status layer updated January 2008. This location is in the Middle San Juan, Arizona, Colorado, New Mexico, Sub-basin. This location is located 1930 meters or 6330 feet above sea level and receives 14 inches of rain each year. The vegetation at this location is classified as Colorado Plateau Pinon-Juniper Woodland as per the Southwest Regional Gap Analysis Program.

The estimated depth to ground water at this point is 75 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 394 feet to the south and is classified by the USGS as an intermittent stream. The nearest perennial stream is 6,438 feet to the north. The nearest water body is 2,401 feet to the west. It is classified by the USGS as an intermittent lake and is 0.1 acres in size. The nearest spring is 22,716 feet to the northwest. 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 4,103 feet to the northwest. There is no wetland data available for this area. The slope at this location is 11 degrees to the southeast 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 1.1 miles to the northwest as indicated on the Mines, Mills and Quarries Map of New Mexico provided.

Regional Geological context:

The Nacimiento Formation is of Paleocene age (Baltz, 1967, p. 35). It crops out in a broad band inside the southern and western margins of the central basin and in a narrow band along the west face of the Nacimiento Uplift. The Nacimiento is a nonresistant unit and typically erodes to low, rounded hills or forms badland topography.

The Nacimiento Formation occurs in approximately only the southern two-thirds of the San Juan Basin where it conformably overlies and intertongues with the Ojo Alamo Sandstone (Fassett, 1974, p. 229). The Nacimiento Formation grades laterally into the main part of the Animas Formation (Fassett and Hinds, 1971, p. 34); thus, in this area, the two formations occupy the same stratigraphic interval.

Strata of the Nacimiento Formation were deposited in lakebeds in the central basin area with lesser deposition in stream channels (Brimhall, 1973, p. 201). In general, the Nacimiento consists of drab, interbedded black and gray shale with discontinuous, white, medium- to very coarse grained arkosic sandstone (Stone et al., 1983, p.30). Stone et al. indicated that the formation may contain more sandstone than commonly reported because some investigators assume the slope-forming strata in the unit area shales, whereas in many places the strata actually are poorly consolidated sandstones.

Total thickness of the Nacimiento Formation ranges from about 500 to 1,300 feet. The unit generally thickens from the basin margins toward the basin center (Steven et al., 1974). The sandstone deposits within the Nacimiento Formation are much thinner than the total thickness of the formation because their environment of deposition was localized stream channels (Brimhall, 1973, p. 201). The thickness of the combined San Jose, Animas, and Nacimiento Formations ranges from 500 to more than 3,500 feet.

Depth to groundwater

New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(A CLW##### in the
POD suffix indicates the
POD has been replaced
& no longer serves a
water right file.)

(R=POD has been
replaced,
O=orphaned,
C=the file is
closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub- basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	DepthWell	DepthWater	Water Column
SJ 00055		SJ	SJ			2	25	32N	12W	229105	4094796*	504		
SJ 03583		SJ	SJ	1	1	1	23	32N	12W	226477	4096872*	167	60	107
SJ 03933 POD1		SJ	SJ	1	4	1	22	32N	12W	225262	4096446			
SJ 03996 POD1		SJ	SJ	2	4	2	25	32N	12W	229425	4094710	120	65	55

Average Depth to Water: 62 feet

Minimum Depth: 60 feet

Maximum Depth: 65 feet

Record Count: 4

PLSS Search:

Section(s): 26, 23, 27, 25, **Township:** 32N **Range:** 12W
24, 22

*UTM location was derived from PLSS - see Help

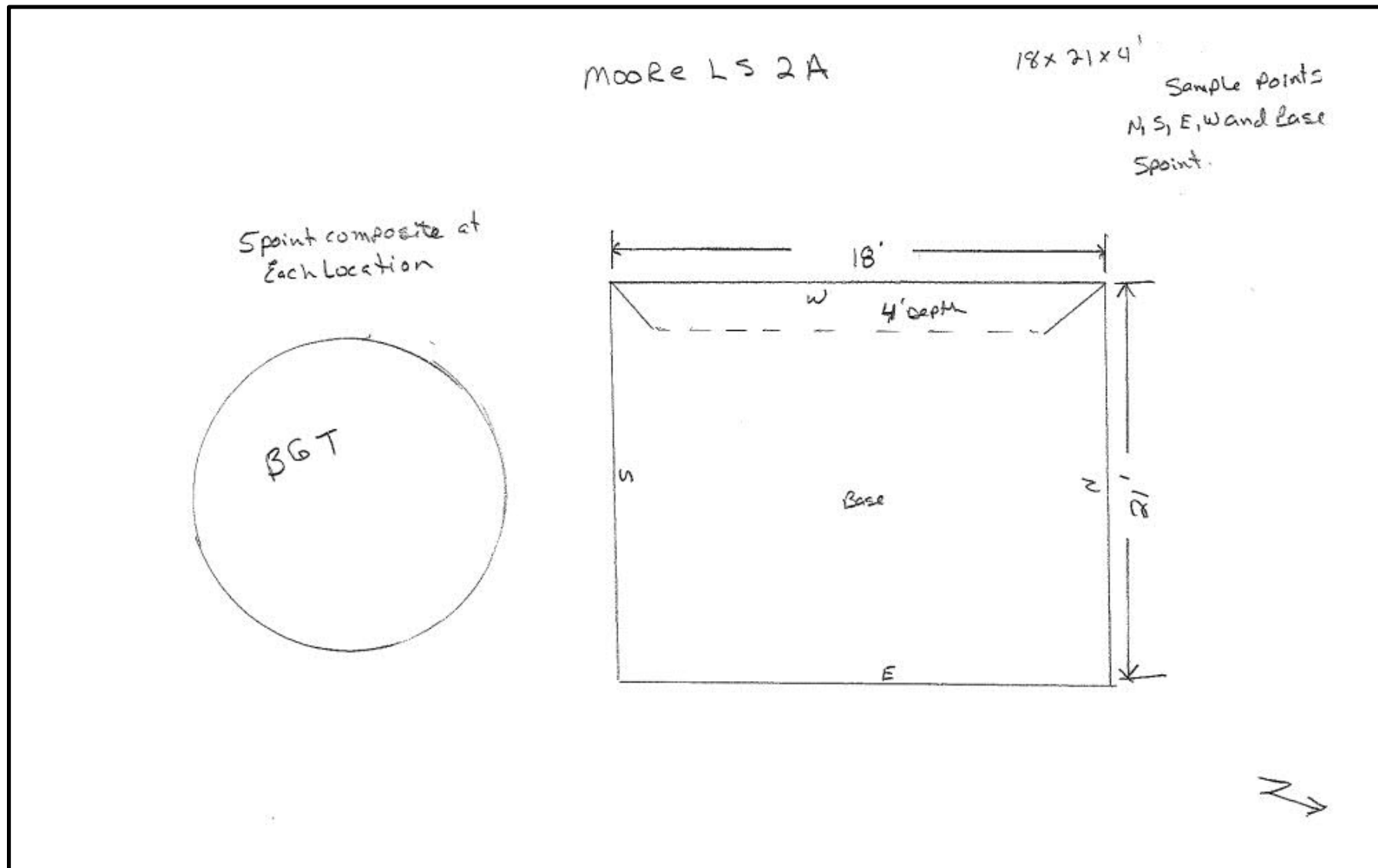
The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

6/30/21 5:05 PM

WATER COLUMN/ AVERAGE DEPTH TO
WATER

Note: Depth to groundwater in sources shown above are greater than 50 ft based on data pulled from 6 sections around the release point. It should also be noted that none of the sources shown above were mapped in Section 26, which is the location of the Moore LS 2A.

Sample field notes



Sample locations



Sample No. 1
Base Composite Point



Sample No. 2
East Wall Composite Point



Sample locations



Sample No. 3
North Wall Composite Point



Sample No. 4
South Wall Composite Point

Sample locations



Sample No. 5
West Wall Composite Point

Data table of soil contaminant concentration data

Soil Sample Identification	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	Chlorides (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	MRO (mg/kg)	GRO+DRO (mg/kg)	TPH (mg/kg)
Base	6/16/2021	<0.021	0.21	0.12	0.91	<1.261	<60	18	25	<48	43	<91
North Wall	6/16/2021	<0.019	<0.037	0.049	0.53	<0.635	<60	13	21	<50	34	<84
West Wall	6/16/2021	<0.022	0.19	0.13	1.2	<1.542	<61	21	57	<49	78	<127
South Wall	6/16/2021	0.023	0.92	0.48	5.5	6.923	<60	59	170	<46	229	<275
East Wall	6/16/2021	<0.018	<0.036	<0.036	<0.072	<0.162	<60	<3.6	<9.9	<50	<13.5	<63.5
NMOCD Table 1 Closure Criteria		10	NE	NE	NE	50	10,000	NE	NE	NE	1,000	2,500

Note: Confirmation samples were collected on 6/16/2021 by Hilcorp personnel. All samples came back below action levels.



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

June 24, 2021

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

RE: Moore LS 2A

OrderNo.: 2106903

Dear Mitch Killough:

Hall Environmental Analysis Laboratory received 5 sample(s) on 6/17/2021 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report

Lab Order 2106903

Date Reported: 6/24/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: Base

Project: Moore LS 2A

Collection Date: 6/16/2021 9:40:00 AM

Lab ID: 2106903-001

Matrix: MEOH (SOIL)

Received Date: 6/17/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	25	9.7		mg/Kg	1	6/21/2021 4:31:26 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	6/21/2021 4:31:26 PM
Surr: DNOP	95.7	70-130		%Rec	1	6/21/2021 4:31:26 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	18	4.3		mg/Kg	1	6/17/2021 4:59:00 PM
Surr: BFB	177	70-130	S	%Rec	1	6/17/2021 4:59:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.021		mg/Kg	1	6/17/2021 4:59:00 PM
Toluene	0.21	0.043		mg/Kg	1	6/17/2021 4:59:00 PM
Ethylbenzene	0.12	0.043		mg/Kg	1	6/17/2021 4:59:00 PM
Xylenes, Total	0.91	0.085		mg/Kg	1	6/17/2021 4:59:00 PM
Surr: 4-Bromofluorobenzene	99.7	70-130		%Rec	1	6/17/2021 4:59:00 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	6/18/2021 3:11:51 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	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2106903

Date Reported: 6/24/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: North Wall

Project: Moore LS 2A

Collection Date: 6/16/2021 9:45:00 AM

Lab ID: 2106903-002

Matrix: MEOH (SOIL)

Received Date: 6/17/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	21	10		mg/Kg	1	6/18/2021 4:53:48 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	6/18/2021 4:53:48 PM
Surr: DNOP	118	70-130		%Rec	1	6/18/2021 4:53:48 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	13	3.7		mg/Kg	1	6/17/2021 5:19:00 PM
Surr: BFB	169	70-130	S	%Rec	1	6/17/2021 5:19:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.019		mg/Kg	1	6/17/2021 5:19:00 PM
Toluene	ND	0.037		mg/Kg	1	6/17/2021 5:19:00 PM
Ethylbenzene	0.049	0.037		mg/Kg	1	6/17/2021 5:19:00 PM
Xylenes, Total	0.53	0.075		mg/Kg	1	6/17/2021 5:19:00 PM
Surr: 4-Bromofluorobenzene	95.6	70-130		%Rec	1	6/17/2021 5:19:00 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	6/18/2021 3:49:04 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	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2106903

Date Reported: 6/24/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: West Wall

Project: Moore LS 2A

Collection Date: 6/16/2021 9:50:00 AM

Lab ID: 2106903-003

Matrix: MEOH (SOIL)

Received Date: 6/17/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	57	9.9		mg/Kg	1	6/18/2021 5:17:51 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	6/18/2021 5:17:51 PM
Surr: DNOP	122	70-130		%Rec	1	6/18/2021 5:17:51 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	21	4.5		mg/Kg	1	6/17/2021 5:39:00 PM
Surr: BFB	190	70-130	S	%Rec	1	6/17/2021 5:39:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.022		mg/Kg	1	6/17/2021 5:39:00 PM
Toluene	0.19	0.045		mg/Kg	1	6/17/2021 5:39:00 PM
Ethylbenzene	0.13	0.045		mg/Kg	1	6/17/2021 5:39:00 PM
Xylenes, Total	1.2	0.090		mg/Kg	1	6/17/2021 5:39:00 PM
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	6/17/2021 5:39:00 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	61		mg/Kg	20	6/18/2021 4:01:28 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	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2106903

Date Reported: 6/24/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: South Wall

Project: Moore LS 2A

Collection Date: 6/16/2021 9:55:00 AM

Lab ID: 2106903-004

Matrix: MEOH (SOIL)

Received Date: 6/17/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	170	9.1		mg/Kg	1	6/18/2021 5:41:55 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	6/18/2021 5:41:55 PM
Surr: DNOP	109	70-130		%Rec	1	6/18/2021 5:41:55 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	59	3.6		mg/Kg	1	6/17/2021 5:59:00 PM
Surr: BFB	420	70-130	S	%Rec	1	6/17/2021 5:59:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	0.023	0.018		mg/Kg	1	6/17/2021 5:59:00 PM
Toluene	0.92	0.036		mg/Kg	1	6/17/2021 5:59:00 PM
Ethylbenzene	0.48	0.036		mg/Kg	1	6/17/2021 5:59:00 PM
Xylenes, Total	5.5	0.072		mg/Kg	1	6/17/2021 5:59:00 PM
Surr: 4-Bromofluorobenzene	151	70-130	S	%Rec	1	6/17/2021 5:59:00 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	6/18/2021 4:13:52 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	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2106903

Date Reported: 6/24/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: East Wall

Project: Moore LS 2A

Collection Date: 6/16/2021 10:00:00 AM

Lab ID: 2106903-005

Matrix: MEOH (SOIL)

Received Date: 6/17/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	6/18/2021 6:05:59 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	6/18/2021 6:05:59 PM
Surr: DNOP	110	70-130		%Rec	1	6/18/2021 6:05:59 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	3.6		mg/Kg	1	6/17/2021 6:19:00 PM
Surr: BFB	112	70-130		%Rec	1	6/17/2021 6:19:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.018		mg/Kg	1	6/17/2021 6:19:00 PM
Toluene	ND	0.036		mg/Kg	1	6/17/2021 6:19:00 PM
Ethylbenzene	ND	0.036		mg/Kg	1	6/17/2021 6:19:00 PM
Xylenes, Total	ND	0.072		mg/Kg	1	6/17/2021 6:19:00 PM
Surr: 4-Bromofluorobenzene	86.0	70-130		%Rec	1	6/17/2021 6:19:00 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	6/18/2021 6:55:09 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	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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

WO#: 2106903

24-Jun-21

Client: HILCORP ENERGY**Project:** Moore LS 2A

Sample ID: MB-60731	SampType: MBLK	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 60731	RunNo: 79166								
Prep Date: 6/18/2021	Analysis Date: 6/18/2021	SeqNo: 2780110 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-60731	SampType: LCS	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 60731	RunNo: 79166								
Prep Date: 6/18/2021	Analysis Date: 6/18/2021	SeqNo: 2780111 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.0	90	110			

Sample ID: MB-60733	SampType: MBLK	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 60733	RunNo: 79166								
Prep Date: 6/18/2021	Analysis Date: 6/18/2021	SeqNo: 2780115 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-60733	SampType: LCS	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 60733	RunNo: 79166								
Prep Date: 6/18/2021	Analysis Date: 6/18/2021	SeqNo: 2780116 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	99.1	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 Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

Page 6 of 9

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

WO#: 2106903

24-Jun-21

Client: HILCORP ENERGY**Project:** Moore LS 2A

Sample ID: MB-60718	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 60718	RunNo: 79227								
Prep Date: 6/17/2021	Analysis Date: 6/18/2021	SeqNo: 2783467 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		96.6	70	130			

Sample ID: MB-60742	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 60742	RunNo: 79227								
Prep Date: 6/18/2021	Analysis Date: 6/20/2021	SeqNo: 2783470 Units: %Rec								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.9		10.00		98.7	70	130			

Sample ID: LCS-60718	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 60718	RunNo: 79227								
Prep Date: 6/17/2021	Analysis Date: 6/18/2021	SeqNo: 2783471 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	89.9	68.9	141			
Surr: DNOP	4.8		5.000		96.8	70	130			

Sample ID: LCS-60742	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 60742	RunNo: 79227								
Prep Date: 6/18/2021	Analysis Date: 6/20/2021	SeqNo: 2783473 Units: %Rec								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.1		5.000		102	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

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

WO#: 2106903

24-Jun-21

Client: HILCORP ENERGY**Project:** Moore LS 2A

Sample ID: MB-60640	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: 60640	RunNo: 79145								
Prep Date: 6/15/2021	Analysis Date: 6/17/2021	SeqNo: 2778274	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		105	70	130			

Sample ID: LCS-60640	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID: 60640	RunNo: 79145								
Prep Date: 6/15/2021	Analysis Date: 6/17/2021	SeqNo: 2778275	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	105	78.6	131			
Surr: BFB	1200		1000		116	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

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

WO#: 2106903

24-Jun-21

Client: HILCORP ENERGY**Project:** Moore LS 2A

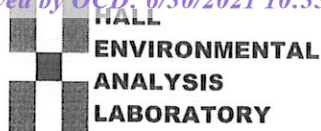
Sample ID: MB-60640	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBS	Batch ID: 60640	RunNo: 79145								
Prep Date: 6/15/2021	Analysis Date: 6/17/2021	SeqNo: 2778273	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.88		1.000		87.9	70	130			

Sample ID: LCS-60640	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch ID: 60640	RunNo: 79145								
Prep Date: 6/15/2021	Analysis Date: 6/17/2021	SeqNo: 2778276	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.98	0.025	1.000	0	97.7	80	120			
Toluene	0.96	0.050	1.000	0	96.1	80	120			
Ethylbenzene	0.99	0.050	1.000	0	98.9	80	120			
Xylenes, Total	2.9	0.10	3.000	0	97.4	80	120			
Surr: 4-Bromofluorobenzene	0.89		1.000		88.7	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit



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

Sample Log-In Check List

Client Name: HILCORP ENERGY

Work Order Number: 2106903

RcptNo: 1

Received By: Tracy Casambres 6/17/2021 8:00:00 AM

Completed By: Desiree Dominguez 6/17/2021 8:33:26 AM

Reviewed By: JR 6/17/21

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☒ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
9. 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:

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 $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.1	Good	Yes			

Released to Imaging: 6/15/2022 2:29:51 PM

☐ EDD (Type)

2106903

Analysis Request

[illegible]

Received by: Via: Date Time

[Signature] Carrier Co. 17-21 8:44

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.

Mitch Killough

From: Mitch Killough
Sent: Friday, June 11, 2021 9:17 AM
To: Smith, Cory, EMNRD; Enviro, OCD, EMNRD
Cc: Bobby Spearman; Freddy Proctor; Ryan Joyner
Subject: Closure Soil Sampling - Moore LS 2A (Incident No. nAPP2110654878)

Tracking:	Recipient	Delivery	Read
	Smith, Cory, EMNRD		
	Enviro, OCD, EMNRD		
	Bobby Spearman	Delivered: 6/11/2021 9:17 AM	
	Freddy Proctor	Delivered: 6/11/2021 9:17 AM	Read: 6/11/2021 9:57 AM
	Ryan Joyner		

Good morning.

Hilcorp Energy Company (Hilcorp) is providing a 48-hour notification for closure soil sampling scheduled to occur at the Moore LS 2A on Wednesday, June 16, 2021, beginning at 9:30 am (MT). The initial C-141 was submitted to the NMOCD on 4/16/2021 and was assigned incident no. nAPP2110654878.

Please let me know if you have any questions.

Thanks.

Mitch Killough
Environmental Specialist
Hilcorp Energy Company
1111 Travis Street
Houston, TX 77002
713-757-5247 (office)
281-851-2338 (cell)
mkillough@hilcorp.com

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

Action 34540

CONDITIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 34540
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
nvelez	None	6/15/2022