



EOG Resources, Inc.  
Artesia Division Office  
104 S. 4<sup>th</sup> Street  
Artesia, N. M. 88210

**EOG Y Resources, Inc.**

***Characterization Plan***

**Ross EG Federal Battery**

**30-015-25903**

**Section 20, T19S-R25E**

**Eddy County, New Mexico**

**August 31, 2017**

**2RP-4354**

## **I. Location**

From the intersection of US 285 and Rocking R Red Road, take Rocking R Red Road west for 6.5 miles, then turn south onto the lease road and follow for 0.3 mile, then turn west for 0.2 mile to the entrance of the location.

## **II. Background**

On August 22, 2017, EOG Y Resources, Inc. submitted to the NMOCD District II office a Form C-141 for the release of 35 B/PW with 30 B/PW recovered. The affected area is approximately 255 feet by 15 feet within the primary berm of the facility and 65 feet by 20 feet outside of the primary berm, but within the secondary berm, at the northeast corner. The release was caused by the failure of an underground produced water transfer line. A vacuum truck was dispatched to recover the standing fluid and a backhoe crew was contracted to excavate visually impacted soils.

## **III. Surface and Ground Water**

Area surface geology is Paleozoic Permian. Based on information from the New Mexico Office of the State Engineer (NMOSE) database and United States Geological Survey National Water Information System (USGS) regarding this location (Section 20, T19S-R25E), depth to groundwater is approximately 300 feet. The Chevron/Texaco Trend Map (Trend Map) has the same location (Section 20, T19S-R25E) to be approximately 150 feet to groundwater. However, based on the elevation of the location (3,587 ft.) and the elevation of the wells listed on USGS and NMOSE (3,585 ft.), the more accurate calculation of depth to groundwater appears to be 300 feet rather than 150 feet depicted by the Trend Map. Watercourses in the area are dry except for infrequent flows in response to major precipitation events, with the nearest body of surface water being Brantley Lake at 8.4 miles away.

## **IV. NMOCD Ranking Criteria**

The ranking for this site is zero (0) based on the following:

Depth to ground water	> 100'
Wellhead Protection Area	> 1000'
Distance to surface water body	> 1000'

Based on the ranking criteria, the NMOCD established RRALs for this site are:

Benzene	10 ppm
BTEX	50 ppm
TPH	5,000 ppm
Chlorides	No established RRAL

## **V. Sampling Procedure**

Vertical delineation samples will be collected at 6 sample points (S1-S6) within the release area. Samples will be collected at 1', 2', 3', and 4' below grade surface (bgs). Due to the nature of the release (produced water), the first set of vertical delineation hole soil samples (1' and 2' bgs) will be analyzed for Benzene, BTEX, TPH extended, and chlorides. If these samples are below RRALs for Benzene, BTEX, and TPH extended, no further sampling for these constituents will occur, only chloride will be analyzed with any further soil sampling if the initial sample analyses warrant further delineation. All samples will be sent to a NMOCD approved laboratory for analysis. Based on those results, additional vertical samples may be collected at the same sample points until the RRAL for a site ranking 0 has been met.

Horizontal delineation samples will be collected at 14 sample points (H1-H14) at what is believed to be the outer edge of the release area. Samples will be collected at 1' bgs and analysis will be run for the identified constituents determined from vertical delineation sampling to have caused impaction to the soil at the site. If a sample point is determined to be impacted by the release, a new sample will be collected moving out further until an area without impaction is located. Once located, samples will be taken to collaborate the impaction path to the next sample point in the sequence.

As a baseline for all sampling analytical data, background samples will be collected up gradient from the release to the southwest. The point remains on the production pad in an area that has no known release impaction. This creates less damage to the landowner's private surface by keeping the activities on the production pad and reduces the vegetative damage that would otherwise be created by moving off of location to collect background samples in the adjoining pasture.

# Figure 1

## Site Map



# Ross EG Federal Battery

Release Area

## Legend

Release Area

32.65229, -104.51287

32.65229, -104.51264

32.65222, -104.51286

32.65224, -104.51265

32.65214, -104.51291

32.65201, -104.51319

32.65197, -104.51292

32.65186, -104.51304

32.65176, -104.51325



100 ft

Google Earth

## **Figure 2**

### **Vertical Sample Points**



**Ross EG Federal Battery**  
Release Area w/ Proposed Sampling Points

**Legend**

- Release Area
- Release Point
- Sample Points



Release Point

S1

S2

S3

S4

S5

S6

Google Earth

90 ft



# **Figure 3**

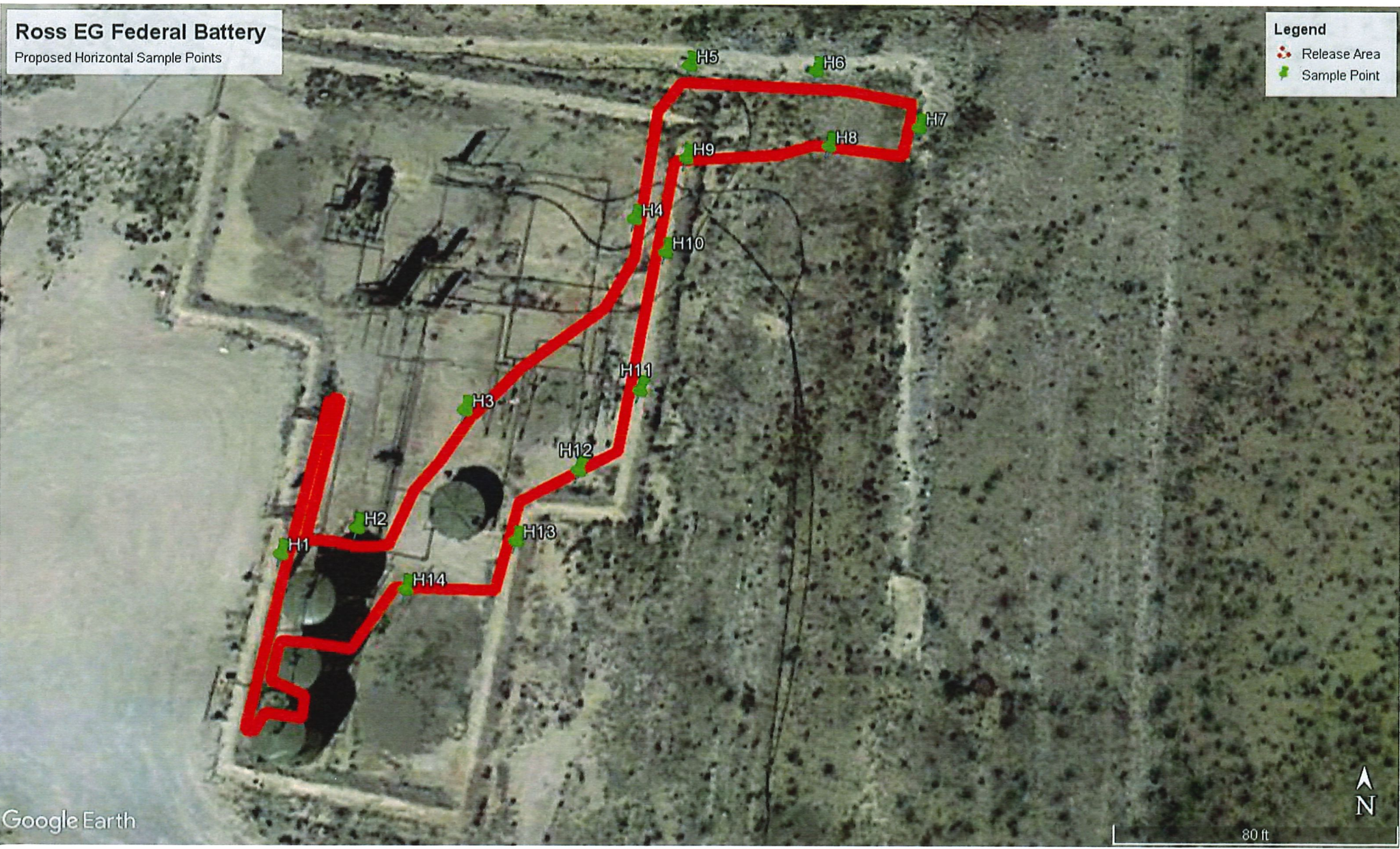
## **Horizontal Sample Points**



**Ross EG Federal Battery**  
Proposed Horizontal Sample Points

**Legend**

- Release Area
- Sample Point



# **Figure 4**

## **Background Sample Point**



**Ross EG Federal Battery**  
Release Area w/ Proposed Background Sample Point

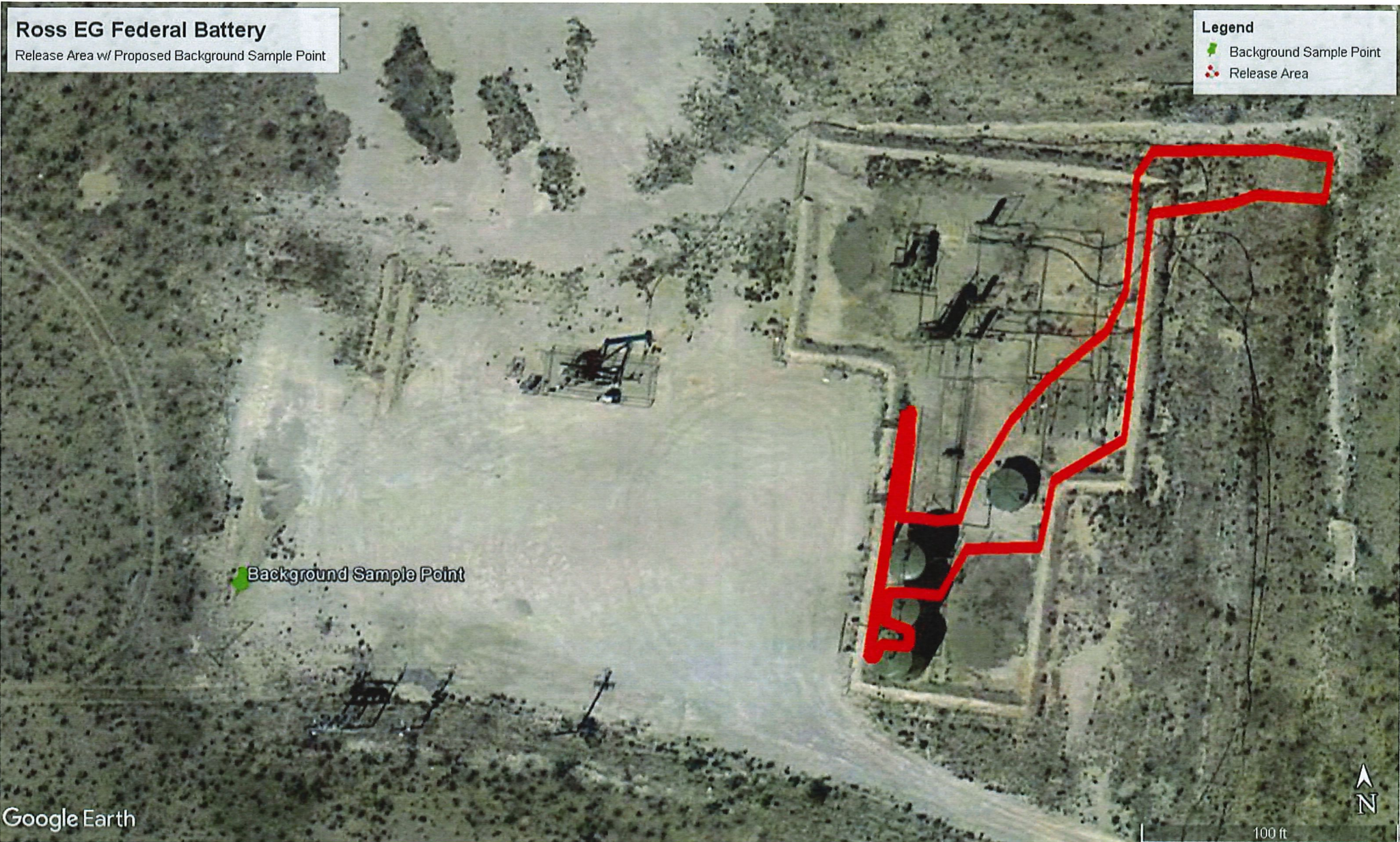
**Legend**

- Background Sample Point
- Release Area

Background Sample Point




100 ft



## Photos



 **eog resources (575) 748-1471**

ROSS "EG"  
BATTERY

NW 1/4 - NW 1/4 - Unit D

Sec. 20 - T 19 S - R 25 E

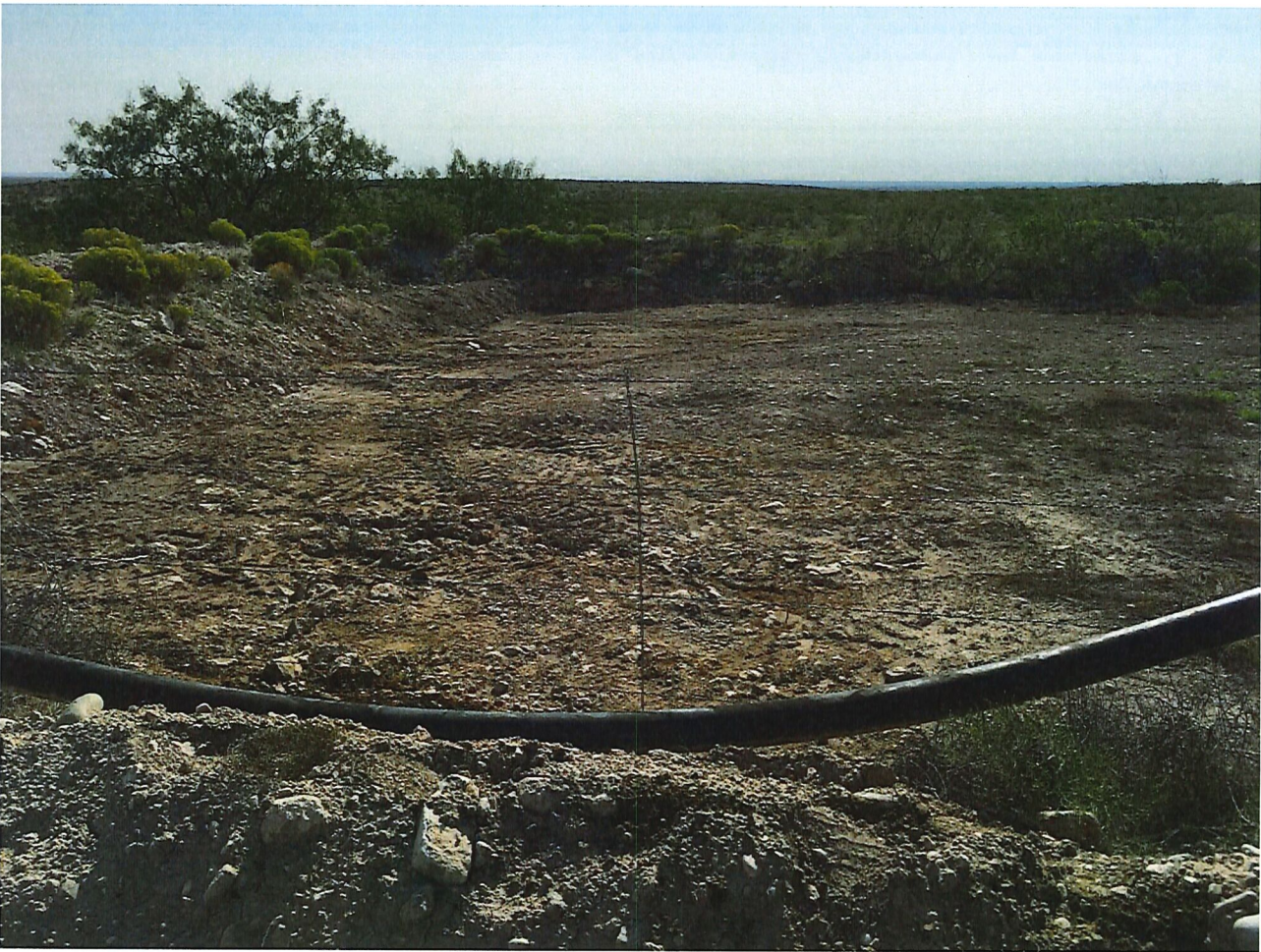
Eddy Co. New Mexico













# Appendix A

## NMOSE Well Log





# New Mexico Office of the State Engineer

## Wells with Well Log Information

(A CLW#### in the POD suffix indicates the POD has been replaced & no longer serves a water right			(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)			Licens			
POD Number	POD		County	Source	q q q	Sec	Twrs	Rng	X	Y	Distance	Start Date	Finish Date	Log File Date	Depth Well	Depth Water	Driller	Licens Number
RA 04726	Code	Subbasin	ED	Shallow	6416 4	3 2	19	19S 25E	544825	3612390*	859	12/05/1962	12/20/1962	11/08/1962	390	310		62

Record Count: 1

UTMNAD83 Radius Search (in meters):

Easting (X): 545582.49      Northing (Y): 3612795.16      Radius: 900

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOS/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 particular purpose of the data.

8/28/17 2:07 PM

WELLS WITH WELL LOG INFORMATION

# **Appendix B**

## **USGS Groundwater Level Information**



# National Water Information System: Web Interface

USGS Water Resources

Data Category:  Geographic Area:

[Click for News Bulletins](#)

[Groundwater levels for New Mexico](#)

[Click for state-specific text](#)

## Site Description Information -- 2 sites match criteria

County = Eddy

lat\_long\_bounding\_box =

Position	Latitude	Longitude
Corner 1	32.653561	-104.544639
Corner 2	32.645194	-104.494185
Coordinates are entered as Decimal Degrees. DMS values are converted to Decimal degrees using NAD83 as the datum. Make your bounding box bigger if you are using NAD27 Datum for your DMS values		

Minimum number of 1  
levels =

Agency	Site Number	Site Name	Dec. Lat.	Dec. Lon	Coor accr.	Dec. lat/long datum	State	County	Country	Land net	Well depth	Hole depth	Source of depth data	Field water- level measurements count
USGS	323854104311601	19S.25E.19.232334	32.64844560	-104.52163240	U	NAD83	35	015	US	NESWNES019T19S. R2SE.	317.00		A	1
USGS	<u>323858104311101</u>	19S.25E.19.23431	32.64955676	-104.52024350	T	NAD83	35	015	US	SESWNES19 T19S R2SE	288			2

[Questions about sites/data?](#)

[Feedback on this web site](#)

[Automated retrievals](#)

[Help](#)

[Data Tips](#)

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[U.S. Department of the Interior](#) | [U.S. Geological Survey](#)

**Title:** Groundwater levels -- 2 sites found

**URL:** <https://nwis.waterdata.usgs.gov/nm/nwis/gwlevels?>

**Page Contact Information:** [New Mexico Water Data Maintainer](#)

**Page Last Modified:** 2017-08-28 16:55:05 EDT

0.38 0.37 nadww01



# **Appedix C**

## **Form C-141 Initial**

# NM OIL CONSERVATION

ARTESIA DISTRICT

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

AUG 22 2017

Form C-141  
Revised April 3, 2017

RECEIVED to appropriate District Office in  
accordance with 19.15.29 NMAC.

## Release Notification and Corrective Action

### OPERATOR

NAB1723536168

☒ Initial Report ☐ Final Report

Name of Company EOG Y Resources, Inc.	Contact Chase Settle
Address 104 S. 4 <sup>th</sup> Street Artesia NM 88210	Telephone No. 575-748-1471
Facility Name Ross EG Federal #3 Battery	Facility Type Well

Surface Owner Private	Mineral Owner Federal	API No. 30-015-25903
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### LOCATION OF RELEASE

Unit Letter D	Section 20	Township 19S	Range 25E	Feet from the 660	North/South Line North	Feet from the 660	East/West Line West	County Eddy
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Latitude 32.6519089 Longitude -104.5134125 NAD83

### NATURE OF RELEASE

Type of Release Produced Water	Volume of Release 35 B/PW	Volume Recovered 30 B/PW
Source of Release Transfer line	Date and Hour of Occurrence 08/08/2017; 6:58 AM	Date and Hour of Discovery 08/08/17; 6:58 AM
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Mike Bratcher, Crystal Weaver, Shelly Tucker	
By Whom? Robert Asher	Date and Hour August 8, 2017; 11:00 AM	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

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

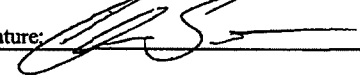
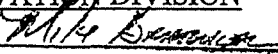
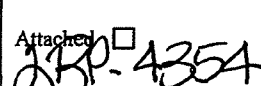
Describe Cause of Problem and Remedial Action Taken.\*

There was a failure of an underground produced water transfer line, which led to the release of produced water. A vacuum truck was called to recover standing fluid and a backhoe was dispatched to excavate impacted soils.

Describe Area Affected and Cleanup Action Taken.\*

The impacted area was approximately 255 feet by 15 feet within the primary berm of the battery and 65 feet by 20 feet outside of the primary berm, but within the secondary berm, at the northeast corner. Vertical and horizontal delineation samples will be taken and analysis ran for TPH & BTEX (chlorides for documentation). If initial analytical results for TPH & BTEX are under RRAL's (site ranking is 0) a Final Report, C-141 will be submitted to the OCD requesting closure. If the analytical results are above the RRAL's a work plan will be submitted to the OCD. Depth to Ground Water: >100' (300', Section 20, T19S, R25E, per NMOSE), Wellhead Protection Area: No, Distance to Surface Water Body: >1000', SITE RANKING IS 0.

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: 	OIL CONSERVATION DIVISION Signed By 	
Printed Name: Chase Settle	Approved by Environmental Specialist:	
Title: Rep Safety & Environmental II	Approval Date: 8/22/17	Expiration Date: N/A
E-mail Address: chase.settle@eogresources.com	Conditions of Approval: See attached	Attached <input type="checkbox"/> 
Date: August 21, 2017	Phone: 575-748-4171	

\* Attach Additional Sheets If Necessary

\*NOTE: As a condition of approval, in addition to the attached COA document, chloride data will be used to determine remediation requirements.