State of New Mexico
Energy, Minerals and Natural Resources Department

March 15, 2024

Mitch Killough - Environmental Specialist
Hilcorp Energy Company
1111 Travis Street
Houston, TX 77002

RE: Conditional Approval of Soil Vapor Extraction Remediation Method for L C Kelly #001E; (API #: 30-045-25349; Incident #: Napp2308124076; Application ID: 293036)

Mr. Killough,

The Oil Conservation Division (OCD) has reviewed and approved the subject work plan with the following conditions;

1. Hilcorp's SVE system must be designed to have a minimum of 90% operational runtime, 24/7, start to finish. Operation & maintenance (O&M) or any matter that requires a temporary downtime should be excluded within the applicable runtime.
2. On-site analog or digital runtime counter must be installed and viewable to OCD personnel. Any alternative method must be explained and pre-approved by OCD.
3. The following field data measurement parameters will be required and reported (prior to reaching vacuum pump);
    a. Total Extracted Flow Rate via a Flow Meter
    b. Flow Rates from each vapor extraction point/well (VEP)
    c. Volatile Organic Compound (VOC) Concentrations for each VEP and/or VEP cluster being implemented via Handheld Gas Analyzer (e.g. – Photo Ionization Detector (PID)
    d. Record vacuum pressure at each VEP and/or VEP cluster being implemented
    e. Oxygen (O_2) and carbon di-oxide (CO_2) levels via hand-held analyzers from each VEP and/or VEP cluster being implemented, prior to reaching vacuum pump and at discharge orifice or vent stack
4. The following minimum timeline will be required for the above data recordings;
    a. Daily for the first week
    b. Weekly for the next three (3) months
    c. Monthly thereafter for the first calendar year
    d. Then contingent upon the recorded data output
5. Any water condensation will be categorized as oil field waste and must be disposed of accordingly. System modifications to address increased water collection and disposal must be pre-approved by OCD.
6. Extracted vapor sampling (prior to reaching vacuum pump) for laboratory testing will be required as follows;
    a. Approximately 15-30 minutes and approximately 8-10 hours after startup (or at the end of the same day if initial sample collected in early morning), one full round of sampling for constituents noted in b, c, & d below
    b. BTEX per US EPA Method 8021B or 8260B
    c. TPH per US EPA Method 8015M
    d. O_2 and CO_2

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7. The following timeline will be required for the above laboratory sampling elements;
    a. Weekly - next three (3) weeks (first month)
    b. Bi-weekly (twice a month) – next two (2) months (first quarter)
    c. Bi-Monthly (every other month) - next nine (9) months (first year)
    d. Quarterly – Year #2 until diminishing returns has been consistently documented
8. Hilcorp must submit to OCD quarterly reports for the first 2 years of operation. Reports are due no later than the 15th in the months of April (first quarter), July (second quarter), October (third quarter), and January (fourth quarter), then bi-annual thereafter (1st & 3rd or 2nd & 4th quarters), detailing the following;
    a. Summary of remediation activity
    b. Chart of O_2 & CO_2 levels over time
    c. SVE runtime
    d. SVE mass removal
    e. Product recovery, if applicable
    f. Laboratory air sample analysis, if applicable
9. Hilcorp must notify OCD of its initial system startup which is required within 120 days of this approval. If this cannot be achieved, Hilcorp must verify the delay within its request for a time extension.
10. Hilcorp must submit to OCD a closure plan prior to initiating confirmation sampling for final remediation termination.

These conditions by the OCD does not relieve Hilcorp of responsibility for compliance with any federal, state, or local law.

If you have any questions, please contact Nelson Velez of the Environmental Incident Group at (505) 469-6146 or by email at nelson.velez@emnrd.nm.gov.

Respectfully,

Michael Bratcher
Incident Group Supervisor
(575) 626-0857

Nelson Velez
Environmental Specialist – Adv
(505) 469-6146

Incident ID	nAPP2308124076
District RP	
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: ***Each of the following items must be included in the plan.***

☒ Detailed description of proposed remediation technique
☒ Scaled sitemap with GPS coordinates showing delineation points
☒ Estimated volume of material to be remediated
☒ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
☒ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.

☐ Extents of contamination must be fully delineated.

☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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: 12/11/2023

email: mkillough@hilcorp.com Telephone: 713-757-5247

OCD Only

Received by: Date:

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: Nelson Velez Date: 03/15/2024

ENSOLUM

December 11, 2023

New Mexico Oil Conservation Division
New Mexico Energy, Minerals, and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Re: Updated Site Investigation Report and Remediation Work Plan
L C Kelly 1E
San Juan County, New Mexico
Hilcorp Energy Company
NMOCD Incident Number: nAPP2308124076

To Whom it May Concern:

Ensolum, LLC. (Ensolum), on behalf of Hilcorp Energy Company (Hilcorp), presents this *Updated Site Investigation Report and Remediation Work Plan* for the L C Kelly 1E natural gas production well (Site). The Site is located on land managed by the Bureau of Land Management (BLM) in Unit C, Section 5, Township 30 North, Range 12 West in San Juan County, New Mexico (Figure 1).

SITE BACKGROUND

On March 8, 2023, Hilcorp personnel discovered approximately 45 barrels (bbls) of fluid (35.07 bbls of condensate and 10.02 bbls of produced water) released from a drain valve on a 300-bbls condensate storage tank. Due to freezing temperatures, ice had formed on the inside of the drain valve, subsequently causing the valve to rupture. The released fluids remained within the secondary containment earthen berm, with the observed impacted area measuring approximately 20 feet by 6 feet in areal extent. No fluids were recovered after discovery of the release. The release volume was determined based on the operator's monthly tank gauging data.

Initial Site investigations were conducted in April 2023 to assess and delineate the vertical and lateral extent of impacts originating from the release. Based on field screening observations and analytical data collected from soil borings BH01 through BH06, boring BH01 was completed as nested soil vapor extraction (SVE) wells SVE01 and SVE02. Additionally, borings BH02 (SVE03), BH04 (SVE04), BH05 (SVE05), and BH06 (SVE06) were completed as SVE wells to be used for future remediation. Slotted casing was installed across the subsurface interval with the highest petroleum hydrocarbon impacts based on photoionization detector (PID) readings in order to direct the applied vacuum to these depth intervals. SVE wells were constructed with 2-inch diameter Schedule 40 polyvinyl chloride (PVC) casing and 2-inch Schedule 40 PVC 0.010-inch slotted screen. Wells were completed with 10-20 silica sand pack to 2 feet above the screened interval, then hydrated bentonite seal to the ground surface.

A *Site Investigation Report and Remediation Work Plan* (dated May 2, 2023) was prepared by Ensolum and subsequently approved by the New Mexico Oil Conservation Division (NMOCD) and BLM. Additional information regarding the Site including the release background, Site investigation data, results, and recommendations is presented in the May 2023 work plan.

SITE CLOSURE CRITERIA

As presented in the May 2023 work plan, the following Closure Criteria apply to the Site in accordance with *Table I, Closure Criteria for Soils Impacted by a Release* (Table I Closure Criteria), 19.15.29.12 of the New Mexico Administrative Code (NMAC):

- Chloride: 20,000 milligrams per kilogram (mg/kg)
- Total Petroleum Hydrocarbons (TPH) as a combination of gasoline range organics (GRO), diesel range organics (DRO), and motor oil range organics (MRO): 2,500 mg/kg
- TPH-GRO + TPH-DRO: 1,000 mg/kg
- A combination of benzene, toluene, ethylbenzene, and xylenes (BTEX): 50 mg/kg
- Benzene: 10 mg/kg

SVE SYSTEM PILOT TESTING RESULTS

To determine if SVE would effectively remediate the Site in a reasonable timeframe and to aid in system design, Ensolum conducted a pilot test on July 13, 2023, to determine the optimal flow rate and applied vacuum required to volatilize and remove petroleum hydrocarbons from the impacted subsurface soils. Pilot test data was also used to estimate the system's radius-of-influence (ROI) and radius-of-effect (ROE) and to determine whether additional SVE wells are needed at the Site. Based on the favorable, observed, and calculated ROI/ROE of 30 feet, as well as the analytical results gathered during the pilot test, SVE was determined to be a viable remediation technique. Details of the pilot test were provided in the *Soil Vapor Extraction Pilot Test Report* prepared by Ensolum and submitted to the NMOCD on September 8, 2023.

ADDITIONAL DELINEATION ACTIVITIES AND RESULTS

As proposed in the May 2023 work plan, additional drilling and delineation activities were performed once the pilot test was completed and access to off-pad areas was approved by the BLM. Ensolum submitted notice of sampling to the NMOCD and BLM on October 11, 2023 (Appendix A). Drilling was performed by Enviro-Drill, Inc. using a Central Mining Equipment (CME)-75 hollow-stem auger drill rig. Five additional borings (BH07 through BH11) were advanced at the Site to depths ranging from 35 feet to 48 feet below ground surface (bgs) during this investigation in the locations presented on Figure 2.

During drilling, an Ensolum geologist logged soil lithology and inspected the soil for petroleum hydrocarbon staining and odors. Soil descriptions were noted in field books/boring logs and generally followed the Unified Soil Classification System (USCS), as specified in American Society for Testing and Materials (ASTM) method D2488. Soil samples were also field screened for the presence of organic vapors using a calibrated PID, with results noted on the field boring logs (attached as Appendix B). In general, soil samples were collected from depth intervals indicating the greatest impacts based on field screening and PID measurements. Soil samples were collected directly into laboratory-provided jars and immediately placed on ice. Samples were submitted to Envirotech Laboratory (Envirotech) for analysis of BTEX following United States Environmental Protection Agency (EPA) Method 8260B, TPH-GRO, TPH-DRO, TPH-MRO following EPA Method 8015D, and chloride following EPA Method 300.0.

In general, fine to coarse-grained, poorly sorted sand and silty sand were encountered in all borings at the Site. Groundwater was not encountered in any of the borings during drilling. Concentrations of benzene, total BTEX, TPH-GRO+DRO, Total TPH, and chloride were not detected in any of the analyzed samples exceeding the NMOCD Table I Closure Criteria. A

summary of analytical results is presented in Table 1 and depicted on Figure 2. Complete laboratory reports are attached as Appendix C. Based on the delineation activities described above, impacted soil at the Site has been successfully delineated. Based on the areal extent and depth of impacts, an estimated 1,500 cubic yards of impacted soil are present at the Site.

All borings advanced in October 2023 were completed as SVE wells for potential use during future remediation. Slotted casing was installed across the subsurface interval with the highest petroleum hydrocarbon impacts based on PID readings in order to direct the applied vacuum to these depth intervals. SVE wells were constructed with 2-inch diameter Schedule 40 polyvinyl chloride (PVC) casing and 2-inch Schedule 40 PVC 0.010-inch slotted screen. Wells were completed with 10-20 silica sand pack to 2 feet above the screened interval, then hydrated bentonite seal to the ground surface.

UPDATED REMEDIATION WORK PLAN

As stated above, SVE is a viable technology to remediate subsurface impacts at the Site. Based on the pilot test results, the SVE system should be sized to apply a minimum of 100 inches of water column (IWC) vacuum and a flow rate of 150 inlet cubic feet per minute (icfm) and approximately 85 standard cubic feet per minute (scfm). Based on the areas of impacted soil, the system will be initially constructed to induce flow and vacuum on SVE wells SVE01, SVE02, and SVE04 through SVE11 concurrently (shown on Figure 3); however, an adjustable manifold will be constructed for the system allowing the wells to be cycled, if necessary. At the elevation corrected flow rate and with the 10 wells each operating at 7.5 scfm (for a combined system flow rate of approximately 82.5 scfm), the system can achieve the ROE, annual pore volume exchanges, and pore velocities required for Site remediation. If an increase in individual well flow rate is observed after initial SVE system startup, the system will be designed so that SVE wells can be cycled to operate two at a time and induce the required vacuum.

OPERATIONS AND MAINTENANCE PLAN

Regular operation and maintenance (O&M) visits will be conducted at the Site to ensure the system is operating properly and assess for any required maintenance. Specifically, personnel will check that the SVE system is operating within normal working temperature, pressure, and vacuum range. System runtime will be recorded during each visit and vapor concentrations will be periodically measured with a PID from a sampling port located on the inlet side of the vacuum blower and prior to the dilution valve. Vacuum, temperature, and flow measurements will also be recorded. Any deviations from normal operating parameters will be recorded and corrected by on-site personnel, if possible. The SVE system will also be connected to Hilcorp's telemetry network so that Hilcorp personnel will be notified immediately of any system downtime via email. Immediate notification will allow for quick response to maximize system runtime.

FUTURE RUNTIME CALCULATIONS AND PROPOSED REMEDIATION TIMELINE

The SVE system will be tied into grid power to allow the system to operate for 24 hours per day. Based on 24 hours of available runtime, the system will have to operate a minimum of 7,884 hours per year to maintain a 90% efficiency. A runtime meter will be installed on the SVE system in a location accessible to the NMOCD and will be used to track runtime hours. Downtime outside of Hilcorp's control (i.e., equipment failure) will be accounted for and the total available annual runtime hours will be adjusted. This information will be detailed and submitted to the NMOCD in quarterly Site reports.

The United States Army Corps of Engineers, *Soil Vapor Extraction and Bioventing – Engineer Manual,* dated June 3, 2002, states "Unless target cleanup goals are low or initial concentrations are very high, 1,000 to 1,500 pore volumes would be a good estimate of the required air

exchanges". Although the calculated annual pore volume exchanges presented in the *Soil Vapor Extraction Pilot Test Report,* dated September 8, 2023, are less than the recommended value of 500, Ensolum recommends the installation of an SVE system at the Site based on the favorable, observed and calculated ROI of 30 feet, as well as the mass removal analytical results obtained during pilot testing. Assuming the SVE system is able to achieve the anticipated flow and vacuum presented above, the system should be able to achieve between 1,000 and 1,500 pore volume exchanges in 4 to 5 years of operation if 100% operational runtime is achieved. If TPH-GRO concentrations collected from the system become asymptotic before the estimated closure date, the system will be adjusted in attempts to maximize performance and increase mass removal.

Once the system is operational, quarterly reports will be prepared and submitted to the NMOCD to present air sample results, mass removal calculations, and any system adjustments required during the previous quarter of operation. Based on the above assumptions, the following general timeline is anticipated for the operation of the system. Day zero (0) is the date on which the NMOCD and the BLM approve this report and work plan.

- Months 0 to 6 – Acquire/construct and install the SVE system per the specifications outlined in this report. Additionally, a permanent power drop is not located at the Site and will need to be installed prior to system hookup. Hilcorp will work with the local electrical utility in order to install the appropriate power drop.
- 6 Months to 1.0 Years – Collect regular air samples from the SVE system at a location upstream of the blower and any dilution valves. Assess system efficacy and update the remediation timeline based on sampling analytical results after 6 to 12 months of operation. Perform system maintenance and optimize system operation, as necessary. Continue O&M visits to monitor system performance and prepare quarterly reports.
- 1.0 Years to 4.5 Years – At any point, if air concentrations of TPH-GRO collected from the system become asymptotic and/or are below 1.0 milligrams per liter (mg/L), soil samples can be collected and analyzed for TPH and BTEX constituents to determine if concentrations are below NMOCD Table I Closure Criteria (as described below). Additionally, the system will be adjusted to maximize performance and address areas with remaining soil impacts. Continue air sample collection, monitoring, and reporting as necessary.
- Year 4.5 – Collect soil confirmation samples and analyze for TPH and BTEX constituents as described below. Request Site closure if soil sample results are below NMOCD Table I Closure Criteria. If soil concentrations are above Closure Criteria, the remediation timeline will be reviewed, and the system will be adjusted to maximize performance and address areas with remaining soil impacts. Continue quarterly air sample collection, monitoring, and reporting as necessary.

REFERENCES

United States Army Corps of Engineers (USACE), 2002. Engineering and Design, Soil Vapor Extraction and Bioventing - Engineer Manual, Document EM 1110-1-4001. June 3, 2002.

We appreciate the opportunity to provide this report to the NMOCD. If you should have any questions or comments regarding this document, please contact the undersigned.

Sincerely,
Ensolum, LLC

Stuart Hyde, PG
Senior Geologist
(970) 903-1607
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Daniel R. Moir PG
Senior Managing Geologist
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Hannah Mishriki, PE
Senior Engineer
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hmishriki@ensolum.com

Attachments:

Figure 1:	Site Location Map
Figure 2:	Soil Analytical Results
Figure 3:	SVE System Radius of Influence and Radius of Effect
Table 1:	Soil Analytical Results
Appendix A:	NMOCD Correspondences
Appendix B:	Lithologic/Soil Sampling Logs
Appendix B:	Laboratory Analytical Report

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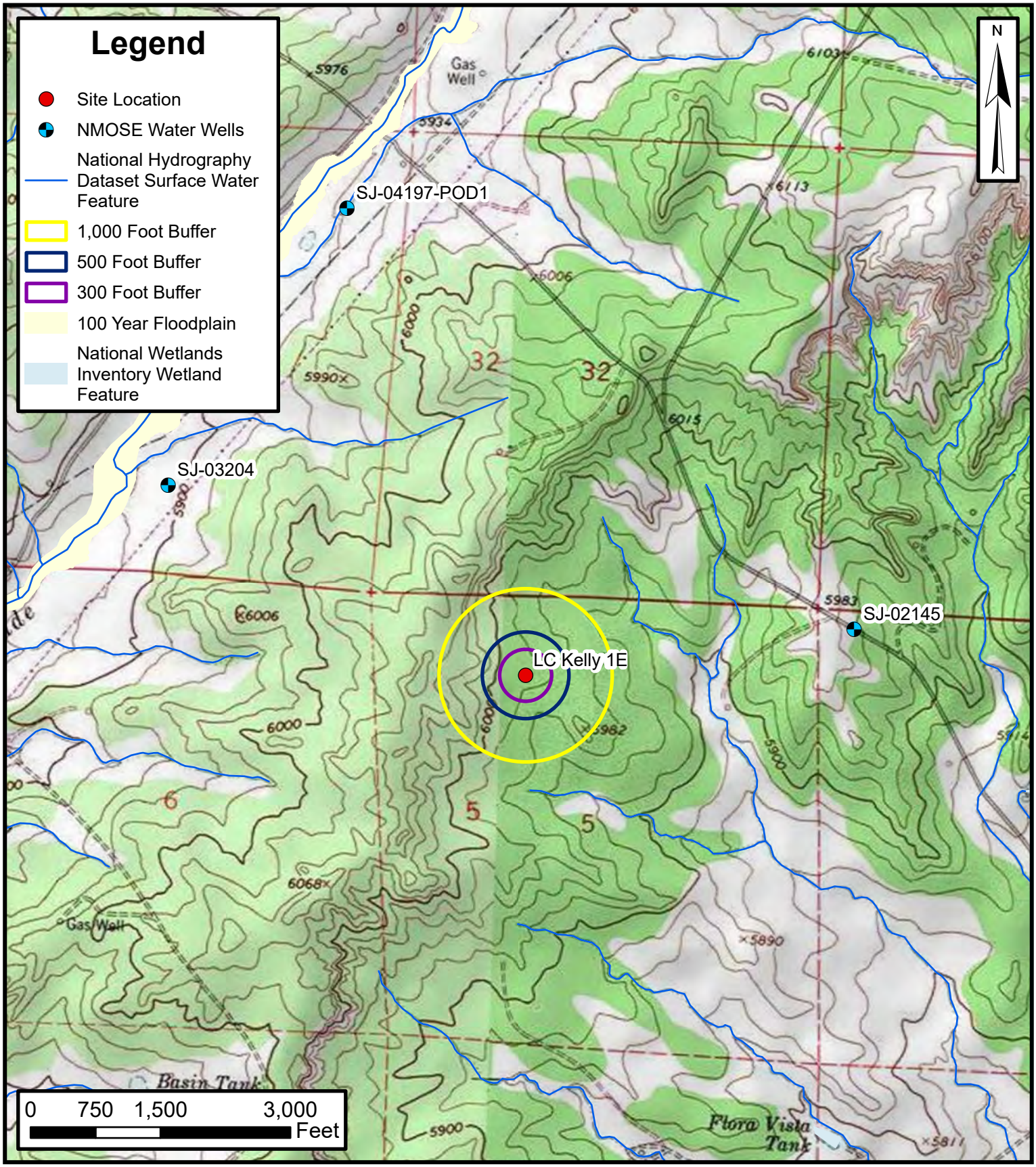
FIGURES



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Environmental, Engineering and Hydrogeologic Consultants

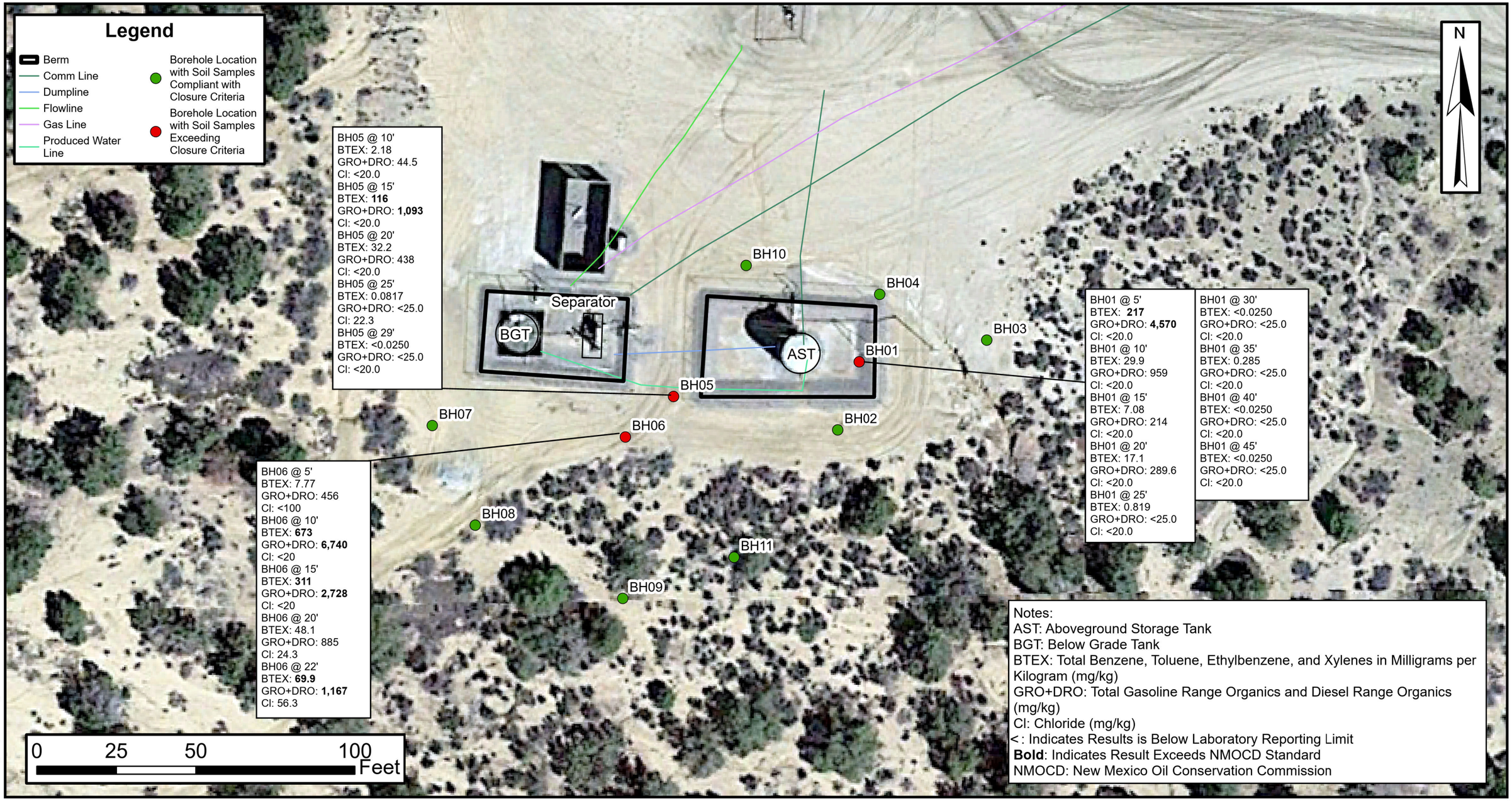
Site Location Map

L C Kelly 1E
Hilcorp Energy Company

36.84600, -108.12450
Unit C, Sec 05, T30N, R12W
San Juan County, New Mexico

FIGURE
1

Sources: Environmental Systems Research Institute (ESRI), National Geographic Society, i-cubed, United States Geologic Survey (USGS), United States Fish and Wildlife Service (USFWS), New Mexico Office of the State Engineer (NMOSE)



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Soil Analytical Results

L C Kelly 1E
Hilcorp Energy Company
36.84600, -108.12450
Unit C, Sec 05, T30N, R12W
San Juan County, New Mexico

FIGURE
2

Sources: Google Earth

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SVE System Radius of Influence and Radius of Effect

L C Kelly 1E
Hilcorp Energy Company
36.84600, -108.12450
Unit C, Sec 05, T30N, R12W
San Juan County, New Mexico

FIGURE
3

Sources: Google Earth

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TABLES

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TABLE 1
DELINEATION SOIL SAMPLE ANALYTICAL RESULTS
L C Kelly 1E
Hilcorp Energy Company
San Juan County, New Mexico

Sample Designation	Date	Depth (feet)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH MRO (mg/kg)	TPH GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Closure Criteria for Soils Impacted by a Release			**10**	**50**	NE	NE	NE	**1,000**	**2,500**	**20,000**
BH01 @ 5'	4/11/2023	5	<1.25	**217**	2,130	2,440	50.4	**4,570**	**4,620**	<20.0
BH01 @ 10'	4/11/2023	10	<0.0500	29.9	433	526	<50.0	959	959	<20.0
BH01 @ 15'	4/11/2023	15	<0.0250	7.08	120	94.2	<50.0	214	214	<20.0
BH01 @ 20'	4/11/2023	20	<0.0250	17.1	260	29.6	<50.0	289.6	289.6	<20.0
BH01 @ 25'	4/11/2023	25	<0.0250	0.819	<20.0	<25.0	<50.0	<25.0	<50.0	<20.0
BH01 @ 30'	4/11/2023	30	<0.0250	<0.0250	<20.0	<25.0	<50.0	<25.0	<50.0	<20.0
BH01 @ 35'	4/11/2023	35	<0.0250	0.285	<20.0	<25.0	<50.0	<25.0	<50.0	<20.0
BH01 @ 40'	4/11/2023	40	<0.0250	<0.0250	<20.0	<25.0	<50.0	<25.0	<50.0	<20.0
BH01 @ 45'	4/11/2023	45	<0.0250	<0.0250	<20.0	<25.0	<50.0	<25.0	<50.0	<20.0
BH02 @ 10'	4/12/2023	10	<0.0250	<0.0250	<20.0	<25.0	<50.0	<25.0	<50.0	<20.0
BH02 @ 25'	4/12/2023	25	<0.0250	<0.0250	<20.0	<25.0	<50.0	<25.0	<50.0	<20.0
BH02 @ 30'	4/12/2023	30	<0.0250	<0.0250	<20.0	<25.0	<50.0	<25.0	<50.0	<20.0
BH02 @ 33'	4/12/2023	33	<0.0250	1.938	56.4	105	<50.0	161.4	161.4	<20.0
BH03 @ 15'	4/12/2023	15	<0.0250	<0.0250	<20.0	<25.0	<50.0	<25.0	<50.0	31.7
BH03 @ 35'	4/12/2023	35	<0.0250	<0.0250	<20.0	<25.0	<50.0	<25.0	<50.0	<40.0
BH04 @ 30'	4/12/2023	30	<0.0250	0.0329	<20.0	<25.0	<50.0	<25.0	<50.0	<20.0
BH04 @ 35'	4/12/2023	35	0.0455	0.773	<20.0	<25.0	<50.0	<25.0	<50.0	<20.0
BH04 @ 38'	4/12/2023	38	<0.0250	<0.0250	<20.0	<25.0	<50.0	<25.0	<50.0	<20.0
BH05 @ 10'	4/13/2023	10	<0.0250	2.18	44.5	<25.0	<50.0	44.5	44.5	<20.0
BH05 @ 15'	4/13/2023	15	1.22	**116**	937	156	<50.0	**1,093**	1,093	<20.0
BH05 @ 20'	4/13/2023	20	0.974	32.2	202	236	<50.0	438	438	<20.0
BH05 @ 25'	4/13/2023	25	<0.0250	0.0817	<20.0	<25.0	<50.0	<25.0	<50.0	22.3
BH05 @ 29'	4/13/2023	29	<0.0250	<0.0250	<20.0	<25.0	<50.0	<25.0	<50.0	<20.0
BH06 @ 5'	4/13/2023	5	<0.0250	7.77	181	275	<50.0	456	456	<100
BH06 @ 10'	4/13/2023	10	**12.2**	**673**	5,360	1,380	<50.0	**6,740**	**6,740**	<20.0
BH06 @ 15'	4/13/2023	15	5.49	**311**	2,280	448	<50.0	**2,728**	**2,728**	<20.0
BH06 @ 20'	4/13/2023	20	0.448	48.1	515	370	<50.0	885	885	24.3
BH06 @ 22'	4/13/2023	22	0.333	**69.9**	651	516	138	**1,167**	1,305	56.3
BH07 @ 30'	10/16/2023	30	<0.0250	<0.0250	<20.0	<25.0	<50.0	<50.0	<50.0	21.4
BH07 @ 35'	10/16/2023	35	<0.0250	0.171	<20.0	61.4	<50.0	61.4	61.4	<20.0
BH07 @ 40'	10/16/2023	40	<0.0250	3.94	145	49.7	<50.0	195	195	<20.0
BH07 @ 45'	10/16/2023	45	<0.0250	0.120	<20.0	<25.0	<50.0	<50.0	<50.0	<20.0
BH08 @ 44-46'	10/17/2023	44 - 46	<0.0250	0.166	<20.0	41.6	<50.0	41.6	41.6	20.9
BH08 @ 48'	10/17/2023	48	<0.0250	<0.0250	<20.0	<25.0	<50.0	<50.0	<50.0	<20.0
BH09 @ 25'	10/18/2023	25	<0.0250	<0.0250	<20.0	<25.0	<50.0	<50.0	<50.0	55.2
BH09 @ 30'	10/18/2023	30	<0.0250	<0.0250	<20.0	<25.0	<50.0	<50.0	<50.0	44
BH09 @ 35'	10/18/2023	35	<0.0250	0.920	<20.0	<25.0	<50.0	<50.0	<50.0	27.7
BH09 @ 40'	10/18/2023	40	<0.0250	0.772	<20.0	<25.0	<50.0	<50.0	<50.0	23.6
BH09 @ 45'	10/18/2023	45	<0.0250	<0.0250	<20.0	<25.0	<50.0	<50.0	<50.0	24.1
BH10 @ 5'	10/18/2023	5	<0.0250	<0.0250	<20.0	<25.0	<50.0	<50.0	<50.0	<20.0
BH10 @ 10'	10/18/2023	10	<0.0250	<0.0250	<20.0	<25.0	<50.0	<50.0	<50.0	<20.0
BH10 @ 25'	10/18/2023	25	<0.0250	<0.0250	<20.0	<25.0	<50.0	<50.0	<50.0	<20.0
BH10 @ 35'	10/18/2023	35	<0.0250	<0.0250	<20.0	<25.0	<50.0	<50.0	<50.0	<20.0
BH11 @ 25'	10/18/2023	25	<0.0250	<0.0250	<20.0	25.4	<50.0	25.4	25.4	<20.0
BH11 @ 30'	10/18/2023	30	<0.0250	<0.0250	<20.0	<25.0	<50.0	<50.0	<50.0	<20.0
BH11 @ 40'	10/18/2023	40	<0.0250	<0.0250	<20.0	<25.0	<50.0	<50.0	<50.0	<20.0
BH11 @ 45'	10/18/2023	45	<0.0250	<0.0250	<20.0	<25.0	<50.0	<50.0	<50.0	<20.0

Notes:

bgs: below ground surface
BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes
mg/kg: milligrams per kilogram
NA: Not Analyzed
NE: Not Established
NMOCD: New Mexico Oil Conservation Division
': feet

GRO: Gasoline Range Organics
DRO: Diesel Range Organics
MRO: Motor Oil/Lube Oil Range Organics
TPH: Total Petroleum Hydrocarbon
< : indicates result less than the stated laboratory reporting limit (RL)
*Concentrations in **bold** and shaded exceed the New Mexico Oil Conservation Division Table 1 Closure Criteria for Soils Impacted by a Release*

ENSOLUM

APPENDIX A

NMOCD Correspondences

From: Stuart Hyde
To: Velez, Nelson, EMNRD; Adeloye, Abiodun A
Cc: Zach Myers; Eric Carroll; Devin Hencmann; Mitch Killough; Christopher Bramwell; Ray Shelby
Subject: L C Kelly 1E (nAPP2308124076) - Additional Drilling and Sampling Notification
Date: Wednesday, October 11, 2023 4:35:00 PM
Attachments: image001.png
image002.png
image003.png
image004.png

All,

On behalf of Hilcorp Energy Company, Ensolum is providing this drilling and sampling notification for work at the L C Kelly 1E (nAPP2308124076) site located at coordinates 36.8460274, -108.1248856 in rural San Juan County. Work is scheduled to begin on Monday October 16, 2023 at 10 AM. Please reach out with any questions or comments. Thanks.

Stuart Hyde, LG
Senior Geologist
970-903-1607
Ensolum, LLC

ENSOLUM

APPENDIX B

Lithologic/Soil Sampling Logs

ENSOLUM

Client: Hilcorp Energy Co.
Project Name: LC Kelly 1E
Project Location: 36.84615° N, 108.12417° W
Project Manager: Stuart Hyde

BORING LOG NUMBER: BH01
Project No.: 07A1988069

Date Sampled: 4-11-23
Drilled By: Enviro-Drill – CME-85 HSA
Driller: Juan
Logged By: Danny Burns

Ground Surface Elevation: 5,990'
Top of Casing Elevation:
North Coordinate:
West Coordinate:

Borehole Diameter: ~~8~~ 8"
Casing Diameter: 2"
Well Materials: PVC sch 40
Surface Completion: ~~above~~ stick up
Boring Method: HSA

DEPTH (FEET)	SAMPLE ~~INTERVAL~~ TIME	RECOVERY (%)	FID/PID READING (PPM)	POTENTIOMETRIC SURFACE	GEOLOGIC LOG SYMBOL	GEOLOGIC DESCRIPTION	BORING/WELL COMPLETION
0							
2	1/1/1 6"	75%	>5,000		SW	Brown, med-coarse sand No stain, strong hydrocarbon odor. SL. Moist.	
4							
6							
8	25/50 3"	75	>5,000		SW-SM	" " SAA. Dry, no stain strong odor. w/ some fines.	
10							
12	31/50 3"	50	2,950		SW	Brown, coarse sand w/ gravel No stain, strong odor.	
14							
16						Brown med-coarse sand w/silt.	
18	27/50 2"	~~50~~	2,065		SW-SM	No stain, strong-moderate odor.	
20							
22						Brown, med-coarse ~~sand~~ w/ silt	
24	25/50 4"	100	945		SW-SM	No stain, mod. odor. Dry. some compaction.	
26							
28	29/50 5"	100	253		SW-SM	Lt. gray med sand w/ silt. slt. sweet gassy odor.	
30							
32							
34	30/50 2"	100	732		SW-SM	Brown med-coarse sand w/ silt slt. to mod. HC odor, degraded.	
36							
38	50 5"	25	272		SW-SM	Lt-gray med sand w/ silt slt gassy HC odor.	
40							
42							
44	32/50 4"	75	220		SW-SM	Lt-gray med. fn sand w/ silt. slt. odor.	
46							
48	35/50 2"	25	43		SW	Lt. gray. med sand. No stain/odor.	
50							

20'-5' screen
22-20 cuttings/sand
Hydrated Bentonite 24-22'

sand 41'-24'

40-25' screen

Backfill to 41' with cuttings

ENSOLUM

Client: Hilcorp Energy Co
Project Name: LC Kelly 1E
Project Location: 36 84615° N, 108 12417° W
Project Manager: Stuart Hyde

BORING LOG NUMBER BH02
Project No.: 07A1988069

Date Sampled: 4-12-23
Drilled By: Juan
Driller: Enviro-Drill CME 85
Logged By: Danny Burns

Ground Surface Elevation: 5,990'
Top of Casing Elevation:
North Coordinate:
West Coordinate:

Borehole Diameter: 8"
Casing Diameter: 2"
Well Materials: PVC
Surface Completion: Stickup
Boring Method: HSA

DEPTH (FEET)	SAMPLE INTERVAL TIME	RECOVERY (%)	FID/PID READING (PPM)	POTENTIOMETRIC SURFACE	GEOLOGIC LOG SYMBOL	GEOLOGIC DESCRIPTION
0–4		100	5.6		SW	Brown, med- coarse sand, some silt. No stain/odor. Dry, unconsolidated.
1/2/2 6"						
6–10	0900	100	23.7		SW	Lt. brown coarse sand ±Brown med-coarse sand. Trace silt. No s/o. Dry.
27/50 3"						
12–14		75	17.6		SW	Lt. brown coarse sand. Dry. No s/o.
25/50 5"						
16–18		100	3.3		SW-SM	Brown coarse sand w/ gravel and silt. No s/o
39/50 5"						
20–24		100	32.1		SW-SM	Lt. Brown med-coarse sand w/ silt. Dry. No stain, slight sweet gassy odor.
29/50 4"	0930					
26–28		100	175		SW-SM	Lt. gray med. sand w/ silt. some cementation. No SH sweet gassy odor.
50 6"						
30–32	1000		484		SW-SM	SAA + then Lt. Brown med sand w/ silt, SLt. moist. No stain, slight gassy HC odor, sweet.
50 5" Refusal	1010					Refusal @ 33', sand stone. Augered down for 5 min. w/ no depth progress.
34–50						

BORING/WELL COMPLETION

Bentonite 21'-0'
21'-33' sand
23'-33' screen
33' Refusal

ENSOLUM

Client: Hilcorp Energy Co.
Project Name: LC Kelly 1E
Project Location: 36.84615° N, 108.12417° W
Project Manager: Stuart Hyde

BORING LOG NUMBER: BH03
Project No.: 07A1988069

Date Sampled: 4-12-23
Drilled By: ENVIRO-DRILL
Driller: Juan
Logged By: Danny Burns

Ground Surface Elevation: 5,990'
Top of Casing Elevation:
North Coordinate:
West Coordinate:

Borehole Diameter: 8"
Casing Diameter: ~~4"~~
Well Materials: ~~PVC~~
Surface Completion: ~~Flush~~
Boring Method: HSA

DEPTH (FEET)	SAMPLE INTERVAL	RECOVERY (%)	FID/PID READING (PPM)	POTENTIOMETRIC SURFACE	GEOLOGIC LOG SYMBOL	GEOLOGIC DESCRIPTION	BORING/WELL COMPLETION
0–4		100	2.9		SW-SM	Lt. Brown med. well graded sand w/ silt. Dry, no stain/odor. Loose.	
6–8		100	2.1		SW-SM	SAA. No S/O.	No well set.
10–14	1115	75	7.8		SW-SM	Brown med.-coarse sand w/ silt. Dry. No S/O	Borehole open
16–18		50	3.2		SW-SM	SAA. Dry. No S/O.	backfilled w/ clean cuttings
20–24		75	2.5		SW-SM	Lt. Brown med. coarse sand w/ silt. No S/O	
26–28		25	2.3		SW-SM	SAA. No S/O	
30–34	1310	25	2.1		SW-SM	Lt. Brown med sand w/ silt. Semi-cemented. Dry. No S/O. Very hard drilling. Refusal @ 35'	
36–50						- No observed impacts. left hole open. No well set at this time.	

9/14/25 6"
50 6"
50 5"
50 5"
39/50 8"
50 4"
50 4"

ENSOLUM

Client: Hilcorp Energy Co
Project Name: LC Kelly 1E
Project Location: 36.84615° N, 108.12417° W
Project Manager: Stuart Hyde

BORING LOG NUMBER BH04
Project No.: 07A1988069

Date Sampled: 4-12-23
Drilled By: Enviro-Drill
Driller: Sean
Logged By: Danny Burns

Ground Surface Elevation: 5,990'
Top of Casing Elevation:
North Coordinate:
West Coordinate:

Borehole Diameter: 8"
Casing Diameter: 2"
Well Materials: PVC
Surface Completion: Stick up
Boring Method: HSA

DEPTH (FEET)	SAMPLE INTERVAL	RECOVERY (%)	FID/PID READING (PPM)	POTENTIOMETRIC SURFACE	GEOLOGIC LOG SYMBOL	GEOLOGIC DESCRIPTION
0						
2		100	1.1		SW -SM	Lt. Brown med sand w/ silt. Dry. No s/o
4						
6						
8		25	3.7		SW	Lt. Brown/tan coarse sand, some gravel. Dry, No s/o
10						
12						
14		100	2.3		SW	SAA. coarse sand w/ gravel No s/o
16						
18		100	1.6		SW	Brown coarse sand, dense, SL. moist. No stain/odor.
20						
22						Brown coarse sand.
24		25	4.3		SW	Dense. Dry - No s/o
26						SAA, w/ gravel.
28		25	8.5		SW	SL. Moist . No s/o
30	1500					
32	1580	25	55.8		SW -SM	Brown. med-coarse sand w/silt. Dry. Dense No stain, slight Degraded HC odor.
34						
36						
38	1540	25'	5.1		SW -SM	Lt. gray med sand w/ silt. Dense, some cementation, Dry, No s/o.
Refusal 40						Refusal w/ HSA @ 38'
42						Well set @ 38'-28' 10' screen
44						
46						
48						
50						

10/18/30
29/50 4"
29/45/50
16/25/50-5"
50-5"
50-4"
50-4"
50-4"

BORING/WELL COMPLETION

ENSOLUM

Client: Hilcorp Energy Co.
Project Name: LC Kelly 1E
Project Location: 36.84615° N, 108.12417° W
Project Manager: Stuart Hyde

BORING LOG NUMBER: BH05
Project No.: 07A1988069

Date Sampled: 4-13-23
Drilled By: Enviro-Drill
Driller: Jason
Logged By: Danny Burns

Ground Surface Elevation: 5,990'
Top of Casing Elevation:
North Coordinate:
West Coordinate:

Borehole Diameter: 8"
Casing Diameter: 2"
Well Materials: PVC
Surface Completion: stick up
Boring Method: HSA

DEPTH (FEET)	SAMPLE INTERVAL	RECOVERY (%)	FID/PID READING (PPM)	POTENTIOMETRIC SURFACE	GEOLOGIC LOG SYMBOL	GEOLOGIC DESCRIPTION
0–4		100	0.1		SW-SM	Brown, med. sand w/ silt. SL. moist, No stain/odor.
6–8		50 ~~100~~	1,226		SW	Gray + brown med-coarse sand. Tr. silt. Dry. Slight stain + odor.
10	0930					
12–14		50	3,823		SW-SM	Gray med-coarse sand w/ silt. Moderate-strong stain/odor Dry.
14	0950					
16–18		75	4,103		SW-SM	Dark gray and brown interspersed med-course sand. Mod. S/O. Dry.
20	1000					
22–24		100	584			Gray fine-med sand w/ silt Mod. S/O. Dry some cementation
26	1020					
28		25	102			Gray, fn-med sand w/ silt Dense, compacted, some cement. Dry, mod stain, slt. odor.
Refusal 30	1035					Refusal @ 29'
32–50						

1/3/3

50-5"

50-5"

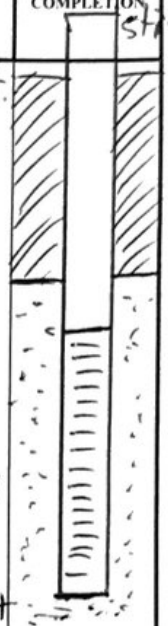
26/50-4"

39/50-4"

50-4"

Set SVE well 20'-10'
10' screen

BORING/WELL COMPLETION



ENSOLUM

Client: Hilcorp Energy Co
Project Name: LC Kelly 1E
Project Location: 36.84615° N, 108.12417° W
Project Manager: Stuart Hyde

BORING LOG NUMBER: BH06
Project No.: 07A1988069

Date Sampled: 4-13-23
Drilled By: Enviro-Drill
Driller: Juan
Logged By: Danny Burns

Ground Surface Elevation: 5,990'
Top of Casing Elevation:
North Coordinate:
West Coordinate:

Borehole Diameter: 8"
Casing Diameter: 2"
Well Materials: PVC
Surface Completion: Stick up
Boring Method: HSA

DEPTH (FEET)	SAMPLE INTERVAL	RECOVERY (%)	FID/PID READING (PPM)	POTENTIOMETRIC SURFACE	GEOLOGIC LOG SYMBOL	GEOLOGIC DESCRIPTION
0					SW-SM	Brown med-coarse sand w/ SiH sl. moist.
2						
4	1230	100	1,324			@5' – Lt. gray coarse sand w/ SiH mod. stain & odor.
6						
8		100	2,066		SW	Lt. gray. med. sand. Tr. SiH. Mod. S/O.
10	1245					
12						
14		50	2,936		SW	Lt. gray med.-coarse sand. Mod. S/O.
16	1255					
18		25	3,214		SW	Brown med-coarse sand. No stain, mod. odor.
20	1305	25	2018		SW	Lt. Brown med & med-coarse sand. No stain, mod. odor.
22 Refusal	1325					Refusal @ 22'
24						
26						
28						
30						
32						
34						
36						
38						
40						
42						
44						
46						
48						
50						

BORING/WELL COMPLETION

6/7/13

36/50-4"

50-5"

50-5"

50-5"

Bentonite plug 8'-0'

Sand 8'-22'

Screen 20'-10'

cuttings backfill to 20'

ENSOLUM

Client: HEC
Project Name: LC Kelly 1E
Project Location: Flora Vista, NM
Project Manager: Stuart Hyde

BORING LOG NUMBER BH07
Project No.:

Date Sampled: 10-16-23
Drilled By: EDI
Driller: Juan
Logged By: E. Carroll

Ground Surface Elevation:
Top of Casing Elevation:
North Coordinate:
West Coordinate:

Borehole Diameter: 8"
Casing Diameter: 2"
Well Materials: PVC
Surface Completion: Stick up
Boring Method: HSA

DEPTH (FEET)	SAMPLE INTERVAL	RECOVERY (%)	FID/PID READING (PPM)	POTENTIOMETRIC SURFACE	GEOLOGIC LOG SYMBOL	GEOLOGIC DESCRIPTION	BORING/WELL COMPLETION
0–1	3-5	100%	6.3		SM	lt. yellow brown moist med→coarse sand No stain/odor	Grout
10–12.5	10-12.5	100%	1.9		SM	SAA No stain/odor	
15–17.5	15-17.5	50%	7.7		SM	DRY lt brown/white coarse sand No stain/odor	
20–22.5	20-22.5	100%	12.3		SM	moist brown coarse sand few gravel No stain/odor	
25–27.5	25-27.5	70%	28.9		SM	moist red/brown coarse sand No stain/odor	Grout

BH 07

DEPTH (FEET)	SAMPLE INTERVAL	RECOVERY (%)	FID/PID READING (PPM)	POTENTIOMETRIC SURFACE	GEOLOGIC LOG SYMBOL	GEOLOGIC DESCRIPTION	BORING/WELL COMPLETION
30	30 -						
31	32.5	100%	112		SM	Red brown moist Sand few gravel NR Stain slight odor	
32							
33							
34							
35	35 - 37.5	100%	>5000		SM	SAA NO stain Strong odor	
36							
37							
38			1985		SM	SAA	
39	40 -	100%				~~41 - 42.5 lt gray clay Dry Stiff~~	
40	42.5						
41							
42							
43	42.0 -	100%	3172			gray stained medium Sand slight odor	
44	44						
45	45 - 47	100%	~~600~~ 68.0			gray stained sand Some cementation slight odor	
46							
47							
48							
49						TD = 45'	
50							
51							
52							
53							
54							
55							

ENSOLUM

Client: HEC
Project Name: LC Kelly 1E
Project Location: Flora Vista, NM
Project Manager: Stuart Hyde

BORING LOG NUMBER BH08
Project No.:

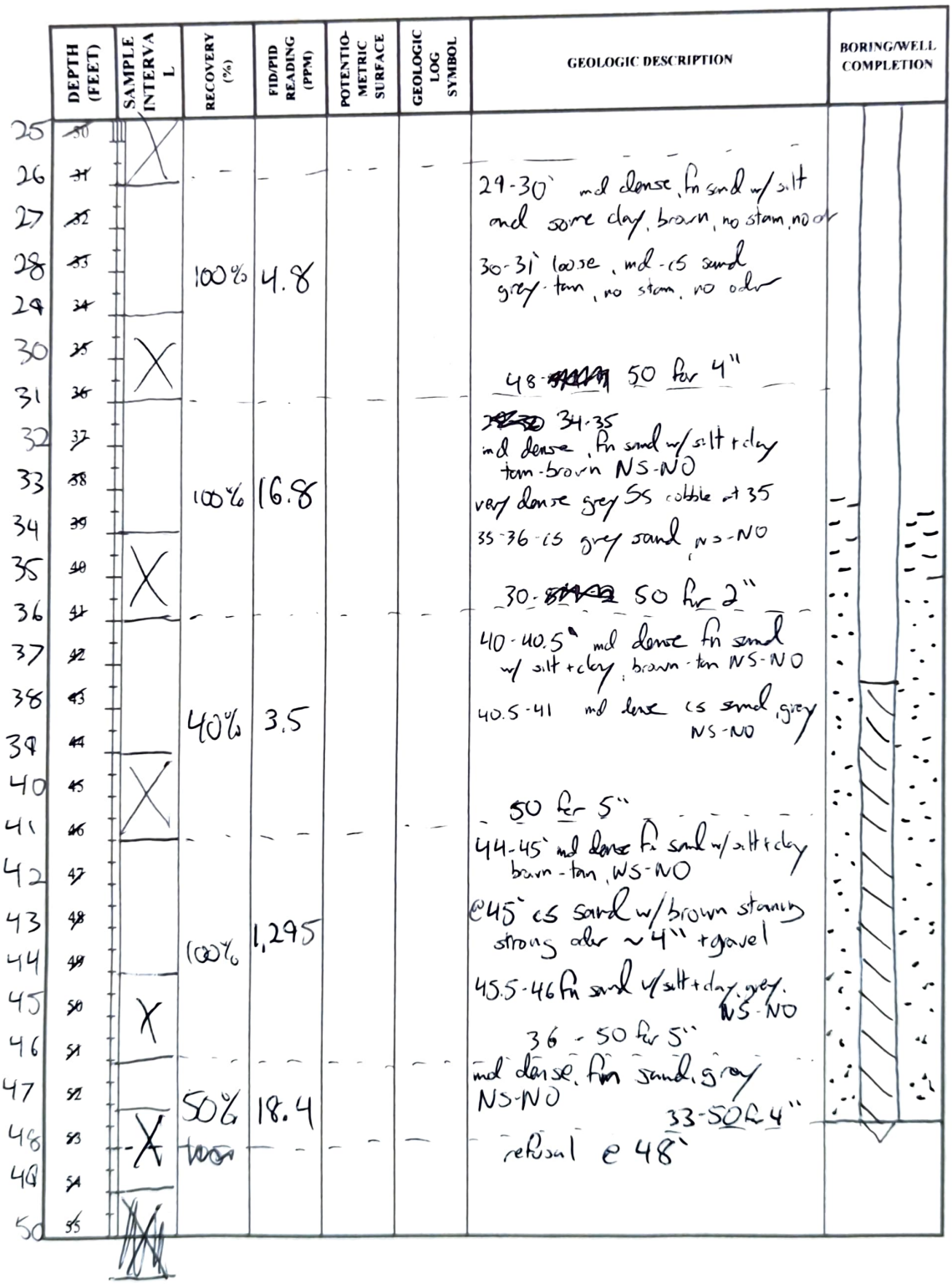
Date Sampled: 10-17
Drilled By: Enviro-drill
Driller: Juan
Logged By: ZM

Ground Surface Elevation:
Top of Casing Elevation:
North Coordinate:
West Coordinate:

Borehole Diameter: 8"
Casing Diameter: 2"
Well Materials: PVC
Surface Completion: Stick up
Boring Method: HSA

DEPTH (FEET)	SAMPLE INTERVAL	RECOVERY (%)	FID/PID READING (PPM)	POTENTIOMETRIC SURFACE	GEOLOGIC LOG SYMBOL	GEOLOGIC DESCRIPTION	BORING/WELL COMPLETION
0–4						loose, fn-cs sand, tan/brown no stain, no odor 11 blows	
5		75%	7.6				
6–7						@ 7.5' loose, fn-md sand, tan/brown NS, NO	
8			4.1				
9–10		75%				@ 10' md-cs, wht-grey sand, rare clay NS, NO 10-22-32	
11–12						@ 14' md dense, fn-md sand, tan/brown no stain, no odor rare clay/silt	
13–14		100%	15.8				
15–16						18-35-35 md dense fn-cs sand, tan/brown rare clay/silt, no stain, no odor	
17–18			14.1				
19		100%					
20–21						20-38-50	
22						24-25 md dense fn-md sand w/silt, tan/brown	
23		100%	32.7			@ 25' – 1" of fn sand, grey 25-25.5' md dense, fn-md sand w/silt 25.5-26' loose, cs sand, grey/brown	
24–25						31- NS-NO 50 for 4"	

BH08


DEPTH (FEET)
SAMPLE INTERVAL
RECOVERY (%)
FID/PID READING (PPM)
POTENTIOMETRIC SURFACE
GEOLOGIC LOG SYMBOL
GEOLOGIC DESCRIPTION
BORING/WELL COMPLETION
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
29-30' md dense, fn sand w/ silt and some clay, brown, no stain, no odor
30-31' loose, md-cs sand grey-tan, no stain, no odor
100%
4.8
48-50 for 4"
34-35
md dense, fn sand w/ silt + clay tan-brown NS-NO
100%
16.8
very dense grey SS cobble at 35
35-36 cs grey sand, NS-NO
30-50 for 2"
40-40.5' md dense fn sand w/ silt + clay, brown-tan NS-NO
40.5-41 md dense cs sand, grey NS-NO
40%
3.5
50 for 5"
44-45' md dense fn sand w/ silt + clay brown-tan, NS-NO
@45' cs sand w/ brown stains strong odor ~4" + gravel
100%
1,295
45.5-46 fn sand w/ silt + clay, grey. NS-NO
36-50 for 5"
md dense, fn sand, gray NS-NO
50%
18.4
33-50 for 4"
refusal @ 48'

ENSOLUM

Client: HEC
Project Name: LC Kelly 1E
Project Location:
Project Manager: Stuart Hyde

BORING LOG NUMBER: BH09
Project No.:

Date Sampled: 10-18
Drilled By: Enviro drill
Driller: Juan
Logged By: AT

Ground Surface Elevation:
Top of Casing Elevation:
North Coordinate:
West Coordinate:

Borehole Diameter: 8"
Casing Diameter: 2"
Well Materials: PVC
Surface Completion: Stick up
Boring Method: HSA

DEPTH (FEET)	SAMPLE INTERVAL	RECOVERY (%)	FID/PID READING (PPM)	POTENTIOMETRIC SURFACE	GEOLOGIC LOG SYMBOL	GEOLOGIC DESCRIPTION	BORING/WELL COMPLETION
5, 7, 6	5-6	60%	2.0			@ 5' - Poorly sorted med Sand (coarse) Brown. No odor some gravel, some fines	Grout
6, 9, 10	10-11	100%	4.5			Med/fine sand. Brown No odor. No stain. Some gravel	
39, 50/4	15-16	100%	4.0			SAA. No odor/stain	
50/5	20-21		16.8			Brown/tan corse sand w/ fines. No odor/stain	

ENSOLUM

Client: Hilcorp
Project Name: ~~San Juan 30-6 #31A~~
Project Location: LC Kelly 1E
Project Manager: Stuart Hyde

BORING LOG NUMBER: BH09
Project No.

Date Sampled: 10-18
Drilled By: Enviodrill
Driller:
Logged By: AT

Ground Surface Elevation:
Top of Casing Elevation:
North Coordinate:
West Coordinate:

Borehole Diameter:
Casing Diameter:
Well Materials:
Surface Completion:
Boring Method:

DEPTH (FEET)	SAMPLE INTERVAL	RECOVERY (%)	FID/PID READING (PPM)	POTENTIOMETRIC SURFACE	GEOLOGIC LOG SYMBOL	GEOLOGIC DESCRIPTION	BORING/WELL COMPLETION
25–26	50/6	60%	7.5			Brown med-sand w/ some clay and gravel. No odor/stain	B
27–28							B
29–30							
31–33	50/6	100%	363			Moist tan med-sand w/ clay. Mod odor slight stain/oxidation	
34–35							
36–38	50/4	100%	202			~~35-37' SLA~~ ~~35.15~~ 35-35.15 ~~35-38.5~~ - Gray slightly cemented SS w/ coal clasts and clay (Sampled above this layer)	
39–41	50/5	100%	145			Moist tan/brown med-sand w/ clays. Slight odor slight stain/oxidation	
42–44							
45–46	50/4		23.0			gray immature SS med-grained No odor. Possibly stained?	
47–50							

B

B

B

B

carc-in

ENSOLUM

Client: HEC
Project Name: LC KCIIY iE
Project Location:
Project Manager: Stuart Hyde

BORING LOG NUMBER: BH10
Project No.:

Date Sampled: 10-18
Drilled By: Hydrovac/Envirodrill
Driller:
Logged By: AT

Ground Surface Elevation:
Top of Casing Elevation:
North Coordinate:
West Coordinate:

Borehole Diameter: 8"
Casing Diameter: 2"
Well Materials: PVC
Surface Completion: stickup
Boring Method: HSA

DEPTH (FEET)	SAMPLE INTERVAL	RECOVERY (%)	FID/PID READING (PPM)	POTENTIOMETRIC SURFACE	GEOLOGIC LOG SYMBOL	GEOLOGIC DESCRIPTION	BORING/WELL COMPLETION
0							
1							
2							
3							
4							
5		hand auger	3.3 (wet)			@5' - Med/fine sand - Brown some gravel. wet from hydrovac. No odor	
6							
7							
8							
9							
10		hand auger	3.6 (wet)			@10' - SAA - No odor med/coarse wet from hydrovac	
11							
12							
13							
14							
15		100%	4.4			Moist Med-Coarse sand Brown, no odor/stain Some gravel and clay	
16							
17							
18							
19							
20		100%	6.4			Moist redish-brown med/coarse sand no odor/stain 1 inch lense gray sand	
21							
22							
23							
24							
25							

Grout

B

B

B

B

50/6

50/4

ENSOLUM

Client: Hilcorp
Project Name: ~~San Juan 30-6 #31A~~
Project Location:
Project Manager: Stuart Hyde

BORING LOG NUMBER: BH10
Project No.:

Date Sampled:
Drilled By:
Driller:
Logged By:

Ground Surface Elevation:
Top of Casing Elevation:
North Coordinate:
West Coordinate:

Borehole Diameter:
Casing Diameter:
Well Materials:
Surface Completion:
Boring Method:

DEPTH (FEET)	SAMPLE INTERVAL	RECOVERY (%)	FID/PID READING (PPM)	POTENTIOMETRIC SURFACE	GEOLOGIC LOG SYMBOL	GEOLOGIC DESCRIPTION	BORING/WELL COMPLETION
25	40, 50/3	100%	49.3			Brown moist clayey sand med grain. No odor/stain	screen
26							
27							
28							
29							
30	50/4	100%	8.8			Moist gray med-fine clayey sand. Slight odor. Potentially stained	cave-in
31							
32							
33							
34							
35	38, 50/4	100%	6.9			SAA	
36							
37							
38							
39							
40							
41							
42							
43							
44							
45							
46							
47							
48							
49							
50							

ENSOLUM

Client: HEC
Project Name: LC Kelly 2E
Project Location:
Project Manager:

BORING LOG NUMBER: BH 11
Project No.:

Date Sampled: 10-19
Drilled By:
Driller: Enviodrill
Logged By: AT

Ground Surface Elevation:
Top of Casing Elevation:
North Coordinate:
West Coordinate:

Borehole Diameter: 8"
Casing Diameter: 2"
Well Materials: PVC
Surface Completion: Stick up
Boring Method: HSA

DEPTH (FEET)	SAMPLE INTERVAL	RECOVERY (%)	FID/PID READING (PPM)	POTENTIOMETRIC SURFACE	GEOLOGIC LOG SYMBOL	GEOLOGIC DESCRIPTION	BORING/WELL COMPLETION
5	4,6,14	100%	4.4			tan med-fine Sand w/ coarse No odor/stain	
10	50/5	100%	5.7			Light tan Med-coarse Sand no odor/stain	Grout
15	29, 50/3	100	24.2			Reddish tan med-fine Sand No odor/stain. Oxidized Fe	
20	50/4	90	19.6			SAA - some clay	

ENSOLUM

Client: Hilcorp Project Name: ~~San Jaun 30-6 #31A~~ A Project Location: Project Manager: Stuart Hyde	**BORING LOG NUMBER** BH 11	Project No.:
Date Sampled: 10-19 **Drilled By:** Envirodrill **Driller:** **Logged By:** AT	**Ground Surface Elevation:** **Top of Casing Elevation:** **North Coordinate:** **West Coordinate:**	**Borehole Diameter:** **Casing Diameter:** **Well Materials:** **Surface Completion:** **Boring Method:**

	DEPTH (FEET)	SAMPLE INTERVAL	RECOVERY (%)	FID/PID READING (PPM)	POTENTIO-METRIC SURFACE	GEOLOGIC LOG SYMBOL	GEOLOGIC DESCRIPTION	BORING/WELL COMPLETION
	25						Reddish-Brown coarse sand w/ gravel and clay slight ~~no~~ odor / no stain	
50/4	26	25.5–26	90	164.4				
	27							
	28							
	29							
	30						gray Med-fine sand slight odor, Potentially Stained w/ clay	
45, 50/4	31	30–31	100	248				
	32							
	33							
	34							
	35						Reddish-tan Med-fine sand slight odor, no stain w/ clay	
44, 50/1	36	35–36	100	126.9				
	37							
	38							
	39							
	40						SAA - mod odor	
39, 50/2	41	40–41	100	298				
	42							
	43							
	44							
	45	45	100	78.9			Light tan med-fine Sand w/ some clay and oxidized Fe slight odor, no stain.	
	46							
	47							
	48							
	49						TD: 45'	
	50							

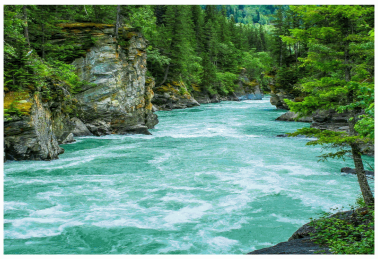
ENSOLUM

APPENDIX C

Laboratory Analytical Report

Report to:

Stuart Hyde



5796 U.S. Hwy 64
Farmington, NM 87401

Phone: (505) 632-1881
Envirotech-inc.com

envirotech

Practical Solutions for a Better Tomorrow

Analytical Report

Hilcorp Energy Co

Project Name:	LC Kelly #1E
Work Order:	E310119
Job Number:	17051-0002
Received:	10/18/2023

Revision: 1

Report Reviewed By:

Walter Hinchman
Laboratory Director
10/19/23

Envirotech Inc. certifies the test results meet all requirements of TNI unless noted otherwise.
Statement of Data Authenticity: Envirotech Inc, attests the data reported has not been altered in any way.
Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech Inc.
Envirotech Inc, holds the Utah TNI certification NM00979 for data reported.
Envirotech Inc, holds the Texas TNI certification T104704557 for data reported.

Date Reported: 10/19/23

Stuart Hyde
PO Box 61529
Houston, TX 77208

Project Name: LC Kelly #1E
Workorder: E310119
Date Received: 10/18/2023 10:01:00AM

Stuart Hyde,

Thank you for choosing Envirotech, Inc. as your analytical testing laboratory for the sample(s) received on, 10/18/2023 10:01:00AM, under the Project Name: LC Kelly #1E.

The analytical test results summarized in this report with the Project Name: LC Kelly #1E apply to the individual samples collected, identified and submitted bearing the project name on the enclosed chain-of-custody. Subcontracted sample analyses not conducted by Envirotech, Inc., are attached in full as issued by the subcontract laboratory.

Please review the Chain-of-Custody (COC) and Sample Receipt Checklist (SRC) for any issues reguarding sample receipt temperature, containers, preservation etc. To best understand your test results, review the entire report summarizing your sample data and the associated quality control batch data.

All reported data in this analytical report were analyzed according to the referenced method(s) and are in compliance with the latest NELAC/TNI standards, unless otherwise noted. Samples or analytical quality control parameters not meeting specific QC criteria are qualified with a data flag. Data flag definitions are located in the Notes and Definitions section of this analytical report.

If you have any questions concerning this report, please feel free to contact Envirotech, Inc.

Respectfully,

Walter Hinchman
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Table of Contents

Sample Summary

Hilcorp Energy Co	Project Name:	LC Kelly #1E	**Reported:**
PO Box 61529	Project Number:	17051-0002	
Houston TX, 77208	Project Manager:	Stuart Hyde	10/19/23 17:45

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
BH07 @ 30'	E310119-01A	Soil	10/16/23	10/18/23	Glass Jar, 4 oz.
BH07 @ 35'	E310119-02A	Soil	10/16/23	10/18/23	Glass Jar, 4 oz.
BH07 @ 40'	E310119-03A	Soil	10/16/23	10/18/23	Glass Jar, 4 oz.
BH07 @ 45'	E310119-04A	Soil	10/16/23	10/18/23	Glass Jar, 4 oz.
BH08 @ 44-46'	E310119-05A	Soil	10/17/23	10/18/23	Glass Jar, 4 oz.
BH08 @ 48'	E310119-06A	Soil	10/17/23	10/18/23	Glass Jar, 4 oz.

Sample Data

Hilcorp Energy Co	Project Name:	LC Kelly #1E	
PO Box 61529	Project Number:	17051-0002	**Reported:**
Houston TX, 77208	Project Manager:	Stuart Hyde	10/19/2023 5:45:16PM

BH07 @ 30'

E310119-01

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: RKS			Batch: 2342061
Benzene	ND	0.0250	1	10/18/23	10/18/23	
Ethylbenzene	ND	0.0250	1	10/18/23	10/18/23	
Toluene	ND	0.0250	1	10/18/23	10/18/23	
o-Xylene	ND	0.0250	1	10/18/23	10/18/23	
p,m-Xylene	ND	0.0500	1	10/18/23	10/18/23	
Total Xylenes	ND	0.0250	1	10/18/23	10/18/23	
Surrogate: Bromofluorobenzene		*103 %*	*70-130*	*10/18/23*	*10/18/23*	
Surrogate: 1,2-Dichloroethane-d4		*91.6 %*	*70-130*	*10/18/23*	*10/18/23*	
Surrogate: Toluene-d8		*97.6 %*	*70-130*	*10/18/23*	*10/18/23*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: RKS			Batch: 2342061
Gasoline Range Organics (C6-C10)	ND	20.0	1	10/18/23	10/18/23	
Surrogate: Bromofluorobenzene		*103 %*	*70-130*	*10/18/23*	*10/18/23*	
Surrogate: 1,2-Dichloroethane-d4		*91.6 %*	*70-130*	*10/18/23*	*10/18/23*	
Surrogate: Toluene-d8		*97.6 %*	*70-130*	*10/18/23*	*10/18/23*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: KM			Batch: 2342060
Diesel Range Organics (C10-C28)	ND	25.0	1	10/18/23	10/18/23	
Oil Range Organics (C28-C36)	ND	50.0	1	10/18/23	10/18/23	
Surrogate: n-Nonane		*90.4 %*	*50-200*	*10/18/23*	*10/18/23*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: IY			Batch: 2342058
Chloride	**21.4**	20.0	1	10/18/23	10/19/23	

Sample Data

Hilcorp Energy Co	Project Name:	LC Kelly #1E	
PO Box 61529	Project Number:	17051-0002	**Reported:**
Houston TX, 77208	Project Manager:	Stuart Hyde	10/19/2023 5:45:16PM

BH07 @ 35'

E310119-02

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: RKS			Batch: 2342061
Benzene	ND	0.0250	1	10/18/23	10/18/23	
Ethylbenzene	ND	0.0250	1	10/18/23	10/18/23	
Toluene	ND	0.0250	1	10/18/23	10/18/23	
o-Xylene	**0.0310**	0.0250	1	10/18/23	10/18/23	
p,m-Xylene	**0.140**	0.0500	1	10/18/23	10/18/23	
Total Xylenes	**0.171**	0.0250	1	10/18/23	10/18/23	
Surrogate: Bromofluorobenzene		*109 %*	*70-130*	*10/18/23*	*10/18/23*	
Surrogate: 1,2-Dichloroethane-d4		*97.0 %*	*70-130*	*10/18/23*	*10/18/23*	
Surrogate: Toluene-d8		*98.6 %*	*70-130*	*10/18/23*	*10/18/23*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: RKS			Batch: 2342061
Gasoline Range Organics (C6-C10)	ND	20.0	1	10/18/23	10/18/23	
Surrogate: Bromofluorobenzene		*109 %*	*70-130*	*10/18/23*	*10/18/23*	
Surrogate: 1,2-Dichloroethane-d4		*97.0 %*	*70-130*	*10/18/23*	*10/18/23*	
Surrogate: Toluene-d8		*98.6 %*	*70-130*	*10/18/23*	*10/18/23*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: KM			Batch: 2342060
Diesel Range Organics (C10-C28)	**61.4**	25.0	1	10/18/23	10/19/23	
Oil Range Organics (C28-C36)	ND	50.0	1	10/18/23	10/19/23	
Surrogate: n-Nonane		*96.5 %*	*50-200*	*10/18/23*	*10/19/23*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: IY			Batch: 2342058
Chloride	ND	20.0	1	10/18/23	10/19/23	

Sample Data

Hilcorp Energy Co	Project Name:	LC Kelly #1E	
PO Box 61529	Project Number:	17051-0002	**Reported:**
Houston TX, 77208	Project Manager:	Stuart Hyde	10/19/2023 5:45:16PM

BH07 @ 40'

E310119-03

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: RKS			Batch: 2342061
Benzene	ND	0.0250	1	10/18/23	10/18/23	
Ethylbenzene	**0.198**	0.0250	1	10/18/23	10/18/23	
Toluene	**0.0345**	0.0250	1	10/18/23	10/18/23	
o-Xylene	**0.599**	0.0250	1	10/18/23	10/18/23	
p,m-Xylene	**3.12**	0.0500	1	10/18/23	10/18/23	
Total Xylenes	**3.71**	0.0250	1	10/18/23	10/18/23	
Surrogate: Bromofluorobenzene		*90.1 %*	*70-130*	*10/18/23*	*10/18/23*	
Surrogate: 1,2-Dichloroethane-d4		*92.6 %*	*70-130*	*10/18/23*	*10/18/23*	
Surrogate: Toluene-d8		*108 %*	*70-130*	*10/18/23*	*10/18/23*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: RKS			Batch: 2342061
Gasoline Range Organics (C6-C10)	**145**	20.0	1	10/18/23	10/18/23	
Surrogate: Bromofluorobenzene		*90.1 %*	*70-130*	*10/18/23*	*10/18/23*	
Surrogate: 1,2-Dichloroethane-d4		*92.6 %*	*70-130*	*10/18/23*	*10/18/23*	
Surrogate: Toluene-d8		*108 %*	*70-130*	*10/18/23*	*10/18/23*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: KM			Batch: 2342060
Diesel Range Organics (C10-C28)	**49.7**	25.0	1	10/18/23	10/19/23	
Oil Range Organics (C28-C36)	ND	50.0	1	10/18/23	10/19/23	
Surrogate: n-Nonane		*101 %*	*50-200*	*10/18/23*	*10/19/23*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: IY			Batch: 2342058
Chloride	ND	20.0	1	10/18/23	10/19/23	

Sample Data

Hilcorp Energy Co	Project Name:	LC Kelly #1E	
PO Box 61529	Project Number:	17051-0002	**Reported:**
Houston TX, 77208	Project Manager:	Stuart Hyde	10/19/2023 5:45:16PM

BH07 @ 45'

E310119-04

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: RKS			Batch: 2342061
Benzene	ND	0.0250	1	10/18/23	10/18/23	
Ethylbenzene	ND	0.0250	1	10/18/23	10/18/23	
Toluene	ND	0.0250	1	10/18/23	10/18/23	
o-Xylene	**0.0250**	0.0250	1	10/18/23	10/18/23	
p,m-Xylene	**0.0945**	0.0500	1	10/18/23	10/18/23	
Total Xylenes	**0.120**	0.0250	1	10/18/23	10/18/23	
Surrogate: Bromofluorobenzene		*102 %*	*70-130*	*10/18/23*	*10/18/23*	
Surrogate: 1,2-Dichloroethane-d4		*93.9 %*	*70-130*	*10/18/23*	*10/18/23*	
Surrogate: Toluene-d8		*117 %*	*70-130*	*10/18/23*	*10/18/23*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: RKS			Batch: 2342061
Gasoline Range Organics (C6-C10)	ND	20.0	1	10/18/23	10/18/23	
Surrogate: Bromofluorobenzene		*102 %*	*70-130*	*10/18/23*	*10/18/23*	
Surrogate: 1,2-Dichloroethane-d4		*93.9 %*	*70-130*	*10/18/23*	*10/18/23*	
Surrogate: Toluene-d8		*117 %*	*70-130*	*10/18/23*	*10/18/23*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: KM			Batch: 2342060
Diesel Range Organics (C10-C28)	ND	25.0	1	10/18/23	10/18/23	
Oil Range Organics (C28-C36)	ND	50.0	1	10/18/23	10/18/23	
Surrogate: n-Nonane		*90.1 %*	*50-200*	*10/18/23*	*10/18/23*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: IY			Batch: 2342058
Chloride	ND	20.0	1	10/18/23	10/19/23	

Sample Data

Hilcorp Energy Co	Project Name:	LC Kelly #1E	
PO Box 61529	Project Number:	17051-0002	**Reported:**
Houston TX, 77208	Project Manager:	Stuart Hyde	10/19/2023 5:45:16PM

BH08 @ 44-46'

E310119-05

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: RKS			Batch: 2342061
Benzene	ND	0.0250	1	10/18/23	10/18/23	
Ethylbenzene	ND	0.0250	1	10/18/23	10/18/23	
Toluene	ND	0.0250	1	10/18/23	10/18/23	
o-Xylene	**0.0360**	0.0250	1	10/18/23	10/18/23	
p,m-Xylene	**0.130**	0.0500	1	10/18/23	10/18/23	
Total Xylenes	**0.166**	0.0250	1	10/18/23	10/18/23	
Surrogate: Bromofluorobenzene		*107 %*	*70-130*	*10/18/23*	*10/18/23*	
Surrogate: 1,2-Dichloroethane-d4		*93.3 %*	*70-130*	*10/18/23*	*10/18/23*	
Surrogate: Toluene-d8		*98.6 %*	*70-130*	*10/18/23*	*10/18/23*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: RKS			Batch: 2342061
Gasoline Range Organics (C6-C10)	ND	20.0	1	10/18/23	10/18/23	
Surrogate: Bromofluorobenzene		*107 %*	*70-130*	*10/18/23*	*10/18/23*	
Surrogate: 1,2-Dichloroethane-d4		*93.3 %*	*70-130*	*10/18/23*	*10/18/23*	
Surrogate: Toluene-d8		*98.6 %*	*70-130*	*10/18/23*	*10/18/23*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: KM			Batch: 2342060
Diesel Range Organics (C10-C28)	**41.6**	25.0	1	10/18/23	10/18/23	
Oil Range Organics (C28-C36)	ND	50.0	1	10/18/23	10/18/23	
Surrogate: n-Nonane		*96.4 %*	*50-200*	*10/18/23*	*10/18/23*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: IY			Batch: 2342058
Chloride	**20.9**	20.0	1	10/18/23	10/19/23	

Sample Data

Hilcorp Energy Co	Project Name:	LC Kelly #1E	
PO Box 61529	Project Number:	17051-0002	**Reported:**
Houston TX, 77208	Project Manager:	Stuart Hyde	10/19/2023 5:45:16PM

BH08 @ 48'

E310119-06

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: RKS			Batch: 2342061
Benzene	ND	0.0250	1	10/18/23	10/18/23	
Ethylbenzene	ND	0.0250	1	10/18/23	10/18/23	
Toluene	ND	0.0250	1	10/18/23	10/18/23	
o-Xylene	ND	0.0250	1	10/18/23	10/18/23	
p,m-Xylene	ND	0.0500	1	10/18/23	10/18/23	
Total Xylenes	ND	0.0250	1	10/18/23	10/18/23	
Surrogate: Bromofluorobenzene		*99.1 %*	*70-130*	*10/18/23*	*10/18/23*	
Surrogate: 1,2-Dichloroethane-d4		*95.0 %*	*70-130*	*10/18/23*	*10/18/23*	
Surrogate: Toluene-d8		*94.1 %*	*70-130*	*10/18/23*	*10/18/23*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: RKS			Batch: 2342061
Gasoline Range Organics (C6-C10)	ND	20.0	1	10/18/23	10/18/23	
Surrogate: Bromofluorobenzene		*99.1 %*	*70-130*	*10/18/23*	*10/18/23*	
Surrogate: 1,2-Dichloroethane-d4		*95.0 %*	*70-130*	*10/18/23*	*10/18/23*	
Surrogate: Toluene-d8		*94.1 %*	*70-130*	*10/18/23*	*10/18/23*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: KM			Batch: 2342060
Diesel Range Organics (C10-C28)	ND	25.0	1	10/18/23	10/18/23	
Oil Range Organics (C28-C36)	ND	50.0	1	10/18/23	10/18/23	
Surrogate: n-Nonane		*93.3 %*	*50-200*	*10/18/23*	*10/18/23*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: IY			Batch: 2342058
Chloride	ND	20.0	1	10/18/23	10/19/23	

QC Summary Data

Hilcorp Energy Co	Project Name:	LC Kelly #1E	**Reported:**
PO Box 61529	Project Number:	17051-0002	
Houston TX, 77208	Project Manager:	Stuart Hyde	10/19/2023 5:45:16PM

Volatile Organic Compounds by EPA 8260B

Analyst: RKS

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	
Blank (2342061-BLK1)									Prepared: 10/18/23 Analyzed: 10/18/23
Benzene	ND	0.0250							
Ethylbenzene	ND	0.0250							
Toluene	ND	0.0250							
o-Xylene	ND	0.0250							
p,m-Xylene	ND	0.0500							
Total Xylenes	ND	0.0250							
Surrogate: Bromofluorobenzene	*0.547*		*0.500*		*109*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.473*		*0.500*		*94.6*	*70-130*			
Surrogate: Toluene-d8	*0.480*		*0.500*		*96.0*	*70-130*			
LCS (2342061-BS1)									Prepared: 10/18/23 Analyzed: 10/18/23
Benzene	2.54	0.0250	2.50		102	70-130			
Ethylbenzene	2.60	0.0250	2.50		104	70-130			
Toluene	2.49	0.0250	2.50		99.7	70-130			
o-Xylene	2.66	0.0250	2.50		106	70-130			
p,m-Xylene	5.23	0.0500	5.00		105	70-130			
Total Xylenes	7.88	0.0250	7.50		105	70-130			
Surrogate: Bromofluorobenzene	*0.506*		*0.500*		*101*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.466*		*0.500*		*93.2*	*70-130*			
Surrogate: Toluene-d8	*0.485*		*0.500*		*97.0*	*70-130*			
Matrix Spike (2342061-MS1)				**Source: E310119-04**					Prepared: 10/18/23 Analyzed: 10/18/23
Benzene	2.55	0.0250	2.50	ND	102	48-131			
Ethylbenzene	2.60	0.0250	2.50	ND	104	45-135			
Toluene	2.30	0.0250	2.50	ND	92.1	48-130			
o-Xylene	2.66	0.0250	2.50	0.0250	105	43-135			
p,m-Xylene	5.43	0.0500	5.00	0.0945	107	43-135			
Total Xylenes	8.09	0.0250	7.50	0.120	106	43-135			
Surrogate: Bromofluorobenzene	*0.530*		*0.500*		*106*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.473*		*0.500*		*94.6*	*70-130*			
Surrogate: Toluene-d8	*0.457*		*0.500*		*91.3*	*70-130*			
Matrix Spike Dup (2342061-MSD1)				**Source: E310119-04**					Prepared: 10/18/23 Analyzed: 10/18/23
Benzene	2.59	0.0250	2.50	ND	104	48-131	1.69	23	
Ethylbenzene	2.64	0.0250	2.50	ND	106	45-135	1.55	27	
Toluene	2.77	0.0250	2.50	ND	111	48-130	18.5	24	
o-Xylene	2.67	0.0250	2.50	0.0250	106	43-135	0.470	27	
p,m-Xylene	5.31	0.0500	5.00	0.0945	104	43-135	2.25	27	
Total Xylenes	7.98	0.0250	7.50	0.120	105	43-135	1.35	27	
Surrogate: Bromofluorobenzene	*0.509*		*0.500*		*102*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.480*		*0.500*		*95.9*	*70-130*			
Surrogate: Toluene-d8	*0.535*		*0.500*		*107*	*70-130*			

QC Summary Data

Hilcorp Energy Co	Project Name:	LC Kelly #1E	**Reported:**
PO Box 61529	Project Number:	17051-0002	
Houston TX, 77208	Project Manager:	Stuart Hyde	10/19/2023 5:45:16PM

Nonhalogenated Organics by EPA 8015D - GRO

Analyst: RKS

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	
Blank (2342061-BLK1)									Prepared: 10/18/23 Analyzed: 10/18/23
Gasoline Range Organics (C6-C10)	ND	20.0							
Surrogate: Bromofluorobenzene	*0.547*		*0.500*		*109*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.473*		*0.500*		*94.6*	*70-130*			
Surrogate: Toluene-d8	*0.480*		*0.500*		*96.0*	*70-130*			
LCS (2342061-BS2)									Prepared: 10/18/23 Analyzed: 10/18/23
Gasoline Range Organics (C6-C10)	57.8	20.0	50.0		116	70-130			
Surrogate: Bromofluorobenzene	*0.554*		*0.500*		*111*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.494*		*0.500*		*98.7*	*70-130*			
Surrogate: Toluene-d8	*0.479*		*0.500*		*95.7*	*70-130*			
Matrix Spike (2342061-MS2)				**Source: E310119-04**					Prepared: 10/18/23 Analyzed: 10/18/23
Gasoline Range Organics (C6-C10)	65.0	20.0	50.0	ND	130	70-130			
Surrogate: Bromofluorobenzene	*0.470*		*0.500*		*93.9*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.470*		*0.500*		*94.0*	*70-130*			
Surrogate: Toluene-d8	*0.497*		*0.500*		*99.4*	*70-130*			
Matrix Spike Dup (2342061-MSD2)				**Source: E310119-04**					Prepared: 10/18/23 Analyzed: 10/18/23
Gasoline Range Organics (C6-C10)	54.8	20.0	50.0	ND	110	70-130	17.1	20	
Surrogate: Bromofluorobenzene	*0.508*		*0.500*		*102*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*0.460*		*0.500*		*92.0*	*70-130*			
Surrogate: Toluene-d8	*0.502*		*0.500*		*100*	*70-130*			

QC Summary Data

Hilcorp Energy Co	Project Name:	LC Kelly #1E	**Reported:**
PO Box 61529	Project Number:	17051-0002	
Houston TX, 77208	Project Manager:	Stuart Hyde	10/19/2023 5:45:16PM

Nonhalogenated Organics by EPA 8015D - DRO/ORO

Analyst: KM

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	
Blank (2342060-BLK1)									Prepared: 10/18/23 Analyzed: 10/18/23
Diesel Range Organics (C10-C28)	ND	25.0							
Oil Range Organics (C28-C36)	ND	50.0							
Surrogate: n-Nonane	*49.5*		*50.0*		*99.1*	*50-200*			
LCS (2342060-BS1)									Prepared: 10/18/23 Analyzed: 10/18/23
Diesel Range Organics (C10-C28)	269	25.0	250		108	38-132			
Surrogate: n-Nonane	*46.6*		*50.0*		*93.2*	*50-200*			
Matrix Spike (2342060-MS1)				**Source: E310119-03**					Prepared: 10/18/23 Analyzed: 10/19/23
Diesel Range Organics (C10-C28)	327	25.0	250	49.7	111	38-132			
Surrogate: n-Nonane	*50.5*		*50.0*		*101*	*50-200*			
Matrix Spike Dup (2342060-MSD1)				**Source: E310119-03**					Prepared: 10/18/23 Analyzed: 10/19/23
Diesel Range Organics (C10-C28)	341	25.0	250	49.7	117	38-132	4.17	20	
Surrogate: n-Nonane	*51.4*		*50.0*		*103*	*50-200*			

QC Summary Data

Hilcorp Energy Co	Project Name:	LC Kelly #1E	**Reported:**
PO Box 61529	Project Number:	17051-0002	
Houston TX, 77208	Project Manager:	Stuart Hyde	10/19/2023 5:45:16PM

Anions by EPA 300.0/9056A

Analyst: IY

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	
Blank (2342058-BLK1)									Prepared: 10/18/23 Analyzed: 10/18/23
Chloride	ND	20.0							
LCS (2342058-BS1)									Prepared: 10/18/23 Analyzed: 10/18/23
Chloride	248	20.0	250		99.1	90-110			
Matrix Spike (2342058-MS1)				**Source: E310118-04**					Prepared: 10/18/23 Analyzed: 10/18/23
Chloride	263	20.0	250	ND	105	80-120			
Matrix Spike Dup (2342058-MSD1)				**Source: E310118-04**					Prepared: 10/18/23 Analyzed: 10/18/23
Chloride	265	20.0	250	ND	106	80-120	0.939	20	

QC Summary Report Comment:
Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

Definitions and Notes

Hilcorp Energy Co	Project Name:	LC Kelly #1E	
PO Box 61529	Project Number:	17051-0002	**Reported:**
Houston TX, 77208	Project Manager:	Stuart Hyde	10/19/23 17:45

ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
RPD	Relative Percent Difference
DNI	Did Not Ignite
DNR	Did not react with the addition of acid or base.

Note (1): Methods marked with ** are non-accredited methods.

Note (2): Soil data is reported on an "as received" weight basis, unless reported otherwise.

Chain of Custody

Client Information	Invoice Information	Lab Use Only	TAT	State
Client: Hilcorp Energy Company	Company: Hilcorp	Lab WO# E310119	Job Number 17051-0002	1D 2D 3D Std: X	NM CO UT TX
Project Name: L C Kelly 1E	Address: 1111 Travis St			
Project Manager: Stuart Hyde	City, State, Zip: Houston, TX			
Address:	Phone: 713-757-5247			
City, State, Zip:	Email: mkillough@hilcorp.com			
Phone: 970-903-1607				
Email: shyde@ensolum.com				

Sample Information

Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Field Filter	Lab Number	DRO/ORO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Chloride 300.0	BGDOC - NM	TCEQ 1005 - TX	RCRA 8 Metals				Remarks
1300	10/16/23	S	0:1	1 4oz		1	X	X	X		X							BH07@30'
1320						2	X	X	X		X							BH07@35'
1340						3	X	X	X		X							BH07@40'
1430						4	X	X	X		X							BH07@45'
1540	10/17					5	X	X	X		X							BH08@44-46'
1620	10/17					6	X	X	X		X							BH08@48'

Analysis and Method

EPA Program: SDWA | CWA | RCRA

Compliance: Y or N

PWSID #:

Additional Instructions: Rush TAT – 10/19 in the AM Area 2

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.

Sampled by: Zach Myers / Al Thomson

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	10/18/23	10:01		10.18.23	10:01
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Lab Use Only

Received on ice: (Y) / N

T1 T2 T3

AVG Temp °C 4

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other

Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 14 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.

envirotech

Envirotech Analytical Laboratory

Printed: 10/18/2023 10:11:16AM

Sample Receipt Checklist (SRC)

Instructions: Please take note of any NO checkmarks.
If we receive no response concerning these items within 24 hours of the date of this notice, all the samples will be analyzed as requested.

Client:	Hilcorp Energy Co	Date Received:	10/18/23 10:01	Work Order ID:	E310119
Phone:	-	Date Logged In:	10/18/23 10:04	Logged In By:	Caitlin Mars
Email:	shyde@ensolum.com	Due Date:	10/19/23 17:00 (1 day TAT)		

Chain of Custody (COC)

1. Does the sample ID match the COC?	Yes	
2. Does the number of samples per sampling site location match the COC	Yes	
3. Were samples dropped off by client or carrier?	Yes	Carrier: Reese
4. Was the COC complete, i.e., signatures, dates/times, requested analyses?	Yes	
5. Were all samples received within holding time? Note: Analysis, such as pH which should be conducted in the field, i.e, 15 minute hold time, are not included in this disucssion.	Yes	

Comments/Resolution

Additional Instructions from client- 10/19 in the AM.

Sample Turn Around Time (TAT)

6. Did the COC indicate standard TAT, or Expedited TAT?	Yes

Sample Cooler

7. Was a sample cooler received?	Yes
8. If yes, was cooler received in good condition?	Yes
9. Was the sample(s) received intact, i.e., not broken?	Yes
10. Were custody/security seals present?	No
11. If yes, were custody/security seals intact?	NA
12. Was the sample received on ice? If yes, the recorded temp is 4°C, i.e., 6°±2°C Note: Thermal preservation is not required, if samples are received w/i 15 minutes of sampling	Yes
13. If no visible ice, record the temperature. Actual sample temperature: 4°C	

Sample Container

14. Are aqueous VOC samples present?	No
15. Are VOC samples collected in VOA Vials?	NA
16. Is the head space less than 6-8 mm (pea sized or less)?	NA
17. Was a trip blank (TB) included for VOC analyses?	NA
18. Are non-VOC samples collected in the correct containers?	Yes
19. Is the appropriate volume/weight or number of sample containers collected?	Yes

Field Label

20. Were field sample labels filled out with the minimum information:	
Sample ID?	Yes
Date/Time Collected?	Yes
Collectors name?	Yes

Sample Preservation

21. Does the COC or field labels indicate the samples were preserved?	No
22. Are sample(s) correctly preserved?	NA
24. Is lab filteration required and/or requested for dissolved metals?	No

Multiphase Sample Matrix

26. Does the sample have more than one phase, i.e., multiphase?	No
27. If yes, does the COC specify which phase(s) is to be analyzed?	NA

Subcontract Laboratory

28. Are samples required to get sent to a subcontract laboratory?	No	
29. Was a subcontract laboratory specified by the client and if so who?	NA	Subcontract Lab: NA

Client Instruction

Signature of client authorizing changes to the COC or sample disposition.

Date

envirotech Inc.

Report to:

Stuart Hyde

5796 U.S. Hwy 64
Farmington, NM 87401

Phone: (505) 632-1881
Envirotech-inc.com

envirotech

Practical Solutions for a Better Tomorrow

Analytical Report

Hilcorp Energy Co

Project Name:	LC Kelly 1E
Work Order:	E310177
Job Number:	17051-0002
Received:	10/19/2023

Revision: 1

Report Reviewed By:

Walter Hinchman
Laboratory Director
10/20/23

Date Reported: 10/20/23

Stuart Hyde
PO Box 61529
Houston, TX 77208

Project Name: LC Kelly 1E
Workorder: E310177
Date Received: 10/19/2023 11:08:00AM

Stuart Hyde,

Thank you for choosing Envirotech, Inc. as your analytical testing laboratory for the sample(s) received on, 10/19/2023 11:08:00AM, under the Project Name: LC Kelly 1E.

The analytical test results summarized in this report with the Project Name: LC Kelly 1E apply to the individual samples collected, identified and submitted bearing the project name on the enclosed chain-of-custody. Subcontracted sample analyses not conducted by Envirotech, Inc., are attached in full as issued by the subcontract laboratory.

Please review the Chain-of-Custody (COC) and Sample Receipt Checklist (SRC) for any issues reguarding sample receipt temperature, containers, preservation etc. To best understand your test results, review the entire report summarizing your sample data and the associated quality control batch data.

All reported data in this analytical report were analyzed according to the referenced method(s) and are in compliance with the latest NELAC/TNI standards, unless otherwise noted. Samples or analytical quality control parameters not meeting specific QC criteria are qualified with a data flag. Data flag definitions are located in the Notes and Definitions section of this analytical report.

If you have any questions concerning this report, please feel free to contact Envirotech, Inc.

Respectfully,

Walter Hinchman
Laboratory Director
Office: 505-632-1881
Cell: 775-287-1762
whinchman@envirotech-inc.com

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Laboratory Administrator
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Envirotech Web Address: www.envirotech-inc.com

Table of Contents

Sample Summary

Hilcorp Energy Co	Project Name:	LC Kelly 1E	**Reported:**
PO Box 61529	Project Number:	17051-0002	
Houston TX, 77208	Project Manager:	Stuart Hyde	10/20/23 14:19

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
BH09 @ 25'	E310177-01A	Soil	10/18/23	10/19/23	Glass Jar, 4 oz.
BH09 @ 30'	E310177-02A	Soil	10/18/23	10/19/23	Glass Jar, 4 oz.
BH09 @ 35'	E310177-03A	Soil	10/18/23	10/19/23	Glass Jar, 4 oz.
BH09 @ 40'	E310177-04A	Soil	10/18/23	10/19/23	Glass Jar, 4 oz.
BH09 @ 45'	E310177-05A	Soil	10/18/23	10/19/23	Glass Jar, 4 oz.

Sample Data

Hilcorp Energy Co	Project Name:	LC Kelly 1E	
PO Box 61529	Project Number:	17051-0002	**Reported:**
Houston TX, 77208	Project Manager:	Stuart Hyde	10/20/2023 2:19:54PM

BH09 @ 25'

E310177-01

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg	Analyst: RKS			Batch: 2342089
Benzene	ND	0.0250	1	10/19/23	10/20/23	
Ethylbenzene	ND	0.0250	1	10/19/23	10/20/23	
Toluene	ND	0.0250	1	10/19/23	10/20/23	
o-Xylene	ND	0.0250	1	10/19/23	10/20/23	
p,m-Xylene	ND	0.0500	1	10/19/23	10/20/23	
Total Xylenes	ND	0.0250	1	10/19/23	10/20/23	
Surrogate: 4-Bromochlorobenzene-PID		*95.9 %*	*70-130*	*10/19/23*	*10/20/23*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: RKS			Batch: 2342089
Gasoline Range Organics (C6-C10)	ND	20.0	1	10/19/23	10/20/23	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*90.3 %*	*70-130*	*10/19/23*	*10/20/23*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: KM			Batch: 2342090
Diesel Range Organics (C10-C28)	ND	25.0	1	10/19/23	10/19/23	
Oil Range Organics (C28-C36)	ND	50.0	1	10/19/23	10/19/23	
Surrogate: n-Nonane		*96.7 %*	*50-200*	*10/19/23*	*10/19/23*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: IY			Batch: 2342077
Chloride	**55.2**	20.0	1	10/19/23	10/20/23	

Sample Data

Hilcorp Energy Co	Project Name:	LC Kelly 1E	
PO Box 61529	Project Number:	17051-0002	**Reported:**
Houston TX, 77208	Project Manager:	Stuart Hyde	10/20/2023 2:19:54PM

BH09 @ 30'

E310177-02

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg	Analyst: RKS			Batch: 2342089
Benzene	ND	0.0250	1	10/19/23	10/19/23	
Ethylbenzene	ND	0.0250	1	10/19/23	10/19/23	
Toluene	ND	0.0250	1	10/19/23	10/19/23	
o-Xylene	ND	0.0250	1	10/19/23	10/19/23	
p,m-Xylene	ND	0.0500	1	10/19/23	10/19/23	
Total Xylenes	ND	0.0250	1	10/19/23	10/19/23	
Surrogate: 4-Bromochlorobenzene-PID		*93.9 %*	*70-130*	*10/19/23*	*10/19/23*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: RKS			Batch: 2342089
Gasoline Range Organics (C6-C10)	ND	20.0	1	10/19/23	10/19/23	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*90.4 %*	*70-130*	*10/19/23*	*10/19/23*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: KM			Batch: 2342090
Diesel Range Organics (C10-C28)	ND	25.0	1	10/19/23	10/19/23	
Oil Range Organics (C28-C36)	ND	50.0	1	10/19/23	10/19/23	
Surrogate: n-Nonane		*95.1 %*	*50-200*	*10/19/23*	*10/19/23*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: IY			Batch: 2342077
Chloride	**44.0**	20.0	1	10/19/23	10/19/23	

Sample Data

Hilcorp Energy Co	Project Name:	LC Kelly 1E	
PO Box 61529	Project Number:	17051-0002	**Reported:**
Houston TX, 77208	Project Manager:	Stuart Hyde	10/20/2023 2:19:54PM

BH09 @ 35'

E310177-03

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg	Analyst: RKS			Batch: 2342089
Benzene	ND	0.0250	1	10/19/23	10/20/23	
Ethylbenzene	**0.0537**	0.0250	1	10/19/23	10/20/23	
Toluene	**0.0702**	0.0250	1	10/19/23	10/20/23	
o-Xylene	**0.0999**	0.0250	1	10/19/23	10/20/23	
p,m-Xylene	**0.696**	0.0500	1	10/19/23	10/20/23	
Total Xylenes	**0.796**	0.0250	1	10/19/23	10/20/23	
Surrogate: 4-Bromochlorobenzene-PID		*99.8 %*	*70-130*	*10/19/23*	*10/20/23*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: RKS			Batch: 2342089
Gasoline Range Organics (C6-C10)	ND	20.0	1	10/19/23	10/20/23	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*89.9 %*	*70-130*	*10/19/23*	*10/20/23*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: KM			Batch: 2342090
Diesel Range Organics (C10-C28)	ND	25.0	1	10/19/23	10/19/23	
Oil Range Organics (C28-C36)	ND	50.0	1	10/19/23	10/19/23	
Surrogate: n-Nonane		*98.0 %*	*50-200*	*10/19/23*	*10/19/23*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: IY			Batch: 2342077
Chloride	**27.7**	20.0	1	10/19/23	10/20/23	

Sample Data

Hilcorp Energy Co	Project Name:	LC Kelly 1E	
PO Box 61529	Project Number:	17051-0002	**Reported:**
Houston TX, 77208	Project Manager:	Stuart Hyde	10/20/2023 2:19:54PM

BH09 @ 40'

E310177-04

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg	Analyst: RKS			Batch: 2342089
Benzene	ND	0.0250	1	10/19/23	10/20/23	
Ethylbenzene	**0.0435**	0.0250	1	10/19/23	10/20/23	
Toluene	**0.138**	0.0250	1	10/19/23	10/20/23	
o-Xylene	**0.0981**	0.0250	1	10/19/23	10/20/23	
p,m-Xylene	**0.492**	0.0500	1	10/19/23	10/20/23	
Total Xylenes	**0.590**	0.0250	1	10/19/23	10/20/23	
Surrogate: 4-Bromochlorobenzene-PID		*97.1 %*	*70-130*	*10/19/23*	*10/20/23*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: RKS			Batch: 2342089
Gasoline Range Organics (C6-C10)	ND	20.0	1	10/19/23	10/20/23	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*89.6 %*	*70-130*	*10/19/23*	*10/20/23*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: KM			Batch: 2342090
Diesel Range Organics (C10-C28)	ND	25.0	1	10/19/23	10/20/23	
Oil Range Organics (C28-C36)	ND	50.0	1	10/19/23	10/20/23	
Surrogate: n-Nonane		*92.1 %*	*50-200*	*10/19/23*	*10/20/23*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: IY			Batch: 2342077
Chloride	**23.6**	20.0	1	10/19/23	10/20/23	

Sample Data

Hilcorp Energy Co	Project Name:	LC Kelly 1E	
PO Box 61529	Project Number:	17051-0002	**Reported:**
Houston TX, 77208	Project Manager:	Stuart Hyde	10/20/2023 2:19:54PM

BH09 @ 45'

E310177-05

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg	Analyst: RKS			Batch: 2342089
Benzene	ND	0.0250	1	10/19/23	10/20/23	
Ethylbenzene	ND	0.0250	1	10/19/23	10/20/23	
Toluene	ND	0.0250	1	10/19/23	10/20/23	
o-Xylene	ND	0.0250	1	10/19/23	10/20/23	
p,m-Xylene	ND	0.0500	1	10/19/23	10/20/23	
Total Xylenes	ND	0.0250	1	10/19/23	10/20/23	
Surrogate: 4-Bromochlorobenzene-PID		*96.2 %*	*70-130*	*10/19/23*	*10/20/23*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: RKS			Batch: 2342089
Gasoline Range Organics (C6-C10)	ND	20.0	1	10/19/23	10/20/23	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*91.4 %*	*70-130*	*10/19/23*	*10/20/23*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: KM			Batch: 2342090
Diesel Range Organics (C10-C28)	ND	25.0	1	10/19/23	10/20/23	
Oil Range Organics (C28-C36)	ND	50.0	1	10/19/23	10/20/23	
Surrogate: n-Nonane		*91.6 %*	*50-200*	*10/19/23*	*10/20/23*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: IY			Batch: 2342077
Chloride	**24.1**	20.0	1	10/19/23	10/20/23	

QC Summary Data

Hilcorp Energy Co	Project Name:	LC Kelly 1E	**Reported:**
PO Box 61529	Project Number:	17051-0002	
Houston TX, 77208	Project Manager:	Stuart Hyde	10/20/2023 2:19:54PM

Volatile Organics by EPA 8021B

Analyst: RKS

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	
Blank (2342089-BLK1)									Prepared: 10/19/23 Analyzed: 10/20/23
Benzene	ND	0.0250							
Ethylbenzene	ND	0.0250							
Toluene	ND	0.0250							
o-Xylene	ND	0.0250							
p,m-Xylene	ND	0.0500							
Total Xylenes	ND	0.0250							
Surrogate: 4-Bromochlorobenzene-PID	*7.60*		*8.00*		*95.0*	*70-130*			
LCS (2342089-BS1)									Prepared: 10/19/23 Analyzed: 10/20/23
Benzene	4.72	0.0250	5.00		94.4	70-130			
Ethylbenzene	4.53	0.0250	5.00		90.5	70-130			
Toluene	4.71	0.0250	5.00		94.2	70-130			
o-Xylene	4.67	0.0250	5.00		93.3	70-130			
p,m-Xylene	9.37	0.0500	10.0		93.7	70-130			
Total Xylenes	14.0	0.0250	15.0		93.5	70-130			
Surrogate: 4-Bromochlorobenzene-PID	*7.67*		*8.00*		*95.9*	*70-130*			
Matrix Spike (2342089-MS1)				**Source: E310177-01**					Prepared: 10/19/23 Analyzed: 10/20/23
Benzene	4.70	0.0250	5.00	ND	93.9	54-133			
Ethylbenzene	4.49	0.0250	5.00	ND	89.8	61-133			
Toluene	4.68	0.0250	5.00	ND	93.5	61-130			
o-Xylene	4.64	0.0250	5.00	ND	92.7	63-131			
p,m-Xylene	9.29	0.0500	10.0	ND	92.9	63-131			
Total Xylenes	13.9	0.0250	15.0	ND	92.8	63-131			
Surrogate: 4-Bromochlorobenzene-PID	*7.68*		*8.00*		*96.0*	*70-130*			
Matrix Spike Dup (2342089-MSD1)				**Source: E310177-01**					Prepared: 10/19/23 Analyzed: 10/20/23
Benzene	4.98	0.0250	5.00	ND	99.5	54-133	5.80	20	
Ethylbenzene	4.77	0.0250	5.00	ND	95.4	61-133	6.00	20	
Toluene	4.96	0.0250	5.00	ND	99.2	61-130	5.89	20	
o-Xylene	4.90	0.0250	5.00	ND	97.9	63-131	5.45	20	
p,m-Xylene	9.85	0.0500	10.0	ND	98.5	63-131	5.82	20	
Total Xylenes	14.7	0.0250	15.0	ND	98.3	63-131	5.70	20	
Surrogate: 4-Bromochlorobenzene-PID	*7.67*		*8.00*		*95.9*	*70-130*			

QC Summary Data

Hilcorp Energy Co	Project Name:	LC Kelly 1E	**Reported:**
PO Box 61529	Project Number:	17051-0002	
Houston TX, 77208	Project Manager:	Stuart Hyde	10/20/2023 2:19:54PM

Nonhalogenated Organics by EPA 8015D - GRO

Analyst: RKS

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	
Blank (2342089-BLK1)									Prepared: 10/19/23 Analyzed: 10/20/23
Gasoline Range Organics (C6-C10)	ND	20.0							
Surrogate: 1-Chloro-4-fluorobenzene-FID	*7.25*		*8.00*		*90.6*	*70-130*			
LCS (2342089-BS2)									Prepared: 10/19/23 Analyzed: 10/20/23
Gasoline Range Organics (C6-C10)	46.4	20.0	50.0		92.8	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	*7.34*		*8.00*		*91.7*	*70-130*			
Matrix Spike (2342089-MS2)				**Source: E310177-01**					Prepared: 10/19/23 Analyzed: 10/20/23
Gasoline Range Organics (C6-C10)	45.3	20.0	50.0	ND	90.6	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	*7.33*		*8.00*		*91.6*	*70-130*			
Matrix Spike Dup (2342089-MSD2)				**Source: E310177-01**					Prepared: 10/19/23 Analyzed: 10/20/23
Gasoline Range Organics (C6-C10)	44.9	20.0	50.0	ND	89.7	70-130	0.938	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	*7.34*		*8.00*		*91.8*	*70-130*			

QC Summary Data

Hilcorp Energy Co	Project Name:	LC Kelly 1E	**Reported:**
PO Box 61529	Project Number:	17051-0002	
Houston TX, 77208	Project Manager:	Stuart Hyde	10/20/2023 2:19:54PM

Nonhalogenated Organics by EPA 8015D - DRO/ORO

Analyst: KM

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	
Blank (2342090-BLK1)									Prepared: 10/19/23 Analyzed: 10/19/23
Diesel Range Organics (C10-C28)	ND	25.0							
Oil Range Organics (C28-C36)	ND	50.0							
Surrogate: n-Nonane	*50.6*		*50.0*		*101*	*50-200*			
LCS (2342090-BS1)									Prepared: 10/19/23 Analyzed: 10/19/23
Diesel Range Organics (C10-C28)	253	25.0	250		101	38-132			
Surrogate: n-Nonane	*53.5*		*50.0*		*107*	*50-200*			
Matrix Spike (2342090-MS1)				**Source: E310177-04**					Prepared: 10/19/23 Analyzed: 10/19/23
Diesel Range Organics (C10-C28)	263	25.0	250	ND	105	38-132			
Surrogate: n-Nonane	*50.2*		*50.0*		*100*	*50-200*			
Matrix Spike Dup (2342090-MSD1)				**Source: E310177-04**					Prepared: 10/19/23 Analyzed: 10/19/23
Diesel Range Organics (C10-C28)	265	25.0	250	ND	106	38-132	0.508	20	
Surrogate: n-Nonane	*52.2*		*50.0*		*104*	*50-200*			

QC Summary Data

Hilcorp Energy Co	Project Name:	LC Kelly 1E	**Reported:**
PO Box 61529	Project Number:	17051-0002	
Houston TX, 77208	Project Manager:	Stuart Hyde	10/20/2023 2:19:54PM

Anions by EPA 300.0/9056A

Analyst: IY

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	
Blank (2342077-BLK1)									Prepared: 10/19/23 Analyzed: 10/20/23
Chloride	ND	20.0							
LCS (2342077-BS1)									Prepared: 10/19/23 Analyzed: 10/20/23
Chloride	253	20.0	250		101	90-110			
Matrix Spike (2342077-MS1)				**Source: E310127-01**					Prepared: 10/19/23 Analyzed: 10/20/23
Chloride	688	20.0	250	253	174	80-120			M1
Matrix Spike Dup (2342077-MSD1)				**Source: E310127-01**					Prepared: 10/19/23 Analyzed: 10/20/23
Chloride	732	20.0	250	253	192	80-120	6.32	20	M1

QC Summary Report Comment:
Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

Definitions and Notes

Hilcorp Energy Co	Project Name:	LC Kelly 1E	
PO Box 61529	Project Number:	17051-0002	**Reported:**
Houston TX, 77208	Project Manager:	Stuart Hyde	10/20/23 14:19

M1	Matrix spike recovery was above acceptance limits. The associated LCS spike recovery was acceptable.
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
RPD	Relative Percent Difference
DNI	Did Not Ignite
DNR	Did not react with the addition of acid or base.

Note (1): Methods marked with ** are non-accredited methods.

Note (2): Soil data is reported on an "as received" weight basis, unless reported otherwise.

Chain of Custody

Client Information	Invoice Information	Lab Use Only	TAT	State
Client: Hilcorp	Company: Hilcorp	Lab WO# E310177	Job Number 17051-0002	1D 2D 3D Std: X	NM X CO UT TX
Project Name: Stuart Hyde	Address: 1111 Travis St			
Project Manager: JC Kelly TE	City, State, Zip: Houston TX			
Address:	Phone: 713-757-5247			
City, State, Zip:	Email: mkillough@hilcorp			
Phone:	Miscellaneous: Area 2			
Email: shyde@ensolum.com				

Sample Information

Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Field Filter	Lab Number	DRO/ORO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Chloride 300.0	BGDOC - NM	TCEQ 1005 - TX	RCRA 8 Metals	Remarks
1100	10/18/23	Soil	1-4oz	BH09 @ 25'		1	X	X	X						Standard TAT
1115	↓	↓	↓	BH09 @ 30'		2	X	X	X						☆Rush TAT
1130				BH09 @ 35'		3	X	X	X						Standard TAT
1200				BH09 @ 40'		4	X	X	X						↓
1330				BH09 @ 45'		5	X	X	X						

Analysis and Method

EPA Program: SDWA | CWA | RCRA

Compliance Y or N

PWSID #

Additional Instructions: Rush results by 10/20 AM via ice in cooler.

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.

Sampled by: AJ Thomson by 10/20 AM

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	10-19-23	11:08	Irene Zoz	10/19/23	11:08
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Lab Use Only

Received on ice: (Y) / N

T1 _____ T2 _____ T3 _____

AVG Temp °C 4.0

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other _____

Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 14 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.

envirotech

Envirotech Analytical Laboratory

Printed: 10/19/2023 11:28:57AM

Sample Receipt Checklist (SRC)

Instructions: Please take note of any NO checkmarks.
If we receive no response concerning these items within 24 hours of the date of this notice, all the samples will be analyzed as requested.

Client:	Hilcorp Energy Co	Date Received:	10/19/23 11:08	Work Order ID:	E310177
Phone:	-	Date Logged In:	10/19/23 11:23	Logged In By:	Caitlin Mars
Email:	shyde@ensolum.com	Due Date:	10/20/23 17:00 (1 day TAT)		

Chain of Custody (COC)

1. Does the sample ID match the COC?	Yes	
2. Does the number of samples per sampling site location match the COC	Yes	
3. Were samples dropped off by client or carrier?	Yes	Carrier: Reese
4. Was the COC complete, i.e., signatures, dates/times, requested analyses?	Yes	
5. Were all samples received within holding time? Note: Analysis, such as pH which should be conducted in the field, i.e, 15 minute hold time, are not included in this disucssion.	Yes	

Sample Turn Around Time (TAT)

6. Did the COC indicate standard TAT, or Expedited TAT?	Yes	

Sample Cooler

7. Was a sample cooler received?	Yes	
8. If yes, was cooler received in good condition?	Yes	
9. Was the sample(s) received intact, i.e., not broken?	Yes	
10. Were custody/security seals present?	No	
11. If yes, were custody/security seals intact?	NA	
12. Was the sample received on ice? If yes, the recorded temp is 4°C, i.e., 6°±2°C Note: Thermal preservation is not required, if samples are received w/i 15 minutes of sampling	Yes	
13. If no visible ice, record the temperature. Actual sample temperature: 4°C		

Sample Container

14. Are aqueous VOC samples present?	No	
15. Are VOC samples collected in VOA Vials?	NA	
16. Is the head space less than 6-8 mm (pea sized or less)?	NA	
17. Was a trip blank (TB) included for VOC analyses?	NA	
18. Are non-VOC samples collected in the correct containers?	Yes	
19. Is the appropriate volume/weight or number of sample containers collected?	Yes	

Field Label

20. Were field sample labels filled out with the minimum information:		
Sample ID?	Yes	
Date/Time Collected?	Yes	
Collectors name?	Yes	

Sample Preservation

21. Does the COC or field labels indicate the samples were preserved?	No	
22. Are sample(s) correctly preserved?	NA	
24. Is lab filteration required and/or requested for dissolved metals?	No	

Multiphase Sample Matrix

26. Does the sample have more than one phase, i.e., multiphase?	No	
27. If yes, does the COC specify which phase(s) is to be analyzed?	NA	

Subcontract Laboratory

28. Are samples required to get sent to a subcontract laboratory?	No	
29. Was a subcontract laboratory specified by the client and if so who?	NA	Subcontract Lab: na

Comments/Resolution

Client remarks: Sample 1,3,4,5 Standard TAT. Sample #2 Rush TAT

Client Instruction

Signature of client authorizing changes to the COC or sample disposition.

Date

envirotech Inc.

Chain of Custody

Client Information	Invoice Information	Lab Use Only	TAT	State
Client: Hilcorp	Company: Hilcorp	Lab WO# E31077	Job Number 70SI-0002	1D 2D 3D Std: X		NM: X CO UT TX
Project Name: Stuart Hyde	Address: 1111 Travis St					
Project Manager: K Kelly TE	City, State, Zip: Houston TX					
Address:	Phone: 713-757-5047					
City, State, Zip:	Email: kkillough@hilcorp					
Phone:	Miscellaneous: Area 2					
Email: shyde@ensolum.com						

Sample Information

Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Field Filter	Lab Number	DRO/ORO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Chloride 300.0	BGDOC - NM	TCEQ 1005 - TX	RCRA 8 Metals	Remarks
1100	10/18/23	Soil	1-4oz	BH09 @ 25'		1	X	X	X		X				Standard TAT
1115	↓	↓	↓	BH09 @ 30'		2	X	X	X		X				☒ Rush TAT
1130				BH09 @ 35'		3	X	X	X		X				Standard TAT
1200				BH09 @ 40'		4	X	X	X		X				↓
1330				BH09 @ 45'		5	X	X	X		X				Client asked to add Chlorides. 10/19/23 CM

Analysis and Method

EPA Program

SDWA	CWA	RCRA

Compliance: Y or N

PWSID #

Additional Instructions: Rush results by 10/20 AM via Ice in cooler.

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.

Sampled by: AJ Thomson ~~by 10/20 AM~~

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	10-19-23	11:08	Irene Hernandez	10/19/23	11:08
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Lab Use Only

Received on ice: (Y) / N

T1 T2 T3

AVG Temp °C 4.0

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other _____

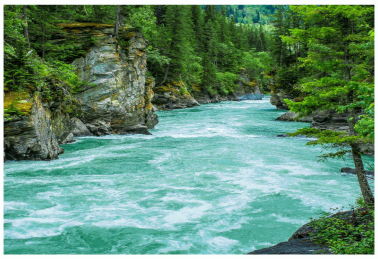
Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 14 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.

envirotech

Report to:

Stuart Hyde



5796 U.S. Hwy 64
Farmington, NM 87401

Phone: (505) 632-1881
Envirotech-inc.com

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Practical Solutions for a Better Tomorrow

Analytical Report

Hilcorp Energy Co

Project Name:	LC Kelly 1E
Work Order:	E310181
Job Number:	17051-0002
Received:	10/19/2023

Revision: 1

Report Reviewed By:

Walter Hinchman
Laboratory Director
10/26/23

Envirotech Inc. certifies the test results meet all requirements of TNI unless noted otherwise.
Statement of Data Authenticity: Envirotech Inc, attests the data reported has not been altered in any way.
Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech Inc.
Envirotech Inc, holds the Utah TNI certification NM00979 for data reported.
Envirotech Inc, holds the Texas TNI certification T104704557 for data reported.

Date Reported: 10/26/23

Stuart Hyde
PO Box 61529
Houston, TX 77208

Project Name: LC Kelly 1E
Workorder: E310181
Date Received: 10/19/2023 4:15:00PM

Stuart Hyde,

Thank you for choosing Envirotech, Inc. as your analytical testing laboratory for the sample(s) received on, 10/19/2023 4:15:00PM, under the Project Name: LC Kelly 1E.

The analytical test results summarized in this report with the Project Name: LC Kelly 1E apply to the individual samples collected, identified and submitted bearing the project name on the enclosed chain-of-custody. Subcontracted sample analyses not conducted by Envirotech, Inc., are attached in full as issued by the subcontract laboratory.

Please review the Chain-of-Custody (COC) and Sample Receipt Checklist (SRC) for any issues reguarding sample receipt temperature, containers, preservation etc. To best understand your test results, review the entire report summarizing your sample data and the associated quality control batch data.

All reported data in this analytical report were analyzed according to the referenced method(s) and are in compliance with the latest NELAC/TNI standards, unless otherwise noted. Samples or analytical quality control parameters not meeting specific QC criteria are qualified with a data flag. Data flag definitions are located in the Notes and Definitions section of this analytical report.

If you have any questions concerning this report, please feel free to contact Envirotech, Inc.

Respectfully,

Walter Hinchman
Laboratory Director
Office: 505-632-1881
Cell: 775-287-1762
whinchman@envirotech-inc.com

Raina Schwanz
Laboratory Administrator
Office: 505-632-1881
rainaschwanz@envirotech-inc.com

Alexa Michaels
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labadmin@envirotech-inc.com

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mgonzales@envirotech-inc.com

Envirotech Web Address: www.envirotech-inc.com

Table of Contents

Sample Summary

Hilcorp Energy Co	Project Name:	LC Kelly 1E	**Reported:**
PO Box 61529	Project Number:	17051-0002	
Houston TX, 77208	Project Manager:	Stuart Hyde	10/26/23 14:15

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
BH10 @ 5'	E310181-01A	Soil	10/18/23	10/19/23	Glass Jar, 4 oz.
BH10 @ 10'	E310181-02A	Soil	10/18/23	10/19/23	Glass Jar, 4 oz.
BH10 @ 25'	E310181-03A	Soil	10/18/23	10/19/23	Glass Jar, 4 oz.
BH10 @ 35'	E310181-04A	Soil	10/18/23	10/19/23	Glass Jar, 4 oz.
BH11 @ 25'	E310181-05A	Soil	10/18/23	10/19/23	Glass Jar, 4 oz.
BH11 @ 30'	E310181-06A	Soil	10/18/23	10/19/23	Glass Jar, 4 oz.
BH11 @ 40'	E310181-07A	Soil	10/18/23	10/19/23	Glass Jar, 4 oz.
BH11 @ 45'	E310181-08A	Soil	10/18/23	10/19/23	Glass Jar, 4 oz.

Sample Data

Hilcorp Energy Co	Project Name:	LC Kelly 1E	
PO Box 61529	Project Number:	17051-0002	**Reported:**
Houston TX, 77208	Project Manager:	Stuart Hyde	10/26/2023 2:15:36PM

BH10 @ 5'

E310181-01

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg	Analyst: RKS			Batch: 2342089
Benzene	ND	0.0250	1	10/19/23	10/20/23	
Ethylbenzene	ND	0.0250	1	10/19/23	10/20/23	
Toluene	ND	0.0250	1	10/19/23	10/20/23	
o-Xylene	ND	0.0250	1	10/19/23	10/20/23	
p,m-Xylene	ND	0.0500	1	10/19/23	10/20/23	
Total Xylenes	ND	0.0250	1	10/19/23	10/20/23	
Surrogate: 4-Bromochlorobenzene-PID		*96.4 %*	*70-130*	*10/19/23*	*10/20/23*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: RKS			Batch: 2342089
Gasoline Range Organics (C6-C10)	ND	20.0	1	10/19/23	10/20/23	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*88.4 %*	*70-130*	*10/19/23*	*10/20/23*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: KM			Batch: 2342115
Diesel Range Organics (C10-C28)	ND	25.0	1	10/20/23	10/20/23	
Oil Range Organics (C28-C36)	ND	50.0	1	10/20/23	10/20/23	
Surrogate: n-Nonane		*106 %*	*50-200*	*10/20/23*	*10/20/23*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: RAS			Batch: 2343051
Chloride	ND	20.0	1	10/24/23	10/25/23	

Sample Data

Hilcorp Energy Co	Project Name:	LC Kelly 1E	
PO Box 61529	Project Number:	17051-0002	**Reported:**
Houston TX, 77208	Project Manager:	Stuart Hyde	10/26/2023 2:15:36PM

BH10 @ 10'

E310181-02

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg	Analyst: RKS			Batch: 2342089
Benzene	ND	0.0250	1	10/19/23	10/20/23	
Ethylbenzene	ND	0.0250	1	10/19/23	10/20/23	
Toluene	ND	0.0250	1	10/19/23	10/20/23	
o-Xylene	ND	0.0250	1	10/19/23	10/20/23	
p,m-Xylene	ND	0.0500	1	10/19/23	10/20/23	
Total Xylenes	ND	0.0250	1	10/19/23	10/20/23	
Surrogate: 4-Bromochlorobenzene-PID		*96.4 %*	*70-130*	*10/19/23*	*10/20/23*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: RKS			Batch: 2342089
Gasoline Range Organics (C6-C10)	ND	20.0	1	10/19/23	10/20/23	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*87.4 %*	*70-130*	*10/19/23*	*10/20/23*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: KM			Batch: 2342115
Diesel Range Organics (C10-C28)	ND	25.0	1	10/20/23	10/21/23	
Oil Range Organics (C28-C36)	ND	50.0	1	10/20/23	10/21/23	
Surrogate: n-Nonane		*107 %*	*50-200*	*10/20/23*	*10/21/23*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: RAS			Batch: 2343051
Chloride	ND	20.0	1	10/24/23	10/25/23	

Sample Data

Hilcorp Energy Co	Project Name:	LC Kelly 1E	
PO Box 61529	Project Number:	17051-0002	**Reported:**
Houston TX, 77208	Project Manager:	Stuart Hyde	10/26/2023 2:15:36PM

BH10 @ 25'

E310181-03

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg	Analyst: RKS			Batch: 2342089
Benzene	ND	0.0250	1	10/19/23	10/20/23	
Ethylbenzene	ND	0.0250	1	10/19/23	10/20/23	
Toluene	ND	0.0250	1	10/19/23	10/20/23	
o-Xylene	ND	0.0250	1	10/19/23	10/20/23	
p,m-Xylene	ND	0.0500	1	10/19/23	10/20/23	
Total Xylenes	ND	0.0250	1	10/19/23	10/20/23	
Surrogate: 4-Bromochlorobenzene-PID		*95.5 %*	*70-130*	*10/19/23*	*10/20/23*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: RKS			Batch: 2342089
Gasoline Range Organics (C6-C10)	ND	20.0	1	10/19/23	10/20/23	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*89.0 %*	*70-130*	*10/19/23*	*10/20/23*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: KM			Batch: 2342115
Diesel Range Organics (C10-C28)	ND	25.0	1	10/20/23	10/21/23	
Oil Range Organics (C28-C36)	ND	50.0	1	10/20/23	10/21/23	
Surrogate: n-Nonane		*105 %*	*50-200*	*10/20/23*	*10/21/23*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: RAS			Batch: 2343051
Chloride	ND	20.0	1	10/24/23	10/25/23	

Sample Data

Hilcorp Energy Co	Project Name:	LC Kelly 1E	
PO Box 61529	Project Number:	17051-0002	**Reported:**
Houston TX, 77208	Project Manager:	Stuart Hyde	10/26/2023 2:15:36PM

BH10 @ 35'

E310181-04

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg	Analyst: RKS			Batch: 2342089
Benzene	ND	0.0250	1	10/19/23	10/20/23	
Ethylbenzene	ND	0.0250	1	10/19/23	10/20/23	
Toluene	ND	0.0250	1	10/19/23	10/20/23	
o-Xylene	ND	0.0250	1	10/19/23	10/20/23	
p,m-Xylene	ND	0.0500	1	10/19/23	10/20/23	
Total Xylenes	ND	0.0250	1	10/19/23	10/20/23	
Surrogate: 4-Bromochlorobenzene-PID		*95.8 %*	*70-130*	*10/19/23*	*10/20/23*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: RKS			Batch: 2342089
Gasoline Range Organics (C6-C10)	ND	20.0	1	10/19/23	10/20/23	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*89.1 %*	*70-130*	*10/19/23*	*10/20/23*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: KM			Batch: 2342115
Diesel Range Organics (C10-C28)	ND	25.0	1	10/20/23	10/21/23	
Oil Range Organics (C28-C36)	ND	50.0	1	10/20/23	10/21/23	
Surrogate: n-Nonane		*108 %*	*50-200*	*10/20/23*	*10/21/23*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: RAS			Batch: 2343051
Chloride	ND	20.0	1	10/24/23	10/25/23	

Sample Data

Hilcorp Energy Co	Project Name:	LC Kelly 1E	
PO Box 61529	Project Number:	17051-0002	**Reported:**
Houston TX, 77208	Project Manager:	Stuart Hyde	10/26/2023 2:15:36PM

BH11 @ 25'

E310181-05

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg	Analyst: RKS			Batch: 2342089
Benzene	ND	0.0250	1	10/19/23	10/20/23	
Ethylbenzene	ND	0.0250	1	10/19/23	10/20/23	
Toluene	ND	0.0250	1	10/19/23	10/20/23	
o-Xylene	ND	0.0250	1	10/19/23	10/20/23	
p,m-Xylene	ND	0.0500	1	10/19/23	10/20/23	
Total Xylenes	ND	0.0250	1	10/19/23	10/20/23	
Surrogate: 4-Bromochlorobenzene-PID		*97.1 %*	*70-130*	*10/19/23*	*10/20/23*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: RKS			Batch: 2342089
Gasoline Range Organics (C6-C10)	ND	20.0	1	10/19/23	10/20/23	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*88.9 %*	*70-130*	*10/19/23*	*10/20/23*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: KM			Batch: 2342115
Diesel Range Organics (C10-C28)	**25.4**	25.0	1	10/20/23	10/21/23	
Oil Range Organics (C28-C36)	ND	50.0	1	10/20/23	10/21/23	
Surrogate: n-Nonane		*104 %*	*50-200*	*10/20/23*	*10/21/23*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: RAS			Batch: 2343051
Chloride	ND	20.0	1	10/24/23	10/25/23	

Sample Data

Hilcorp Energy Co	Project Name:	LC Kelly 1E	
PO Box 61529	Project Number:	17051-0002	**Reported:**
Houston TX, 77208	Project Manager:	Stuart Hyde	10/26/2023 2:15:36PM

BH11 @ 30'

E310181-06

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg	Analyst: RKS			Batch: 2342089
Benzene	ND	0.0250	1	10/19/23	10/20/23	
Ethylbenzene	ND	0.0250	1	10/19/23	10/20/23	
Toluene	ND	0.0250	1	10/19/23	10/20/23	
o-Xylene	ND	0.0250	1	10/19/23	10/20/23	
p,m-Xylene	ND	0.0500	1	10/19/23	10/20/23	
Total Xylenes	ND	0.0250	1	10/19/23	10/20/23	
Surrogate: 4-Bromochlorobenzene-PID		*95.5 %*	*70-130*	*10/19/23*	*10/20/23*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: RKS			Batch: 2342089
Gasoline Range Organics (C6-C10)	ND	20.0	1	10/19/23	10/20/23	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*90.0 %*	*70-130*	*10/19/23*	*10/20/23*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: KM			Batch: 2342115
Diesel Range Organics (C10-C28)	ND	25.0	1	10/20/23	10/21/23	
Oil Range Organics (C28-C36)	ND	50.0	1	10/20/23	10/21/23	
Surrogate: n-Nonane		*110 %*	*50-200*	*10/20/23*	*10/21/23*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: RAS			Batch: 2343051
Chloride	ND	20.0	1	10/24/23	10/25/23	

Sample Data

Hilcorp Energy Co	Project Name:	LC Kelly 1E	
PO Box 61529	Project Number:	17051-0002	**Reported:**
Houston TX, 77208	Project Manager:	Stuart Hyde	10/26/2023 2:15:36PM

BH11 @ 40'

E310181-07

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg	Analyst: RKS			Batch: 2342089
Benzene	ND	0.0250	1	10/19/23	10/20/23	
Ethylbenzene	ND	0.0250	1	10/19/23	10/20/23	
Toluene	ND	0.0250	1	10/19/23	10/20/23	
o-Xylene	ND	0.0250	1	10/19/23	10/20/23	
p,m-Xylene	ND	0.0500	1	10/19/23	10/20/23	
Total Xylenes	ND	0.0250	1	10/19/23	10/20/23	
Surrogate: 4-Bromochlorobenzene-PID		*95.4 %*	*70-130*	*10/19/23*	*10/20/23*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: RKS			Batch: 2342089
Gasoline Range Organics (C6-C10)	ND	20.0	1	10/19/23	10/20/23	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*90.2 %*	*70-130*	*10/19/23*	*10/20/23*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: KM			Batch: 2342115
Diesel Range Organics (C10-C28)	ND	25.0	1	10/20/23	10/21/23	
Oil Range Organics (C28-C36)	ND	50.0	1	10/20/23	10/21/23	
Surrogate: n-Nonane		*108 %*	*50-200*	*10/20/23*	*10/21/23*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: RAS			Batch: 2343051
Chloride	ND	20.0	1	10/24/23	10/25/23	

Sample Data

Hilcorp Energy Co	Project Name:	LC Kelly 1E	
PO Box 61529	Project Number:	17051-0002	**Reported:**
Houston TX, 77208	Project Manager:	Stuart Hyde	10/26/2023 2:15:36PM

BH11 @ 45'

E310181-08

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg	Analyst: RKS			Batch: 2342089
Benzene	ND	0.0250	1	10/19/23	10/20/23	
Ethylbenzene	ND	0.0250	1	10/19/23	10/20/23	
Toluene	ND	0.0250	1	10/19/23	10/20/23	
o-Xylene	ND	0.0250	1	10/19/23	10/20/23	
p,m-Xylene	ND	0.0500	1	10/19/23	10/20/23	
Total Xylenes	ND	0.0250	1	10/19/23	10/20/23	
Surrogate: 4-Bromochlorobenzene-PID		*95.2 %*	*70-130*	*10/19/23*	*10/20/23*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: RKS			Batch: 2342089
Gasoline Range Organics (C6-C10)	ND	20.0	1	10/19/23	10/20/23	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*89.4 %*	*70-130*	*10/19/23*	*10/20/23*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: KM			Batch: 2342115
Diesel Range Organics (C10-C28)	ND	25.0	1	10/20/23	10/21/23	
Oil Range Organics (C28-C36)	ND	50.0	1	10/20/23	10/21/23	
Surrogate: n-Nonane		*100 %*	*50-200*	*10/20/23*	*10/21/23*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: RAS			Batch: 2343051
Chloride	ND	20.0	1	10/24/23	10/25/23	

QC Summary Data

Hilcorp Energy Co	Project Name:	LC Kelly 1E	**Reported:**
PO Box 61529	Project Number:	17051-0002	
Houston TX, 77208	Project Manager:	Stuart Hyde	10/26/2023 2:15:36PM

Volatile Organics by EPA 8021B

Analyst: RKS

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	
Blank (2342089-BLK1)									Prepared: 10/19/23 Analyzed: 10/20/23
Benzene	ND	0.0250							
Ethylbenzene	ND	0.0250							
Toluene	ND	0.0250							
o-Xylene	ND	0.0250							
p,m-Xylene	ND	0.0500							
Total Xylenes	ND	0.0250							
Surrogate: 4-Bromochlorobenzene-PID	*7.60*		*8.00*		*95.0*	*70-130*			
LCS (2342089-BS1)									Prepared: 10/19/23 Analyzed: 10/20/23
Benzene	4.72	0.0250	5.00		94.4	70-130			
Ethylbenzene	4.53	0.0250	5.00		90.5	70-130			
Toluene	4.71	0.0250	5.00		94.2	70-130			
o-Xylene	4.67	0.0250	5.00		93.3	70-130			
p,m-Xylene	9.37	0.0500	10.0		93.7	70-130			
Total Xylenes	14.0	0.0250	15.0		93.5	70-130			
Surrogate: 4-Bromochlorobenzene-PID	*7.67*		*8.00*		*95.9*	*70-130*			
Matrix Spike (2342089-MS1)				**Source: E310177-01**					Prepared: 10/19/23 Analyzed: 10/20/23
Benzene	4.70	0.0250	5.00	ND	93.9	54-133			
Ethylbenzene	4.49	0.0250	5.00	ND	89.8	61-133			
Toluene	4.68	0.0250	5.00	ND	93.5	61-130			
o-Xylene	4.64	0.0250	5.00	ND	92.7	63-131			
p,m-Xylene	9.29	0.0500	10.0	ND	92.9	63-131			
Total Xylenes	13.9	0.0250	15.0	ND	92.8	63-131			
Surrogate: 4-Bromochlorobenzene-PID	*7.68*		*8.00*		*96.0*	*70-130*			
Matrix Spike Dup (2342089-MSD1)				**Source: E310177-01**					Prepared: 10/19/23 Analyzed: 10/20/23
Benzene	4.98	0.0250	5.00	ND	99.5	54-133	5.80	20	
Ethylbenzene	4.77	0.0250	5.00	ND	95.4	61-133	6.00	20	
Toluene	4.96	0.0250	5.00	ND	99.2	61-130	5.89	20	
o-Xylene	4.90	0.0250	5.00	ND	97.9	63-131	5.45	20	
p,m-Xylene	9.85	0.0500	10.0	ND	98.5	63-131	5.82	20	
Total Xylenes	14.7	0.0250	15.0	ND	98.3	63-131	5.70	20	
Surrogate: 4-Bromochlorobenzene-PID	*7.67*		*8.00*		*95.9*	*70-130*			

QC Summary Data

Hilcorp Energy Co	Project Name:	LC Kelly 1E	**Reported:**
PO Box 61529	Project Number:	17051-0002	
Houston TX, 77208	Project Manager:	Stuart Hyde	10/26/2023 2:15:36PM

Nonhalogenated Organics by EPA 8015D - GRO

Analyst: RKS

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	
Blank (2342089-BLK1)									Prepared: 10/19/23 Analyzed: 10/20/23
Gasoline Range Organics (C6-C10)	ND	20.0							
Surrogate: 1-Chloro-4-fluorobenzene-FID	*7.25*		*8.00*		*90.6*	*70-130*			
LCS (2342089-BS2)									Prepared: 10/19/23 Analyzed: 10/20/23
Gasoline Range Organics (C6-C10)	46.4	20.0	50.0		92.8	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	*7.34*		*8.00*		*91.7*	*70-130*			
Matrix Spike (2342089-MS2)				**Source: E310177-01**					Prepared: 10/19/23 Analyzed: 10/20/23
Gasoline Range Organics (C6-C10)	45.3	20.0	50.0	ND	90.6	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	*7.33*		*8.00*		*91.6*	*70-130*			
Matrix Spike Dup (2342089-MSD2)				**Source: E310177-01**					Prepared: 10/19/23 Analyzed: 10/20/23
Gasoline Range Organics (C6-C10)	44.9	20.0	50.0	ND	89.7	70-130	0.938	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	*7.34*		*8.00*		*91.8*	*70-130*			

QC Summary Data

Hilcorp Energy Co	Project Name:	LC Kelly 1E	**Reported:**
PO Box 61529	Project Number:	17051-0002	
Houston TX, 77208	Project Manager:	Stuart Hyde	10/26/2023 2:15:36PM

Nonhalogenated Organics by EPA 8015D - DRO/ORO

Analyst: KM

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	
Blank (2342115-BLK1)									Prepared: 10/20/23 Analyzed: 10/20/23
Diesel Range Organics (C10-C28)	ND	25.0							
Oil Range Organics (C28-C36)	ND	50.0							
Surrogate: n-Nonane	*53.0*		*50.0*		*106*	*50-200*			
LCS (2342115-BS1)									Prepared: 10/20/23 Analyzed: 10/20/23
Diesel Range Organics (C10-C28)	276	25.0	250		110	38-132			
Surrogate: n-Nonane	*55.2*		*50.0*		*110*	*50-200*			
Matrix Spike (2342115-MS1)				**Source: E310181-06**					Prepared: 10/20/23 Analyzed: 10/20/23
Diesel Range Organics (C10-C28)	286	25.0	250	ND	115	38-132			
Surrogate: n-Nonane	*56.4*		*50.0*		*113*	*50-200*			
Matrix Spike Dup (2342115-MSD1)				**Source: E310181-06**					Prepared: 10/20/23 Analyzed: 10/20/23
Diesel Range Organics (C10-C28)	275	25.0	250	ND	110	38-132	4.17	20	
Surrogate: n-Nonane	*53.6*		*50.0*		*107*	*50-200*			

QC Summary Data

Hilcorp Energy Co	Project Name:	LC Kelly 1E	**Reported:**
PO Box 61529	Project Number:	17051-0002	
Houston TX, 77208	Project Manager:	Stuart Hyde	10/26/2023 2:15:36PM

Anions by EPA 300.0/9056A

Analyst: RAS

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	
Blank (2343051-BLK1)									Prepared: 10/24/23 Analyzed: 10/25/23
Chloride	ND	20.0							
LCS (2343051-BS1)									Prepared: 10/24/23 Analyzed: 10/25/23
Chloride	248	20.0	250		99.1	90-110			
Matrix Spike (2343051-MS1)				**Source: E310181-01**					Prepared: 10/24/23 Analyzed: 10/25/23
Chloride	247	20.0	250	ND	98.9	80-120			
Matrix Spike Dup (2343051-MSD1)				**Source: E310181-01**					Prepared: 10/24/23 Analyzed: 10/25/23
Chloride	247	20.0	250	ND	98.8	80-120	0.173	20	

QC Summary Report Comment:
Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

Definitions and Notes

Hilcorp Energy Co	Project Name:	LC Kelly 1E	
PO Box 61529	Project Number:	17051-0002	**Reported:**
Houston TX, 77208	Project Manager:	Stuart Hyde	10/26/23 14:15

ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
RPD	Relative Percent Difference
DNI	Did Not Ignite
DNR	Did not react with the addition of acid or base.

Note (1): Methods marked with ** are non-accredited methods.

Note (2): Soil data is reported on an "as received" weight basis, unless reported otherwise.

Project Information | Chain of Custody | Page 1 of 1

Client: HilcorP	Bill To
Project: LC Kelly 1E	Attention: Mitch Killough
Project Manager: Stuart Hyde	Address: 1111 Travis St
Address:	City, State, Zip Houston, TX
City, State, Zip	Phone: 713-757-5247
Phone: 970-903-1607	Email: MKillough@hilcorp.com
Email: Shyde@ensolum.com	
Report due by: Standard	

Lab Use Only: Lab WO# E310181 | Job Number 17051-0002

TAT: 1D | 2D | 3D | Standard X

EPA Program: CWA | SDWA | RCRA

State: NM | CO | UT | AZ | TX

Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number	DRO/ORO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	Remarks
9:00	10-18	Soil	1	BH10@5'	1	X	X	X			X	
9:15	10-18	Soil	1	BH10@10'	2							
16:00	10-18	Soil	1	BH10@25'	3							
10:00	10-19	Soil	1	BH10@35'	4							
11:30	10-19	Soil	1	BH11@25'	5							
12:00	10-19	Soil	1	BH11@30'	6							
13:00	10-19	Soil	1	BH11@40'	7							
13:30	10-19	Soil	1	BH11@45'	8							

Additional Instructions:

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action. Sampled by: Al Thomson

Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	10-19-23	16:15		10/19/23	16:15
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Lab Use Only: Received on ice: (Y) / N; T1 ____ T2 ____ T3 ____; AVG Temp °C 4

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other ____

Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.

envirotech

Envirotech Analytical Laboratory

Printed: 10/19/2023 4:35:26PM

Sample Receipt Checklist (SRC)

Instructions: Please take note of any NO checkmarks.
If we receive no response concerning these items within 24 hours of the date of this notice, all the samples will be analyzed as requested.

Client:	Hilcorp Energy Co	Date Received:	10/19/23 16:15	Work Order ID:	E310181
Phone:	-	Date Logged In:	10/19/23 16:24	Logged In By:	Caitlin Mars
Email:	shyde@ensolum.com	Due Date:	10/26/23 17:00 (5 day TAT)		

Chain of Custody (COC)

1. Does the sample ID match the COC?	Yes	
2. Does the number of samples per sampling site location match the COC	Yes	
3. Were samples dropped off by client or carrier?	Yes	Carrier: Al Thompson
4. Was the COC complete, i.e., signatures, dates/times, requested analyses?	Yes	
5. Were all samples received within holding time? Note: Analysis, such as pH which should be conducted in the field, i.e, 15 minute hold time, are not included in this disucssion.	Yes	

Comments/Resolution

Sample Turn Around Time (TAT)

6. Did the COC indicate standard TAT, or Expedited TAT?	Yes

Sample Cooler

7. Was a sample cooler received?	Yes
8. If yes, was cooler received in good condition?	Yes
9. Was the sample(s) received intact, i.e., not broken?	Yes
10. Were custody/security seals present?	No
11. If yes, were custody/security seals intact?	NA
12. Was the sample received on ice? If yes, the recorded temp is 4°C, i.e., 6°±2°C Note: Thermal preservation is not required, if samples are received w/i 15 minutes of sampling	Yes
13. If no visible ice, record the temperature. Actual sample temperature: 4°C	

Sample Container

14. Are aqueous VOC samples present?	No
15. Are VOC samples collected in VOA Vials?	NA
16. Is the head space less than 6-8 mm (pea sized or less)?	NA
17. Was a trip blank (TB) included for VOC analyses?	NA
18. Are non-VOC samples collected in the correct containers?	Yes
19. Is the appropriate volume/weight or number of sample containers collected?	Yes

Field Label

20. Were field sample labels filled out with the minimum information:	
Sample ID?	Yes
Date/Time Collected?	Yes
Collectors name?	Yes

Sample Preservation

21. Does the COC or field labels indicate the samples were preserved?	No
22. Are sample(s) correctly preserved?	NA
24. Is lab filteration required and/or requested for dissolved metals?	No

Multiphase Sample Matrix

26. Does the sample have more than one phase, i.e., multiphase?	No
27. If yes, does the COC specify which phase(s) is to be analyzed?	NA

Subcontract Laboratory

28. Are samples required to get sent to a subcontract laboratory?	No	
29. Was a subcontract laboratory specified by the client and if so who?	NA	Subcontract Lab: NA

Client Instruction

Signature of client authorizing changes to the COC or sample disposition.

Date

envirotech Inc.

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Energy, Minerals and Natural Resources
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Santa Fe, NM 87505

QUESTIONS

Action 293036

QUESTIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 293036
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Prerequisites	
Incident ID (n#)	**nAPP2308124076**
Incident Name	**NAPP2308124076 L C KELLY 1E SVE @ 30-045-25349**
Incident Type	**Release Other**
Incident Status	**Remediation Plan Received**
Incident Well	**[30-045-25349] L C KELLY #001E**

Location of Release Source	
Please answer all the questions in this group.	
Site Name	L C KELLY 1E SVE
Date Release Discovered	03/08/2023
Surface Owner	Federal

Incident Details	
Please answer all the questions in this group.	
Incident Type	Release Other
Did this release result in a fire or is the result of a fire	No
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release	
Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.	
Crude Oil Released (bbls) Details	*Not answered.*
Produced Water Released (bbls) Details	Cause: Equipment Failure | Valve | Produced Water | Released: 10 BBL | Recovered: 0 BBL | Lost: 10 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	Yes
Condensate Released (bbls) Details	Cause: Equipment Failure | Valve | Condensate | Released: 35 BBL | Recovered: 0 BBL | Lost: 35 BBL.
Natural Gas Vented (Mcf) Details	*Not answered.*
Natural Gas Flared (Mcf) Details	*Not answered.*
Other Released Details	*Not answered.*
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	This release consisted of condensate (35.07 bbls) and produced water (10.02 bbls) fluids.

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QUESTIONS (continued)

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 293036
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QUESTIONS

Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	**No, according to supplied volumes this does not appear to be a "gas only" report.**
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	**Yes**
Reasons why this would be considered a submission for a notification of a major release	**From paragraph A. "Major release" determine using:** **(1) an unauthorized release of a volume, excluding gases, of 25 barrels or more.**
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.	

Initial Response	
The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury.	
The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	False
If all the actions described above have not been undertaken, explain why	The secondary containment berm prevented lateral movement of the fluids. However, the fluids had soaked into the ground surface underlying the bermed area and migrated vertically into the soil profile.
Per Paragraph (4) of Subsection B of 19.15.29.8 NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.	

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.

I hereby agree and sign off to the above statement	Name: Stuart Hyde Title: Senior Geologist Email: shyde@ensolum.com Date: 12/11/2023

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QUESTIONS (continued)

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 293036
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Site Characterization	
Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). 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 in feet below ground surface (ft bgs)	Between 100 and 500 (ft.)
What method was used to determine the depth to ground water	NM OSE iWaters Database Search
Did this release impact groundwater or surface water	No
What is the minimum distance, between the closest lateral extents of the release and the following surface areas:	
A continuously flowing watercourse or any other significant watercourse	Between 1000 (ft.) and ½ (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between ½ and 1 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Between 1 and 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between ½ and 1 (mi.)
Any other fresh water well or spring	Between ½ and 1 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Between ½ and 1 (mi.)
A wetland	Between 1000 (ft.) and ½ (mi.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Greater than 5 (mi.)
Categorize the risk of this well / site being in a karst geology	None
A 100-year floodplain	Between ½ and 1 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	No

Remediation Plan	
Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
Requesting a remediation plan approval with this submission	Yes
Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
Soil Contamination Sampling: (Provide the highest observable value for each, in milligrams per kilograms.)	
Chloride (EPA 300.0 or SM4500 Cl B)	56.3
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	6740
GRO+DRO (EPA SW-846 Method 8015M)	6740
BTEX (EPA SW-846 Method 8021B or 8260B)	673
Benzene (EPA SW-846 Method 8021B or 8260B)	12.2
Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.	
On what estimated date will the remediation commence	06/11/2024
On what date will (or did) the final sampling or liner inspection occur	12/11/2028
On what date will (or was) the remediation complete(d)	12/11/2028
What is the estimated surface area (in square feet) that will be reclaimed	0
What is the estimated volume (in cubic yards) that will be reclaimed	0
What is the estimated surface area (in square feet) that will be remediated	3000
What is the estimated volume (in cubic yards) that will be remediated	1500
These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.	
The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.	

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QUESTIONS (continued)

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 293036
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Remediation Plan (continued)	
Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:	
(Select all answers below that apply.)	
(Ex Situ) Excavation and **off-site** disposal (i.e. dig and haul, hydrovac, etc.)	*Not answered.*
(Ex Situ) Excavation and **on-site** remediation (i.e. On-Site Land Farms)	*Not answered.*
(In Situ) Soil Vapor Extraction	Yes
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	*Not answered.*
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	*Not answered.*
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	*Not answered.*
Ground Water Abatement pursuant to 19.15.30 NMAC	*Not answered.*
OTHER (Non-listed remedial process)	*Not answered.*
Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.	

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.

I hereby agree and sign off to the above statement	Name: Stuart Hyde Title: Senior Geologist Email: shyde@ensolum.com Date: 12/11/2023

The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.

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QUESTIONS (continued)

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	Action Number: 293036
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Deferral Requests Only	
Only answer the questions in this group if seeking a deferral upon approval this submission. Each of the following items must be confirmed as part of any request for deferral of remediation.	
Requesting a deferral of the remediation closure due date with the approval of this submission	No

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QUESTIONS (continued)

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 293036
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	***{Unavailable.}***

Remediation Closure Request	
Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.	
Requesting a remediation closure approval with this submission	No

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CONDITIONS

Action 293036

CONDITIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 293036
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

CONDITIONS

Created By	Condition	Condition Date
nvelez	See Conditions of Approval letter within report.	3/15/2024