



ENSOLUM

REVIEWED

By NVelez at 3:02 pm, Feb 07, 2025

Proceed with recommendations offered within the "**SYSTEM STARTUP ACTIVITIES**" section of report. Submit next quarterly report to OCD no later than April 15, 2025.

January 15, 2025

New Mexico Oil Conservation Division

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

Re: Soil Vapor Extraction System Startup Report

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 *Soil Vapor Extraction System Startup Report* 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.

Site investigation activities were conducted in 2023 to assess and delineate the vertical and lateral extent of impacts originating from the release. Details regarding Site investigation activities and results were submitted to the New Mexico Oil Conservation Division (NMOCD) and BLM and in the *Site Investigation Report and Remediation Work Plan* dated May 2, 2023 and *Updated Site Investigation Report and Remediation Work Plan* dated January 10, 2024 (NMOCD approval attached as Appendix A). To determine if SVE techniques would effectively remediate the Site, 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). Based on the calculated ROI/ROE of 30 feet at a single extraction well flow rate of 7.5 standard cubic feet per minute (scfm) and an applied vacuum of 100 inches of water column (IWC), 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.

SVE SYSTEM SPECIFICATIONS

The SVE system at the Site consists of a 3-phase, 6 horsepower Roots 42 URAI positive displacement blower capable of producing approximately 140 inlet cubic feet per minute (icfm) flow at 100 IWC vacuum at Site elevation. The system is powered by a generator capable of operating 24 hours per day. Additionally, a backup generator has been placed at the Site to minimize system downtime if there are operational/maintenance issues with the primary generator. Eleven SVE wells, SVE01 through SVE11, are currently in operation and are shown on Figure 2. The *Updated Site Investigation Report and Remediation Work Plan* dated June 5, 2024, proposed extraction on SVE wells SVE01, SVE02, and SVE04 through SVE11; however, upon further evaluation, SVE03 was added to the system layout and plumbed to the manifold. The manifold was constructed in such a manner as to allow the wells to be cycled, if necessary.

SYSTEM STARTUP ACTIVITIES

The SVE system began operation on January 6, 2025 (agency notification attached as Appendix A). Based on the NMOCD Conditions of Approval (COAs), dated March 15, 2024, field data measurements are being collected from the system daily for the first week of operation and then weekly thereafter for the remainder of January, February, and March 2025. Field measurements include the following parameters: total system flow, estimated flow rates from each SVE well, photoionization detector (PID) measurements of volatile organic compounds (VOCs) from each SVE well, vacuum measurements from each SVE well, and oxygen/carbon dioxide measurements via hand-held analyzers from each SVE well.

Additionally, initial vapor samples were collected on January 6 and 7, 2025 from a sample port located between the SVE piping manifold and the SVE blower using a high vacuum air sampler. Prior to collection, the vapor sample was field screened with a PID for organic vapor monitoring (OVM). The vapor sample was collected directly into two 1-Liter Tedlar® bags and submitted to Eurofins Environment Testing (Eurofins) in Albuquerque, New Mexico for analysis of total volatile petroleum hydrocarbons (TVPH – also known as total petroleum hydrocarbons – gasoline range organics (TPH-GRO)) following United States Environmental Protection Agency (EPA) Method 8015D, volatile organic compounds (VOCs) following EPA Method 8260B, and fixed gas analysis of oxygen and carbon dioxide following Gas Processors Association (GPA) Method 2261. Analytical results from the January 6 and January 7 sampling events are pending and will be included in the second quarter of 2025 update report. Moving forward, samples will be collected weekly for the first month of operation, and then bi-weekly (twice per month) for the remainder of the first quarter of 2025.

Activities and data collected during the first quarter of 2025 will be summarized in a report to be submitted to the NMOCD no later than April 15, 2025. We appreciate the opportunity to provide this report to the NMOCD. If you should have any questions or comments regarding this report, please contact the undersigned.

Sincerely,
Ensolum, LLC



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



Hannah Mishriki, PE*
(*Licensed in CO/WY/NM/NE/ND)
Senior Engineer
(610) 390-7059
hmishriki@ensolum.com

Attachments:

Figure 1 Site Location Map

Figure 2 SVE System Radius of Influence and Radius of Effect

Appendix A NMOCD Correspondence

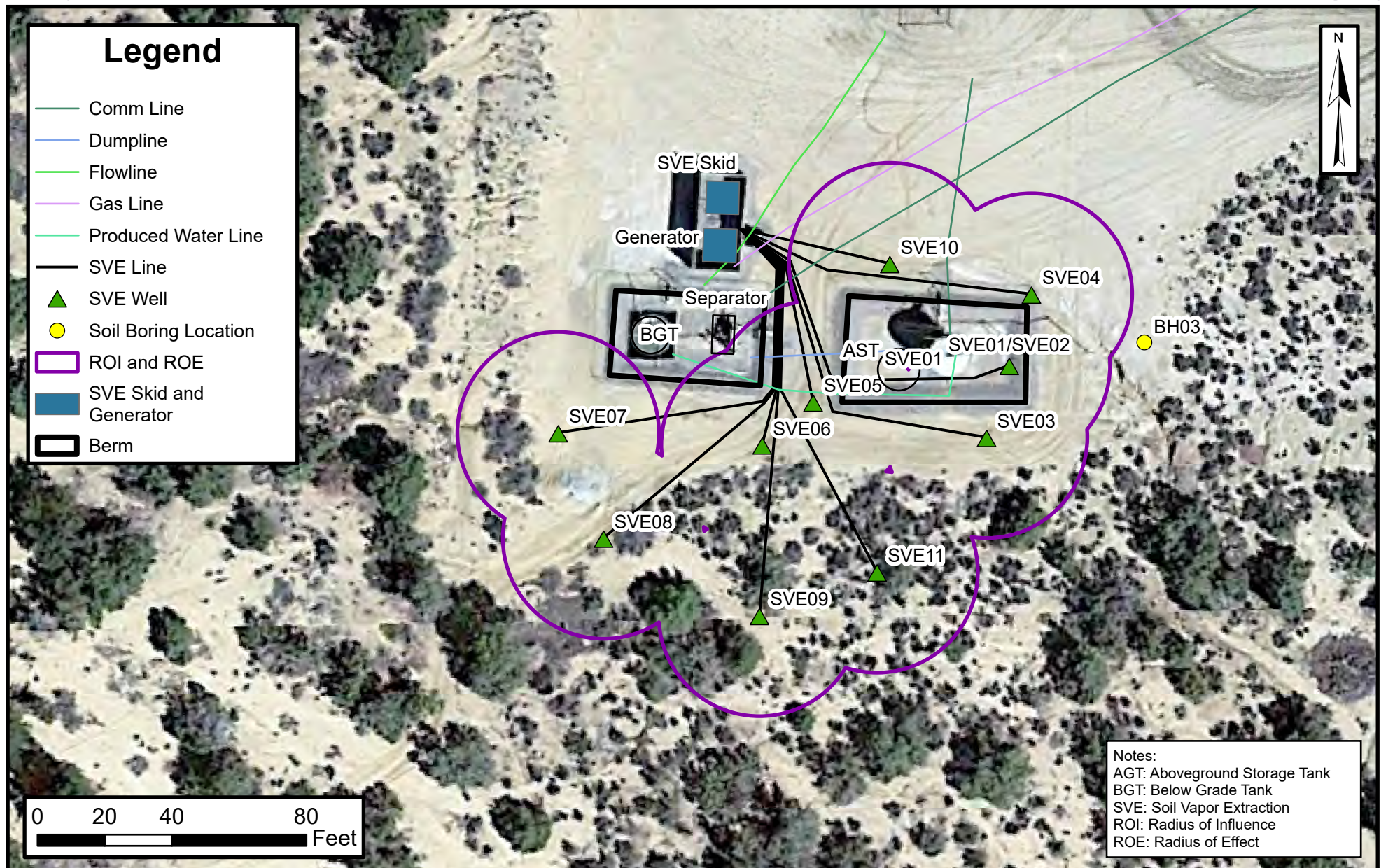


Figures



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

1



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
2

ENSOLUM
 Environmental, Engineering and
 Hydrogeologic Consultants



APPENDIX A

NMOCD Correspondence

From: OCDOnline@state.nm.us
To: [Stuart Hyde](#)
Subject: The Oil Conservation Division (OCD) has approved the application, Application ID: 351064
Date: Tuesday, July 16, 2024 8:43:19 AM

[**EXTERNAL EMAIL**]

To whom it may concern (c/o Stuart Hyde for HILCORP ENERGY COMPANY),

The OCD has approved the submitted *Corrective Action Alternative Remediation Report* (C-141AR), for incident ID (n#) nAPP2308124076, with the following conditions:

- **Proceed with recommendations offered within the “FUTURE RUNTIME CALCULATIONS AND PROPOSED REMEDIATION TIMELINE” section of report. Submit next quarterly report to OCD no later than October 15, 2024.**

The signed C-141AR can be found in the OCD Online: Imaging under the incident ID (n#).

If you have any questions regarding this application, please contact me.

Thank you,
Nelson Velez
Environmental Specialist - Advanced
505-469-6146
Nelson.Velez@emnrd.nm.gov

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

From: [Adeloye, Abiodun A](#)
To: [Stuart Hyde](#); [Velez, Nelson, EMNRD](#)
Cc: [Mitch Killough](#); [Danny Burns](#); [Hannah Mishriki](#); [Wenman, Christopher P](#)
Subject: RE: [EXTERNAL] nAPP2308124076 - LC Kelly 1E SVE System Startup and Reporting Extension Request
Date: Thursday, October 10, 2024 2:08:58 PM
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)

[**EXTERNAL EMAIL**]

Hi, Stuart, the extension is granted by the BLM.
Please let me know if you have any questions.

Abiodun Adeloye (Emmanuel)
Natural Resources Specialist (NRS)
6251 College Blvd., Suite A
Farmington, NM 87402
Office: 505-564-7665
Mobile: 505-635-0984

From: Stuart Hyde <shyde@ensolum.com>
Sent: Thursday, October 10, 2024 11:35 AM
To: Velez, Nelson, EMNRD <Nelson.Velez@emnrd.nm.gov>
Cc: Mitch Killough <mkillough@hilcorp.com>; Adeloye, Abiodun A <aadeloye@blm.gov>; Danny Burns <dburns@ensolum.com>; Hannah Mishriki <hmishriki@ensolum.com>
Subject: [EXTERNAL] nAPP2308124076 - LC Kelly 1E SVE System Startup and Reporting Extension Request

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Nelson and Emmanuel,

On behalf of Hilcorp Energy Company, we are requesting an extension to the October 15, 2024 reporting deadline for the LC Kelly 1E site. At this time, Hilcorp and Ensolum are continuing to procure parts and build the SVE system for the site and it has not yet been installed. We anticipate that the system will be installed and operating by November 2024. As such, we are requesting an extension for submitting the first quarterly report to January 15, 2025. This report will include details on the system installation and performance for the time operated during Q4 2024.

Please reach out with any questions regarding the site or this request. Thanks.



Stuart Hyde, PG

(Licensed in WA/TX)

Senior Managing Geologist

970-903-1607

[Ensolum, LLC](#)

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"If you want to go fast, go alone. If you want to go far, go together." – African Proverb

From: [Velez, Nelson, EMNRD](#)
To: [Stuart Hyde](#)
Subject: Re: [EXTERNAL] nAPP2308124076 - L C Kelly 1E SVE System Startup Date
Date: Monday, December 30, 2024 11:24:31 AM
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)
[Outlook-gvqxw5ic.png](#)

[**EXTERNAL EMAIL**]

Good morning Stuart,

Thank you for the update. Please keep us posted on the progression of the SVE.

Have a safe and pleasant day!

Regards,

Nelson Velez • Environmental Specialist - Adv
Environmental Bureau | EMNRD - Oil Conservation Division
1000 Rio Brazos Road | Aztec, NM 87410
(505) 469-6146 | nelson.velez@emnrd.nm.gov
<http://www.emnrd.nm.gov/oed>



From: Stuart Hyde <shyde@ensolum.com>
Sent: Monday, December 30, 2024 10:44 AM
To: Adeloye, Abiodun A <aadeloye@blm.gov>; Velez, Nelson, EMNRD <Nelson.Velez@emnrd.nm.gov>
Cc: Mitch Killough <mkillough@hilcorp.com>; Danny Burns <dburns@ensolum.com>; Bryan Hall <bhall@hilcorp.com>; Chad Perkins <cperkins@hilcorp.com>
Subject: [EXTERNAL] nAPP2308124076 - L C Kelly 1E SVE System Startup Date

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Nelson and Emmanuel,

On behalf of Hilcorp Energy Company, we are providing this notification for the SVE system startup date at the L C Kelly 1E site. At this time, we are finalizing construction of the system this week and anticipate startup to be January 6, 2025. We will keep you posted if there are any delays in the

system startup and/or issues during the first week of operation.

Please reach out with any questions. Thanks.



Stuart Hyde, PG

(Licensed in WA/TX)

Senior Managing Geologist

970-903-1607

[Ensolum, LLC](#)

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"If you want to go fast, go alone. If you want to go far, go together." – African Proverb

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
<https://www.emnrd.nm.gov/ocd/contact-us>

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

CONDITIONS

Action 421322

CONDITIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 421322
	Action Type: [REPORT] Alternative Remediation Report (C-141AR)

CONDITIONS

Created By	Condition	Condition Date
nvez	SVE reviewed. Proceed with recommendations offered within the "SYSTEM STARTUP ACTIVITIES" section of report. Submit next quarterly report to OCD no later than April 15, 2025.	2/7/2025