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	NCS1929541151
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party Hilcorp Energy Company	OGRID 372171
Contact Name Jennifer Deal	Contact Telephone 832-839-4585
Contact email jdeal@hilcorp.com	Incident # (assigned by OCD) NCS1929541151
Contact mailing address 382 Road 3100, Aztec NM 87410	

Location of Release Source

Latitude 36.758495

Longitude -108.2162476_ (NAD 83 in decimal degrees to 5 decimal places)

Site Name FRPC 4 1	Site Type Gas Well
Date Release Discovered 9/25/2019 @ 3:15pm	API# (if applicable) 30-045-31995

Unit Letter	Section	Township	Range	County
D	04	29N	13W	San Juan

Surface Owner: State Federal Tribal Private (Name: James Whitfield______

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) 23 bbls	Volume Recovered (bbls) 13
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	Yes No
Condensate	Volume Released (bbls)	Volume Recovered (bbls)
Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

A release of ~ 23 bbls of produced water was released due to the water pump line leaking from corrosion. The operator shut in the well and a one call was submitted to begin excavation to repair the line. Release remained on location. 13 bbls were recovered. Environmental will provide OCD 48 hour notice of sampling.

•

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)?
<u> </u>	

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 t	he release has been stopped.		
The impacted a	area has been secured to prot	ect human health and the envir	onment.
Released mater	rials have been contained via	the use of berms or dikes, abs	orbent pads, or other containment devices.
All free liquids	and recoverable materials h	ave been removed and manage	d appropriately.
If all the actions de	scribed above have <u>not</u> been	undertaken, explain why:	
Per 10 15 20 8 B (4) NMAC the responsible n	arty may commence remediation	on immediately after discovery of a release. If remediation
has begun, please	attach a narrative of actions	to date. If remedial efforts ha	we been successfully completed or if the release occurred
	× •		ach all information needed for closure evaluation.
regulations all operat	ors are required to report and/or	r file certain release notifications a	knowledge and understand that pursuant to OCD rules and nd perform corrective actions for releases which may endanger not relieve the operator of liability should their operations have
failed to adequately i	nvestigate and remediate contai	nination that pose a threat to group	ndwater, surface water, human health or the environment. In
addition, OCD accep and/or regulations.	tance of a C-141 report does no	t relieve the operator of responsibility	lity for compliance with any other federal, state, or local laws
Printed Name:	Jennifer Deal	Title	Environmental Specialist
		1100	
	Ayunife Deal		
Signature:	0	Date:1/4/2021	
email:jdea	al@hilcorp.com	Telephone:	5058016517
OCD Only			
Received by:		Date:	

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	<u><50</u> (ft bgs)
Did this release impact groundwater or surface water?	🗌 Yes 🛛 No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	🛛 Yes 🗌 No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	🗌 Yes 🛛 No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	🗌 Yes 🛛 No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	🗌 Yes 🛛 No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	🗌 Yes 🛛 No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	🗌 Yes 🛛 No
Are the lateral extents of the release within 300 feet of a wetland?	🗌 Yes 🛛 No
Are the lateral extents of the release overlying a subsurface mine?	🗌 Yes 🛛 No
Are the lateral extents of the release overlying an unstable area such as karst geology?	🗌 Yes 🛛 No
Are the lateral extents of the release within a 100-year floodplain?	🗌 Yes 🛛 No
Did the release impact areas not on an exploration, development, production, or storage site?	🗌 Yes 🛛 No

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

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

Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.

- 🛛 Field data
- Data table of soil contaminant concentration data
- \boxtimes 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.

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 regulations.

Printed Name: _____Jennifer Deal ______ Title: ____Environmental Specialist _______ Date: _____/
email: ______jdeal@hilcorp.com ______ Telephone: ___5058016517 _______

Received by: ______ Date: ______ Date: _______

.

Remediation Plan

<u>Remediation Plan Checklist</u> : Each of the following items must be included in the plan.			
 Detailed description of proposed remediation technique Scaled sitemap with GPS coordinates showing delineation points Estimated volume of material to be remediated Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required) 			
Defensel Demoste Only. Each of the following items must be confirmed as must of new new of four defensed of new disting			
Deferral Requests Only: Each of the following items must be confirmed as part of any request for deferral of remediation. Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.			
Extents of contamination must be fully delineated.			
Contamination does not cause an imminent risk to human health, the environment, or groundwater.			
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Printed Name:Jenifer Deal Title:Environmental Specialist			
Signature:			
OCD Only			
Received by: Date:			
Approved Approved with Attached Conditions of Approval Denied Deferral Approved			
Signature: Date:			

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

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If YES, was immediate n	otice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?

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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 <u>not</u> 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.							
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Printed Name:Jennifer Deal Title:Environmental Specialist							
Signature: Date: 1/4/2021 email: jdeal@hilcorp.com Telephone: 5058016517							
OCD Only							
Received by: Date:							

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Printed Name: _____Jennifer Deal ______ Title: ____Environmental Specialist _______ Date: _____/
email: ______jdeal@hilcorp.com ______ Telephone: ___5058016517 _______

Received by: ______ Date: ______ Date: _______

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Signature: Date:1/4/2021							
email:jdeal@hilcorp.com Telephone:5058016517							
OCD Only							
Received by: Chad Hensley Date: 05/12/2021							
Approved Approved with Attached Conditions of Approval Denied Deferral Approved							
Signature: Chad Henry Date: 05/21/2021							

HILCORP ENERGY COMPANY

REVISED REMEDIATION WORK PLAN FRPC 4-1 NCS1929541151

DECEMBER 23, 2020

CLICK HERE TO ENTER TEXT.





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REVISED REMEDIATION WORK PLAN

FRPC 4-1 NCS1929541151

HILCORP ENERGY COMPANY

PROJECT NO.: TE017820013 DATE: DECEMBER 23, 2020

WSP 848 E 2ND AVENUE DURANGO, CO 81301

T: 970-385-1096 F: 970-385-1873 WSP.COM

Released to Imaging: 5/12/2021 10:26:18 AM

SIGNATURES

PREPARED BY

Joh Adams

Josh Adams, PG Geologist

APPROVED¹ BY (must be reviewed for technical accuracy prior to approval)

Ashley L. ager

Ashley Ager Managing Director

FRPC 4-1 Revised Remediation Work Plan Project No. TE017820013 Hilcorp Energy Company WSP December 2020 Page iii

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Received by OCD: 1/4/2021 5:28:22 PM

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Revised Remediation Work Plan Project No. TE017820013 Hilcorp Energy Company WSP November 2020 Page iv

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INTRODUCTION

WSP USA Inc, (WSP) (formerly LT Environmental, Inc.), on behalf of Hilcorp Lower 48 (Hilcorp), presents this revised remediation work plan associated with subsurface impacts encountered at the FRPC 4-1 (Site). The NMOCD has assigned incident number NCS1929541151 to the Site. This work plan is being submitted in response of the denial of the original Remediation Work Plan, submitted to the NMOCD on May 1, 2020. This plan details the site description and background, initial response and assessment, and site characterization. The plan presents the findings of soil delineation activities and proposes remediation per Title 19, Chapter 15, Part 29 (19.15.29) of the New Mexico Administrative Code (NMAC).

SITE DESCRIPTION AND BACKGROUND

The FRPC 4-1 (Site) is located in the Farmington Glade area approximately 1.12 miles east of the La Plata River and approximately 1.44 miles north of the Farmington Airport in Unit D of Section 4 of Township 29 North, Range 13 West, San Juan County, New Mexico. The Site is located proximal to a seasonal dry wash and irrigated agricultural pastures. The Site is approximately 0.5 miles northeast of the intersection of Pinon Hills Boulevard and West 30th Street on the west side of Farmington, New Mexico (Figure 1). On September 25, 2019, approximately 23 barrels (bbls) of produced water were released from a water transfer line due to corrosion. Upon discovery, Hilcorp shut in the well and began to excavate to repair the line. The release remained on the location and approximately 13 bbls of produced water were recovered. Hilcorp submitted an initial C-141 to the New Mexico Oil Conservation Division (NMOCD) on October 3, 2019 and was assigned Incident Number NCS1929555165.

WSP submitted a Remediation Work Plan to the NMOCD on May 1, 2020 (May 2020 Work Plan).On August 4, 2020 the NMOCD requested additional information pertaining to the work plan. On August 14, 2020 Hicorp responded to the NMOCD's requested and provided the additional information requested. On August 25, 2020 the NMOCD denied the May 2020 Work Plan and instituted a deadline to remediate the Site or submit a revised remediation work plan by December 1, 2020. On October 25, 2020 Hilcorp responded to the denial from the NMOCD and provided additional information and arguments for approval of the original work plan. On November 20, 2020 the NMOCD responded and maintained their position on the originally denied work plan. Hilcorp requested an extension on November 30, 2020 to move the deadline to January 31, 2021. The NMOCD granted Hilcorp an extension but required remediation or a revised remediation work plan by January 6, 2021. Please see Appendix A for the correspondence detailing the extension request.

SITE CHARACTERIZATION

WSP characterized the Site according to Table 1, NMOCD Closure Criteria for Soils Impacted by a Release, of 19.15.29.12 NMAC. The Site is approximately 187 feet northwest from the Farmington Glade and approximately 400 feet northwest of the Halford Independent Irrigation Ditch (HIID) (Figure 2). The closest water well to the Site is the SJ-03203, with a depth to water reported at 20 feet below ground surface (bgs) and total depth of the well at 59 feet bgs. That water well is located approximately 1,870

FRPC 4-1 Revised Remediation Work Plan Project No. TE017820013 Hilcorp Energy Company

feet southwest of the Site. The nearest significant watercourse to the Site is the Farmington Glade. The Site is greater than 200 feet from any lakebed, sinkhole, or playa lake. The Site is greater than 300 feet of any mapped wetland. Land use surrounding the Site consists of natural gas development, agricultural fields, recreational areas, and residential areas. The nearest residence is located approximately 1,050 feet southeast of the Site. The Site is not within the area of a subsurface mine or unstable area. The Site is within the 100-year flood plain. Due to the Site having a depth to groundwater of less than 50 feet, distance to a significant watercourse, and being in a floodplain, the following NMOCD 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.

INITIAL RESPONSE

Hilcorp excavated approximately 258 cubic yards (yds³) of impacted soil at the Site in order to make repairs to the water transfer line and to remove impacted soil. During the excavation activities Hilcorp personnel collected various soil samples that confirmed the presence of elevated chloride concentrations as a result of produced water impact to soil at the Site. Due to the sampling results and existing size of the excavation, Hilcorp opted to stop the excavation for further investigation.

On January 27, 2020, Hilcorp requested an extension to the 90-day requirement for Site characterization and closure reporting (as required in 19.15.29.11.A NMAC) and proposed a new deadline of February 28, 2020. The NMOCD approved the extension request on January 29, 2020. Between October 8, 2019 and February 25, 2020, Hilcorp personnel collected a total of 42 soil samples to characterize and delineate impact to soil at the Site. Figure 3 shows the locations of the soil samples and Table 1 details the analytical results from these sampling events.

On February 21, 2020, Hilcorp requested an additional extension and proposed a new deadline of May 1, 2020. On April 16, 2019 and April 28, 2020, Hilcorp retained WSP to participate in soil delineation activities using a hollow-stem drill rig and hand auger with field assistance from Hilcorp on some sampling events. Findings from these soil sampling events are described in the following sections of this report.

FRPC 4-1 Revised Remediation Work Plan Project No. TE017820013 Hilcorp Energy Company

SITE INVESTIGATION

After the release, Hilcorp and WSP conducted soil investigations at the Site to delineate the vertical and lateral extent of the impact as well as characterize the source material. Hilcorp and WSP utilized a hollow-stem auger drilling rig and a hand auger to advance soil borings and collect soil samples. Soil samples were collected during these efforts to assess subsurface conditions and potential contaminant concentrations.

SOURCE CHARACTERIZATION

The initial soil sampling conducted by Hilcorp at the Site indicated minor impact from hydrocarbons, but no exceedances of the NMOCD Closure Criteria for the Site. During these sampling events, detectable concentrations of BTEX and TPH were observed but none that exceeded the NMOCD Closure Criteria. Chloride was determined to be the contaminant of concern with chloride concentrations ranging from 48 mg/kg to 25,7000 mg/kg.

On April 16, 2020, WSP advanced a borehole (BH01) near the source area and collected soil samples in order to characterize the source material. Results from these soil samples are summarized in Table 2, displayed on Figure 4, and included in Appendix B.

DELINEATION ACTIVITIES

Between April 16, 2020, and April 28, 2020, WSP conducted soil delineation activities at the Site using a 75 Central Mining Equipment (CME) hollow-stem auger drilling rig and hand auger. A total of eight boreholes (BH01 through BH08) were advanced at the Site ranging from 15 feet to 20 feet bgs. Soil borings were advanced near the release point, then outward from the known impacted area/open excavation. The soil borings were logged by an WSP geologist who observed the soil for visual staining and the presence or absence of odor. The soil was characterized by visually inspecting the soil samples, field screening the soil headspace using a photo-ionization detector (PID) to monitor for the presence of volatile organic vapors and assessing the presence of chloride using Hach® Quantab® titrator strips. WSP's borelogs are included as Appendix C.

A minimum of two soil samples from each soil boring was submitted for laboratory analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) by United States Environmental Protection Agency (EPA) Method 8021, TPH-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-motor oil range organics (MRO) by EPA Method 8015, and Chloride by EPA Method 300.0. All collected samples were placed on ice to maintain a temperature of approximately 4 degrees Celsius (°C) and sealed in a cooler for delivery to Hall Environmental Analysis Laboratory (Hall), of Albuquerque, New Mexico, for analysis. Samples were labeled with the date and time of collection, sample name, sampler's name, and parameters to be analyzed. Strict chain-of-custody (COC) procedures were documented including the date and time sampled, sample number, type of sample, sampler's name and signature, preservative used, and analyses required. Soil sample analytical results are summarized in Table 1, displayed on Figure 3, and included as Appendix B.

FRPC 4-1 Revised Remediation Work Plan Project No. TE017820013 Hilcorp Energy Company

RESULTS

SOIL SAMPLING RESULTS

Geology at the Site was determined through observations during delineation drilling events. WSP geologist noted that geology surrounding the Site consisted of seasonal dry washes and irrigated fields that both exhibited white crust-like deposits that are indicative of alkali soil deposits.

Near-surface soils within the boreholes consisted mainly of silty sand and poorly graded sand from surface to approximately 5 feet bgs. Between 5 feet bgs and 10 feet bgs, lithology consists of intermixed poorly graded sand and silt. Below 10 feet bgs the dominant lithology is poorly graded sand with some gravel to approximately 20 feet bgs.

Soil samples collected near the source area (BH01, BH03, BH04, and BH06) indicate concentrations of benzene, total BTEX, and TPH were compliant with the NMOCD Closure Criteria for all soil samples. Chloride concentrations exceeded the NMOCD Closure Criteria of 600 mg/kg in several locations with concentrations ranging from 660 mg/kg in BH06 to 1,300 mg/kg in BH03 and BH04.

The shallow sample (2.5'- 5' bgs) from BH06 only contained 230 mg/kg chloride, while the deeper sample from 12.5 feet to 15 feet bgs contained 660 mg/kg chloride. While this result exceeds the NMOCD Closure Criteria of 600 mg/kg, it only exceeds by 60 mg/kg and lateral samples to the east (BH04) and west (BH08) from similar depths are below 600 mg/kg.

Soil samples collected from the delineation boreholes (BH02, BH05, BH07, and BH08) indicate concentrations of benzene, total BTEX, TPH, and chloride were compliant with the NMOCD Closure Criteria for all soil samples.

The soil analytical results, as compared to the NMOCD Closure Criteria, are presented on Figure 4 and summarized in Table 2. The laboratory analytical reports are included as Appendix B.

FRPC 4-1 Revised Remediation Work Plan Project No. TE017820013 Hilcorp Energy Company

CONCLUSIONS

No hydrocarbon impacts to soil above the NMOCD Closure Criteria for benzene, total BTEX, or TPH were identified during the soil sampling events. Chloride impacts to soil were delineated by WSP during the April site investigation. The lateral extent of the release was restricted to a small area near the release point and characterized by elevated chloride concentrations in the shallow samples from BH01, BH03, and BH04. Elevated chloride is primarily restricted to five feet bgs and above. The highest chloride concentration detected was 1,300 mg/kg in both BH03 and BH04 from samples representing 2.5 feet to 5 feet bgs. Chloride impacted soils have been delineated laterally by analytical results observed in BH08, BH07, BH02, and BH05.

All samples collected from the boreholes at depth (12.5 feet to 15 feet) were compliant with the NMOCD Closure Criteria except the sample collected from BH06. WSP believes that, based on lithology and results from the other soil samples, the slightly elevated chloride concentration observed in BH06 is caused by naturally occurring conditions. BH06 is located between two other samples (BH04@12.5'-15' and BH08@12.5'-15') collected at the same depths that did not contain chloride exceeding 600 mg/kg. The Site is proximal to a seasonal dry wash and irrigated field, which are known to discharge mineral laden water that create alkali soil deposits. These alkali soils were identified in the field as white crust-like layers observed at the ground surface and in the nearby upgradient dry wash. Those same minerals that deposit at the surface could easily infiltrate the soil and cause elevated chloride concentrations throughout the soil column.

Since BH04 represents a point of compliance and separates BH06 from the source material, another point of compliance (BH08) has been established less than 15 feet away, and the chloride concentration in BH06@12.5-15' is only 60 mg/kg above the standard, Hilcorp is requesting that 15 feet bgs represent vertical delineation at BH06 and that BH06 represent lateral delineation of the shallow impacts identified in BH04. As such, Hilcorp believes the source material at the Site has been delineated laterally and vertically.

FRPC 4-1 Revised Remediation Work Plan Project No. TE017820013 Hilcorp Energy Company

REMEDIATION PLAN

Chloride impacted soil associated with FRPC 4-1 is generally restricted to the top 5 feet of the subsurface. Approximately 258 cubic yards of impacted soil were excavated from the Site. Figure 5 shows the existing excavations at the Site that range from 2 feet in depth to 8 feet in depth. Based on delineation soil sampling results from BH03 and BH04, additional soil needs to be remediated.

Due to the nature of the release (produced water containing chloride), extent of impact in the subsurface (chloride impact to approximately 5 feet bgs and no identified hydrocarbon impacts above the NMOCD closure standards), Hilcorp proposes additional excavation to remove the entirety of the top 4 feet of impacted soil (well pad material and underlying future root zone), then installation of a liner to mitigate further migration of chloride into the subsurface.

Hilcorp estimates removing an additional 345 cubic yards of soil from the delineated release extent in the area shown on Figure 5 and within the proposed trenches surrounding the excavation. Hilcorp will excavate to 4 feet bgs in the proposed excavation area depicted on Figure 5. Hilcorp will collect 5-point composite soil samples at a frequency of every 200 square feet from the sidewalls and floor of the excavation to confirm the lateral extent, potential vertical extent, and/or characterize chloride concentrations to be left in place. Once the sidewalls of the excavation are below NMOCD closure criteria, Hilcorp will trench down along each edge of the excavation to 8 feet bgs. Hilcorp will also collect 5-point composite samples every 200 lateral feet within the base of the exterior trenches surrounding the excavation with a minimum of one composite sample collected form each trench.

Following the additional excavation and soil sampling, Hilcorp requests to install a 20-mil impermeable liner laterally at the base of the excavation and vertically within the trenches surrounding the excavation and backfill with non-waste containing soil. The liner will be installed in the entire excavation extent and to the terminal depths of the trenches. The liner within the trenches and at the base of the excavation will serve as a barrier to prevent potential vertical and lateral migration of contaminated soil that will remain in the subsurface.

Upon completion of fieldwork, Hilcorp will provide a report to NMOCD documenting excavation, excavation confirmation sampling results, and liner installation. The report will request deferral of any remaining chloride concentrations until final plugging and abandonment and reclamation of the Site. Hilcorp will complete the excavation and liner installation within 90 days of the date of approval of this work plan by NMOCD. The report will be provided within 2 weeks of receipt of final analytical results.

WSP appreciates the opportunity to provide this remediation work plan to the NMOCD. If you have any questions or comments regarding this remediation work plan, do not hesitate to contact Ashley Ager at (970) 385-1096 or via email at <u>ashley.ager@wsp.com</u> or Jennifer Deal at (505)-599-3400 or at <u>jdeal@hilcorp.com</u>.

FRPC 4-1 Revised Remediation Work Plan Project No. TE017820013 Hilcorp Energy Company

FIGURES

FRPC 4-1 Revised Remediation Work Plan Project No. TE017820013 Hilcorp Energy Company WSP December 2020 Page 7

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P:\Hilcorp\GIS\MXD\017820013_FRPC 4-1\017820013_FIG01_SL_2020.mxd



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P:\Hilcorp\GIS\MXD\017820013_FRPC 4-1\017820013_FIG02_RECEPTOR_MAP.mxd



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P:\Hilcorp\GIS\MXD\017820013_FRPC 4-1\017820013_FIG03_SITE_2020.mxd





TABLES

FRPC 4-1 Revised Remediation Work Plan Project No. TE017820013 Hilcorp Energy Company WSP December 2020 Page 8

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Table 1

Soil Analytical Results (Hilcorp Samples)

FRPC 4-1

San Juan County, New Mexico (a)

Soil Sample Identification	Sample Date	Field Headspace (ppm)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	Chlorides (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	MRO (mg/kg)	TPH (mg/kg)
AH #1 (9')	2/18/2020							2060				
AH #2 (9')	2/18/2020							2750				
AH #3 (9')	2/18/2020							2720				
AH #4 (9')	2/18/2020							1930				
AH #2 (8 1/2'D 15' TD)	2/25/2020							1290				
AH #3 (8 1/2' D 15' TD)	2/25/2020							1070				
AH #4C (5'9"D 12'3" TD)	2/25/2020							1220				
AH #5 (2' D 5' TD)	2/25/2020							817				
AH #5 (7' D 10' TD)	2/25/2020							1100				
AH #5 (8 1/2' D 11 1/2' TD)	2/25/2020							1010				
AH #6 (5' D 5' TD)	2/25/2020							54				
AH #6 (10' D 10' TD)	2/25/2020							48				
AH #6 (14' TD)	2/25/2020							74				
AH #7 (5' D 5' TD)	2/25/2020							563				
AH #7 (10' D 10' TD)	2/25/2020							1000				
AH #7 (12'6" TD)	2/25/2020							1100				
AH #8 (3' D 5' TD)	2/25/2020							622				
AH #8 (8' D 10' TD)	2/25/2020							748				
AH #8 (12' D 14' TD)	2/25/2020							570				
NMOCD Standard	s	NE	10	NE	NE	NE	50	600	NE	NE	NE	100

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< - indicates result is less than the stated laboratory reporting limit

BOLD - indicates value exceeds stated NMOCD standard

BTEX - benzene, toluene, ethylbenzene, total xylenes

DRO - diesel range organics

GRO - gasoline range organics

mg/kg - milligrams per kilogram MRO - motor oil range organics

NE - Not Established

NMOCD - New Mexico Oil Conservation Division

ppm - parts per million

TPH - total petroleum hydrocarbons

Table 2

Soil Analytical Results (WSP Samples) FRPC 4-1 San Juan County, New Mexico (a)

Soil Sample Identification	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (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 @ 2.5'-5'	4/16/2020	< 0.025	< 0.049	< 0.049	< 0.099	< 0.222	690	<4.9	<10	<50	<64.9
BH01 @ 12.5'-15'	4/16/2020	< 0.024	< 0.049	< 0.049	< 0.097	< 0.219	<60	<4.9	<9.2	<46	<60.1
BH02 @ 7.5'-10'	4/16/2020	< 0.025	< 0.050	< 0.050	< 0.10	< 0.225	<60	<5.0	<9.3	<47	<61.3
BH02 @ 12.5'-15'	4/16/2020	< 0.025	< 0.050	< 0.050	< 0.10	< 0.225	<59	<5.0	<8.7	<43	<56.7
BH03 @ 2.5'-5'	4/16/2020	< 0.025	< 0.050	< 0.050	< 0.10	< 0.225	1,300	<5.0	<10	<50	<65.0
BH03 @ 12.5'-15'	4/16/2020	< 0.025	< 0.050	< 0.050	< 0.10	< 0.225	250	<5.0	<9.5	<48	<62.5
BH04 @ 2.5'-5'	4/16/2020	< 0.025	< 0.049	< 0.049	< 0.098	< 0.221	1,300	<4.9	<10	<50	<64.9
BH04 @ 12.5'-15'	4/16/2020	< 0.025	< 0.050	< 0.050	< 0.10	< 0.225	340	<5.0	<9.7	<49	<63.7
BH05 @ 7.5'-10'	4/16/2020	< 0.025	< 0.050	< 0.050	< 0.10	< 0.225	<60	<5.0	<9.8	<49	<63.8
BH05 @ 12.5'-15'	4/16/2020	< 0.025	< 0.049	< 0.049	< 0.099	< 0.222	<61	<4.9	<10	<50	<64.9
BH06 @ 2.5'-5'	4/16/2020	< 0.025	< 0.050	< 0.050	< 0.10	< 0.225	230	<5.0	<9.2	<46	<60.2
BH06 @ 12.5'-15'	4/16/2020	< 0.025	< 0.049	< 0.049	< 0.098	< 0.221	660	<4.9	<8.9	<44	<57.8
BH07 @ 5'	4/28/2020	< 0.025	< 0.050	< 0.050	< 0.10	< 0.225	230	<5.0	<9.9	<50	<64.9
BH07 @ 15'	4/28/2020	< 0.025	< 0.050	< 0.050	< 0.10	< 0.225	<60	<5.0	<8.9	<45	<58.9
BH08 @ 5'	4/28/2020	< 0.025	< 0.050	< 0.050	< 0.10	< 0.225	<60	<5.0	<9.8	<49	<63.8
BH08 @ 15'	4/28/2020	< 0.025	< 0.050	< 0.050	< 0.10	< 0.225	280	<5.0	<9.7	<48	<62.7
NMOCD Closure	Criteria	10	NE	NE	NE	50	600	NE	NE	NE	100

a/

< - indicates result is less than the stated laboratory reporting limit

BOLD - indicates value exceeds stated NMOCD standard

BTEX - benzene, toluene, ethylbenzene, and total xylenes analyzed by US EPA Method 8021B

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

TPH - total petroleum hydrocarbon (sum of GRO, DRO, and MRO)

ENCLOSURE A – NMOCD EXTENSION REQUEST APPROVAL

FRPC 4-1 Revised Remediation Work Plan Project No. TE017820013 Hilcorp Energy Company

WSP December 2020 Page 9

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Adams, Josh

From:	Smith, Cory, EMNRD <cory.smith@state.nm.us></cory.smith@state.nm.us>
Sent:	Tuesday, December 1, 2020 2:18 PM
То:	Jennifer Deal
Cc:	Adams, Josh; Hernandez, Emily, EMNRD
Subject:	RE: FRPC 4-1 Extension Request

Jennifer,

OCD has reviewed HEC Request for an extension for the FRPC 4-1 (incident # nCS1929541151) and has approved it with the following condition of approval.

- HEC will submit an alternative remediation plan or remove the impacted soil associated with the release from the site no later than January 4, 2021.

Please include a copy of this approval in HEC report submitted on January 4, 2021 as a hard copy will not be sent to you.

Thank you,

Cory Smith • Environmental Specialist Environmental Bureau EMNRD - Oil Conservation Division 1000 Rio Brazos | Aztec, NM 87410 505.334.6178 x115 | <u>Cory.Smith@state.nm.us</u> http://www.emnrd.state.nm.us/OCD/

From: Jennifer Deal <jdeal@hilcorp.com> Sent: Monday, November 30, 2020 8:36 AM To: Smith, Cory, EMNRD <Cory.Smith@state.nm.us> Cc: Adams, Josh <Josh.Adams@wsp.com> Subject: [EXT] FRPC 4-1 Extension Request

Mr. Cory Smith,

Hilcorp submitted a Remediation Work Plan for the FRPC 4-1 (incident # nCS1929541151) on May 1, 2020 but it was denied by the NMOCD on October 25, 2020 with a new deadline to submit an updated work plan by December 1, 2020. Hilcorp responded to the denial on October 28, 2020 and requested the NMOCD to reconsider the decision. The NMOCD responded on 11/20/2020 and stated that they would not reconsider the denial and required an update remediation work plan to be submitted by December 1, 2020. Due to the upcoming holidays, key decision making personnel being unavailable, and the current COVID-19 restrictions, Hilcorp is requesting an extension to December 1, 2020 date for reporting required by the NMOCD. Hilcorp requests an extension until January 31, 2021. Hilcorp will provide an updated remediation work plan by that date.

Thank you,

Jennifer Deal Environmental Specialist Hilcorp Energy – L48 West jdeal@hilcorp.com 382 Road 3100 Aztec, NM 87410 Office: (505) 324-5128 Cell: (505) 801-6517

The information contained in this email message is confidential and may be legally privileged and is intended only for the use of the individual or entity named above. If you are not an intended recipient or if you have received this message in error, you are hereby notified that any dissemination, distribution, or copy of this email is strictly prohibited. If you have received this email in error, please immediately notify us by return email or telephone if the sender's phone number is listed above, then promptly and permanently delete this message.

While all reasonable care has been taken to avoid the transmission of viruses, it is the responsibility of the recipient to ensure that the onward transmission, opening, or use of this message and any attachments will not adversely affect its systems or data. No responsibility is accepted by the company in this regard and the recipient should carry out such virus and other checks as it considers appropriate.

ENCLOSURE B – LABORATORY ANALYTICAL REPORTS

FRPC 4-1 Revised Remediation Work Plan Project No. TE017820013 Hilcorp Energy Company

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April 27, 2020

Jennifer Deal 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: www.hallenvironmental.com

RE: FRPC 4 1

OrderNo.: 2004812

Dear Jennifer Deal:

Hall Environmental Analysis Laboratory received 18 sample(s) on 4/17/2020 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,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Analytical Report
Lab Order 2004812

Date Reported: 4/27/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY Client Sample ID: BH01@2.5-5' **Project:** FRPC 4 1 Collection Date: 4/16/2020 9:50:00 AM Lab ID: 2004812-001 Matrix: SOIL Received Date: 4/17/2020 8:00:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: CLP Diesel Range Organics (DRO) ND 10 mg/Kg 1 4/20/2020 4:44:30 PM Motor Oil Range Organics (MRO) ND 50 mg/Kg 1 4/20/2020 4:44:30 PM Surr: DNOP 94.6 55.1-146 %Rec 1 4/20/2020 4:44:30 PM **EPA METHOD 300.0: ANIONS** Analyst: JMT Chloride 4/20/2020 12:03:50 PM 690 60 mg/Kg 20 **EPA METHOD 8260B: VOLATILES SHORT LIST** Analyst: RAA Benzene ND 0.025 mg/Kg 4/21/2020 6:24:11 PM 1 Toluene ND 0.049 mg/Kg 4/21/2020 6:24:11 PM 1 Ethvlbenzene ND 0.049 mg/Kg 1 4/21/2020 6:24:11 PM Xylenes, Total ND 0.099 mg/Kg 1 4/21/2020 6:24:11 PM Surr: 1.2-Dichloroethane-d4 90.5 70-130 %Rec 1 4/21/2020 6:24:11 PM Surr: 4-Bromofluorobenzene 94.6 70-130 %Rec 1 4/21/2020 6:24:11 PM Surr: Dibromofluoromethane 70-130 %Rec 1 4/21/2020 6:24:11 PM 93.5 Surr: Toluene-d8 102 70-130 %Rec 1 4/21/2020 6:24:11 PM **EPA METHOD 8015D MOD: GASOLINE RANGE** Analyst: RAA Gasoline Range Organics (GRO) ND 4/21/2020 6:24:11 PM 49 mg/Kg 1 Surr: BFB 96.4 70-130 %Rec 1 4/21/2020 6:24:11 PM

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

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- 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 1 of 22

Analytical Report
Lab Order 2004812

Date Reported: 4/27/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY Client Sample ID: BH01@12.5-15' **Project:** FRPC 4 1 Collection Date: 4/16/2020 9:54:00 AM Lab ID: 2004812-002 Matrix: SOIL Received Date: 4/17/2020 8:00:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: CLP Diesel Range Organics (DRO) ND 9.2 mg/Kg 1 4/20/2020 5:08:56 PM Motor Oil Range Organics (MRO) ND 46 mg/Kg 1 4/20/2020 5:08:56 PM Surr: DNOP 93.8 55.1-146 %Rec 1 4/20/2020 5:08:56 PM **EPA METHOD 300.0: ANIONS** Analyst: JMT Chloride ND 4/20/2020 12:41:04 PM 60 mg/Kg 20 **EPA METHOD 8260B: VOLATILES SHORT LIST** Analyst: RAA Benzene ND 0.024 mg/Kg 4/21/2020 6:53:18 PM 1 Toluene ND 0.049 mg/Kg 4/21/2020 6:53:18 PM 1 Ethvlbenzene ND 0.049 mg/Kg 1 4/21/2020 6:53:18 PM Xylenes, Total ND 0.097 mg/Kg 1 4/21/2020 6:53:18 PM Surr: 1.2-Dichloroethane-d4 91.6 70-130 %Rec 1 4/21/2020 6:53:18 PM Surr: 4-Bromofluorobenzene 96.9 70-130 %Rec 1 4/21/2020 6:53:18 PM Surr: Dibromofluoromethane 70-130 %Rec 1 4/21/2020 6:53:18 PM 92.7 Surr: Toluene-d8 99.5 70-130 %Rec 1 4/21/2020 6:53:18 PM **EPA METHOD 8015D MOD: GASOLINE RANGE** Analyst: RAA Gasoline Range Organics (GRO) ND 4/21/2020 6:53:18 PM 49 mg/Kg 1

96.8

70-130

%Rec

1

4/21/2020 6:53:18 PM

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

Qualifiers:

Surr: BFB

- Value exceeds Maximum Contaminant Level.
 Sample Diluted Due to Matrix
- 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 22
Date Reported: 4/27/2020

4/21/2020 7:23:07 PM

4/21/2020 7:23:07 PM

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY Client Sample ID: BH02@7.5-10 **Project:** FRPC 4 1 Collection Date: 4/16/2020 10:35:00 AM Lab ID: 2004812-004 Matrix: SOIL Received Date: 4/17/2020 8:00:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: CLP Diesel Range Organics (DRO) 4/20/2020 5:33:34 PM ND 9.3 mg/Kg 1 Motor Oil Range Organics (MRO) ND 47 mg/Kg 1 4/20/2020 5:33:34 PM Surr: DNOP 96.3 55.1-146 %Rec 1 4/20/2020 5:33:34 PM **EPA METHOD 300.0: ANIONS** Analyst: JMT Chloride ND 4/20/2020 12:53:29 PM 60 mg/Kg 20 **EPA METHOD 8260B: VOLATILES SHORT LIST** Analyst: RAA Benzene ND 0.025 mg/Kg 4/21/2020 7:23:07 PM 1 Toluene ND 0.050 mg/Kg 4/21/2020 7:23:07 PM 1 Ethvlbenzene ND 0.050 mg/Kg 1 4/21/2020 7:23:07 PM Xylenes, Total ND 0.10 mg/Kg 1 4/21/2020 7:23:07 PM Surr: 1.2-Dichloroethane-d4 91.7 70-130 %Rec 1 4/21/2020 7:23:07 PM Surr: 4-Bromofluorobenzene 98.6 70-130 %Rec 1 4/21/2020 7:23:07 PM Surr: Dibromofluoromethane 93.5 70-130 %Rec 1 4/21/2020 7:23:07 PM Surr: Toluene-d8 101 70-130 %Rec 1 4/21/2020 7:23:07 PM **EPA METHOD 8015D MOD: GASOLINE RANGE** Analyst: RAA

ND

97.1

5.0

70-130

mg/Kg

%Rec

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 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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Gasoline Range Organics (GRO)

Surr: BFB

Date Reported: 4/27/2020

4/21/2020 7:52:14 PM

4/21/2020 7:52:14 PM

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY Client Sample ID: BH02@12.5-15' **Project:** FRPC 4 1 Collection Date: 4/16/2020 10:40:00 AM Lab ID: 2004812-005 Matrix: SOIL Received Date: 4/17/2020 8:00:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: CLP Diesel Range Organics (DRO) ND 8.7 mg/Kg 1 4/20/2020 5:58:17 PM Motor Oil Range Organics (MRO) ND 43 mg/Kg 1 4/20/2020 5:58:17 PM Surr: DNOP 86.6 55.1-146 %Rec 1 4/20/2020 5:58:17 PM **EPA METHOD 300.0: ANIONS** Analyst: JMT Chloride ND 4/20/2020 1:05:53 PM 59 mg/Kg 20 **EPA METHOD 8260B: VOLATILES SHORT LIST** Analyst: RAA Benzene ND 0.025 mg/Kg 4/21/2020 7:52:14 PM 1 Toluene ND 0.050 mg/Kg 4/21/2020 7:52:14 PM 1 Ethvlbenzene ND 0.050 mg/Kg 1 4/21/2020 7:52:14 PM Xylenes, Total ND 0.10 mg/Kg 1 4/21/2020 7:52:14 PM Surr: 1.2-Dichloroethane-d4 91.5 70-130 %Rec 1 4/21/2020 7:52:14 PM Surr: 4-Bromofluorobenzene 95.6 70-130 %Rec 1 4/21/2020 7:52:14 PM Surr: Dibromofluoromethane 70-130 %Rec 1 4/21/2020 7:52:14 PM 92.7 Surr: Toluene-d8 99.6 70-130 %Rec 1 4/21/2020 7:52:14 PM **EPA METHOD 8015D MOD: GASOLINE RANGE** Analyst: RAA

ND

95.7

5.0

70-130

mg/Kg

%Rec

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 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 Page 4 of 22

Released to Imaging: 5/12/2021 10:26:18 AM

Gasoline Range Organics (GRO)

Surr: BFB

Project:

Lab ID:

Analyses

Surr: DNOP

Analytical Report Lab Order 2004812

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 4/27/2020 **CLIENT: HILCORP ENERGY** Client Sample ID: BH03@2.5-5' FRPC 4 1 Collection Date: 4/16/2020 11:30:00 AM 2004812-007 Matrix: SOIL Received Date: 4/17/2020 8:00:00 AM Result **RL** Qual Units DF **Date Analyzed** EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: CLP **Diesel Range Organics (DRO)** 4/20/2020 6:23:06 PM ND 10 mg/Kg 1 Motor Oil Range Organics (MRO) ND 50 mg/Kg 1 4/20/2020 6:23:06 PM 55.1-146 87.5 %Rec 1 4/20/2020 6:23:06 PM FPA METHOD 300 0. ANIONS

				Analyst: JMI
1300	60	mg/Kg	20	4/20/2020 1:18:18 PM
				Analyst: RAA
ND	0.025	mg/Kg	1	4/21/2020 8:21:43 PM
ND	0.050	mg/Kg	1	4/21/2020 8:21:43 PM
ND	0.050	mg/Kg	1	4/21/2020 8:21:43 PM
ND	0.10	mg/Kg	1	4/21/2020 8:21:43 PM
92.7	70-130	%Rec	1	4/21/2020 8:21:43 PM
94.7	70-130	%Rec	1	4/21/2020 8:21:43 PM
95.5	70-130	%Rec	1	4/21/2020 8:21:43 PM
97.1	70-130	%Rec	1	4/21/2020 8:21:43 PM
				Analyst: RAA
ND	5.0	mg/Kg	1	4/21/2020 8:21:43 PM
93.2	70-130	%Rec	1	4/21/2020 8:21:43 PM
	ND ND ND 92.7 94.7 95.5 97.1 ND	ND 0.025 ND 0.050 ND 0.10 92.7 70-130 94.7 70-130 95.5 70-130 97.1 70-130 ND 5.0	ND 0.025 mg/Kg ND 0.050 mg/Kg ND 0.050 mg/Kg ND 0.10 mg/Kg 92.7 70-130 %Rec 94.7 70-130 %Rec 95.5 70-130 %Rec 97.1 70-130 %Rec ND 5.0 mg/Kg	ND 0.025 mg/Kg 1 ND 0.050 mg/Kg 1 ND 0.050 mg/Kg 1 ND 0.10 mg/Kg 1 92.7 70-130 %Rec 1 94.7 70-130 %Rec 1 95.5 70-130 %Rec 1 97.1 70-130 %Rec 1 97.1 5.0 mg/Kg 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

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Date Reported: 4/27/2020

4/21/2020 8:51:06 PM

4/21/2020 8:51:06 PM

4/21/2020 8:51:06 PM

Analyst: RAA

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY Client Sample ID: BH03@12.5-15' **Project:** FRPC 4 1 Collection Date: 4/16/2020 11:32:00 AM Lab ID: 2004812-009 Matrix: SOIL Received Date: 4/17/2020 8:00:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: CLP Diesel Range Organics (DRO) ND 9.5 mg/Kg 1 4/20/2020 6:47:54 PM Motor Oil Range Organics (MRO) ND 48 mg/Kg 1 4/20/2020 6:47:54 PM Surr: DNOP 87.6 55.1-146 %Rec 1 4/20/2020 6:47:54 PM **EPA METHOD 300.0: ANIONS** Analyst: JMT Chloride 250 4/20/2020 1:30:42 PM 60 mg/Kg 20 **EPA METHOD 8260B: VOLATILES SHORT LIST** Analyst: RAA Benzene ND 0.025 mg/Kg 4/21/2020 8:51:06 PM 1 Toluene ND 0.050 mg/Kg 4/21/2020 8:51:06 PM 1 Ethvlbenzene ND 0.050 mg/Kg 1 4/21/2020 8:51:06 PM Xylenes, Total ND 0.10 mg/Kg 1 4/21/2020 8:51:06 PM Surr: 1.2-Dichloroethane-d4 89.4 70-130 %Rec 1 4/21/2020 8:51:06 PM Surr: 4-Bromofluorobenzene 99.0 70-130 %Rec 1 4/21/2020 8:51:06 PM Surr: Dibromofluoromethane 91.7 70-130 %Rec 1 4/21/2020 8:51:06 PM

Surr: Toluene-d8 100 70-130 %Rec 1 EPA METHOD 8015D MOD: GASOLINE RANGE Surr: Toluene-d8 MD 5.0 mg/Kg 1

96.1

70-130

%Rec

1

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

Qualifiers:

Surr: BFB

- 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: 4/27/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY Client Sample ID: BH04@2.5-5' **Project:** FRPC 4 1 Collection Date: 4/16/2020 12:20:00 PM Lab ID: 2004812-010 Matrix: SOIL Received Date: 4/17/2020 8:00:00 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 4/22/2020 10:51:22 AM Motor Oil Range Organics (MRO) ND 50 mg/Kg 1 4/22/2020 10:51:22 AM Surr: DNOP 99.0 55.1-146 %Rec 1 4/22/2020 10:51:22 AM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: NSB Gasoline Range Organics (GRO) ND 4/25/2020 10:52:34 AM 4.9 mg/Kg 1 Surr: BFB 102 66.6-105 %Rec 1 4/25/2020 10:52:34 AM **EPA METHOD 8021B: VOLATILES** Analyst: NSB Benzene ND 0.025 mg/Kg 4/25/2020 10:52:34 AM 1 Toluene ND 0.049 mg/Kg 1 4/25/2020 10:52:34 AM Ethylbenzene ND 0.049 mg/Kg 1 4/25/2020 10:52:34 AM Xylenes, Total ND 0.098 mg/Kg 1 4/25/2020 10:52:34 AM Surr: 4-Bromofluorobenzene 101 80-120 %Rec 1 4/25/2020 10:52:34 AM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride 1300 60 4/22/2020 5:13:01 PM ma/Ka 20

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

Qualifiers:

- Value exceeds Maximum Contaminant Level.
 Sample Diluted Due to Matrix
- 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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CLIENT: HILCORP ENERGY

FRPC 41

2004812-011

Project:

Lab ID:

Analytical Report Lab Order 2004812

Date Reported: 4/27/2020

Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: BH04@12.5-15' Collection Date: 4/16/2020 12:23:00 PM Matrix: SOIL Received Date: 4/17/2020 8:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORG	BANICS				Analyst: BRM
Diesel Range Organics (DRO)	ND	9.7	mg/Kg	1	4/22/2020 11:15:32 AM
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	4/22/2020 11:15:32 AM
Surr: DNOP	103	55.1-146	%Rec	1	4/22/2020 11:15:32 AM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	4/25/2020 12:03:08 PM
Surr: BFB	102	66.6-105	%Rec	1	4/25/2020 12:03:08 PM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	0.025	mg/Kg	1	4/25/2020 12:03:08 PM
Toluene	ND	0.050	mg/Kg	1	4/25/2020 12:03:08 PM
Ethylbenzene	ND	0.050	mg/Kg	1	4/25/2020 12:03:08 PM
Xylenes, Total	ND	0.10	mg/Kg	1	4/25/2020 12:03:08 PM
Surr: 4-Bromofluorobenzene	103	80-120	%Rec	1	4/25/2020 12:03:08 PM
EPA METHOD 300.0: ANIONS					Analyst: CAS
Chloride	340	60	mg/Kg	20	4/22/2020 6:14:45 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

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Date Reported: 4/27/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY Client Sample ID: BH05@7.5-10 **Project:** FRPC 4 1 Collection Date: 4/16/2020 1:10:00 PM Lab ID: 2004812-013 Matrix: SOIL Received Date: 4/17/2020 8:00:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: CLP Diesel Range Organics (DRO) ND 9.8 mg/Kg 1 4/20/2020 7:12:33 PM Motor Oil Range Organics (MRO) ND 49 mg/Kg 1 4/20/2020 7:12:33 PM Surr: DNOP 87.5 55.1-146 %Rec 1 4/20/2020 7:12:33 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: NSB Gasoline Range Organics (GRO) ND 4/20/2020 10:52:52 PM 5.0 mg/Kg 1 Surr: BFB 102 66.6-105 %Rec 1 4/20/2020 10:52:52 PM **EPA METHOD 8021B: VOLATILES** Analyst: NSB Benzene ND 0.025 mg/Kg 4/20/2020 10:52:52 PM 1 Toluene 0.050 ND mg/Kg 1 4/20/2020 10:52:52 PM Ethylbenzene ND 0.050 mg/Kg 1 4/20/2020 10:52:52 PM Xylenes, Total ND 0.10 mg/Kg 1 4/20/2020 10:52:52 PM Surr: 4-Bromofluorobenzene 100 80-120 %Rec 1 4/20/2020 10:52:52 PM **EPA METHOD 300.0: ANIONS** Analyst: JMT Chloride ND 60 4/20/2020 2:07:57 PM ma/Ka 20

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

Reporting Limit RL

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Date Reported: 4/27/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY Client Sample ID: BH05@12.5-15' **Project:** FRPC 4 1 Collection Date: 4/16/2020 1:12:00 PM Lab ID: 2004812-014 Matrix: SOIL Received Date: 4/17/2020 8:00:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: CLP Diesel Range Organics (DRO) ND 10 mg/Kg 1 4/20/2020 7:37:06 PM Motor Oil Range Organics (MRO) ND 50 mg/Kg 1 4/20/2020 7:37:06 PM Surr: DNOP 91.6 55.1-146 %Rec 1 4/20/2020 7:37:06 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: NSB Gasoline Range Organics (GRO) ND 4/21/2020 12:04:03 AM 4.9 mg/Kg 1 Surr: BFB 103 66.6-105 %Rec 1 4/21/2020 12:04:03 AM **EPA METHOD 8021B: VOLATILES** Analyst: NSB Benzene ND 0.025 mg/Kg 4/21/2020 12:04:03 AM 1 Toluene ND 0.049 mg/Kg 1 4/21/2020 12:04:03 AM Ethylbenzene ND 0.049 mg/Kg 1 4/21/2020 12:04:03 AM Xylenes, Total ND 0.099 mg/Kg 1 4/21/2020 12:04:03 AM Surr: 4-Bromofluorobenzene 101 80-120 %Rec 1 4/21/2020 12:04:03 AM **EPA METHOD 300.0: ANIONS** Analyst: JMT Chloride ND 61 4/20/2020 2:20:21 PM ma/Ka 20

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

Qualifiers:

- Value exceeds Maximum Contaminant Level.
 Sample Diluted Due to Matrix
- 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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Date Reported: 4/27/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY Client Sample ID: BH06@2.5-5' **Project:** FRPC 4 1 Collection Date: 4/16/2020 1:55:00 PM Lab ID: 2004812-016 Matrix: SOIL Received Date: 4/17/2020 8:00:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: CLP Diesel Range Organics (DRO) 4/20/2020 8:01:41 PM ND 9.2 mg/Kg 1 Motor Oil Range Organics (MRO) ND 46 mg/Kg 1 4/20/2020 8:01:41 PM Surr: DNOP 88.0 55.1-146 %Rec 1 4/20/2020 8:01:41 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: NSB Gasoline Range Organics (GRO) ND 4/21/2020 1:15:18 AM 5.0 mg/Kg 1 Surr: BFB 103 66.6-105 %Rec 1 4/21/2020 1:15:18 AM **EPA METHOD 8021B: VOLATILES** Analyst: NSB 4/21/2020 1:15:18 AM Benzene ND 0.025 mg/Kg 1 Toluene 0.050 ND mg/Kg 1 4/21/2020 1:15:18 AM Ethylbenzene ND 0.050 mg/Kg 1 4/21/2020 1:15:18 AM Xylenes, Total ND 0.10 mg/Kg 1 4/21/2020 1:15:18 AM Surr: 4-Bromofluorobenzene 102 80-120 %Rec 1 4/21/2020 1:15:18 AM Analyst: JMT **EPA METHOD 300.0: ANIONS** Chloride 230 61 4/20/2020 2:32:45 PM ma/Ka 20

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

Qualifiers:

- Value exceeds Maximum Contaminant Level.
 Sample Diluted Due to Matrix
- 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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Date Reported: 4/27/2020

4/22/2020 6:27:05 PM

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY Client Sample ID: BH06@12.5-15' **Project:** FRPC 4 1 Collection Date: 4/16/2020 1:57:00 PM Lab ID: 2004812-017 Matrix: SOIL Received Date: 4/17/2020 8:00:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: CLP Diesel Range Organics (DRO) ND 8.9 mg/Kg 1 4/20/2020 8:26:09 PM Motor Oil Range Organics (MRO) ND 44 mg/Kg 1 4/20/2020 8:26:09 PM Surr: DNOP 91.9 55.1-146 %Rec 1 4/20/2020 8:26:09 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: NSB Gasoline Range Organics (GRO) ND 4/21/2020 1:39:13 AM 4.9 mg/Kg 1 Surr: BFB 104 66.6-105 %Rec 1 4/21/2020 1:39:13 AM **EPA METHOD 8021B: VOLATILES** Analyst: NSB Benzene ND 0.025 mg/Kg 4/21/2020 1:39:13 AM 1 Toluene ND 0.049 mg/Kg 1 4/21/2020 1:39:13 AM Ethylbenzene ND 0.049 mg/Kg 1 4/21/2020 1:39:13 AM Xylenes, Total ND 0.098 mg/Kg 1 4/21/2020 1:39:13 AM Surr: 4-Bromofluorobenzene 102 80-120 %Rec 1 4/21/2020 1:39:13 AM **EPA METHOD 300.0: ANIONS** Analyst: CAS

660

60

ma/Ka

20

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

Qualifiers:

Chloride

- 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
- Reporting Limit RL

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Released to Imaging: 5/12/2021 10:26:18 AM

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Client:	HILCOR	P ENERGY									
Project:	FRPC 4 1										
Completio	ND 54050	Comm			Tee			200.0. Anion			
-	MB-51956	SampType: mblk						300.0: Anion	S		
Client ID:	-	Batch I				RunNo: 68		liste da			
Prep Date:	4/20/2020	Analysis Da	te: 4/	20/2020	5	SeqNo: 2:	362478	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-51956	SampTy	be: Ics	5	Tes	tCode: EF	PA Method	300.0: Anion	s		
Client ID:	LCSS	Batch I	D: 51	956	F	RunNo: 6 8	8287				
Prep Date:	4/20/2020	Analysis Da	te: 4/	20/2020	S	SeqNo: 2	362479	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	94.6	90	110			
Sample ID:	MB-52033	SampTy	oe: mt	olk	Tes	tCode: EF	PA Method	300.0: Anion	s		
Client ID:		Batch I				RunNo: 6			-		
	4/22/2020	Analysis Da				SeqNo: 2		Units: mg/K	a		
		Result	PQL		SPK Ref Val		LowLimit	•	%RPD	RPDLimit	Qual
Analyte Chloride		ND	FQL 1.5	SFK value	SFK KEI VAI	%REC	LOWLINII	HighLimit	%RFD	KFDLIIIII	Qual
-	LCS-52033	SampTy						300.0: Anion	S		
Client ID:		Batch I				RunNo: 61					
Prep Date:	4/22/2020	Analysis Da	te: 4/	22/2020	5	SeqNo: 2:	364907	Units: mg/K	g		
Analyte		Result	PQL		SPK Ref Val		LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		14	1.5	15.00	0	93.2	90	110			
Sample ID:	MB-52033	SampTy	oe: mb	olk	Tes	tCode: EF	PA Method	300.0: Anion	s		
Client ID:	PBS	Batch I	D: 52	033	F	RunNo: 6	8356				
Prep Date:	4/22/2020	Analysis Da	te: 4/	23/2020	S	SeqNo: 2	365666	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-52033	SampTy	be: Ics	5	Tes	tCode: EF	PA Method	300.0: Anion	s		
Client ID:		Batch I				RunNo: 6			-		
	4/22/2020	Analysis Da				SeqNo: 2		Units: mg/K	a		
								•	•		Qual
Analita		Decult									
Analyte Chloride		Result 14	PQL 1.5	SPK value 15.00	SPK Ref Val 0	%REC 95.1	LowLimit 90	HighLimit 110	%RPD	RPDLimit	Qual

Qualifiers:

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

2004812

27-Apr-20

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Client:HILCORProject:FRPC 4	RP ENERGY 1		
Sample ID: MB-51938	SampType: MBLK	TestCode: EPA Method	8015M/D: Diesel Range Organics
Client ID: PBS	Batch ID: 51938	RunNo: 68249	
Prep Date: 4/19/2020	Analysis Date: 4/20/2020	SeqNo: 2362082	Units: mg/Kg
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qual
Diesel Range Organics (DRO)	ND 10		
Motor Oil Range Organics (MRO)	ND 50		
Surr: DNOP	8.4 10.00	84.4 55.1	146
Sample ID: LCS-51938	SampType: LCS	TestCode: EPA Method	8015M/D: Diesel Range Organics
Client ID: LCSS	Batch ID: 51938	RunNo: 68249	
Prep Date: 4/19/2020	Analysis Date: 4/20/2020	SeqNo: 2362083	Units: mg/Kg
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qual
Diesel Range Organics (DRO)	46 10 50.00	0 91.5 70	130
Surr: DNOP	4.1 5.000	82.9 55.1	146
Sample ID: LCS-52010	SampType: LCS	TestCode: EPA Method	8015M/D: Diesel Range Organics
Client ID: LCSS	Batch ID: 52010	RunNo: 68326	
Prep Date: 4/22/2020	Analysis Date: 4/22/2020	SeqNo: 2364065	Units: mg/Kg
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qual
Diesel Range Organics (DRO)	45 10 50.00	0 90.0 70	130
Surr: DNOP	3.4 5.000	67.8 55.1	146
Sample ID: MB-52010	SampType: MBLK	TestCode: EPA Method	8015M/D: Diesel Range Organics
Client ID: PBS	Batch ID: 52010	RunNo: 68326	
Prep Date: 4/22/2020	Analysis Date: 4/22/2020	SeqNo: 2364069	Units: mg/Kg
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qual
Diesel Range Organics (DRO)	ND 10		
Motor Oil Range Organics (MRO)	ND 50		
Surr: DNOP	7.8 10.00	77.9 55.1	146
Sample ID: LCS-52025	SampType: LCS	TestCode: EPA Method	8015M/D: Diesel Range Organics
Client ID: LCSS	Batch ID: 52025	RunNo: 68357	
Prep Date: 4/22/2020	Analysis Date: 4/23/2020	SeqNo: 2366142	Units: %Rec
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qual
Surr: DNOP	6.3 5.000	125 55.1	146

Qualifiers:

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

2004812

27-Apr-20

Client: Project:	HILCOR FRPC 4 1		Y								
Sample ID: MB-5	2025	SampT	ype: M I	BLK	Tes	tCode: EF	PA Method	8015M/D: Die	esel Range	e Organics	
Client ID: PBS		Batcl	h ID: 52	025	F	unNo: 6	8357				
Prep Date: 4/22	/2020	Analysis D	Date: 4	/23/2020	S	eqNo: 2	366143	Units: %Rec	:		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP		13		10.00		129	55.1	146			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of 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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2004812

27-Apr-20

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Client:HILCORProject:FRPC 4	P ENERGY 1								
Sample ID: mb-51914	SampType: N	IBLK	Tes	tCode: EF	PA Method	8015D: Gaso	line Rang	e	
Client ID: PBS	Batch ID: 5	1914	F	RunNo: 68	3276				
Prep Date: 4/17/2020	Analysis Date:	4/21/2020	S	SeqNo: 23	361707	Units: mg/K	g		
Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO) Surr: BFB	ND 5. 1000	0 1000		104	66.6	105			
Sample ID: Ics-51914	SampType: L	.CS	Tes	tCode: EF	PA Method	8015D: Gaso	line Rang	e	
Client ID: LCSS	Batch ID: 5	1914	F	RunNo: 68	3276				
Prep Date: 4/17/2020	Analysis Date:	4/20/2020	S	SeqNo: 23	361708	Units: mg/K	g		
Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21 5.	0 25.00	0	84.6	80	120			
Surr: BFB	1100	1000		110	66.6	105			S
Sample ID: 2004812-014ams	SampType: N	IS	Tes	tCode: EF	PA Method	8015D: Gaso	line Rang	e	
Client ID: BH05@12.5-15'	Batch ID: 5	1914	F	RunNo: 68	3276				
Prep Date: 4/17/2020	Analysis Date:	4/21/2020	S	SeqNo: 23	361711	Units: mg/K	g		
Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21 5.	0 25.00	0	83.8	80	120			
Surr: BFB	1100	1000		109	66.6	105			S
Sample ID: 2004812-014amso	SampType: N	ISD	Tes	tCode: EF	PA Method	8015D: Gaso	line Rang	e	
Client ID: BH05@12.5-15'	Batch ID: 5	1914	F	RunNo: 68	3276				
Prep Date: 4/17/2020	Analysis Date:	4/21/2020	5	SeqNo: 23	361712	Units: mg/K	g		
Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21 5.	0 24.90	0	83.4	80	120	0.878	20	
Surr: BFB	1100	996.0		112	66.6	105	0	0	S
Sample ID: MB-52005	SampType: N	IBLK	Tes	tCode: EF	PA Method	8015D: Gaso	line Rang	e	
Client ID: PBS	Batch ID: 5	2005	F	RunNo: 68	3422				
Prep Date: 4/21/2020	Analysis Date:	4/25/2020	S	SeqNo: 23	367346	Units: mg/K	g		
Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO) Surr: BFB	ND 5. 1000	0 1000		104	66.6	105			
Sample ID: Ics-52005	SampType: L	.CS	Tes	tCode: EF	PA Method	8015D: Gaso	line Rang	e	
Client ID: LCSS	Batch ID: 5	2005	F	RunNo: 68	3422				
Prep Date: 4/21/2020	Analysis Date:	4/25/2020	S	SeqNo: 23	367347	Units: mg/K	g		
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

- 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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27-Apr-20

Client:

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

HILCORP ENERGY

Project:	FRPC 4 1	l									
Sample ID:	lcs-52005	SampT	ype: LC	S	Tes	tCode: EF	PA Method	8015D: Gaso	line Rang	e	
Client ID:	LCSS	Batch	n ID: 52	005	F	unNo: 6	8422				
Prep Date:	4/21/2020	Analysis D	Date: 4/	25/2020	S	eqNo: 2	367347	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	25	5.0	25.00	0	98.3	80	120			
Surr: BFB		1100		1000		113	66.6	105			S
Sample ID:	2004812-011ams	SampT	ype: MS	6	Tes	tCode: EF	PA Method	8015D: Gaso	line Rang	e	
Client ID:	BH04@12.5-15'	Batch	n ID: 520	005	F	unNo: 6	8422				
Prep Date:	4/21/2020	Analysis D	ate: 4/	25/2020	5	eqNo: 2	367350	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	23	4.9	24.70	0	92.9	80	120			
Surr: BFB		1100		988.1		115	66.6	105			S
Sample ID:	2004812-011amsd	I SampT	ype: MS	SD	Tes	tCode: EF	PA Method	8015D: Gaso	line Rang	e	
Client ID:	BH04@12.5-15'	Batch	n ID: 52	005	F	unNo: 6	8422				
Prep Date:	4/21/2020	Analysis D	Date: 4/	25/2020	S	eqNo: 2	367351	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	22	4.8	24.22	0	90.5	80	120	4.62	20	
Surr: BFB		1100		969.0		114	66.6	105	0	0	S
Sample ID:	mb-52018	SampT	уре: МЕ	BLK	Tes	tCode: EF	PA Method	8015D: Gaso	line Rang	e	
Client ID:	PBS	Batch	n ID: 52	018	F	unNo: 6	3422				
Prep Date:	4/22/2020	Analysis D	Date: 4/	26/2020	S	eqNo: 2	367394	Units: %Rec	;		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB		1000		1000		102	66.6	105			
Sample ID:	lcs-52018	SampT	ype: LC	S	Tes	tCode: EF	PA Method	8015D: Gaso	line Rang	e	
Client ID:	LCSS	Batch	n ID: 520	018	F	unNo: 6	8422				
Prep Date:	4/22/2020	Analysis D	Date: 4/	26/2020	S	eqNo: 2	367395	Units: %Rec	:		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB		1100		1000		114	66.6	105			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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27-Apr-20

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Client: Project:	HILCORI FRPC 4 1		Y								
Sample ID:	mb-51914	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8021B: Volat	iles		
Client ID:	PBS	Batch	n ID: 519	914	F	RunNo: 6	8276				
Prep Date:	4/17/2020	Analysis D)ate: 4/	21/2020	S	SeqNo: 2	361753	Units: mg/K	íg		
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-Brom	ofluorobenzene	1.0		1.000		102	80	120			
Sample ID:	LCS-51914	SampT	ype: LC	S	Tes	tCode: El	PA Method	8021B: Volat	iles		
Client ID:	LCSS	Batch	n ID: 519	914	F	RunNo: 6	8276				
Prep Date:	4/17/2020	Analysis D	Date: 4/	20/2020	S	SeqNo: 2	361754	Units: mg/K	(g		
Analyte		Result	PQL		SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene		0.84	0.025	1.000	0	84.4	80	120			
Toluene		0.88	0.050	1.000	0	88.1	80	120			
Ethylbenzene		0.89	0.050	1.000	0	89.1	80	120			
Xylenes, Total		2.7	0.10	3.000	0	89.8	80	120			
Surr: 4-Brom	ofluorobenzene	1.0		1.000		101	80	120			
Sample ID:	2004812-013ams	SampT	ype: MS	5	Tes	tCode: El	PA Method	8021B: Volat	iles		
Client ID:	BH05@7.5-10'	Batch	n ID: 519	9 14	F	RunNo: 6	8276				
Prep Date:	4/17/2020	Analysis D	ate: 4/	20/2020	S	SeqNo: 2	361756	Units: mg/K	(g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene		0.85	0.024	0.9775	0	87.4	78.5	119			
Toluene		0.88	0.049	0.9775	0	90.0	75.7	123			
Ethylbenzene		0.89	0.049	0.9775	0	91.4	74.3	126			
Xylenes, Total		2.7	0.098	2.933	0	92.7	72.9	130			
Surr: 4-Brom	ofluorobenzene	1.0		0.9775		102	80	120			
Sample ID:	2004812-013amsd	SampT	ype: MS	SD .	Tes	tCode: El	PA Method	8021B: Volat	iles		
Client ID:	BH05@7.5-10'	Batch	n ID: 519	914	F	RunNo: 6	8276				
Prep Date:	4/17/2020	Analysis D	Date: 4/	20/2020	5	SeqNo: 2	361757	Units: mg/K	(g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene		0.86	0.025	0.9930	0	87.0	78.5	119	1.11	20	
Toluene		0.90	0.050	0.9930	0	90.9	75.7	123	2.57	20	
Ethylbenzene		0.92	0.050	0.9930	0	92.3	74.3	126	2.64	20	
Xylenes, Total		2.8	0.099	2.979	0	94.1	72.9	130	3.09	20	
Surr: 4-Brom	ofluorobenzene	1.0		0.9930		102	80	120	0	0	

Qualifiers:

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- D Sample Diluted Due to Matrix
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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

- 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

2004812

27-Apr-20

Client:

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

HILCORP ENERGY

Project:	FRPC 4 1										
Sample ID:	MB-52005	SampT	ype: ME	BLK	Tes	tCode: EF	PA Method	8021B: Vola	tiles		
Client ID:	PBS	Batch	Batch ID: 52005			RunNo: 6	3422				
Prep Date:	4/21/2020	Analysis D	Date: 4/	25/2020	S	SeqNo: 2	367425	Units: mg/k	٢g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene		ND	0.025								
oluene		ND	0.050								
Ethylbenzene		ND	0.050								
Kylenes, Total		ND	0.10								
Surr: 4-Bron	nofluorobenzene	1.0		1.000		103	80	120			
Sample ID:	LCS-52005	SampT	ype: LC	s	Test	tCode: EF	PA Method	8021B: Vola	tiles		
Client ID:	LCSS	Batch	n ID: 52	005	R	RunNo: 6 8	3422				
Prep Date:	4/21/2020	Analysis D	Date: 4/	25/2020	S	SeqNo: 2	367429	Units: mg/k	٢g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene		0.82	0.025	1.000	0	82.4	80	120			
Toluene		0.84	0.050	1.000	0	84.4	80	120			
Ethylbenzene		0.86	0.050	1.000	0	86.3	80	120			
Xylenes, Total		2.6	0.10	3.000	0	86.9	80	120			
Surr: 4-Bron	nofluorobenzene	1.0		1.000		104	80	120			
Sample ID:	2004812-010ams	SampT	уре: М	3	Tes	tCode: EF	PA Method	8021B: Vola	tiles		
Client ID:	BH04@2.5-5'	Batch	h ID: 52	005	R	RunNo: 68	3422				
Prep Date:	4/21/2020	Analysis D	Date: 4/	25/2020	S	SeqNo: 2	367440	Units: mg/k	٢g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene		0.78	0.024	0.9775	0	79.7	78.5	119			
Toluene		0.81	0.049	0.9775	0	83.3	75.7	123			
Ethylbenzene		0.84	0.049	0.9775	0	86.1	74.3	126			
Xylenes, Total		2.5	0.098	2.933	0	86.4	72.9	130			
Surr: 4-Bron	nofluorobenzene	1.0		0.9775		103	80	120			
Sample ID:	2004812-010amsd	SampT	уре: М	SD	Tes	tCode: EF	PA Method	8021B: Vola	tiles		
Client ID:	BH04@2.5-5'	Batch	n ID: 52	005	R	RunNo: 68	3422				
Prep Date:	4/21/2020	Analysis D	Date: 4/	25/2020	S	SeqNo: 2	367441	Units: mg/k	٢g		
Analyte		Result	PQL		SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
		0.77	0.024	0.9533	0	80.8	78.5	119	1.11	20	
Benzene								123	0 000	00	
Benzene Toluene		0.81	0.048	0.9533	0	84.8	75.7	123	0.808	20	
		0.81 0.84	0.048 0.048	0.9533 0.9533	0	84.8 88.0	75.7 74.3	123	0.808	20 20	
Toluene											

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
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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

- 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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27-Apr-20

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

	LCORP ENERGY RPC 4 1					
Sample ID: mb-52018	SampType: MBLK	Test	tCode: EPA Method	8021B: Volatiles		
Client ID: PBS	Batch ID: 52018	R	RunNo: 68422			
Prep Date: 4/22/2020	Analysis Date: 4/26/20	20 S	SeqNo: 2367486	Units: %Rec		
Analyte	Result PQL SPk	value SPK Ref Val	%REC LowLimit	HighLimit %RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzer	ne 1.0	1.000	101 80	120		
Sample ID: LCS-52018	SampType: LCS	Test	tCode: EPA Method	8021B: Volatiles		
Client ID: LCSS	Batch ID: 52018	R	RunNo: 68422			
Prep Date: 4/22/2020	Analysis Date: 4/26/20	20 S	SeqNo: 2367487	Units: %Rec		
Analyte	Result PQL SPk	value SPK Ref Val	%REC LowLimit	HighLimit %RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzer	ne 1.0	1.000	103 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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27-Apr-20

Client:

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

HILCORP ENERGY

Released to Imaging:	5/12/2021 10:26:18 AM	

В Analyte detected in the associated Method Blank

pH Not In Range

Reporting Limit RL

alue above	quantitation range	
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- Е Val
 - J Analyte detected below quantitation limits

P	Sample pH No
DI	Demonting Line

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	27-Apr-20

Sample ID: los 51000	Samal		84	Taa			0260B. Valat	loo Shart	List				
Sample ID: Ics-51909		ype: LC			TestCode: EPA Method 8260B: Volatiles Short List								
Client ID: BatchQC	Batc	h ID: 51 9	909	R	tunNo: 6	3321							
Prep Date: 4/17/2020	Analysis E	Date: 4/	21/2020	S	eqNo: 2	363813	Units: mg/K	g					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual			
Benzene	0.89	0.025	1.000	0	88.5	80	120						
Toluene	1.1	0.050	1.000	0	107	80	120						
Ethylbenzene	1.1	0.050	1.000	0	108	80	120						
Xylenes, Total	3.1	0.10	3.000	0	104	80	120						
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.4	70	130						
Surr: 4-Bromofluorobenzene	0.47		0.5000		94.7	70	130						
Surr: Dibromofluoromethane	0.45		0.5000		90.3	70	130						
Surr: Toluene-d8	0.49		0.5000		98.6	70	130						
						-	100						
Sample ID: mb-51909	SampT	ype: ME	BLK	Tes	tCode: EF	PA Method	8260B: Volati	les Short	List				
Sample ID: mb-51909 Client ID: PBS		ype: ME h ID: 51			tCode: Ef			les Short	List				
		h ID: 51	909	R		3321			List				
Client ID: PBS	Batcl	h ID: 51	909 21/2020	R	unNo: 6	3321	8260B: Volati		List RPDLimit	Qual			
Client ID: PBS Prep Date: 4/17/2020	Batcl Analysis [h ID: 51 9 Date: 4 /	909 21/2020	R	tunNo: 6 8 SeqNo: 2 3	3321 363815	8260B: Volati Units: mg/K	g		Qual			
Client ID: PBS Prep Date: 4/17/2020 Analyte	Batcl Analysis I Result	h ID: 51 9 Date: 4/ PQL	909 21/2020	R	tunNo: 6 8 SeqNo: 2 3	3321 363815	8260B: Volati Units: mg/K	g		Qual			
Client ID: PBS Prep Date: 4/17/2020 Analyte Benzene	Analysis E Result ND	h ID: 51 Date: 4/ PQL 0.025	909 21/2020	R	tunNo: 6 8 SeqNo: 2 3	3321 363815	8260B: Volati Units: mg/K	g		Qual			
Client ID: PBS Prep Date: 4/17/2020 Analyte Benzene Toluene	Batcl Analysis E Result ND ND	h ID: 51 Date: 4/ PQL 0.025 0.050	909 21/2020	R	tunNo: 6 8 SeqNo: 2 3	3321 363815	8260B: Volati Units: mg/K	g		Qual			
Client ID: PBS Prep Date: 4/17/2020 Analyte Benzene Toluene Ethylbenzene	Batch Analysis E Result ND ND ND	h ID: 51 9 Date: 4 / <u>PQL</u> 0.025 0.050 0.050	909 21/2020	R	tunNo: 6 8 SeqNo: 2 3	3321 363815	8260B: Volati Units: mg/K	g		Qual			
Client ID: PBS Prep Date: 4/17/2020 Analyte Benzene Toluene Ethylbenzene Xylenes, Total	Batcl Analysis E Result ND ND ND ND	h ID: 51 9 Date: 4 / <u>PQL</u> 0.025 0.050 0.050	909 21/2020 SPK value	R	2unNo: 6 6 6 8 9 8 8 8 8 8 8 8 8 8 8 9 8 9 8 8 8 8	3321 363815 LowLimit	8260B: Volati Units: mg/K HighLimit	g		Qual			
Client ID: PBS Prep Date: 4/17/2020 Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 1,2-Dichloroethane-d4	Batcl Analysis E Result ND ND ND ND 0.45	h ID: 51 9 Date: 4 / <u>PQL</u> 0.025 0.050 0.050	009 21/2020 SPK value 0.5000	R	2unNo: 66 SeqNo: 2: %REC 90.2	3321 363815 LowLimit 70	8260B: Volati Units: mg/K HighLimit 130	g		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

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2004812 W∩#·

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Client: HILCOF Project: FRPC 4	RP ENERG 1	Y								
Sample ID: Ics-51909	SampT	ype: LC	S	Test	tCode: EF	PA Method	8015D Mod:	Gasoline	Range	
Client ID: LCSS	Batch	n ID: 51 9	909	R	unNo: 6	8321				
Prep Date: 4/17/2020	Analysis D	ate: 4/	21/2020	S	eqNo: 2	363971	Units: mg/K	٤g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	5.0	25.00	0	81.2	70	130			
Surr: BFB	490		500.0		98.3	70	130			
Sample ID: mb-51909	SampT	ype: ME	BLK	Test	tCode: EF	PA Method	8015D Mod:	Gasoline	Range	
Client ID: PBS	Batch	n ID: 51	909	R	tunNo: 6	8321				
Prep Date: 4/17/2020	Analysis D	ate: 4/	21/2020	S	eqNo: 2	363973	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	480		500.0		95.9	70	130			

Qualifiers:

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- 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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Client Name: HILCORP ENERGY FAR Work Order Number: 2004812 RoptNo: 1 Received By: Juan Rojas 4/17/2020 8:00:00 AM Juan-4.9 Completed By: Desiree Dominguez 4/17/2020 8:07:19 AM Juan-4.9 Reviewed By: Juan Main A Juan-4.9 Chain of Custody 4/17/2020 8:07:19 AM Juan-4.9 1. Is Chain of Custody sufficiently complete? Yes No Not Present 2. How was the sample delivered? Courtier Courtier Log In 3. Was an attempt made to cool the samples? Yes No NA 4. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA 5. Sample(s) in proper container(s)? Yes No NA 6. Sufficient sample volume for indicated test(s)? Yes No NA 9. Received at least 1 vial with headspace <1/4" for AQ VOA? 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 No If of preserved for ph:<	Page 5 k List
Contained by: Usering Dominguez All // 2 do Reviewed By: G 4// 4/ 4 do 1. Is Chain of Custody 1. Is Chain of Custody sufficiently complete? Yes No Not Present 2. How was the sample delivered? Courier Log In 3. Was an attempt made to cool the samples? Yes No NA 4. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA 5. Sample(s) in proper container(s)? Yes No NA 6. Sufficient sample volume for indicated test(s)? Yes No NA 7. Are samples (except VOA and ONG) property preserved? Yes No NA 9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes No NA # of preserved 10. Were any sample containers received broken? Yes No If of preserved bottle ischecked for pH: (2 or >12 unite 11. Does paperwork match bottle labels? Yes No If of preserved Adjusted? Yes No Adjusted? 12. Are matrices correctly identified on Chain of Custody? Yes No If of preserved bottle ischecked for pH	
Contained by: Usering Dominguez All // 2 do Reviewed By: G 4// 4/ 4 do 1. Is Chain of Custody 1. Is Chain of Custody sufficiently complete? Yes No Not Present 2. How was the sample delivered? Courier Log In 3. Was an attempt made to cool the samples? Yes No NA 4. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA 5. Sample(s) in proper container(s)? Yes No NA 6. Sufficient sample volume for indicated test(s)? Yes No NA 7. Are samples (except VOA and ONG) property preserved? Yes No NA 9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes No NA # of preserved 10. Were any sample containers received broken? Yes No If of preserved bottle ischecked for pH: (2 or >12 unite 11. Does paperwork match bottle labels? Yes No If of preserved Adjusted? Yes No Adjusted? 12. Are matrices correctly identified on Chain of Custody? Yes No If of preserved bottle ischecked for pH	
Reviewed By: 4/12/10 Chain of Custody 1. Is Chain of Custody sufficiently complete? Yes No Not Present 2. How was the sample delivered? Courier Loa In	
1. Is Chain of Custody sufficiently complete? Yes No Not Present 2. How was the sample delivered? Courier Log In . Na Na 3. Was an attempt made to cool the samples? Yes No NA 4. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA 5. Sample(s) in proper container(s)? Yes No NA 6. Sufficient sample volume for indicated test(s)? Yes No NA 7. Are samples (except VOA and ONG) properly preserved? Yes No NA 9. Received at least 1 vial with headspace <1/4" for AQ VOA?	
2. How was the sample delivered? Courier Log In	
Log In 3. Was an attempt made to cool the samples? Yes No NA 4. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA 5. Sample(s) in proper container(s)? Yes No NA 6. Sufficient sample volume for indicated test(s)? Yes No NA 7. Are samples (except VOA and ONG) properly preserved? Yes No NA 9. Received at least 1 vial with headspace <1/4" for AQ VOA?	
3. Was an attempt made to cool the samples? Yes No NA 4. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA 5. Sample(s) in proper container(s)? Yes No NA 6. Sufficient sample volume for indicated test(s)? Yes No NA 7. Are samples (except VOA and ONG) properly preserved? Yes No NA 8. Was preservative added to bottles? Yes No NA 9. Received at least 1 vial with headspace <1/4" for AQ VOA?	
4. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA 5. Sample(s) in proper container(s)? Yes No 6. Sufficient sample volume for indicated test(s)? Yes No 7. Are samples (except VOA and ONG) properly preserved? Yes No 8. Was preservative added to bottles? Yes No NA 9. Received at least 1 vial with headspace <1/4" for AQ VOA?	
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 9. Received at least 1 vial with headspace <1/4" for AQ VOA?	
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?	
7. Are samples (except VOA and ONG) properly preserved? Yes No 8. Was preservative added to bottles? Yes No 9. Received at least 1 vial with headspace <1/4" for AQ VOA?	
8. Was preservative added to bottles? Yes No NA 9. Received at least 1 vial with headspace <1/4" for AQ VOA?	
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	
10. Were any sample containers received broken? Yes No # of preserved bottles checked for pH:	
11. Does paperwork match bottle labels? Yes ✓ No bottles checked bottles checked for pH: (Note discrepancies on chain of custody) Yes ✓ No Adjusted? 12. Are matrices correctly identified on Chain of Custody? Yes ✓ No Adjusted? 13. Is it clear what analyses were requested? Yes ✓ No Adjusted? 14. Were all holding times able to be met? Yes ✓ No Checked by: JP (If no, notify customer for authorization.) Special Handling (if applicable) No NA ✓ 15. Was client notified of all discrepancies with this order? Yes No NA ✓ Person Notified:	
11. Does paperwork match bottle labels? Yes No for pH: (<2 or >12* unleteended bottle labels? (Note discrepancies on chain of custody) Yes No Adjusted? Adjusted? 13. Is it clear what analyses were requested? Yes No Checked by: Clecked by:	
12. Are matrices correctly identified on Chain of Custody? Yes No Adjusted? 13. Is it clear what analyses were requested? Yes No Adjusted? 14. Were all holding times able to be met? Yes No Checked by: JP Checked by: JP 14. Were all holding times able to be met? Yes No Checked by: JP Checked by: JP 15. Was client notified of all discrepancies with this order? Yes No NA Person Notified: By Whom: Via: eMail Phone Fax In Person Regarding: Client Instructions: Client Instructions: 16. Additional remarks:	less noted)
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ♥ No □ Checked by: 𝔅 ♥ 𝔅 Special Handling (if applicable) 15. Was client notified of all discrepancies with this order? Yes □ No □ NA ♥ Person Notified: □ □ □ NA ♥ By Whom: Via: eMail Phone Fax In Person Client Instructions: □ 16. Additional remarks: 16. Additional r	
(If no, notify customer for authorization.) Special Handling (if applicable) 15. Was client notified of all discrepancies with this order? Yes No NA Person Notified: Date:	
15. Was client notified of all discrepancies with this order? Yes No NA ✓ Person Notified: Date: ✓	1117/20
15. Was client notified of all discrepancies with this order? Yes No NA ✓ Person Notified: Date: ✓	
By Whom: Via: eMail Phone Fax In Person Regarding: Client Instructions: 16. Additional remarks:	
By Whom: Via: eMail Phone Fax In Person Regarding: In Client Instructions: In Person In Person In Person 16. Additional remarks: In Person In Person In Person In Person	
Regarding: Client Instructions: 16. Additional remarks:	
17. October 1. ferrer 1.	
17. <u>Cooler Information</u>	
Cooler No Temp °C Condition Seal Intact Seal No Seal Date Signed By 1 3.4 Good Yes End Seal Date Signed By	

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Page 1 of 1

	TAL ORY																								Sample		
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	ENVIRONMENT	E	Albuquerque, NM 87109	107						1	_														kid	Jadams @ Henv. ON	21400.COM
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Page		A		4901 Hawkins NE	Tel. 505-345-3975			PCB's O / MR	, DR 8082 14.1)	9 P Səp	5D(0 sticio	STEX / < 108:191 2081 Ре 2081 Ре	\times					\rightarrow				Remarks:
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Turn-Around Time:	1	Standard Rush	e:	FKP2 4-1	ct #:		Project Manager:		R. Josh Ad	olers:	Cooler Temp(including CF): 3.4	iner Preservative and # Type						7				NW-F WALT wed by: Via:
		S	LIDIE		874(3 Project #:)	Project		Sampler: On Ice	# of C	Coole	Container Type and #	101-0	212.5-15'	(chan) ac-21	2.5-51	152-151	(1994), or-511 0				Recei
Chain-of-Custody Bocord	Cusicuy IN	iter uear	+ilcorp	382 CR 4100	Azlec, NM 8		deale hilcorp	□ Level 4 (Full Validation)	Az Compliance Other	DF		ix Sample Name	BHOS	BHOSOW	BHOSPIT	DHOGE	BHOGEL	BHOCOT			1 V	Relinquished by: Relinquished by: Relinquished by: Muttur UD00 Luc
Chain-of-	Client:	Jeni		Mailing Address: 36	A	Phone #:	email or Fax#: 10	QA/QC Package:	Accreditation: Accreditation:	EDD (Type)		Date Time Matrix	-16-20 1310 SQI	213	1514	1355	V 1357 1	J 1359 U				Date: Time: Relinda Date: Time: Relinda

Analytical Report Lab Order 2004B74

Date Reported:

Hall Environmental Analysis Laboratory, Inc.

 CLIENT:
 HILCORP ENERGY
 Client Sample ID: BH08@5'

 Project:
 FRPC 4 1
 Collection Date: 4/28/2020 12:35:00 PM

 Lab ID:
 2004B74-001
 Matrix: MEOH (SOIL)
 Received Date: 4/29/2020 8:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE O	RGANICS				Analyst: BRM
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	4/29/2020 10:23:58 AM
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	4/29/2020 10:23:58 AM
Surr: DNOP	95.3	55.1-146	%Rec	1	4/29/2020 10:23:58 AM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	4/29/2020 9:09:14 AM
Surr: BFB	99.4	66.6-105	%Rec	1	4/29/2020 9:09:14 AM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	0.025	mg/Kg	1	4/29/2020 9:09:14 AM
Toluene	ND	0.050	mg/Kg	1	4/29/2020 9:09:14 AM
Ethylbenzene	ND	0.050	mg/Kg	1	4/29/2020 9:09:14 AM
Xylenes, Total	ND	0.10	mg/Kg	1	4/29/2020 9:09:14 AM
Surr: 4-Bromofluorobenzene	102	80-120	%Rec	1	4/29/2020 9:09:14 AM
EPA METHOD 300.0: ANIONS					Analyst: MRA
Chloride	ND	60	mg/Kg	20	4/29/2020 11:00:00 AM

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

Value exceeds Maximum Conta В Analyte detected in the associated Method Blank **Qualifiers:** * D Sample Diluted Due to Matrix E Ralue above quantitation range Analyte detected below quantitation limits Н Holding times for preparation or analysis exce ND Not Detected at the Reporting Limit Р Sample pH Not In Range PQL Practical Quanitative Limit RL Reporting Limit S % Recovery outside of range due to dilution or matrix

Page 1 of 0

Page 2 of 0

Analytical Report Lab Order 2004B74

Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY	Client Sample ID: BH08@15'
Project: FRPC 4 1	Collection Date: 4/28/2020 1:00:00 PM
Lab ID: 2004B74-002	Matrix: MEOH (SOIL) Received Date: 4/29/2020 8:00:00 AM

Analyses	Result	RL Qu	ual Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE O	RGANICS				Analyst: BRM
Diesel Range Organics (DRO)	ND	9.7	mg/Kg	1	4/29/2020 10:48:01 AM
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	4/29/2020 10:48:01 AM
Surr: DNOP	95.8	55.1-146	%Rec	1	4/29/2020 10:48:01 AM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	4/29/2020 9:32:49 AM
Surr: BFB	99.2	66.6-105	%Rec	1	4/29/2020 9:32:49 AM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	0.025	mg/Kg	1	4/29/2020 9:32:49 AM
Toluene	ND	0.050	mg/Kg	1	4/29/2020 9:32:49 AM
Ethylbenzene	ND	0.050	mg/Kg	1	4/29/2020 9:32:49 AM
Xylenes, Total	ND	0.10	mg/Kg	1	4/29/2020 9:32:49 AM
Surr: 4-Bromofluorobenzene	100	80-120	%Rec	1	4/29/2020 9:32:49 AM
EPA METHOD 300.0: ANIONS					Analyst: MRA
Chloride	280	60	mg/Kg	20	4/29/2020 11:00:00 AM

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

* Value exceeds Maximum Contai В Analyte detected in the associated Method Blank **Qualifiers:** D Sample Diluted Due to Matrix E Ralue above quantitation range nalyte detected below quantitation limits 7 Н Holding times for preparation or analysis exceed ND Not Detected at the Reporting Limit Р Sample pH Not In Range RL PQL Practical Quanitative Limit Reporting Limit S % Recovery outside of range due to dilution or matrix

Analytical Report Lab Order 2004B74

Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY	Client Sample ID: BH07@5'
Project: FRPC 4 1	Collection Date: 4/28/2020 1:30:00 PM
Lab ID: 2004B74-003	Matrix: MEOH (SOIL) Received Date: 4/29/2020 8:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE O	RGANICS				Analyst: BRM
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	4/29/2020 11:11:59 AM
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	4/29/2020 11:11:59 AM
Surr: DNOP	96.2	55.1-146	%Rec	1	4/29/2020 11:11:59 AM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	4/29/2020 9:56:35 AM
Surr: BFB	100	66.6-105	%Rec	1	4/29/2020 9:56:35 AM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	0.025	mg/Kg	1	4/29/2020 9:56:35 AM
Toluene	ND	0.050	mg/Kg	1	4/29/2020 9:56:35 AM
Ethylbenzene	ND	0.050	mg/Kg	1	4/29/2020 9:56:35 AM
Xylenes, Total	ND	0.10	mg/Kg	1	4/29/2020 9:56:35 AM
Surr: 4-Bromofluorobenzene	102	80-120	%Rec	1	4/29/2020 9:56:35 AM
EPA METHOD 300.0: ANIONS					Analyst: MRA
Chloride	230	59	mg/Kg	20	4/29/2020 11:00:00 AM

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

* Value exceeds Maximum Contai В Analyte detected in the associated Method Blank **Qualifiers:** D Sample Diluted Due to Matrix E Reality above quantitation range Analyte detected below quantitation limits 7 Н Holding times for preparation or analysis exceed ND Not Detected at the Reporting Limit Р Sample pH Not In Range RL PQL Practical Quanitative Limit Reporting Limit S % Recovery outside of range due to dilution or matrix

Page 3 of 0

Analytical Report Lab Order 2004B74

Date Reported:

Hall Environmental Analysis Laboratory, Inc.

 CLIENT:
 HILCORP ENERGY
 Client Sample ID:
 BH07@15'

 Project:
 FRPC 4 1
 Collection Date:
 4/28/2020 1:50:00 PM

 Lab ID:
 2004B74-004
 Matrix:
 MEOH (SOIL)
 Received Date:
 4/29/2020 8:00:00 AM

Analyses Result **RL** Qual Units DF **Date Analyzed** EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: **BRM Diesel Range Organics (DRO)** ND 8.9 mg/Kg 1 4/29/2020 11:36:06 AM Motor Oil Range Organics (MRO) ND 45 mg/Kg 1 4/29/2020 11:36:06 AM Surr: DNOP 96.4 55.1-146 %Rec 1 4/29/2020 11:36:06 AM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: NSB Gasoline Range Organics (GRO) ND 4/29/2020 10:20:14 AM 5.0 mg/Kg 1 Surr: BFB 4/29/2020 10:20:14 AM 99.0 66.6-105 %Rec 1 **EPA METHOD 8021B: VOLATILES** Analyst: NSB ND Benzene 0.025 mg/Kg 1 4/29/2020 10:20:14 AM Toluene ND 0.050 4/29/2020 10:20:14 AM mg/Kg 1 Ethylbenzene ND 0.050 mg/Kg 1 4/29/2020 10:20:14 AM Xylenes, Total ND 0.10 mg/Kg 1 4/29/2020 10:20:14 AM Surr: 4-Bromofluorobenzene %Rec 4/29/2020 10:20:14 AM 102 80-120 1 **EPA METHOD 300.0: ANIONS** Analyst: MRA Chloride ND 60 4/29/2020 11:00:00 AM mg/Kg 20

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

Value exceeds Maximum Contam **Qualifiers:** в Analyte_detected in the associated Method Blank D Sample Diluted Due to Matrix Value above quantitation range Е Analyte detected below quantitation limits Н Holding times for preparation or analysis Sample pH Not In Range ND Not Detected at the Reporting Limit Practical Quanitative Limit RL Reporting Limit PQL % Recovery outside of range due to dilution or matrix S

Page 4 of 0

ENCLOSURE C – LTE BORELOGS

FRPC 4-1 Revised Remediation Work Plan Project No. TE017820013 Hilcorp Energy Company

WSP December 2020 Page 1

				181	ADI		1	ot B Boring/We	Proud member WSP CORING LOG/MONITORING V	Project: FRP/ 4	DIAGRAM
Elevation:			Detector:			2-3-4 12-14	No. of Concession, No.	Date: Logged By: Drilling Me	4-16-20 5A May - stem	Project Number: Drilled By: Mo - 7 Sampling Method:	
Casing Typ Sche	ilica Sar e: edule 40		N/¥		'Quantab			Cook	d Bentonite Chips VA Length:	Grout: Be <u>ntonite</u> -Cement Hole Diameter:	Slurry MA Depth to Liquid:
Screen Typ Sche	^{be:} edule 40) PVG	70.	Slot: 0.0	010"			Diameter:	Length:	Total Depth: 20 1	Depth to Water:
Qtab (ppm)	Moisture Content	Vapor (ppm)	HC Staining?/	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Rer	narks	Well Completion
		N	R		0 1 2		Im	Surg	light brown poort Sand w/ silt low plasticit	y graded Jow cohosion ty	
568	Dry	0.0	No	8 HOI 25-5' 0950	3 4 5	0-5'	And a start	Św-sm		-	
	1	VK			6	- 	~		NR	-	
568	Dry	0.3	NO		8 9 10	-	MARANNA MIN	SW-9m ML	SAA brow silt w/sar		
368		ND	-		11 12	10-15			NR	-	
y128	Dry	3.5	NO	BHOI D.S19 0955	13 , 14 15		Shrrr Carle	Shi-5M	light brown poor Sand 4 silt	ly graded -	-

-											
									Boring/Well #	BHOI FRPC 4-1	
									Project:	FRPC 4-1	
									Project #	and the second se	
				1			-		Date	4-16-20	
Qtab (ppm)	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Litho	ology/Remarks	Well Completion
					15 16 17	15-20	2			NR	
<129 Ppm	Dry	0.7	NO	8H01 17.5-	18 0 ¹⁹ 20		Rever	SP	Poorly g	raded sand	
					21 22				TDe 20	o'	
					23	-					
					25		2				
					27 28	-	•		•		
					29 30						
					31 - 32 -	-	•	9			
					33				a S		
					34 35						
					36 37						

Elevation: Gravel Pack:

Casing Type:

Screen Type:

Qtab (ppm)

L 128

2128

128

10,20 Silica Sand N

Schedule 40 PVC

Schedule 40 PVC

Dry

		BHOL BHOD		of	Provd member WSP ORING LOG/MONITORING V INumber: BHO2 4-16-20	Project: FRPC	4-1
	Detector	PID/Quantab		Drilling Met	JA hollow stem	Sampling Method:	tinuous
lica Sand N	P			Hydrate	d Bentonite Chips	Bentonite-Cement	Slurry
dule 40 PVC	NA	Slate			Z ^{II}	Hole Diameter:	Depth to Liquid:
tule 40 PVC	NA	Slot: 0,010	, TT	Diameter:	Length: 2"	Total Depth:	Depth to Water:
Moisture Content Vapor (ppm)	HC Staining?/ Chlordie ppm	# Depth E S (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Rer	marks	Well Completion
A	JR	0 1 2			NR		
Dry Ot	t No	3 4 5		SP-SM	poorly graded w/silt	Canel	
∧	JR	6	- -		NR		
Dry 0.0	NO NO	BHON 8 C 0 9 15-0 9 10 10	MUJUUJ	mL	SAA	high coheston	
A	JR	11	- 7 -		NR	nigh plas.	

poorly graded sand u/sitt

ODNO

BHOD

25 10

e

13

14

15

MMMMM

sp.sm

	_								Boring/Well #	BH02			
									Project:	DDOC			
				•	*				Project #				
									Date	4-16-20			
Qtab (ppm)	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithc	ology/Remarks		We Comple	
		-NÎ	ک		15 16 17	-			N ₽	2	+		
-	-			- 10		1500	7		0.07				
6128	Dry	0.0	NO	840 9 7.54	0 19 20	-	Nun	SP	peer y gra	ided Sand			
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	4				25	-					ŧ		
					26 27	-					+		
					28	-					+		
					29	-					-		
*					30 -	-					I		
		*		5	31	-					+		
μ.					32	-		•			+		
					33 _	-					+		
					34	-					Ŧ		
				1	35						Ŧ		
					36 37						+		

I		ERFG	•B	403 1401 • 1	JIOZ		1	of	Droud member WSP	VELL COMPLETION I	DIAGRAM
	S Martin	1			4/2	FR	CHOX CHOX	Boring/Well	Number: 13H03	Project FRP/ 4	
¥.	12		100	- 198	in		14 - Cal	Date:	4-16-20	Project Number:	
A.	and the second			14		T.		logged By:	JA	Drilled By: Mo - t	•
Elevation:	and Allowed	n estado de	Detector:			A DOMEST		Drilling Met	hod:	Complian Matheda	nerous
Gravel Pack				PID/C	Quantab			Seal:	hollowstern	Grout	
Casing Type						2		Diameter:	Bentonite Chips NT	Bentonite Cement Hole Diameter:	Depth to Liquid:
Screen Typ		FVC		Slot:				Diameter:	Length:	Total Depth:	Depth to Water:
	dule 40			0.0	10"				21		NA
Qtab (ppm)	Moisture Content	Vapor (ppm)	HC Staining?/ Ghl <mark>imdie ppm</mark>	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Rei	marks	Well Completion
		\wedge	JR		0				NR		
388	Pry	0.1	No	BH08 24-5 1130	3 4 5		MANN	5M	brown silty sa med c	phesion, med	
		V	1D		6 7 8	5-10	AN AN		NR	5	
6128	M	12-8	NO		9	-	frankarde .	SM	SAA, brown a Some blac	korganics fines	
0		N	R		11 12		X		NR		
628	Dry	0.5	NO	BH0. 25-15 1132	13 14 15	16-15	NUMANON	SP	poorly graded Some gravel	Sandy	

1

			e.						Boring/Well # Project: Project #	B1403 FRPC 9-1	
				·					Date	4-16-20	
Qtab (ppm)	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Litho	logy/Remarks	Well Completion
		15			15	-					-
		N	2		16	-	X		Λ	JR	+
		1.			17	. 1	1				Ţ
							1				±
					18		3	SP			+
152	Fred	03	NO		19		4	ן יכ	S	44	1
e					20		Julio				±
					21				1	2.1	-
					22				TDe	,28	Ŧ
					23						†
					T						±
					24						+
					25						Į
	•				26					с. С	‡
					27						±
					28						-
					29						T
					30						†
					31						†
					32				*		+
											+
					33 🕇						Ŧ
					34 _						1
					35						1
					36						±
					37 +						-

Elevation:			Detector:	PID/	Quantab		1	of B Boring/Wel Date: Logged By: Drilling Met	Hollowstern	Project: FRPC Project Number: Drilled By: Mo - 1 Sampling Method:	4-1 Ie
10-20 S Casing Typ	ilica Sa		11	A		5		Diameter:	d Bentonite Chips Length:	Grout: AMA Bentonite-Cemen Hole Diameter: 11	Depth to Liquid:
Screen/Typ	edule 40 ee: edule 40		/₹ .	Slot:	10"			Diameter:	2" Length:	Total Depth:	Depth to Water:
Qtab (ppm)	Moisture Content	Vapor (ppm)	HC Staining?/ Chierdie ppm	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	z Lithology/Rer		Well Completion
		(NR		0 1 2	-	X		NR		
4008	Pry	0.0	Ng	BAOL	3 -		mmm	SM	brown Silty Sa		
516	M	4	JR	1220	5 6 7	5-10		m	brown silt with ophesion high NR	blas	
216	Dry	0.3	NO	8404 75-10 1210	8 (9 10		7229	sp	brown poorly go	aded sand	
			NR	Вно	11 12 4	10-5	2		NR		
516	Dry	6.0	NO	12.5-1	5 ¹ 14 15	_	and	SP	SAA, som	e gravel	

									Boring/Well # Project: Project #	BHOH FRPC 4-1		
		-					_		Date	4-16-20		
Qtab (ppm)	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Litho	logy/Remarks		Well pletion
					15 16	. (X	· .	R/	R	+	
2124	Dry	0.2	NO	8404 9.5-21 1225	17 18 19 20		Munn	SP	S.	4 A		
			25	1952	20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36		7		toe			

		Cont	,3		2		1	of			
	2 Mars		•	5			14	Boring/Wel	ORING LOG/MONITORING		DIAGRAM
2		No. and				- 1		Date:	4-16-20	Project Number:	- 7-1
1.	· ~			1	A PROPERTY		1	Logged By:	74	Drilled By:	Te
Elevation:			Detector:		Quantab			Drilling Met	hollausten	Sampling Method:	1.000
Gravel Pac 10-20 S	k: Silica Sar	nd	1.00	1107	quantab				d Bentonite Chips	Grout: Bentonite-Cemen	n 14
Casing Typ Sch	edule 40		TUR			_		Diameter:	Length: 2"	Hole Diameter:	Depth to Liquid:
Screen				Slot:	10"			Diameter:	Length:	Total Depth: 20'	Depth to Water:
Qtab (ppm)	Moisture Content	Vapor (ppm)	HC Staining?/ Chloretin ppm	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/R	emarks	Well Completion
		N	R		0 1 2		X		NR		
2128	DNY	0.0	No		3 4 5	0-5	mour	SM	brown silty s cohesion, m	sand med edplasheity	
		NT	2		6		X	1	NR		
2128	Dry	0.0	No	BH05 12.5-10 1310	8 9 10		MUN	SP	brown poorly gro	ided sand	
		N	R		11 12	10-15	X		NR		
2124	Dry	0.1	NO	BH05 128-15 1312	13 14 15		MUNNE	SP	SAA, son	regravel	

Г								-				
I										Boring/Well #	8405 FRPC 4-1	
I										Project:	FRPC 41-1	
I										Project #		
l		~	r		1			-		Date	4-16-20	
	Qtab (ppm)	Moisture Content	Vapor (ppm)	Staining	Sample #	(ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	- Litho	logy/Remarks	Well Completion
			N	P		15 16	-	X			NR	
		and of The Despine a care of the	After any incommunity of the		Pllos	17	15-20	Z		142		-
	4124	Dry	00	ŇQ	BH09 7.5-8 1314	0 19	-	22	SP	SA	A	
						20	-	/		TA	vil.	
						22 23	-			IJe	201	+
						23 -						
						25						÷
						26 27						
						28						- -
						29 30						‡
						31						
						32 L						
						33 34						
			7			35	•					-
					-	36 37						

-								3			
	6	ERRET	•3			1			Droud member WSP		
	5.00	4						B	ORING LOG/MONITORING		
	1 P	1. 11		-5		7		Boring/ weil	Number: BHOG	Project: FRPC	4-1
X			100		-	2		_{تت} Date:	4-16-20	Project Number:	
1-1	· 9	and day	and in the	a exterio	10000	12201101210		Logged By:	54	Drilled By: Mo . TE	
Elevation:			Detector:	PID/	Quantab			Drilling Met	ollow Stem	Sampling Method:	
Gravel Pag	^{ck:} Silfca Şar	well	1	1107	quantas			Sear:	VD	Grout: Bentonite-Cement	
Casing	ie:		ALA					Diameter:	Bentonite Chips Length:	Hole Diameter:	Depth to Liquid:
Screen Typ			T	Slot:			_	Diameter:	Length:	Total Depth:	Depth to Water:
	edule 40		2 8		10*		<u> </u>	2 1	P	Total Deptn:	NA
Qtab (ppm)	Moisture Content	Vapor (ppm)	HC Staining?/ Chlordin ppm	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/R	emarks	Well Completion
		N	R		0 1 2	0-5	X		NR hour eilt		
152	Dry	0.0	NO	BHO 25-5 1355	6 ³ 1 ⁴ 5		MMMMM	SM	brown silty cohesion	`	
		N	R			5-10	X		NI		
2124	Dry	0.0	NO		8 9 10	10-15	WWW	SP-SM	brown poor sand wl	ily graded silt	
		V	pR		11 12		X				
420	Pry	5.0	NO	BHC6 25-15 1357	13 14 15		Norm.	sp	poorly grade	d sand	

r							_			0.0.00	
									Boring/Well #	BH06 FRPC 4-1	
			•						Project: Project #	FKIC -1-1	
				_					Date	4-16-20	
Qtab (ppm)	Moisture Content,	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type		logy/Remarks	Well Completion
2124	Dry	N 0-0	NR	BHCC 17.5-2 1350	15 16 17 18 19	15-20	~ ~ ~	SP	NR SAA,	somegravel	
•				<i>43</i> 3	21 22 23 24 25 26 27 28 29		7		TDe	201	
					30 31 32 33 34 35 36 37						

- BHO8 X-X-i-t-X-X BHO7 X BHO7 X BHO7 X BHO7 X BHO7 X BHO7 X BHO7 X BHO7 X BHO7 X BHO7 X BHO7 X BHO7 X BHO8 X BHO8 X BHO8 X BHO8 X BHO8 X BHO8 X BHO8 X BHO8 X BHO8 X BHO8 X BHO8 X BHO8 X BHO8 X BHO8 X BHO7 X BHO7 X BHO7 X BHO8 X BHO7 A BO8 BHO7 A BO8 BHO7 A BO8 BHO7 A BO8 BHO7 A BO8 BHO7 A BHO8 BHO7 A BO8 BHO7 A BO8 BHO7 A BHO8 BHO7 A BHO8 BHO7 A BHO8 BHO7 A BHO8 BHO7 A BHO8 BHO7 A BHO8 BHO7 A BHO8 BHO7 A BHO8 BHO7 A BHO8 BHO7 A BHO8																
9	BHO7 / X									Durango, Colorado 81301						
										BORING LOG/MONITORING WELL COMPLETION DIAGRAM						
		$\overline{\langle}$				V			Bornig/ wei	BHO7	Project: FRR 4-1					
		4	- X -	-人-	X	X			Date:	4-28-20	Project Number:					
									Logged By:	SA	Drilled By: JA	Drilled By: JA				
Elev	Elevation: Detector: PID/ @ + a b								Drilling Me	thod: hand alled	Sampling Method:	ampling Method: hand augcs				
	vel Pack 10-20	S Slida	Sarlds						Seal:	NA	Grout: NA	Grout:				
Casi	ing Typ		11/	NA					Diameter:	Length:	Hole Diameter:	Depth to Liquid:				
Scree	en Pyp	the second s	NIV		Slot:	164 W	A		Diameter:	Length:	Total Depth: 15	Depth to Water:				
Penetration		Moisture Content	Vapor (ppm)	HC Staining?	Sample #		Sample Run	Recovery		Lithology/Re		Well Completion				
		dry				0	- - -	- WWW	SM	brown silty sa -cohesion, me	nd, med = ed plasticity =	-				
		dry	0.1	Nð	BH07 C 5' 1330	3 4 5	*	Recently and the second	SM	SAM CI = 1864	lpM 184ppm	* - - -				
		94	0.2	NO		6 _ 7 _	-	S	SM	SAA	-	-				
	-	ger	0.0	ND		° - 9 -		25	SM	, napriv arrela	- south					
		dry	0.0	NO	0.11-2	10 11 12 13	-	Con	SP-SM SPSM	SAA	-	- 				
		dry	62	ND	BH07 15 1350	14 15	-	Swy	59	poorly gradelso	and, some gravef)= <124ppm	-				

TDe 5'

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		_	20,02	_			-						
a		нист			The second		1		P proud member WSP				
题		N.		12	6011		BORING LOG/MONITORING WELL COMPLETION DIAGRAM						
	Comments of							-Boring/Well	Number: BAO8	Project: FRPC 4.	-		
3	1		100		-			Date:	4-28-20	Project Number:			
	10	100		1			1.4	Logged By:	JA	Drilled By:			
Elevation:		a sector se	Detector:					Drilling Met	had	Sampling Method: hand angel			
Gravel Pac				PID/0	Quantab		_	Seal:	hand auger	Grout:	ut:		
10-20 S Casing Vp	ilica San e	d						Diameter:	Bentonite Chips NA	Hole Diameter:			
Sche Screen Typ	edule 40	PVC	Asio					Diameter:	Length:		UA Depth to Water:		
\$che	dule 40		20	0/0	6d"		r	ú	2"	Total Depth: 15	NA		
Qtab (ppm)	Moisture Content	Vapor (ppm)	HC Staining?/ Chlordie ppm	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Re	marks	Well Completion		
NS	dry	0.0	NO		0		MMMMM		brown silty sand how plasficity				
Cl2t ppm	dry	6.0	No	BIFOS	3 _ 4		Swwww	SP-SM	light brown poor Sound w/silt	ly graded			
NS	dry	0-1	NO		6	-	MNN	_9.5M	SAA				
2124	dry	0.0	NO		8 9 10	-	www	sp-sm	SAA				
NS	dry	0.0	NO		11 12	-	WWW.	SP	brown silty sand				
186	dry	0.0	NO		13 14 15	-	mmm	Sp-sen	poorly gradeel so some gravel	end w/silt			

TDe151

District II

District IV

District I 1625 N. French Dr., Hobbs, NM 88240

Phone:(575) 393-6161 Fax:(575) 393-0720

811 S. First St., Artesia, NM 88210 Phone: (575) 748-1283 Fax: (575) 748-9720

Phone:(505) 334-6178 Fax:(505) 334-6170

1220 S. St Francis Dr., Santa Fe, NM 87505 Phone:(505) 476-3470 Fax:(505) 476-3462

District III 1000 Rio Brazos Rd., Aztec, NM 87410 CONDITIONS

Action 13717

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

CONDITIONS OF APPROVAL

Opera	tor:				OGRID:	Action Number:	Action Type:
	HILCORP ENERGY COMPANY	1111 Travis Street	Houston, TX77002		372171	13717	C-141
OCD F	Reviewer			Condition			
chens	ley			None			