



P.O. Box 1708 • Artesia, NM 88211
www.hrlcomp.com

March 5, 2020

Ms. Amanda Davis
Devon Energy Production Company
6488 Seven Rivers Highway
Artesia, New Mexico 88210
Email: Amanda.davis@dvn.com

**Subject: Liner Inspection and Closure Report
Cotton Draw 33-4 Battery
Lea County, New Mexico**

Dear Ms. Davis:

Devon Energy Production Company (Devon) (Client) retained HRL Compliance Solutions, Inc. (HRL) to conduct a liner inspection and prepare this closure report for the release at the Cotton Draw 33-4 Battery well pad (Site). The Site is located in Lea County, New Mexico (Figure 1).

Release Summary and Initial Response

On August 6, 2019, a release of 17.4 barrels (bbls) of produced water was observed at the Site. The release occurred when a two-inch Vic clamp leaked fluid from the water transfer pump. The produced water impacted the area within the poly-lined metal secondary containment. Initial response activities included stopping the source of the release, securing the impacted area, containing the released materials, and removing free liquids within the secondary containment.

The volume released was between five barrels and 25 barrels; therefore, this release is considered a minor release. On August 8, 2019 the C-141 (Attachment A) was submitted to the New Mexico Oil Conservation Division (NMOCD).

Item	Discussion
Site Name	Cotton Draw 33-4 Battery
Latitude	32.180359
Longitude	-103.683966
Township/Range/Section/Unit	Township 24 South/Range 32 East/Section 33/Unit D
Date Release Discovered	August 6, 2019
Cause of Release	Two-inch Vic clamp leaked fluid from the water transfer pump
Type of Material Released	Produced Water



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Item	Discussion
Volume Released	17.4 barrels
Volume Recovered	17.4 barrels

Liner Inspection

On February 17, 2020, after the released fluid was removed, HRL conducted an inspection to evaluate the integrity of the liner (Attachment B, Photographs). No tears or holes were observed in the liner and the liner was retaining precipitation. Based on this inspection, HRL has determined that the liner remains intact and had the ability to contain the release (Attachment C, Liner Inspection Field Form).

New Mexico Administrative Code (NMAC) Site Characterization Criteria

Title 19, Chapter 15, Part 29, Section 11 of the New Mexico Administrative Code (NMAC) provides requirements for release characterization once the free liquids and recoverable materials have been removed from the Site.

Site Map

A scaled diagram depicting the Site and nearby significant features has been prepared (Figure 1).

Depth to Groundwater

Based on research from the New Mexico Office of the State Engineer (NMOSE) and United States Geological Survey (USGS), depth to groundwater is estimated to be between 70 and 415 feet below ground surface (bgs) (Figure 2).

Wellhead Protection Area

There are no sources of water, including springs, wells, or other sources of fresh water, within one-half mile of the Site.

Distance to Nearest Significant Watercourse

A significant watercourse is defined as "...a watercourse with a defined bed and bank either named or identified by a dashed blue line on a USGS 7.5-minute quadrangle map or the next lower order tributary with a defined bed and bank" (19.15.17.7 NMAC). There are no significant watercourses within one-half mile of the extent of the release.



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Additional Site Characterization Criteria

The following additional site characterization criteria were evaluated for the release.

Additional Site Characterization Criteria	Response/Discussion
Is the Site within 300 feet of a continuously flowing water or other significant watercourse?	No
Is the Site within 200 feet of a lakebed, sinkhole, or playa lake?	No
Is the Site within 300 feet of an occupied permanent residence, school, hospital institution, or church?	No
Is the Site within 500 feet of a spring or private, domestic fresh water well used by less than five households for domestic or stock watering purposes?	No
Is the Site within 1,000 feet of any fresh water well or spring?	No
Is the Site within 300 feet of a wetland?	No
Is the Site within the area overlying a subsurface mine?	No
Is the Site within an unstable area?	No
Is the Site within the 100-year floodplain?	No

Conclusions and Recommendations

The August 6, 2019 release of 17.4 barrels of produced water at the Site remained within the lined containment area. HRL has determined that the liner integrity remains intact and had the ability to contain the release; therefore, additional characterization of the soil and/or groundwater at the Site is not necessary. HRL recommends closure of this release.

Scope and Limitations

The scope of HRL's services consists of performing a liner integrity inspection and preparation of this closure report. All work has been performed in accordance with generally accepted professional environmental consulting practices for oil and gas releases in the Permian Basin.



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If you have any questions or concerns, please do not hesitate to contact Kris Graham at (575) 616-7398 Ext. 436 or via email at kgraham@hrlcomp.com

Sincerely,

HRL Compliance Solutions, Inc.

A handwritten signature in black ink, appearing to read 'Kris Graham', is written over a faint, larger version of the same signature.

Kris Graham
Environmental Scientist

Copy: Julie Linn, PG, RG, HRL Compliance Solutions, Inc.

Figures:

Figure 1: Site Location Map

Figure 2: Depth to Groundwater Map

Attachments:

Attachment A: NMOCD Form C-141

Attachment B: Photographs

Attachment C: Liner Inspection Field Form



Figures

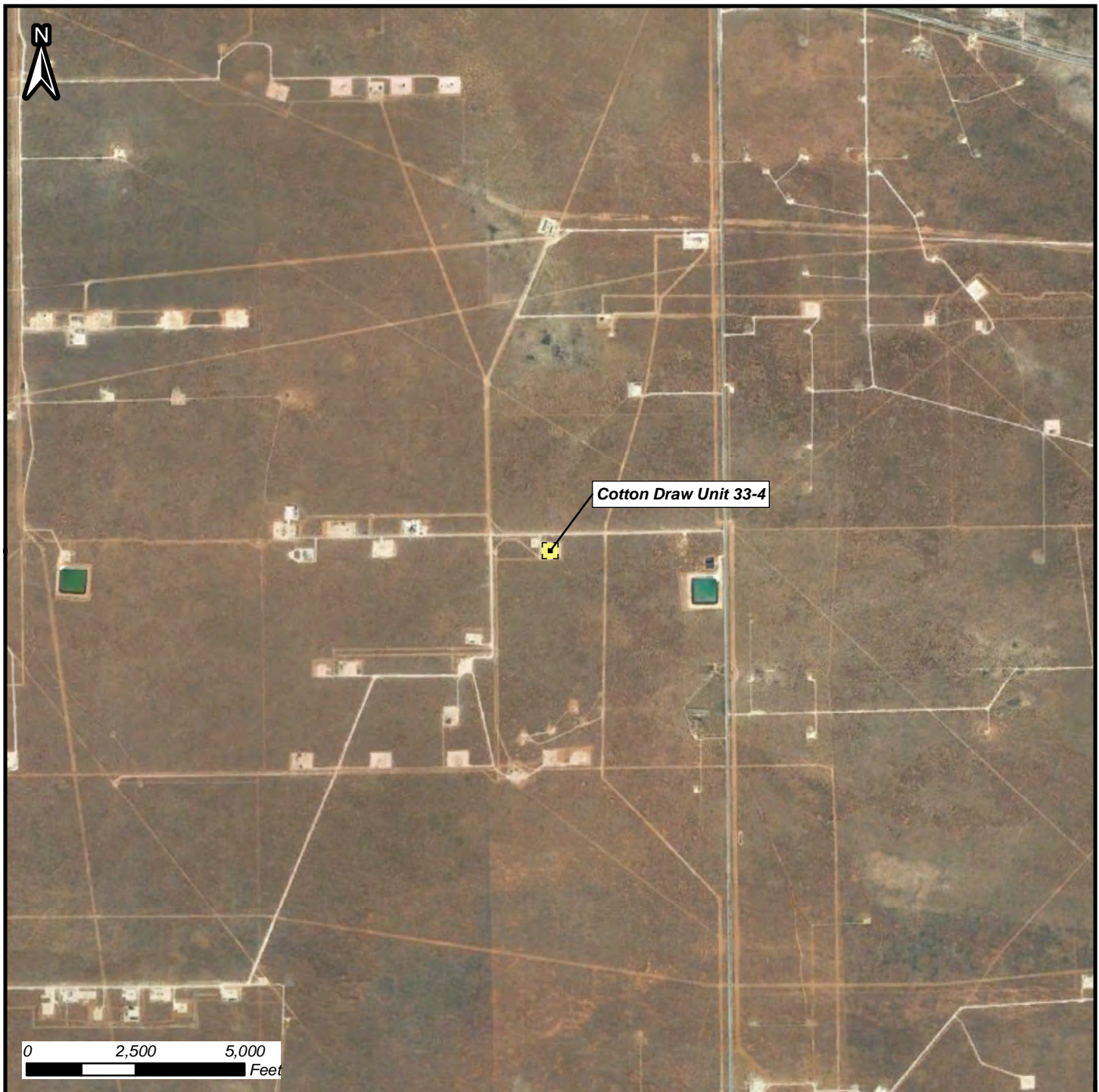


Figure 1: Site Location Map

Cotton Draw Unit 33-4
August 2019 Spill

32.180359, -103.683966
Section 33, Township 24 South, Range 32 East

NOTES / COMMENTS:

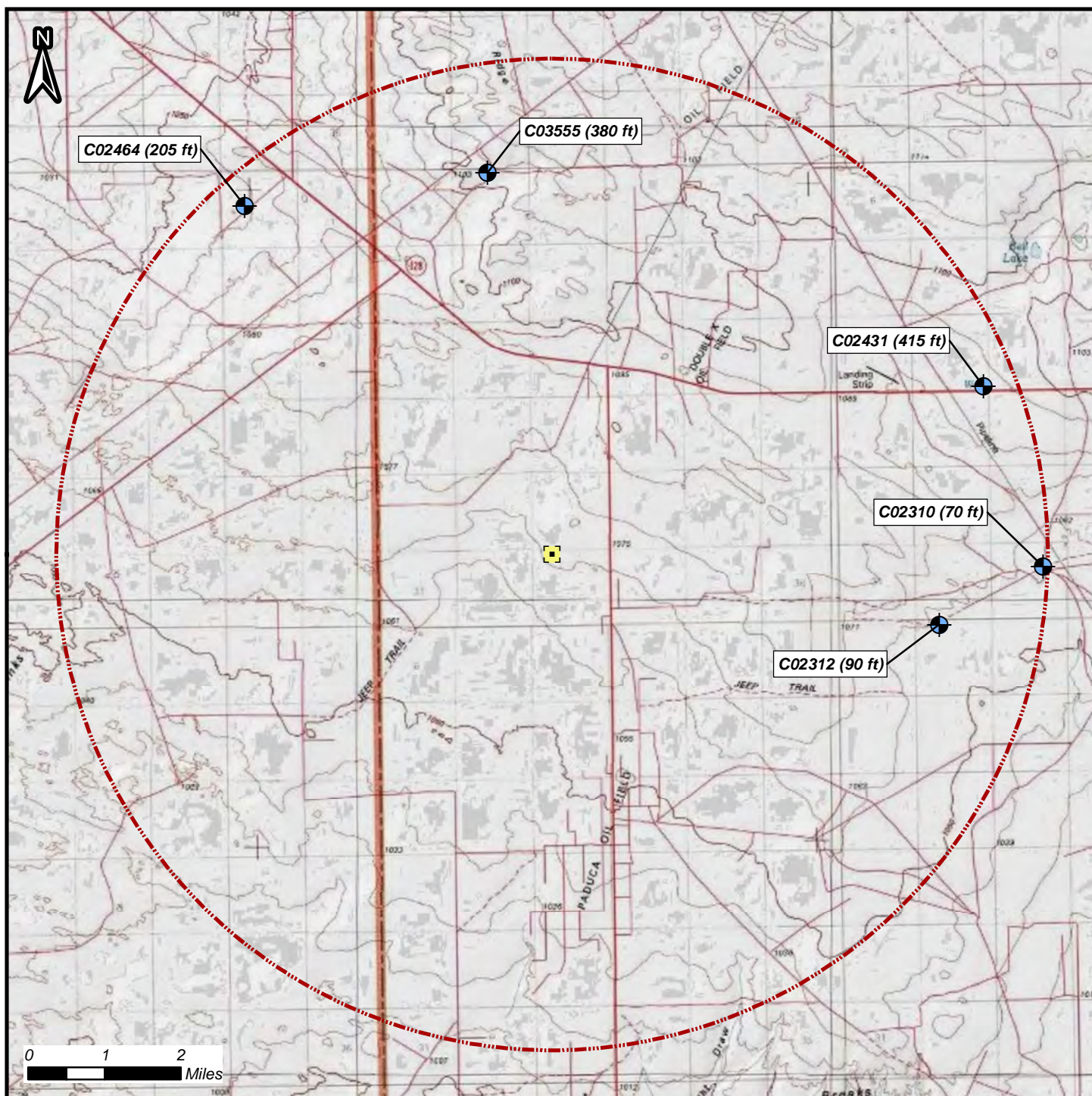
Mapped Features

 Facility Location

DISCLAIMER: This representation and the Geographic Information System (GIS) used to create it are designed as a source of reference and not intended to replace official records and/or legal surveys. HRL assumes no responsibility for any risks, dangers, or liabilities that may result from its use and makes no guarantees as to the quality or accuracy of the underlying data.



Author: A. Asay
Revision: 0
Date: 2/27/2020

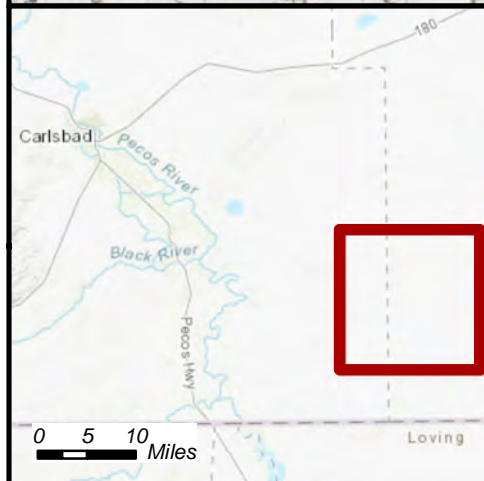
**Figure 2: Depth to Groundwater Map**

Cotton Draw Unit 33-4

August 2019 Spill

32.180359, -103.683966

Section 33, Township 24 South, Range 32 East

**Mapped Features**

- Point of Release
- Groundwater Monitoring Well
- 6.5-Mile Buffer

Well Number	Water Level Below Ground Surface (ft)	Distance from Source (mi)
C03555	380	5.08
C02312	90	5.12
C02431	415	6.07
C02464	205	6.09
C02310	70	6.44



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Author: A. Asay

Revision: 0

Date: 2/27/2020



Attachment A
NMOCD Form C-141

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural
Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party	OGRID
Contact Name	Contact Telephone
Contact email	Incident # (assigned by OCD)
Contact mailing address	

Location of Release Source

Latitude _____ Longitude _____
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Site Type
Date Release Discovered	API# (if applicable)

Unit Letter	Section	Township	Range	County

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☐ Private (Name: _____)

Nature and Volume of Release

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

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

Cause of Release

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? <input type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

Initial Response

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

<input type="checkbox"/> The source of the release has been stopped.	
<input type="checkbox"/> The impacted area has been secured to protect human health and the environment.	
<input type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.	
<input type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: _____	Title: _____
Signature: <u>Kendra DeHoyos</u>	Date: _____
email: _____	Telephone: _____
<u>OCD Only</u>	
Received by: _____	Date: _____



Attachment B

Photographs



View of
stormwater
pooling within
lined secondary
containment



View of sediment
buildup within
lined secondary
containment





Attachment C
Liner Inspection Field Form

**HRL**
COMPLIANCE
SOLUTIONS

Liner Inspection Form

Client Devon Energy

Date of Inspection 2/17/2020

Site Name Cotton Draw 33 Fed 1 Battery

Latitude 32.180359

Longitude -103.683966

Observations	Yes	No	Comments
Is the liner present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is the liner torn?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are there visible holes in the liner?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is the liner retaining any liquids?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Some Stormwater present
Does it appear the liner had the ability to contain the leak?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Type of Liner: Poly Earthen Metal Other (describe below):

Other Concerns or Observations:

Inspector Name Kevin Smith

Inspector Signature Kevin Smith

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State of New Mexico
Energy Minerals and Natural
Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	NCE2002836856
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>70</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

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

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

- ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☒ Field data
- ☒ Data table of soil contaminant concentration data
- ☒ Depth to water determination
- ☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- ☒ Boring or excavation logs
- ☒ Photographs including date and GIS information
- ☒ Topographic/Aerial maps
- ☒ Laboratory data including chain of custody

Incident ID	NCE2002836856
District RP	
Facility ID	
Application ID	

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

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

Printed Name: Tom Bynum Title: EHS Consultant

Signature: Tom Bynum Date: 3/5/2020

email: tom.bynum@dvn.com Telephone: 575-748-1688

OCD Only

Received by: _____ Date: _____

Incident ID	NCE2002836856
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: Tom Bynum Title: EHS Consultant

Signature: Tom Bynum Date: 3/5/2020

email: tom.bynum@dvn.com Telephone: 575-748-1688

OCD Only

Received by: _____ Date: _____

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

Signature: _____ Date: _____

Incident ID	NCE2002836856
District RP	
Facility ID	
Application ID	

Closure

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

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

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

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

Printed Name: Tom Bynum Title: EHS Consultant

Signature: Tom Bynum Date: 3/5/2020

email: tom.bynum@dvn.com Telephone: 575-748-1688

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____