Souder, Miller & Associates♦201 S. Halagueno St.♦Carlsbad, NM 88220
(575) 689-8801

April 9, 2020

#5E29133-BG4

NMOCD District 1
1625 N. French Drive
Hobbs, New Mexico 88240

SUBJECT: Remediation Closure Report for the Boomslang 14 CTB 1 Release (1RP-4949), Lea County, New Mexico

To Whom It May Concern:

On behalf of Devon Energy Production Company, Souder, Miller & Associates (SMA) has prepared this Remediation Closure Report that describes the remediation of a release of liquids related to oil and gas production activities at the Boomslang 14 CTB 1 site. The site is in Unit D, Section 14, Township 24S, Range 33E, Lea County, New Mexico, on Federal land. Figure 1 illustrates the vicinity and site location on an USGS 7.5 minute quadrangle map.

Table 1 summarizes release information and closure criteria.

Table 1: Release Information and Closure Criteria			
Name	Boomslang 14 CTB 1	Company	Devon Energy Production Company
API Number	30-025-43032	Location	32.2243126 -103.5431322
Incident Number	1RP - 4949		
Estimated Date of Release	1/17/2018	Date Reported to NMOCD	1/31/2018
Land Owner	Federal Land	Reported To	NMOCD
Source of Release	Gun Barrel		
Released Volume	9 BBLS	Released Material	Produced Water
Recovered Volume	9 BBLS	Net Release	9BBLS
NMOCD Closure Criteria	>100 feet to groundwater		
SMA Response Dates	3/26/2020		

1.0 Background

On January 17, 2018, a release was discovered at the Boomslang 14 CTB 1 site due to an open valve on the gun barrel. The release occurred entirely within the metal containment structure, with no visual impacts to soil. Initial response activities were conducted by Devon Energy Production Company, and included source elimination, containment and vacuum activities, which recovered approximately 9 barrels of fluid which were hauled to and disposed of at R360 Environmental Solutions near Hobbs, NM.

Figure 1 illustrates the vicinity and site location, Figure 2 illustrates the release location. The initial C-141 form is included in Appendix A.

2.0 Site Information and Closure Criteria

The Boomslang 14 CTB 1 is located approximately 22 miles northwest from Jal, New Mexico on Federal (BLM) land. As summarized in Table 2 and illustrated in Figure 1, depth to groundwater in the area is estimated to be 328 feet below grade surface (bgs). There are no known water sources within ½-mile of the location, according to the New Mexico Office of the State Engineer (NMOSE) online water well database (https://gis.ose.state.nm.us/gisapps/ose_pod_locations/; accessed 3/24/2020). The nearest surface water is an unnamed playa located approximately 3,890 feet to the northeast.

Based on the information presented herein, the applicable NMOCD Closure Criteria for this site is for a groundwater depth of greater than 100 feet bgs. Table 2 demonstrates the Closure Criteria applicable to this location. Pertinent well data is attached in Appendix B.

3.0 Release Characterization Activities and Findings

On March 25, 2020, SMA conducted a liner integrity inspection per requirements of 19.15.29.11.A(5)(a) NMAC. Notice was given to New Mexico Oil Conservation Division on March 23, 2020 that the inspection was to occur on the date mentioned above. After a thorough visual inspection of the containment structure, the liner appeared to be intact and had the ability to contain the leak. The containment did have standing water due to a recent rain event, supporting evidence of liner integrity. A Photo Log documenting the inspection is included in Appendix C.

On behalf of Devon Energy Production Company, SMA recommends no further action and requests closure for the release associated with 1RP-4949

4.0 Scope and Limitations

All work has been performed in accordance with generally accepted professional environmental consulting practices for oil and gas releases in the Permian Basin in New Mexico.

If there are any questions regarding this report, please contact either Ashely Maxwell at 505-320-8975 or Shawna Chubbuck at 505-325-7535.

Submitted by:
SOUDER, MILLER & ASSOCIATES

Reviewed by:

Ashley Maxwell
Project Scientist

Shawna Chubbuck
Senior Scientist

ATTACHMENTS:

Figures:

Figure 1: Site Map
Figure 2: Surface Water Protection Map

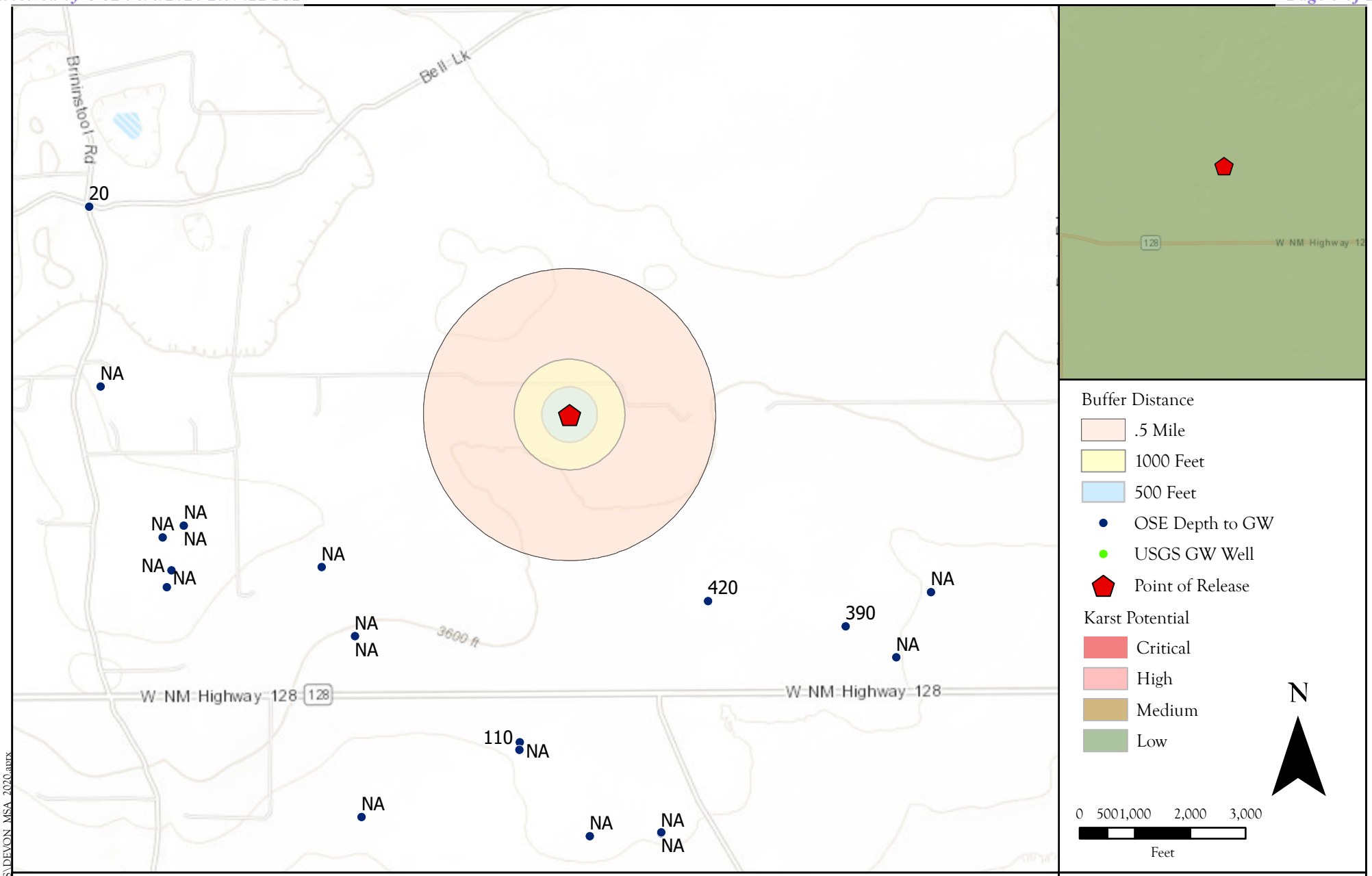
Tables:

Table 2: NMOCD Closure Criteria Justification

Appendices:

Appendix A: Form C-141 Initial
Appendix B: NMOSE Wells Report
Appendix C: Liner Inspection & Photo Log

FIGURES



Site Map
Boomslang 14 CTB 1- Devon Energy
UL: C S: 14 T: 24S R: 33E, Lea County, New Mexico

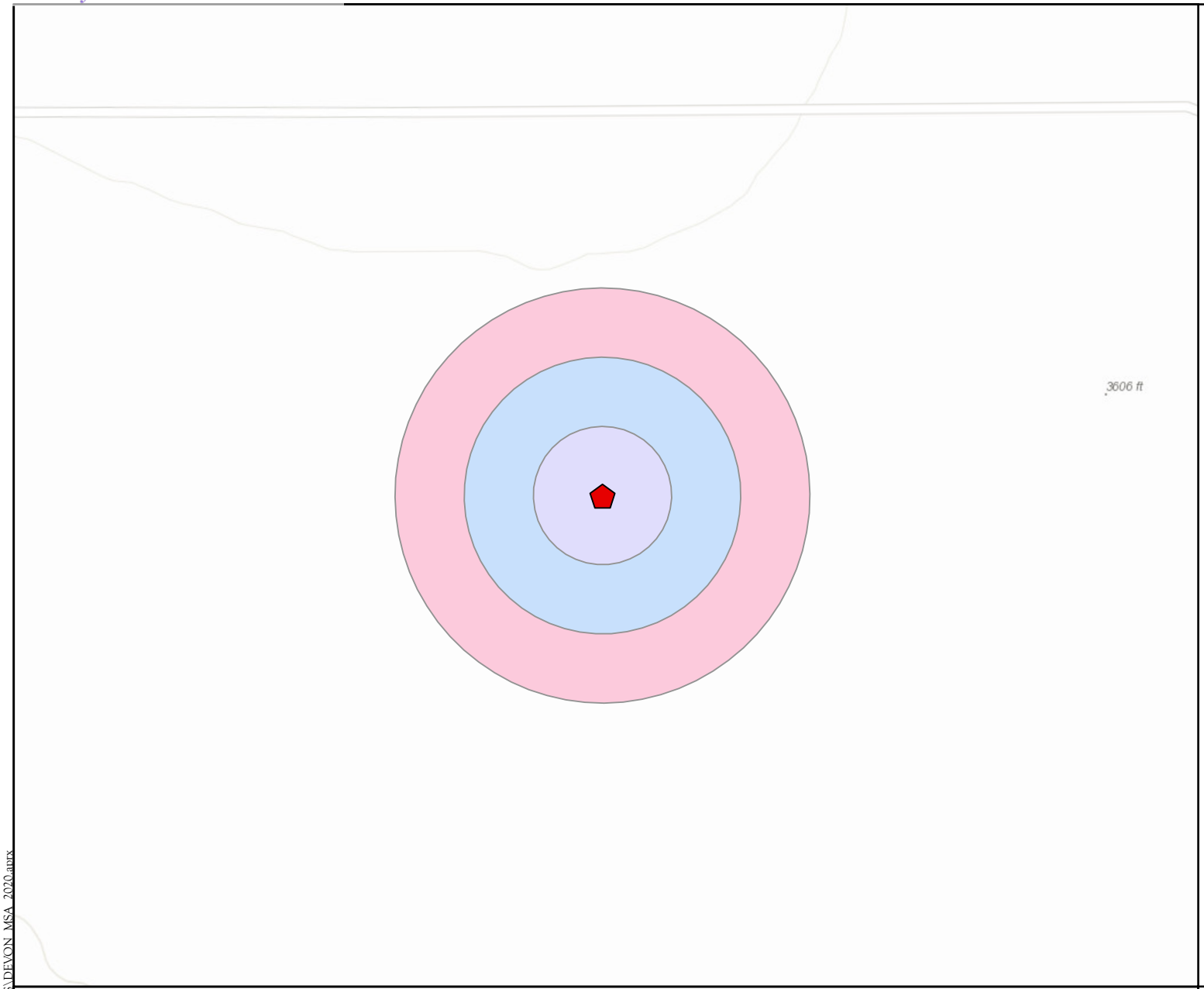
Figure 1

P:\5-Devon MSA 2020 (5E29133)\GIS\DEVON_MSA_2020.aprx
Date Saved: 4/6/2020

Revisions
By: _____ Date: _____ Descr: _____
By: _____ Date: _____ Descr: _____

Drawn Sebastian Orozco
Date 4/9/2020
Checked
Approved

SMA
201 South Halaguena Street
Carlsbad, New Mexico 88221
(575) 689-7040
Serving the Southwest & Rocky Mountains



Buffer Distance
- 300 Feet
- 200 Feet
- 100 Feet
- Springs & Seeps
- Streams & Canals
- Rivers
- Flowlines SENM
- NM Wetlands
- Lakes & Playas
- FEMA Flood Zones 2011
- Point of Release

N

0 70 140 280 420

Feet

Surface Water Protection Map
Boomslang 14 CTB 1- Devon Energy
UL: C S: 14 T: 24S R: 33E, Lea County, New Mexico

Figure 2

P:\5-Devon MSA 2020 (5E29133)\GIS\DEVON_MSA_2020.aprx
Date Saved: 4/6/2020

Revisions
By: Date: Descr:
By: Date: Descr:

Drawn Sebastian Orozco
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TABLES

Table 2:
NMOCD Closure Criteria

Devon Energy Production Company
Boomslang 14 CTB 1 (1RP-4949)

Site Information (19.15.29.11.A(2, 3, and 4) NMAC)		Source/Notes
Depth to Groundwater (feet bgs)	306	New Mexico Office of the State Engineer
Hortizontal Distance From All Water Sources Within 1/2 Mile (ft)	NA	United States Geological Survery Topo Map
Hortizontal Distance to Nearest Significant Watercourse (ft)	3,890	Unnamed Playa

Closure Criteria (19.15.29.12.B(4) and Table 1 NMAC)						
Depth to Groundwater		**Closure Criteria (units in mg/kg)**				
		Chloride *numerical limit or background, whichever is greater	**TPH**	**GRO + DRO**	**BTEX**	**Benzene**
< 50' BGS		600	100		50	10
51' to 100'		10000	2500	1000	50	10
>100'	X	20000	2500	1000	50	10
Surface Water	**yes or no**	**if yes, then**				
<300' from continuously flowing watercourse or other significant watercourse?	No	600	100		50	10
<200' from lakebed, sinkhole or playa lake?	No					
Water Well or Water Source						
<500 feet from spring or a private, domestic fresh water well used by less than 5 households for domestic or stock watering purposes?	No					
<1000' from fresh water well or spring?	No					
Human and Other Areas						
<300' from an occupied permanent residence, school, hospital, institution or church?	No					
within incorporated municipal boundaries or within a defined municipal fresh water well field?	No					
<100' from wetland?	No					
within area overlying a subsurface mine	No					
within an unstable area?	No					
within a 100-year floodplain?	No					

SMA #

APPENDIX A
FORM C141 FINAL

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

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

Form C-141
Revised April 3, 2017

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

Initial only

OPERATOR

☒ Initial Report ☒ Final Report

Name of Company Devon Energy Company	Contact Hubert Perry
Address 6488 Seven Rivers Hwy Artesia, NM 88210	Telephone No. 575-513-9637
Facility Name Boomslang 14-23 Federal 9H	Facility Type Oil

Surface Owner Fee	Mineral Owner Federal	API No. 30-025-43032

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	14	24S	33E	200	FNL	283	FWL	Lea

Latitude: 32.2243126 **Longitude:** -103.5431322

NATURE OF RELEASE

Type of Release Produced Water (PW)	Volume of Release 9BBLS PW	Volume Recovered 9BBLS PW
Source of Release Gun Barrel	Date and Hour of Occurrence 1/17/2018 @ 5:36 pm MST	Date and Hour of Discovery 1/17/2018 @ 5:36 pm MST
Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required	If YES, To Whom?	
By Whom? N/A	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*
N/A

RECEIVED
By Olivia Yu at 2:44 pm, Feb 02, 2018

Describe Cause of Problem and Remedial Action Taken.*
Upon arrival to the location, lease operator observed that fluid had splashed out of the Gun Barrel due a valve hanging open from a separator.

Describe Area Affected and Cleanup Action Taken.*
Approximately 9BBLS produced water was released. A vacuum truck was called and approximately 9BBLS of produced water was recovered. Repairs were made.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD 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.

Signature: Dana DeLaRosa	OIL CONSERVATION DIVISION
Printed Name: Dana DeLaRosa	Approved by Environmental Specialist:
Title: Field Admin Support	Approval Date: 2/2/2018 Expiration Date:
E-mail Address: dana.delarosa@dvn.com	Conditions of Approval: see attached directive Attached ☑
Date: 1.31.2018 Phone: 575-746-5594	

* Attach Additional Sheets If Necessary

1RP-4949 nOY1803353939 pOY1803354514

Operator/Responsible Party,

The OCD has received the form C-141 you provided on _1/31/2018_ regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number _1RP-4949__ has been assigned. **Please refer to this case number in all future correspondence.**

It is the Division's obligation under both the Oil & Gas Act and Water Quality Act to provide for the protection of public health and the environment. Our regulations (19.15.29.11 NMAC) state the following,

> *The responsible person shall complete division-approved corrective action for releases that endanger public health or the environment. The responsible person shall address releases in accordance with a remediation plan submitted to and approved by the division or with an abatement plan submitted in accordance with 19.15.30 NMAC.* [emphasis added]

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District _1_ office in __Hobbs____ on or before _3/2/2018_. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.**

The goals of a characterization effort are: 1) determination of the lateral and vertical extents along with the magnitude of soil contamination. 2) determine if groundwater or surface waters have been impacted. 3) If groundwater or surface waters have been impacted, what are the extents and magnitude of that impact. 4) The characterization of any other adverse impacts that may have occurred (examples: impacts on vegetation, impacts on wildlife, air quality, loss of use of property, etc.). To meet these goals as quickly as possible, the following items must, at a minimum, be addressed in the release characterization workplan and subsequent reporting:

● Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C_6 thru C_{36}), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.

● Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C_6 thru C_{36}), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.

● Nominal detection limits for field and laboratory analyses must be provided.

● Composite sampling is not generally allowed.

● Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted

for laboratory analysis from each borehole or test pit (highest observed contamination and deepest depth investigated). Copies of the actual laboratory results must be provided including chain of custody documentation.

●Probable depth to shallowest protectable groundwater and lateral distance to nearest surface water. If there is an estimate of groundwater depth, the information used to arrive at that estimate must be provided. If there is a reasonable assumption that the depth to protectable water is 50 feet or less, the responsible party should anticipate the need for at least one groundwater monitoring well to be installed in the area of likely maximum contamination.

● If groundwater contamination is encountered, an additional investigation workplan may be required to determine the extents of that contamination. Groundwater and/or surface water samples, if any, must be analyzed by a competent laboratory for volatile organic hydrocarbons (typically Method 8260 full list), total dissolved solids, pH, major anions and cations including chloride and sulfate, dissolved iron, and dissolved manganese. The investigation workplan must provide the groundwater sampling method(s) and sample handling protocols. To the fullest extent possible, aqueous analyses must be undertaken using nominal method detection limits. As with the soil analyses, copies of the actual laboratory results must be provided including chain of custody documentation.

● Accurately scaled and well-drafted site maps must be provided providing the location of borings, test pits, monitoring wells, potentially impacted areas, and significant surface features including roads and site infrastructure that might limit either the release characterization or remedial efforts. Field sketches may be included in subsequent reporting, but should not be considered stand-alone documentation of the site's layout. Digital photographic documentation of the location and fieldwork is recommended, especially if unusual circumstances are encountered.

Nothing herein should be interpreted to preclude emergency response actions or to imply immediate remediation by removal cannot proceed as warranted. Nonetheless, characterization of impacts and confirmation of the effectiveness of remedial efforts must still be provided to the OCD before any release incident will be closed.

Jim Griswold
OCD Environmental Bureau Chief
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
505-476-3465
jim.griswold@state.nm.us

Boomslang 14-23 Federal 9H

9BBLS PW_1.17.2018

devon

This map is for illustrative purposes only and is neither a legally recorded map nor survey and is not intended to be used as one. Devon makes no warranty, representation, or guarantee of any kind regarding this map.

WGS_1984_Web_Mercator_Auxiliary_Sphere
Prepared by: Dana DeLaRosa
Map is current as of: 24-Jan-2018

N

Miles
0 0.00 0.01 0.02 1: 889

APPENDIX B
NMOSE WELLS REPORT

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Code	Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 03917 POD1		C	LE	4	1	3	13	24S	33E	638374	3565212	1301	600	420	180
C 03662 POD1		C	LE	3	1	2	23	24S	33E	637342	3564428	1838	550	110	440
C 04339 POD6		CUB	LE	3	1	2	23	24S	33E	637340	3564386	1879	60		
C 03666 POD1		C	LE	2	3	4	13	24S	33E	639132	3565078	1938	650	390	260

Average Depth to Water: **306 feet**

Minimum Depth: **110 feet**

Maximum Depth: **420 feet**

Record Count: 4

UTMNAD83 Radius Search (in meters):

Easting (X): 637588 **Northing (Y):** 3566250 **Radius:** 2000

APPENDIX C
LINER INSPECTION & PHOTO LOG

Souder, Miller & Associates
Liner Inspection Form

Project Name: Boomslang 14 CTB Inspection Date: 3/26/2020

Client Name: Devon

Client Representative(s): _____

SMA Inspector(s): Sebastian Orozco

Project Location: _____ Latitude: 32.2243174 Longitude: -103.539675

Inspection Parameters as Outlined in 19.15.29.11.A(5) NMAC

PRIOR TO INSPECTION:

Two (2) Business Day Notification of Inspection to Appropriate Division Office (Y/N): Y
Date of Notice: 3/24/2020

Material Covering Liner Removed by Client (Y/N): Y

Affected Areas Exposed by Client (Y/N): N

INSPECTION:

Liner Thoroughly Inspected for Damage (Y/N): Y

All Damaged Areas Observed Marked in **White Paint** on Liner
Photos and Field Notes Detailing Failures Attached to This Form

To Be Completed by Client Representative:

Can Responsible Party Demonstrate:
Liner Integrity Was Maintained (per SMA Inspection) (Y/N): Y
Release Was Contained to Lined Containment Area (Y/N): Y
Liner Was Able to Contain the Leak (Y/N): Y

If **YES**:
Certify on Form C-141 That Liner Remains Intact

If **NO** to Any of Above:
Responsible Party Must Delineate Horizontal & Vertical Extent
Depending on Release:
See Table 1 19.15.29.12 NMAC
See Subparagraph (e) Paragraph (5) of Subsection A 19.15.29.11 NMAC

Additional Comments:

SMA INSPECTOR SIGNATURE

Sebastian Orozco
Date: 3/26/2020

CLIENT REPRESENTATIVE

Lupe Carrasco
Date: 4/14/20

Liner Inspection Photos Taken March 26, 2020


DANGER
CONFINED SPACE