



*EOG Resources, Inc.
Artesia Division Office
104 S. 4th Street
Artesia, N. M. 88210*

EOG Resources, Inc.

***Characterization &
Remediation Plan***

Boykin ACV #1

30-015-25334

nRH200483379

Section 34, T18S-R26E

Eddy County, New Mexico

June 24, 2020

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I. Location

Go south on Highway 285 from Artesia, New Mexico to East Kincaid Road (CR 38, between MM 60 & MM 61). Turn left (East) and continue approximately 1.0 miles to access road to the intersection of E. Kincaid and Lake Road. Turn right (South) on Lake Road and continue approximately 0.1 miles, turn left (East) and continue approximately 200' to the battery (left side).

II. Background

EOG Resources, Inc. submitted to the NMOCD District I office a Form C-141, Release Notification for the release of 10B/PW with 10 B/PW recovered, that occurred on January 31, 2020. The cause was from a tank that ran over after putting the well online from being down awaiting pumping unit motor replacement. The lease operator reported the transfer pump panel off, preventing the transfer pump from coming on (release point was within the Waldrip JY #1 Battery, Appendix 7). The affected area is approximately 60' X 90' within the bermed and lined battery. A vacuum truck was called and 10 B/PW was recovered. But because of a below ground valve box is on the west side of the lined battery, and the valve box is unlined, the valve box area could be impacted from the release (the valve box is approximately 6' X 13' and valve infrastructure is out of service). EOG wants to insure that the valve box area was not compromised from the release and that area in question is compliant to NMOCD Table I Criteria.

II. Surface Geology and Depth to Ground Water

Area surface geology is Tansill and Yates Formations (Guadalupean). The Boykin ACV #1 is not located in a High/Critical karst area per Bureau of Land Management Karst kmz files (per the Carlsbad Field Office).

Based on information regarding this location (Section 34, T18S-R26E), the United States Geological Survey (USGS) National Water Information System, indicates the depth to groundwater as follows: USGS #324250104224101 (Depth to Water: 109'; Field Groundwater-Level Measurements: 8/2/1993; 0.3 Miles from Location), USGS #324249104220601 (Depth to water: 51'; Field Groundwater-Level Measurements: 1/26/2005; 0.59 Miles from Location), USGS #324215104223101 (Depth to Water: 51', Field groundwater-level measurements: 1/26/2005, 0.43 Miles from Location). The New Mexico State Engineers Office indicates the depth to groundwater as follows: NMOSE RA 02804 POD 2 (Depth to Water: 168', Log File Date: 12/28/2011, 0.60 Miles from Location). NMOSE RA 07394 (Depth to Water: 100', Log File Date: 3/8/1985, 0.82 Miles from Location). See Appendix 2.

Watercourses in the area are dry except for infrequent flows in response to major precipitation events, lateral extents of the release are not within a 100-year floodplain and the distance to the nearest significant watercourse being approximately 2.08 miles north of the location, (Appendix 4).

IV. NMOCD Table I Criteria

Depth to ground water	51-99'
Wellhead Protection Area	> 1000'
Distance to significant watercourse	> 1000'

Depth	Constituent	Method	Limit
51-99'	Chloride	EPA 300.0 or SM4500 Cl B	10,000 mg/kg
	TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015M	2,500 mg/kg
	GRO+DRO	EPA SW-846 Method 8015M	1,000 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg

V. Site Delineation Status

Initial sampling was conducted on February 27, 2020, with samples collected being 5-point composite samples at the depth of Surface, 6", 12" and 18" BSL & GPS coordinates are shown below.

(32.70976°; -104.37791°)
(32.70975°; -104.37791°)
(32.70975°; -104.37790°)
(32.70976°; -104.37788°)
(32.70975°; -104.37788°)

These samples were sent to an NMOCD approved laboratory and analysis for the following constituents/methods.

Chlorides:	EPA 300.0
TPH (GRO+DRO+MRO):	Method 8015M
GRO+DRO:	Method 8015M
BTEX:	Method 8015B
Benzene:	Method 8015B

Field Data/Sample Data (Appendix 5).

Laboratory Data and COC (Appendix 6).

VI. Remediation Plan

EOG proposes the following remediation plan.

Based off of the 2/27/2020 enclosed analytical results being below the NMOCD Table I Criteria for the Depth of 51-99', EOG will notify the appropriate division district office two business days prior to conducting final sampling. A base 5-point composite sample(s) will be collected to show horizontal and vertical remediation. Each composite sample must not be representative of more than 200 ft².

If all composite and grab sample concentrations are less than or equal to the parameters listed in Table I, then the responsible party will proceed to remove the valve and backfill the area(s) with approximately 2.89 cubic yards of clean/like backfill material.

VII. Site Closure

Upon completion of the remedial and backfilling activities, EOG Resources, Inc. will submit a Form C-141/Closure to the NMOCD, including the Closure Report Attachment Checklist.

Appendix 1

Site/Topo/Impacted Map

Boykin ACV #1
Site Map A



- Legend**
- Boykin ACV #1
 - Boykin ACV Battery Area
 - Release Point

Google Earth

N. Lake Rd

Boykin ACV #1

300 ft



Boykin ACV #1

Site Map B



Legend

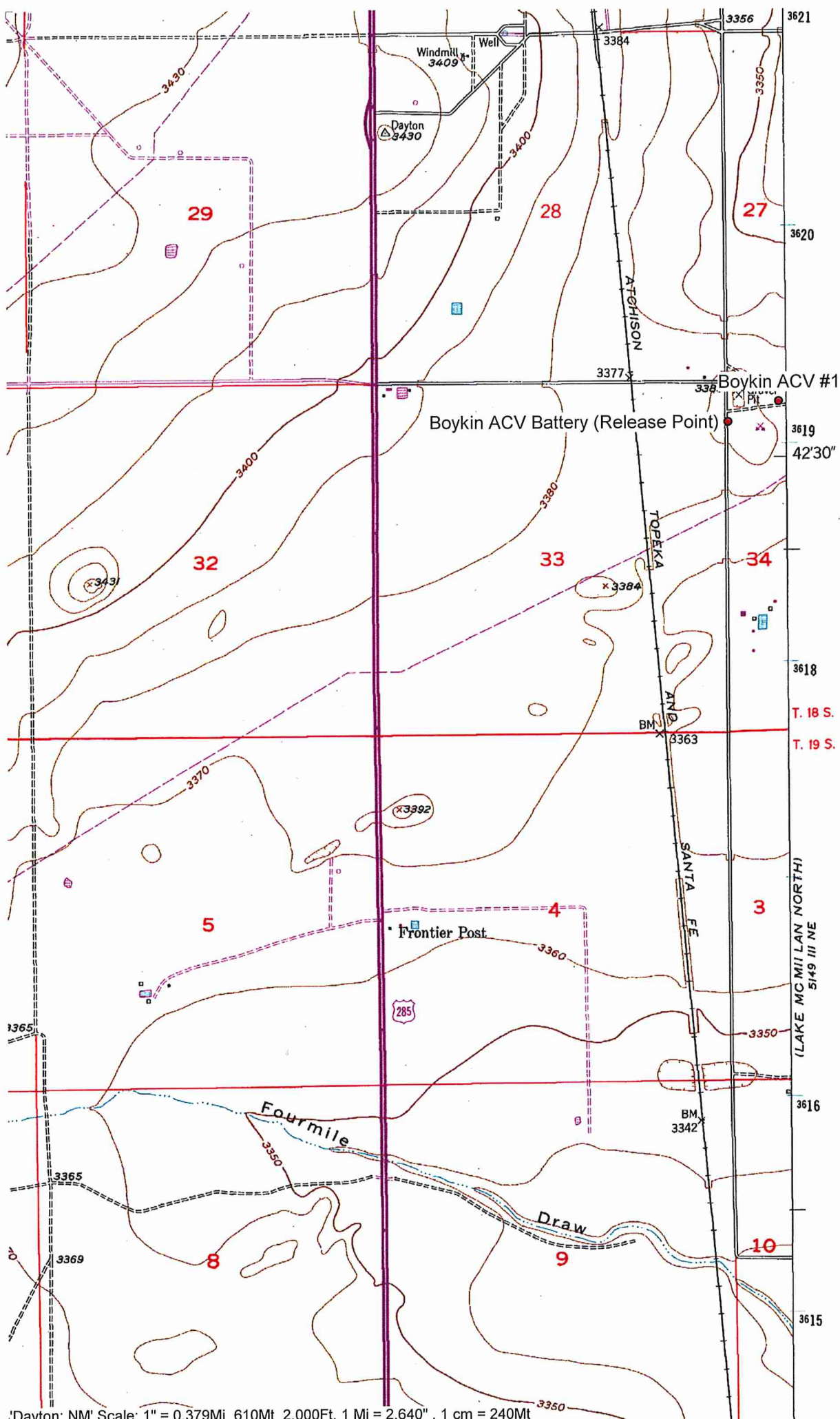
- Boykin ACV Battery Area
- Release Point

Google Earth

©2023 Google

100 ft





Boykin ACV #1

Impacted Area

Legend

Line Area of Battery

Release Point

United States Ground Water Act

Containment Basin

Google Earth

© 2000 Google

30 ft



Appendix 2

Depth to Ground Water

Boykin ACV #1

Depth to Ground Water

USGS 824250M04224131 (DTW: 109.1 FGLM: 82.1933, 0.20 MFL)

USGS 824249M04224501 (DTW: 571 FGLM: 126.2005, 0.53 MFL)

Ekmead/Kanger Rd 33

Boykin ACV #1

Release Point

USGS 824215M04223101 (DTW: 511 FGLM: 126.2005, 0.43 MFL)

NMOSE RA02804 POD2 (DTW: 168.1 FLD: 3/8/1985, 0.60 MFL)

NMOSE RA07394 (DTW: 100.1 FLD: 12/28/2014, 0.82 MFL)

N Lake Rd

Legend

- Boykin ACV #1
- Boykin ACV Battery Area
- Release Point
- USGA & NMOSE Water Well Data

Google Earth

3/20/2015 5:02:14

2000 ft





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USGS 324250104224101 18S.26E.28.444432

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Well Site

DESCRIPTION:

Latitude 32°42'50", Longitude 104°22'41" NAD27
Eddy County, New Mexico , Hydrologic Unit 13060011
Well depth: 115 feet
Land surface altitude: 3,362 feet above NAVD88.
Well completed in "Alluvium, Bolson Deposits and Other Surface
Deposits" (110AVMB) local aquifer

AVAILABLE DATA:

Data Type	Begin Date	End Date	Count
Field groundwater-level measurements	1951-01-08	1993-08-02	67
Revisions	Unavailable (site:0) (timeseries:0)		

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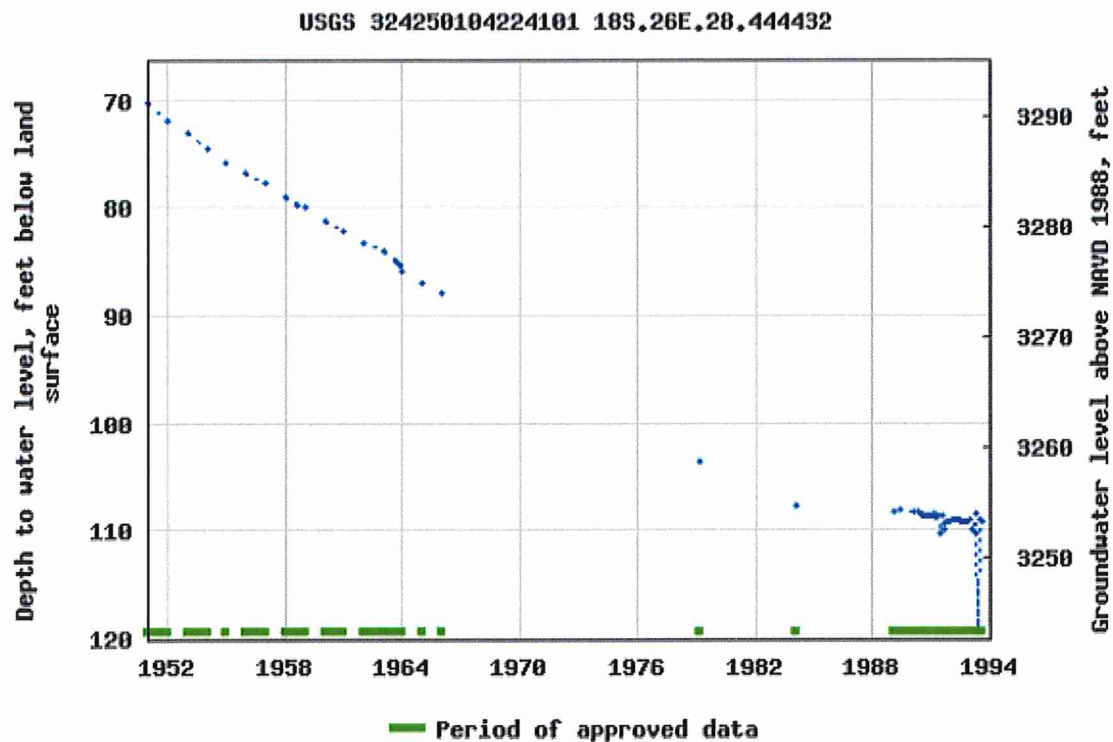
Available data for this site

Groundwater: Field measurements	GO
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Eddy County, New Mexico
Hydrologic Unit Code 13060011
Latitude 32°42'50", Longitude 104°22'41" NAD27
Land-surface elevation 3,362 feet above NAVD88
The depth of the well is 115 feet below land surface.
This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period



Breaks in the plot represent a gap of at least one year between field measurements.

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USGS 324249104220601 18S.26E.27.433333

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Well Site

DESCRIPTION:

Latitude 32°42'49", Longitude 104°22'06" NAD27

Eddy County, New Mexico , Hydrologic Unit 13060011

Well depth: 744 feet

Land surface altitude: 3,351 feet above NAVD88.

Well completed in "Grayburg Formation of Artesia Group" (313GRBG) local aquifer

AVAILABLE DATA:

Data Type	Begin Date	End Date	Count
Field groundwater-level measurements	1907-09-20	2005-01-26	80
Revisions	Unavailable (site:0) (timeseries:0)		

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Geographic Area:

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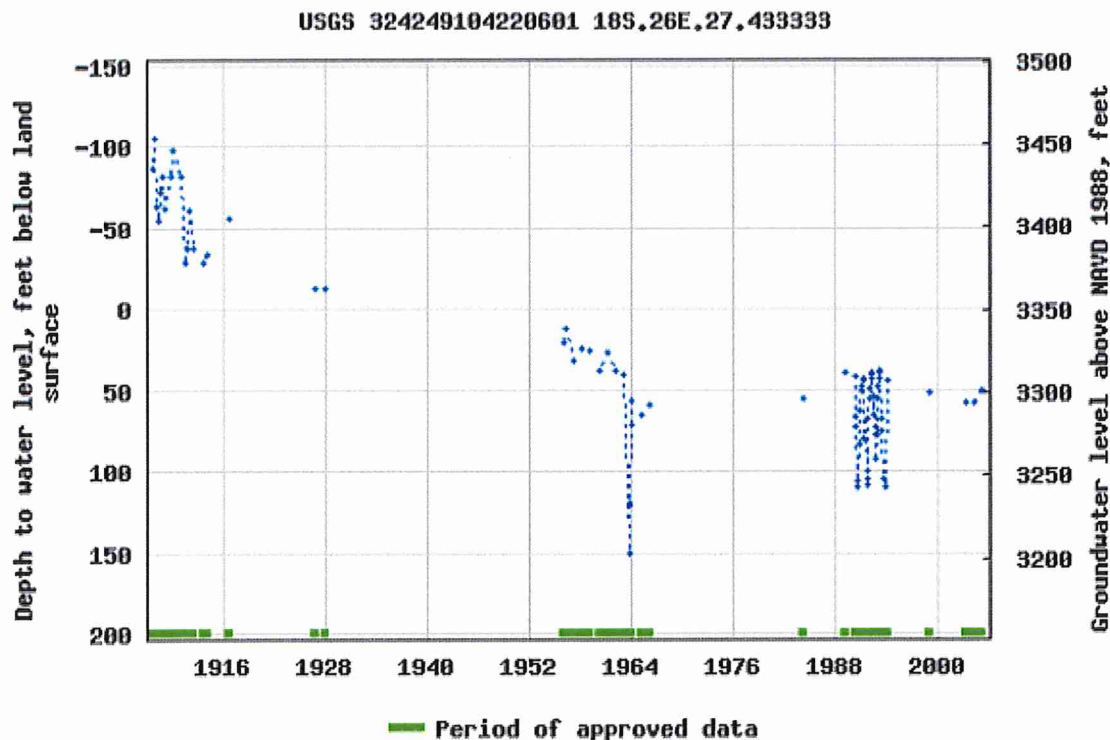
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GO

Eddy County, New Mexico
Hydrologic Unit Code 13060011
Latitude 32°42'49", Longitude 104°22'06" NAD27
Land-surface elevation 3,351 feet above NAVD88
The depth of the well is 744 feet below land surface.
This well is completed in the Grayburg Formation of Artesia Group (313GRBG) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period



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Site Information ▼

Geographic Area:

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USGS 324215104223101 18S.26E.34.313244

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Well Site

DESCRIPTION:

Latitude 32°42'15", Longitude 104°22'31" NAD27

Eddy County, New Mexico , Hydrologic Unit 13060011

Well depth: 871 feet

Land surface altitude: 3,360 feet above NAVD88.

Well completed in "Grayburg Formation of Artesia Group" (313GRBG) local aquifer

AVAILABLE DATA:

Data Type	Begin Date	End Date	Count
Field groundwater-level measurements	1956-01-04	2005-01-26	32
Revisions	Unavailable (site:0) (timeseries:0)		

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Groundwater ▼

Geographic Area:

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Groundwater: Field measurements ▼

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Eddy County, New Mexico

Hydrologic Unit Code 13060011

Latitude 32°42'15", Longitude 104°22'31" NAD27

Land-surface elevation 3,360 feet above NAVD88

The depth of the well is 871 feet below land surface.

This well is completed in the Grayburg Formation of Artesia Group (313GRBG) local aquifer.

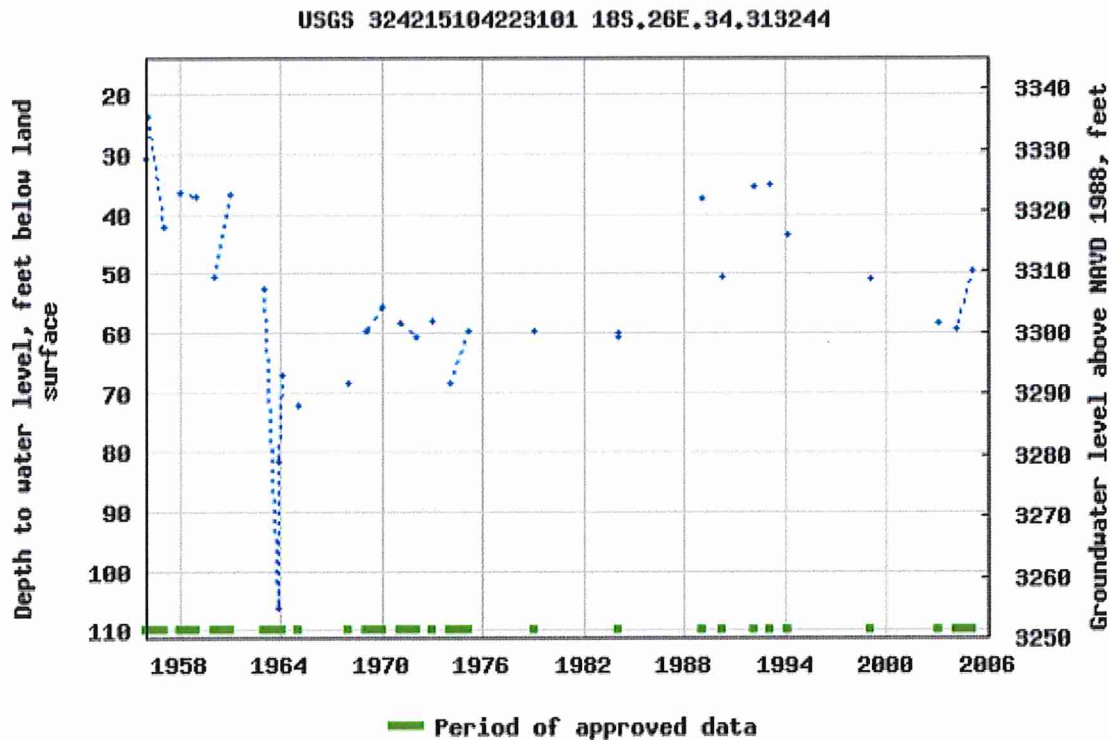
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0.8 0.58 nadww01



New Mexico Office of the State Engineer

Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
	RA 02804 POD2	3	1	3	34	18S	26E	558425	3618324

Driller License:	1400	Driller Company:	SOUTHEAST DRILLING COMPANY		
Driller Name:	HAMMOND, MARK (LD)				
Drill Start Date:	12/16/2011	Drill Finish Date:	12/22/2011	Plug Date:	
Log File Date:	12/28/2011	PCW Rcv Date:		Source:	Shallow
Pump Type:		Pipe Discharge Size:		Estimated Yield:	10 GPM
Casing Size:	6.25	Depth Well:	200 feet	Depth Water:	168 feet

Water Bearing Stratifications:	Top	Bottom	Description
	168	181	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	140	200



New Mexico Office of the State Engineer

Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
	RA 07394	3	3	3	34	18S	26E	558369	3617968*

Driller License: 823

Driller Company: TIDWELL DRILLING

Driller Name:

Drill Start Date: 02/25/1985

Drill Finish Date: 03/04/1985

Plug Date:

Log File Date: 03/08/1985

PCW Rcv Date:

Source: Shallow

Pump Type:

Pipe Discharge Size:

Estimated Yield: 30 GPM

Casing Size: 7.00

Depth Well: 166 feet

Depth Water: 100 feet

Water Bearing Stratifications:

Top	Bottom	Description
-----	--------	-------------

100	135	Sandstone/Gravel/Conglomerate
-----	-----	-------------------------------

Casing Perforations:

Top	Bottom
-----	--------

86	166
----	-----

*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.

Appendix 3

Wellhead Protection Area

Boykin ACV #1
Wellhead Protection Area

Google Earth
© 2020 Google



- Legend**
- Boykin ACV #1
 - Boykin ACV Battery Area
 - Wellhead Protection Area
 - Release Point

2000 ft
N

Appendix 4

Distance to Nearest Significant Watercourse

Boykin ACV #1

Distance to Significant Watercourse (Rio Penasco, 2.08 miles)



Legend

- Boykin ACV #1
- Boykin ACV Battery Area
- Release Point
- Rio Penasco



1 mi

© 2010 Google

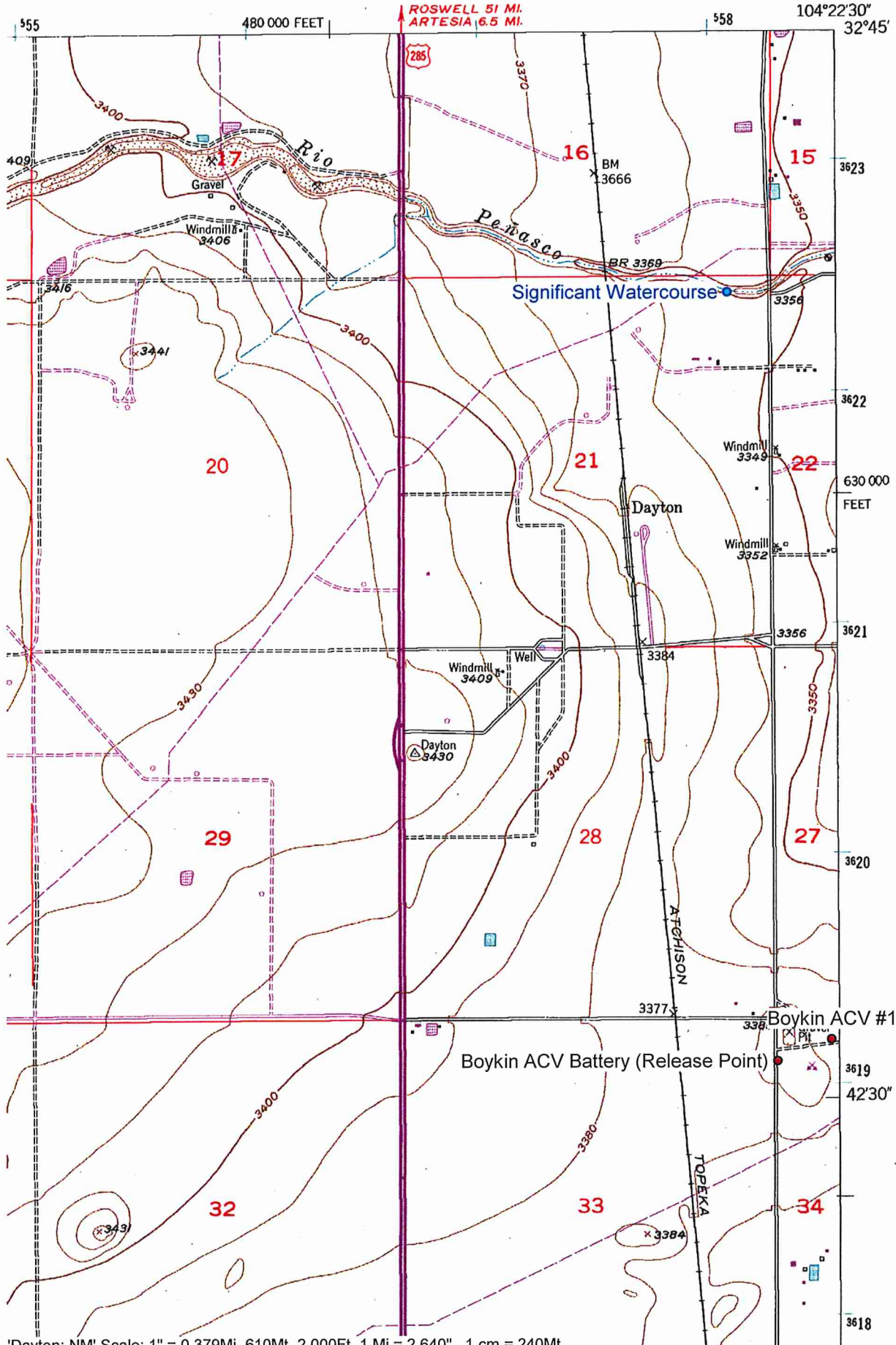
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DAYTON QUADRANGLE

NEW MEXICO-EDDY CO.

7.5 MINUTE SERIES (TOPOGRAPHIC)

5149 IV SE
(SPRING LAKE)



Dayton; NM Scale: 1" = 0.379Mi 610Mt 2,000Ft, 1 Mi = 2.640" , 1 cm = 240Mt

National Flood Hazard Layer FIRMette

104°22'59"W 32°42'50"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS

	Without Base Flood Elevation (BFE) Zone A, V, A99
	With BFE or Depth Zone AE, AO, AH, VE, AR Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD

	0.2% Annual Chance Flood Hazard, Area of 1% annual chance flood with average depth less than one foot or with draining areas of less than one square mile (Zone X)
	Future Conditions 1% Annual Chance Flood Hazard (Zone X)
	Area with Reduced Flood Risk due to Levee. See Notes, Zone X
	Area with Flood Risk due to Levee (Zone D)

OTHER AREAS

	NO SCREEN
	Area of Minimal Flood Hazard (Zone X)
	Effective LOMRS
	Area of Undetermined Flood Hazard (Zone X)

GENERAL STRUCTURES

	Channel, Culvert, or Storm Sewer
	Levee, Dike, or Floodwall

	20.2	Cross Sections with 1% Annual Chance
	17.5	Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature

MAP PANELS

	Digital Data Available
	No Digital Data Available
	Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards.

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 6/18/2020 at 9:44 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for regulatory purposes.

USGS The National Map: Orthoimagery. Data refreshed April 2020

104°22'21"W 32°42'20"N

0 250 500 1,000 1,500 2,000 Feet 1:6,000

FEMA Flood Map Service Center: Search By Address

Enter an address, place, or coordinates: ?

-104.377787, 32.709781

Search

Whether you are in a high risk zone or not, you may need [flood insurance](https://www.fema.gov/national-flood-insurance-program) (<https://www.fema.gov/national-flood-insurance-program>) because most homeowners insurance doesn't cover flood damage. If you live in an area with low or moderate flood risk, you are 5 times more likely to experience flood than a fire in your home over the next 30 years. For many, a National Flood Insurance Program's flood insurance policy could cost less than \$400 per year. Call your insurance agent today and protect what you've built.

Learn more about [steps you can take](https://www.fema.gov/what-mitigation) (<https://www.fema.gov/what-mitigation>) to reduce flood risk damage.

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(/portal/resources/hazus)

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(/portal/resources/lomc)

Product Availability
(/portal/productAvailability)

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(FAQs) (/portal/resources/faq)

MSC Email Subscriptions
(/portal/subscriptionHome)

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(/portal/resources/contact)

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The flood map for the selected area is number **35015C0550D**, effective on **06/04/2010** ?

DYNAMIC MAP



PRINT MAP/
FIRMette

MAP IMAGE



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FIRM PANEL

(<https://msc.fema.gov/portal/downloadProduct?>

[filepath=/35/P/Firm/35015C0550D.tif&productTypeID=FINAL_PRODUCT&productSubTypeID=FIRM_PANEL&productI](https://msc.fema.gov/portal/downloadProduct?filepath=/35/P/Firm/35015C0550D.tif&productTypeID=FINAL_PRODUCT&productSubTypeID=FIRM_PANEL&productI)

Changes to this FIRM ?

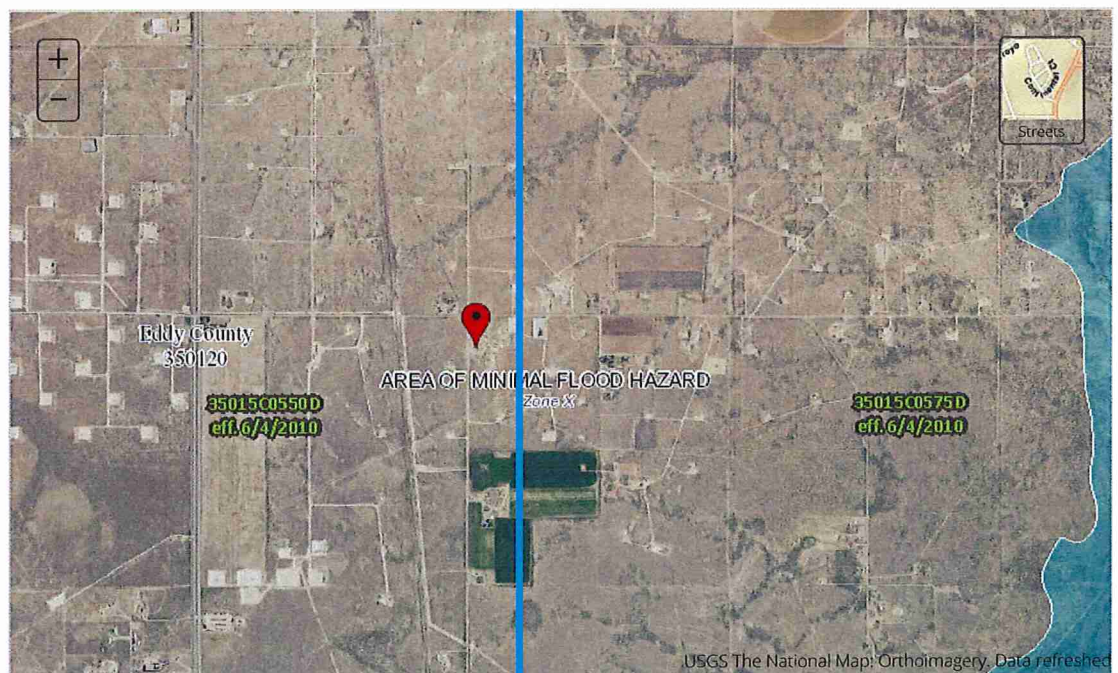
Revisions (0)

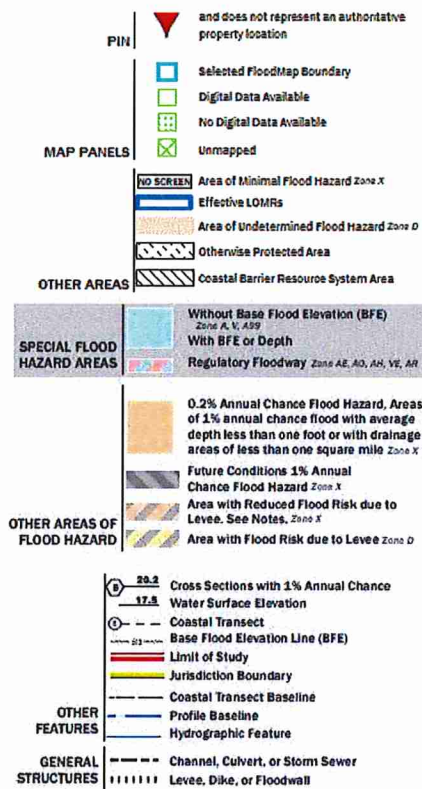
Amendments (0)

Revalidations (0)

You can choose a new flood map or move the location pin by selecting a different location on the locator map below or by entering a new location in the search field above. It may take a minute or more during peak hours to generate a dynamic FIRMette. If you are a person with a disability, are blind, or have low vision, and need assistance, please contact a map specialist (<https://msc.fema.gov/portal/resources/contact>).

Go To NFHL Viewer » (<https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338>)





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[DisasterAssistance.gov \(/www.disasterassistance.gov/\)](http://www.disasterassistance.gov/)

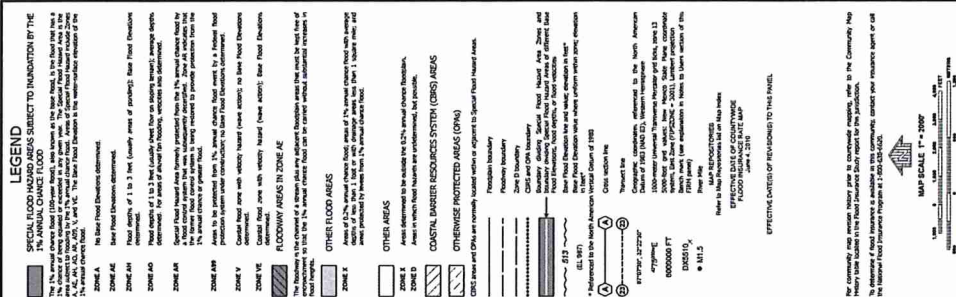


(<https://www.oig.dhs.gov/hotline>)

 Official website of the Department of Homeland Security

[illegible]

1

[illegible]

Appendix 5

Field Data/Sample Data

Gissler B #59
Sample Data
Per NMOCD Table I Criteria

Sample ID	Depth (ft. bgs)	Date	Chloride	TPH (GRO+DRO+ MRO)	GRO+DRO	BTEX	Benzene
S-1.S	Surface	2/27/20	1210	571	220	0.0000	0.0000
S-1.0.5	6"	2/27/20	3200	883	348	0.0000	0.0000
S-1.1.0	12"	2/27/20	860	1409	604	0.0000	0.0000
S-1.15	18"	2/27/20	855	189.8	65.8	0.0000	0.0000

NMOCD Table I Criteria			
Depth	Constituent	Method	Limit
51-99'	Chloride	EPA 300.0 or SM4500 Cl B	10,000 mg/kg
	TPH (GRO+DRO +MRO)	EPA SW-846 Method 8015M	2,500 mg/kg
	GRO+DRO	EPA SW-846 Method 8015M	1,000 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg

Boykin ACV #1
Release & Sample Area

Legend
● Release Point



Boykin ACV #1

Valve Box & Sample Points

Google Earth



Legend

- Sample Points
- Valve Box

7.01 ft



Appendix 6

Laboratory Data and COC



Analytical Report

Report Summary

Client: EOG Resources Inc. - Carlsbad

Samples Received: 2/28/2020

Job Number: 19034-0001

Work Order: P002102

Project Name/Location: Boykin ACV #1 Battery

Report Reviewed By:

A handwritten signature in black ink, appearing to read 'Walter Hinchman', is written over a horizontal line.

Date: 3/5/20

Walter Hinchman, Laboratory Director



Envirotech Inc. certifies the test results meet all requirements of TNI unless footnoted otherwise.
Statement of Data Authenticity: Envirotech, Inc. attests the data reported has not been altered in any way.
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Envirotech, Inc. holds the Utah TNI certification NM009792018-1 for the data reported.
Envirotech, Inc. holds the Texas TNI certification T104704557-19-2 for the data reported.



EOG Resources Inc. - Carlsbad
104 South 4th Street
Artesia NM, 88210

Project Name: Boykin ACV #1 Battery
Project Number: 19034-0001
Project Manager: Robert Asher

Reported:
03/05/20 08:39

Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
S-1.S	P002102-01A	Soil	02/27/20	02/28/20	Glass Jar, 4 oz.
S-1.0.5	P002102-02A	Soil	02/27/20	02/28/20	Glass Jar, 4 oz.
S-1.1.0	P002102-03A	Soil	02/27/20	02/28/20	Glass Jar, 4 oz.
S-1.1.5	P002102-04A	Soil	02/27/20	02/28/20	Glass Jar, 4 oz.

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EOG Resources Inc. - Carlsbad	Project Name:	Boykin ACV #1 Battery	Reported:
104 South 4th Street	Project Number:	19034-0001	03/05/20 08:39
Artesia NM, 88210	Project Manager:	Robert Asher	

S-1.S
P002102-01 (Solid)

Reporting									
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<u>Volatile Organics by EPA 8021</u>									
Benzene	ND	0.0250	mg/kg	1	2009040	02/28/20	03/01/20	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	2009040	02/28/20	03/01/20	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	2009040	02/28/20	03/01/20	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	2009040	02/28/20	03/01/20	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	2009040	02/28/20	03/01/20	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	2009040	02/28/20	03/01/20	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		103 %		50-150	2009040	02/28/20	03/01/20	EPA 8021B	
<u>Nonhalogenated Organics by 8015 - DRO/ORO</u>									
Diesel Range Organics (C10-C28)	220	25.0	mg/kg	1	2010005	03/02/20	03/03/20	EPA 8015D	
Oil Range Organics (C28-C40)	351	50.0	mg/kg	1	2010005	03/02/20	03/03/20	EPA 8015D	
Surrogate: n-Nonane		104 %		50-200	2010005	03/02/20	03/03/20	EPA 8015D	
<u>Nonhalogenated Organics by 8015 - GRO</u>									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	2009040	02/28/20	03/01/20	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		85.6 %		50-150	2009040	02/28/20	03/01/20	EPA 8015D	
<u>Anions by 300.0/9056A</u>									
Chloride	1210	20.0	mg/kg	1	2009041	02/28/20	02/29/20	EPA 300.0/9056A	

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EOG Resources Inc. - Carlsbad
 104 South 4th Street
 Artesia NM, 88210

 Project Name: Boykin ACV #1 Battery
 Project Number: 19034-0001
 Project Manager: Robert Asher

 Reported:
 03/05/20 08:39

S-1.0.5
P002102-02 (Solid)

Reporting

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.0250	mg/kg	1	2009040	02/28/20	03/01/20	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	2009040	02/28/20	03/01/20	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	2009040	02/28/20	03/01/20	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	2009040	02/28/20	03/01/20	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	2009040	02/28/20	03/01/20	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	2009040	02/28/20	03/01/20	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		101 %		50-150	2009040	02/28/20	03/01/20	EPA 8021B	
Nonhalogenated Organics by 8015 - DRO/ORO									
Diesel Range Organics (C10-C28)	348	250	mg/kg	10	2010005	03/02/20	03/02/20	EPA 8015D	
Oil Range Organics (C28-C40)	535	500	mg/kg	10	2010005	03/02/20	03/02/20	EPA 8015D	
Surrogate: n-Nonane		101 %		50-200	2010005	03/02/20	03/02/20	EPA 8015D	
Nonhalogenated Organics by 8015 - GRO									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	2009040	02/28/20	03/01/20	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		84.1 %		50-150	2009040	02/28/20	03/01/20	EPA 8015D	
Anions by 300.0/9056A									
Chloride	3200	40.0	mg/kg	2	2009041	02/28/20	02/29/20	EPA 300.0/9056A	

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EOG Resources Inc. - Carlsbad
 104 South 4th Street
 Artesia NM, 88210

 Project Name: Boykin ACV #1 Battery
 Project Number: 19034-0001
 Project Manager: Robert Asher

 Reported:
 03/05/20 08:39

S-1.1.0
P002102-03 (Solid)

Reporting

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.0250	mg/kg	1	2009040	02/28/20	03/01/20	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	2009040	02/28/20	03/01/20	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	2009040	02/28/20	03/01/20	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	2009040	02/28/20	03/01/20	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	2009040	02/28/20	03/01/20	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	2009040	02/28/20	03/01/20	EPA 8021B	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		102 %	50-150		2009040	02/28/20	03/01/20	EPA 8021B	
Nonhalogenated Organics by 8015 - DRO/ORO									
Diesel Range Organics (C10-C28)	604	250	mg/kg	10	2010005	03/02/20	03/02/20	EPA 8015D	
Oil Range Organics (C28-C40)	805	500	mg/kg	10	2010005	03/02/20	03/02/20	EPA 8015D	
<i>Surrogate: n-Nonane</i>		107 %	50-200		2010005	03/02/20	03/02/20	EPA 8015D	
Nonhalogenated Organics by 8015 - GRO									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	2009040	02/28/20	03/01/20	EPA 8015D	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		84.4 %	50-150		2009040	02/28/20	03/01/20	EPA 8015D	
Anions by 300.0/9056A									
Chloride	860	20.0	mg/kg	1	2009041	02/28/20	02/29/20	EPA 300.0/9056A	

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EOG Resources Inc. - Carlsbad
104 South 4th Street
Artesia NM, 88210

Project Name: Boykin ACV #1 Battery
Project Number: 19034-0001
Project Manager: Robert Asher

Reported:
03/05/20 08:39

S-1.1.5

P002102-04 (Solid)

Reporting

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Volatile Organics by EPA 8021

Benzene	ND	0.0250	mg/kg	1	2009040	02/28/20	03/01/20	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	2009040	02/28/20	03/01/20	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	2009040	02/28/20	03/01/20	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	2009040	02/28/20	03/01/20	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	2009040	02/28/20	03/01/20	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	2009040	02/28/20	03/01/20	EPA 8021B	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		103 %		50-150	2009040	02/28/20	03/01/20	EPA 8021B	

Nonhalogenated Organics by 8015 - DRO/ORO

Diesel Range Organics (C10-C28)	65.8	25.0	mg/kg	1	2010005	03/02/20	03/03/20	EPA 8015D	
Oil Range Organics (C28-C40)	124	50.0	mg/kg	1	2010005	03/02/20	03/03/20	EPA 8015D	
<i>Surrogate: n-Nonane</i>		100 %		50-200	2010005	03/02/20	03/03/20	EPA 8015D	

Nonhalogenated Organics by 8015 - GRO

Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	2009040	02/28/20	03/01/20	EPA 8015D	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		85.8 %		50-150	2009040	02/28/20	03/01/20	EPA 8015D	

Anions by 300.0/9056A

Chloride	855	20.0	mg/kg	1	2009041	02/28/20	02/29/20	EPA 300.0/9056A	
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EOG Resources Inc. - Carlsbad	Project Name:	Boykin ACV #1 Battery	Reported: 03/05/20 08:39
104 South 4th Street	Project Number:	19034-0001	
Artesia NM, 88210	Project Manager:	Robert Asher	

Volatile Organics by EPA 8021 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2009040 - Purge and Trap EPA 5030A

Blank (2009040-BLK1)

Prepared: 02/28/20 1 Analyzed: 02/29/20 1

Benzene	ND	0.0250	mg/kg							
Toluene	ND	0.0250	"							
Ethylbenzene	ND	0.0250	"							
p,m-Xylene	ND	0.0500	"							
o-Xylene	ND	0.0250	"							
Total Xylenes	ND	0.0250	"							
Surrogate: 4-Bromochlorobenzene-PID	7.99		"	8.00		99.9	50-150			

LCS (2009040-BS1)

Prepared: 02/28/20 1 Analyzed: 02/29/20 1

Benzene	4.85	0.0250	mg/kg	5.00		97.0	70-130			
Toluene	4.98	0.0250	"	5.00		99.5	70-130			
Ethylbenzene	4.90	0.0250	"	5.00		98.1	70-130			
p,m-Xylene	9.75	0.0500	"	10.0		97.5	70-130			
o-Xylene	4.86	0.0250	"	5.00		97.3	70-130			
Total Xylenes	14.6	0.0250	"	15.0		97.4	0-200			
Surrogate: 4-Bromochlorobenzene-PID	8.12		"	8.00		101	50-150			

Matrix Spike (2009040-MS1)

Source: P002100-01

Prepared: 02/28/20 1 Analyzed: 02/29/20 1

Benzene	10.1	0.0500	mg/kg	10.0	ND	101	54.3-133			
Toluene	10.3	0.0500	"	10.0	ND	103	61.4-130			
Ethylbenzene	10.2	0.0500	"	10.0	ND	102	61.4-133			
p,m-Xylene	20.2	0.100	"	20.0	ND	101	63.3-131			
o-Xylene	10.1	0.0500	"	10.0	ND	101	63.3-131			
Total Xylenes	30.3	0.0500	"	30.0	ND	101	0-200			
Surrogate: 4-Bromochlorobenzene-PID	16.4		"	16.0		103	50-150			

Matrix Spike Dup (2009040-MSD1)

Source: P002100-01

Prepared: 02/28/20 1 Analyzed: 02/29/20 1

Benzene	9.32	0.0500	mg/kg	10.0	ND	93.2	54.3-133	7.96	20	
Toluene	9.56	0.0500	"	10.0	ND	95.6	61.4-130	7.46	20	
Ethylbenzene	9.41	0.0500	"	10.0	ND	94.1	61.4-133	7.82	20	
p,m-Xylene	18.7	0.100	"	20.0	ND	93.4	63.3-131	7.91	20	
o-Xylene	9.26	0.0500	"	10.0	ND	92.6	63.3-131	8.44	20	
Total Xylenes	27.9	0.0500	"	30.0	ND	93.1	0-200	8.08	200	
Surrogate: 4-Bromochlorobenzene-PID	16.2		"	16.0		101	50-150			

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EOG Resources Inc. - Carlsbad	Project Name:	Boykin ACV #1 Battery	Reported: 03/05/20 08:39
104 South 4th Street	Project Number:	19034-0001	
Artesia NM, 88210	Project Manager:	Robert Asher	

Nonhalogenated Organics by 8015 - DRO/ORO - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2010005 - DRO Extraction EPA 3570

Blank (2010005-BLK1)

Prepared & Analyzed: 03/02/20 1

Diesel Range Organics (C10-C28)	ND	25.0	mg/kg							
Oil Range Organics (C28-C40)	ND	50.0	"							
Surrogate: n-Nonane	47.2		"	50.0		94.4	50-200			

LCS (2010005-BS1)

Prepared & Analyzed: 03/02/20 1

Diesel Range Organics (C10-C28)	436	25.0	mg/kg	500		87.2	38-132			
Surrogate: n-Nonane	47.9		"	50.0		95.9	50-200			

Matrix Spike (2010005-MS1)

Source: P002081-01

Prepared & Analyzed: 03/02/20 1

Diesel Range Organics (C10-C28)	427	25.0	mg/kg	500	ND	85.4	38-132			
Surrogate: n-Nonane	46.6		"	50.0		93.3	50-200			

Matrix Spike Dup (2010005-MSD1)

Source: P002081-01

Prepared & Analyzed: 03/02/20 1

Diesel Range Organics (C10-C28)	429	25.0	mg/kg	500	ND	85.8	38-132	0.445	20	
Surrogate: n-Nonane	47.4		"	50.0		94.8	50-200			

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EOG Resources Inc. - Carlsbad
104 South 4th Street
Artesia NM, 88210

Project Name: Boykin ACV #1 Battery
Project Number: 19034-0001
Project Manager: Robert Asher

Reported:
03/05/20 08:39

Nonhalogenated Organics by 8015 - GRO - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2009040 - Purge and Trap EPA 5030A

Blank (2009040-BLK1)

Prepared: 02/28/20 1 Analyzed: 02/29/20 1

Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg							
Surrogate: 1-Chloro-4-fluorobenzene-FID	6.87		"	8.00		85.8	50-150			

LCS (2009040-BS2)

Prepared: 02/28/20 1 Analyzed: 02/29/20 1

Gasoline Range Organics (C6-C10)	49.8	20.0	mg/kg	50.0		99.6	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	6.97		"	8.00		87.2	50-150			

Matrix Spike (2009040-MS2)

Source: P002100-01

Prepared: 02/28/20 1 Analyzed: 02/29/20 2

Gasoline Range Organics (C6-C10)	99.7	40.0	mg/kg	100	ND	99.7	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	14.0		"	16.0		87.5	50-150			

Matrix Spike Dup (2009040-MSD2)

Source: P002100-01

Prepared: 02/28/20 1 Analyzed: 02/29/20 2

Gasoline Range Organics (C6-C10)	102	40.0	mg/kg	100	ND	102	70-130	1.78	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	14.1		"	16.0		88.3	50-150			

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EOG Resources Inc. - Carlsbad
104 South 4th Street
Artesia NM, 88210

Project Name: Boykin ACV #1 Battery
Project Number: 19034-0001
Project Manager: Robert Asher

Reported:
03/05/20 08:39

Anions by 300.0/9056A - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2009041 - Anion Extraction EPA 300.0/9056A										
Blank (2009041-BLK1)				Prepared: 02/28/20 1 Analyzed: 02/29/20 1						
Chloride	ND	20.0	mg/kg							
LCS (2009041-BS1)				Prepared: 02/28/20 1 Analyzed: 02/29/20 1						
Chloride	257	20.0	mg/kg	250		103	90-110			
Matrix Spike (2009041-MS1)				Source: P002099-01 Prepared: 02/28/20 1 Analyzed: 02/29/20 1						
Chloride	272	20.0	mg/kg	250	ND	109	80-120			
Matrix Spike Dup (2009041-MSD1)				Source: P002099-01 Prepared: 02/28/20 1 Analyzed: 02/29/20 1						
Chloride	274	20.0	mg/kg	250	ND	110	80-120	0.776	20	

QC Summary Report

Comment:

Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.



EOG Resources Inc. - Carlsbad
104 South 4th Street
Artesia NM, 88210

Project Name: Boykin ACV #1 Battery
Project Number: 19034-0001
Project Manager: Robert Asher

Reported:
03/05/20 08:39

Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

RPD Relative Percent Difference

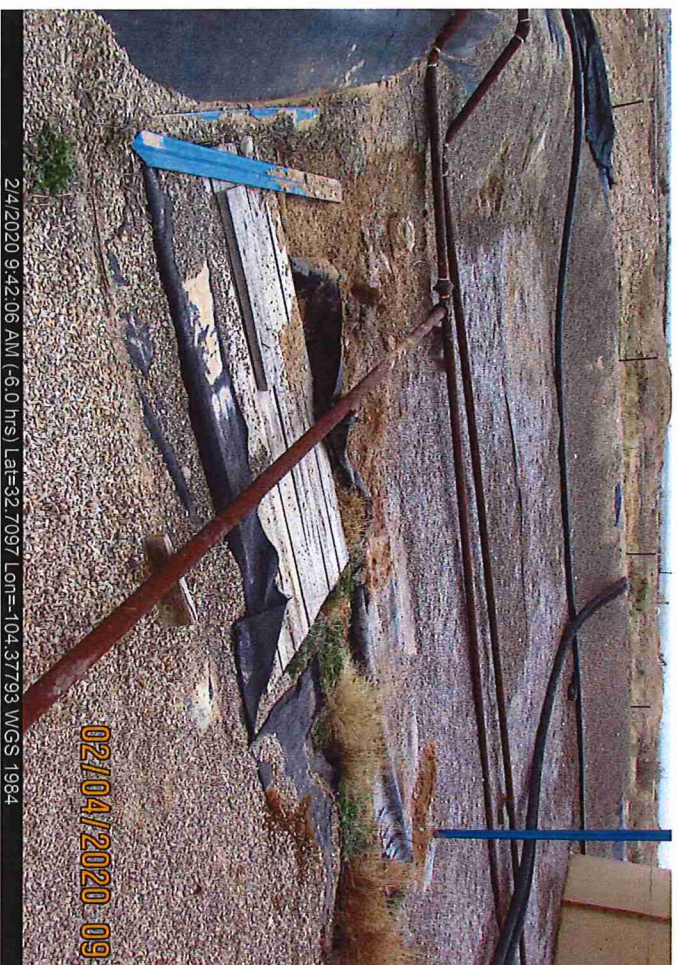
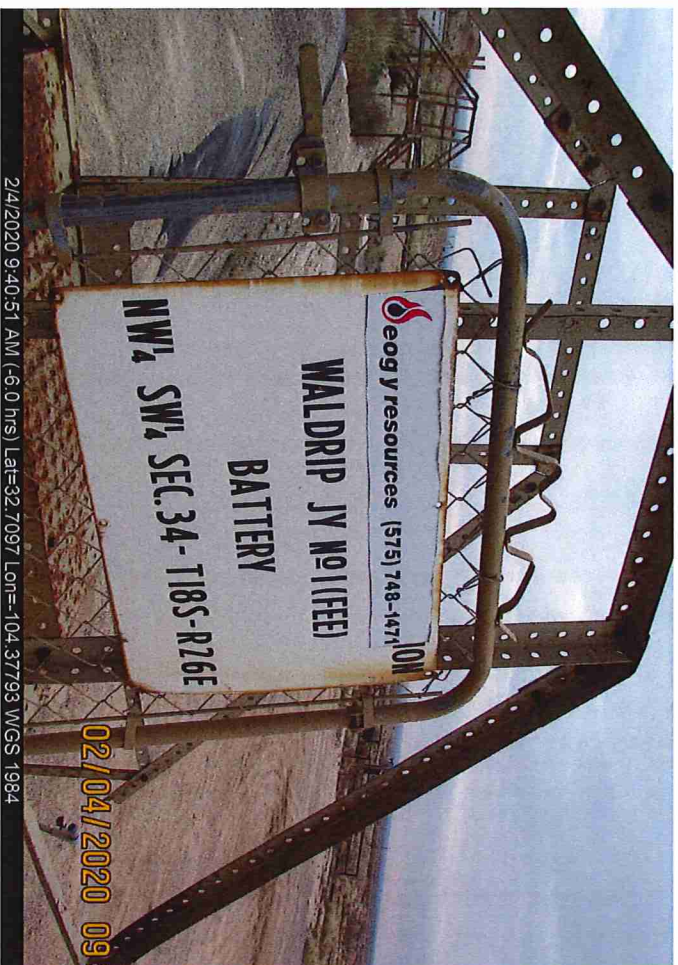
** Methods marked with ** are non-accredited methods.

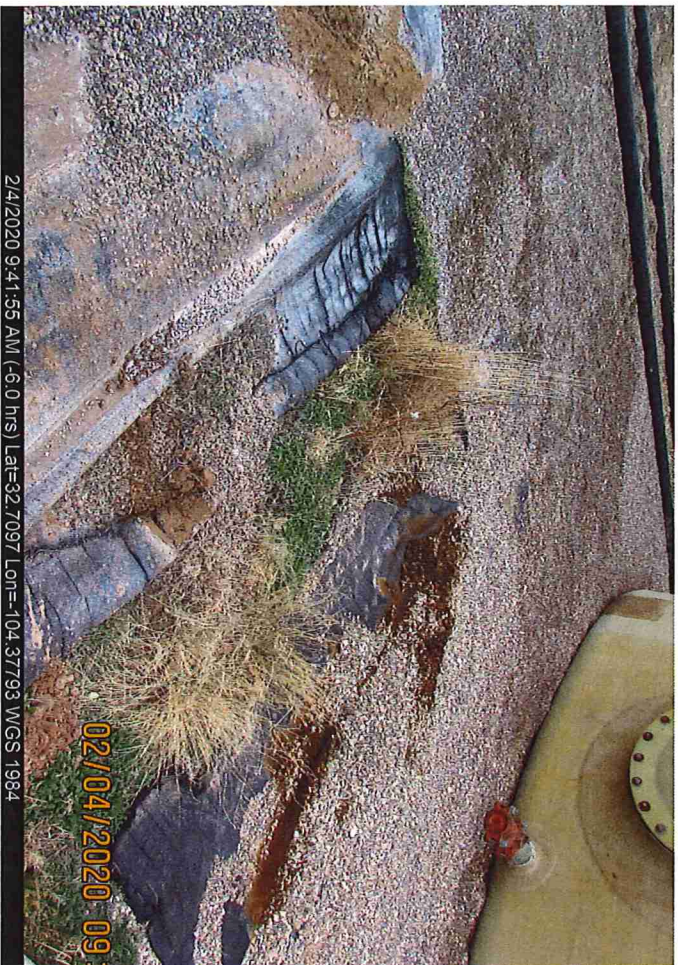
Soil data is reported on an "as received" weight basis, unless reported otherwise.

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.

Appendix 7

Photos





Appendix 8

Form C-141

Release Notification

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 EOG Resources, Inc.	OGRID 7377
Contact Name Robert Asher	Contact Telephone 575-748-4217
Contact email bob_asher@eogresources.com	Incident # (assigned by OCD)
Contact mailing address 104 S. 4 th Artesia, NM 88210	

Location of Release Source

Latitude 32.71062 Longitude -104.37528
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Boykin ACV #1	Site Type: Battery
Date Release Discovered: 01/31/2020	API# 30-015-25334

Unit Letter	Section	Township	Range	County
D	34	18S	26E	Eddy

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (Name: Brian & Pamela Wright)

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) 10	Volume Recovered (bbls) 10
	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:

Tank ran over after putting well online from being down awaiting pumping unit motor replacement. Lease operator reports finding water transfer pump panel off preventing pump from coming on. 10 bbls of produced water lost.


State of New Mexico
Oil Conservation Division

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 checked="" 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 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>Robert Asher</u>	Title: <u>Environmental Supervisor</u>
Signature: <u></u>	Date: <u>2/18/2020</u>
email: <u>bob_asher@eogresources.com</u>	Telephone: <u>575-748-4217</u>
<u>OCD Only</u> Received by: _____ Date: _____	

Appendix 9

Form C-141

Site Assessment/Characterization/Remediation Plan

Incident ID	NRM2004834379
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>51'</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.

State of New Mexico
Oil Conservation Division

Incident ID	NRM2004834379
District RP	
Facility ID	
Application ID	

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: Robert AsherTitle: Environmental Supervisor

Signature: _____

Date: 6-24-2020email: bob_asher@eogresources.comTelephone: 575-748-4217**OCD Only**Received by: Cristina EadsDate: 09/03/2020

Incident ID	NRM2004834379
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: Robert AsherTitle: Environmental Supervisor

Signature: _____

Date: 6-24-2020email: bob_asher@eogresources.comTelephone: 575-748-4217**OCD Only**Received by: Cristina Eads Date: 09/03/2020☐ Approved ☒ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: _____

Date: 09/04/2020