

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	nAPP2133326844
District RP	
Facility ID	
Application ID	

## Release Notification

### Responsible Party

Responsible Party Hilcorp Energy Company	OGRID 372171
Contact Name Mitch Killough	Contact Telephone 713-757-5247
Contact email mkillough@hilcorp.com	Incident # nAPP2133326844
Contact mailing address 1111 Travis Street, Houston, Texas 77002	

### Location of Release Source

Latitude 36.955822 \_\_\_\_\_ Longitude -107.7127533 \_\_\_\_\_  
*(NAD 83 in decimal degrees to 5 decimal places)*

Site Name San Juan 32-8 Unit 233	Site Type Natural Gas Production Facility
Date Release Discovered 11/16/2021 @ 12:30pm MT	API# 30-045-27972

Unit Letter	Section	Township	Range	County
G	30	32N	08W	San Juan

Surface Owner:  State  Federal  Tribal  Private (Name: \_\_\_\_\_)

### Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 184	Volume Recovered (bbls) 53
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

**Cause of Release:**

On 11/16/2021 at approximately 12:30 pm (MT), Hilcorp Energy Company (Hilcorp) discovered a 184-bbl release of produced water at the San Juan 32-8 Unit 233 (API: 30-045-27972) in San Juan County, NM. Based on assessments conducted by Hilcorp personnel, the primary cause was due to a leaking manway gasket on a 500-bbl water storage tank. Immediately upon discovery, the storage tank was isolated.

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Was this a major release as defined by 19.15.29.7(A) NMAC?  <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?  The spill amount exceeded 25 bbls.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Mitch Killough notified the BLM (FFO) and NMOCD via 24-hour email notification on 11/17/2021 at 11:07 am CT.	

### Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> 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:  Spilled fluids leaked into the secondary containment berm area (not lined) and did not migrate horizontally outside of this surface area or the pad. However, 131 bbls of produced water could not be recovered and migrated vertically into the underlying soils beneath the secondary containment area.
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.
Printed Name: <u> Mitch Killough </u> Title: <u> Environmental Specialist </u>  Signature: <u>  </u> Date: <u> 11/29/2021 </u> email: <u> mkillough@hilcorp.com </u> Telephone: <u> 713-757-5247 </u>
<b><u>OCD Only</u></b> Received by: <u> Ramona Marcus </u> Date: <u> 11/29/2021 </u>

**District I**  
 1625 N. French Dr., Hobbs, NM 88240  
 Phone:(575) 393-6161 Fax:(575) 393-0720

**District II**  
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**District III**  
 1000 Rio Brazos Rd., Aztec, NM 87410  
 Phone:(505) 334-6178 Fax:(505) 334-6170

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

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

CONDITIONS  
 Action 63893

**CONDITIONS**

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 63893
	Action Type: [C-141] Release Corrective Action (C-141)

**CONDITIONS**

Created By	Condition	Condition Date
marcus	When submitting future reports regarding this release, please submit the calculations used or specific justification for the volumes reported on the initial C-141	11/29/2021

Incident ID	
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## Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	120 (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

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

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

- Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- Field data
- Data table of soil contaminant concentration data
- Depth to water determination
- Determination of water sources and significant watercourses within 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.

State of New Mexico  
Oil Conservation Division

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

Printed Name: Mitch Killough Title: Environmental Specialist

Signature:  Date: 1/21/2022

email: [mkillough@hilcorp.com](mailto:mkillough@hilcorp.com) Telephone: 713-757-5247

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

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## Closure

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

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

- A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- Description of remediation activities

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

Printed Name: Mitch Killough Title: Environmental Specialist

Signature:  Date: 1/21/2022

email: [mkillough@hilcorp.com](mailto:mkillough@hilcorp.com) Telephone: 713-757-5247

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

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

Closure Approved by: Nelson Velez Date: 01/28/2022

Printed Name: Nelson Velez Title: Environmental Specialist – Adv



January 19, 2022

New Mexico Energy, Minerals and Natural Resources Department  
New Mexico Oil Conservation Division  
1000 Rio Brazos  
Aztec, New Mexico 87410

**Subject: Site Characterization Report and Closure Request  
San Juan 32-8 Unit #233  
San Juan County, New Mexico  
NMOCD Incident Number: nAPP2133326844**

To Whom It May Concern:

On behalf of Hilcorp Energy Company (Hilcorp), WSP USA Inc. (WSP) has prepared this *Site Characterization Report and Closure Request* for the San Juan 32-8 Unit #233 production well site (Site) located on Bureau of Land Management (BLM) surface in San Juan County, New Mexico (Figure 1). WSP conducted soil-delineation activities to investigate a release of produced water resulting from equipment failure of on-Site aboveground storage tanks (ASTs). Specifically, on November 16, 2021, Hilcorp personnel discovered a release of 184 barrels (bbls) of produced water resulting from a leaking manway gasket on a 500-bbl AST. Upon discovery of the release, the AST was isolated and recoverable fluids (53 bbls) were removed via vacuum truck. All released fluids remained within the unlined secondary containment berm surrounding the ASTs and did not flow outside of the containment or off-pad. Additionally, the manway gasket was replaced and the AST was put back into service.

Hilcorp estimated the release of produced water to be 184 bbls, as determined by the operator's tank gauging data. After discovery of the release, Hilcorp provided 24-hour notification via email on November 17, 2021. Hilcorp submitted a *Release Notification Form C-141* to the New Mexico Oil Conservation Division (NMOCD) on November 29, 2021. NMOCD has assigned Incident Number nAPP2133326844 to the release.

## SITE CHARACTERIZATION

The Site is located on BLM surface in Unit G of Section 30, Township 32 North, Range 08 West, San Juan County, New Mexico (Figure 1). The Site is approximately 12 miles north of Navajo Dam, New Mexico and approximately 2.5 miles west of State Route 511. As part of the Site investigation, local geology/hydrogeology and nearby sensitive receptors were accessed in accordance with 19.15.29.11 of the New Mexico Administrative Code (NMAC). This information is further discussed below.

## GEOLOGY AND HYDROGEOLOGY

Based on United States Geological Survey (USGS) geologic mapping, the Site is located within the Tertiary San Jose Formation. In the report titled "Hydrogeology and Water Resources of San Juan Basin, New Mexico" (Stone, Lyford, Frenzel, Mizell, & Padgett, 1983), the San Jose Formation is characterized by various lithologies including course-grained arkose, mudstones, and lenses of claystone, siltstone, and poorly consolidated sandstone. This formation ranges in thickness from 200 to 2,700 feet. The San Jose Formation is the youngest Tertiary bedrock unit in the San Juan Basin and is underlain by the Nacimiento Formation.

## SITE RECEPTORS

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

WSP USA  
848 EAST 2ND AVENUE  
DURANGO CO 81301

Tel.: 970-385-1096  
wsp.com



Trail Canyon is located 1,500 feet east of the Site. Additionally, a first-order tributary to Trail Canyon is located 1,000 feet north of the Site and may be considered a “significant watercourse” as defined in 19.15.17.7 NMAC. There are no known springs or fresh-water wells located within 500 feet of the Site. The nearest groundwater well with depth-to-water information (SJ 03823) is located approximately 2.5 miles east of the Site, with groundwater measured at approximately 250 feet below ground surface (bgs). Additionally, the data sheet for a deep ground bed cathodic protection well located at the Site (included as Enclosure A) indicates that groundwater is approximately 120 feet below ground surface (bgs). Based on this information, depth to water at the Site is assumed to be greater than 100 feet bgs.

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

## **SITE CLOSURE CRITERIA**

WSP has characterized the Site according to *Table 1, Closure Criteria for Soils Impacted by a Release of 19.15.29.12 NMAC*. The following NMOCD Table 1 closure criteria apply: 10 milligrams per kilogram (mg/kg) benzene; 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX); 1,000 mg/kg total petroleum hydrocarbons (TPH) as a combination of gasoline range organics (GRO) and diesel range organics (DRO); 2,500 mg/kg TPH as a combination of GRO, DRO, and motor oil range organics (MRO); and 20,000 mg/kg chloride.

## **SITE INVESTIGATION ACTIVITIES AND RESULTS**

After the discovery of the release and removal of fluids from the secondary containment, WSP personnel conducted subsurface investigations using a hand auger to assess the magnitude and vertical/lateral extent of impacts to Site soils. Hand auger borings were advanced at the Site at the locations shown on Figure 3. Boring locations were recorded using a handheld Global Positioning System (GPS) unit. The attached Photographic Log includes photographs taken during delineation activities.

Borings were advanced up to depths of 5 feet bgs and generally encountered sand and gravel in the top 6 inches of soil and then sand, silt, and clay to the terminal depths of each boring. Field notes are attached as Enclosure B. During delineation sampling, the soil was inspected for odors and/or staining. Additionally, soil was field screened using a photoionization detector (PID) to monitor for the presence of organic vapors and/or Hach® chloride QuanTab® test strips to field screen for chloride concentrations. Field screening results collected during sampling are summarized in Table 1.

### **SOIL ASSESSMENT**

In total, 11 borings were advanced at the Site. Borings SB01 through SB05 were advanced at the Site just after the release occurred in order to field screen soils and assess general conditions and the magnitude of potential impacts. Borings BH01 through BH06 were subsequently advanced at the Site to further delineate the release and confirm previous field screening results. In general, two samples were collected from each delineation boring for laboratory analysis: one sample from the interval with the highest PID and/or chloride concentration and one sample near the terminus of each boring. Samples were submitted to Hall Environmental Analysis Laboratory (Hall) for analysis of the BTEX by United States Environmental Protection Agency (EPA) Method 8021, TPH by EPA Method 8015, and chloride by EPA method 300.0. A summary of soil analytical results is presented in Table 1, with laboratory analytical reports attached as Enclosure C.

Based on analytical results, chloride was detected in four of the eleven borings at concentrations ranging from 82 to 2,500 mg/kg, all of which were encountered at shallow depths between the ground surface and 6 inches bgs. TPH and BTEX were not present at detectable concentrations in any of the analyzed samples collected during Site work. Based on these results, concentrations of TPH, BTEX, and/or chloride were not detected above Table 1 Closure Criteria at the Site.



## CONCLUSIONS AND CLOSURE REQUEST

In response to the release of produced water, Hilcorp was able to capture and remove a significant volume of the released liquids on November 16, 2021. Delineation soil samples indicate that concentrations on TPH, BTEX, and chloride do not exceed applicable Table 1 Closure Criteria in Site soils. As such, Hilcorp formally requests Site closure from the NMOCD and BLM, as well as approval that no further action is necessary to remediate the Site.

If you have any questions or comments, please do not hesitate to contact Mr. Stuart Hyde at [stuart.hyde@wsp.com](mailto:stuart.hyde@wsp.com), or at (970) 385-1096 or Mitch Killough at (713) 757-5247 or at [mkillough@hilcorp.com](mailto:mkillough@hilcorp.com).

Kind regards,

Stuart Hyde, L.G.  
Senior Geologist

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

cc: Mitch Killough, Hilcorp Energy Company

**Enclosures:**

- Figure 1      Site Location Map
- Figure 2      Site Receptor Map
- Figure 3      Delineation Soil Boring Locations
- Table 1        Soil Analytical Results
- Photographic Log
- Enclosure A    Data Sheet for Deep Bed Cathodic Protection Wells, 32-8 Unit 233
- Enclosure B    WSP Field Notes
- Enclosure C    Laboratory Analytical Reports

## FIGURES

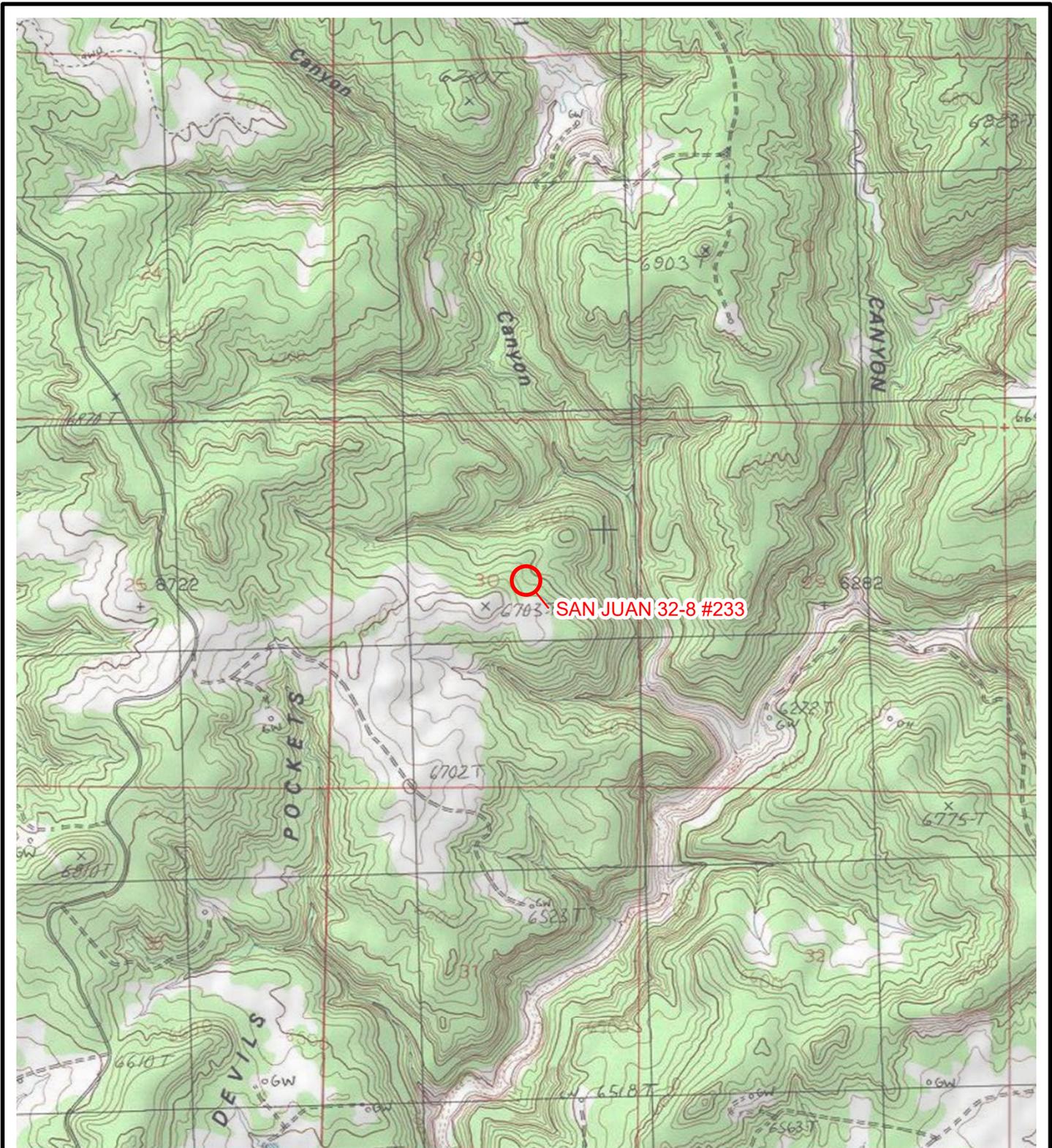
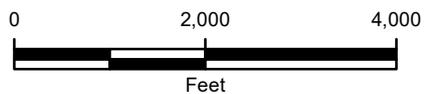


IMAGE COURTESY OF ESRI/USGS

**LEGEND**

 SITE LOCATION



NEW MEXICO

**FIGURE 1**  
**SITE LOCATION MAP**  
**SAN JUAN 32-8 #233**  
**SWNE SEC 30-T32N-R8W**  
**SAN JUAN COUNTY, NEW MEXICO**  
**HILCORP ENERGY COMPANY**



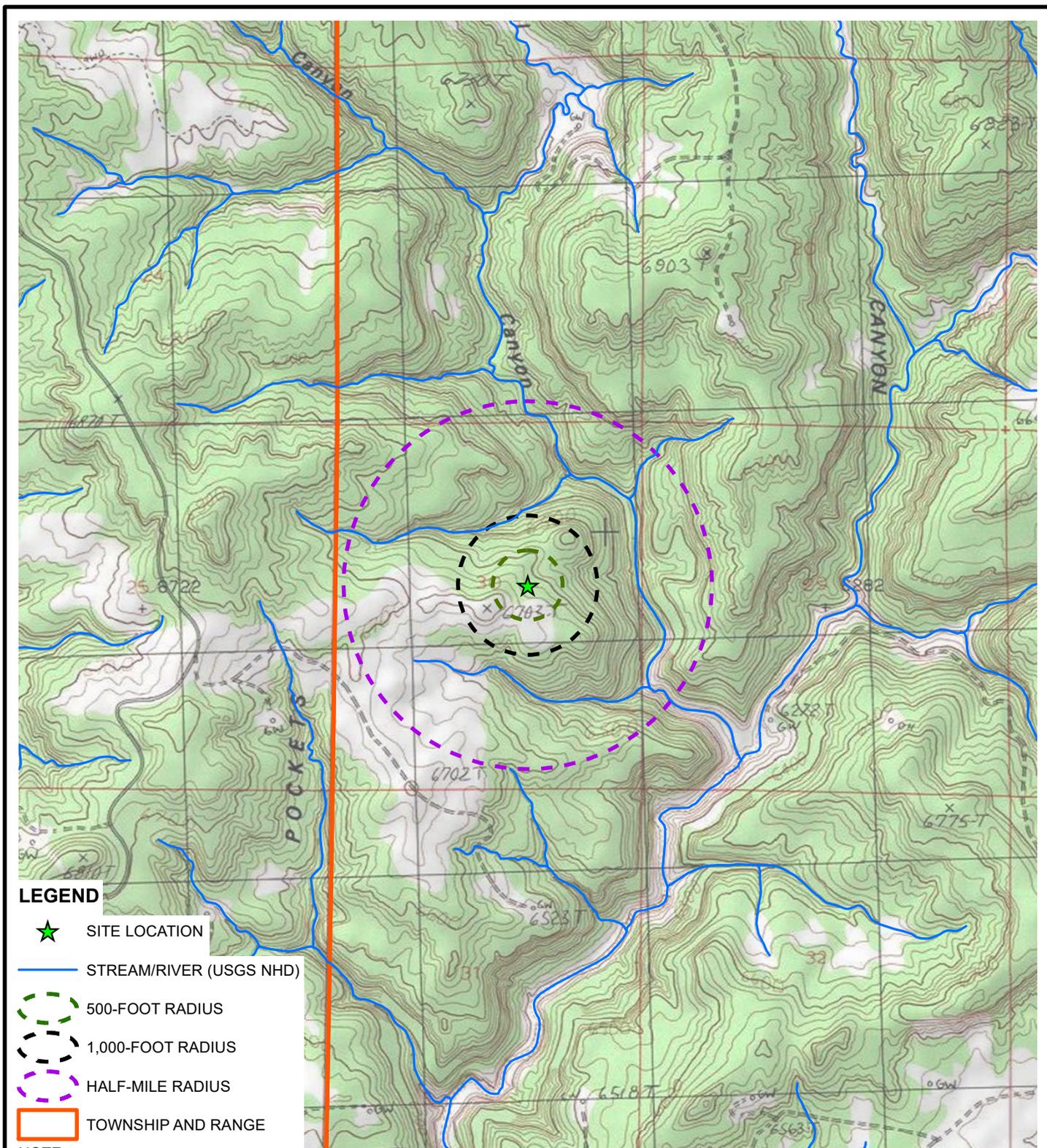
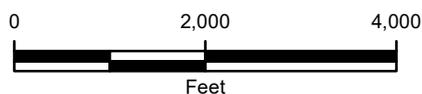


IMAGE COURTESY OF ESRI/USGS



DTW: DEPTH TO WATER  
 ELEV: APPROXIMATE ELEVATION IN FEET ABOVE MEAN SEA LEVEL  
 NM OSE: NEW MEXICO OFFICE OF THE STATE ENGINEER  
 †: FEET

**FIGURE 2**  
 SITE RECEPTOR MAP  
 SAN JUAN 32-8 #233  
 SWNE SEC 30-T32N-R8W  
 SAN JUAN COUNTY, NEW MEXICO  
 HILCORP ENERGY COMPANY



C:\Users\USJG689584\OneDrive - WSP\0365\Documents\TE017821041\_SAN JUAN 32-8 #233\MXD\017821041\_Fig02\_SJ 32-8 #233\_RECEPTOR\_2022.mxd

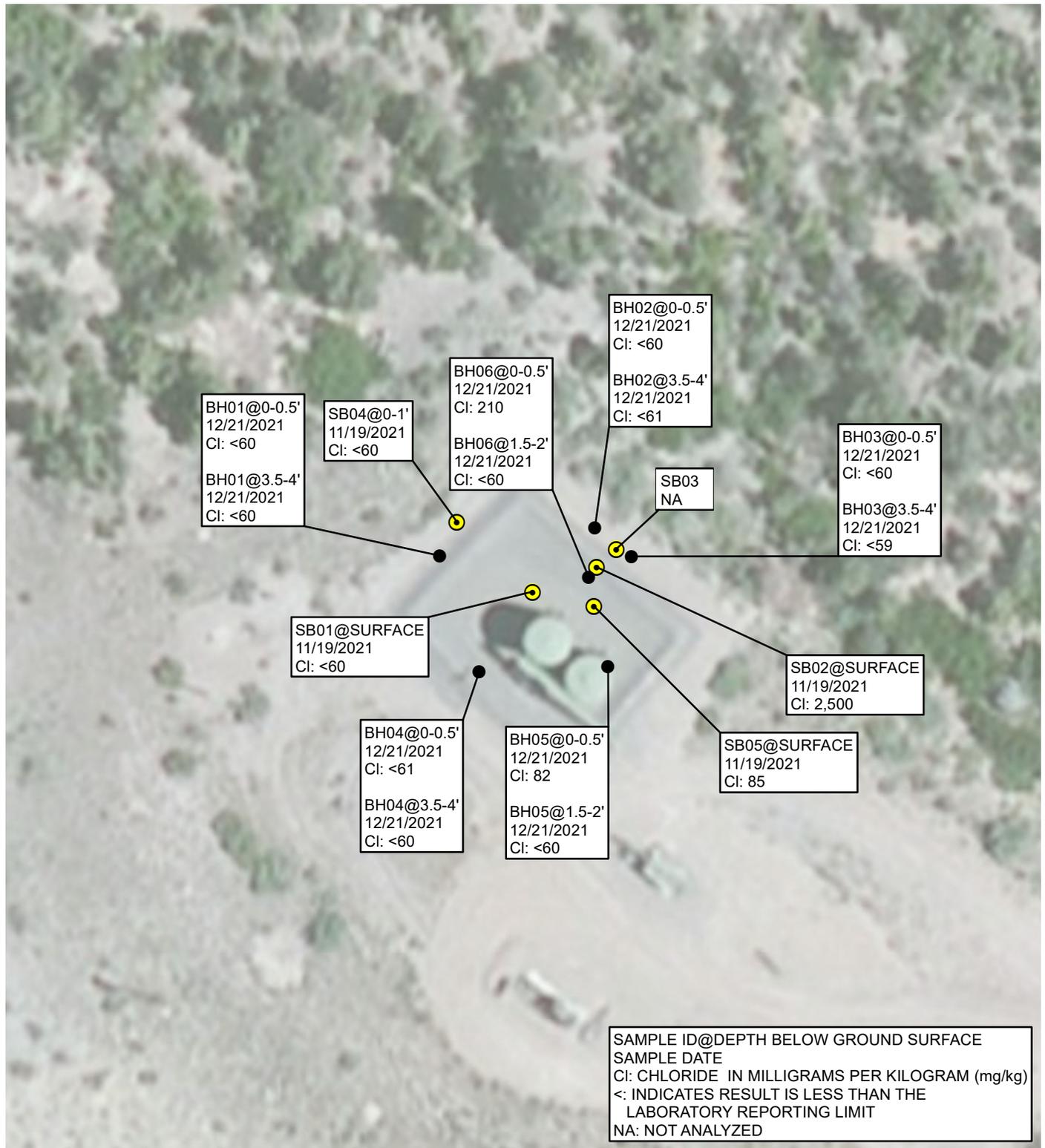
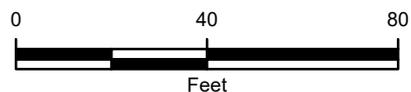


IMAGE COURTESY OF ESRI

**LEGEND**

- INITIAL ASSESSMENT SAMPLE
- DELINEATION BORING



**FIGURE 3**  
**DELINEATION SOIL BORING LOCATIONS**  
 SAN JUAN 32-8 #233  
 SWNE SEC 30-T32N-R8W  
 SAN JUAN COUNTY, NEW MEXICO  
 HILCORP ENERGY COMPANY



## TABLES

**TABLE 1  
SOIL ANALYTICAL RESULTS  
SAN JUAN 32-8 UNIT 233  
HILCORP ENERGY COMPANY  
SAN JUAN COUNTY, NEW MEXICO**

Soil Sample Identification	Sample Date	Sample depth	Field Headspace (ppm)	Field Chloride Test Strip (ppm)	Chlorides (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	MRO (mg/kg)	TPH-GRO+DRO (mg/kg)	TPH (mg/kg)
<b>NMOCD Table 1 Closure Criteria</b>					<b>20,000</b>	<b>10</b>	NE	NE	NE	<b>50</b>	NE	NE	NE	<b>1,000</b>	<b>2,500</b>
SB01 Surface	11/19/2021	0'	1.2	<120	<60	<0.023	<0.046	<0.046	<0.093	<0.093	<4.6	<9.6	<48	<9.6	<48
SB01 0-1'	11/19/2021	0-1'	2.1	<120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB01 1-2'	11/19/2021	1-2'	0.8	<120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB01 2-3'	11/19/2021	2-3'	0.8	<120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB01 3-4'	11/19/2021	3-4'	1.1	<120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB01 4-5'	11/19/2021	4-5'	1.1	<120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB02 Surface	11/19/2021	0'	0.8	412	2,500	<0.024	<0.048	<0.048	<0.096	<0.096	<4.8	<9.3	<47	<9.3	<47
SB02 0-1'	11/19/2021	0-1'	0.8	268	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB02 1-2'	11/19/2021	1-2'	0.6	<120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB02 2-3'	11/19/2021	2-3'	0.6	<120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB02 3-4'	11/19/2021	3-4'	0.4	<120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB02 4-5'	11/19/2021	4-5'	0.4	<120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB03 Surface	11/19/2021	0'	0.0	<120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB03 0-1'	11/19/2021	0-1'	0.0	<120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB03 1-2'	11/19/2021	1-2'	0.0	<120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB03 2-3'	11/19/2021	2-3'	0.0	<120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB04 Surface	11/19/2021	0'	0.0	184	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB04 0-1'	11/19/2021	0-1'	0.0	<120	<60	<0.023	<0.047	<0.047	<0.094	<0.094	<4.7	<9.9	<50	<9.9	<50
SB04 1-2'	11/19/2021	1-2'	0.0	<120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB05 Surface	11/19/2021	0'	0.6	<120	85	<0.023	<0.046	<0.046	<0.091	<0.091	<4.6	<8.2	<41	<8.2	<41
SB05 0-1'	11/19/2021	0-1'	0.4	<120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB05 1-2'	11/19/2021	1-2'	0.4	<120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB05 2-3'	11/19/2021	2-3'	0.2	<120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB05 3-4'	11/19/2021	3-4'	0.0	<120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB05 4-5'	11/19/2021	4-5'	0.0	<120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH01 0-0.5'	12/21/2021	0-0.5'	0.0	<128	<60	<0.025	<0.049	<0.049	<0.099	<0.099	<4.9	<9.2	<46	<9.2	<46
BH01 1.5-2'	12/21/2021	1.5-2'	0.0	<128	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH01 3.5-4'	12/21/2021	3.5-4'	0.0	<128	<60	<0.023	<0.047	<0.047	<0.094	<0.094	<4.7	<9.7	<49	<9.7	<49
BH02 0-0.5'	12/21/2021	0-0.5'	0.0	<64	<60	<0.023	<0.047	<0.047	<0.094	<0.094	<4.7	<9.5	<47	<9.5	<47
BH02 1.5-2'	12/21/2021	1.5-2'	0.0	<64	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH02 3.5-4'	12/21/2021	3.5-4'	0.0	<64	<61	<0.024	<0.047	<0.047	<0.095	<0.095	<4.7	<9.8	<49	<9.8	<49
BH03 0-0.5'	12/21/2021	0-0.5'	0.0	<64	<60	<0.024	<0.049	<0.049	<0.098	<0.098	<4.9	<9.7	<48	<9.7	<48
BH03 1.5-2'	12/21/2021	1.5-2'	0.0	<64	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH03 3.5-4'	12/21/2021	3.5-4'	0.0	<64	<59	<0.024	<0.048	<0.048	<0.096	<0.096	<4.8	<9.9	<49	<9.9	<49
BH04 0-0.5'	12/21/2021	0-0.5'	0.0	<64	<61	<0.023	<0.047	<0.047	<0.093	<0.093	<4.7	<9.0	<45	<9.0	<45
BH04 1.5-2'	12/21/2021	1.5-2'	0.0	<64	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH04 3.5-4'	12/21/2021	3.5-4'	0.0	<64	<60	<0.024	<0.048	<0.048	<0.095	<0.095	<4.8	<9.4	<47	<9.4	<47
BH05 0-0.5'	12/21/2021	0-0.5'	0.0	<64	82	<0.023	<0.047	<0.047	<0.094	<0.094	<4.7	<10	<50	<10	<50
BH05 1.5-2'	12/21/2021	1.5-2'	0.0	<64	<60	<0.024	<0.048	<0.048	<0.095	<0.095	<4.8	<9.9	<50	<9.9	<50
BH06 0-0.5'	12/21/2021	0-0.5'	0.0	76.0	210	<0.025	<0.049	<0.049	<0.098	<0.098	<4.9	<9.4	<47	<9.4	<47
BH06 1.5-2'	12/21/2021	1.5-2'	0.0	<64	<60	<0.023	<0.046	<0.046	<0.092	<0.092	<4.6	<9.6	<48	<9.6	<48
BH06 3.5-4'	12/21/2021	3.5-4'	0.0	<64	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

**Notes:**

- < - indicates result is less than the stated laboratory reporting limit
- Bold** - indicates value exceeds stated NMOCD closure criteria
- 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
- ppm - parts per million
- TPH - total petroleum hydrocarbon (sum of GRO, DRO, and MRO)
- ' - feet

## PHOTOGRAPHIC LOG



PHOTOGRAPHIC LOG		
<b>HILCORP ENERGY COMPANY</b>	<b>SAN JUAN 32-8 UNIT 233 SAN JUAN COUNTY, NEW MEXICO</b>	<b>NMOCD INCIDENT nAPP2133326844</b>

Photo No.	Date	
1	12/21/2022	
View of boring BH01 looking southeast.		

Photo No.	Date	
2	12/21/2022	
View of boring BH02 looking south.		



PHOTOGRAPHIC LOG		
HILCORP ENERGY COMPANY	SAN JUAN 32-8 UNIT 233 SAN JUAN COUNTY, NEW MEXICO	NMOCD INCIDENT nAPP2133326844

Photo No.	Date	
3	12/21/2022	
View of boring BH03 looking west.		

Photo No.	Date	
4	12/21/2022	
View of boring BH04 looking southeast.		



PHOTOGRAPHIC LOG		
<b>HILCORP ENERGY COMPANY</b>	<b>SAN JUAN 32-8 UNIT 233 SAN JUAN COUNTY, NEW MEXICO</b>	<b>NMOCD INCIDENT nAPP2133326844</b>

Photo No.	Date	
5	12/21/2022	
View of boring BH05 looking west.		

Photo No.	Date	
6	12/21/2022	
View of boring BH06 looking southeast.		

ENCLOSURE A – DATA SHEET FOR DEEP BED CATHODIC  
PROTECTION WELLS, 32-8 UNIT 233

DATA SHEET FOR DEEP BED CATHODIC PROTECTION WELLS  
NORTHWESTERN NEW MEXICO  
(SUBMIT 2 COPIES TO OCD AZTEC OFFICE)

30-045-27972 507

PPCO DESIGNATION: FM-516  
OPERATOR: PHILLIPS PETROLEUM COMPANY LOCATION: NE 30-32-8  
FARMINGTON, N.M. 87401 LEASE NUMBER: NAA  
(505) 599-3400

NAME OF WELL/S OR PIPELINE SERVED: (1) 32-8#233  
(2) N/A

ELEVATION: NA COMPLETION DATE: 05/03/91  
TOTAL DEPTH: 300 FT. LAND: FEDERAL

CASING INFO.: SIZE: 8 IN. TYPE: PVC  
DEPTH: 20 FT. CEMENT USED: NA

IF CEMENT OR BENTONITE PLUGS HAVE BEEN PLACED, SHOW DEPTHS & AMOUNTS:  
PLUG DEPTH: NONE  
PLUG AMOUNT: NONE

WATER INFORMATION:  
WATER DEPTH (FT): (1) 120 (2) -0-  
WATER INFORMATION: NA

DEPTHS GAS ENCOUNTERED (FT): NA

TYPE AND AMOUNT OF COKE BREEZE USED:  
COKE TYPE: METALLURGICAL COKE BREEZE  
COKE AMOUNT: 3834 LBS.

DEPTHS ANODES PLACED (FT):  
145, 160, 170, 180, 195, 205, 215, 225, 235, 245

DEPTH VENT PIPE PLACED (FT): 300

VENT PIPE PERFORATIONS (FT): TOP 135 BOTTOM 300

REMARKS: -0-

IF ANY OF THE ABOVE DATA IS UNAVAILABLE, PLEASE INDICATE SO. COPIES OF ALL LOGS, INCLUDING DRILLERS LOG, WATER ANALYSIS & WELL BORE SCHEMATICS SHOULD BE SUBMITTED WHEN AVAILABLE. UNPLUGGED ABANDONED WELLS ARE TO BE INCLUDED.

\* - LAND TYPE MAY BE SHOWN: F-FEDERAL; I-INDIAN; S-STATE; F-FEE  
IF FEDERAL OR INDIAN, ADD LEASE NUMBER.

NA-INFORMATION NOT AVAILABLE

RECEIVED

FEB 21 1992

OIL CON. DIV.  
DIST. 3

CC: CP FILE--FARMINGTON  
HOUSTON

**ENCLOSURE B – FIELD NOTES**

Location SJ 32-8 # 233 Date 11/19/21  
 Project / Client Hillcorp  
EC, RENTZ, Hand Auger, PID, Cl<sup>-</sup> x Sunny 50's

1100 EC on site for site investigation  
 release response  
 Salt Crusting inside bermed area

SBO1		N of Tanks		
Surface	1.2 PPM	1.4	<120	wet sand/gravel
300 0-1	2.1	0.2	<120	ble gray clay matrix
1-2	0.8	0.2	<120	↓
2-3	0.8	0.4	<120	
3-4	1.1	0.2	<120	
4-5	1.1	0.2	<120	

SBO2 Berm NW side

Berm is still wet slight odor

ID		PID	Cl <sup>-</sup>	
1315 Surface	0.8	3.0	412	lb. brown sand
0-1	0.8	2.4	268	
1-2	0.6	1.4	<120	
2-3	0.6	0.2	<120	
3-4	0.4	0.2	<120	
4-5	0.4	0.2	<120	

Standing water near tank Cl<sup>-</sup> =  
 6.6 HR 2046 no dilution

Location Cont'd Date \_\_\_\_\_

Project / Client \_\_\_\_\_

Surface stain		NW of berm		
	CI = LR	2.0	184	
SBO3		NE of berm		
	Surface	0.0	0 < 120	
	0-1	0.0	0 < 120	
	1-2	0.0	0 < 120	
	2-3	0.0	0 < 120	
SBO4		N of berm		
	Surface	0.0	<del>2.0</del> 184	13:26
	0-1	0.0	0.0 < 120	
	1-2	0.0	0.0 < 120	
SBO5				
	Surface	0.6	0.4 < 120	13:30
	1	0.4	0.2 < 120	
	2	0.4	0.2 < 120	
	3	0.2	0.2 < 120	
	4	0.0	0.2 < 120	
	5	0.0	0.2 < 120	

Location San Juan 32-8 # 233 Date 10/21/21Project / Client Hilcorp

RH, Rental Truss, PID, RI, chloride kit.

1035 - RH on site to hand auger  
7 additional delineation borings.

- E-manuel w/ BLM on site upon arrival.

1110 → E-manuel off site

BH	PID	CI-	Sample Time	Description
BH01	0	02 < 128	1206	Dark gray silt & clays
0-0.5	0	0 < 128	—	SAA w/ some gravel
1.5-2	0	0 < 128	—	gray/purple silt & clay
3.5-4	0	0 < 128	1206	
<del>0-0.5</del>				
BH02	0	0.2 < 64	1310	gray clay, some silt
1.5-2	0	0.2 < 64	—	silt & sand
3.5-4	0	0 < 64	1310	silt, sand, clay, some gravel
BH03				
0-0.5	0	0.2 < 64	1445	sandy silt
1.5-2	0	0 < 64	—	SAA
3.5-4	0	0 < 64	1445	SAA some gravel
BH04	0	0 < 64		
0-0.5	0	0 < 64	1400	gray silty clay
1.5-2	0	0 < 64	—	w/ some orange
3.5-4	0	0 < 64	1400	sand

cont →

Location Cont

Date \_\_\_\_\_

Project / Client \_\_\_\_\_

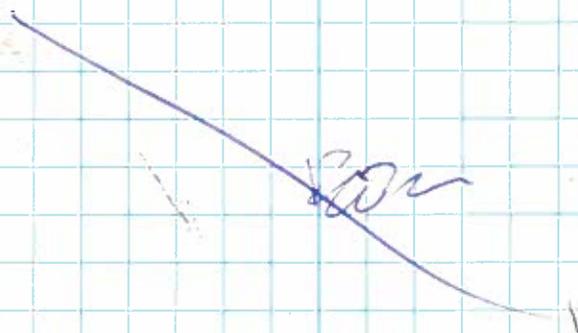
BH	PID	CI-	Sample Time	Description
BH05	0	1.0 < 64	1505	Sand, silt & clay - dark
0-0.5	0	1.0 < 64	1505	gray/purple
1.5-2	0	0.6 < 64	1505	

BH05 → Refusal @ ~ 2.5'

BH	PID	CI- RI	Sample Time	Description
BH06	0	1.8 / 38	1605	silt & clay
0-0.5	0	0.8 < 64	1605	Sand silt & clay
1.5-2	0	0.2 < 64	—	SAA
3.5-4	0	0.2 < 64	—	

- Backfill BH's, take pictures

1625 - RH off site



**ENCLOSURE C – LABORATORY ANALYTICAL REPORTS**



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

December 03, 2021

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

RE: SJ 32 8 233

OrderNo.: 2111A63

Dear Stuart Hyde:

Hall Environmental Analysis Laboratory received 4 sample(s) on 11/20/2021 for the analyses presented in the following report.

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

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

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

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written in a cursive style.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

## Analytical Report

Lab Order 2111A63

Date Reported: 12/3/2021

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: SB01 Surface

Project: SJ 32 8 233

Collection Date: 11/19/2021 1:00:00 PM

Lab ID: 2111A63-001

Matrix: SOIL

Received Date: 11/20/2021 8:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	11/23/2021 3:38:12 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/23/2021 3:38:12 PM
Surr: DNOP	101	70-130		%Rec	1	11/23/2021 3:38:12 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/24/2021 2:51:00 PM
Surr: BFB	96.0	70-130		%Rec	1	11/24/2021 2:51:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.023		mg/Kg	1	11/24/2021 2:51:00 PM
Toluene	ND	0.046		mg/Kg	1	11/24/2021 2:51:00 PM
Ethylbenzene	ND	0.046		mg/Kg	1	11/24/2021 2:51:00 PM
Xylenes, Total	ND	0.093		mg/Kg	1	11/24/2021 2:51:00 PM
Surr: 4-Bromofluorobenzene	90.6	70-130		%Rec	1	11/24/2021 2:51:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	ND	60		mg/Kg	20	11/23/2021 10:22:29 PM

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

## Analytical Report

Lab Order 2111A63

Date Reported: 12/3/2021

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: SB02 Surface

Project: SJ 32 8 233

Collection Date: 11/19/2021 1:15:00 PM

Lab ID: 2111A63-002

Matrix: SOIL

Received Date: 11/20/2021 8:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	11/23/2021 4:02:33 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/23/2021 4:02:33 PM
Surr: DNOP	98.1	70-130		%Rec	1	11/23/2021 4:02:33 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/24/2021 3:11:00 PM
Surr: BFB	94.6	70-130		%Rec	1	11/24/2021 3:11:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.024		mg/Kg	1	11/24/2021 3:11:00 PM
Toluene	ND	0.048		mg/Kg	1	11/24/2021 3:11:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/24/2021 3:11:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	11/24/2021 3:11:00 PM
Surr: 4-Bromofluorobenzene	89.2	70-130		%Rec	1	11/24/2021 3:11:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	2500	150		mg/Kg	50	11/24/2021 6:08:42 PM

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

**Analytical Report**

Lab Order **2111A63**

Date Reported: **12/3/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** HILCORP ENERGY

**Client Sample ID:** SB04 0-1'

**Project:** SJ 32 8 233

**Collection Date:** 11/19/2021 1:20:00 PM

**Lab ID:** 2111A63-003

**Matrix:** SOIL

**Received Date:** 11/20/2021 8:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	11/23/2021 4:26:52 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/23/2021 4:26:52 PM
Surr: DNOP	98.6	70-130		%Rec	1	11/23/2021 4:26:52 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/24/2021 3:30:00 PM
Surr: BFB	95.7	70-130		%Rec	1	11/24/2021 3:30:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.023		mg/Kg	1	11/24/2021 3:30:00 PM
Toluene	ND	0.047		mg/Kg	1	11/24/2021 3:30:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	11/24/2021 3:30:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	11/24/2021 3:30:00 PM
Surr: 4-Bromofluorobenzene	90.5	70-130		%Rec	1	11/24/2021 3:30:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	60		mg/Kg	20	11/24/2021 10:43:57 AM

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

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix interference	

**Analytical Report**

Lab Order **2111A63**

Date Reported: **12/3/2021**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** HILCORP ENERGY

**Client Sample ID:** SB05 Surface

**Project:** SJ 32 8 233

**Collection Date:** 11/19/2021 1:30:00 PM

**Lab ID:** 2111A63-004

**Matrix:** SOIL

**Received Date:** 11/20/2021 8:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	8.2		mg/Kg	1	11/29/2021 9:39:04 AM
Motor Oil Range Organics (MRO)	ND	41		mg/Kg	1	11/29/2021 9:39:04 AM
Surr: DNOP	93.0	70-130		%Rec	1	11/29/2021 9:39:04 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/24/2021 10:08:02 AM
Surr: BFB	100	70-130		%Rec	1	11/24/2021 10:08:02 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.023		mg/Kg	1	11/24/2021 10:08:02 AM
Toluene	ND	0.046		mg/Kg	1	11/24/2021 10:08:02 AM
Ethylbenzene	ND	0.046		mg/Kg	1	11/24/2021 10:08:02 AM
Xylenes, Total	ND	0.091		mg/Kg	1	11/24/2021 10:08:02 AM
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	11/24/2021 10:08:02 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	85	59		mg/Kg	20	11/24/2021 11:45:41 AM

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

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix interference	

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2111A63

03-Dec-21

**Client:** HILCORP ENERGY

**Project:** SJ 32 8 233

Sample ID: <b>MB-64134</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>64134</b>	RunNo: <b>83084</b>								
Prep Date: <b>11/23/2021</b>	Analysis Date: <b>11/23/2021</b>	SeqNo: <b>2951478</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-64134</b>	SampType: <b>ics</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>64134</b>	RunNo: <b>83084</b>								
Prep Date: <b>11/23/2021</b>	Analysis Date: <b>11/23/2021</b>	SeqNo: <b>2951479</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.7	90	110			

Sample ID: <b>MB-64155</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>64155</b>	RunNo: <b>83124</b>								
Prep Date: <b>11/24/2021</b>	Analysis Date: <b>11/24/2021</b>	SeqNo: <b>2952997</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-64155</b>	SampType: <b>ics</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>64155</b>	RunNo: <b>83124</b>								
Prep Date: <b>11/24/2021</b>	Analysis Date: <b>11/24/2021</b>	SeqNo: <b>2952998</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.6	90	110			

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2111A63

03-Dec-21

**Client:** HILCORP ENERGY

**Project:** SJ 32 8 233

Sample ID: <b>LCS-64126</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>64126</b>	RunNo: <b>83086</b>								
Prep Date: <b>11/23/2021</b>	Analysis Date: <b>11/23/2021</b>	SeqNo: <b>2951616</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	91.3	68.9	135			
Surr: DNOP	4.8		5.000		95.7	70	130			

Sample ID: <b>MB-64126</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>64126</b>	RunNo: <b>83086</b>								
Prep Date: <b>11/23/2021</b>	Analysis Date: <b>11/23/2021</b>	SeqNo: <b>2951617</b>	Units: <b>mg/Kg</b>							
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	7.6		10.00		76.1	70	130			

Sample ID: <b>MB-64151</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>64151</b>	RunNo: <b>83128</b>								
Prep Date: <b>11/24/2021</b>	Analysis Date: <b>11/29/2021</b>	SeqNo: <b>2953455</b>	Units: <b>mg/Kg</b>							
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	10		10.00		103	70	130			

Sample ID: <b>LCS-64151</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>64151</b>	RunNo: <b>83128</b>								
Prep Date: <b>11/24/2021</b>	Analysis Date: <b>11/29/2021</b>	SeqNo: <b>2953457</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	10	50.00	0	104	68.9	135			
Surr: DNOP	5.0		5.000		99.1	70	130			

Sample ID: <b>MB-64165</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>64165</b>	RunNo: <b>83128</b>								
Prep Date: <b>11/24/2021</b>	Analysis Date: <b>11/29/2021</b>	SeqNo: <b>2953508</b>	Units: <b>%Rec</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.5		10.00		95.4	70	130			

**Qualifiers:**

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

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2111A63

03-Dec-21

**Client:** HILCORP ENERGY

**Project:** SJ 32 8 233

Sample ID: <b>LCS-64165</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>64165</b>	RunNo: <b>83128</b>								
Prep Date: <b>11/24/2021</b>	Analysis Date: <b>11/29/2021</b>	SeqNo: <b>2953509</b>	Units: <b>%Rec</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.6		5.000		92.1	70	130			

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2111A63

03-Dec-21

**Client:** HILCORP ENERGY

**Project:** SJ 32 8 233

Sample ID: <b>mb-64119</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>64119</b>	RunNo: <b>83087</b>								
Prep Date: <b>11/23/2021</b>	Analysis Date: <b>11/24/2021</b>	SeqNo: <b>2951620</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	950		1000		95.4	70	130			

Sample ID: <b>ics-64119</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>64119</b>	RunNo: <b>83087</b>								
Prep Date: <b>11/23/2021</b>	Analysis Date: <b>11/24/2021</b>	SeqNo: <b>2951621</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.6	78.6	131			
Surr: BFB	1100		1000		114	70	130			

Sample ID: <b>mb-64130</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>64130</b>	RunNo: <b>83119</b>								
Prep Date: <b>11/23/2021</b>	Analysis Date: <b>11/24/2021</b>	SeqNo: <b>2952506</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		104	70	130			

Sample ID: <b>ics-64130</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>64130</b>	RunNo: <b>83119</b>								
Prep Date: <b>11/23/2021</b>	Analysis Date: <b>11/24/2021</b>	SeqNo: <b>2952507</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	94.3	78.6	131			
Surr: BFB	1200		1000		115	70	130			

Sample ID: <b>2111a63-004ams</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>SB05 Surface</b>	Batch ID: <b>64130</b>	RunNo: <b>83119</b>								
Prep Date: <b>11/23/2021</b>	Analysis Date: <b>11/24/2021</b>	SeqNo: <b>2952509</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	4.9	24.61	0	84.2	61.3	114			
Surr: BFB	1100		984.3		111	70	130			

Sample ID: <b>2111a63-004amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>SB05 Surface</b>	Batch ID: <b>64130</b>	RunNo: <b>83119</b>								
Prep Date: <b>11/23/2021</b>	Analysis Date: <b>11/24/2021</b>	SeqNo: <b>2952510</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

**Qualifiers:**

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

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2111A63

03-Dec-21

**Client:** HILCORP ENERGY

**Project:** SJ 32 8 233

Sample ID: <b>2111a63-004amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>SB05 Surface</b>	Batch ID: <b>64130</b>	RunNo: <b>83119</b>								
Prep Date: <b>11/23/2021</b>	Analysis Date: <b>11/24/2021</b>	SeqNo: <b>2952510</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	4.7	23.67	0	100	61.3	114	13.7	20	
Surr: BFB	1100		947.0		114	70	130	0	0	

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2111A63

03-Dec-21

**Client:** HILCORP ENERGY

**Project:** SJ 32 8 233

Sample ID: <b>mb-64119</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>64119</b>	RunNo: <b>83087</b>								
Prep Date: <b>11/23/2021</b>	Analysis Date: <b>11/24/2021</b>	SeqNo: <b>2951626</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.90		1.000		89.5	70	130			

Sample ID: <b>lcs-64119</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>64119</b>	RunNo: <b>83087</b>								
Prep Date: <b>11/23/2021</b>	Analysis Date: <b>11/24/2021</b>	SeqNo: <b>2951627</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.85	0.025	1.000	0	84.5	80	120			
Toluene	0.86	0.050	1.000	0	86.0	80	120			
Ethylbenzene	0.89	0.050	1.000	0	88.9	80	120			
Xylenes, Total	2.6	0.10	3.000	0	87.8	80	120			
Surr: 4-Bromofluorobenzene	0.93		1.000		93.2	70	130			

Sample ID: <b>mb-64130</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>64130</b>	RunNo: <b>83119</b>								
Prep Date: <b>11/23/2021</b>	Analysis Date: <b>11/24/2021</b>	SeqNo: <b>2952553</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		101	70	130			

Sample ID: <b>LCS-64130</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>64130</b>	RunNo: <b>83119</b>								
Prep Date: <b>11/23/2021</b>	Analysis Date: <b>11/24/2021</b>	SeqNo: <b>2952554</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.85	0.025	1.000	0	85.4	80	120			
Toluene	0.86	0.050	1.000	0	85.6	80	120			
Ethylbenzene	0.86	0.050	1.000	0	86.4	80	120			
Xylenes, Total	2.6	0.10	3.000	0	86.3	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		106	70	130			

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit



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

Sample Log-In Check List

Client Name: HILCORP ENERGY Work Order Number: 2111A63 RcptNo: 1

Received By: Juan Rojas 11/20/2021 8:35:00 AM
Completed By: Juan Rojas 11/20/2021 9:02:31 AM
Reviewed By: [Signature] 11/20/2021

Chain of Custody

- 1. Is Chain of Custody complete? Yes [checked] No [ ] Not Present [ ]
2. How was the sample delivered? Courier

Log In

- 3. Was an attempt made to cool the samples? Yes [checked] No [ ] NA [ ]
4. Were all samples received at a temperature of >0° C to 6.0°C Yes [checked] No [ ] NA [ ]
5. Sample(s) in proper container(s)? Yes [checked] No [ ]
6. Sufficient sample volume for indicated test(s)? Yes [checked] No [ ]
7. Are samples (except VOA and ONG) properly preserved? Yes [checked] No [ ]
8. Was preservative added to bottles? Yes [ ] No [checked] NA [ ]
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes [ ] No [ ] NA [checked]
10. Were any sample containers received broken? Yes [ ] No [checked]
11. Does paperwork match bottle labels? Yes [checked] No [ ]
12. Are matrices correctly identified on Chain of Custody? Yes [checked] No [ ]
13. Is it clear what analyses were requested? Yes [checked] No [ ]
14. Were all holding times able to be met? Yes [checked] No [ ]

# of preserved bottles checked for pH:
(<2 or >12 unless noted)
Adjusted?
Checked by: [Signature]

Special Handling (if applicable)

- 15. Was client notified of all discrepancies with this order? Yes [ ] No [ ] NA [checked]

Person Notified: [ ] Date: [ ]
By Whom: [ ] Via: [ ] eMail [ ] Phone [ ] Fax [ ] In Person [ ]
Regarding: [ ]
Client Instructions: [ ]

16. Additional remarks:

17. Cooler Information

Table with 7 columns: Cooler No, Temp °C, Condition, Seal Intact, Seal No, Seal Date, Signed By. Row 1: 1, 1.9, Good, [ ], [ ], [ ], [ ]





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

January 04, 2022

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

RE: San Juan 32-8 233

OrderNo.: 2112D38

Dear Mitch Killough:

Hall Environmental Analysis Laboratory received 12 sample(s) on 12/23/2021 for the analyses presented in the following report.

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

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

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

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a white background.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

**Analytical Report**

Lab Order **2112D38**

Date Reported: 1/4/2022

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** HILCORP ENERGY

**Client Sample ID:** BH01 0-0.5

**Project:** San Juan 32-8 233

**Collection Date:** 12/21/2021 12:06:00 PM

**Lab ID:** 2112D38-001

**Matrix:** SOIL

**Received Date:** 12/23/2021 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	12/28/2021 6:17:04 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	12/28/2021 6:17:04 PM
Surr: DNOP	93.5	70-130		%Rec	1	12/28/2021 6:17:04 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/28/2021 5:47:00 PM
Surr: BFB	87.9	70-130		%Rec	1	12/28/2021 5:47:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.025		mg/Kg	1	12/28/2021 5:47:00 PM
Toluene	ND	0.049		mg/Kg	1	12/28/2021 5:47:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	12/28/2021 5:47:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	12/28/2021 5:47:00 PM
Surr: 4-Bromofluorobenzene	77.9	70-130		%Rec	1	12/28/2021 5:47:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	60		mg/Kg	20	12/30/2021 10:28:27 PM

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

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Estimated value
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix interference	

**Analytical Report**

Lab Order **2112D38**

Date Reported: 1/4/2022

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** HILCORP ENERGY

**Client Sample ID:** BH01 3.5-4

**Project:** San Juan 32-8 233

**Collection Date:** 12/21/2021 12:06:00 PM

**Lab ID:** 2112D38-002

**Matrix:** SOIL

**Received Date:** 12/23/2021 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	12/28/2021 6:27:36 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/28/2021 6:27:36 PM
Surr: DNOP	95.2	70-130		%Rec	1	12/28/2021 6:27:36 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/28/2021 6:46:00 PM
Surr: BFB	83.1	70-130		%Rec	1	12/28/2021 6:46:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.023		mg/Kg	1	12/28/2021 6:46:00 PM
Toluene	ND	0.047		mg/Kg	1	12/28/2021 6:46:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	12/28/2021 6:46:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	12/28/2021 6:46:00 PM
Surr: 4-Bromofluorobenzene	77.0	70-130		%Rec	1	12/28/2021 6:46:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	60		mg/Kg	20	12/30/2021 11:05:29 PM

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

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Estimated value
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix interference	

## Analytical Report

Lab Order 2112D38

Date Reported: 1/4/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: BH02 0-0.5

Project: San Juan 32-8 233

Collection Date: 12/21/2021 1:10:00 PM

Lab ID: 2112D38-003

Matrix: SOIL

Received Date: 12/23/2021 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	12/28/2021 6:38:07 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/28/2021 6:38:07 PM
Surr: DNOP	93.1	70-130		%Rec	1	12/28/2021 6:38:07 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/28/2021 7:05:00 PM
Surr: BFB	87.4	70-130		%Rec	1	12/28/2021 7:05:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.023		mg/Kg	1	12/28/2021 7:05:00 PM
Toluene	ND	0.047		mg/Kg	1	12/28/2021 7:05:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	12/28/2021 7:05:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	12/28/2021 7:05:00 PM
Surr: 4-Bromofluorobenzene	79.0	70-130		%Rec	1	12/28/2021 7:05:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	60		mg/Kg	20	12/30/2021 11:17:51 PM

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

## Analytical Report

Lab Order 2112D38

Date Reported: 1/4/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: BH02 3.5-4

Project: San Juan 32-8 233

Collection Date: 12/21/2021 1:10:00 PM

Lab ID: 2112D38-004

Matrix: SOIL

Received Date: 12/23/2021 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	12/28/2021 6:48:40 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/28/2021 6:48:40 PM
Surr: DNOP	105	70-130		%Rec	1	12/28/2021 6:48:40 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/28/2021 7:25:00 PM
Surr: BFB	86.5	70-130		%Rec	1	12/28/2021 7:25:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.024		mg/Kg	1	12/28/2021 7:25:00 PM
Toluene	ND	0.047		mg/Kg	1	12/28/2021 7:25:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	12/28/2021 7:25:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	12/28/2021 7:25:00 PM
Surr: 4-Bromofluorobenzene	78.5	70-130		%Rec	1	12/28/2021 7:25:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	61		mg/Kg	20	12/30/2021 11:30:12 PM

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

**Analytical Report**

Lab Order **2112D38**

Date Reported: 1/4/2022

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** HILCORP ENERGY

**Client Sample ID:** BH03 0-0.5

**Project:** San Juan 32-8 233

**Collection Date:** 12/21/2021 2:45:00 PM

**Lab ID:** 2112D38-005

**Matrix:** SOIL

**Received Date:** 12/23/2021 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	12/28/2021 6:59:11 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/28/2021 6:59:11 PM
Surr: DNOP	95.1	70-130		%Rec	1	12/28/2021 6:59:11 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/28/2021 7:45:00 PM
Surr: BFB	87.1	70-130		%Rec	1	12/28/2021 7:45:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.024		mg/Kg	1	12/28/2021 7:45:00 PM
Toluene	ND	0.049		mg/Kg	1	12/28/2021 7:45:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	12/28/2021 7:45:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	12/28/2021 7:45:00 PM
Surr: 4-Bromofluorobenzene	79.9	70-130		%Rec	1	12/28/2021 7:45:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	60		mg/Kg	20	12/30/2021 11:42:32 PM

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

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Estimated value
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix interference	

**Analytical Report**

Lab Order **2112D38**

Date Reported: 1/4/2022

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** HILCORP ENERGY

**Client Sample ID:** BH03 3.5-4

**Project:** San Juan 32-8 233

**Collection Date:** 12/21/2021 2:45:00 PM

**Lab ID:** 2112D38-006

**Matrix:** SOIL

**Received Date:** 12/23/2021 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	12/29/2021 1:45:19 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/29/2021 1:45:19 PM
Surr: DNOP	88.3	70-130		%Rec	1	12/29/2021 1:45:19 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/28/2021 9:04:00 PM
Surr: BFB	91.4	70-130		%Rec	1	12/28/2021 9:04:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.024		mg/Kg	1	12/28/2021 9:04:00 PM
Toluene	ND	0.048		mg/Kg	1	12/28/2021 9:04:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	12/28/2021 9:04:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	12/28/2021 9:04:00 PM
Surr: 4-Bromofluorobenzene	83.6	70-130		%Rec	1	12/28/2021 9:04:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	59		mg/Kg	20	12/31/2021 12:19:32 AM

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

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Estimated value
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix interference	

**Analytical Report**

Lab Order **2112D38**

Date Reported: **1/4/2022**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** HILCORP ENERGY

**Client Sample ID:** BH04 0-0.5

**Project:** San Juan 32-8 233

**Collection Date:** 12/21/2021 2:00:00 PM

**Lab ID:** 2112D38-007

**Matrix:** SOIL

**Received Date:** 12/23/2021 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.0		mg/Kg	1	12/29/2021 1:55:58 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	12/29/2021 1:55:58 PM
Surr: DNOP	84.7	70-130		%Rec	1	12/29/2021 1:55:58 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/28/2021 10:02:00 PM
Surr: BFB	87.1	70-130		%Rec	1	12/28/2021 10:02:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.023		mg/Kg	1	12/28/2021 10:02:00 PM
Toluene	ND	0.047		mg/Kg	1	12/28/2021 10:02:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	12/28/2021 10:02:00 PM
Xylenes, Total	ND	0.093		mg/Kg	1	12/28/2021 10:02:00 PM
Surr: 4-Bromofluorobenzene	80.1	70-130		%Rec	1	12/28/2021 10:02:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	61		mg/Kg	20	12/31/2021 12:31:52 AM

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

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Estimated value
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix interference	

**Analytical Report**

Lab Order **2112D38**

Date Reported: 1/4/2022

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** HILCORP ENERGY

**Client Sample ID:** BH04 3.5-4

**Project:** San Juan 32-8 233

**Collection Date:** 12/21/2021 2:00:00 PM

**Lab ID:** 2112D38-008

**Matrix:** SOIL

**Received Date:** 12/23/2021 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	12/29/2021 2:06:36 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/29/2021 2:06:36 PM
Surr: DNOP	88.1	70-130		%Rec	1	12/29/2021 2:06:36 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/28/2021 11:01:00 PM
Surr: BFB	89.9	70-130		%Rec	1	12/28/2021 11:01:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.024		mg/Kg	1	12/28/2021 11:01:00 PM
Toluene	ND	0.048		mg/Kg	1	12/28/2021 11:01:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	12/28/2021 11:01:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	12/28/2021 11:01:00 PM
Surr: 4-Bromofluorobenzene	84.0	70-130		%Rec	1	12/28/2021 11:01:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	60		mg/Kg	20	12/31/2021 12:44:14 AM

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

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Estimated value
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix interference	

**Analytical Report**

Lab Order **2112D38**

Date Reported: **1/4/2022**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** HILCORP ENERGY

**Client Sample ID:** BH05 0-0.5

**Project:** San Juan 32-8 233

**Collection Date:** 12/21/2021 3:05:00 PM

**Lab ID:** 2112D38-009

**Matrix:** SOIL

**Received Date:** 12/23/2021 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/29/2021 2:17:15 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/29/2021 2:17:15 PM
Surr: DNOP	89.5	70-130		%Rec	1	12/29/2021 2:17:15 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/28/2021 11:21:00 PM
Surr: BFB	97.7	70-130		%Rec	1	12/28/2021 11:21:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.023		mg/Kg	1	12/28/2021 11:21:00 PM
Toluene	ND	0.047		mg/Kg	1	12/28/2021 11:21:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	12/28/2021 11:21:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	12/28/2021 11:21:00 PM
Surr: 4-Bromofluorobenzene	87.3	70-130		%Rec	1	12/28/2021 11:21:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	82	60		mg/Kg	20	1/3/2022 11:09:52 AM

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

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Estimated value
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix interference	

**Analytical Report**

Lab Order **2112D38**

Date Reported: **1/4/2022**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** HILCORP ENERGY

**Client Sample ID:** BH05 1.5-2

**Project:** San Juan 32-8 233

**Collection Date:** 12/21/2021 3:05:00 PM

**Lab ID:** 2112D38-010

**Matrix:** SOIL

**Received Date:** 12/23/2021 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	12/29/2021 2:27:57 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/29/2021 2:27:57 PM
Surr: DNOP	88.2	70-130		%Rec	1	12/29/2021 2:27:57 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/28/2021 11:41:00 PM
Surr: BFB	97.5	70-130		%Rec	1	12/28/2021 11:41:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.024		mg/Kg	1	12/28/2021 11:41:00 PM
Toluene	ND	0.048		mg/Kg	1	12/28/2021 11:41:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	12/28/2021 11:41:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	12/28/2021 11:41:00 PM
Surr: 4-Bromofluorobenzene	87.6	70-130		%Rec	1	12/28/2021 11:41:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	60		mg/Kg	20	1/3/2022 11:22:16 AM

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

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Estimated value
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix interference	

**Analytical Report**

Lab Order **2112D38**

Date Reported: **1/4/2022**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** HILCORP ENERGY

**Client Sample ID:** BH06 0-0.5

**Project:** San Juan 32-8 233

**Collection Date:** 12/21/2021 4:05:00 PM

**Lab ID:** 2112D38-011

**Matrix:** SOIL

**Received Date:** 12/23/2021 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	12/29/2021 2:38:46 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/29/2021 2:38:46 PM
Surr: DNOP	88.7	70-130		%Rec	1	12/29/2021 2:38:46 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/29/2021 12:01:00 AM
Surr: BFB	99.2	70-130		%Rec	1	12/29/2021 12:01:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.025		mg/Kg	1	12/29/2021 12:01:00 AM
Toluene	ND	0.049		mg/Kg	1	12/29/2021 12:01:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	12/29/2021 12:01:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	12/29/2021 12:01:00 AM
Surr: 4-Bromofluorobenzene	87.9	70-130		%Rec	1	12/29/2021 12:01:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	210	60		mg/Kg	20	1/3/2022 11:34:40 AM

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

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Estimated value
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix interference	

**Analytical Report**

Lab Order **2112D38**

Date Reported: **1/4/2022**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** HILCORP ENERGY

**Client Sample ID:** BH06 1.5-2

**Project:** San Juan 32-8 233

**Collection Date:** 12/21/2021 4:05:00 PM

**Lab ID:** 2112D38-012

**Matrix:** SOIL

**Received Date:** 12/23/2021 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	12/30/2021 7:55:07 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/30/2021 7:55:07 PM
Surr: DNOP	86.2	70-130		%Rec	1	12/30/2021 7:55:07 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>mb</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	12/29/2021 1:00:00 AM
Surr: BFB	94.3	70-130		%Rec	1	12/29/2021 1:00:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>mb</b>
Benzene	ND	0.023		mg/Kg	1	12/29/2021 1:00:00 AM
Toluene	ND	0.046		mg/Kg	1	12/29/2021 1:00:00 AM
Ethylbenzene	ND	0.046		mg/Kg	1	12/29/2021 1:00:00 AM
Xylenes, Total	ND	0.092		mg/Kg	1	12/29/2021 1:00:00 AM
Surr: 4-Bromofluorobenzene	86.4	70-130		%Rec	1	12/29/2021 1:00:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	60		mg/Kg	20	1/3/2022 11:47:05 AM

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

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Estimated value
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix interference	

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2112D38

04-Jan-22

**Client:** HILCORP ENERGY

**Project:** San Juan 32-8 233

Sample ID: <b>MB-64803</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>64803</b>	RunNo: <b>84894</b>								
Prep Date: <b>12/30/2021</b>	Analysis Date: <b>12/30/2021</b>	SeqNo: <b>2986415</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-64803</b>	SampType: <b>ics</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>64803</b>	RunNo: <b>84894</b>								
Prep Date: <b>12/30/2021</b>	Analysis Date: <b>12/30/2021</b>	SeqNo: <b>2986416</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.2	90	110			

Sample ID: <b>MB-64806</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>64806</b>	RunNo: <b>84914</b>								
Prep Date: <b>12/30/2021</b>	Analysis Date: <b>1/3/2022</b>	SeqNo: <b>2987201</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-64806</b>	SampType: <b>ics</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>64806</b>	RunNo: <b>84914</b>								
Prep Date: <b>12/30/2021</b>	Analysis Date: <b>1/3/2022</b>	SeqNo: <b>2987202</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.0	90	110			

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank
- E Estimated value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2112D38

04-Jan-22

**Client:** HILCORP ENERGY

**Project:** San Juan 32-8 233

Sample ID: <b>LCS-64735</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>64735</b>	RunNo: <b>84808</b>								
Prep Date: <b>12/27/2021</b>	Analysis Date: <b>12/28/2021</b>	SeqNo: <b>2983329</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	10	50.00	0	103	68.9	135			
Surr: DNOP	5.8		5.000		117	70	130			

Sample ID: <b>LCS-64745</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>64745</b>	RunNo: <b>84858</b>								
Prep Date: <b>12/28/2021</b>	Analysis Date: <b>12/29/2021</b>	SeqNo: <b>2985134</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	60	10	50.00	0	121	68.9	135			
Surr: DNOP	5.2		5.000		103	70	130			

Sample ID: <b>MB-64745</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>64745</b>	RunNo: <b>84858</b>								
Prep Date: <b>12/28/2021</b>	Analysis Date: <b>12/29/2021</b>	SeqNo: <b>2985136</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	11	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.4		10.00		93.7	70	130			

Sample ID: <b>MB-64735</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>64735</b>	RunNo: <b>84859</b>								
Prep Date: <b>12/27/2021</b>	Analysis Date: <b>12/29/2021</b>	SeqNo: <b>2985227</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.2		10.00		91.6	70	130			

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank
- E Estimated value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2112D38

04-Jan-22

**Client:** HILCORP ENERGY

**Project:** San Juan 32-8 233

Sample ID: <b>mb-64725</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>64725</b>	RunNo: <b>84821</b>								
Prep Date: <b>12/23/2021</b>	Analysis Date: <b>12/28/2021</b>	SeqNo: <b>2983480</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	880		1000		88.0	70	130			

Sample ID: <b>mb-64732</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>64732</b>	RunNo: <b>84821</b>								
Prep Date: <b>12/27/2021</b>	Analysis Date: <b>12/28/2021</b>	SeqNo: <b>2983481</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	910		1000		90.6	70	130			

Sample ID: <b>lcs-64725</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>64725</b>	RunNo: <b>84821</b>								
Prep Date: <b>12/23/2021</b>	Analysis Date: <b>12/28/2021</b>	SeqNo: <b>2983482</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	102	78.6	131			
Surr: BFB	1100		1000		108	70	130			

Sample ID: <b>lcs-64732</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>64732</b>	RunNo: <b>84821</b>								
Prep Date: <b>12/27/2021</b>	Analysis Date: <b>12/28/2021</b>	SeqNo: <b>2983483</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	106	78.6	131			
Surr: BFB	1100		1000		109	70	130			

Sample ID: <b>2112D38-006ams</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>BH03 3.5-4</b>	Batch ID: <b>64732</b>	RunNo: <b>84821</b>								
Prep Date: <b>12/27/2021</b>	Analysis Date: <b>12/28/2021</b>	SeqNo: <b>2983484</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	4.8	23.92	0	103	61.3	114			
Surr: BFB	1000		956.9		108	70	130			

Sample ID: <b>2112D38-006amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>BH03 3.5-4</b>	Batch ID: <b>64732</b>	RunNo: <b>84821</b>								
Prep Date: <b>12/27/2021</b>	Analysis Date: <b>12/28/2021</b>	SeqNo: <b>2983485</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank
- E Estimated value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2112D38

04-Jan-22

**Client:** HILCORP ENERGY

**Project:** San Juan 32-8 233

Sample ID: <b>2112D38-006amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>BH03 3.5-4</b>	Batch ID: <b>64732</b>	RunNo: <b>84821</b>								
Prep Date: <b>12/27/2021</b>	Analysis Date: <b>12/28/2021</b>	SeqNo: <b>2983485</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	4.8	24.18	0	108	61.3	114	5.42	20	
Surr: BFB	1000		967.1		105	70	130	0	0	

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank
- E Estimated value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2112D38

04-Jan-22

**Client:** HILCORP ENERGY

**Project:** San Juan 32-8 233

Sample ID: <b>mb-64725</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>64725</b>	RunNo: <b>84821</b>								
Prep Date: <b>12/23/2021</b>	Analysis Date: <b>12/28/2021</b>	SeqNo: <b>2983529</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.78		1.000		78.2	70	130			

Sample ID: <b>mb-64732</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>64732</b>	RunNo: <b>84821</b>								
Prep Date: <b>12/27/2021</b>	Analysis Date: <b>12/28/2021</b>	SeqNo: <b>2983530</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.81		1.000		81.1	70	130			

Sample ID: <b>lcs-64725</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>64725</b>	RunNo: <b>84821</b>								
Prep Date: <b>12/23/2021</b>	Analysis Date: <b>12/28/2021</b>	SeqNo: <b>2983531</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.025	1.000	0	90.6	80	120			
Toluene	0.89	0.050	1.000	0	89.0	80	120			
Ethylbenzene	0.88	0.050	1.000	0	88.3	80	120			
Xylenes, Total	2.6	0.10	3.000	0	86.0	80	120			
Surr: 4-Bromofluorobenzene	0.77		1.000		77.4	70	130			

Sample ID: <b>lcs-64732</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>64732</b>	RunNo: <b>84821</b>								
Prep Date: <b>12/27/2021</b>	Analysis Date: <b>12/28/2021</b>	SeqNo: <b>2983532</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.025	1.000	0	90.7	80	120			
Toluene	0.91	0.050	1.000	0	91.1	80	120			
Ethylbenzene	0.93	0.050	1.000	0	93.2	80	120			
Xylenes, Total	2.8	0.10	3.000	0	91.7	80	120			
Surr: 4-Bromofluorobenzene	0.85		1.000		84.9	70	130			

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank
- E Estimated value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2112D38

04-Jan-22

**Client:** HILCORP ENERGY

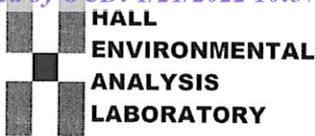
**Project:** San Juan 32-8 233

Sample ID: <b>2112D38-007ams</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>BH04 0-0.5</b>	Batch ID: <b>64732</b>	RunNo: <b>84821</b>								
Prep Date: <b>12/27/2021</b>	Analysis Date: <b>12/28/2021</b>	SeqNo: <b>2983533</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.024	0.9653	0	96.3	80	120			
Toluene	0.93	0.048	0.9653	0	96.7	80	120			
Ethylbenzene	0.95	0.048	0.9653	0	98.9	80	120			
Xylenes, Total	2.8	0.097	2.896	0	97.0	80	120			
Surr: 4-Bromofluorobenzene	0.79		0.9653		81.7	70	130			

Sample ID: <b>2112D38-007amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>BH04 0-0.5</b>	Batch ID: <b>64732</b>	RunNo: <b>84821</b>								
Prep Date: <b>12/27/2021</b>	Analysis Date: <b>12/28/2021</b>	SeqNo: <b>2983534</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.024	0.9709	0	93.0	80	120	2.87	20	
Toluene	0.92	0.049	0.9709	0	94.7	80	120	1.50	20	
Ethylbenzene	0.94	0.049	0.9709	0	96.9	80	120	1.48	20	
Xylenes, Total	2.8	0.097	2.913	0	95.4	80	120	1.12	20	
Surr: 4-Bromofluorobenzene	0.80		0.9709		82.8	70	130	0	0	

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank
- E Estimated value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit



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

Sample Log-In Check List

Client Name: HILCORP ENERGY Work Order Number: 2112D38 RcptNo: 1

Received By: Isaiah Ortiz 12/23/2021 7:40:00 AM IOX
Completed By: Isaiah Ortiz 12/23/2021 9:29:28 AM IOX
Reviewed By: JA 12/23/21

Chain of Custody

- 1. Is Chain of Custody complete? Yes [checked] No [ ] Not Present [ ]
2. How was the sample delivered? Courier

Log In

- 3. Was an attempt made to cool the samples? Yes [checked] No [ ] NA [ ]
4. Were all samples received at a temperature of >0° C to 6.0° C Yes [checked] No [ ] NA [ ]
5. Sample(s) in proper container(s)? Yes [checked] No [ ]
6. Sufficient sample volume for indicated test(s)? Yes [checked] No [ ]
7. Are samples (except VOA and ONG) properly preserved? Yes [checked] No [ ]
8. Was preservative added to bottles? Yes [ ] No [checked] NA [ ]
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes [ ] No [ ] NA [checked]
10. Were any sample containers received broken? Yes [ ] No [checked]
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes [checked] No [ ]
12. Are matrices correctly identified on Chain of Custody? Yes [checked] No [ ]
13. Is it clear what analyses were requested? Yes [checked] No [ ]
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes [checked] No [ ]

# of preserved bottles checked for pH: (<2 or >12 unless noted)
Adjusted?
Checked by: KRC 12/23/21

Special Handling (if applicable)

- 15. Was client notified of all discrepancies with this order? Yes [ ] No [ ] NA [checked]

Person Notified: [ ] Date: [ ]
By Whom: [ ] Via: [ ] eMail [ ] Phone [ ] Fax [ ] In Person [ ]
Regarding: [ ]
Client Instructions: [ ]

16. Additional remarks:

17. Cooler Information

Table with 7 columns: Cooler No, Temp °C, Condition, Seal Intact, Seal No, Seal Date, Signed By. Row 1: 1, 1.6, Good, Not Present, [ ], [ ], [ ]



**District I**  
 1625 N. French Dr., Hobbs, NM 88240  
 Phone:(575) 393-6161 Fax:(575) 393-0720

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

**District III**  
 1000 Rio Brazos Rd., Aztec, NM 87410  
 Phone:(505) 334-6178 Fax:(505) 334-6170

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

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

CONDITIONS

Action 74256

**CONDITIONS**

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 74256
	Action Type: [C-141] Release Corrective Action (C-141)

**CONDITIONS**

Created By	Condition	Condition Date
nvelez	None	1/28/2022