



EOG Resources, Inc.
Artesia Division Office
104 S. 4th 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

January 11, 2018

2RP-4509

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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 December 1, 2017, EOG Y Resources, Inc. submitted to the NMOCD District II office a Form C-141 for the release of 10 B/PW with 7 B/PW recovered. The affected area overlaps area impacted by the 2RP-4354 release (approximately 255 feet by 15 feet within the primary berm), except this release did not breach the primary berm and there was an additional finger that followed the berm from the south tank that measures approximately 110 feet by 2 feet before tying back into the previously impacted area. The release was caused by the failure of a transfer pump causing the overflow of a produced water tank. A vacuum truck was dispatched to recover the standing fluid and a backhoe crew was contracted to excavate visually impacted soils, approximately 1 foot of soil excavated and sent to a NMOCD approved disposal facility during these activities.

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 consist of points S1, S2, and S4 from the 2RP-4354 approved characterization plan, plus an additional 3 points (S7, S8, and S9) which will be collected in the newly impacted area. Figure 2 displays the vertical sampling points, including 2RP-4354 points. 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 had already been collected for 2RP-4354 prior to this release occurring. However, points H1, H2, H4, H10, H11, H12, H13, and H14 will be resampled to ensure that the boundaries are again identified since the new release re-impacted these areas. New horizontal delineation points will include H15-H20 which will be collected at what is believed to be the outer edge of the 2RP-4509 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 impactation 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 impactation is located. Once located, samples will be taken to collaborate the impactation path to the next sample point in the sequence.

The baseline for all sampling analytical data, will be background samples that have already been collected as part of the original 2RP-4354 Characterization Plan.

Figure 1

Site Map

Ross EG Federal Battery
Release Area

Legend

- Area Impacted 2017-08-08
- Area Impacted 2017-11-22
- Area Impacted Both 8-8-17 & 11-22-17



Figure 2

Vertical Sample Points

Ross EG Federal Battery
Release Area w/ Vertical Sampling Points

- Legend**
- 2017-08-08 Sample Points
 - 2017-11-22 Sample Points
 - Area Impacted 2017-08-08
 - Area Impacted 2017-11-22
 - Area Impacted Both 8-8-17 & 11-22-17



Figure 3

Horizontal Sample Points

Ross EG Federal Battery
Release Area w Horizontal Points

- Legend**
- 2017-08-08 Horizontal Points
 - 2017-11-22 Horizontal Points
 - Area Impacted 2017-08-08
 - Area Impacted 2017-11-22
 - Area Impacted Both 8-8-17 & 11-22-17

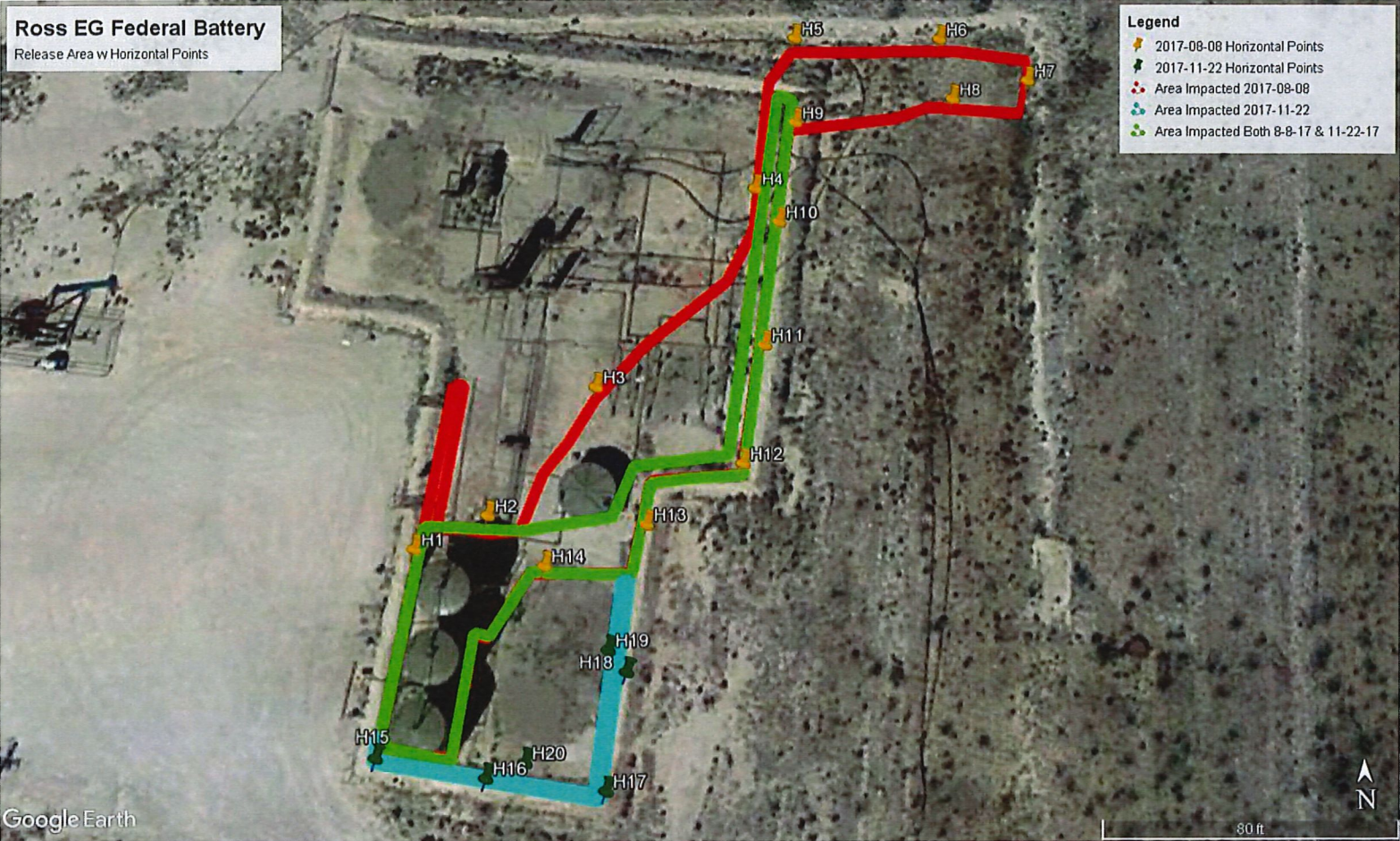


Figure 4

Background Sample Point

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

Legend
Background Sample Point
Release Area

Background Sample Point

Google Earth

100 ft

N



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)

POD Number	Code	Subbasin	County	Source	ED	Shallow	64164	Sec	Tws	Rng	X	Y	Distance	Start Date	Finish Date	Log File	Date	Depth	Depth	Driller	Licens	Numbr
RA 04726								3	2	19	19S	25E	544825	3612390*	859	12/05/1962	12/20/1962	11/08/1962	390	310		62

Record Count: 1

UTM/NAD83 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 NMOWE/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

USGS Home
Contact USGS
Search USGS

Data Category: Groundwater Geographic Area: New Mexico GO

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	195.25E.19.232334	32.64844560	-104.52163240	U	NAD83	35	015	US	NESWNES019T19S. R25E.	317.00		A	1
USGS	323858104311101	195.25E.19.23431	32.64955676	-104.52024350	T	NAD83	35	015	US	SESWNES19 T19S R25E	288			2

[Questions about sites/data?](#)

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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

0.39 5.37 nadvw01



Appendix 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

DEC 01 2017

State of New Mexico
Energy Minerals and Natural Resources

NM OIL CONSERVATION

ARTESIA DISTRICT

DEC 01 2017

Form C-141
Revised April 3, 2017

RECEIVED

Oil Conservation Division

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

1220 South St. Francis Dr.

RECEIVED

Santa Fe, NM 87505

Release Notification and Corrective Action

OPERATOR

NAB1734036870

☒ Initial Report ☐ Final Report

Name of Company EOG Y Resources, Inc.	Contact Chase Settle
Address 104 S. 4 th Street Artesia NM 88210	Telephone No. 575-748-1471
Facility Name Ross EG Federal Battery (API for Ross EG Federal #3)	Facility Type Battery
Surface Owner Private	Mineral Owner Federal
API No. 30-015-25903	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	20	19S	25E	660	North	660	West	Eddy

Latitude 32.6519089 Longitude -104.5134125 NAD83

NATURE OF RELEASE

Type of Release Produced Water	Volume of Release 10 B/PW	Volume Recovered 7 B/PW
Source of Release Produced Water Tank	Date and Hour of Occurrence 11/22/2017; AM	Date and Hour of Discovery 11/22/2017; 11:43 AM
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
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 a transfer pump causing the overflow of a produced water tank, leading to the release. 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 identical to the area impacted by the 2RP-4354 release (255 feet by 15 feet within the primary battery berm), except this release did not breach the primary berm and there was an additional finger that followed the berm from the south tank that measured approximately 110 by 2 feet before tying back into the previously impacted and re-impacted release area. 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	
Printed Name: Chase Settle	Approved by Environmental Specialist: <i>Accepted for record only</i>	
Title: Rep Safety & Environmental II	Approval Date: 12/4/17	Expiration Date: N/A
E-mail Address: chase_settle@eogresources.com	Conditions of Approval: see attached	Attached: 2RP-4509
Date: December 1, 2017	Phone: 575-748-4171	

* Attach Additional Sheets If Necessary