



June 24, 2024

**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 Remediation Work Plan**

Moore LS 6B  
Incident Number: nAPP2206056316  
San Juan County, New Mexico  
Hilcorp Energy Company

To Whom it May Concern:

Ensolum, LLC (Ensolum), on behalf of Hilcorp Energy Company (Hilcorp), presents this *Updated Remediation Work Plan* for the Moore LS 6B natural gas production well (Site). The Site is located on private land in Section 25, Township 32 North, Range 12 West in San Juan County, New Mexico (Figure 1).

On February 14, 2022, Hilcorp discovered two bullet holes in the 268-barrel (bbl) condensate aboveground storage tank located within a bermed secondary containment at the Site (Figure 2). Based on tank-gauging data and the volume of fluid remaining in the tank, approximately 42 bbls of condensate were released from the tank and remained within the limits of the earthen secondary containment berm on the production pad. No fluids were recovered from the release. The initial footprint of visibly impacted soil was approximately 40 feet by 25 feet in lateral extent. Hilcorp provided verbal notification to the New Mexico Oil Conservation Division (NMOCD) on February 15, 2022, and submitted the initial C-141 on March 1, 2022.

Following the discovery of the release, Ensolum performed delineation activities at the Site to assess the vertical and lateral extent of impacts. Details regarding the delineation activities were provided in the *Site Characterization Report and Remediation Work Plan* prepared by Ensolum and dated July 8, 2022. Based on the Site characterization information presented in the July 8, 2022 report, the following closure criteria were applied based on the *Table I, Closure Criteria for Soils Impacted by a Release* presented in 19.15.29.12 of the New Mexico Administrative Code:

- Chloride: 10,000 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

Moore LS 6B  
2024 Updated Remediation Work Plan  
Hilcorp Energy Company



Based on the drilling and analytical results gathered during the delineation activities in May 2022, an estimated 500 cubic yards of soil were impacted by the condensate release to a depth of approximately 17 feet below ground surface (bgs). The impacts to soil appeared to correlate to the current footprint of the secondary containment. Data collected during the Site delineation were summarized in the *Site Characterization Report and Remediation Work Plan* dated July 8, 2022. Based on the nature of the release, favorable soil lithology, and the proximity of impacted soil to active equipment, Ensolum recommended pilot testing soil vapor extraction (SVE) techniques to remediate soil at the Site; however, based on the pilot test data collected in October 2022, SVE is not a viable remedial option for the Site using the existing Site wells. As such, an *Updated Remediation Work Plan* (dated December 8, 2022) was submitted to the NMOCD recommending excavation and off-Site disposal as the chosen remedial option for the Site. Pilot test results and the updated remediation work plan were presented in the *Updated Remediation Work Plan* dated December 8, 2022 and approved by the NMOCD on March 26, 2024.

## 2024 UPDATED REMEDIATION WORK PLAN

As presented in Ensolum's *Updated Remediation Work Plan* dated December 8, 2022, an estimated 500 cubic yards of impacted soil are present at the Site. The December 2022 work plan presented excavation and off-Site disposal as the chosen remedial action to address impacted soil; however, based on favorable siting criteria and well-pad conditions, Hilcorp is requesting to modify the remediation work plan to incorporate an on-Site small landfarm to treat impacted soil in lieu of hauling to material to a commercial landfarm. The operation of a small landfarm will reduce greenhouse gas emissions through the reduction of dump truck traffic hauling soil to the Envirotech commercial landfarm located 36 miles south of the Site. The reduction of heavy truck traffic will also mitigate dust, noise, roadway traffic, and safety concerns related to hauling.

As such, Hilcorp proposes to submit a registration for a small landfarm to the NMOCD Permitting Group to be constructed on the Moore LS 6B well pad. Upon approved by the landowner and the NMOCD Permitting Group, the small landfarm will be constructed in accordance with Title 19, Chapter 15, Part 36 of the New Mexico Administrative Code (NMAC). Once constructed, impacted soil will be excavated and placed into the small landfarm. Ensolum/Hilcorp will assess soil during excavation using a photoionization detector (PID) until field screening indicates impacted soil has been removed from the excavation. Five-point composite soil samples will be collected from the floor and sidewalls of the excavation at a frequency of one sample every 200 square feet.

The five-point composite samples will be collected by placing five equivalent aliquots of soil into a one-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Based on previous analytical results and no prior Closure Criteria exceedances of chloride, Hilcorp is requesting soil samples only be analyzed for TPH following United States Environmental Protection Agency (EPA) Method 8015M/D and BTEX following EPA Method 8260B during confirmation sampling. Once it is confirmed that impacted soil has been removed, the excavation will be backfilled with clean soil and recontoured to match pre-existing conditions at the Site.

Hilcorp will complete the excavation and soil sampling activities within 90 days of the date of approval of this Work Plan by the NMOCD and approval from the landowner and NMOCD Permitting Group for the construction of the small landfarm. A *Closure Request* will be submitted within 60 days of receipt of final laboratory analytical results.

Moore LS 6B  
2024 Updated Remediation Work Plan  
Hilcorp Energy Company



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

## Ensolum, LLC

A handwritten signature in black ink, appearing to read "Shyde", is positioned above the printed name.

Stuart Hyde, PG\*  
\*(Licensed in WA & TX)  
Senior Managing Geologist  
(970) 903-1607  
shyde@ensolum.com

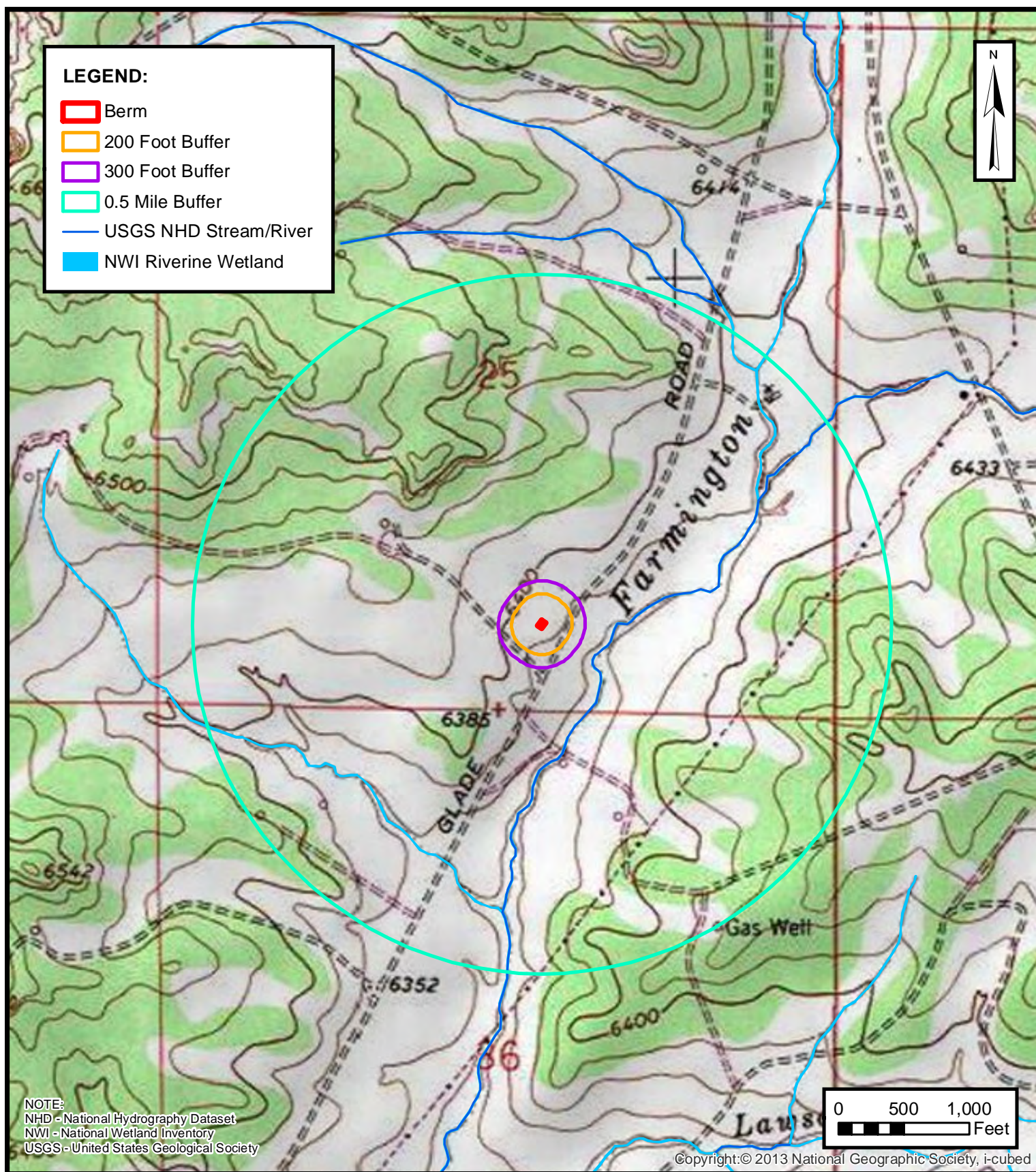
### Attachments:

Figure 1: Site Location Map  
Figure 2: Soil Delineation Results



FIGURES



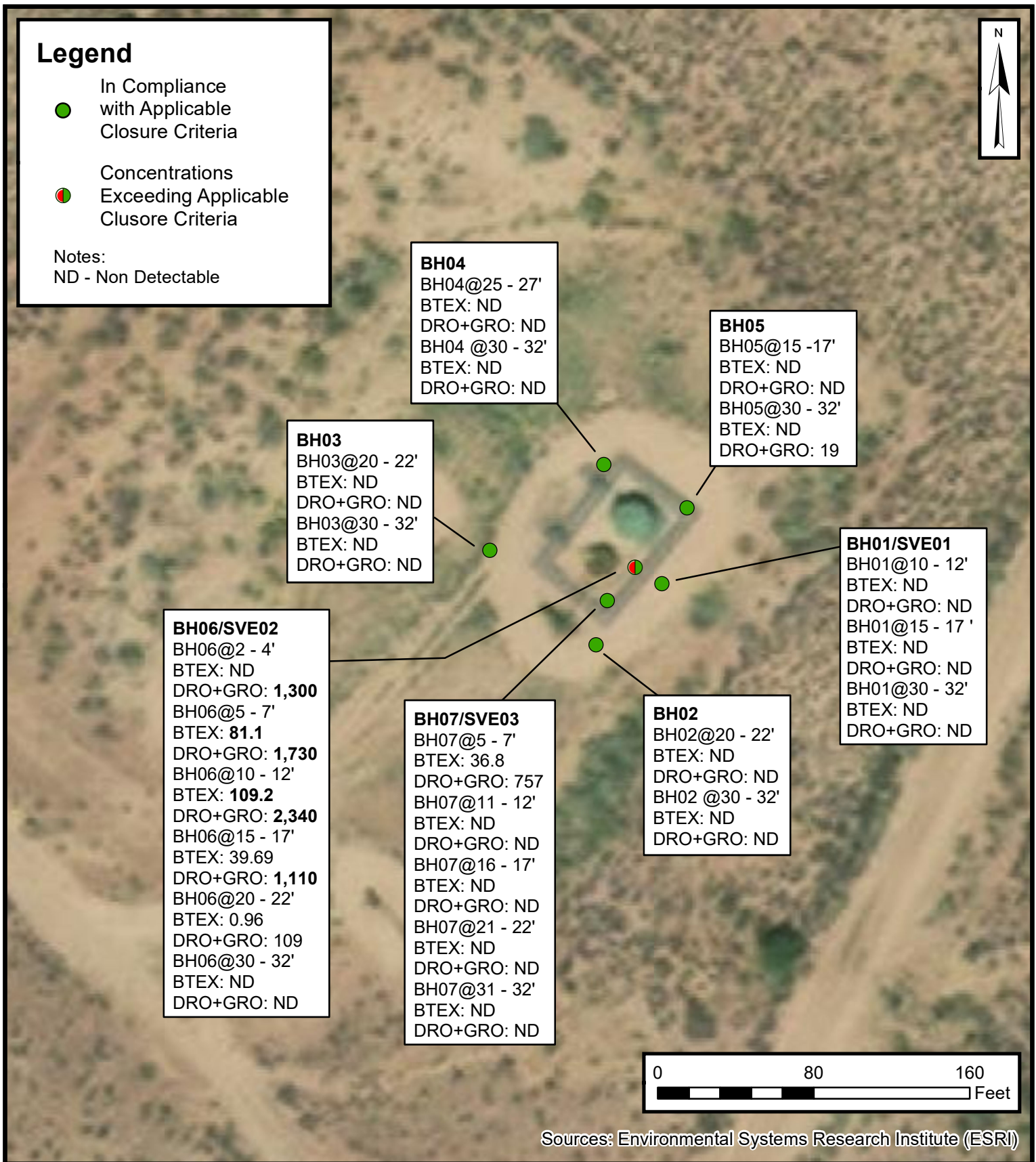


## Site Location Map

Moore LS 6B  
 Hilcorp Energy Company  
 36.951042, -108.045756  
 San Juan County, NM

**FIGURE**  
**1**





## Soil Delineation Results

Moore LS 6B  
Hilcorp Energy Company  
36.951042, -108.045756  
San Juan County, NM

FIGURE  
**2**

**District I**  
1625 N. French Dr., Hobbs, NM 88240  
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Oil Conservation Division  
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QUESTIONS

Action 357086

QUESTIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID:
	372171
	Action Number:
	357086
Action Type:	
[C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)	

QUESTIONS

Prerequisites	
Incident ID (n#)	nAPP2206056316
Incident Name	NAPP2206056316 MOORE LS 6B @ 30-045-30564
Incident Type	Other
Incident Status	Remediation Plan Approved
Incident Well	[30-045-30564] MOORE LS #006B

Location of Release Source	
Please answer all the questions in this group.	
Site Name	MOORE LS 6B
Date Release Discovered	02/14/2022
Surface Owner	Private

Incident Details	
Please answer all the questions in this group.	
Incident Type	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	Not answered.
Is the concentration of chloride in the produced water >10,000 mg/l	Not answered.
Condensate Released (bbls) Details	Cause: Vandalism   Production Tank   Condensate   Released: 42 BBL   Recovered: 0 BBL   Lost: 42 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 incident occurred due to two bullet holes in the condensate storage tank at 1' 8" from the bottom of the vessel.

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Action 357086

**QUESTIONS (continued)**

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

**QUESTIONS**

<b>Nature and Volume of Release (continued)</b>	
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	When the condensate storage tank drained out, the spilled fluids flowed downgradient immediately adjacent to the BGT and the fluids soaked into the ground. All of this occurred within a secondary containment berm, but no fluids could be recovered following this act of vandalism.

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: 06/24/2024
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**Santa Fe, NM 87505**

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Action 357086

**QUESTIONS (continued)**

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID:	372171
	Action Number:	357086
	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 75 and 100 (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
<b>What is the minimum distance, between the closest lateral extents of the release and the following surface areas:</b>	
A continuously flowing watercourse or any other significant watercourse	Between 300 and 500 (ft.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between 1 and 5 (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	Greater than 5 (mi.)
A wetland	Between 300 and 500 (ft.)
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 300 and 500 (ft.)
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)	350
TPH (GRO+DRO+MRO)	(EPA SW-846 Method 8015M)	2340
GRO+DRO	(EPA SW-846 Method 8015M)	2340
BTEX	(EPA SW-846 Method 8021B or 8260B)	109.2
Benzene	(EPA SW-846 Method 8021B or 8260B)	0.3

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	09/25/2024
On what date will (or did) the final sampling or liner inspection occur	09/25/2024
On what date will (or was) the remediation complete(d)	09/25/2024
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	800
What is the estimated volume (in cubic yards) that will be remediated	500

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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Action 357086

**QUESTIONS (continued)**

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID:	372171
	Action Number:	357086
	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 <b>off-site</b> disposal (i.e. dig and haul, hydrovac, etc.)	Not answered.
(Ex Situ) Excavation and <b>on-site</b> remediation (i.e. On-Site Land Farms)	Yes
Which OCD approved facility will be used for <b>on-site</b> disposal	Not answered.
<b>OR</b> which OCD approved well (API) will be used for <b>on-site</b> disposal	30-045-30564 MOORE LS #006B
(In Situ) Soil Vapor Extraction	Not answered.
(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: 06/25/2024
--	--

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, Page 5  
  
Action 357086

QUESTIONS (continued)

Operator:  HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID:  372171
	Action Number:  357086
	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, Page 6  
  
Action 357086

QUESTIONS (continued)

Operator:  HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID:	372171
	Action Number:	357086
	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 357086

CONDITIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 357086
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

CONDITIONS

Created By	Condition	Condition Date
nvelez	The revised remediation plan is approved as written. According to the workplan and approval from OCD Permitting Group, Hilcorp has 180-days (December 30, 2024) to submit to OCD its appropriate or final remediation closure report.	7/2/2024