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

State of New Mexico Energy Minerals and Natural Resources Department

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-141 Revised August 24, 2018 Submit to appropriate OCD District office

)

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Acce	oted	- 11	/14	/2022

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11		v	

Page 1 of 92

Responsible Party Hilcorp Energy	OGRID 372171
Contact Name Kate Kaufman	Contact Telephone 346-237-2275
Contact email kkaufman@hilcorp.com	Incident # (assigned by OCD): NRM2022755502
Contact mailing address 382 CR 3100, Aztec NM 87410	

Location of Release Source

Latitude 36.7776375

(NAD 83 in decimal degrees to 5 decimal places)

Site Name Howell M 1	Site Type Well Site
Date Release Discovered Historic	API# (if applicable) 30-045-09101

Unit Letter	Section	Township	Range	County
Ν	30	30N	8W	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)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	Yes No
Condensate	Volume Released (bbls) Unknown	Volume Recovered (bbls) 0
Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

During cleanup of a release a Midstream operator had on the Hilcorp Howell M 1 well site a historic impact was encountered. Because of the location and what appeared to be a liner they notified Hilcorp of their findings.

Page 2

Incident ID	
District RP	
Facility ID	
Application ID	

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Was this a major	If YES, for what reason(s) does the responsible party consider this a major release?
release as defined by	
19.15.29.7(A) NMAC?	
🗌 Yes 🖾 No	
If YES, was immediate no	otice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?

Initial Response

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

 \square The source of the release has been stopped.

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

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

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

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

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

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: <u>Clara Cardoza</u>	Title: <u>Environmental Specialist</u>
Signature: Condeg	Date: <u>08/14/2020</u>
email: <u>ccardoza@hilcorp.com</u>	Telephone: <u>505.564.0733</u>
OCD Only	
Received by:	Date:

Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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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?	>55 bgs)	(ft
Did this release impact groundwater or surface water?		No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	$\Box \text{Yes} \boxtimes$ $\boxtimes \text{Yes} \Box$	
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?		
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	$\Box Yes \boxtimes$ $\Box Yes \boxtimes$	
Are the lateral extents of the release within 300 feet of a wetland?		
Are the lateral extents of the release overlying a subsurface mine?	\square Yes \boxtimes	
Are the lateral extents of the release overlying an unstable area such as karst geology?	\Box Yes \boxtimes	No
Are the lateral extents of the release within a 100-year floodplain?	\Box Yes \boxtimes	No
Did the release impact areas not on an exploration, development, production, or storage site?	\Box Yes \boxtimes	No
Die die 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.

<u>Characterization Report Checklist</u>: 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 ¹/₂-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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June 29, 2021

District III New Mexico Oil Conservation Division 1000 Rio Brazos Aztec, New Mexico 87410

Subject: Interim Report - Delineation Activities Update Howell M#1 NMOCD Incident Number: NRM2022755502 San Juan County, New Mexico

To Whom It May Concern:

On behalf of Hilcorp Energy Company (Hilcorp), WSP USA Inc. (WSP) has prepared this *Delineation Activities Update* for the Howell M#1 production well site (Site) located on Bureau of Land Management (BLM) surface in San Juan County, New Mexico (Figure 1). WSP has conducted soil-delineation activities to investigate historical petroleum-hydrocarbon impact discovered by a midstream operator at the Site. Specifically, while performing a remedial excavation to address a separate release, the midstream operator encountered what appeared to be an old pit liner and a historical release of petroleum hydrocarbons. Currently, the source and volume of the release is unknown. After discovery of the release, Hilcorp submitted a *Release Notification Form C-141* to the New Mexico Oil Conservation Division (NMOCD) on August 14, 2020. NMOCD has assigned Incident Number NRM2022755502 to the Site.

SITE CHARACTERIZATION

The Howell M#1 natural gas production well is located on Bureau of Land Management (BLM) surface in Unit N of Section 30, Township 30 North, Range 8 West, San Juan County, New Mexico (Figure 1). The Site is approximately 17 miles east of Aztec, New Mexico, south of New Mexico State Route 511. As part of the site investigation, local geology/hydrogeology and nearby sensitive receptors were accessed in accordance with 19.15.29.11 of the New Mexico Administrative Code (NMAC). This information is further discussed below.

GEOLOGY AND HYDROGEOLOGY

Based on United States Geological Survey (USGS) geologic mapping, the Site is located within the Tertiary Nacimiento Formation. In the report titled "Hydrogeology and Water Resources of San Juan Basin, New Mexico" (Stone, et. al., 1983), the Nacimiento Formation as characterized by interbedded black carbonaceous mudstones and white, coarse-grained sandstones. This formation ranges in thickness from 418 to 2,232 feet. The Nacimiento Formation overlies the Ojo Alamo sandstone formation, which is the shallowest water-bearing unit beneath the Site (Stone et. al., 1983).

SITE RECEPTORS

Assessment of potential nearby receptors was conducted through desktop reviews of topographic maps, Federal Emergency Management Administration (FEMA) Geographic Information System (GIS) maps, United States Geological Survey (USGS) GIS maps, New Mexico Office of the State Engineer database, and aerial photographs, as well as site-specific observations.

Borings at the Site indicate groundwater is not present at depths up to 55 feet below ground surface (bgs). However, an unnamed dry wash is located 60 feet to the west of the Site that is considered a "significant watercourse" as defined in 19.15.17.7 NMAC. Additionally, the San Juan River is located approximately 1,660 feet to the northwest

WSP USA 848 EAST 2ND AVENUE DURANGO CO 81301

Tel.: 970-385-1096 wsp.com Released to Imaging: 11/14/2022 10:55:02 AM

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of the Site. There are no known springs or fresh-water wells located within 500 feet of the Site. The nearest groundwater well (SJ 04066) is located approximately 1,300 feet southeast of the Site (Figure 2). Depth to water information from this well indicates that groundwater is approximately 200 feet below ground surface (bgs). In addition, the data sheet for a cathodic protection well submitted for the Howell M#1 well site in 1991 indicated that water was encountered at depths of 36, 80, and 120 feet; however, water and/or saturated soils have not been encountered during drilling at the Site up to depths of 55 feet bgs.

The Site is greater than 200 feet from any lakebed, sinkhole, or playa lake, and greater than 300 feet from any wetland (Figure 2). Surface land use surrounding the Site consists primarily of oil and gas development and livestock grazing. No occupied permanent residence or structures, including schools, hospitals, institutions, and/or churches, are located within 300 feet of the Site. The Site is not within the area of a subsurface mine or unstable area and is not within the 100-year floodplain.

SITE CLOSURE CRITERIA

WSP has characterized the Site according to Table 1, Closure Criteria for Soils Impacted by a Release of 19.15.29.12 NMAC. Due to the Site's proximity to a significant watercourse, the following NMOCD Table 1 closure criteria apply: 10 milligrams per kilogram (mg/kg) benzene; 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX); 100 mg/kg total petroleum hydrocarbons (TPH); and 600 mg/kg chloride.

SITE INVESTIGATION ACTIVITIES AND RESULTS

To date, there have been two separate mobilization events to delineate subsurface impacts: September 16, 2020 to September 22, 2020 and May 14, 2021 to May 14, 2021. During each site delineation attempt, WSP personnel advanced boreholes via hollow-stem auger to confirm the presence or absence of petroleum hydrocarbon impacts to soil. Groundwater was not encountered in any of the boreholes during drilling up to depths of 55 feet bgs.

During drilling, silty sand and sand with occasional gravel and cobbles were generally encountered to depths up to 40 feet bgs. Gravel and cobbles increased with depth and were present in most wells from 35 feet bgs to the terminus of the boring. Several wells encountered clay and silt/siltstone around 40 feet bgs to the terminus of the boring. All borings were advanced until the auger met refusal on the cobbles and/or bedrock.

SOIL ASSESSMENT

To date, 13 boreholes have been advanced at the Site (shown on Figure 3). Soil samples were collected from boreholes and submitted for laboratory analysis of BTEX by United States Environmental Protection Agency (EPA) Method 8021, TPH-gasoline range organics (GRO), TPH-diesel range organics (DRO), TPH-motor oil range organics (MRO) by EPA Method 8015, and chloride by EPA method 300.0. A summary of soil analytical results is presented in Table 1, with laboratory analytical reports attached as Enclosure A.

Borings BH01 through BH10 were initially advanced during the September 2020 sampling event. Soil samples collected from borings BH01, BH02, BH03, BH08, and BH09 contained concentrations of TPH and/or BTEX above the NMOCD Table 1 Closure Criteria. Based on these results, these five borings were completed as soil-vapor extraction (SVE) wells during the September 2020 drilling event for potential future use to remediate the Site. Additionally, analytical results from borings BH02, BH08, and BH09 indicated that soil impacts had migrated off of the well pad to the west/northwest. At that time, Hilcorp proposed additional soil sampling locations in off-pad locations to the BLM. The BLM indicated that a cultural survey would be required for the off-pad locations; however, the cultural survey had to be postponed due to snow cover at the Site. The cultural survey was subsequently performed by La Plata Archaeological Consults in February 2021 and approved by the BLM in May 2021.

Once BLM access approval was obtained, Hilcorp advanced three additional borings at the site in May 2021: BH11, BH12, and BH13. These borings encountered similar lithologies as the previous borings and also met refusal on cobbles and/or bedrock. Borings BH11 and BH12 did not encounter any field indications of petroleum hydrocarbons and soil sample results indicated that no BTEX or TPH was detected above laboratory reporting limits. Petroleum hydrocarbon staining/odors and organic vapors measured on a photoionization detector (PID) indicated that petroleum impacts were increasing at depths below approximately 42 feet bgs in boring BH13. Sample

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BH13@40-45' contained a TPH concentration of 21 milligrams per kilogram (mg/kg), below the NMOCD Table 1 Closure Criteria, however, deeper soil samples were not able to be collected from this boring due to auger refusal.

CONCLUSIONS AND RECOMMENDATIONS:

Based on the delineation activities performed to date, petroleum-impacted soil appears to be present on and to the west/northwest of the Howell M#1 well pad. Soil impacts on the well pad have been successfully delineated at this time. However, due to Site lithology and presence of cobbles and bedrock at depths of approximately 40 feet bgs, vertical delineation has not yet been achieved in locations near borings BH08 and, potentially, BH13.

Because of the shallow refusal using the hollow-stem auger drill rig, additional borings were not advanced during the May 2021 drilling event. As such, a sonic drill rig (Environmental Works, Boulder, Colorado) has been scheduled to complete the delineation the week of August 23, 2021. Sonic drilling will likely be able to obtain continuous core samples at the Site to the required depths. The proposed drilling locations are presented on Figure 3. For the additional work, Hilcorp will complete the Site delineation and prepare a remediation work plan within 90 days of submittal of this document. The remediation work plan will include details regarding SVE well construction and proposed remediation via SVE or other methods based on final delineation findings.

If you have any questions or comments, please do not hesitate to contact Mr. Stuart Hyde at <u>stuart.hyde@wsp.com</u>, or at (970) 385-1096.

Kind regards,

Stuart Hyde, L.G. Senior Geologist

cc: Kate Kaufman, Hilcorp Energy Company

Enclosures:

- Figure 1Site Location MapFigure 2Receptor Map
- Figure 3 Site Map

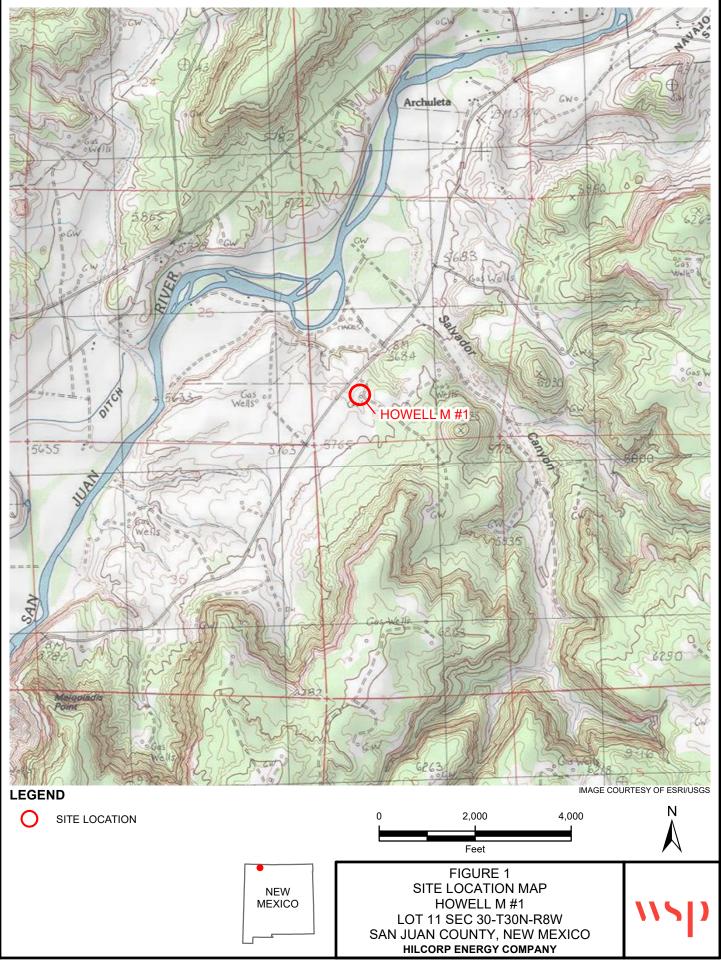
Table 1Soil Analytical Results

Enclosure A Laboratory Analytical Reports

Ashley L. ager

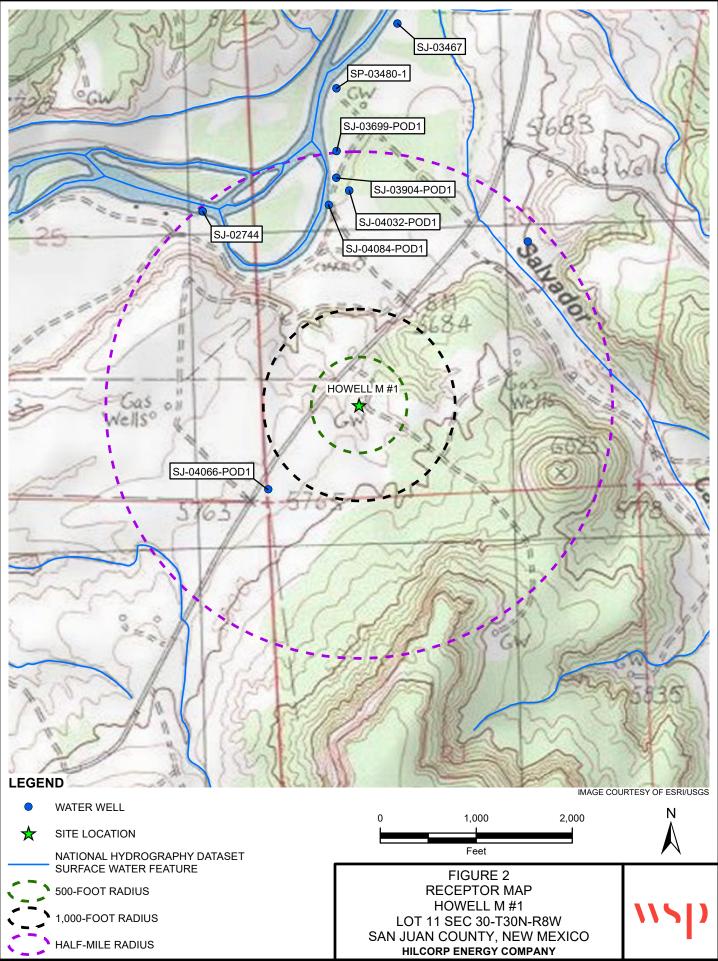
Ashley Ager, M.S., P.G. Senior Geologist, Managing Director

FIGURES



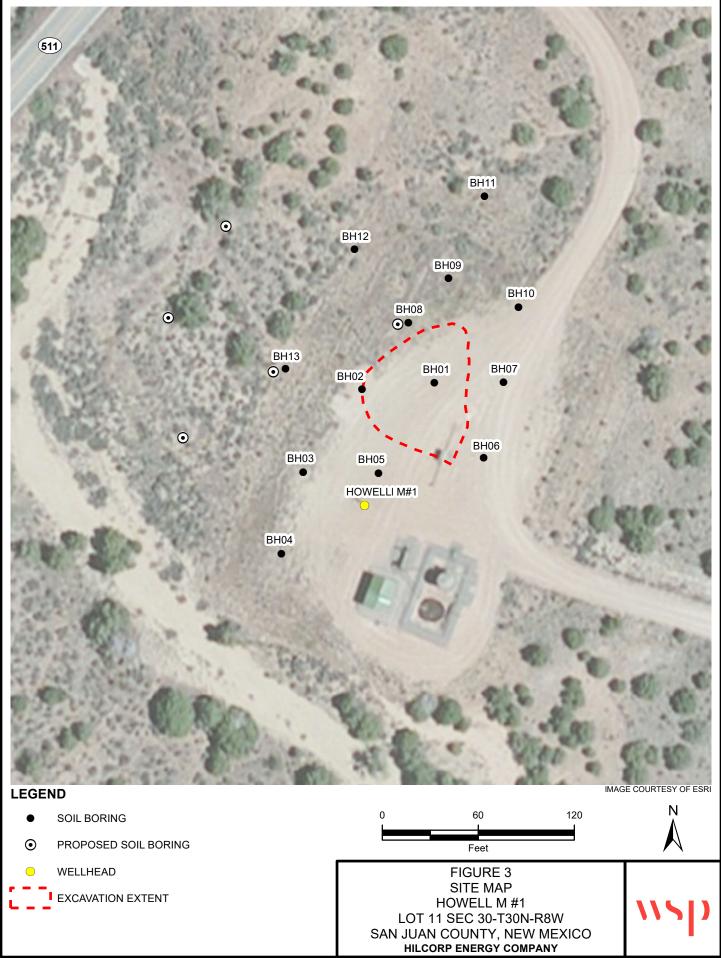
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TABLES

TABLE 1SOIL ANALYTICAL RESULTS

HOWELL M#1 SAN JUAN COUNTY, NEW MEXICO HILCORP ENERGY COMPANY

Soil Sample Identification	Sample Date	PID Reading (ppm)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl- benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	MRO (mg/kg)	TPH (mg/kg)
BH01@25'-30'	9/16/2020	1,757	< 0.024	12	7.5	85	104.5	<60	1,600	190	<45	1,790
BH01@38'-40'	9/16/2020	24.6	0.026	< 0.048	< 0.048	< 0.096	0.026	<60	<4.8	<9.5	<48	<48
BH02@25'-30'	9/16/2020	1,658	< 0.082	0.22	< 0.16	3.8	4.02	<60	140	370	<46	510
BH02@46'	9/16/2020	413.0	0.027	0.32	< 0.031	1.2	1.52	<60	56	21	<48	77
BH03@30'-35'	9/17/2020	2,403	< 0.12	0.80	0.80	13	14.6	<60	430	140	89	659
BH03@47'	9/17/2020	328.0	< 0.086	< 0.17	< 0.17	< 0.35	< 0.35	84	<17	<9.1	<45	<45
BH04@15'-20'	9/17/2020	3.7	< 0.025	< 0.049	< 0.049	< 0.098	< 0.098	100	<4.9	<9.6	<48	<48
BH04@43'-45'	9/17/2020	2.5	< 0.024	< 0.049	< 0.049	< 0.097	< 0.097	<60	<4.9	<9.1	<45	<45
BH05@35'-40'	9/17/2020	14.9	< 0.025	< 0.050	< 0.050	< 0.099	< 0.099	<60	<5.0	<9.7	<48	<48
BH05@40'-45'	9/17/2020	0.7	< 0.024	< 0.049	< 0.049	< 0.097	< 0.097	<60	<4.9	<10	<50	<50
BH06@35'-40'	9/18/2020	10.7	0.054	< 0.048	< 0.048	0.13	0.18	<60	<4.8	<8.8	<44	<44
BH06@40'-45'	9/18/2020	2.9	< 0.024	< 0.048	< 0.048	< 0.097	< 0.097	<60	<4.8	<9.1	<45	<45
BH07@35'-40'	9/18/2020	9.4	< 0.024	< 0.049	< 0.049	< 0.098	< 0.098	<60	<4.9	<10	<50	<50
BH07@40'-45'	9/18/2020	0.9	< 0.024	< 0.048	< 0.048	< 0.096	< 0.096	<60	<4.8	<9.7	<49	<49
BH08@30'-35'	9/21/2020	2,376	< 0.12	0.65	0.54	6.7	7.89	<60	140	31	<46	171
BH08@40'-45'	9/21/2020	2,194	0.66	26	12	150	188.7	<60	3,100	510	<490	3,610
BH09@35'-38'	9/21/2020	1,494	2.9	96	16	260	374.9	<60	6,600	390	<470	6,990
BH09@40'-43'	9/21/2020	54.6	< 0.023	< 0.047	< 0.047	< 0.094	< 0.094	<60	<4.7	16	<44	16
BH10@30'-35'	9/22/2020	17.5	< 0.025	0.077	< 0.050	0.37	0.447	<60	13	<9.5	<48	13
BH10@38'-40'	9/22/2020	7.1	< 0.025	< 0.050	< 0.050	< 0.10	< 0.10	<60	<5.0	< 9.8	<49	<49
BH11@0-5'(1)	5/14/2021	15.4	< 0.023	< 0.047	< 0.047	< 0.094	< 0.094	<60	<4.7	<8.5	<43	<43
BH11@40-45'(1)	5/14/2021	11.6	< 0.025	< 0.049	< 0.049	< 0.099	< 0.099	68	<4.9	<10	<50	<50
BH12@10-15'(1)	5/20/2021	40.5	< 0.023	< 0.047	< 0.047	< 0.093	< 0.093	110	<4.7	<9.6	<48	<48
BH12@50-55'(1)	5/20/2021	6.7	< 0.024	< 0.048	< 0.048	< 0.097	< 0.097	<60	<4.8	<9.6	<48	<48
BH13@30-35'(1)	5/20/2021	12.9	< 0.024	< 0.048	< 0.048	< 0.096	< 0.096	<60	<4.8	< 9.8	<49	<49
BH13@40-45'(1)	5/20/2021	371	< 0.024	< 0.047	< 0.047	< 0.095	< 0.095	<61	21	<9.6	<48	21
NMOCD Closur	re Criteria	NE	10	NE	NE	NE	50	600	NE	NE	NE	100

NOTES:

(1) - samples collected on 5/14/2021 and 5/20/2021 were mislabeled on the laboratory analytical reports

 $\ensuremath{\mathsf{BTEX}}$ - benzene, toluene, ethylbenzene, and total xylenes analyzed by US EPA Method $8021\ensuremath{\mathsf{B}}$

DRO - diesel range organics analyzed by US EPA Method 8015D

GRO - gasoline range organics analyzed by US EPA Method 8015D

mg/kg - milligrams per kilogram

MRO - motor oil range organics analyzed by US EPA method 8015D NA - not analyzed NE - not established

NMOCD - New Mexico Oil Conservation Division

PID - photo-ionization detector

TPH - total petroleum hydrocarbon (sum of GRO, DRO, and MRO) < - indicates result is less than the stated laboratory reporting limit Bold - indicates value exceeds stated NMOCD Closure Criteria ppm - parts per million ENCLOSURE A – LABORATORY ANALYTICAL REPORTS



September 21, 2020

Clara Cardoza HILCORP ENERGY PO Box 4700 Farmington, NM 87499 TEL: (505) 564-0733 FAX: Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: clients.hallenvironmental.com

RE: Howell M1

OrderNo.: 2009976

Dear Clara Cardoza:

Hall Environmental Analysis Laboratory received 4 sample(s) on 9/17/2020 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,

Ander

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

CLIENT: HILCORP ENERGY

Analytical Report Lab Order 2009976

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/21/2020
Client Sample ID: BH01@25'-30'

Project: Howell M1	Collection Date: 9/16/2020 9:45:00 AM									
Lab ID: 2009976-001	Matrix: SOIL	R	eceive	ed Date:	9/17/2020 8:03:00 AM					
Analyses	Result	RL	Qual	Units	DF	Date Analyzed				
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS					Analyst: BRM				
Diesel Range Organics (DRO)	190	9.0		mg/Kg	1	9/17/2020 11:15:10 AM				
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	9/17/2020 11:15:10 AM				
Surr: DNOP	94.9	30.4-154		%Rec	1	9/17/2020 11:15:10 AM				
EPA METHOD 8015D: GASOLINE RANG	E					Analyst: NSB				
Gasoline Range Organics (GRO)	1600	480		mg/Kg	100	9/20/2020 12:41:08 PM				
Surr: BFB	134	75.3-105	S	%Rec	100	9/20/2020 12:41:08 PM				
EPA METHOD 8021B: VOLATILES						Analyst: NSB				
Benzene	ND	0.024		mg/Kg	1	9/19/2020 1:56:46 PM				
Toluene	12	4.8		mg/Kg	100	9/20/2020 12:41:08 PM				
Ethylbenzene	7.5	4.8		mg/Kg	100	9/20/2020 12:41:08 PM				
Xylenes, Total	85	9.6		mg/Kg	100	9/20/2020 12:41:08 PM				
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	100	9/20/2020 12:41:08 PM				
EPA METHOD 300.0: ANIONS						Analyst: CAS				
Chloride	ND	60		mg/Kg	20	9/17/2020 5:15:28 PM				

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

Qualifiers:

- * Value exceeds Maximum Contaminant Level.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 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 1 of 10

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Analytical Report Lab Order 2009976

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/21/2020

CLIENT: HILCORP ENERGY		Client S	Sample ID:	BH01	@38'-40'			
Project: Howell M1		Collec	ction Date:	9/16/2	2020 10:30:00 AM			
Lab ID: 2009976-002	Matrix: SOIL	Received Date: 9/17/2020 8:03:00 AM						
Analyses	Result	RL Qu	al Units	DF	Date Analyzed			
EPA METHOD 8015M/D: DIESEL RAN	IGE ORGANICS				Analyst: BRM			
Diesel Range Organics (DRO)	ND	9.5	mg/Kg	1	9/17/2020 11:39:16 AM			
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	9/17/2020 11:39:16 AM			
Surr: DNOP	93.6	30.4-154	%Rec	1	9/17/2020 11:39:16 AM			
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst: NSB			
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	9/20/2020 1:04:37 PM			
Surr: BFB	90.5	75.3-105	%Rec	1	9/20/2020 1:04:37 PM			
EPA METHOD 8021B: VOLATILES					Analyst: NSB			
Benzene	0.026	0.024	mg/Kg	1	9/20/2020 1:04:37 PM			
Toluene	ND	0.048	mg/Kg	1	9/20/2020 1:04:37 PM			
Ethylbenzene	ND	0.048	mg/Kg	1	9/20/2020 1:04:37 PM			
Xylenes, Total	ND	0.096	mg/Kg	1	9/20/2020 1:04:37 PM			
Surr: 4-Bromofluorobenzene	100	80-120	%Rec	1	9/20/2020 1:04:37 PM			
EPA METHOD 300.0: ANIONS					Analyst: CAS			
Chloride	ND	60	mg/Kg	20	9/17/2020 5:27:48 PM			

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

Qualifiers:

- * Value exceeds Maximum Contaminant Level.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 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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CLIENT: HILCORP ENERGY

Project: Howell M1

Analytical Report Lab Order 2009976

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/21/2020 Client Sample ID: BH02@25'-30' Collection Date: 9/16/2020 1:00:00 PM

Lab ID: 2009976-003	Matrix: SOIL	Rec	Received Date: 9/17/2020 8:03:00 AM						
Analyses	Result	RL Qu	ual Units	DF	Date Analyzed				
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANICS				Analyst: mb				
Diesel Range Organics (DRO)	370	9.1	mg/Kg	1	9/17/2020 10:47:00 AM				
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	9/17/2020 10:47:00 AM				
Surr: DNOP	94.9	30.4-154	%Rec	1	9/17/2020 10:47:00 AM				
EPA METHOD 8015D: GASOLINE R	ANGE				Analyst: NSB				
Gasoline Range Organics (GRO)	140	16	mg/Kg	5	9/17/2020 12:19:40 PM				
Surr: BFB	224	75.3-105	S %Rec	5	9/17/2020 12:19:40 PM				
EPA METHOD 8021B: VOLATILES					Analyst: NSB				
Benzene	ND	0.082	mg/Kg	5	9/17/2020 12:19:40 PM				
Toluene	0.22	0.16	mg/Kg	5	9/17/2020 12:19:40 PM				
Ethylbenzene	ND	0.16	mg/Kg	5	9/17/2020 12:19:40 PM				
Xylenes, Total	3.8	0.33	mg/Kg	5	9/17/2020 12:19:40 PM				
Surr: 4-Bromofluorobenzene	111	80-120	%Rec	5	9/17/2020 12:19:40 PM				
EPA METHOD 300.0: ANIONS					Analyst: CAS				
Chloride	ND	60	mg/Kg	20	9/17/2020 12:31:37 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
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- в Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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Analytical Report Lab Order 2009976

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/21/2020
Client Sample ID: BH02@46'

CLIENT: HILCORP ENERGY		Clien	nt Sar	nple ID:	BH02	@46'			
Project: Howell M1		Col	llectio	on Date:	9/16/2	020 1:30:00 PM			
Lab ID: 2009976-004	Matrix: SOIL	Received Date: 9/17/2020 8:03:00 AM							
Analyses	Result	RL (Qual	Units	DF	Date Analyzed			
EPA METHOD 8015M/D: DIESEL RANG	GE ORGANICS					Analyst: mb			
Diesel Range Organics (DRO)	21	9.5		mg/Kg	1	9/17/2020 11:10:47 AM			
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	9/17/2020 11:10:47 AM			
Surr: DNOP	95.1	30.4-154		%Rec	1	9/17/2020 11:10:47 AM			
EPA METHOD 8015D: GASOLINE RAN	GE					Analyst: NSB			
Gasoline Range Organics (GRO)	56	3.1		mg/Kg	1	9/17/2020 12:43:09 PM			
Surr: BFB	311	75.3-105	S	%Rec	1	9/17/2020 12:43:09 PM			
EPA METHOD 8021B: VOLATILES						Analyst: NSB			
Benzene	0.027	0.015		mg/Kg	1	9/17/2020 12:43:09 PM			
Toluene	0.32	0.031		mg/Kg	1	9/17/2020 12:43:09 PM			
Ethylbenzene	ND	0.031		mg/Kg	1	9/17/2020 12:43:09 PM			
Xylenes, Total	1.2	0.061		mg/Kg	1	9/17/2020 12:43:09 PM			
Surr: 4-Bromofluorobenzene	109	80-120		%Rec	1	9/17/2020 12:43:09 PM			
EPA METHOD 300.0: ANIONS						Analyst: CAS			
Chloride	ND	60		mg/Kg	20	9/17/2020 1:08:40 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 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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Client:	HILCORP	ENERGY								
Project:	Howell M	1								
Sample ID:	MB-55233	SampType:	mblk	Tes	tCode: EP	A Method	300.0: Anions			
Client ID:	PBS	Batch ID:	55233	RunNo: 71928						
Prep Date:	9/17/2020	Analysis Date:			SeqNo: 25		Units: mg/Kg			
	5/11/2020									
Analyte		Result PC		SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND ²	1.5							
Sample ID:	LCS-55233	SampType: Ics TestCode: EPA Method 3								
Client ID:	LCSS	Batch ID:	55233	F	928					
Prep Date:	9/17/2020	Analysis Date:	9/17/2020	5	SeqNo: 25	18798	Units: mg/Kg	J		
Analyte		Result PC	L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		14 <i>*</i>	1.5 15.00	0	93.7	90	110			
Sample ID:	MB-55238	SampType:	mblk	Tes	tCode: EP	A Method	300.0: Anions			
Client ID:	PBS	Batch ID:	55238	F	RunNo: 71	928				
Prep Date:	9/17/2020	Analysis Date:	9/17/2020	S	SeqNo: 25	18827	Units: mg/Kg)		
Analyte		Result PC	L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND ²	1.5							
Sample ID:	LCS-55238	SampType:	lcs	Tes	tCode: EP	A Method	300.0: Anions			
Client ID:	LCSS	Batch ID:	55238	F	RunNo: 71	928				
Prep Date:	9/17/2020	Analysis Date:	9/17/2020	S	SeqNo: 25	18828	Units: mg/Kg)		
Analyte		Result PC	L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		14 ⁻	1.5 15.00	0	93.0	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative 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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2009976

21-Sep-20

Client: HILCON	RP ENERGY								
Project: Howell	M1								
Sample ID: LCS-55231	SampType:	TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: LCSS	Batch ID:	F	RunNo: 71	918					
Prep Date: 9/17/2020	Analysis Date:	S	SeqNo: 25	517325	Units: mg/Kg				
Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45 1	0 50.00	0	89.8	70	130			
Surr: DNOP	4.4	5.000		89.0	30.4	154			
Sample ID: MD 55004	SampType: MBLK TestCode: EPA Method 8015								
Sample ID: MB-55231	SampType: 1	MBLK	Tes	tCode: EP	PA Method	8015M/D: Die	sel Range	Organics	
Client ID: PBS	Batch ID:			tCode: EP RunNo: 71		8015M/D: Die	sel Range	Organics	
	1 21	55231	F		918	8015M/D: Die Units: mg/K	•	Organics	
Client ID: PBS	Batch ID: 5	55231 9/17/2020	F	RunNo: 71	918		•	Organics RPDLimit	Qual
Client ID: PBS Prep Date: 9/17/2020	Batch ID: 5 Analysis Date:	55231 9/17/2020 SPK value	F	RunNo: 71 SeqNo: 25	918 517326	Units: mg/K	g	-	Qual
Client ID: PBS Prep Date: 9/17/2020 Analyte	Batch ID: 5 Analysis Date: Result PQL	5 5231 9/17/2020 _ SPK value 0	F	RunNo: 71 SeqNo: 25	918 517326	Units: mg/K	g	-	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of 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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2009976

21-Sep-20

WO#:

Released to Imaging: 11/14/2022 10:55:02 AM

QC SUMMARY REPORT Hall Environmental sis Laboratory, ld IU.

KEPUKI	WO#:	2009976
l Analysis Laboratory, Inc.		21-Sep-20

Client: HILCOR Project: Howell N	RP ENERGY M1							
Sample ID: 2.5ug gro Ics	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range						
Client ID: LCSS	Batch ID: GS71929	RunNo: 71929						
Prep Date:	Analysis Date: 9/17/2020	SeqNo: 2518375 Units: mg/Kg						
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual	I					
Gasoline Range Organics (GRO) Surr: BFB	22 5.0 25.00 1100 1000	0 87.1 72.5 106 109 75.3 105 S						
Sample ID: mb1	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range						
Client ID: PBS	Batch ID: GS71929	RunNo: 71929						
Prep Date:	Analysis Date: 9/17/2020	SeqNo: 2518399 Units: mg/Kg						
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual	I					
Gasoline Range Organics (GRO) Surr: BFB	ND 5.0 960 1000	95.9 75.3 105						
Sample ID: Ics-55219	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range						
Client ID: LCSS	Batch ID: 55219	RunNo: 71963						
Prep Date: 9/16/2020	Analysis Date: 9/18/2020	SeqNo: 2519548 Units: %Rec						
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual	I					
Surr: BFB	1000 1000	104 75.3 105						
Sample ID: mb-55219	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range						
Client ID: PBS	Batch ID: 55219	RunNo: 71963						
Prep Date: 9/16/2020	Analysis Date: 9/18/2020	SeqNo: 2519549 Units: %Rec						
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual	l					
Surr: BFB	950 1000	95.4 75.3 105						
Sample ID: mb-55234	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range						
Client ID: PBS	Batch ID: 55234	RunNo: 71993						
Prep Date: 9/17/2020	Analysis Date: 9/19/2020	SeqNo: 2520089 Units: mg/Kg						
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual						
Gasoline Range Organics (GRO) Surr: BFB	ND 5.0 890 1000	89.3 75.3 105						
Sample ID: Ics-55234	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range						
Client ID: LCSS	Batch ID: 55234	RunNo: 71993						
Prep Date: 9/17/2020	Analysis Date: 9/19/2020	SeqNo: 2520113 Units: mg/Kg						
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual						
Gasoline Range Organics (GRO)	25 5.0 25.00	0 100 72.5 106						
Surr: BFB	1000 1000	105 75.3 105						

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix S

В Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits

Р Sample pH Not In Range

Reporting Limit RL

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Sample Diluted Due to Matrix

Client: Project:		CORP ENERGY ell M1								
Sample ID:	mb-55251	SampType: MI	Tes	TestCode: EPA Method 8015D: Gasoline Range						
Client ID:	PBS	Batch ID: 55	Batch ID: 55251			1993				
Prep Date:	9/17/2020	Analysis Date: 9/	/20/2020	5	SeqNo: 2	520138	Units: %Rec			
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB		880	1000		88.0	75.3	105			
Sample ID:	lcs-55251	SampType: LC	s	Tes	tCode: EF	PA Method	8015D: Gasoli	ne Range		
Client ID:	LCSS	Batch ID: 55	251	F	RunNo: 71	1993				
Prep Date:	9/17/2020	Analysis Date: 9/	/20/2020	5	SeqNo: 25	520139	Units: %Rec			
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB		990	1000		99.0	75.3	105			

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 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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2009976

21-Sep-20

Client:

Project:

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

HILCORP ENERGY

Howell M1

Sample ID: 100ng btex Ics	Samp	Гуре: LC :	S	TestCode: EPA Method 8021B: Volatiles						
Client ID: LCSS	Batc	h ID: BS	71929	F	RunNo: 71	929				
Prep Date:	Analysis [Date: 9/ 1	7/2020	5	SeqNo: 25	518417	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.025	1.000	0	87.7	80	120			
Toluene	0.90	0.050	1.000	0	89.6	80	120			
Ethylbenzene	0.90	0.050	1.000	0	89.9	80	120			
Xylenes, Total	2.7	0.10	3.000	0	90.0	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		104	80	120			
Sample ID: mb1	Samp	Гуре: МВ	LK	Tes	tCode: EF	A Method	8021B: Volati	les		
Client ID: PBS	Batch ID: BS71929			F	RunNo: 71	929				
Prep Date:	Analysis [Date: 9/ 1	7/2020	\$	SeqNo: 25	18443	Units: mg/K	g		
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		99.7	80	120			
Sample ID: mb-55234	Samp	Гуре: МВ	LK	Tes	tCode: EF	A Method	8021B: Volati	les		
Sample ID: mb-55234 Client ID: PBS		Гуре: МВ h ID: 552			tCode: EF		8021B: Volati	les		
		h ID: 552	234	F		993	8021B: Volati Units: mg/K			
Client ID: PBS	Batc	h ID: 552	234 19/2020	F	RunNo: 71	993			RPDLimit	Qual
Client ID: PBS Prep Date: 9/17/2020	Batc Analysis [h ID: 552 Date: 9/ 1	234 19/2020	F	RunNo: 71 SeqNo: 25	993 20171	Units: mg/K	g	RPDLimit	Qual
Client ID: PBS Prep Date: 9/17/2020 Analyte	Batc Analysis I Result	h ID: 552 Date: 9/ 1 PQL	234 19/2020	F	RunNo: 71 SeqNo: 25	993 20171	Units: mg/K	g	RPDLimit	Qual
Client ID: PBS Prep Date: 9/17/2020 Analyte Benzene	Batc Analysis I Result ND	h ID: 552 Date: 9/ 1 PQL 0.025	234 19/2020	F	RunNo: 71 SeqNo: 25	993 20171	Units: mg/K	g	RPDLimit	Qual
Client ID: PBS Prep Date: 9/17/2020 Analyte Benzene Toluene	Batc Analysis I Result ND ND	h ID: 552 Date: 9/1 PQL 0.025 0.050	234 19/2020	F	RunNo: 71 SeqNo: 25	993 20171	Units: mg/K	g	RPDLimit	Qual
Client ID: PBS Prep Date: 9/17/2020 Analyte Benzene Toluene Ethylbenzene	Batc Analysis I Result ND ND ND	h ID: 552 Date: 9 /1 PQL 0.025 0.050 0.050	234 19/2020	F	RunNo: 71 SeqNo: 25	993 20171	Units: mg/K	g	RPDLimit	Qual
Client ID: PBS Prep Date: 9/17/2020 Analyte Benzene Toluene Ethylbenzene Xylenes, Total	Batc Analysis I Result ND ND ND ND 1.0	h ID: 552 Date: 9 /1 PQL 0.025 0.050 0.050	234 19/2020 SPK value 1.000	F SPK Ref Val	RunNo: 71 SeqNo: 25 %REC 100	993 20171 LowLimit 80	Units: mg/K HighLimit	g %RPD	RPDLimit	Qual
Client ID: PBS Prep Date: 9/17/2020 Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Bromofluorobenzene	Batc Analysis I Result ND ND ND 1.0	h ID: 552 Date: 9 /1 PQL 0.025 0.050 0.050 0.10	234 19/2020 SPK value 1.000	F SPK Ref Val	RunNo: 71 SeqNo: 25 %REC 100	993 520171 LowLimit 80	Units: mg/K HighLimit 120	g %RPD	RPDLimit	Qual
Client ID: PBS Prep Date: 9/17/2020 Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Bromofluorobenzene Sample ID: LCS-55234	Batc Analysis I Result ND ND ND 1.0	h ID: 552 Date: 9 /1 PQL 0.025 0.050 0.050 0.10 Type: LC h ID: 552	234 19/2020 SPK value 1.000 S 234	F SPK Ref Val Tes F	RunNo: 71 SeqNo: 25 %REC 100	993 20171 LowLimit 80 24 Method 993	Units: mg/K HighLimit 120	g %RPD	RPDLimit	Qual
Client ID: PBS Prep Date: 9/17/2020 Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Bromofluorobenzene Sample ID: LCS-55234 Client ID: LCSS	Batc Analysis I ND ND ND 1.0 Samp Batc	h ID: 552 Date: 9 /1 PQL 0.025 0.050 0.050 0.10 Type: LC h ID: 552	234 19/2020 SPK value 1.000 S 234	F SPK Ref Val Tes F	RunNo: 71 SeqNo: 25 %REC 100 ttCode: EF RunNo: 71	993 20171 LowLimit 80 24 Method 993	Units: mg/K HighLimit 120 8021B: Volati	g %RPD	RPDLimit	Qual
Client ID: PBS Prep Date: 9/17/2020 Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Bromofluorobenzene Sample ID: LCS-55234 Client ID: LCSS Prep Date: 9/17/2020	Batc Analysis I ND ND ND 1.0 Samp Batc Analysis I	h ID: 552 Date: 9/1 PQL 0.025 0.050 0.050 0.10 Type: LC Date: 9/1	234 19/2020 SPK value 1.000 S 234 19/2020	F SPK Ref Val Tes F	RunNo: 71 SeqNo: 25 %REC 100 ttCode: EF RunNo: 71 SeqNo: 25	993 20171 LowLimit 80 PA Method 993 320172	Units: mg/K HighLimit 120 8021B: Volati Units: mg/K	g %RPD les g		
Client ID: PBS Prep Date: 9/17/2020 Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Bromofluorobenzene Sample ID: LCS-55234 Client ID: LCSS Prep Date: 9/17/2020 Analyte	Batc Analysis I ND ND ND 1.0 Samp Batc Analysis I Result	h ID: 552 Date: 9 /1 PQL 0.025 0.050 0.050 0.10 Type: LC h ID: 552 Date: 9 /1 PQL	234 19/2020 SPK value 1.000 S 234 19/2020 SPK value	F SPK Ref Val Tes F SPK Ref Val	RunNo: 71 SeqNo: 25 %REC 100 itCode: EF RunNo: 71 SeqNo: 25 %REC	993 20171 LowLimit 80 24 Method 993 20172 LowLimit	Units: mg/K HighLimit 120 8021B: Volati Units: mg/K HighLimit	g %RPD les g		
Client ID: PBS Prep Date: 9/17/2020 Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Bromofluorobenzene Sample ID: LCS-55234 Client ID: LCSS Prep Date: 9/17/2020 Analyte Benzene	Batc Analysis I ND ND ND 1.0 Samp Batc Analysis I Result 0.97	h ID: 552 Date: 9/1 PQL 0.025 0.050 0.050 0.10 Type: LC: h ID: 552 Date: 9/1 PQL 0.025	234 19/2020 SPK value 1.000 S 234 19/2020 SPK value 1.000	F SPK Ref Val Tes SPK Ref Val 0	RunNo: 71 SeqNo: 25 %REC 100 ttCode: EF RunNo: 71 SeqNo: 25 %REC 97.0	993 20171 LowLimit 80 A Method 993 320172 LowLimit 80	Units: mg/K HighLimit 120 8021B: Volati Units: mg/K HighLimit 120	g %RPD les g		
Client ID: PBS Prep Date: 9/17/2020 Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Bromofluorobenzene Sample ID: LCS-55234 Client ID: LCSS Prep Date: 9/17/2020 Analyte Benzene Toluene	Batc Analysis I ND ND ND 1.0 Samp Batc Analysis I Result 0.97 1.0	h ID: 552 Date: 9/1 PQL 0.025 0.050 0.050 0.10 Type: LC: h ID: 552 Date: 9/1 PQL 0.025 0.050	234 19/2020 SPK value 1.000 S 234 19/2020 SPK value 1.000 1.000	F SPK Ref Val	RunNo: 71 SeqNo: 25 %REC 100 ttCode: EF RunNo: 71 SeqNo: 25 %REC 97.0 101	993 20171 LowLimit 80 24 Method 993 20172 LowLimit 80 80 80	Units: mg/K HighLimit 120 8021B: Volati Units: mg/K HighLimit 120 120	g %RPD les g		

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to MatrixH Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative 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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WO#: **2009976**

21-Sep-20

Client:

QC SUMMARY REPORT Hall Envi aboratory,

HILCORP ENERGY

Value exceeds Maximum Contaminant Level.	
Sample Diluted Due to Matrix	

- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit

Qualifiers: *

D

- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank Е
- Value above quantitation range J Analyte detected below quantitation limits
- Р Sample pH Not In Range

Reporting Limit RL

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		•		
ironmental A	Analysis	Laboratory.	Inc.	

Project:	Howell M	1									
Sample ID:	2009976-002ams	SampT	уре: МS	;	Tes	tCode: EF	PA Method	8021B: Volatil	es		
Client ID:	BH01@38'-40'	Batch	n ID: 552	234	F	RunNo: 71	993				
Prep Date:	9/17/2020	Analysis D	Date: 9/ 1	19/2020	S	SeqNo: 2	520177	Units: mg/Kg	9		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene		0.89	0.024	0.9416	0.02586	92.1	76.3	120			
Toluene		0.94	0.047	0.9416	0.01820	98.2	78.5	120			
Ethylbenzene		0.97	0.047	0.9416	0.01791	101	78.1	124			
Xylenes, Total		2.9	0.094	2.825	0.04655	103	79.3	125			
Surr: 4-Bron	nofluorobenzene	0.96		0.9416		102	80	120			
Sample ID:	2009976-002amsd	SampT	уре: МS	D	Tes	tCode: EF	PA Method	8021B: Volatil	es		
Client ID:	BH01@38'-40'	Batch	n ID: 552	234	F	RunNo: 7 1	1993				
Prep Date:	9/17/2020	Analysis E	Date: 9/ 1	19/2020	S	SeqNo: 2	520178	Units: mg/Kg	9		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene		0.95	0.024	0.9588	0.02586	96.9	76.3	120	6.63	20	
Toluene		1.0	0.048	0.9588	0.01820	103	78.5	120	6.58	20	
Ethylbenzene		1.0	0.048	0.9588	0.01791	107	78.1	124	7.46	20	
Xylenes, Total		3.1	0.096	2.876	0.04655	107	79.3	125	6.26	20	
Surr: 4-Bron	nofluorobenzene	0.98		0.9588		102	80	120	0	0	
Sample ID:	mb-55251	SampT	уре: МВ	IK	Tes	tCode: EF	PA Method	8021B: Volatil	es		
Client ID:	PBS	Batch	n ID: 552	251	F	RunNo: 7 1	1993				
Prep Date:	9/17/2020	Analysis D	Date: 9/2	20/2020	S	SeqNo: 2	520197	Units: %Rec			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bron	nofluorobenzene	0.98		1.000		97.6	80	120			
Sample ID:	LCS-55251	SampT	ype: LC	s	Tes	tCode: EF	PA Method	8021B: Volatil	es		
Client ID:	LCSS	Batch	n ID: 552	251	F	RunNo: 71	1993				
Prep Date:	9/17/2020	Analysis D	Date: 9/2	20/2020	S	SeqNo: 2	520198	Units: %Rec			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
	nofluorobenzene	1.0		1.000		99.7	80	120			

WO#: 2009976

21-Sep-20

	LL VIRONMEN IALYSIS BORATORY		Hall Environme TEL: 505-345 Website: clien	490) Albuquerqu 3975 FAX: 5	Hawkins NE 16, NM 87109	Sa l	mple Log-In C	check List
Client Nam	ie: HILCOR	P ENERGY	Work Order Num	nber: 2009	976		RcptNo:	1
Received E	By: Scott A	nderson	9/17/2020 8:03:00	AM				
Completed	By: Juan R	ojas	9/17/2020 8:06:28	AM	4	hand		
Reviewed E	v: JR9	17/20						
Chain of (<u>Custody</u>							
1. Is Chain	of Custody cor	nplete?		Yes	\checkmark	No 🗌	Not Present	
2. How was	the sample de	livered?		<u>Couri</u>	er			
<u>Log In</u>								
	attempt made t	o cool the samples?		Yes		No 🗌	NA 🗌	
4 10/ana all -						Nia 🗔		
4. vvere all :	samples receiv	ed at a temperature	of >0° C to 6.0°C	Yes	\checkmark	No 🛄	NA 🗌	
5. Sample(s) in proper con	tainer(s)?		Yes	\checkmark	No 🗌		
6. Sufficient	sample volume	e for indicated test(s)	?	Yes [✓	No 🗌		
7. Are samp	les (except VO	A and ONG) properly	preserved?	Yes	/	No 🗌		
_	ervative added			Yes [···-]	No 🗹	NA 🗀	
0 Deceived		and the second			— 1	· [""]		
		with headspace <1/4		Yes [NA 🗹	
TU, were any	sample conta	iners received broker	12	Yes		No 🗹	# of preserved	
11. Does pap	erwork match t	ottle labels?		Yes		No	bottles checked for pH:	
		hain of custody)			—			12 unless noted)
		entified on Chain of (Sustody?	Yes		No 🗌	Adjusted?	
		were requested?		Yes		No 🗌		
	olding times al	ole to be met? r authorization.)		Yes		No 🗌	,⊘hecked by: <u>Γ</u>	05/F1/P DAC
	ndling (if a							
		discrepancies with the	nis order?	Yes		No 🗌	NA 🗹	
ſ	son Notified:							
		• • • • • • • • • • • • • • • • • • •	Date	••••••••••••••••••••••••••••••••••••••	· · · · · · · · · · · · · · · · · · ·			
	Whom:		Via:	eMai	Phone [e 🔄 Fax	In Person	
	parding:			****			11 199 11 At 1 da	
16. Additiona	nt Instructions: 	, p erent (11		ba and dis as an ang as an b a ang p a p a _a ng				
17. <u>Cooler I</u> Coole	INCOMENDATION OF A DAMAGE AND A D	C Condition Se	al Intact Seal No	Seal Dat	e eia	ned By	11	
1	5.0	Good		્યુકલા છેલા		.~~ <u>µy</u>	8	

lient: Hilcorp Energy Company Attn: Clara Cardoza ailing Address:	•	Time: Rush : M 4	Same day results for <u>BH02</u> 11	-	490		A	N /	AL v.hal	YS lenvi	IS ronr	5 L		m	RA'	TO	
	Project #:				Te	el. 50	5-34	5-39					345-4	4107			
hone #:					/ 11				A		sis	Req	uest				F
mail or Fax#: <u>CCardoza @hilcorp.com</u> A/QC Package: Standard □ Level 4 (Full Validation)	Project Mana LTE-D 74	ger: anny Bu <u>01-570-</u>	fns 1727	rs (8021)	(O / MRO)	PCB's		8270SIMS		PO4, SO4			(Present/Absent)				
ccreditation: Az Compliance NELAC Other	Sampler: D	· Burns	□ No	BET TMB'S	GRO / DRO	ides/8082	od 504.1)		tals	10 ₃ , NO ₂ ,		-VOA)	rm (Prese		:		
	Container	Preservative		BTEX MTBE	TPH:80150GRO	8081 Pesticides/8082	EDB (Method 504.1)	PAHs by 8310 or		CI)F, Br, NO ₃ ,	8260 (VOA)	8270 (Semi-VOA)	Total Coliform				
ate Time Matrix Sample Name 16-20 09:45 5014 8H 01@25'-30'	Type and # $1 - 4_{02}$.	Type CooL	-001	X	$\overline{\mathbf{A}}$	<u></u>			<u> </u>	X	<u></u>	8				_	
1 10:30 1 BHOI@ 38'-40'	1	1	-002	Î	1			• .		i							+
13:00 BH02@25'-30'			-003			_									-		╈
V 13:30 V BH02@46'	¢.	\mathbf{V}	-004	V	$\mathbf{\nabla}$		_			V							1
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							+		_							╈	╉
1620 17:00 Dillo	Received by: Space Received by:	Via: suniGn Via:	Date Time <u>7 · (7 · 20</u> 8 :03 Date Time	Ren CC	narks 7 (s Jh Jb	enc	um LS	an Q	ne It) - en	ter v.c	W.	C 61 1	M		

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September 22, 2020

Danny Burns HILCORP ENERGY PO Box 4700 Farmington, NM 87499 TEL: (505) 564-0733 FAX: Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: clients.hallenvironmental.com

RE: Howell M 1

OrderNo.: 2009A88

Dear Danny Burns:

Hall Environmental Analysis Laboratory received 2 sample(s) on 9/18/2020 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

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

CLIENT: HILCORP ENERGY

Project: Howell M 1

Analytical Report

Hall Environmental Analysis Laboratory, Inc.

Lab Order **2009A88** Date Reported: **9/22/2020**

Client Sample ID: BH03 @ 30'-35' Collection Date: 9/17/2020 11:45:00 AM

Lab ID: 2009A88-001	Matrix: SOIL		Received Date	e: 9/1	18/2020 8:00:00 AM	
Analyses	Result	RL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analyst	: JMT
Chloride	ND	60	mg/Kg	20	9/21/2020 2:16:39 PM	55323
EPA METHOD 8015D MOD: GASOLII	NE RANGE				Analyst	DJF
Gasoline Range Organics (GRO)	430	25	mg/Kg	5	9/20/2020 1:58:49 PM	55273
Surr: BFB	112	70-130	%Rec	5	9/20/2020 1:58:49 PM	55273
EPA METHOD 8015M/D: DIESEL RAI	NGE ORGANICS				Analyst	: mb
Diesel Range Organics (DRO)	140	8.9	mg/Kg	1	9/21/2020 12:14:38 PM	55283
Motor Oil Range Organics (MRO)	89	44	mg/Kg	1	9/21/2020 12:14:38 PM	55283
Surr: DNOP	117	30.4-154	%Rec	1	9/21/2020 12:14:38 PM	55283
EPA METHOD 8260B: VOLATILES S	HORT LIST				Analyst	DJF
Benzene	ND	0.12	mg/Kg	5	9/20/2020 1:58:49 PM	55273
Toluene	0.80	0.25	mg/Kg	5	9/20/2020 1:58:49 PM	55273
Ethylbenzene	0.80	0.25	mg/Kg	5	9/20/2020 1:58:49 PM	55273
Xylenes, Total	13	0.49	mg/Kg	5	9/20/2020 1:58:49 PM	55273
Surr: 1,2-Dichloroethane-d4	96.3	70-130	%Rec	5	9/20/2020 1:58:49 PM	55273
Surr: 4-Bromofluorobenzene	103	70-130	%Rec	5	9/20/2020 1:58:49 PM	55273
Surr: Dibromofluoromethane	107	70-130	%Rec	5	9/20/2020 1:58:49 PM	55273
Surr: Toluene-d8	98.3	70-130	%Rec	5	9/20/2020 1:58:49 PM	55273

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 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 1 of 8

Analytical Report

Lab Order 2009A88

Date Reported: 9/22/2020

CLIENT: HILCORP ENERGY Project: Howell M 1			ient Sample II Collection Dat		H03 @ 47' 17/2020 12:15:00 PM	
Lab ID: 2009A88-002	Matrix: SOIL		Received Dat	e: 9/1	18/2020 8:00:00 AM	
Analyses	Result	RL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analyst:	MRA
Chloride	84	60	mg/Kg	20	9/18/2020 12:58:43 PM	55265
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst	BRM
Diesel Range Organics (DRO)	ND	9.1	mg/Kg	1	9/18/2020 10:01:11 AM	55261
Motor Oil Range Organics (MRO)	ND	45	mg/Kg	1	9/18/2020 10:01:11 AM	55261
Surr: DNOP	94.7	30.4-154	%Rec	1	9/18/2020 10:01:11 AM	55261
EPA METHOD 8015D: GASOLINE RANGE	E				Analyst	RAA
Gasoline Range Organics (GRO)	ND	17	mg/Kg	5	9/18/2020 12:58:34 PM	55217
Surr: BFB	96.6	75.3-105	%Rec	5	9/18/2020 12:58:34 PM	55217
EPA METHOD 8021B: VOLATILES					Analyst	RAA
Benzene	ND	0.086	mg/Kg	5	9/18/2020 12:58:34 PM	55217
Toluene	ND	0.17	mg/Kg	5	9/18/2020 12:58:34 PM	55217
Ethylbenzene	ND	0.17	mg/Kg	5	9/18/2020 12:58:34 PM	55217
Xylenes, Total	ND	0.35	mg/Kg	5	9/18/2020 12:58:34 PM	55217
Surr: 4-Bromofluorobenzene	101	80-120	%Rec	5	9/18/2020 12:58:34 PM	55217

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

Qualifiers:

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- Н Holding times for preparation or analysis exceeded
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- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

Page 2 of 8

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Client:	HILCOR	P ENERGY								
Project:	Howell N	í 1								
Sample ID:	MB-55265	SampType: m	blk	Tes	tCode: EF	PA Method	300.0: Anions	\$		
Client ID:	PBS	Batch ID: 55	265	F	unNo: 71	1998				
Prep Date:	9/18/2020	Analysis Date: 9	/18/2020	S	eqNo: 2	520645	Units: mg/K	g		
Analyte Chloride		Result PQL ND 1.5	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sample ID:	LCS-55265	SampType: Ic:	\$	Tes	tCode: EF	PA Method	300.0: Anions	\$		
Client ID:	LCSS	Batch ID: 55	265	F	unNo: 71	1998				
Prep Date:	9/18/2020	Analysis Date: 9	/18/2020	S	eqNo: 2	520646	Units: mg/K	g		
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		14 1.5	15.00	0	93.6	90	110			
Sample ID:	MB-55323	SampType: m	blk	Tes	tCode: EF	PA Method	300.0: Anions	5		
Client ID:	PBS	Batch ID: 55	323	F	unNo: 72	2032				
Prep Date:	9/21/2020	Analysis Date: 9	/21/2020	S	eqNo: 2	522893	Units: mg/K	g		
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND 1.5								
Sample ID:	LCS-55323	SampType: Ic:	6	Tes	tCode: EF	PA Method	300.0: Anions	\$		
Client ID:	LCSS	Batch ID: 55	323	F	unNo: 72	2032				
Prep Date:	9/21/2020	Analysis Date: 9	/21/2020	S	eqNo: 2	522895	Units: mg/K	g		
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		14 1.5	15.00	0	90.1	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 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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2009A88

22-Sep-20

Client: HILCON	RP ENERGY								
Project: Howell	M 1								
Sample ID: MB-55261	SampType:	MBLK	Tes	tCode: EP	PA Method	8015M/D: Die	esel Range	e Organics	
Client ID: PBS	Batch ID:	55261	F	RunNo: 71	952				
Prep Date: 9/18/2020	Analysis Date:	9/18/2020	S	SeqNo: 25	518515	Units: mg/K	g		
Analyte	Result PC	QL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10							
Motor Oil Range Organics (MRO)	ND	50							
Surr: DNOP	10	10.00		99.9	30.4	154			
Sample ID: LCS-55261	SampType:	LCS	Tes	tCode: EP	PA Method	8015M/D: Die	esel Range	e Organics	
Client ID: LCSS	Batch ID:	55261	F	RunNo: 71	952				
Prep Date: 9/18/2020	Analysis Date:	9/18/2020	S	SeqNo: 25	518516	Units: mg/K	g		
Analyte	Result PC	QL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10 50.00	0	93.4	70	130			
Surr: DNOP	4.8	5.000		96.6	30.4	154			
Sample ID: LCS-55283	SampType:	LCS	Tes	tCode: EP	PA Method	8015M/D: Die	esel Range	e Organics	
Client ID: LCSS	Batch ID:	55283	F	RunNo: 72	2031				
Prep Date: 9/19/2020	Analysis Date:	9/21/2020	S	SeqNo: 25	522561	Units: mg/K	g		
Analyte	Result PC	QL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10 50.00	0	102	70	130			
Surr: DNOP	5.4	5.000		108	30.4	154			
Sample ID: MB-55283	SampType:	MBLK	Tes	tCode: EP	PA Method	8015M/D: Die	esel Range	e Organics	
Client ID: PBS	Batch ID:	55283	F	RunNo: 72	2031				
Prep Date: 9/19/2020	Analysis Date:	9/21/2020	S	SeqNo: 25	522562	Units: mg/K	g		
Analyte	Result PC	QL 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	13	10.00		127	30.4	154			

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 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

2009A88

22-Sep-20

Client: Project:	HILCO Howell	RP ENERGY M 1								
Sample ID: Client ID:		SampType: LC Batch ID: 55			tCode: EP		8015D: Gasol	line Rang	e	
	9/16/2020	Analysis Date: 9/			SeqNo: 25		Units: mg/Kg	g		
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang Surr: BFB	e Organics (GRO)	25 5.0 1100	25.00 1000	0	101 108	72.5 75.3	106 105			S
Sample ID:	mb-55217	SampType: M	BLK	Tes	tCode: EF	PA Method	8015D: Gasol	line Rang	e	
Client ID:	PBS	Batch ID: 55	217	R	tunNo: 71	963				
Prep Date:	9/16/2020	Analysis Date: 9/	18/2020	S	SeqNo: 25	519203	Units: mg/Kg	g		
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang Surr: BFB	je Organics (GRO)	ND 5.0 970	1000		96.6	75.3	105			
Sample ID:	lcs-55219	SampType: LC	S	Tes	tCode: EP	PA Method	8015D: Gasol	line Rang	e	
Client ID:	LCSS	Batch ID: 55	219	R	tunNo: 71	963				
Prep Date:	9/16/2020	Analysis Date: 9/	18/2020	S	eqNo: 25	519548	Units: %Rec	;		
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB		1000	1000		104	75.3	105			
Sample ID:	mb-55219	SampType: M	BLK	Tes	tCode: EF	A Method	8015D: Gasol	line Rang	e	
Client ID:	PBS	Batch ID: 55	219	R	tunNo: 71	963				
Prep Date:	9/16/2020	Analysis Date: 9/	18/2020	S	eqNo: 25	519549	Units: %Rec	:		
Analyte		Result PQL		SPK Ref Val		LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB		950	1000		95.4	75.3	105			

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 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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2009A88

22-Sep-20

Client:

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

HILCORP ENERGY

Project: Howel	1 M 1									
Sample ID: LCS-55217	SampT	Гуре: LC	S	Tes	tCode: El	PA Method	8021B: Vola	tiles		
Client ID: LCSS	Batch	h ID: 55	217	F	RunNo: 7	1963				
Prep Date: 9/16/2020	Analysis D	Date: 9/	18/2020	5	SeqNo: 2	519215	Units: mg/ #	٢g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.025	1.000	0	89.6	80	120			
Toluene	0.94	0.050	1.000	0	93.6	80	120			
Ethylbenzene	0.95	0.050	1.000	0	95.2	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.4	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		103	80	120			
Sample ID: mb-55217	SampT	Гуре: МЕ	BLK	Tes	tCode: El	PA Method	8021B: Vola	tiles		
Client ID: PBS	Batch	h ID: 55	217	F	RunNo: 7	1963				
Prep Date: 9/16/2020	Analysis D	Date: 9/	18/2020	S	SeqNo: 2	519216	Units: mg/k	٢g		
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		0.40								
Ayleries, rolai	ND	0.10								

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 range due to dilution or matrix

Released to Imaging: 11/14/2022 10:55:02 AM

- 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 8

2009A88

22-Sep-20

Client:

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

0.53

0.49

0.5000

0.5000

HILCORP ENERGY

Project: Howell N	M 1									
Sample ID: mb-55273	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8260B: Volat	iles Short	List	
Client ID: PBS	Batcl	h ID: 55	273	F	RunNo: 7	1984				
Prep Date: 9/18/2020	Analysis D	Date: 9/	19/2020	S	SeqNo: 2	519815	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: 1,2-Dichloroethane-d4	0.45		0.5000		90.7	70	130			
Surr: 4-Bromofluorobenzene	0.52		0.5000		104	70	130			
Surr: Dibromofluoromethane	0.52		0.5000		104	70	130			
Surr: Toluene-d8	0.49		0.5000		98.4	70	130			
Sample ID: Ics-55273	SampT	ype: LC	S4	Tes	tCode: El	PA Method	8260B: Volat	iles Short	List	
Client ID: BatchQC	Batcl	h ID: 55	273	F	RunNo: 7	1984				
Prep Date: 9/18/2020	Analysis D	0ate: 9/	19/2020	S	SeqNo: 2	519816	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.98	0.025	1.000	0	97.8	80	120			
Toluene	1.0	0.050	1.000	0	102	80	120			
Ethylbenzene	1.0	0.050	1.000	0	102	80	120			
Xylenes, Total	3.2	0.10	3.000	0	107	80	120			
Surr: 1,2-Dichloroethane-d4	0.46		0.5000		92.2	70	130			
Surr: 4-Bromofluorobenzene	0.51		0.5000		102	70	130			

Qualifiers:

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

Surr: Dibromofluoromethane

Surr: Toluene-d8

% Recovery outside of range due to dilution or matrix S

в Analyte detected in the associated Method Blank

107

97.4

70

70

130

130

- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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22-Sep-20

2009A88

Client:HILCOProject:Howell	RP ENERGY M 1									
Sample ID: mb-55273	SampType: MBLK TestCode: EPA Method 8015D Mod: Gasoline Range									
Client ID: PBS	Batch ID: 55273		RunNo: 71984							
Prep Date: 9/18/2020	Analysis Date:	9/19/2020	SeqNo: 2519845			Units: mg/K	Units: mg/Kg			
Analyte	Result PC	L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	ND 5	5.0								
Surr: BFB	510	500.0		103	70	130				
Sample ID: Ics-55273	SampType:	LCS	Tes	tCode: EF	PA Method	8015D Mod:	Gasoline	Range		
Client ID: LCSS	Batch ID:	55273	RunNo: 71984							
Prep Date: 9/18/2020	Analysis Date:	9/19/2020	S	SeqNo: 25	519846	Units: mg/K	g			
Analyte	Result PC	L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	22 5	5.0 25.00	0	88.6	70	130				
Surr: BFB	520	500.0		103	70	130				

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative 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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WO#: 2009A88 22-Sep-20

73	20	-	0.0
Page	30	01	92

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HALL ENVIRONMENTAL ANALYSIS LABORATORY	Hall Environmental Albi TEL: 505-345-3975 Website: clients.ha	wkins NE NM 87109 Sa 345-4107	Sample Log-In Check List			
Client Name: HILCORP ENERGY	Work Order Number:	2009A88	3	RcptN	o: 1	
Received By: Emily Mocho	9/18/2020 8:00:00 AM					
Completed By: Emily Mocho	9/18/2020 8:11:35 AM					
Reviewed By: Crrc	9/18/20					
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 sample	es?	Yes 🗹	No	NA 🗌		
4. Were all samples received at a temperate	ure 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 tes	st(s)?	Yes 🗹	No 🗌			
7. Are samples (except VOA and ONG) prop	perly 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 🗸	# of preserved		
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)		Yes 🗹	No 🗌		or >12 unless noted	
12. Are matrices correctly identified on Chain	of Custody?	Yes 🗹	No 🗌	Adjusted?		
13. Is it clear what analyses were requested?		Yes 🗸	No 🗌		Com all	
14. Were all holding times able to be met? (If no, notify customer for authorization.)		Yes 🗹	No	Checked by:	EM 911	
Special Handling (if applicable)				1		
15. Was client notified of all discrepancies w	ith this order?	Yes 🗌	No 🗌	NA 🗸		
Person Notified:	Date:		an descontantes contractes (1953)			
By Whom:	Via:	eMail	Phone Fa	x 🔄 In Person		
Regarding:						
Client Instructions:						
16. Additional remarks:						
Cooler Information Cooler No Temp °C Condition 1 0.6 Good	Seal Intact Seal No S Yes	eal Date	Signed By			

Page 1 of 1

Client:	H <u>Clara</u> Address	icorp ~ ca	ustody Record Edargy rdoza	Turn-Around □ Standard Project Name ↓↓ Project #:	🛛 Rush	<u>15ame Day 47'sa</u> n #1	www.hallenvironmental.com 4901 Hawkins NE - Albuquerque, NM 87109 Tel. 505-345-3975 Fax 505-345-4107 Analysis Request						r								
QA/QC I	Package: dard tation: AC		□ Level 4 (Full Validation) pmpliance r	Sampler: On Ice: # of Coolers: Cooler Temp	Dy Burns 570-47 D. Burns PYes	□ No 5+0-1=0.6(°C)	BIEX 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	F, Br, NO ₃ , NO ₂ , PO ₄ , SO ₄	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)					
Date	Time	Matrix	Sample Name		Туре	2009A88	BT	TP	808		PA	RC	Ī	826	827	Tot		_	\perp		\perp
9/17	1145	501)	BH03 @ 30'-35'			001	×	r					×		99	1.00					_
9/17	1215	50:1	BH23 @ 471			002	x	Y					×					1			
																	_				
																					-
												_						-	+	-	+
																			_		$\frac{1}{1}$
Date: 9// 7 Date:	Time: 15 <i>0</i> 0 Time:	Relinquist	a carrol	Received by: GM C Received by:	Via: DWTIET Via:	Date Time 9/18/20 8:00 Date Time	Ren	narks	s: 50	ame hen	e d	ar	for	tt znr.	h- Cor	BH	03 Q	e 4	7' int	-ac	t
						2			ec	an	oii G	2 It	eni	1.00	r^)		5-	Zi	int ng	(18	20

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.

92



September 30, 2020

Clara Cardoza HILCORP ENERGY PO Box 4700 Farmington, NM 87499 TEL: (505) 564-0733 FAX Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: clients.hallenvironmental.com

RE: Howell M 1

OrderNo.: 2009B86

Dear Clara Cardoza:

Hall Environmental Analysis Laboratory received 8 sample(s) on 9/19/2020 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

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

CLIENT: HILCORP ENERGY

Project: Howell M 1

Analytical Report Lab Order 2009B86

Date Reported: 9/30/2020

Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: BH04@ 15'-20' Collection Date: 9/17/2020 1:45:00 PM wed Data: 0/10/2020 8.20.00 AM ъ

Lab ID: 2009B86-001	Matrix: SOIL	Rece	ived Date:	9/19/2	020 8:30:00 AM
Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RAI	NGE ORGANICS				Analyst: BRM
Diesel Range Organics (DRO)	ND	9.6	mg/Kg	1	9/23/2020 1:55:13 PM
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	9/23/2020 1:55:13 PM
Surr: DNOP	78.9	30.4-154	%Rec	1	9/23/2020 1:55:13 PM
EPA METHOD 300.0: ANIONS					Analyst: CAS
Chloride	100	61	mg/Kg	20	9/28/2020 7:01:48 PM
EPA METHOD 8260B: VOLATILES S	HORT LIST				Analyst: JMR
Benzene	ND	0.025	mg/Kg	1	9/23/2020 7:52:07 AM
Toluene	ND	0.049	mg/Kg	1	9/23/2020 7:52:07 AM
Ethylbenzene	ND	0.049	mg/Kg	1	9/23/2020 7:52:07 AM
Xylenes, Total	ND	0.098	mg/Kg	1	9/23/2020 7:52:07 AM
Surr: 1,2-Dichloroethane-d4	90.3	70-130	%Rec	1	9/23/2020 7:52:07 AM
Surr: 4-Bromofluorobenzene	100	70-130	%Rec	1	9/23/2020 7:52:07 AM
Surr: Dibromofluoromethane	109	70-130	%Rec	1	9/23/2020 7:52:07 AM
Surr: Toluene-d8	99.5	70-130	%Rec	1	9/23/2020 7:52:07 AM
EPA METHOD 8015D MOD: GASOLI	NE RANGE				Analyst: JMR
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	9/23/2020 7:52:07 AM
Surr: BFB	105	70-130	%Rec	1	9/23/2020 7:52:07 AM

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

Qualifiers:

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

- в Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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CLIENT: HILCORP ENERGY

Diesel Range Organics (DRO)

Howell M 1

2009B86-002

Project:

Lab ID:

Analyses

Analytical Report Lab Order 2009B86

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/30/2020 Client Sample ID: BH04@ 43'-45' Collection Date: 9/17/2020 2:20:00 PM Matrix: SOIL Received Date: 9/19/2020 8:30:00 AM Result **RL** Qual Units DF **Date Analyzed EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: BRM ND 9/23/2020 2:05:07 PM 9.1 mg/Kg 1 ND 45 mg/Kg 1 9/23/2020 2:05:07 PM

Motor Oil Range Organics (MRO)	ND	45	mg/Kg	1	9/23/2020 2:05:07 PM
Surr: DNOP	93.2	30.4-154	%Rec	1	9/23/2020 2:05:07 PM
EPA METHOD 300.0: ANIONS					Analyst: CAS
Chloride	ND	60	mg/Kg	20	9/28/2020 8:03:50 PM
EPA METHOD 8260B: VOLATILES SHORT LIST					Analyst: JMR
Benzene	ND	0.024	mg/Kg	1	9/23/2020 6:27:55 PM
Toluene	ND	0.049	mg/Kg	1	9/23/2020 6:27:55 PM
Ethylbenzene	ND	0.049	mg/Kg	1	9/23/2020 6:27:55 PM
Xylenes, Total	ND	0.097	mg/Kg	1	9/23/2020 6:27:55 PM
Surr: 1,2-Dichloroethane-d4	85.8	70-130	%Rec	1	9/23/2020 6:27:55 PM
Surr: 4-Bromofluorobenzene	101	70-130	%Rec	1	9/23/2020 6:27:55 PM
Surr: Dibromofluoromethane	108	70-130	%Rec	1	9/23/2020 6:27:55 PM
Surr: Toluene-d8	97.1	70-130	%Rec	1	9/23/2020 6:27:55 PM
EPA METHOD 8015D MOD: GASOLINE RANGE					Analyst: JMR
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	9/23/2020 6:27:55 PM
Surr: BFB	105	70-130	%Rec	1	9/23/2020 6:27:55 PM

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

Qualifiers:

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

- в Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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Date Reported: 9/30/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY Client Sample ID: BH05@ 35'-40' **Project:** Howell M 1 Collection Date: 9/17/2020 4:20:00 PM Lab ID: 2009B86-003 Matrix: SOIL Received Date: 9/19/2020 8:30:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: BRM Diesel Range Organics (DRO) ND 9.7 mg/Kg 1 9/23/2020 2:14:59 PM Motor Oil Range Organics (MRO) ND 48 mg/Kg 1 9/23/2020 2:14:59 PM Surr: DNOP 89.5 30.4-154 %Rec 1 9/23/2020 2:14:59 PM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride ND 9/28/2020 8:16:15 PM 60 mg/Kg 20 **EPA METHOD 8260B: VOLATILES SHORT LIST** Analyst: JMR Benzene ND 0.025 mg/Kg 9/23/2020 7:53:25 PM 1 Toluene ND 0.050 mg/Kg 9/23/2020 7:53:25 PM 1 Ethvlbenzene ND 0.050 mg/Kg 1 9/23/2020 7:53:25 PM Xylenes, Total ND 0.099 mg/Kg 1 9/23/2020 7:53:25 PM Surr: 1.2-Dichloroethane-d4 90.0 70-130 %Rec 1 9/23/2020 7:53:25 PM Surr: 4-Bromofluorobenzene 102 70-130 %Rec 1 9/23/2020 7:53:25 PM Surr: Dibromofluoromethane 105 70-130 %Rec 1 9/23/2020 7:53:25 PM Surr: Toluene-d8 92.5 70-130 %Rec 1 9/23/2020 7:53:25 PM **EPA METHOD 8015D MOD: GASOLINE RANGE** Analyst: JMR Gasoline Range Organics (GRO) ND mg/Kg 9/23/2020 7:53:25 PM 5.0 1 Surr: BFB 102 70-130 %Rec 1 9/23/2020 7:53:25 PM

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

Qualifiers:

- Value exceeds Maximum Contaminant Level.
 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 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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Date Reported: 9/30/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY Client Sample ID: BH05@ 40'-45' Collection Date: 9/17/2020 4:30:00 PM **Project:** Howell M 1 Lab ID: 2009B86-004 Matrix: SOIL Received Date: 9/19/2020 8:30:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: BRM Diesel Range Organics (DRO) ND 10 mg/Kg 1 9/23/2020 2:24:52 PM Motor Oil Range Organics (MRO) ND 50 mg/Kg 1 9/23/2020 2:24:52 PM Surr: DNOP 80.3 30.4-154 %Rec 1 9/23/2020 2:24:52 PM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride ND 9/28/2020 6:16:13 PM 60 mg/Kg 20 **EPA METHOD 8260B: VOLATILES SHORT LIST** Analyst: JMR Benzene ND 0.024 mg/Kg 9/23/2020 8:21:52 PM 1 Toluene ND 0.049 mg/Kg 9/23/2020 8:21:52 PM 1 9/23/2020 8:21:52 PM Ethvlbenzene ND 0.049 mg/Kg 1 Xylenes, Total ND 0.097 mg/Kg 1 9/23/2020 8:21:52 PM Surr: 1.2-Dichloroethane-d4 94.2 70-130 %Rec 1 9/23/2020 8:21:52 PM Surr: 4-Bromofluorobenzene 104 70-130 %Rec 1 9/23/2020 8:21:52 PM Surr: Dibromofluoromethane 108 70-130 %Rec 1 9/23/2020 8:21:52 PM Surr: Toluene-d8 98.7 70-130 %Rec 1 9/23/2020 8:21:52 PM **EPA METHOD 8015D MOD: GASOLINE RANGE** Analyst: JMR Gasoline Range Organics (GRO) ND mg/Kg 9/23/2020 8:21:52 PM 49 1 Surr: BFB 106 70-130 %Rec 1 9/23/2020 8:21:52 PM

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

Qualifiers:

- Value exceeds Maximum Contaminant Level.
 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 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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Date Reported: 9/30/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY Client Sample ID: BH06@ 35'-40' **Project:** Howell M 1 Collection Date: 9/18/2020 11:20:00 AM Lab ID: 2009B86-005 Matrix: SOIL Received Date: 9/19/2020 8:30:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: BRM Diesel Range Organics (DRO) ND 8.8 mg/Kg 1 9/23/2020 2:34:44 PM Motor Oil Range Organics (MRO) ND 44 mg/Kg 1 9/23/2020 2:34:44 PM Surr: DNOP 87.0 30.4-154 %Rec 1 9/23/2020 2:34:44 PM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride ND 9/28/2020 6:53:26 PM 60 mg/Kg 20 **EPA METHOD 8260B: VOLATILES SHORT LIST** Analyst: JMR Benzene 0.054 0.024 mg/Kg 9/23/2020 8:50:27 PM 1 Toluene ND 0.048 mg/Kg 9/23/2020 8:50:27 PM 1 Ethvlbenzene ND 0.048 mg/Kg 1 9/23/2020 8:50:27 PM Xylenes, Total 0.13 0.097 mg/Kg 1 9/23/2020 8:50:27 PM Surr: 1.2-Dichloroethane-d4 87.9 70-130 %Rec 1 9/23/2020 8:50:27 PM Surr: 4-Bromofluorobenzene 97.0 70-130 %Rec 1 9/23/2020 8:50:27 PM Surr: Dibromofluoromethane 102 70-130 %Rec 1 9/23/2020 8:50:27 PM Surr: Toluene-d8 94.9 70-130 %Rec 1 9/23/2020 8:50:27 PM

EPA METHOD 8015D MOD: GASOLINE RANGE					Analyst: JMR
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	9/23/2020 8:50:27 PM
Surr: BFB	104	70-130	%Rec	1	9/23/2020 8:50:27 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 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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Date Reported: 9/30/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY Client Sample ID: BH06@ 40'-45' **Project:** Howell M 1 Collection Date: 9/18/2020 11:30:00 AM Lab ID: 2009B86-006 Matrix: SOIL Received Date: 9/19/2020 8:30:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: BRM Diesel Range Organics (DRO) ND 9.1 mg/Kg 1 9/23/2020 2:44:36 PM Motor Oil Range Organics (MRO) ND 45 mg/Kg 1 9/23/2020 2:44:36 PM Surr: DNOP 82.9 30.4-154 %Rec 1 9/23/2020 2:44:36 PM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride ND 9/28/2020 7:05:50 PM 60 mg/Kg 20 **EPA METHOD 8260B: VOLATILES SHORT LIST** Analyst: JMR Benzene ND 0.024 mg/Kg 9/23/2020 9:19:02 PM 1 Toluene ND 0.048 mg/Kg 9/23/2020 9:19:02 PM 1 Ethvlbenzene ND 0.048 mg/Kg 1 9/23/2020 9:19:02 PM Xylenes, Total ND 0.097 mg/Kg 1 9/23/2020 9:19:02 PM Surr: 1.2-Dichloroethane-d4 86.6 70-130 %Rec 1 9/23/2020 9:19:02 PM Surr: 4-Bromofluorobenzene 102 70-130 %Rec 1 9/23/2020 9:19:02 PM Surr: Dibromofluoromethane 103 70-130 %Rec 1 9/23/2020 9:19:02 PM Surr: Toluene-d8 93.2 70-130 %Rec 1 9/23/2020 9:19:02 PM **EPA METHOD 8015D MOD: GASOLINE RANGE** Analyst: JMR Gasoline Range Organics (GRO) ND mg/Kg 9/23/2020 9:19:02 PM 4.8 1 Surr: BFB 103 70-130 %Rec 1 9/23/2020 9:19:02 PM

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

Qualifiers:

- Value exceeds Maximum Contaminant Level.
 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 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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Project:

Lab ID:

Analyses

Chloride

Benzene

Toluene

Ethvlbenzene

Xylenes, Total

Surr: BFB

Surr: 1.2-Dichloroethane-d4

Surr: 4-Bromofluorobenzene

Surr: Dibromofluoromethane

Gasoline Range Organics (GRO)

EPA METHOD 8015D MOD: GASOLINE RANGE

Surr: Toluene-d8

Analytical Report Lab Order 2009B86

9/23/2020 9:47:36 PM

Analyst: JMR

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/30/2020 **CLIENT: HILCORP ENERGY** Client Sample ID: BH07@ 35'40' Howell M 1 Collection Date: 9/18/2020 1:45:00 PM 2009B86-007 Matrix: SOIL Received Date: 9/19/2020 8:30:00 AM Result **RL** Qual Units DF **Date Analyzed EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: BRM Diesel Range Organics (DRO) ND 10 mg/Kg 1 9/23/2020 2:54:29 PM Motor Oil Range Organics (MRO) 9/23/2020 2:54:29 PM ND 50 mg/Kg 1 Surr: DNOP 79.4 30.4-154 %Rec 1 9/23/2020 2:54:29 PM **EPA METHOD 300.0: ANIONS** Analyst: CAS ND 9/28/2020 7:18:15 PM 60 mg/Kg 20 **EPA METHOD 8260B: VOLATILES SHORT LIST** Analyst: JMR ND 0.024 mg/Kg 9/23/2020 9:47:36 PM 1

0.049

0.049

0.098

70-130

70-130

70-130

70-130

70-130

49

mg/Kg

mg/Kg

mg/Kg

%Rec

%Rec

%Rec

%Rec

mg/Kg

%Rec

1

1

1

1

1

1

1

1

1

ND

ND

ND

91.4

99.7

107

97.8

ND

103

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
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- POL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- в Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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Date Reported: 9/30/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY Client Sample ID: BH07@ 40'-45' **Project:** Howell M 1 Collection Date: 9/18/2020 2:00:00 PM Lab ID: 2009B86-008 Matrix: SOIL Received Date: 9/19/2020 8:30:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: BRM Diesel Range Organics (DRO) ND 9.7 mg/Kg 1 9/23/2020 3:04:22 PM Motor Oil Range Organics (MRO) 9/23/2020 3:04:22 PM ND 49 mg/Kg 1 Surr: DNOP 96.4 30.4-154 %Rec 1 9/23/2020 3:04:22 PM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride ND 9/28/2020 7:30:39 PM 60 mg/Kg 20 **EPA METHOD 8260B: VOLATILES SHORT LIST** Analyst: JMR Benzene ND 0.024 mg/Kg 9/23/2020 10:16:09 PM 1 Toluene ND 0.048 mg/Kg 9/23/2020 10:16:09 PM 1 Ethvlbenzene ND 0.048 mg/Kg 1 9/23/2020 10:16:09 PM Xylenes, Total ND 0.096 mg/Kg 1 9/23/2020 10:16:09 PM Surr: 1.2-Dichloroethane-d4 91.1 70-130 %Rec 1 9/23/2020 10:16:09 PM Surr: 4-Bromofluorobenzene 106 70-130 %Rec 1 9/23/2020 10:16:09 PM Surr: Dibromofluoromethane 104 70-130 %Rec 1 9/23/2020 10:16:09 PM Surr: Toluene-d8 96.3 70-130 %Rec 1 9/23/2020 10:16:09 PM **EPA METHOD 8015D MOD: GASOLINE RANGE** Analyst: JMR Gasoline Range Organics (GRO) ND 9/23/2020 10:16:09 PM 48 mg/Kg 1 Surr: BFB 105 70-130 %Rec 1 9/23/2020 10:16:09 PM

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

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to MatrixH Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative 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.

Client:	HILCOR	P ENERGY									
Project:	Howell N	11									
Sample ID: I	MB-55495	SampType	e: mbl	k	Tes	Code: El	PA Method	300.0: Anions	6		
Client ID:	PBS	Batch ID	D: 554	95	R	unNo: 7	2217				
Prep Date:	9/28/2020	Analysis Date	e: 9/2	8/2020	S	eqNo: 2	532335	Units: mg/K	g		
Analyte Chloride		Result F	PQL 1.5	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
		ND	1.5								
Sample ID: I	LCS-55495	SampType	e: Ics		Tes	Code: El	PA Method	300.0: Anions	5		
Client ID:	LCSS	Batch ID	D: 554	95	R	unNo: 7	2217				
Prep Date:	9/28/2020	Analysis Date	e: 9/2	8/2020	S	eqNo: 2	532336	Units: mg/K	g		
Analyte		Result F	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		14	1.5	15.00	0	92.0	90	110			
Sample ID: I	MB-55496	SampType	e: mbl	k	Tes	Code: El	PA Method	300.0: Anion:	S		
Client ID:	PBS	Batch ID	D: 554	96	R	unNo: 7	2226				
Prep Date:	9/28/2020	Analysis Date	e: 9/2	8/2020	S	eqNo: 2	532664	Units: mg/K	g		
Analyte		Result F	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND	1.5								
Sample ID: I	LCS-55496	SampType	e: Ics		Tes	Code: El	PA Method	300.0: Anions	5		
Client ID:	LCSS	Batch ID	D: 554	96	R	unNo: 7	2226				
Prep Date:	9/28/2020	Analysis Date	e: 9/2	8/2020	S	eqNo: 2	532665	Units: mg/K	g		
Analyte		Result F	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		14	1.5	15.00	0	95.6	90	110			

Qualifiers:

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

Client: HILCO Project: Howe	ORP ENERG	Ϋ́Υ												
Sample ID: LCS-55347	Sample ID: LCS-55347 SampType: LCS Client ID: LCSS Batch ID: 55347						TestCode: EPA Method 8015M/D: Diesel Range Organics							
					RunNo: 72			-						
Prep Date: 9/22/2020	Analysis [Date: 9/	23/2020	5	SeqNo: 2	527106	Units: mg/k	(g						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual				
Diesel Range Organics (DRO)	53	10	50.00	0	106	70	130							
Surr: DNOP	5.3		5.000		106	30.4	154							
Sample ID: MB-55347	Samp	Гуре: МЕ	BLK	Tes	tCode: El	PA Method	8015M/D: Die	esel Rang	e Organics					
Client ID: PBS	Batc	h ID: 55	347	F	RunNo: 7	2066								
Prep Date: 9/22/2020	Analysis [Date: 9/	23/2020	S	SeqNo: 2	527109	Units: mg/k	٢g						
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	30.4	154							

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 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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30-Sep-20

Client:

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

HILCORP ENERGY

Sample ID: Ics-55331 SampType: LCS4 TestCode: EPA Method 8260B: Volatiles Short List Client ID: Batch QC Batch ID: 55331 RunNo: 72064 Prep Date: 9/21/2020 Analysis Date: 9/23/2020 SeqNo: 2524709 Units: mg/Kg Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Berzene 0.97 0.025 1.000 0 102 80 120 Toluene 1.0 0.050 1.000 0 101 80 120 Xylenes, Total 3.1 0.10 3.000 0 104 80 120 Surr: 12-Dichloroethane-d4 0.42 0.5000 85.0 70 130 Surr: Toluene-d8 0.48 0.5000 99.5 70 130 Surr: Toluene-d8 0.48 0.5000 96.3 70 130 Surr: Toluene-d8 0.48 0.5000 96.3 70 130 Client	Project: Howell M	M 1				
Prep Date: 9/21/2020 Analysis Date: 9/23/2020 SeqNo: 2524709 Units: mg/Kg Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Benzene 0.97 0.025 1.000 0 96.9 80 120 Ethylbenzene 1.0 0.050 1.000 0 1012 80 120 Kylenes, Total 3.1 0.10 3.000 0 104 80 120 Sur: 1.20ichloroethane-d4 0.42 0.5000 85.0 70 130 Sur: 1.20ichloroethane-d4 0.42 0.5000 99.5 70 130 Sur: 1.20ichloroethane-d4 0.48 0.5000 96.3 70 130 Sur: 1.20ichloroethane-d4 0.48 0.5000 96.3 70 130 Sur: 1.20ichloroethane-d4 0.48 0.5000 SeqNo: 2524710 Units:	Sample ID: Ics-55331	SampType: LCS4	Tes	tCode: EPA Method	8260B: Volatiles Short	List
Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Benzene 0.97 0.025 1.000 0 96.9 80 120 Toluene 1.0 0.050 1.000 0 102 80 120 Ethylbenzene 1.0 0.050 1.000 0 101 80 120 Surr: 1,2-Dichloroethane-d4 0.42 0.5000 85.0 70 130 Surr: 4.Bromofluorobenzene 0.50 0.5000 99.5 70 130 Surr: Toluene-d8 0.48 0.5000 96.3 70 130 Surr: Toluene-d8 0.48 0.5000 SeqNo: 2524710 Units: mg/Kg Analyte Result PQL SPK value SPK Ref Val </td <td>Client ID: BatchQC</td> <td>Batch ID: 55331</td> <td>F</td> <td>RunNo: 72064</td> <td></td> <td></td>	Client ID: BatchQC	Batch ID: 55331	F	RunNo: 72064		
Benzene 0.97 0.025 1.000 0 96.9 80 120 Toluene 1.0 0.050 1.000 0 102 80 120 Ethylbenzene 1.0 0.050 1.000 0 101 80 120 Xylenes, Total 3.1 0.10 3.000 0 104 80 120 Surr: 1,2-Dichloroethane-d4 0.42 0.5000 85.0 70 130 Surr: 4-Bromofluorobenzene 0.50 0.5000 101 70 130 Surr: Toluene-d8 0.48 0.5000 96.3 70 130 Surr: Toluene-d8 0.48 0.5000 96.3 70 130 Sample ID: mb-55331 SampType: MBLK TestCode: EPA Method 8260B: Volatiles Short List Client ID: PBS Batch ID: 55331 RunNo: 72064 Prep Date: 9/21/2020 Analysis Date: 9/23/2020 SeqNo: 2524710 Units: mg/Kg Benzene ND 0.025 Ethylbenzene	Prep Date: 9/21/2020	Analysis Date: 9/23/20)20	SeqNo: 2524709	Units: mg/Kg	
Toluene 1.0 0.050 1.000 0 102 80 120 Ethylbenzene 1.0 0.050 1.000 0 101 80 120 Xylenes, Total 3.1 0.10 3.000 0 104 80 120 Surr: 1,2-Dichloroethane-d4 0.42 0.5000 85.0 70 130 Surr: 2-Dichloroethane-d4 0.42 0.5000 99.5 70 130 Surr: 2-Dichloroethane 0.50 0.5000 96.3 70 130 Surr: Dibromofluoromethane 0.50 0.5000 96.3 70 130 Surr: Toluene-d8 0.48 0.5000 96.3 70 130 Sample ID: mb-55331 SampType: MBLK TestCode: EPA Method 8260B: Volatiles Short List Client ID: PBS Batch ID: 55331 RunNo: 72064 Prep Date: 9/21/2020 Analysis Date: 9/23/2020 SeqNo: 2524710 Units: mg/Kg Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Be	Analyte	Result PQL SP	K value SPK Ref Val	%REC LowLimit	HighLimit %RPD	RPDLimit Qual
Ethylbenzene 1.0 0.050 1.000 0 101 80 120 Xylenes, Total 3.1 0.10 3.000 0 104 80 120 Surr: 1,2-Dichloroethane-d4 0.42 0.5000 85.0 70 130 Surr: 4-Bromofluorobenzene 0.50 0.5000 99.5 70 130 Surr: Dibromofluoromethane 0.50 0.5000 101 70 130 Surr: Toluene-d8 0.48 0.5000 96.3 70 130 Sample ID: mb-55331 SampType: MBLK TestCode: EPA Method 8260B: Volatiles Short List Client ID: PBS Batch ID: 55331 RunNo: 72064 Prep Date: 9/21/2020 Analysis Date: 9/23/2020 SeqNo: 2524710 Units: mg/Kg Analyte Result PQL SPK value SPK value SPK value NE LowLimit HighLimit % RPD RPDLimit Qual Benzene ND 0.050 Set Value SPK value Set Value Value Value Value Value Value Value Value	Benzene	0.97 0.025	1.000 0	96.9 80	120	
Xylenes, Total 3.1 0.10 3.000 0 104 80 120 Surr: 1,2-Dichloroethane-d4 0.42 0.5000 85.0 70 130 Surr: 1,2-Dichloroethane-d4 0.42 0.5000 99.5 70 130 Surr: 1,2-Dichloroethane-d4 0.42 0.5000 101 70 130 Surr: Toluene-d8 0.48 0.5000 96.3 70 130 Sample ID: mb-55331 SampType: MBLK TestCode: EPA Method 8260B: Volatiles Short List Client ID: PBS Batch ID: 55331 RunNo: 72064 Prep Date: 9/21/2020 Analysis Date: 9/23/2020 SeqNo: 2524710 Units: mg/Kg Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Benzene ND 0.050 Sur: 130 Sur: Yelnes, Total ND 0.10 Sur: 1,2-Dichloroethane-d4 0.43 0.5000 86.1 70 130 Sur: 1,2-Dichloroethane-d4 0.50 0.5000 99.7	Toluene	1.0 0.050	1.000 0	102 80	120	
Sur: 1,2-Dichloroethane-d4 0.42 0.5000 85.0 70 130 Sur: 4-Bromofluorobenzene 0.50 0.5000 99.5 70 130 Sur: 10ibromofluoromethane 0.50 0.5000 101 70 130 Sur: Toluene-d8 0.48 0.5000 96.3 70 130 Sample ID: mb-55331 SampType: MBLK TestCode: EPA Method 8260B: Volatiles Short List Client ID: PBS Batch ID: 55331 RunNo: 72064 Prep Date: 9/21/2020 Analysis Date: 9/23/2020 SeqNo: 2524710 Units: mg/Kg Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Benzene ND 0.025 Image: SeqNo: 2524710 Units: mg/Kg Image: SeqNo: 2524710 Units: mg/Kg Yelnene ND 0.025 Image: SeqNo: 2524710 Units: mg/Kg Image: SeqNo: 2524710	Ethylbenzene	1.0 0.050	1.000 0	101 80	120	
Surr: 4-Bromofluorobenzene 0.50 0.5000 99.5 70 130 Surr: Dibromofluoromethane 0.50 0.5000 101 70 130 Surr: Toluene-d8 0.48 0.5000 96.3 70 130 Sample ID: mb-55331 SampType: MBLK TestCode: EPA Method 8260B: Volatiles Short List Client ID: PBS Batch ID: 55331 RunNo: 72064 Prep Date: 9/21/2020 Analysis Date: 9/23/2020 SeqNo: 2524710 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 Sur: 1,2-Dichloroethane-d4 0.43 0.5000 86.1 70 130 Sur: 1,2-Dichloroethane-d4 0.43 0.5000 99.7 70 130	Xylenes, Total	3.1 0.10	3.000 0	104 80	120	
Sur: Dibromofluoromethane 0.50 0.5000 101 70 130 Surr: Toluene-d8 0.48 0.5000 96.3 70 130 Sample ID: mb-55331 SampType: MBLK TestCode: EPA Method 8260B: Volatiles Short List Client ID: PBS Batch ID: 55331 RunNo: 72064 Prep Date: 9/21/2020 Analysis Date: 9/23/2020 SeqNo: 2524710 Units: mg/Kg Analyte Result PQL SPK value SPK value SPK Ref Val Benzene ND 0.025 Toluene ND 0.050 Xylenes, Total ND 0.10 Sur: 1,2-Dichloroethane-d4 0.43 0.5000 Sur: 4-Bromofluorobenzene 0.50 0.5000	Surr: 1,2-Dichloroethane-d4	0.42	0.5000	85.0 70	130	
Surr: Toluene-d8 0.48 0.5000 96.3 70 130 Sample ID: mb-55331 SampType: MBLK TestCode: EPA Method 8260B: Volatiles Short List Client ID: PBS Batch ID: 55331 RunNo: 72064 Prep Date: 9/21/2020 Analysis Date: 9/23/2020 SeqNo: 2524710 Units: mg/Kg Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Benzene ND 0.025 Views, Total ND 0.050 Views, Total ND 0.10 Surr: 1,2-Dichloroethane-d4 0.43 0.5000 86.1 70 130 Surr: 4-Bromofluorobenzene 0.50 99.7 70 130	Surr: 4-Bromofluorobenzene	0.50	0.5000	99.5 70	130	
Sample ID:mb-55331SampType:MBLKTestCode:EPA Method 8260B:Volatiles Short ListClient ID:PBSBatch ID:55331RunNo:72064Prep Date:9/21/2020Analysis Date:9/23/2020SeqNo:2524710Units:mg/KgAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQualBenzeneND0.025	Surr: Dibromofluoromethane	0.50	0.5000	101 70	130	
Client ID:PBSBatch ID:55331RunNo:72064Prep Date:9/21/2020Analysis Date:9/23/2020SeqNo:2524710Units:mg/KgAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQualBenzeneND0.025	Surr: Toluene-d8	0.48	0.5000	96.3 70	130	
Prep Date:9/21/2020Analysis Date:9/23/2020SeqNo:2524710Units:mg/KgAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQualBenzeneND0.025	Sample ID: mb-55331	SampType: MBLK	Tes	tCode: EPA Method	8260B: Volatiles Short	List
AnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQualBenzeneND0.025TolueneND0.050EthylbenzeneND0.050Xylenes, TotalND0.10Surr: 1,2-Dichloroethane-d40.430.500086.170Surr: 4-Bromofluorobenzene0.500.500099.770130	Client ID: PBS	Batch ID: 55331	F	RunNo: 72064		
Benzene ND 0.025 Toluene ND 0.050 Ethylbenzene ND 0.050 Xylenes, Total ND 0.10 Surr: 1,2-Dichloroethane-d4 0.43 0.5000 86.1 70 130 Surr: 4-Bromofluorobenzene 0.50 0.5000 99.7 70 130	Prep Date: 9/21/2020	Analysis Date: 9/23/20)20	SeqNo: 2524710	Units: mg/Kg	
Toluene ND 0.050 Ethylbenzene ND 0.050 Xylenes, Total ND 0.10 Surr: 1,2-Dichloroethane-d4 0.43 0.5000 86.1 70 130 Surr: 4-Bromofluorobenzene 0.50 0.5000 99.7 70 130	Analyte	Result PQL SPF	K value SPK Ref Val	%REC LowLimit	HighLimit %RPD	RPDLimit Qual
Ethylbenzene ND 0.050 Xylenes, Total ND 0.10 Surr: 1,2-Dichloroethane-d4 0.43 0.5000 86.1 70 130 Surr: 4-Bromofluorobenzene 0.50 0.5000 99.7 70 130	Benzene	ND 0.025				
Xylenes, Total ND 0.10 Surr: 1,2-Dichloroethane-d4 0.43 0.5000 86.1 70 130 Surr: 4-Bromofluorobenzene 0.50 0.5000 99.7 70 130	Toluene	ND 0.050				
Surr: 1,2-Dichloroethane-d4 0.43 0.5000 86.1 70 130 Surr: 4-Bromofluorobenzene 0.50 0.5000 99.7 70 130	Ethylbenzene	ND 0.050				
Surr: 4-Bromofluorobenzene 0.50 0.5000 99.7 70 130	Xylenes, Total	ND 0.10				
	Surr: 1,2-Dichloroethane-d4	0.43	0.5000	86.1 70	130	
	Surr: 4-Bromofluorobenzene	0.50	0.5000	99.7 70	130	
Surr: Dibromofluoromethane 0.53 0.5000 106 70 130	Surr: Dibromofluoromethane	0.53	0.5000	106 70	130	
Surr: Toluene-d8 0.50 0.5000 99.6 70 130	Surr: Toluene-d8	0.50	0.5000	99.6 70	130	
Sample ID: 2009b86-001ams SampType: MS4 TestCode: EPA Method 8260B: Volatiles Short List	Sample ID: 2009b86-001ams	SampType: MS4	Tes	tCode: EPA Method	8260B: Volatiles Short	List
Client ID: BH04@ 15'-20' Batch ID: 55331 RunNo: 72064	Client ID: BH04@ 15'-20'	Batch ID: 55331	F	RunNo: 72064		
Prep Date: 9/21/2020 Analysis Date: 9/23/2020 SeqNo: 2524715 Units: mg/Kg	Prep Date: 9/21/2020	Analysis Date: 9/23/20)20	SeqNo: 2524715	Units: mg/Kg	
Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual	Analyte	Result PQL SPF	K value SPK Ref Val	%REC LowLimit	HighLimit %RPD	RPDLimit Qual
Benzene 1.1 0.025 0.9901 0 107 71.1 115	Benzene	1.1 0.025	0.9901 0	107 71.1	115	
Toluene 1.1 0.050 0.9901 0 112 79.6 132	Toluene	1.1 0.050	0.9901 0	112 79.6	132	
Ethylbenzene 1.1 0.050 0.9901 0 113 83.8 134	Ethylbenzene	1.1 0.050	0.9901 0	113 83.8	134	
Xylenes, Total 3.4 0.099 2.970 0 116 82.4 132	Xylenes, Total	3.4 0.099	2.970 0	116 82.4	132	
Surr: 1,2-Dichloroethane-d4 0.45 0.4950 90.7 70 130	Surr: 1,2-Dichloroethane-d4	0.45	0.4950	90.7 70	130	
Surr: 4-Bromofluorobenzene 0.50 0.4950 100 70 130	Surr: 4-Bromofluorobenzene	0.50	0.4950	100 70	130	
Surr: Dibromofluoromethane 0.53 0.4950 107 70 130	Surr: Dibromofluoromethane	0.53	0.4950	107 70	130	
Surr: Toluene-d8 0.48 0.4950 97.0 70 130	Surr: Toluene-d8	0.48	0.4950	97.0 70	130	

Qualifiers:

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

- Analyte detected in the associated Method Blank в
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

WO#:	2009B86
	20 0 20

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Value exceeds Maximum Contaminant Level.

Holding times for preparation or analysis exceeded

% Recovery outside of range due to dilution or matrix

Sample Diluted Due to Matrix

PQL Practical Quanitative Limit

Not Detected at the Reporting Limit

Qualifiers:

*

D

Н

ND

S

Client:	HILCORP ENERGY
Project:	Howell M 1

Sample ID: 2009b86-001ams	d Samp	Гуре: МS	D4	Tes	Code: El	PA Method	8260B: Volat	iles Short	List	
Client ID: BH04@ 15'-20'	Batc	h ID: 553	331	R	unNo: 7	2064				
Prep Date: 9/21/2020	Analysis [Date: 9/ 2	23/2020	S	eqNo: 2	524716	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	0.9852	0	110	71.1	115	2.29	20	
Toluene	1.1	0.049	0.9852	0	114	79.6	132	1.15	20	
Ethylbenzene	1.2	0.049	0.9852	0	118	83.8	134	4.15	20	
Xylenes, Total	3.5	0.099	2.956	0	119	82.4	132	2.71	20	
Surr: 1,2-Dichloroethane-d4	0.45		0.4926		91.3	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.46		0.4926		93.3	70	130	0	0	
Surr: Dibromofluoromethane	0.53		0.4926		107	70	130	0	0	
Surr: Toluene-d8	0.47		0.4926		96.2	70	130	0	0	

Analyte detected in the associated Method Blank в

- Е Value above quantitation range
- J Analyte detected below quantitation limits Р Sample pH Not In Range
- RL Reporting Limit

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WO#: 2009B86

30-Sep-20

Client:

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Project: H	owell M 1	-								
Sample ID: Ics-55331	Samp	Type: LC	s	Test	tCode: EF	PA Method	8015D Mod:	Gasoline	Range	
Client ID: LCSS	Bate	ch ID: 55	331	R	unNo: 72	2064				
Prep Date: 9/21/202	0 Analysis	Date: 9/	23/2020	S	eqNo: 2	524727	Units: mg/k	٢g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO) 20	5.0	25.00	0	79.6	70	130			
Surr: BFB	510		500.0		102	70	130			
Sample ID: mb-55331	Samp	Туре: МЕ	BLK	Tes	tCode: EF	PA Method	8015D Mod:	Gasoline	Range	
Client ID: PBS	Bate	ch ID: 55	331	R	unNo: 72	2064				
Prep Date: 9/21/202	0 Analysis	Date: 9/	23/2020	S	eqNo: 2	524728	Units: mg/k	٢g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO) ND	5.0								
Surr: BFB	520		500.0		105	70	130			
Sample ID: 2009b86-	002ams Samp	Туре: М	6	Tes	tCode: EF	PA Method	8015D Mod:	Gasoline	Range	
Client ID: BH04@4	3'-45' Bate	ch ID: 55	331	R	unNo: 72	2117				
Prep Date: 9/21/202	0 Analysis	Date: 9/	23/2020	S	eqNo: 2	527430	Units: mg/h	٢g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO) 21	4.9	24.70	0	85.4	49.2	122			
Surr: BFB	520		494.1		105	70	130			
Sample ID: 2009b86-	002amsd Samp	Туре: М	SD	Tes	tCode: EF	PA Method	8015D Mod:	Gasoline	Range	
Client ID: BH04@ 4	3'-45' Bate	ch ID: 55	331	R	tunNo: 72	2117				
Prep Date: 9/21/202	0 Analysis	Date: 9/	23/2020	S	eqNo: 2	527431	Units: mg/h	٢g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (,	4.8	23.99	0	84.2	49.2	122	4.34	20	
Surr: BFB	490		479.8		102	70	130	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative 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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2009B86

30-Sep-20

	-	•		
HILCORP F	NERGY			
IIILCOKF E	NERUT			

HALL ENVIRONMENTAL ANALYSIS LABORATORY	A TEL: 505-345-39	tal Analysis Labor 4901 Hawkin Ibuquerque, NM 8 75 FAX: 505-345- hallenvironmenta	ns NE 87109 San 4107	nple Log-In Check L	.ist
Client Name: HILCORP ENER	GY Work Order Numb	er: 2009B86		RcptNo: 1	
Received By: Emily Mocho	9/18/2020 8:30:00 A	M			
Completed By: Juan Rojas	9/21/2020 9:24:54 A	M	General		
Reviewed By: JR9/21/	20				
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 th	e samples?	Yes 🔽	No 🗌		
4. Were all samples received at a	emperature of >0° C to 6.0°C	Yes 🔽	No 🗌		
5. Sample(s) in proper container(s	?	Yes 🔽	No 🗌		
6. Sufficient sample volume for ind	cated test(s)?	Yes 🗹	No 🗌		
7. Are samples (except VOA and C	NG) properly preserved?	Yes 🗸	No 🗌		
8. Was preservative added to bottle	es?	Yes	No 🔽	NA 🗌	
9. Received at least 1 vial with hea	dspace <1/4" for AQ VOA?	Yes	No 🗌	NA 🗹	
10. Were any sample containers re-	eived broken?	Yes	No 🔽	/	
11. Does paperwork match bottle lal		Yes 🔽	No 🗌	# of preserved bottles checked for pH:	
(Note discrepancies on chain of 12. Are matrices correctly identified		Yes 🗸	No 🗌	(<2 or >12 unless Adjusted?	noted)
13. Is it clear what analyses were re		Yes 🗸			
14. Were all holding times able to be (If no, notify customer for author	met?	Yes 🗹	No 🗌	Checked by CMC 9	rll W
Special Handling (if applica	<u>ble)</u>				
15. Was client notified of all discrep	ancies with this order?	Yes	No 🗌	NA 🗸	
Person Notified:	Date				
By Whom:	Via:	🗌 eMail 🔲 P	hone 🗌 Fax	In Person	
Regarding:					
Client Instructions:					
16. Additional remarks:					
17. Cooler Information					
Cooler No Temp °C Co 1 2.7 Good	ndition Seal Intact Seal No	Seal Date	Signed By		

Page 1 of 1

			HALL ENVIRONMENTAL ANALYSIS LABORATOR www.hallenvironmental.com 4901 Hawkins NE - Albuquerque, NM 87109 Tel. 505-345-3975 Fax 505-345-4107 Analysis Request												
Sampler: D On Ice: # of Coolers:	Danny K 1-STO-4 DBurns Ø Yes	□ No	MTBE / TMB's (8021)	0150(GRÓ / DRO / MRO)	Pesticides/8082 PCB's	Method 504.1)	님,	1.1		(Semi-VOA)	Coliform (Present/Absent)				
to an annual	Preservative Type (00L	HEAL NO, 1009386 -001 -002 -003	BTEX	X HILL	8081	EDB (PAHS	X CI E	8260 (8270 (Total (
		-005 -006 -007	0	V				V							
Received by:	Via: Of		Rem			d	he	ncy	na	m	0	1+e	- M	·	m
% (# ()	Sampler: 1 Dn Ice: # of Coolers: Cooler Temp Container Type and # 1-4 oz	Sampler: D Burns Dn Ice: Ves # of Coolers: 1 Cooler Temp(including cF): 2- Container Type and # 1-4 oz (00 L 1-4 oz (00 L 1-4 oz (00 L COOL	Dn Ice:	On Ice: \square Yes \square No # of Coolers: 1 Cooler Temp(including CF): 2.8-0-1=2.7 (°C) Container Preservative HEAL No, Type 10091386 Image: State St	Dn Ice:	1-402 (002 -001 XX -002 (1 -003 1 -003 1 -005 -006 -007 -007 -008 NV	1-402 (002 -001 XX -002 1 -003 1 -003 1 -005 1 -006 1 -007 1 -008 0 V	1-402 (002 -001 XX -002 (1) -003 (1) -003 (1) -005 (1-402 (002 -001 XX X -002 (1 -003 -003 -004 -005 -006 -006 -006 -007 -007 -007 -007 -007	1-402 (002 -001 XX X -002 (1 -003 1 -003 1 -005 1 -006 1 -006 1 -007 1 -008 NV V	1-402 (002 -001 XX X -002 (1) -003 -003 -005 -006 V -007 V V -008 VV V	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	1-402 (002 -001 XX X -002 (1) -003 -003	$\begin{array}{c ccc} 1-4 & ccccccccccccccccccccccccccccccccccc$



October 02, 2020

Danny Burns HILCORP ENERGY PO Box 4700 Farmington, NM 87499 TEL: (505) 564-0733 FAX: Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: clients.hallenvironmental.com

RE: Howell M1

OrderNo.: 2009D45

Dear Danny Burns:

Hall Environmental Analysis Laboratory received 6 sample(s) on 9/23/2020 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,

Ander

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Surr: DNOP

Surr: BFB

Benzene

Toluene

Ethylbenzene

Xylenes, Total

Diesel Range Organics (DRO)

Motor Oil Range Organics (MRO)

Gasoline Range Organics (GRO)

EPA METHOD 8021B: VOLATILES

Surr: 4-Bromofluorobenzene

EPA METHOD 8015D: GASOLINE RANGE

Analytical Report

Hall Environmental Analysis Laboratory, Inc.

Lab Order 2009D45

9/24/2020 3:34:09 PM

9/24/2020 3:34:09 PM

9/24/2020 3:34:09 PM

9/26/2020 11:09:25 PM 55383

9/26/2020 11:09:25 PM

55398

55398

55398

55383

Analyst: RAA

Analyst: RAA

Date Reported: 10/2/2020

CLIENT: HILCORP ENERGY		Clien	t Sample II	D:BH	108@30'-35'				
Project: Howell M1		Col	ection Dat	e: 9/2	1/2020 9:00:00 AM				
Lab ID: 2009D45-001	Matrix: SOIL	Matrix: SOIL Received Date: 9/23/2020 8:00:00 AM							
Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch			
EPA METHOD 300.0: ANIONS					Analys	t: CAS			
Chloride	ND	60	mg/Kg	20	9/29/2020 2:22:03 PM	55518			
EPA METHOD 8015M/D: DIESEL RA	IGE ORGANICS Analyst: BF								

31

ND

118

140

178

ND

0.65

0.54

6.7

111

9.1

46

24

0.12

0.24

0.24

0.49

80-120

S

30.4-154

75.3-105

mg/Kg

mg/Kg

%Rec

mg/Kg

%Rec

mg/Kg

mg/Kg

mg/Kg

mg/Kg

%Rec

1

1

1

5

5

5

5

5

5

5

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
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- в Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits J
- Sample pH Not In Range Р
- RL Reporting Limit

Page 1 of 13

Analytical Report

Hall Environmental Analysis Laboratory, Inc.

Lab Order 2009D45

Date Reported: 10/2/2020

CLIENT: HILCORP ENERGY		Cl	ient Sa	ample II	D:BH	08@40'-45	,	
Project: Howell M1		(Collect	tion Dat	e: 9/2	1/2020 9:30):00 AM	
Lab ID: 2009D45-002	Matrix: SOIL Received Date: 9/23/2020 8:00:00 A							
Analyses	Result	RL	Qual	Units	DF	Date Anal	yzed	Batch
EPA METHOD 300.0: ANIONS							Analyst:	CAS
Chloride	ND	60		mg/Kg	20	9/29/2020 5	5:50:52 PM	55541
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS						Analyst:	BRM
Diesel Range Organics (DRO)	510	97		mg/Kg	10	9/24/2020 5	5:36:08 PM	55398
Motor Oil Range Organics (MRO)	ND	490	D	mg/Kg	10	9/24/2020 5	5:36:08 PM	55398
Surr: DNOP	0	30.4-154	S	%Rec	10	9/24/2020 5	5:36:08 PM	55398
EPA METHOD 8015D: GASOLINE RANGE							Analyst:	NSB
Gasoline Range Organics (GRO)	3100	490		mg/Kg	100	9/28/2020 1	12:50:23 PM	55383
Surr: BFB	181	75.3-105	S	%Rec	100	9/28/2020 1	12:50:23 PM	55383
EPA METHOD 8021B: VOLATILES							Analyst:	RAA
Benzene	0.66	0.12		mg/Kg	5	9/26/2020 1	11:32:53 PM	55383
Toluene	26	4.9		mg/Kg	100	9/28/2020 1	12:50:23 PM	55383
Ethylbenzene	12	0.25		mg/Kg	5	9/26/2020 1	11:32:53 PM	55383
Xylenes, Total	150	9.9		mg/Kg	100	9/28/2020 1	12:50:23 PM	55383
Surr: 4-Bromofluorobenzene	191	80-120	S	%Rec	5	9/26/2020 1	11:32:53 PM	55383

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
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

Page 2 of 13

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Analytical Report

Hall Environmental Analysis Laboratory, Inc.

Lab Order 2009D45

Date Reported: 10/2/2020

CLIENT: HILCORP ENERGY		Cl	ient S	ample II	D:BH	[09@35'-38'	
Project: Howell M1		(Collec	tion Dat	e: 9/2	1/2020 12:00:00 PM	
Lab ID: 2009D45-003	Matrix: SOIL Received Date: 9/23/2020 8:00:00 AM						
Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	CAS
Chloride	ND	60		mg/Kg	20	9/29/2020 6:28:06 PM	55541
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS					Analyst:	BRM
Diesel Range Organics (DRO)	390	94		mg/Kg	10	9/24/2020 5:46:06 PM	55398
Motor Oil Range Organics (MRO)	ND	470	D	mg/Kg	10	9/24/2020 5:46:06 PM	55398
Surr: DNOP	0	30.4-154	S	%Rec	10	9/24/2020 5:46:06 PM	55398
EPA METHOD 8015D: GASOLINE RANG	E					Analyst:	NSB
Gasoline Range Organics (GRO)	6600	990		mg/Kg	200	9/28/2020 1:13:49 PM	55383
Surr: BFB	155	75.3-105	S	%Rec	200	9/28/2020 1:13:49 PM	55383
EPA METHOD 8021B: VOLATILES						Analyst:	RAA
Benzene	2.9	0.12		mg/Kg	5	9/27/2020 1:06:32 AM	55383
Toluene	96	9.9		mg/Kg	200	9/28/2020 1:13:49 PM	55383
Ethylbenzene	16	0.25		mg/Kg	5	9/27/2020 1:06:32 AM	55383
Xylenes, Total	260	20		mg/Kg	200	9/28/2020 1:13:49 PM	55383
Surr: 4-Bromofluorobenzene	213	80-120	S	%Rec	5	9/27/2020 1:06:32 AM	55383

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
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

Page 3 of 13

CLIENT: HILCORP ENERGY Howell M1

2009D45-004

Project:

Lab ID:

Analytical Report Lab Order 2009D45

Hall	Environn	nental A	alysis	Labor	atory, Inc.

Date Reported: 10/2/2020

Client Sample ID: BH09@40'-43' Collection Date: 9/21/2020 12:20:00 PM Received Date: 9/23/2020 8:00:00 AM

Analyses	Result	RL (Qual Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analyst	CAS
Chloride	ND	60	mg/Kg	20	9/29/2020 7:05:20 PM	55541
EPA METHOD 8015M/D: DIESEL RANGE O	RGANICS				Analyst	BRM
Diesel Range Organics (DRO)	16	8.7	mg/Kg	1	9/24/2020 4:03:27 PM	55398
Motor Oil Range Organics (MRO)	ND	44	mg/Kg	1	9/24/2020 4:03:27 PM	55398
Surr: DNOP	106	30.4-154	%Rec	1	9/24/2020 4:03:27 PM	55398
EPA METHOD 8015D: GASOLINE RANGE					Analyst	RAA
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	9/27/2020 1:29:53 AM	55383
Surr: BFB	92.3	75.3-105	%Rec	1	9/27/2020 1:29:53 AM	55383
EPA METHOD 8021B: VOLATILES					Analyst	RAA
Benzene	ND	0.023	mg/Kg	1	9/27/2020 1:29:53 AM	55383
Toluene	ND	0.047	mg/Kg	1	9/27/2020 1:29:53 AM	55383
Ethylbenzene	ND	0.047	mg/Kg	1	9/27/2020 1:29:53 AM	55383
Xylenes, Total	ND	0.094	mg/Kg	1	9/27/2020 1:29:53 AM	55383
Surr: 4-Bromofluorobenzene	103	80-120	%Rec	1	9/27/2020 1:29:53 AM	55383

Matrix: SOIL

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
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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Analytical Report

Hall Environmental Analysis Laboratory, Inc.

Lab Order 2009D45

Date Reported: 10/2/2020

CLIENT: HILCORP ENERGY				-		H010@30'-35'		
Project: Howell M1			Collec	tion Dat	e: 9/2	22/2020 8:30:00 AM		
Lab ID: 2009D45-005	Matrix: SOIL	Matrix: SOIL Received Date: 9/23/2020 8:00:00 AM						
Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch	
EPA METHOD 300.0: ANIONS						Analyst	CAS	
Chloride	ND	60		mg/Kg	20	9/29/2020 7:17:44 PM	55541	
EPA METHOD 8015M/D: DIESEL RANG	GE ORGANICS					Analyst	BRM	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	9/24/2020 4:13:12 PM	55398	
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	9/24/2020 4:13:12 PM	55398	
Surr: DNOP	91.4	30.4-154		%Rec	1	9/24/2020 4:13:12 PM	55398	
EPA METHOD 8015D: GASOLINE RAN	IGE					Analyst	RAA	
Gasoline Range Organics (GRO)	13	5.0		mg/Kg	1	9/27/2020 1:53:21 AM	55383	
Surr: BFB	146	75.3-105	S	%Rec	1	9/27/2020 1:53:21 AM	55383	
EPA METHOD 8021B: VOLATILES						Analyst	RAA	
Benzene	ND	0.025		mg/Kg	1	9/27/2020 1:53:21 AM	55383	

EPA METHOD 8021B: VOLATILES					Analyst:
Benzene	ND	0.025	mg/Kg	1	9/27/2020 1:53:21 AM
Toluene	0.077	0.050	mg/Kg	1	9/27/2020 1:53:21 AM
Ethylbenzene	ND	0.050	mg/Kg	1	9/27/2020 1:53:21 AM
Xylenes, Total	0.37	0.099	mg/Kg	1	9/27/2020 1:53:21 AM
Surr: 4-Bromofluorobenzene	106	80-120	%Rec	1	9/27/2020 1:53:21 AM

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

Qualifiers:

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

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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55383

55383

55383

55383

Ethylbenzene

Xylenes, Total

Surr: 4-Bromofluorobenzene

Analytical Report

Hall Environmental Analysis Laboratory, Inc.

Lab Order 2009D45

9/27/2020 2:16:51 AM

9/27/2020 2:16:51 AM

9/27/2020 2:16:51 AM

55383

55383

55383

Date Reported: 10/2/2020

CLIENT:HILCORP ENERGYProject:Howell M1Lab ID:2009D45-006	Matrix: SOIL	Co	ollection Dat	e: 9/2	H010@38'-40' 22/2020 10:00:00 AM 23/2020 8:00:00 AM	
Analyses	Result	RL (Qual Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analyst:	CAS
Chloride	ND	60	mg/Kg	20	9/29/2020 7:30:08 PM	55541
EPA METHOD 8015M/D: DIESEL RANG	GE ORGANICS				Analyst:	BRM
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	9/24/2020 4:22:57 PM	55398
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	9/24/2020 4:22:57 PM	55398
Surr: DNOP	96.0	30.4-154	%Rec	1	9/24/2020 4:22:57 PM	55398
EPA METHOD 8015D: GASOLINE RAN	GE				Analyst:	RAA
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	9/27/2020 2:16:51 AM	55383
Surr: BFB	89.5	75.3-105	%Rec	1	9/27/2020 2:16:51 AM	55383
EPA METHOD 8021B: VOLATILES					Analyst:	RAA
Benzene	ND	0.025	mg/Kg	1	9/27/2020 2:16:51 AM	55383
Toluene	ND	0.050	mg/Kg	1	9/27/2020 2:16:51 AM	55383

ND

ND

102

0.050

0.10

80-120

mg/Kg

mg/Kg

%Rec

1

1

1

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
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

Page 6 of 13

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Client: Project:	HILCORF Howell M		Y								
Sample ID:	MB-55518	SampT	ype: mb	olk	Tes	tCode: EF	PA Method	300.0: Anion	S		
Client ID: F	PBS	Batch	n ID: 55	518	F	RunNo: 72	2231				
Prep Date:	9/29/2020	Analysis D	ate: 9/ 2	29/2020	S	SeqNo: 2	534523	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND	1.5								
Sample ID: L	-CS-55518	SampT	ype: Ics	;	Tes	tCode: EF	PA Method	300.0: Anion	S		
Client ID: L	CSS	Batch	n ID: 55	518	F	RunNo: 72	2231				
Prep Date:	9/29/2020	Analysis D	ate: 9/ 2	29/2020	S	SeqNo: 2	534524	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		14	1.5	15.00	0	96.3	90	110			
Sample ID: N	MB-55518	SampT	ype: mb	olk	Tes	tCode: EF	PA Method	300.0: Anion	s		
Client ID: F	PBS	Batch	n ID: 55	518	F	RunNo: 72	2232				
Prep Date:	9/29/2020	Analysis D	ate: 9/ 2	29/2020	S	SeqNo: 2	534647	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND	1.5								
Sample ID: L	-CS-55518	SampT	ype: Ics	;	Tes	tCode: EF	PA Method	300.0: Anion	S		
Client ID: L	CSS	Batch	n ID: 55	518	F	RunNo: 72	2232				
Prep Date:	9/29/2020	Analysis D	ate: 9/2	29/2020	S	SeqNo: 2	534648	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		14	1.5	15.00	0	96.0	90	110			
Sample ID:	MB-55541	SampT	ype: mb	olk	Tes	tCode: EF	PA Method	300.0: Anion	S		
Client ID: F	PBS	Batch	n ID: 55	541	F	RunNo: 72	2232				
Prep Date:	9/29/2020	Analysis D	ate: 9/ 2	29/2020	S	SeqNo: 25	534669	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND	1.5								
Sample ID: L	_CS-55541	SampT	ype: Ics	;	Tes	tCode: EF	PA Method	300.0: Anion	s		
Client ID: L	CSS	Batch	n ID: 55	541	F	RunNo: 72	2232				
Prep Date:	9/29/2020	Analysis D	ate: 9/ 2	29/2020	S	SeqNo: 25	534670	Units: mg/K	g		
								L Park L San St			Qual
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix S

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- Reporting Limit

RL

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2009D45

02-Oct-20

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Client:	HILCORI		Y								
Project:	Howell M	[1									
Sample ID:	2009D05-001AMS	SampT	ype: ms	5	Tes	tCode: EF	PA Method	300.0: Anion	s		
Client ID:	BatchQC	Batch	n ID: 55	541	F	RunNo: 72	2232				
Prep Date:	9/29/2020	Analysis D	ate: 9/	29/2020	S	eqNo: 2	534672	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		24	7.5	15.00	11.08	83.0	47.2	156			
Sample ID:	2009D05-001AMS) SampT	ype: ms	sd	Tes	tCode: EF	PA Method	300.0: Anion	s		
Client ID:	BatchQC	Batch	n ID: 55	541	F	RunNo: 72	2232				
Prep Date:	9/29/2020	Analysis D	ate: 9/	29/2020	S	SeqNo: 2	534673	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		23	7.5	15.00	11.08	81.2	47.2	156	1.16	20	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative 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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2009D45

02-Oct-20

Client:

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

HILCORP ENERGY

Project: Howell 1	.VI I									
Sample ID: 2009C39-001AMS	2009C39-001AMS SampType: MS				TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID: BatchQC	Batcl	Batch ID: 55398			RunNo: 72109					
Prep Date: 9/23/2020	Analysis D	Date: 9/ 2	24/2020	S	SeqNo: 2	527693	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	41	9.5	47.39	0	86.5	15	184			
Surr: DNOP	4.0		4.739		84.0	30.4	154			
Sample ID: 2009C39-001AMSD SampType: MSD TestCode: EPA Method 8015M/D: Diese					esel Range	e Organics				
Client ID: BatchQC Batch ID: 55398 RunNo: 72109				2109						
Prep Date: 9/23/2020	Analysis D	Date: 9/ 2	24/2020	S	SeqNo: 25	527694	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	9.7	48.64	0	82.1	15	184	2.65	23.9	
Surr: DNOP	3.7		4.864		75.2	30.4	154	0	0	
Sample ID: LCS-55398	Sample ID: LCS-55398 SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics					PA Method	8015M/D: Die			
				RunNo: 72109						
Client ID: LCSS	Batch	h ID: 553	398	R	RunNo: 72	2109				
Client ID: LCSS Prep Date: 9/23/2020	Batcl Analysis D				RunNo: 72 SeqNo: 24		Units: mg/K	g		
			24/2020		SeqNo: 2		Units: mg/K HighLimit	ʻg %RPD	RPDLimit	Qual
Prep Date: 9/23/2020 Analyte	Analysis D	Date: 9/ 2	24/2020	S	SeqNo: 2	527717	Ŭ	0	RPDLimit	Qual
Prep Date: 9/23/2020 Analyte	Analysis D Result	Date: 9/ 2 PQL	2 4/2020 SPK value	SPK Ref Val	SeqNo: 2: %REC	527717 LowLimit	HighLimit	0	RPDLimit	Qual
Prep Date: 9/23/2020 Analyte Diesel Range Organics (DRO)	Analysis D Result 57 5.3	Date: 9/ 2 PQL	24/2020 SPK value 50.00 5.000	SPK Ref Val 0	SeqNo: 28 %REC 114 106	527717 LowLimit 70 30.4	HighLimit 130	%RPD		Qual
Prep Date: 9/23/2020 Analyte Diesel Range Organics (DRO) Surr: DNOP	Analysis D Result 57 5.3 SampT	Date: 9/ PQL 10	24/2020 SPK value 50.00 5.000	SPK Ref Val 0 Tes	SeqNo: 28 %REC 114 106	527717 LowLimit 70 30.4 PA Method	HighLimit 130 154	%RPD		Qual
Prep Date: 9/23/2020 Analyte Diesel Range Organics (DRO) Surr: DNOP Sample ID: MB-55398	Analysis D Result 57 5.3 SampT	Date: 9/2 PQL 10 Type: ME h ID: 553	24/2020 SPK value 50.00 5.000	SPK Ref Val 0 Tes: R	SeqNo: 29 %REC 114 106 tCode: EF	527717 LowLimit 70 30.4 PA Method 2109	HighLimit 130 154	%RPD		Qual
Prep Date: 9/23/2020 Analyte Diesel Range Organics (DRO) Surr: DNOP Sample ID: MB-55398 Client ID: PBS	Analysis D Result 57 5.3 SampT Batcl	Date: 9/2 PQL 10 Type: ME h ID: 553	24/2020 SPK value 50.00 5.000 SLK 398 24/2020	SPK Ref Val 0 Tes: R	SeqNo: 25 %REC 114 106 tCode: EF RunNo: 72 SeqNo: 25	527717 LowLimit 70 30.4 PA Method 2109	HighLimit 130 154 8015M/D: Die	%RPD		Qual
Prep Date: 9/23/2020 Analyte Diesel Range Organics (DRO) Surr: DNOP Sample ID: MB-55398 Client ID: PBS Prep Date: 9/23/2020	Analysis D Result 57 5.3 SampT Batcl Analysis D	Date: 9/2 PQL 10 Type: ME h ID: 553 Date: 9/2	24/2020 SPK value 50.00 5.000 SLK 398 24/2020	SPK Ref Val 0 Tes R S	SeqNo: 25 %REC 114 106 tCode: EF RunNo: 72 SeqNo: 25	527717 LowLimit 70 30.4 PA Method 2109 527718	HighLimit 130 154 8015M/D: Die Units: mg/K	%RPD	e Organics	
Prep Date: 9/23/2020 Analyte Diesel Range Organics (DRO) Surr: DNOP Sample ID: MB-55398 Client ID: PBS Prep Date: 9/23/2020 Analyte	Analysis D Result 57 5.3 SampT Batcl Analysis D Result	Date: 9/3 PQL 10 Fype: ME h ID: 553 Date: 9/3 PQL	24/2020 SPK value 50.00 5.000 SLK 398 24/2020	SPK Ref Val 0 Tes R S	SeqNo: 25 %REC 114 106 tCode: EF RunNo: 72 SeqNo: 25	527717 LowLimit 70 30.4 PA Method 2109 527718	HighLimit 130 154 8015M/D: Die Units: mg/K	%RPD	e Organics	

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 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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2009D45

02-Oct-20

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Client: Project:	HILCOR Howell M	P ENERGY 11	ř								
Client ID:	lcs-55362 LCSS 9/22/2020	SampTy Batch Analysis Da	ID: 55	362	F	tCode: El RunNo: 7 2 SeqNo: 2 3	2151	8015D: Gaso Units: %Rec	-	e	
Analyte Surr: BFB		Result 1000	PQL	SPK value 1000	SPK Ref Val	%REC 103	LowLimit 75.3	HighLimit 105	%RPD	RPDLimit	Qual
Sample ID: Client ID: Prep Date:		SampTy Batch Analysis Da	ID: 55	362	F	tCode: El RunNo: 72 SeqNo: 2	2151	8015D: Gaso Units: %Rec	_	e	
Analyte Surr: BFB		Result 880	PQL	SPK value 1000	SPK Ref Val	%REC 87.8	LowLimit 75.3	HighLimit 105	%RPD	RPDLimit	Qual
Client ID:	2009c45-013ams BatchQC 9/22/2020	SampTy Batch Analysis Da Result	ID: 55:	362 25/2020	F	RunNo: 7 2 SeqNo: 2 9	2151	8015D: Gaso Units: %Rec HighLimit	J	e RPDLimit	Qual
Surr: BFB		9500	4726 202 75.3 105 S Type: MSD TestCode: EPA Method 8015D: Gasoline Range S					S			
	2009c45-013amsd	• •				tCode: El	PA Method		line Range	9	
Client ID:		• •	ID: 55:	362 25/2020	F	-	PA Method 2151		J	e RPDLimit 0	Qual S
Client ID: Prep Date: Analyte Surr: BFB Sample ID: Client ID: Prep Date:	BatchQC 9/22/2020 mb-55383	Batch Analysis Da Result 9600 SampTy Batch Analysis Da	ID: 55: ate: 9/2 PQL ype: ME ID: 55: ate: 9/2	362 25/2020 SPK value 4836 3LK 383 26/2020	F SPK Ref Val Tes F S	tCode: El RunNo: 7 SeqNo: 2 %REC 198 tCode: El RunNo: 7 SeqNo: 2	PA Method 2151 530043 LowLimit 75.3 PA Method 2151 530060	8015D: Gaso Units: %Rec HighLimit 105 8015D: Gaso Units: mg/K	%RPD 0 line Range	RPDLimit 0	Qual S
Client ID: Prep Date: Analyte Surr: BFB Sample ID: Client ID: Prep Date: Analyte	BatchQC 9/22/2020 mb-55383 PBS	Batch Analysis Da Result 9600 SampTy Batch	ID: 55 ; ate: 9 /2 PQL ype: ME ID: 55 ;	362 25/2020 SPK value 4836 3LK 383 26/2020	F SPK Ref Val Tes F	tCode: El RunNo: 7 SeqNo: 2 %REC 198 tCode: El RunNo: 7 SeqNo: 2	PA Method 2151 530043 LowLimit 75.3 PA Method 2151	8015D: Gaso Units: %Rec HighLimit 105 8015D: Gaso	%RPD 0	RPDLimit 0	Qual
Client ID: Prep Date: Analyte Surr: BFB Sample ID: Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB Sample ID: Client ID:	BatchQC 9/22/2020 mb-55383 PBS 9/23/2020 ge Organics (GRO)	Batch Analysis Da Result 9600 SampTy Batch Analysis Da Result ND 910	PQL PQL ID: 55: Ate: 9/, PQL ID: 55: Ate: 9/, PQL 5.0 PQL 5.0	362 25/2020 SPK value 4836 3LK 383 26/2020 SPK value 1000 S 383 26/2020	F SPK Ref Val Tes SPK Ref Val SPK Ref Val	tCode: El RunNo: 7; SeqNo: 24 %REC 198 tCode: El RunNo: 7; SeqNo: 29 91.2 tCode: El RunNo: 7; SeqNo: 29	PA Method 2151 530043 LowLimit 75.3 PA Method 2151 75.3 PA Method 2151	8015D: Gaso Units: %Rec HighLimit 105 8015D: Gaso Units: mg/K HighLimit	%RPD 0 line Range %RPD line Range	RPDLimit 0 e RPDLimit	Qual S

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 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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_	WO#:	2009D45	
ne			

Client:

Project:

Client ID:

Prep Date:

Analyte

Surr: BFB

Prep Date:

Analyte

Surr: BFB

Analyte

Surr: BFB

Sample ID: 2009d42-001ams

Gasoline Range Organics (GRO)

Client ID: BatchQC

Gasoline Range Organics (GRO)

Sample ID: 2.5ug gro Ics

Client ID: LCSS Prep Date:

Sample ID: 2009d42-001amsd

9/23/2020

BatchQC

9/23/2020

QC SUMMARY REPORT Hall Environmental A

onmenta	、		Laborat	ory, Inc.					WO#:	2009D45 02-Oct-20
HILCOR Howell M	P ENERG 11	Y								
42-001ams	SampT	уре: М	S	Tes	tCode: E	PA Method	8015D: Gasol	line Rang	e	
QC	Batch	n ID: 55	383	F	RunNo: 7	2151				
2020	Analysis D	ate: 9/	/26/2020	S	SeqNo: 2	530063	Units: mg/Kg	g		
	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
cs (GRO)	23	4.9	24.51	0	93.6	61.3	114			
	990		980.4		101	75.3	105			
42-001amsd	I SampT	уре: М	SD	Tes	tCode: E	PA Method	8015D: Gasol	line Rang	e	
QC	Batch	n ID: 55	383	F	RunNo: 7	2151				
2020	Analysis D	ate: 9/	/26/2020	S	SeqNo: 2	530064	Units: mg/K	g		
	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
cs (GRO)	20	4.9	24.27	0	84.4	61.3	114	11.3	20	
	920		970.9		94.4	75.3	105	0	0	
gro Ics	SampT	ype: LC	s	Tes	tCode: E	PA Method	8015D: Gasol	line Rang	e	
	Batch	n ID: G7	72180	F	RunNo: 7	2180				
	Analysis D)ate: 9/	/26/2020	S	SeqNo: 2	530540	Units: %Rec	:		
										A 1
	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

04.11.01.0					. 0.0				
Sample ID: 2009g46-001ams	SampType: M	S	Test	tCode: EF	PA Method	8015D: Gaso	line Rang	e	
Client ID: BatchQC	Batch ID: G	72180	R	unNo: 72	2180				
Prep Date:	Analysis Date: 9	/26/2020	S	SeqNo: 25	530559	Units: %Rec	:		
Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	770	796.8		96.9	75.3	105			
Sample ID: 2009g46-001amsc	SampType: MSD TestCode: EPA Method 8015D: Gasolir				line Rang	e			
Client ID: BatchQC	Batch ID: G	72180	R	unNo: 72	2180				
Prep Date:	Analysis Date: 9	/26/2020	S	SeqNo: 25	530560	Units: %Rec	;		
Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	810	796.8		102	75.3	105	0	0	
Sample ID: mb1	SampType: M	BLK	Test	tCode: EF	PA Method	8015D: Gaso	line Rang	e	
Client ID: PBS	Batch ID: G	72180	R	unNo: 72	2180				
Prep Date:	Analysis Date: 9	/26/2020	S	eqNo: 25	530568	Units: %Rec	:		

Analyte

Surr: BFB

Qualifiers:

Value exceeds Maximum Contaminant Level. *

D Sample Diluted Due to Matrix Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix S

В Analyte detected in the associated Method Blank

95.4

LowLimit

75.3

HighLimit

105

- Е Value above quantitation range
- Analyte detected below quantitation limits J
- Р Sample pH Not In Range

Reporting Limit RL

SPK value SPK Ref Val %REC

1000

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RPDLimit

Qual

%RPD

Result

950

PQL

-

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Sample ID: LCS-55362 SampType: LCS TestCode: EPA Method 8021B: Volatiles Client ID: LCSS Batch ID: 55362 RunNo: 72151 Prep Date: 9/22/2020 Analysis Date: 9/25/2020 SeqNo: 2529256 Units: %Rec Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua Surr: 4-Bromofluorobenzene 1.0 1.000 102 80 120 Sample ID: mb-55362 SampType: MBLK TestCode: EPA Method 8021B: Volatiles Client ID: PBS Batch ID: 55362 RunNo: 72151 Prep Date: 9/22/2020 Analysis Date: 9/25/2020 SeqNo: 2529258 Units: %Rec Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua Surr: 4-Bromofluorobenzene 1.0 1.000 102 80 120 SampType: MS TestCode: EPA Method 8021B: Volatiles <th></th>	
Prep Date:9/22/2020Analysis Date:9/25/2020SeqNo:2529256Units:%RecAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQuaSurr: 4-Bromofluorobenzene1.01.00010280120120Sample ID:mb-55362SampType:MBLKTestCode:EPA Method 8021B:VolatilesClient ID:PBSBatch ID:55362RunNo:72151Prep Date:9/22/2020Analysis Date:9/25/2020SeqNo:2529258Units:%RecAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQuaSurr: 4-Bromofluorobenzene1.01.00010280120120120120120120Sample ID:2009c45-014amsSampType:MSTestCode:EPA Method 8021B:Volatiles120120Sample ID:2009c45-014amsSampType:MSDTestCode:EPA Method 8021B:Volatiles120120Sample ID:2009c45-014amsdSampType:MSDTestCode:EPA Method 8021B:Volatiles120120Sample ID:2009c45-014amsdSampType:MSDTestCode:EPA Method 8021B:Volatiles120120Sample ID:2009c45-014amsdSampType:MSDTestCode:EPA Method 8021B:Volatiles120120Sample ID:2	
AnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQuaditySurr: 4-Bromofluorobenzene1.01.00010280120100 <t< th=""><th></th></t<>	
Surr: 4-Bromofluorobenzene1.01.0010280120Sample ID: mb-55362SampType: MBLKTestCode: EPA Method 8021B: VolatilesClient ID:PBSBatch ID: 55362RunNo: 72151Prep Date:9/22/2020Analysis Date:9/25/2020SeqNo: 2529258Units: %RecAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQuaSurr: 4-Bromofluorobenzene1.01.00010280120Inits: %RecSample ID:2009c45-014amsSampType: MSTestCode: EPA Method 8021B: VolatilesClient ID:BatchQCBatch ID: 55362RunNo: 72151Prep Date:9/22/2020Analysis Date:9/25/2020SeqNo: 2530072Units: %RecAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimit <qua< td="">Surr: 4-Bromofluorobenzene1.00.955110780120Inits: %RecAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimit<qua< td="">Sample ID:2009c45-014amsdSampType: MSDTestCode: EPA Method 8021B: VolatilesInits: %RecAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimit<qua< td="">Sample ID:BatchQCBatch ID: 55362RunNo: 72151Prep Date:9/22/2020Analysis Date:9/25/2020SeqNo: 2530073</qua<></qua<></qua<>	
Sample ID: mb-55362 SampType: MBLK TestCode: EPA Method 8021B: Volatiles Client ID: PBS Batch ID: 55362 RunNo: 72151 Prep Date: 9/22/2020 Analysis Date: 9/25/2020 SeqNo: 2529258 Units: %Rec Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua Surr: 4-Bromofluorobenzene 1.0 1.000 102 80 120 120 Sample ID: 2009c45-014ams SampType: MS TestCode: EPA Method 8021B: Volatiles Client ID: BatchQC Batch ID: 55362 RunNo: 72151 Prep Date: 9/22/2020 Analysis Date: 9/25/2020 SeqNo: 2530072 Units: %Rec Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua Surr: 4-Bromofluorobenzene 1.0 0.9551 107 80 120 120 120 </th <th>1</th>	1
Client ID:PBSBatch ID:55362RunNo:72151Prep Date:9/22/2020Analysis Date:9/25/2020SeqNo:2529258Units:%RecAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQuaSurr: 4-Bromofluorobenzene1.01.0001028012010010280120Sample ID:2009c45-014amsSampType:MSTestCode:EPA Method 8021B:VolatilesClient ID:Batch QCBatch ID:55362RunNo:72151Prep Date:9/22/2020Analysis Date:9/25/2020SeqNo:2530072Units:%RecAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQuaSurr: 4-Bromofluorobenzene1.00.955110780120100100100100100Sample ID:2009c45-014amsdSampType:MSDTestCode:EPA Method 8021B:Volatiles100	I
Prep Date:9/22/2020Analysis Date:9/25/2020SeqNo:2529258Units:%RecAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQuaSurr: 4-Bromofluorobenzene1.01.00010280120120Sample ID:2009c45-014amsSampType:MSTestCode:EPA Method 8021B:VolatilesClient ID:BatchQCBatch ID:55362RunNo:72151Prep Date:9/22/2020Analysis Date:9/25/2020SeqNo:2530072Units:%RecAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQuaSurr: 4-Bromofluorobenzene1.00.955110780120100100100Sample ID:2009c45-014amsdSampType:MSDTestCode:EPA Method 8021B:VolatilesClient ID:BatchQCBatch ID:55362RunNo:72151Prep Date:9/22/2020Analysis Date:9/25/2020SeqNo:2530073Units:%RecAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQuaSurr: 4-Bromofluorobenzene1.00.992110480120000Sample ID:mb-55383SampType:MBLKTestCode:EPA Method 8021B:Volatiles	I
AnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQuaditional control con	I
Surr: 4-Bromofluorobenzene1.01.00010280120Sample ID:2009c45-014amsSampType: MSTestCode: EPA Method 8021B: VolatilesClient ID:BatchQCBatch ID:55362RunNo:72151Prep Date:9/22/2020Analysis Date:9/25/2020SeqNo:2530072Units: %RecAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQuaSurr: 4-Bromofluorobenzene1.00.955110780120120Sample ID:2009c45-014amsdSampType: MSDTestCode: EPA Method 8021B: VolatilesClient ID:Batch ID:55362RunNo:72151Prep Date:9/22/2020Analysis Date:9/25/2020SeqNo:2530073Units: %RecAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQuaSurr: 4-Bromofluorobenzene1.00.992110480120000Sample ID:mb-55383SampType: MBLKTestCode: EPA Method 8021B: VolatilesSampType: MBLKTestCode: EPA Method 8021B: Volatiles	I
Sample ID: 2009c45-014ams SampType: MS TestCode: EPA Method 8021B: Volatiles Client ID: BatchQC Batch ID: 55362 RunNo: 72151 Prep Date: 9/22/2020 Analysis Date: 9/25/2020 SeqNo: 2530072 Units: %Rec Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua Sur: 4-Bromofluorobenzene 1.0 0.9551 107 80 120 100 Sample ID: 2009c45-014amsd SampType: MSD TestCode: EPA Method 8021B: Volatiles 100	
Client ID: BatchQC Batch ID: 55362 RunNo: 72151 Prep Date: 9/22/2020 Analysis Date: 9/25/2020 SeqNo: 2530072 Units: %Rec Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua Surr: 4-Bromofluorobenzene 1.0 0.9551 107 80 120 100 Sample ID: 2009c45-014amsd SampType: MSD TestCode: EPA Method 8021B: Volatiles Client ID: Batch QC Batch ID: 55362 RunNo: 72151 Prep Date: 9/22/2020 Analysis Date: 9/25/2020 SeqNo: 2530073 Units: %Rec Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua Surr: 4-Bromofluorobenzene 1.0 0.9921 104 80 120 0 0 Sample ID: mb-55383 SampType: MBLK TestCode: EPA Method 8021B: Volatiles	
Prep Date:9/22/2020Analysis Date:9/25/2020SeqNo:2530072Units:%RecAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQuaSurr: 4-Bromofluorobenzene1.00.955110780120120120120Sample ID:2009c45-014amsdSampType:MSDTestCode:EPA Method 8021B:VolatilesClient ID:BatchQCBatch ID:55362RunNo:72151Prep Date:9/22/2020Analysis Date:9/25/2020SeqNo:2530073Units:%RecAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQuaSurr: 4-Bromofluorobenzene1.00.992110480120000Sample ID:mb-55383SampType:MBLKTestCode:EPA Method 8021B:Volatiles	
AnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQuaditionSurr: 4-Bromofluorobenzene1.00.955110780120Sample ID: 2009c45-014amsdSampType: MSDTestCode: EPA Method 8021B: VolatilesClient ID:BatchQCBatch ID: 55362RunNo: 72151Prep Date:9/22/2020Analysis Date:9/25/2020SeqNo: 2530073Units: %RecAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitSurr: 4-Bromofluorobenzene1.00.992110480120000Sample ID:mb-55383SampType:MBLKTestCode: EPA Method 8021B: Volatiles	
Surr: 4-Bromofluorobenzene1.00.955110780120Sample ID: 2009c45-014amsdSampType: MSDTestCode: EPA Method 8021B: VolatilesClient ID:BatchQCBatch ID: 55362RunNo: 72151Prep Date:9/22/2020Analysis Date:9/25/2020SeqNo: 2530073Units: %RecAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQuaSurr: 4-Bromofluorobenzene1.00.992110480120000Sample ID:mb-55383SampType:MBLKTestCode: EPA Method 8021B: Volatiles	
Sample ID: 2009c45-014amsdSampType: MSDTestCode: EPA Method 8021B: VolatilesClient ID:BatchQCBatch ID: 55362RunNo: 72151Prep Date:9/22/2020Analysis Date:9/25/2020SeqNo: 2530073Units: %RecAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQuaSurr: 4-Bromofluorobenzene1.00.992110480120000Sample ID:mb-55383SampType:MBLKTestCode:EPA Method 8021B: Volatiles	I
Client ID: Batch QC Batch ID: 55362 RunNo: 72151 Prep Date: 9/22/2020 Analysis Date: 9/25/2020 SeqNo: 2530073 Units: %Rec Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua Surr: 4-Bromofluorobenzene 1.0 0.9921 104 80 120 0 0 Sample ID: mb-55383 SampType: MBLK TestCode: EPA Method 8021B: Volatiles	
Prep Date: 9/22/2020 Analysis Date: 9/25/2020 SeqNo: 2530073 Units: %Rec Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua Surr: 4-Bromofluorobenzene 1.0 0.9921 104 80 120 0 0 Sample ID: mb-55383 SampType: MBLK TestCode: EPA Method 8021B: Volatiles	
Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Quadratic Surr: 4-Bromofluorobenzene 1.0 0.9921 104 80 120 0 0 Sample ID: mb-55383 SampType: MBLK TestCode: EPA Method 8021B: Volatiles Volatiles	
Surr: 4-Bromofluorobenzene 1.0 0.9921 104 80 120 0 0 Sample ID: mb-55383 SampType: MBLK TestCode: EPA Method 8021B: Volatiles Volatiles	
Sample ID: mb-55383 SampType: MBLK TestCode: EPA Method 8021B: Volatiles	I
Client ID: DDC Datab ID: E5992 Durble: 79454	
Client ID: PBS Batch ID: 55383 RunNo: 72151	
Prep Date: 9/23/2020 Analysis Date: 9/26/2020 SeqNo: 2530090 Units: mg/Kg	
Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua	I
Benzene ND 0.025	
Toluene ND 0.050	
EthylbenzeneND0.050Xylenes, TotalND0.10	
Sur: 4-Bromofluorobenzene 1.0 1.000 103 80 120	
Sample ID: LCS-55383 SampType: LCS TestCode: EPA Method 8021B: Volatiles	
Client ID: LCSS Batch ID: 55383 RunNo: 72151	
Prep Date: 9/23/2020 Analysis Date: 9/26/2020 SeqNo: 2530091 Units: mg/Kg	
Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua	
Benzene 0.97 0.025 1.000 0 96.9 80 120	

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative 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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2009D45

02-Oct-20

Client:

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

HILCORP ENERGY

Project:	Howell M	1									
Sample ID: LCS	-55383	SampT	Гуре: LC	S	Tes	TestCode: EPA Method 8021B: Volatiles					
Client ID: LCS	s	Batcl	h ID: 553	383	R	RunNo: 72	2151				
Prep Date: 9/2	3/2020	Analysis D	Date: 9/2	26/2020	S	SeqNo: 25	530091	Units: mg/K	(g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Toluene		1.0	0.050	1.000	0	101	80	120			
Ethylbenzene		1.0	0.050	1.000	0	101	80	120			
Xylenes, Total		3.1	0.10	3.000	0	102	80	120			
Surr: 4-Bromofluor	obenzene	1.1		1.000		106	80	120			
Sample ID: 2009d42-002ams SampType: MS				Tes	tCode: EF	A Method	8021B: Volat	iles			
Client ID: Batc	hQC	Batc	Batch ID: 55383 RunNo: 72151			2151					
Prep Date: 9/2	3/2020	Analysis E	Date: 9/2	26/2020	S	SeqNo: 25	530094	Units: mg/K	íg		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene		0.85	0.024	0.9542	0	89.6	76.3	120			
Toluene		0.93	0.048	0.9542	0.01215	95.9	78.5	120			
Ethylbenzene		0.95	0.048	0.9542	0	99.9	78.1	124			
Xylenes, Total		2.9	0.095	2.863	0	99.8	79.3	125			
Surr: 4-Bromofluor	obenzene	0.95		0.9542		99.8	80	120			
Sample ID: 2009	d42-002amsd	SampT	Гуре: МЅ	D	Tes	tCode: EF	A Method	8021B: Volat	iles		
Client ID: Batc	hQC	Batc	h ID: 553	383	R	RunNo: 72	2151				
Prep Date: 9/2	3/2020	Analysis E	Date: 9/ 2	26/2020	S	SeqNo: 25	530095	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene		0.86	0.023	0.9302	0	92.1	76.3	120	0.209	20	
Toluene		0.92	0.047	0.9302	0.01215	97.3	78.5	120	1.13	20	
Ethylbenzene		0.94	0.047	0.9302	0	101	78.1	124	1.86	20	
Xylenes, Total		2.8	0.093	2.791	0	101	79.3	125	1.35	20	
Surr: 4-Bromofluor	ohenzene	0.94		0.9302		101	80	120	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative 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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2009D45

02-Oct-20

HALL		Hall Environmenta Alb TEL: 505-345-397, Website: clients.h	4901 Hav ouquerque, N 5 FAX: 505-3	wkins NE M 87109 Sa l 45-4107	mple Log-In (Page 68 o
Client Name:	HILCORP ENERGY	Work Order Number	2009D45		RcptNo	p: 1
Received By:	Cheyenne Cason	9/23/2020 8:00:00 AM	1			
Completed By:	Isaiah Ortiz	9/23/2020 9:08:49 AM	I	Inc	2-1	
Reviewed By:	lm	9/23/2J				
Chain of Custo	<u>ody</u>					
1. Is Chain of Cus	tody complete?		Yes 🗹	No 🗌	Not Present	
2. How was the sa	ample delivered?		Courier			
Log In 3. Was an attemp	t made to cool the samples?	,	Yes 🔽	No 🗌	NA 🗌	
4. Were all sample	es received at a temperature	of >0° C to 6.0°C	Yes 🔽	No 🗌		
5. Sample(s) in pr	oper container(s)?		Yes 🗹	No 🗌		
6. Sufficient sampl	e volume for indicated test(s	5)?	Yes 🗹	No 🗌		
7. Are samples (ex	cept VOA and ONG) proper	ly preserved?	Yes 🗸	No 🗌		
8. Was preservativ	e added to bottles?		Yes	No 🗸	NA 🗌	
9. Received at leas	st 1 vial with headspace <1/4	4" for AQ VOA?	Yes 🗌	No 🗌	NA 🗹	
10. Were any samp	le containers received broke	en?	Yes 🗌	No 🔽	# of preserved bottles checked	
	match bottle labels? cies on chain of custody)		Yes 🗹	No 🗌	for pH:	or >12 unless noted)
12. Are matrices con	rectly identified on Chain of	Custody?	Yes 🗹	No 🗌	Adjusted?	
13. Is it clear what a	nalyses were requested?		Yes 🗸	No 🗌		CD: 0 00
	times able to be met? tomer for authorization.)		Yes 🗹	No 🗌	Checked by:	SPA 9.23.2
Special Handlin	<u>g (if applicable)</u>					
15. Was client notif	ied of all discrepancies with	this order?	Yes	No 🗌	NA 🗹	
Person N	otified:	Date:				
By Whom	p .	Via: [eMail] Phone 🔄 Fax	In Person	
Regarding Client Inst	P					
16. Additional rema	arks:					
17. <u>Cooler Inform</u> Cooler No		eal Intact Seal No	Seal Date	Signed By		
		t Present		Signed by		

.

Page 1 of 1

Chain-of-Custody Record	Turn-Around Time:							
	K Standard □ Rush	ANALYSIS LABORATORY						
Ath, Clara Cardoza Mailing Address:	Project Name:	www.hallenvironmental.com						
Mailing Address:	Howell MHI	4901 Hawkins NE - Albuquerque, NM 87109						
	Project #: Tel. 505-345-3975 Fax 505-345-41							
Phone #:	-	Analysis Request						
email or Fax#: ccardoza Chailcorp.com	Project Manager:							
	LTE-Danny Burns	s (8021) 0 / MR01 PCB's PO4, SO4 it/Absent)						
QA/QC Package:	ete starting grant							
Accreditation:	Sampler: D. Burns	BTEX) MTBE / TMB TPH:8015D(GRO / DR 8081 Pesticides/8082 B081 Pesticides/8082 EDB (Method 504.1) PAHs by 8310 or 8270 RCRA 8 Metals CDF, Br, NO ₃ , NO ₂ , 8260 (VOA) 8270 (Semi-VOA) Total Coliform (Presen						
□ NELAC □ Other	On Ice: 🛛 Yes 🗆 No	BTEX) MTBE / TM TPH:8015D(GRO / D 8081 Pesticides/808 8081 Pesticides/808 EDB (Method 504.1) PAHs by 8310 or 82 RCRA 8 Metals CI, F, Br, NO ₃ , NO ₂ CI, F, Br, NO ₃ , NO ₂ S260 (VOA) 8270 (Semi-VOA) Total Coliform (Prese						
EDD (Type)	# of Coolers: (BTEX) MTBE / 1 TPH:8015D(GRO 8081 Pesticides/8 EDB (Method 504 PAHs by 8310 or RCRA 8 Metals CD F, Br, NO ₃ , N CD F, Br, NO ₃ , N CD F, Br, NO ₃ , N Total Coliform (Pr						
	Cooler Temp(including CF): 5.3-0.1=5.2 (°C)	BTEX) MT TPH:8015D 8081 Pestic 8081 Pestic EDB (Metho EDB (Metho EDB (Metho 8260 (VOA) 8260 (VOA) 8270 (Semi Total Colifo						
	Container Preservative HEAL No.	BTEX BTEX 8081 F 8081 F 8081 F 8081 F F PAHS 8260 (101 F, 101 C						
Date Time Matrix Sample Name	Type and # Type 2009, D45							
9-21 0900 Soil BHUS @ 30'-35'	1-402 COOL ODL							
1 0930 1 BH08 @40'-45'	002							
1200 BH 09 @ 35'-38'	003							
V 1220 BH09@40'-43'	004							
9-22 0830 BHIO@ 30'-35'	005							
1 Was N/ Pills Ord'ny								
V 1000 V 15710(238-40"	V V 006							
Date: Time: Relinquished by:	Received by: Via: Date Time	Remarks: C(: dhencmann@Henv.com Jburns@Itenv.com						
9-22-20 14:30	Just Wal 122/2020	11 man CP 1 Jenny Porton						
Date: Time: Relinquished by:	Received by: Via: Date Time	a bui use i porvo coros						
12/020 1810 000 2000	Che Cam 9/23/60 0500	is possibility. Any sub-contracted data will be clearly notated on the analytical report.						



May 28, 2021

Clara Cardoza HILCORP ENERGY PO Box 4700 Farmington, NM 87499 TEL: (505) 564-0733 FAX: TEL: 505-345-3975 FAX: 505-345-4107 Website: clients.hallenvironmental.com

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory

RE: Howell M1

OrderNo.: 2105A14

Dear Clara Cardoza:

Hall Environmental Analysis Laboratory received 4 sample(s) on 5/22/2021 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,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

CLIENT: HILCORP ENERGY

2105A14-001

Project: Howell M1

Lab ID:

Analytical Report Lab Order 2105A14

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 5/28/2021 Client Sample ID: BH11 10-15' Collection Date: 5/20/2021 1:30:00 PM Received Date: 5/22/2021 8:45:00 AM

Lub ID: 2105/111001	Mutha Soll	nee	liveu Dute.	521 0.15.00 / 101		
Analyses	Result	RL Qu	al Units	DF	Date Analyzed	
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: SB	
Diesel Range Organics (DRO)	ND	9.6	mg/Kg	1	5/24/2021 2:42:02 PM	
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	5/24/2021 2:42:02 PM	
Surr: DNOP	91.8	70-130	%Rec	1	5/24/2021 2:42:02 PM	
EPA METHOD 300.0: ANIONS					Analyst: VP	
Chloride	110	60	mg/Kg	20	5/25/2021 12:30:50 PM	
EPA METHOD 8260B: VOLATILES SHOP					Analyst: JMR	
Benzene	ND	0.023	mg/Kg	1	5/25/2021 2:29:19 AM	
Toluene	ND	0.047	mg/Kg	1	5/25/2021 2:29:19 AM	
Ethylbenzene	ND	0.047	mg/Kg	1	5/25/2021 2:29:19 AM	
Xylenes, Total	ND	0.093	mg/Kg	1	5/25/2021 2:29:19 AM	
Surr: 1,2-Dichloroethane-d4	94.0	70-130	%Rec	1	5/25/2021 2:29:19 AM	
Surr: 4-Bromofluorobenzene	97.4	70-130	%Rec	1	5/25/2021 2:29:19 AM	
Surr: Dibromofluoromethane	112	70-130	%Rec	1	5/25/2021 2:29:19 AM	
Surr: Toluene-d8	102	70-130	%Rec	1	5/25/2021 2:29:19 AM	
EPA METHOD 8015D MOD: GASOLINE	RANGE				Analyst: JMR	
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	5/25/2021 2:29:19 AM	
Surr: BFB	105	70-130	%Rec	1	5/25/2021 2:29:19 AM	

Matrix: SOIL

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
- н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- Analyte detected in the associated Method Blank в
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

Page 1 of 8

CLIENT: HILCORP ENERGY

Howell M1

Project:

Analytical Report Lab Order 2105A14

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 5/28/2021 Client Sample ID: BH11 50-55' Collection Date: 5/20/2021 3:30:00 PM

Lab ID: 2105A14-002 Matrix: SOIL Received Date: 5/22/2021 8:45:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: SB Diesel Range Organics (DRO) ND 9.6 mg/Kg 1 5/24/2021 2:51:50 PM Motor Oil Range Organics (MRO) ND 48 mg/Kg 1 5/24/2021 2:51:50 PM Surr: DNOP 123 70-130 %Rec 1 5/24/2021 2:51:50 PM **EPA METHOD 300.0: ANIONS** Analyst: VP Chloride ND 5/25/2021 1:32:52 PM 60 mg/Kg 20 **EPA METHOD 8260B: VOLATILES SHORT LIST** Analyst: JMR Benzene ND 0.024 mg/Kg 5/25/2021 5:43:15 PM 1 Toluene ND 0.048 mg/Kg 5/25/2021 5:43:15 PM 1 Ethvlbenzene ND 0.048 mg/Kg 1 5/25/2021 5:43:15 PM Xylenes, Total ND 0.097 mg/Kg 1 5/25/2021 5:43:15 PM Surr: 1.2-Dichloroethane-d4 88.5 70-130 %Rec 1 5/25/2021 5:43:15 PM Surr: 4-Bromofluorobenzene 98.3 70-130 %Rec 1 5/25/2021 5:43:15 PM Surr: Dibromofluoromethane 103 70-130 %Rec 1 5/25/2021 5:43:15 PM Surr: Toluene-d8 101 70-130 %Rec 1 5/25/2021 5:43:15 PM **EPA METHOD 8015D MOD: GASOLINE RANGE** Analyst: JMR Gasoline Range Organics (GRO) ND mg/Kg 5/25/2021 5:43:15 PM 4.8 1 Surr: BFB 106 70-130 %Rec 1 5/25/2021 5:43:15 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 MatrixH Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative 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 2 of 8

CLIENT: HILCORP ENERGY

2105A14-003

Project: Howell M1

Lab ID:

Analytical Report Lab Order 2105A14

Date Reported: 5/28/2021

Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: BH12 30-35' Collection Date: 5/21/2021 10:00:00 AM Received Date: 5/22/2021 8:45:00 AM

Result	RL Qu	al Units	DF	Date Analyzed
BE ORGANICS				Analyst: SB
ND	9.8	mg/Kg	1	5/24/2021 3:01:38 PM
ND	49	mg/Kg	1	5/24/2021 3:01:38 PM
95.4	70-130	%Rec	1	5/24/2021 3:01:38 PM
				Analyst: VP
ND	60	mg/Kg	20	5/25/2021 1:45:16 PM
ORT LIST				Analyst: JMR
ND	0.024	mg/Kg	1	5/25/2021 3:26:18 AM
ND	0.048	mg/Kg	1	5/25/2021 3:26:18 AM
ND	0.048	mg/Kg	1	5/25/2021 3:26:18 AM
ND	0.096	mg/Kg	1	5/25/2021 3:26:18 AM
90.6	70-130	%Rec	1	5/25/2021 3:26:18 AM
98.9	70-130	%Rec	1	5/25/2021 3:26:18 AM
110	70-130	%Rec	1	5/25/2021 3:26:18 AM
100	70-130	%Rec	1	5/25/2021 3:26:18 AM
RANGE				Analyst: JMR
ND	4.8	mg/Kg	1	5/25/2021 3:26:18 AM
103	70-130	%Rec	1	5/25/2021 3:26:18 AM
	SE ORGANICS ND 95.4 ND 95.4 ND ND ND ND ND 90.6 98.9 110 100 E RANGE ND	ND 9.8 ND 49 95.4 70-130 ND 60 DRT LIST ND 0.024 ND 0.048 ND 0.048 ND 0.048 ND 0.048 ND 0.048 ND 0.096 90.6 70-130 98.9 70-130 110 70-130 100 70-130 100 70-130 100 70-130 ERANGE ND 4.8 100	ND 9.8 mg/Kg ND 49 mg/Kg 95.4 70-130 %Rec ND 60 mg/Kg D 60 mg/Kg D 0.024 mg/Kg D 0.048 mg/Kg ND 0.048 mg/Kg ND 0.096 mg/Kg ND 0.096 mg/Kg 90.6 70-130 %Rec 98.9 70-130 %Rec 110 70-130 %Rec 100 70-130 %Rec	ND 9.8 mg/Kg 1 ND 49 mg/Kg 1 95.4 70-130 %Rec 1 ND 60 mg/Kg 20 DRT LIST ND 0.024 mg/Kg 1 ND 0.024 mg/Kg 1 ND 0.048 mg/Kg 1 ND 0.048 mg/Kg 1 ND 0.096 mg/Kg 1 90.6 70-130 %Rec 1 98.9 70-130 %Rec 1 100 70-130 %Rec 1 100

Matrix: SOIL

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
- н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- Analyte detected in the associated Method Blank в
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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Analytical Report Lab Order 2105A14

Date Reported: 5/28/2021

5/25/2021 6:11:51 PM

5/25/2021 6:11:51 PM

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY Client Sample ID: BH12 40-45' **Project:** Howell M1 Collection Date: 5/21/2021 11:00:00 AM Lab ID: 2105A14-004 Matrix: SOIL Received Date: 5/22/2021 8:45:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: SB Diesel Range Organics (DRO) ND 9.6 mg/Kg 1 5/24/2021 3:11:28 PM Motor Oil Range Organics (MRO) ND 48 mg/Kg 1 5/24/2021 3:11:28 PM Surr: DNOP 104 70-130 %Rec 1 5/24/2021 3:11:28 PM **EPA METHOD 300.0: ANIONS** Analyst: VP Chloride ND 61 5/25/2021 1:57:41 PM mg/Kg 20 **EPA METHOD 8260B: VOLATILES SHORT LIST** Analyst: JMR Benzene ND 0.024 mg/Kg 5/25/2021 6:11:51 PM 1 Toluene ND 0.047 mg/Kg 5/25/2021 6:11:51 PM 1 Ethvlbenzene ND 0.047 mg/Kg 1 5/25/2021 6:11:51 PM Xylenes, Total ND 0.095 mg/Kg 1 5/25/2021 6:11:51 PM Surr: 1.2-Dichloroethane-d4 95.1 70-130 %Rec 1 5/25/2021 6:11:51 PM Surr: 4-Bromofluorobenzene 96.6 70-130 %Rec 1 5/25/2021 6:11:51 PM Surr: Dibromofluoromethane 103 70-130 %Rec 1 5/25/2021 6:11:51 PM Surr: Toluene-d8 98.1 70-130 %Rec 1 5/25/2021 6:11:51 PM **EPA METHOD 8015D MOD: GASOLINE RANGE** Analyst: JMR

21

109

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 MatrixH Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative 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

mg/Kg

%Rec

1

1

47

70-130

- P Sample pH Not In Range
- RL Reporting Limit

Page 4 of 8

Gasoline Range Organics (GRO)

Surr: BFB

Client: Project:		CORP ENERGY vell M1	7								
Sample ID:	MB-60237	SampTy	pe: ME	BLK	Tes	tCode: EF	PA Method	300.0: Anion	s		
Client ID:	PBS	Batch	ID: 60	237	F	RunNo: 77	7623				
Prep Date:	5/25/2021	Analysis Da	ate: 5/	25/2021	S	SeqNo: 27	756623	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND	1.5								
Sample ID:	LCS-60237	SampTy	pe: LC	S	Tes	tCode: EF	PA Method	300.0: Anion	s		
Client ID:	LCSS	Batch	ID: 60	237	F	RunNo: 77	7623				
Prep Date:	5/25/2021	Analysis Da	ate: 5/	25/2021	S	SeqNo: 27	756624	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		14	1.5	15.00	0	91.6	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of 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 5 of 8

WO#: 2105A14 28-May-21

Client: HILCOF Project: Howell 1	RP ENERG M1	Y								
Sample ID: MB-60204	SampT	Гуре: МЕ	BLK	Tes	tCode: EF	PA Method	8015M/D: Die	esel Range	e Organics	
Client ID: PBS	Batcl	h ID: 602	204	F	unNo: 77	7605				
Prep Date: 5/22/2021	Analysis D	Date: 5/ 2	24/2021	S	eqNo: 27	754540	Units: mg/K	g		
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		108	70	130			
Sample ID: LCS-60204	SampT	Type: LC	S	Tes	tCode: EF	PA Method	8015M/D: Die	esel Range	e Organics	
Client ID: LCSS	Batcl	h ID: 602	204	F	unNo: 77	7600				
Prep Date: 5/22/2021	Analysis D	Date: 5/ 2	24/2021	S	eqNo: 27	754936	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	10	50.00	0	80.2	68.9	141			
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 Quanitative 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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2105A14

28-May-21

Client:

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

HILCORP ENERGY

Qual
Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of 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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WO#: 2105A14

28-May-21

	CORP ENERG vell M1	Y								
Sample ID: Ics-60202	SampT	ype: LC	S	Tes	tCode: El	PA Method	8015D Mod:	Gasoline	Range	
Client ID: LCSS	Batc	h ID: 60	202	F	RunNo: 7	7632				
Prep Date: 5/22/2021	Analysis E	Date: 5/	24/2021	S	SeqNo: 2	755770	Units: mg/k	íg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO	0) 24	5.0	25.00	0	97.4	70	130			
Surr: BFB	520		500.0		104	70	130			
Sample ID: mb-60202	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8015D Mod:	Gasoline	Range	
Client ID: PBS	Batc	h ID: 60	202	F	RunNo: 7	7632				
Prep Date: 5/22/2021	Analysis E	Date: 5/	24/2021	S	SeqNo: 2	755771	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO) ND	5.0								
Surr: BFB	520		500.0		103	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative 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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2105A14

28-May-21

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ENVIRONMENTAL ANALYSIS LABORATORY TEL: 505-345	ental Analysis Labor 4901 Hawkin Albuquerque, NM 8 3975 FAX: 505-345- ts.hallenvironmental	7109 San 4107	P nple Log-In Check List
Client Name: HILCORP ENERGY Work Order Num	nber: 2105A14		RcptNo: 1
Received By: Desiree Dominguez 5/22/2021 8:45:00	АМ	TAZ	
Completed By: Desiree Dominguez 5/22/2021 10:08:0	8 AM	THE	
Reviewed By: El SIZZ ZI			
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 $>0^{\circ}$ C to 6.0° C	Yes 🔽	No 🗌	
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 🗹	# of preserved bottles checked
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes 🗹	No 🗌	for pH: (<2 or >12 unless note
12. Are matrices correctly identified on Chain of Custody?	Yes 🖌	No 🗌	Adjusted?
13. Is it clear what analyses were requested?	Yes 🗹	No 🗌	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes 🗹	No 🗔	Checked by: DAD 5/22/2
Special Handling (if applicable)			
15. Was client notified of all discrepancies with this order?	Yes 🗌	No 🗌	NA 🗹
Person Notified: Date	e: [
By Whom: Via:	eMail 🗌 F	Phone 🗌 Fax	In Person
Regarding:	Nev Canada Canada Cada yana ara mutapat	ang ng pang kang ng pang ng pan	ED-ED-SUITS APPLICATION OF DESCRIPTION OF
Client Instructions:	ann an far feiling agus ann an san af an tao an		
16. Additional remarks:			
Cooler Information Cooler No Temp °C Condition Seal Intact Seal No 1 3.4 Good Yes	Seal Date	Signed By	

Page 1 of 1

Client:	Hilcory Clava		Record	Turn-Around Standard Project Nam <i>Ho w</i> Project #:	d 🗆 Rush		HALL ENVIRONMENTA ANALYSIS LABORATO www.hallenvironmental.com 4901 Hawkins NE - Albuquerque, NM 87109 Tel. 505-345-3975 Fax 505-345-4107 Analysis Request													
email or Fa QA/QC Pack Standar Accreditation Date Tin	kage: d on: □ Az C □ Othe /pe)	□ Level 4 ompliance	(Full Validation)	Sampler: On Ice: # of Coolers:	Wrt Hyd Evric Ca ⊠Yes	~~011 □ No 3+0:1=3,4 (°C)	BTEX / MTBE / TMB's (8021)	TPH:8015D(GR0 / DR0 / MR0)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO ₃ , NO ₂ , PO ₄ , SO ₄	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Chloride			
5/20 13 5/20 13 5/20 15 5/21 10 5/21 110	30 Soil 30 20	ВНЛ ВНП				-001 -002 -003 -004	<u>ж</u> Х Х							00	0		× × ×			
Date: Time S/2(1) $SDate: TimeS/2(1)$ $SIf necessity in the second second$	C Ez	ned by: rttrubl	reters	Received by: Received by: Received by: contracted to other a	Via; <u>when the via;</u> Via: Couries ccredited laboratorie	Date Time 5/21/20 Date Time $5 \cdot 22 \cdot 21 8:45$ as. This serves as notice of this		narks		b-cont	racted	data v	vill be o	clearly	y notati	ed on	the ana	alytical	report.	<u> </u>



May 28, 2021

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

OrderNo.: 2105888

Hall Environmental Analysis Laboratory

TEL: 505-345-3975 FAX: 505-345-4107

Website: clients.hallenvironmental.com

4901 Hawkins NE

Albuquerque, NM 87109

RE: Howell 1M

Dear Clara Cardoza:

Hall Environmental Analysis Laboratory received 2 sample(s) on 5/20/2021 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,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

CLIENT: HILCORP ENERGY

Project: Howell 1M

Analytical Report Lab Order 2105888

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 5/28/2021 Client Sample ID: BH10 0-5' Collection Date: 5/14/2021 11:00:00 AM Pageiyad Date: 5/20/2021 7:20:00 AM

Lab ID: 2105888-001	Matrix: SOIL	Rece	eived Date:	5/20/2	021 7:20:00 AM
Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS				Analyst: SB
Diesel Range Organics (DRO)	ND	8.5	mg/Kg	1	5/22/2021 6:59:05 PM
Motor Oil Range Organics (MRO)	ND	43	mg/Kg	1	5/22/2021 6:59:05 PM
Surr: DNOP	103	70-130	%Rec	1	5/22/2021 6:59:05 PM
EPA METHOD 8015D: GASOLINE RAM	IGE				Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	5/22/2021 11:59:15 AM
Surr: BFB	90.2	70-130	%Rec	1	5/22/2021 11:59:15 AM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	0.023	mg/Kg	1	5/22/2021 11:59:15 AM
Toluene	ND	0.047	mg/Kg	1	5/22/2021 11:59:15 AM
Ethylbenzene	ND	0.047	mg/Kg	1	5/22/2021 11:59:15 AM
Xylenes, Total	ND	0.094	mg/Kg	1	5/22/2021 11:59:15 AM
Surr: 4-Bromofluorobenzene	101	70-130	%Rec	1	5/22/2021 11:59:15 AM
EPA METHOD 300.0: ANIONS					Analyst: VP
Chloride	ND	60	mg/Kg	20	5/24/2021 4:16:53 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 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 1 of 7

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CLIENT: HILCORP ENERGY

Howell 1M

Project:

Analytical Report Lab Order 2105888

Date Reported: 5/28/2021

Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: BH10 40-45' Collection Date: 5/14/2021 12:30:00 PM Received Date: 5/20/2021 7:20:00 AM

Lab ID: 2105888-002	Matrix: SOIL	Receiv	ved Date:	5/20/2	021 7:20:00 AM
Analyses	Result	RL Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: mb
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	5/22/2021 11:15:07 AM
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	5/22/2021 11:15:07 AM
Surr: DNOP	140	70-130 S	%Rec	1	5/22/2021 11:15:07 AM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	5/22/2021 12:22:39 PM
Surr: BFB	89.7	70-130	%Rec	1	5/22/2021 12:22:39 PM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	0.025	mg/Kg	1	5/22/2021 12:22:39 PM
Toluene	ND	0.049	mg/Kg	1	5/22/2021 12:22:39 PM
Ethylbenzene	ND	0.049	mg/Kg	1	5/22/2021 12:22:39 PM
Xylenes, Total	ND	0.099	mg/Kg	1	5/22/2021 12:22:39 PM
Surr: 4-Bromofluorobenzene	100	70-130	%Rec	1	5/22/2021 12:22:39 PM
EPA METHOD 300.0: ANIONS					Analyst: VP
Chloride	68	60	mg/Kg	20	5/24/2021 4:29:17 PM

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

Qualifiers:

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

- Analyte detected in the associated Method Blank в
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

Page 2 of 7

Client: Project:		CORP ENERGY vell 1M	7								
Sample ID:	MB-60211	SampTy	pe: ME	BLK	Tes	tCode: EF	PA Method	300.0: Anion	s		
Client ID:	PBS	Batch	ID: 60	211	F	RunNo: 77	7619				
Prep Date:	5/24/2021	Analysis Da	ite: 5/	24/2021	S	SeqNo: 27	755203	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND	1.5								
Sample ID:	LCS-60211	SampTy	pe: LC	s	Tes	tCode: EF	PA Method	300.0: Anion	s		
Client ID:	LCSS	Batch	ID: 60	211	F	RunNo: 77	7619				
Prep Date:	5/24/2021	Analysis Da	ite: 5/	24/2021	S	SeqNo: 27	755204	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		14	1.5	15.00	0	93.7	90	110			

- * 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 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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2105888

28-May-21

Client: HILCOR	P ENERG	iΥ								
Project: Howell 1	М									
Sample ID: MB-60165	Samp	Гуре: МЕ	BLK	Tes	tCode: El	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID: PBS	Batc	h ID: 60	165	F	RunNo: 7	7563				
Prep Date: 5/20/2021	Analysis [Date: 5/	21/2021	S	SeqNo: 2	753501	Units: mg/k	٢g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	14		10.00		138	70	130			S
Sample ID: MB-60191	Samp	Гуре: МЕ	BLK	Tes	tCode: El	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID: PBS	Batc	h ID: 60	191	F	RunNo: 7	7590				
Prep Date: 5/21/2021	Analysis [Date: 5/	22/2021	S	SeqNo: 2	753997	Units: mg/k	٤g		
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	13		10.00		128	70	130			
Sample ID: LCS-60191	Samp	Гуре: LC	S	Tes	tCode: El	PA Method	8015M/D: Di	esel Rang	e Organics	
								-		
Client ID: LCSS	Batc	h ID: 60	191	F	RunNo: 7	7590		-		
Client ID: LCSS Prep Date: 5/21/2021	Batc Analysis [RunNo: 7 SeqNo: 2		Units: mg/k	۲		
			22/2021				Units: mg/k HighLimit	(g %RPD	RPDLimit	Qual
Prep Date: 5/21/2021	Analysis [Date: 5/	22/2021	S	SeqNo: 2	754004	•	•	RPDLimit	Qual
Prep Date: 5/21/2021 Analyte	Analysis I Result	Date: 5/	22/2021 SPK value	SPK Ref Val	SeqNo: 2 %REC	754004 LowLimit	HighLimit	•	RPDLimit	Qual S
Prep Date: 5/21/2021 Analyte Diesel Range Organics (DRO)	Analysis I Result 64 7.2	Date: 5/	22/2021 SPK value 50.00 5.000	SPK Ref Val 0	SeqNo: 2 %REC 127 145	754004 LowLimit 68.9 70	HighLimit 141	%RPD		
Prep Date: 5/21/2021 Analyte Diesel Range Organics (DRO) Surr: DNOP	Analysis I Result 64 7.2 Samp	Date: 5/ PQL 10	22/2021 SPK value 50.00 5.000	SPK Ref Val 0 Tes	SeqNo: 2 %REC 127 145	754004 LowLimit 68.9 70 PA Method	HighLimit 141 130	%RPD		
Prep Date: 5/21/2021 Analyte Diesel Range Organics (DRO) Surr: DNOP Sample ID: 2105888-002AMS	Analysis I Result 64 7.2 Samp	Date: 5/ PQL 10 Type: MS h ID: 60	22/2021 SPK value 50.00 5.000	SPK Ref Val 0 Tes F	SeqNo: 2 %REC 127 145 tCode: EI	754004 LowLimit 68.9 70 PA Method 7590	HighLimit 141 130	%RPD		
Prep Date: 5/21/2021 Analyte Diesel Range Organics (DRO) Surr: DNOP Sample ID: 2105888-002AMS Client ID: BH10 40-45'	Analysis I Result 64 7.2 Samp Batc	Date: 5/ PQL 10 Type: MS h ID: 60	22/2021 SPK value 50.00 5.000	SPK Ref Val 0 Tes F	SeqNo: 2 %REC 127 145 tCode: EF	754004 LowLimit 68.9 70 PA Method 7590	HighLimit 141 130 8015M/D: Die	%RPD		
Prep Date: 5/21/2021 Analyte Diesel Range Organics (DRO) Surr: DNOP Sample ID: 2105888-002AMS Client ID: BH10 40-45' Prep Date: 5/21/2021	Analysis I Result 64 7.2 Samp Batc Analysis I	Date: 5/ PQL 10 Type: MS h ID: 60 Date: 5/	22/2021 SPK value 50.00 5.000	SPK Ref Val 0 Tes F S	SeqNo: 2 %REC 127 145 tCode: El RunNo: 7 SeqNo: 2	754004 LowLimit 68.9 70 PA Method 7590 754008	HighLimit 141 130 8015M/D: Dia Units: mg/k	%RPD esel Range	e Organics	S
Prep Date: 5/21/2021 Analyte Diesel Range Organics (DRO) Surr: DNOP Sample ID: 2105888-002AMS Client ID: BH10 40-45' Prep Date: 5/21/2021 Analyte	Analysis I Result 64 7.2 Samp Batc Analysis I Result	Date: 5/ PQL 10 Type: MS h ID: 60 Date: 5/ PQL	22/2021 SPK value 50.00 5.000 3 191 22/2021 SPK value	SPK Ref Val 0 Tes F SPK Ref Val	SeqNo: 2 %REC 127 145 tCode: EI RunNo: 7 SeqNo: 2 %REC	754004 LowLimit 68.9 70 PA Method 7590 754008 LowLimit	HighLimit 141 130 8015M/D: Dia Units: mg/H HighLimit	%RPD esel Range	e Organics	S
Prep Date: 5/21/2021 Analyte Diesel Range Organics (DRO) Surr: DNOP Sample ID: 2105888-002AMS Client ID: BH10 40-45' Prep Date: 5/21/2021 Analyte Diesel Range Organics (DRO)	Analysis I Result 64 7.2 Samp Batc Analysis I Result 50 5.2	Date: 5/ PQL 10 Type: MS h ID: 60 Date: 5/ PQL	22/2021 SPK value 50.00 5.000 5 191 22/2021 SPK value 47.13 4.713	SPK Ref Val 0 Tes F SPK Ref Val 0	SeqNo: 2 %REC 127 145 tCode: El RunNo: 7 SeqNo: 2 %REC 107 111	754004 LowLimit 68.9 70 PA Method 7590 754008 LowLimit 15 70	HighLimit 141 130 8015M/D: Did Units: mg/k HighLimit 184	%RPD esel Range	e Organics RPDLimit	S
Prep Date: 5/21/2021 Analyte Diesel Range Organics (DRO) Surr: DNOP Sample ID: 2105888-002AMS Client ID: BH10 40-45' Prep Date: 5/21/2021 Analyte Diesel Range Organics (DRO) Surr: DNOP	Analysis I Result 64 7.2 Samp Batc Analysis I Result 50 5.2 D Samp	Date: 5/ PQL 10 Type: MS h ID: 60 Date: 5/ PQL 9.4	22/2021 SPK value 50.00 5.000 5.000 5 191 22/2021 SPK value 47.13 4.713 5D	SPK Ref Val 0 Tes 5 SPK Ref Val 0 Tes	SeqNo: 2 %REC 127 145 tCode: El RunNo: 7 SeqNo: 2 %REC 107 111	754004 LowLimit 68.9 70 74 Method 7590 754008 LowLimit 15 70 74 Method	HighLimit 141 130 8015M/D: Did Units: mg/P HighLimit 184 130	%RPD esel Range	e Organics RPDLimit	S
Prep Date: 5/21/2021 Analyte Diesel Range Organics (DRO) Surr: DNOP Sample ID: 2105888-002AMS Client ID: BH10 40-45' Prep Date: 5/21/2021 Analyte Diesel Range Organics (DRO) Surr: DNOP Sample ID: 2105888-002AMS	Analysis I Result 64 7.2 Samp Batc Analysis I Result 50 5.2 D Samp	Date: 5/ PQL 10 Fype: MS h ID: 60 Date: 5/ PQL 9.4 Fype: MS h ID: 60	22/2021 SPK value 50.00 5.0000 5.0000 5.0000 5.000 5.000 5.000 5.000	SPK Ref Val 0 Tes 5 SPK Ref Val 0 Tes F	SeqNo: 2 %REC 127 145 tCode: El RunNo: 7 SeqNo: 2 %REC 107 111 tCode: El	754004 LowLimit 68.9 70 PA Method 7590 754008 LowLimit 15 70 PA Method 7590	HighLimit 141 130 8015M/D: Did Units: mg/P HighLimit 184 130	%RPD esel Range %RPD esel Range	e Organics RPDLimit	S
Prep Date: 5/21/2021 Analyte Diesel Range Organics (DRO) Surr: DNOP Sample ID: 2105888-002AMS Client ID: BH10 40-45' Prep Date: 5/21/2021 Analyte Diesel Range Organics (DRO) Surr: DNOP Sample ID: 2105888-002AMS Client ID: BH10 40-45'	Analysis I Result 64 7.2 Samp Batc Analysis I Result 50 5.2 D Samp Batc	Date: 5/ PQL 10 Fype: MS h ID: 60 Date: 5/ PQL 9.4 Fype: MS h ID: 60	22/2021 SPK value 50.00 5.0000 5.0000 5.0000 5.000 5.000 5.000 5.000	SPK Ref Val 0 Tes 5 SPK Ref Val 0 Tes F	SeqNo: 2 %REC 127 145 tCode: EI RunNo: 7 SeqNo: 2 %REC 107 111 tCode: EI RunNo: 7 SeqNo: 2	754004 LowLimit 68.9 70 PA Method 7590 754008 LowLimit 15 70 PA Method 7590	HighLimit 141 130 8015M/D: Dia Units: mg/P HighLimit 184 130 8015M/D: Dia	%RPD esel Range %RPD esel Range	e Organics RPDLimit	S
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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 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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WO#:	2105888

28-May-21

Client:	HILCOR	P ENERG	Y								
Project:	Howell 1	М									
Sample ID: LCS-6	0165	SampT	ype: LC	S	Tes	tCode: EF	PA Method	8015M/D: Die	esel Rang	e Organics	
Client ID: LCSS		Batch	n ID: 60	165	R	lunNo: 7	7604				
Prep Date: 5/20/	2021	Analysis D	0ate: 5/	22/2021	S	eqNo: 2	754505	Units: mg/K	ζg		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics	(DRO)	59	10	50.00	0	118	68.9	141			
Surr: DNOP		5.9		5.000		118	70	130			

Qualifiers:

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- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

Released to Imaging: 11/14/2022 10:55:02 AM

- 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

2105888

28-May-21

Client: HILCO Project: Howell	RP ENERGY 1M								
Sample ID: mb-60161	SampType	SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBS	Batch ID	60161	F	′587					
Prep Date: 5/20/2021	Analysis Date	5/22/2021	S	753650	Units: mg/K	nits: mg/Kg			
Analyte	Result P	QL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0							
Surr: BFB	890	1000		88.7	70	130			
Sample ID: Ics-60161	SampType: LCS TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID	60161	RunNo: 77587						
Prep Date: 5/20/2021	Analysis Date	5/22/2021	S	SeqNo: 27	53651	Units: mg/K	g		
Analyte	Result P	QL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0 25.00	0	92.4	78.6	131			
Surr: BFB	970	1000		97.3	70	130			

Qualifiers:

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- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

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- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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2105888

28-May-21

Client: HILC Project: Howe	ORP ENERG ll 1M	θY								
Sample ID: mb-60161	0161 SampType: MBLK TestCode: EPA Method 8021B: Volatiles									
Client ID: PBS	Batc	h ID: 60	0161 RunNo: 77587							
Prep Date: 5/20/2021	Analysis [Date: 5/	22/2021	SeqNo: 2753713			713 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	0.99		1.000	.000 99.5 70 1						
Sample ID: LCS-60161	Samp	SampType: LCS TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batc	h ID: 60	161	RunNo: 77587						
Prep Date: 5/20/2021	Analysis [Date: 5/	22/2021	SeqNo: 2753714			Units: mg/K	íg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.025	1.000	0	94.1	80	120			
Toluene	0.98	0.050	1.000	0	98.2	80	120			
Ethylbenzene	0.97	0.050	1.000	0	97.3	80	120			
Xylenes, Total	2.9	0.10	3.000	0	97.7	80	120			

Qualifiers:

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- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

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- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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WO#:	2105888

28-May-21

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Wed by OCD: 7/26/2021 12:04:25 PM HALL ENVIRONMENTAL ANALYSIS LABORATORY	Hall Environmen. A TEL: 505-345-39 Website: clients.	490 Ilbuquerq 975 FAX:	I Hawkins ue, NM 87 505-345-4	s NE 7109 Sai	mple Log-In C	Pa
Client Name: HILCORP ENERGY	Work Order Numb	er: 2105	888		RcptNo:	1
Received By: Juan Rojas	5/20/2021 7:20:00 A	M		(Juan Eng)		
Completed By: Sean Livingston	5/20/2021 9:29:51 A	M		Guanzag S-L	/ /	
Reviewed By: JR 5/20/21)L	17 31	
Chain of Custody						
1. Is Chain of Custody complete?		Yes	\checkmark	No 🗌	Not Present	
2. How was the sample delivered?		Cour	ier			
Log In 3. Was an attempt made to cool the samples?		Yes	\checkmark	No 🗌	NA 🗌	
4. Were all samples received at a temperature	of >0° C to 6.0°C	Yes	\checkmark	No 🗌	NA 🗌	
5. Sample(s) in proper container(s)?		Yes	\checkmark	No 🗌		
6. Sufficient sample volume for indicated test(s)	?	Yes	\checkmark	No 🗌		
7. Are samples (except VOA and ONG) properly	y preserved?	Yes	\checkmark	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 🔽	70
10. Were any sample containers received broke	n?	Yes		No 🗸	# of preserved	70
11.Does paperwork match bottle labels? (Note discrepancies on chain of custody)		Yes	V	No 🗌	for pH:	5 · 20
12. Are matrices correctly identified on Chain of (Custody?	Yes	\checkmark	No 🗌	Adjusted?	
3. Is it clear what analyses were requested?		Yes	\checkmark	No 🗌		
14. Were all holding times able to be met? (If no, notify customer for authorization.)		Yes	\checkmark	No 🗌	Checked by:	
Special Handling (if applicable)						
15. Was client notified of all discrepancies with t	his order?	Yes		No 🗌	NA 🗹	
Person Notified:	Date:			an an a stand of the Later of Society Const.		
By Whom:	Via:	eMa	il 🗌 Pł	none 🗌 Fax	In Person	
Regarding:					anan anan anan anan anan anan anan ana	
Client Instructions:					STATE PARTICULAR AND STREAM CONTRACTOR OF THE STREAM STREAM	
16. Additional remarks:						
17. <u>Cooler Information</u> Cooler No Temp ^o C Condition Se 1 0.5 Good	al Intact Seal No	Seal Da	te	Signed By	1	

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Received by OCD: 7/26/2021 1	2:04:25 PM State of New Mexico				Page 91 of 92
				Incident ID	
Page 4	Oil Conservation Division	on		District RP	
				Facility ID	
				Application ID	
regulations all operators are required public health or the environment. failed to adequately investigate and addition, OCD acceptance of a C and/or regulations.	ion given above is true and complete to ired to report and/or file certain release . The acceptance of a C-141 report by t nd remediate contamination that pose a -141 report does not relieve the operato yn H Kaufman	notifications and pe he OCD does not re threat to groundwar or of responsibility f Title:Env Date:7/26	erform co elieve the ter, surfac for compli- <u>vironmen</u>	rrective actions for rele operator of liability sho ce water, human health iance with any other feo ntal Specialist	eases which may endanger ould their operations have or the environment. In deral, state, or local laws
OCD Only					
Received by:		Date:	:		

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:	OGRID:
HILCORP ENERGY COMPANY	372171
1111 Travis Street	Action Number:
Houston, TX 77002	37317
	Action Type:
	[C-141] Release Corrective Action (C-141)

CONDITIONS

CONDITIC		
Created By	Condition	Condition Date
nvelez	Accepted for the record. See App ID 63058 for most updated status.	11/14/2022

CONDITIONS

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Action 37317