

Form C-141

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State of New Mexico
Oil Conservation Division

Incident ID	NRM1926756372
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>38</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

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.

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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: KYLE ALPERS Title: VICE PRESIDENT OF ENGINEERINGSignature:  Date: 9/25/20email: KALPERS@AECNM.COM Telephone: 575-623-2999 EXT. 305**OCD Only**Received by: Cristina Eads Date: 11/09/2020

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Oil Conservation Division

Incident ID	NRM1926756372
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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: KYLE ALPERS Title: VICE PRESIDENT OF ENGINEERING

Signature:  Date: 9/25/20

email: KALPERS@AECNM.COM Telephone: 575-623-2999 EXT. 305

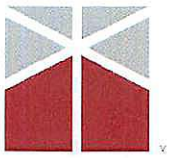
OCD Only

Received by: Cristina Eads Date: 09/25/2020

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: D E N I E D Date: 11/09/2020

Printed Name: Cristina Eads Title: Environmental Scientist



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SOLUTIONS

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

SITE CHARACTERIZATION AND CLOSURE REPORT

Property:

ARMSTRONG ENERGY CORPORATION
DORA DEAN 24 # 1 SWD
ROOSEVELT COUNTY, NEW MEXICO
UNIT LETTER "B", SECTION 24, TOWNSHIP 5 SOUTH, RANGE 33 EAST
LATITUDE 33.86264° N, LONGITUDE 103.42913° W
API NUMBER: 30-041-20938

SEPTEMBER 2019

Prepared For:

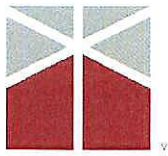
ARMSTRONG ENERGY CORPORATION
P.O. BOX 1973
ROSWELL, NM 88202
ATTN: MR. KYLE ALPERS

Prepared By:

A handwritten signature in black ink that reads "Natalie Gordon".

Natalie Gordon
Project Manager

INNOVATIVE SOLUTIONS DELIVERED



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ACRONYM LIST

bbl(s)	barrel(s)
bgs	feet below ground surface
Armstrong	Armstrong Energy
EPA	U.S. Environmental Protection Agency
ft	feet
GPS	global positioning system
HRL	HRL Compliance Solutions
NRCS	Natural Resources Conservation Service
NMAC	New Mexico Administrative Code
NM OCD	New Mexico Oil Conservation Division
NM OSE	New Mexico Office of the State Engineer
PW	produced water
SWD	saltwater disposal
USDA	United States Department of Agriculture
USGS	United States Geological Survey

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EXECUTIVE SUMMARY

HRL Compliance Solutions (HRL) was retained by Armstrong Energy Corporation (Armstrong) to conduct a site characterization assessment and liner inspection at the Dora Dean 24 #1 Saltwater Disposal (SWD) on September 4, 2019. The objective of the site assessment was to determine if there are any indications of chloride and/or hydrocarbon impacts from the release that occurred due to a lightning strike and subsequent fire on September 1, 2019. The objective of the liner inspection was to demonstrate continued liner integrity and verify that it remained intact and had the ability to contain the release in question. This report is also intended to serve as a final closure report to obtain approval from New Mexico Oil Conservation Division (NM OCD) for closure of the release.

OVERVIEW:

- Lightning strike on one of the storage tanks at Dora Dean 24 # 1 SWD in the early morning hours of September 1, 2019.
- The resulting fire destroyed all 4 tanks within the battery.
- An estimated 815 barrels (bbls) of produced water were released from the burning tanks into the lined secondary containment.
- An automated warning system alerted personnel of the fire and efforts were made to douse the flames.
- An estimated 660 bbls of produced water was recovered from the containment area using a vacuum truck. An estimated 155 bbls of produced water is believed to have evaporated as a result of the fire.
- Armstrong contacted HRL on September 4, 2019 to evaluate and remediate the spill and to obtain closure from NM OCD.
- HRL conducted a liner inspection on September 23, 2019 and the findings are presented in this report.

RECOMMENDATION:

Given the location of the release wholly within the lined secondary containment and the evaluation and discussion captured in Section 2.4 of this report, HRL recommends that no further action be taken regarding this release. Certification of the liner integrity on form C-141 and this closure report is hereby submitted to NM OCD to obtain closeout of the incident.



1.0 INTRODUCTION

1.1 RELEASE AND INITIAL RESPONSE

On September 1, 2019, a release at Armstrong Energy's (Armstrong) saltwater disposal (SWD) site, Dora Dean 24 # 1 (Dora Dean), occurred when lightning struck one of the tanks, resulting in a fire that destroyed all of the produced water (PW) storage on site. This incident resulted in the release of 815 barrels (bbls) of produced water into the tank battery lined secondary containment. A vacuum truck was brought on site and 660 bbls of free liquid were recovered. An estimated 155 bbls of PW is believed to have evaporated as a result of the fire. No oil or produced water was released outside of the secondary containment area.

Armstrong notified representatives of the New Mexico Oil Conservation Division (NM OCD) and submitted an initial C-141 Release Notification (Appendix A) to NM OCD through their online portal on September 4, 2019. HRL Compliance Solutions (HRL) was contacted by Armstrong on September 4, 2019 to conduct a site assessment for the release at Dora Dean as well as a liner inspection and submit required documentation per 19.15.29 New Mexico Administrative Code (NMAC) regulations to obtain NM OCD closure of the incident.

1.2 PURPOSE OF REPORT

This report, which has been prepared for the exclusive use of Armstrong Energy Corporation, presents the methods and results of the environmental investigation (site characterization) conducted at Dora Dean on September 23, 2019, by HRL. The objective of this site characterization report is to establish that remediation is complete, all applicable regulations are being followed, and to serve as a final closure report to obtain approval from NM OCD for closure of the release that occurred on September 1, 2019.

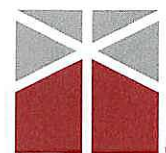
1.3 SCOPE AND LIMITATIONS

The scope of HRL's services consists of performing site characterization including a regional and local desktop review of potential receptors, verification of release stability, conducting a liner inspection, providing regulatory liaison, and preparation of this characterization report and recommendations associated with the incident specified therein. 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.

2.0 SITE CHARACTERIZATION

2.1 GENERAL SITE INFORMATION

The following information provides a brief outline of the site location and site conditions.



2.1.1 Site Location

Dora Dean 24 # 1 SWD is located on privately-owned land in Unit Letter "B", Section 24, Township 5 South, Range 33 East in Roosevelt County (Figure 1). This location is at the northern extent of the Permian Basin in southeast New Mexico and has historically been used for oil and gas exploration and production, and range land.

2.1.2 Site Description

Dora Dean is typical for oil and gas exploration and production sites in the Permian Basin and southeastern and eastern New Mexico, and it is currently used for produced water storage and disposal. This characterization report discusses an area on the pad within the secondary containment of the tank battery. The impacted area was underneath and around the produced water holding tanks, all of which are inside a lined secondary containment on the two-foot thick, constructed pad.

The surrounding landscape is comprised of upland plains with a semiarid climate and average annual precipitation ranging between 14 and 16 inches. Native vegetation is principally shortgrass and midgrass species such as black grama, blue grama, and sideoats grama and the occasional forbs (Soil Survey Staff, n.d.). Limited vegetation is allowed to grow on the compacted production pad and no vegetation grows within the secondary containment.

2.1.3 Topography

Dora Dean is located at an elevation of approximately 4,371 feet above sea level on flat upland plains typically with a 0-3 percent slope.

2.1.4 Geology

According to the United States Department of Agriculture (USDA) Web Soil Survey, the majority surface soil geology at Dora Dean is Spraberry fine sandy loam, which consists of fine sandy loam over a layer of cemented material and gravelly, sandy loam. The soil tends to be well-drained with high runoff and very low available water storage in the soil profile.

The geology at Dora Dean comes from older alluvial deposits of upland plains and piedmont areas, and calcic soils and eolian cover sediments of the High Plains region dating back to the middle to lower Pleistocene age. Although the site is within an area of sedimentary rocks known to locally contain piping or other pseudokarst features, it is not found over true karst geology and is therefore not subject to the requirements of Paragraph (4) of Subsection C of 19.15.29.12 NMAC.

2.1.5 Surface Water

There is no surface water located at the Dora Dean SWD site. Based on USGS National Hydrology Maps, the nearest significant watercourses as defined in Subsection P of 19.15.17.7



NMAC are an intermittent pond located 0.5 miles due west of the tank battery and an intermittent stream located approximately 1 mile south of the tank battery (Figure 2).

2.1.6 Groundwater

Using the NM Office of the State Engineer (NM OSE) Water Column Report, depth to groundwater is estimated to be an average of 46 feet below ground surface (bgs) for an area with a radius of 6 miles around the release location. The minimum depth to groundwater in that same area is 12 ft bgs.

Because NM OSE did not show detailed depth to groundwater information for an area closer to the release site, additional groundwater information was obtained from the United States Geological Survey (USGS) National Water Information System. Of the six USGS wells within two miles of Dora Dean, the shallowest depth to groundwater is 38 feet bgs (Figure 3). See Appendix B for information pertaining to the depth to groundwater determination.

2.1.7 Known Water Sources

There are no known water sources within a half mile of the release as stated in Section 2.1.6 of this report. There are no continuously flowing watercourses or significant watercourses, nor any lakebeds, sinkholes, playa lakes, or other critical water or community features as outlined in Paragraph (4) of Subsection C of 19.15.29.12 NMAC.

2.1.8 Oil and Gas Production/Transfer/Storage Equipment

The release occurred within the tank battery secondary containment on the Dora Dean SWD pad (Figure 1). There were a total of five produced water tanks located within this secondary containment prior to the fire. No additional production equipment is located at this site and no equipment outside of the tank battery was affected by the release.

2.2 INVESTIGATION METHODS

The following information discusses the actions performed at Dora Dean SWD as part of the evaluation and closure activities conducted on September 23, 2019.

2.2.1 Soil Sampling Procedures

No soil sampling was conducted at Dora Dean following vacuum removal of the free liquids because the release was contained within the lined secondary containment where there is no soil.

2.2.2 Liner Inspection and Verification

HRL conducted a visual liner inspection on September 23, 2019. Following appropriate notice to NM OCD District I office, the liner was visually inspected for cracks, tears, cuts, and other signs of damage to verify that the liner remained intact and had the ability to contain the release, as required by Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC.



2.3 EVALUATION OF DATA AND DISCUSSION

This section presents investigation results and evaluates the results in respect to NM OCD site characterization requirements and/or guidelines.

2.3.1 Dora Dean 24 # 1 SWD

The site assessment and liner inspection conducted on September 23, 2019 was conducted under NM OCD guidance found in Subparagraph (a) of Paragraph (5) of Subsection A in 19.15.29.11 NMAC. The inspection, along with photographic evidence provided by Armstrong, identified that the liner had fully contained the release and there were no indications of adverse conditions on or near the site. The inspection also identified that the old lined, earthen berm secondary containment had been removed and a new, permanent secondary containment structure was being installed.

3.0 RISK ASSESSMENT

3.1 POTENTIAL RECEPTOR EVALUATION

No potential receptors were identified either on- or off-site based on the following findings.

3.1.1 Human Receptors

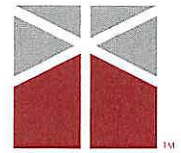
There are ongoing SWD operations at the site. Current contamination levels, if any, do not pose a threat to human health so long as existing company health and safety guidelines are followed by site personnel. There is no threat to human health for offsite human receptors due to the fact the release was entirely contained within the secondary containment.

3.1.2 Ecological Receptors

There are no ecological receptors identified which may be threatened by the release that occurred within the Dora Dean secondary containment. Offsite, there are no ecological receptors identified which may be threatened by the minimal presence of hydrocarbons and chlorides that may be present within the lined secondary containment of this tank battery.

3.1.3 Wells and Surface Water

There are no potable wells, non-potable wells, or surface water bodies, onsite nor offsite, that are close enough to be adversely affected by this release (Figure 3). Groundwater is at a sufficient depth below ground surface such that it is not expected to be affected by any hydrocarbons or chlorides that were previously present in the secondary containment as a result of this release.



4.0 REMEDIATION ASSESSMENT

4.1 REMEDIATION DRIVERS AND CLEANUP OBJECTIVES

Clear remediation drivers and objectives are required to establish the framework within which potential remedial technologies are evaluated and compared. The remediation driver for this site is compliance with NM OCD regulations and directives to ensure proper cleanup at the Dora Dean SWD location. Cleanup objectives are chemical and media-specific goals that are protective of human health and the environment and must be achieved to meet regulatory requirements outlined in Table I in 19.15.29 NMAC.

4.2 RECOMMENDATION

Given the location of the spill, the producer's immediate removal of free liquids from the secondary containment area following the release and, based on the success of the liner verification and installation of an upgraded secondary containment system, HRL recommends no additional remediation action to address this release. The presence of any contaminants of concern at the site resulting from the above-referenced release, were wholly contained within the lined secondary containment and have since been removed from site along with the previous liner. There are no anticipated risks to human, ecological, or hydrological receptors at the Dora Dean location.

5.0 CLOSURE

Due to the reasons outlined in Section 4.2 above, HRL recommends that this incident (RP # not yet assigned) be closed. All liner certification requirements as set forth in Subsection A of 19.15.29.12 NMAC and any closure requirements set forth in Subsection E of 10.15.29.12 have been met. Photos included in Appendix C of this report demonstrate the liner certification assertions. Armstrong Energy Corporation certifies that all information in this report and the attachments is correct and that Armstrong has complied with all applicable closure requirements and conditions specified in Division rules and directives to meet NM OCD requirements to obtain closure on the release at Dora Dean 24 # 1 SWD.



6.0 REFERENCES

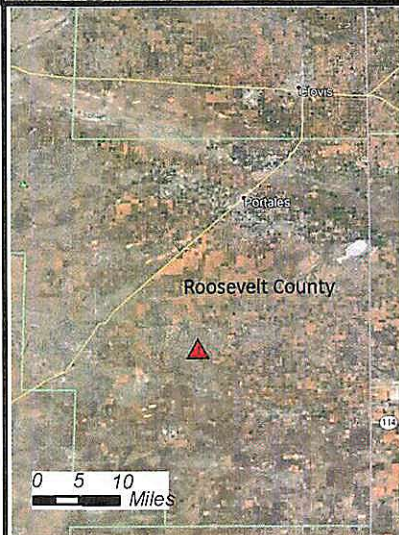
Geological Survey Staff, United States Geological Survey, U.S. Department of the Interior. Groundwater for New Mexico: Water Levels. Available online at: <https://nwis.waterdata.usgs.gov/nm/nwis/gwlevels>. Accessed [09/26/2019].

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State Engineer, New Mexico Office of the State Engineer. New Mexico Water Rights Reporting System. Available online at <http://nmwrrs.ose.state.nm.us/waterColumn.html>. Accessed [09/26/2019].



Mapped Features



Release Location



Secondary
Containment



Figure 1

Site Location Map

Dora Dean 24 # 1 SWD

33.86264, -103.42913

Section 24, Township 5South, Range 33 East

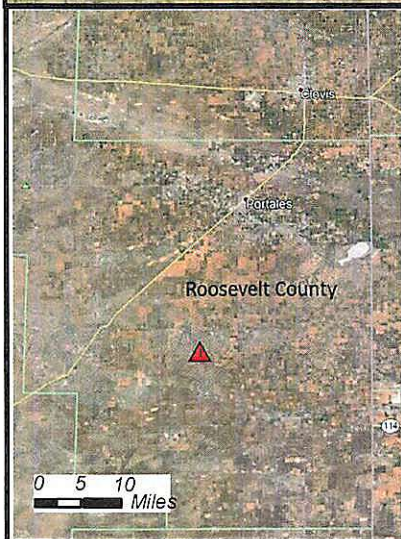
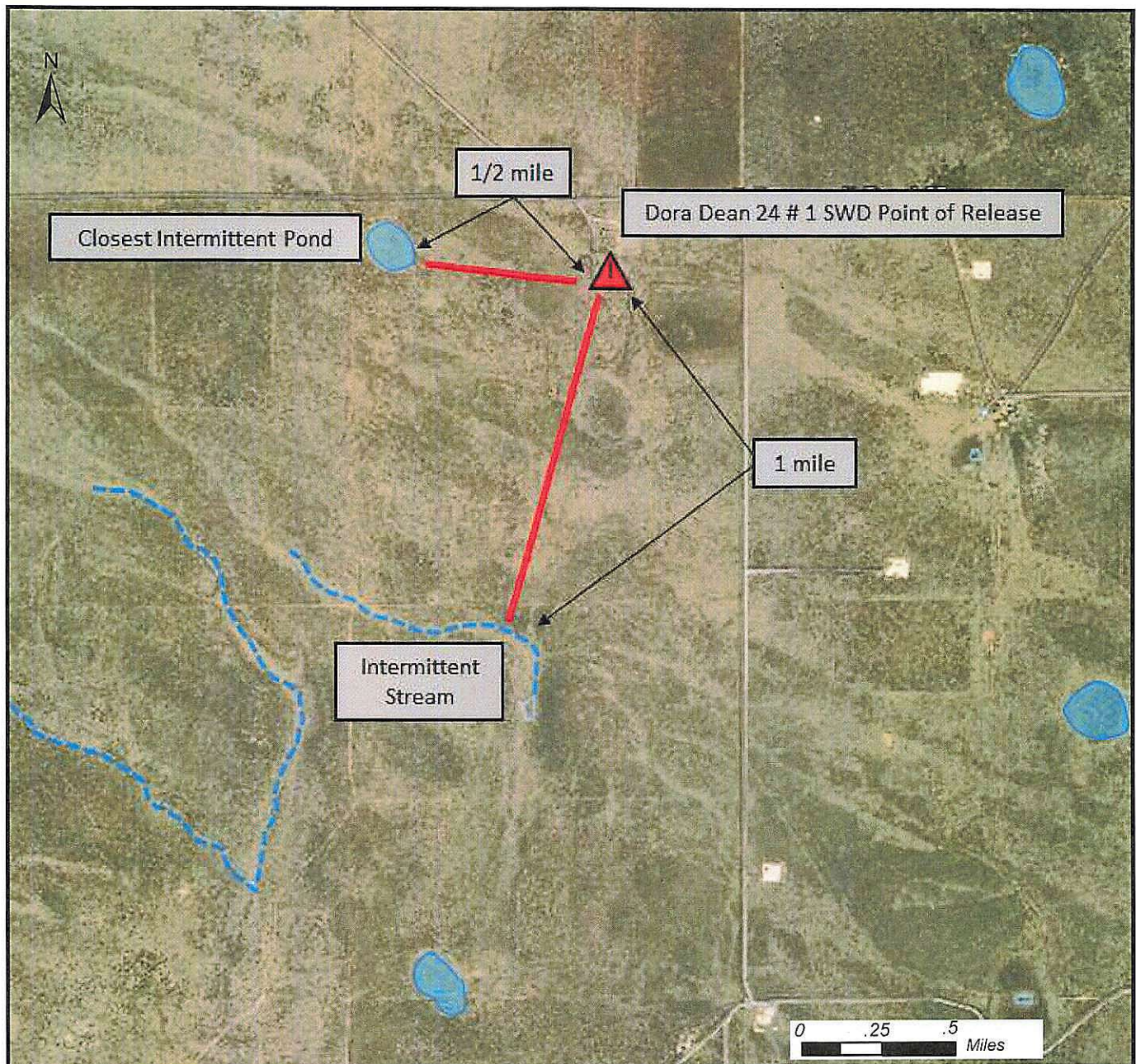


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Revision: 0

Date: 09/26/2019



Mapped Features



Release Location



Intermittent Pond



Intermittent Stream



Figure 2

Nearest Surface Water

Dora Dean 24 # 1 SWD

33.86264, -103.42913

Section 24, Township 5South, Range 33 East

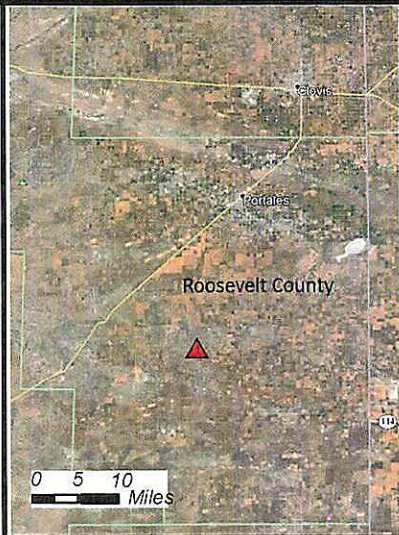
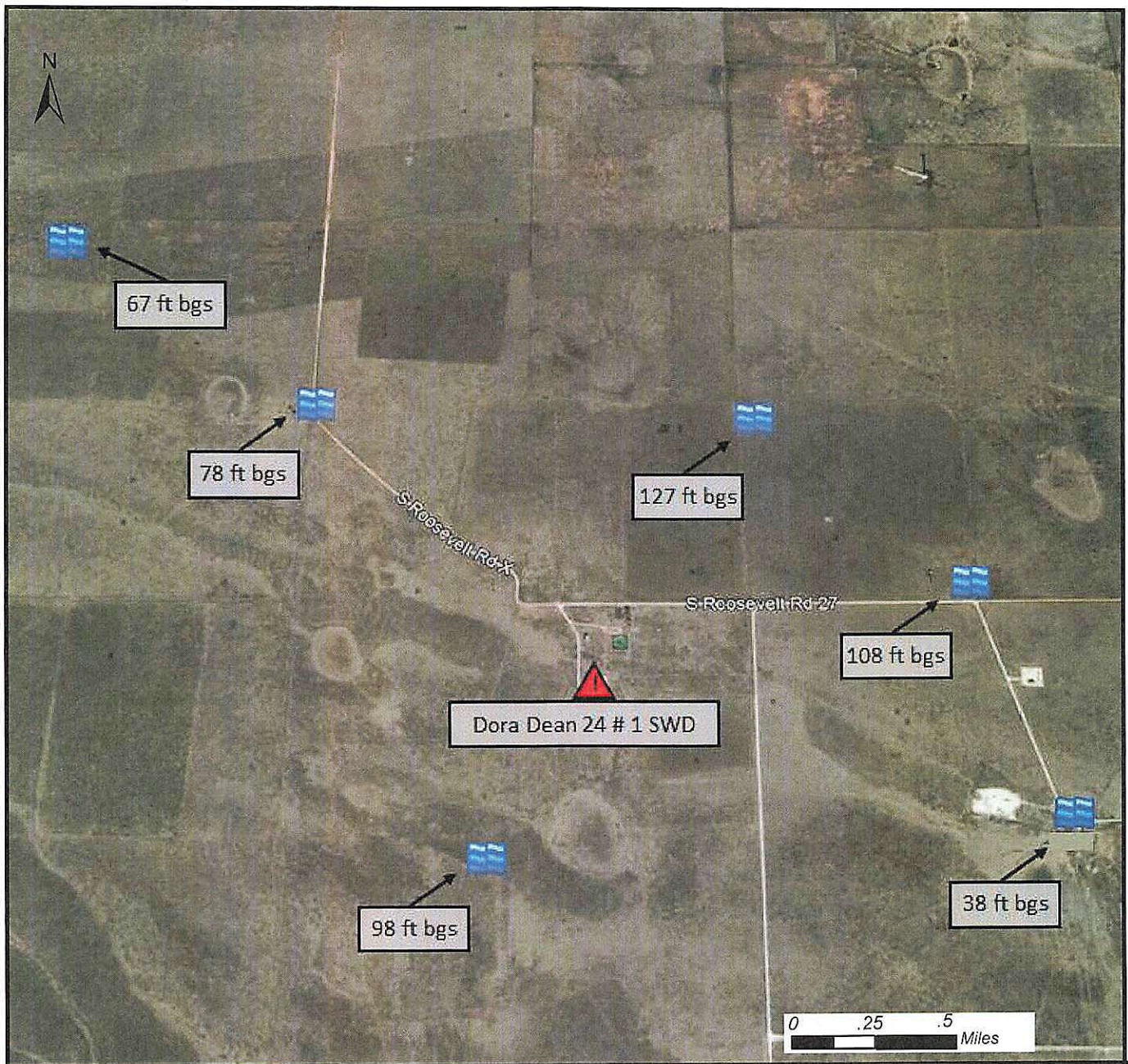


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Author: N. Gordon

Revision: 0

Date: 09/26/2019



Mapped Features



Release Location



Groundwater Wells



Figure 3

Nearest Groundwater Wells and Depth to Groundwater Dora Dean 24 # 1 SWD

33.86264, -103.42913

Section 24, Township 5South, Range 33 East

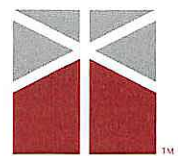


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Author: N. Gordon

Revision: 0

Date: 09/26/2019



Appendix A: Initial 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	ARMSTRONG ENERGY CORPORATION	OGRID	1092
Contact Name	KYLE ALPERS	Contact Telephone	(575) 623-2999 Ext. 305
Contact email	kalpers@aecnm.com	Incident #	(assigned by OCD)
Contact mailing address	P.O. BOX 1973	ROSWELL, NM	88202

Location of Release Source

Latitude 33.86264 Longitude -103.42913
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	DORA DEAN 24 # 1	Site Type	SWD
Date Release Discovered	9/1/2019	API# (if applicable)	30-041-20938

Unit Letter	Section	Township	Range	County
B	24	5S	33E	ROOSEVELT

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 checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 815 BBLS	Volume Recovered (bbls) 660 BBLS
	Is the concentration of dissolved chloride 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

LIGHTNING STRIKE ON TANK BATTERY CAUSED A FIRE WHICH DESTROYED MOST OF THE TANKS IN THE BATTERY. THE RELEASE WAS CONTAINED WITHIN THE LINED BERM SECONDARY CONTAINMENT.

Form C-141

State of New Mexico
Oil Conservation Division

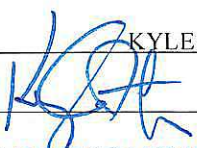
Page 2

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? THE VOLUME OF PRODUCED WATER RELEASED EXCEEDED 25 BBLS.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? IMMEDIATE NOTICE WAS NOT PROVIDED TO OCD. THIS FORM IS FIRST NOTIFICATION.	

Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" 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: <u>KYLE ALPERS</u>	Title: <u>VICE PRESIDENT OF ENGINEERING</u>
Signature: 	Date: <u>9/25/20</u>
email: <u>KALPERS@AECNM.COM</u>	Telephone: <u>575-623-2999 EXT. 305</u>
<u>OCD Only</u> Received by: _____ Date: _____	



Appendix B: Depth to Groundwater Analysis

9/26/2019

nmwrrs.ose.state.nm.us/ReportProxy?queryData=%7B"report"%3A"waterColumn"%2C%0A"BasinDiv"%3A"true"%2C%0A"Basin"%3A"..."



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	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	DepthWell	DepthWater	Water Column
CL 00156 POD1		CL	RO	1	1	2	24	05S	33E	645169	3748205*	217	130		
CL 00157 POD1		CL	RO	3	3	4	13	05S	33E	645163	3748407*	397	130		
CL 00158 POD1		CL	RO	2	2	4	13	05S	33E	645760	3749020*	1083	169		
CL 00099 POD1		CL	RO	2	2	14	05S	34E	653698	3749861*	8587	165			
CL 00100 POD1		CL	RO	2	2	14	05S	34E	653698	3749861*	8587	185	115	70	
CL 00105 POD1		CL	RO	3	3	2	28	04S	33E	640209	3755527*	9060	38	12	26
CL 00108 POD1		CL	RO	3	3	2	28	04S	33E	640209	3755527*	9060	38	12	26

Average Depth to Water: **46 feet**

Minimum Depth: **12 feet**

Maximum Depth: **115 feet**

Record Count: 7

UTM NAD83 Radius Search (in meters):

Easting (X): 645306.48

Northing (Y): 3748036

Radius: 10000

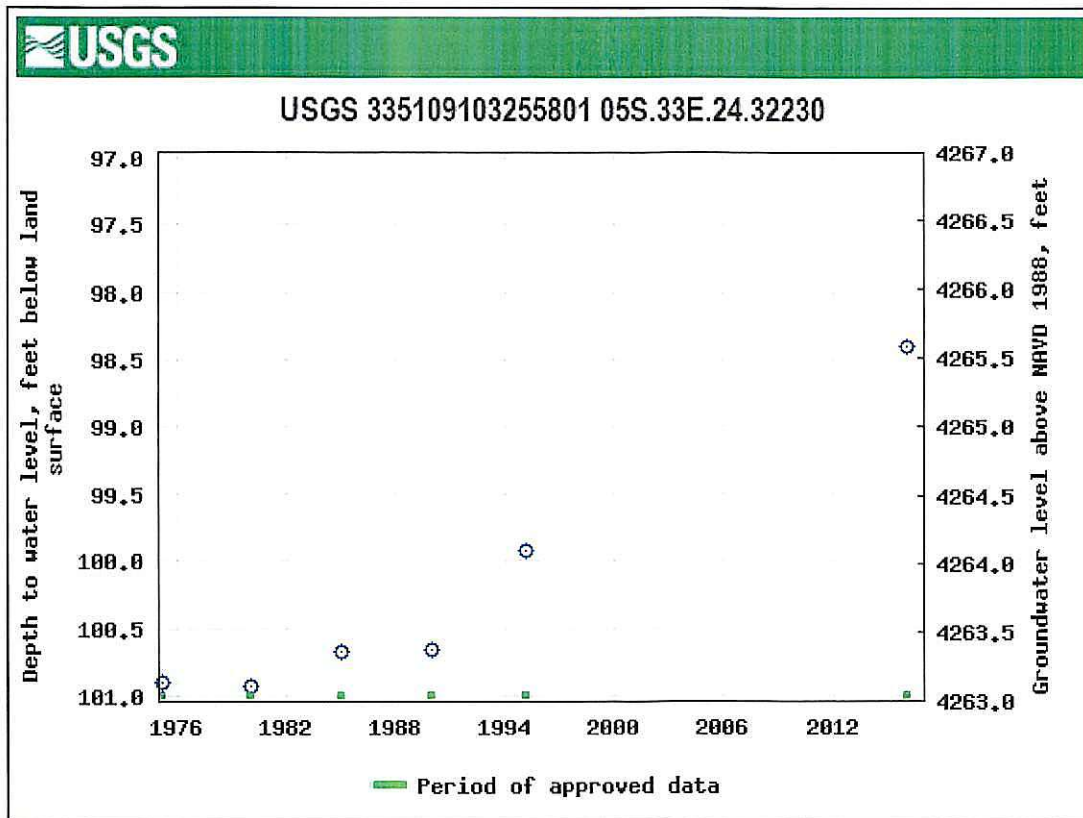
*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

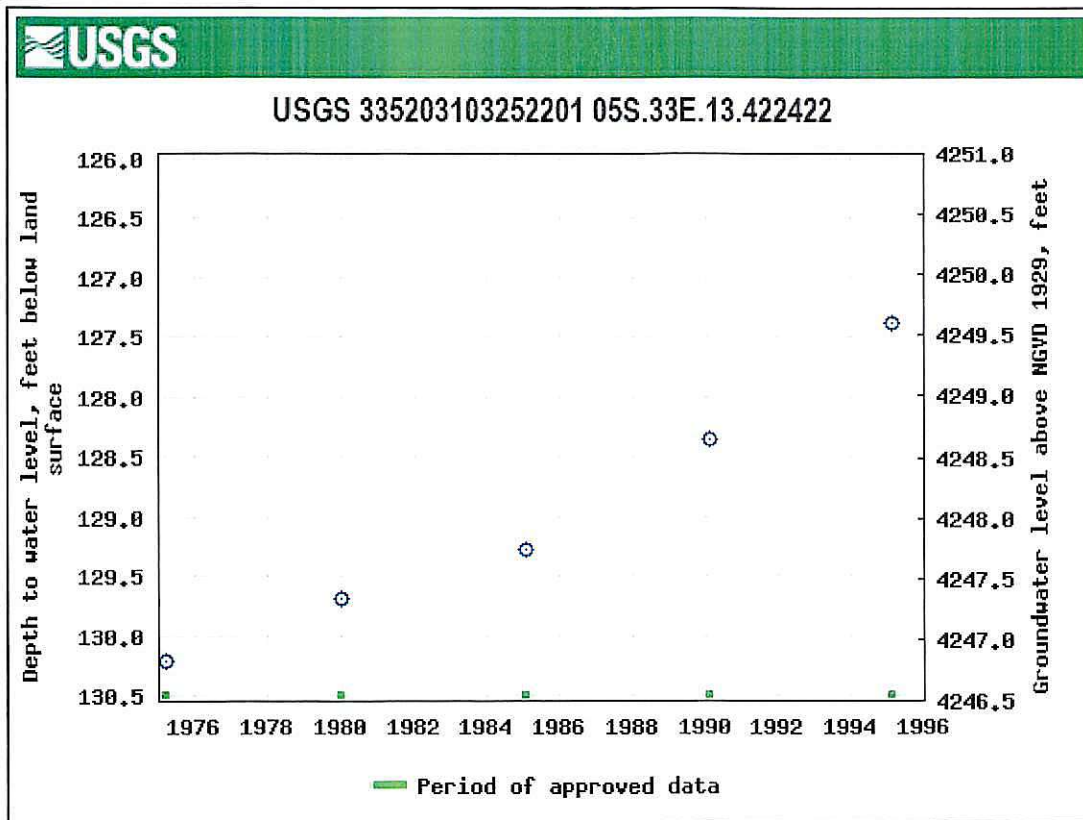
9/26/19 10:39 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER

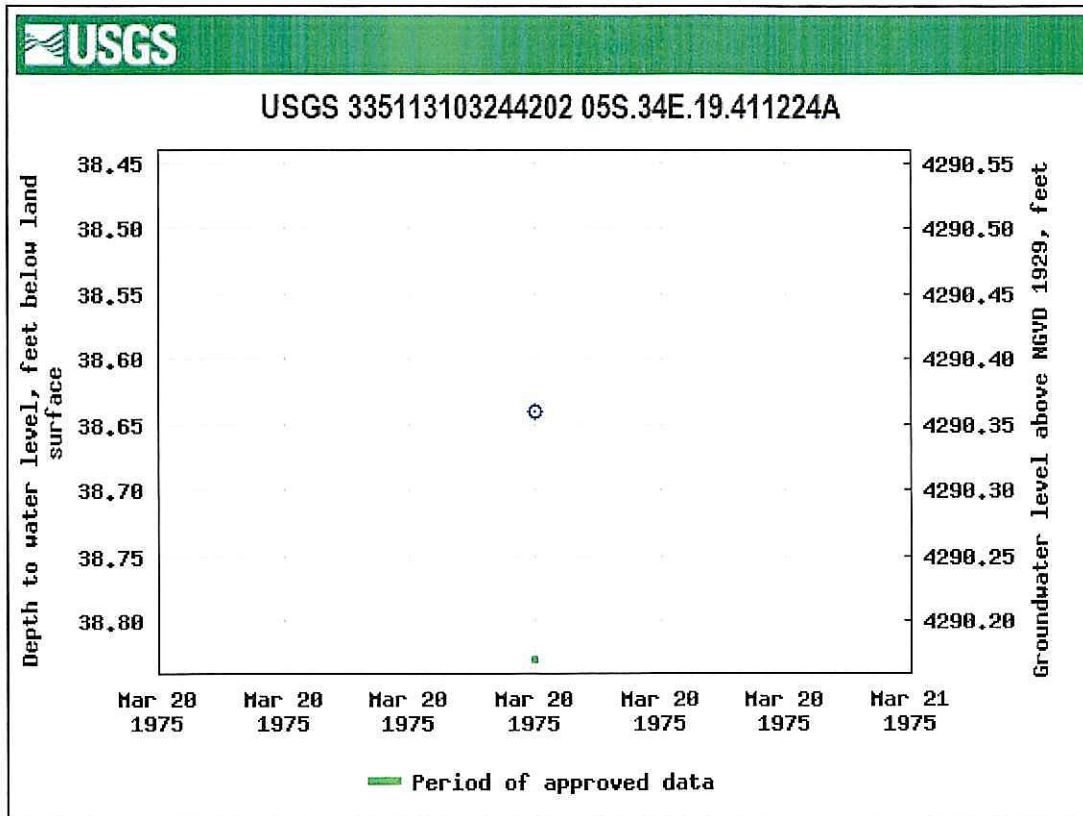
9/26/2019

https://nwis.waterdata.usgs.gov/nwis/gwlevels?site_no=335109103255801&begin_date=&end_date=&format=img&submitted_form=&pre...

9/26/2019

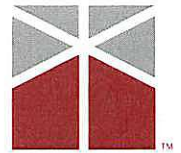
https://nwis.waterdata.usgs.gov/nwis/gwlevels?site_no=335203103252201&begin_date=&end_date=&format=img&submitted_form=&pre...

9/26/2019

https://nwis.waterdata.usgs.gov/nwis/gwlevels?site_no=335113103244202&begin_date=&end_date=&format=img&submitted_form=&pre...



Appendix C: Photographs



Photograph 1: Burned Production Water Storage Tanks and Standing Water in Lined, Bermed Secondary Containment

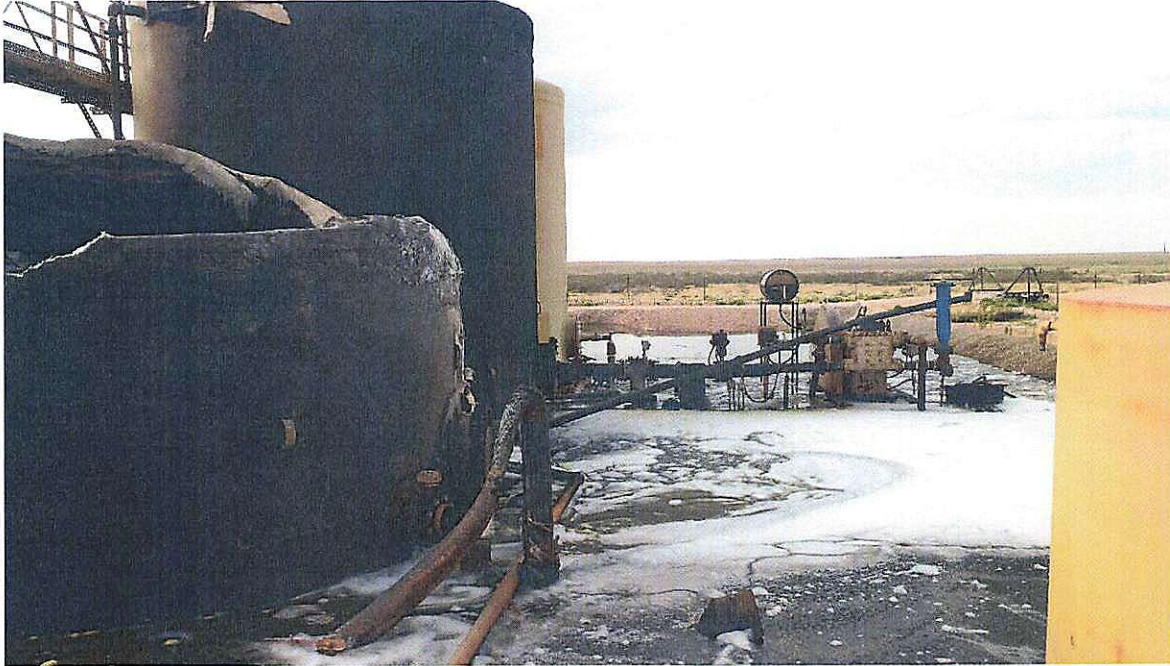


Photograph 2: Original Secondary Containment Holding All Released Liquids



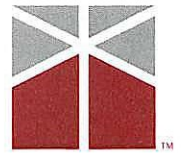


Photograph 3: Produced Water Release Contained in Secondary Containment



Photograph 4: Secondary Containment Liner and Earthen Berm Removed



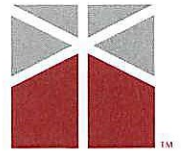


Photograph 5: Removal of Secondary Containment Liner and Berm to Make Way for New Secondary Containment Structure



Photograph 6: Pad Surface Prepared for Installation of New Secondary Containment Structure





Photograph 7: Brand New Secondary Containment Structure Installed



Photograph 8: New Storage Tank Bases Installed in New Secondary Containment Structure

