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

February 27, 2019

NMOCD District II
811 S. First St.
Artesia, NM 88210

Re: Jackson B #57
30-015-41003
L-1-17S-30E
Eddy County, NM
2RP-5149

EOG Y Resources, Inc. is submitting the enclosed remediation work plan for the above referenced site. The plan is being submitted in reference to the C-141 report dated on December 13, 2018.

If you have any questions, feel free to call me at (575) 748-1471.

Respectfully,

Chase Settle

Chase Settle
Rep Safety & Environmental II
EOG Y Resources, Inc.

I. Location

From the intersection of US HWY 82 and Square Lake Road (CR 220), head north on Square Lake Road for 3.2 miles, the release point is the flow line sleeve under the county road.

II. Background

A release was discovered on December 1, 2018, from the Jackson B #57 poly flow line that runs through a sleeve under Square Lake Road (CR 220) to the gathering facility. The release consisted of 2 B/CO and 6 B/PW with 2 B/CO and 5 B/PW recovered. A contractor was obtained to excavate soils that were impacted by the release. Approximately 67 cubic yards of soil were excavated, 22 cubic yards from the excavation named #1 on the east side of Square Lake Road and 45 cubic yards from the excavation named #2 on the west side of Square Lake Road, leaving both sites excavated to approximately six (6) feet below grade surface (bgs). All excavated soil was sent to a NMOCD approved disposal facility. The affected area in #1 is approximately ten (10) feet by ten (10) feet and in #2 is approximately twenty (20) feet by ten (10) feet. Initial vertical and horizontal soil sampling was conducted at the location with use of a backhoe on January 29, 2019.

III. Surface and Ground Water

Area surface geology is Cenozoic Quaternary. Based on information from the United States Geological Survey National Water Information System (USGS) regarding this location (Section 1, T17S-R30E), the closest well to the release is 2.47 miles to the west at a depth of 361 feet bgs. Watercourses in the area are dry except for infrequent flows in response to major precipitation events, with the nearest body of significant surface water being the Flat Lake at 13 miles away.

IV. NMOCD Assessment Criteria

The site assessment criteria are as follows:

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

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

Benzene	10 mg/kg
BTEX	50 mg/kg
TPH	2,500 mg/kg
GRO + DRO	1,000 mg/kg
Chlorides	20,000 mg/kg

V. Soils

USDA Natural Resources Conservation Service (NRCS) classifies soil in the area as Kermit-Berino fine sands, with 0-3% slopes, and very rapid permeability.

VI. Scope of Work

Due to the presence of active flow lines, the asphalt county road, and the area consisting of sand soils, we are unable to sample any further vertically at this time. In order to fully delineate the sites, EOG Resources, Inc. proposes to install a Geosynthetic Clay Liner (GCL) under the flow lines and road sleeve that are already excavated at six (6) feet bgs. This would prevent any further vertical movement of contaminants and address the chloride issues identified in the #2 excavation area. Then the two excavated areas (#1 and #2) would be backfilled with caliche to grade in order to create a flat, stable surface with the ability to support an Air Rotary Core Rig. With the flow line positions clearly marked from previously being excavated, EOG will be able to safely complete vertical and horizontal delineation of the release areas. Once the bottom of the contamination has been determined, slotted PVC pipe (three inch if possible) will be installed into the bore holes, and these will serve to gravity flow a microbial bioremediation product (Liquid Remediact) into the impacted areas to perform in situ remediation. Approximately one (1) gallon of the mixed product will be used for every three feet of PVC pipe installed. The bioremediation product will be administered for five (5) consecutive days during each treatment cycle, with treatment cycles to occur every thirty (30) days for the anticipated 90-day remediation project. The initial design will have a minimum of four (4) treatment holes at each excavation site (#1 and #2), two (2) treatment holes on either side (north and south) of the road sleeve and flow lines (Figure 2). Treatment bore holes will be spaced enough that at the completion of the treatment process a confirmation bore hole can be completed between the two bore holes on each side of the sleeve used to apply the bioremediation product. Confirmation samples will be collected from each bore hole beginning at ten (10) feet bgs and to consist of sample collection every five (5) feet thereafter to a depth ten (10) feet past the known contamination depth. To identify horizontal extents, sample bore holes will be completed outside of the known impacted areas, with two bore holes to the north and two bore holes to the south at both the #1 and #2 excavation areas (Figure 1). Samples collected at these bore holes will begin a five (5) feet bgs, with sampling to occur every five (5) feet thereafter, and extend to the known uncontaminated depth of the bore holes completed in the excavation areas. Based on these analytical sample results, treatment area could be increased with more bore holes installed to meet the bioremediation needs of the site. Once the soils have completed bioremediation, EOG will use bentonite to plug the treatment and sample holes from eight (8) feet bgs to five (5) feet bgs. This will allow the GCL previously installed to bond to the plugs and create a seal to prevent any further chloride migration, but will also prevent any future releases that may occur from re-impacting this area.

At the completion of the remediation project, the remediated areas will be capped with one (1) foot of a similar type topsoil to support revegetation activities. The area will be revegetated with the appropriate BLM Grass Mix during the next planting season, which would occur the July following the completion of the remediation project. When remediation work is completed a C-141 Closure Report will be submitted to the NMOCD requesting closure of the site.

Table 1
Soil Analytical Data

Soil Analytical Data

Sample ID	Depth (ft. bgs)	Date	Benzene	Toluene	Ethylbenzene	Xylenes	BTEX	TPH (GRO)	TPH (DRO)	TPH EXT DRO	Total TPH	Chlorides
#1 Sidewalls	0-6'	1/29/19	0.126	0.243	0.154	0.179	0.701	<10.0	20.1	<10.0	20.1	48
#1-7'	7'	1/29/19	92.7	440	277	293	1100	9720	15600	2230	27550	160
#1-9'	9'	1/29/19	159	516	292	301	1270	7250	11900	1790	20940	3280
#1-11'	11'	1/29/19	154	424	226	229	1030	5310	8520	1310	15140	8260
#1-13'	13'	1/29/19	94.4	347	210	216	867	4700	8200	1200	14100	4720
#1-15'	15'	1/29/19	183	491	265	264	1200	6990	10900	1660	19550	8000
#2 Sidewalls	0-6'	1/29/19	<0.050	0.085	0.073	<0.150	<0.300	<10.0	17.4	<10.0	17.4	176
#2-7'	7'	1/29/19	53.9	228	139	146	567	4460	7860	1170	13490	25600
#2-9'	9'	1/29/19	44.1	185	119	125	473	3730	7300	894	11924	24000
#2-11'	11'	1/29/19	21.7	109	78	83.9	292	1810	3970	554	6334	26400
#2-13'	13'	1/29/19	21.8	101	72.1	77.6	273	1810	4300	526	6636	26800
#2-15'	15'	1/29/19	150	439	243	256	1090	8570	13000	1930	23500	8800

Figure 1
Site Map with Sample and Treatment Points



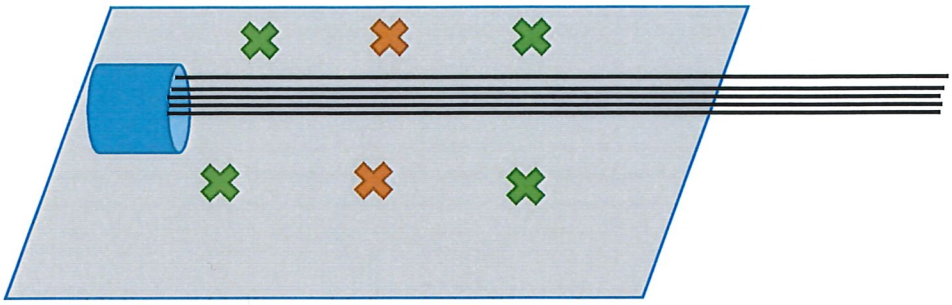
-Represents an initial soil testing bore hole and soil treatment bore hole

-Represents a confirmation soil testing bore hole

-Represents a horizontal soil testing bore hole and possible treatment bore hole (note: these will be placed as close to lines as SAFELY possible)

Figure 2
Treatment Point Design Diagram

Impacted Area Remediation and Sampling Design



Represents a confirmation sample point

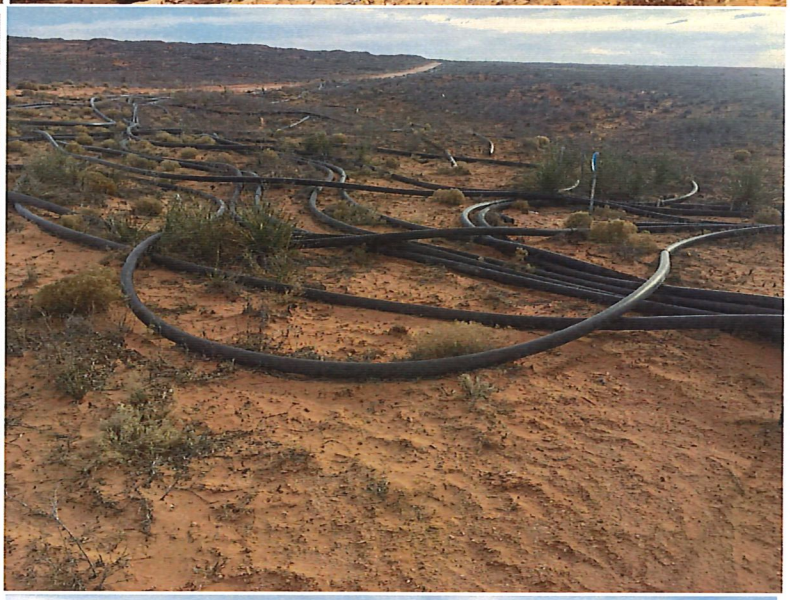
Represents a treatment point and initial sample point

Photos





















Appendix A
Soil Sample Laboratory Data

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

February 06, 2019

CHASE SETTLE

EOG Y RESOURCES, INC

105 SOUTH 4TH STREET

ARTESIA, NM 88210

RE: JACKSON B #57

Enclosed are the results of analyses for samples received by the laboratory on 01/30/19 14:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

EOG Y RESOURCES, INC
CHASE SETTLE
105 SOUTH 4TH STREET
ARTESIA NM, 88210
Fax To: (575) 748-4131

Received:	01/30/2019	Sampling Date:	01/29/2019
Reported:	02/06/2019	Sampling Type:	Soil
Project Name:	JACKSON B #57	Sampling Condition:	Cool & Intact
Project Number:	2RP-5149	Sample Received By:	Tamara Oldaker
Project Location:	JACKSON B #57		

Sample ID: #1 SIDEWALLS (H900340-01)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	**0.126**	0.050	02/04/2019	ND	2.19	110	2.00	1.83	
Toluene*	**0.243**	0.050	02/04/2019	ND	2.10	105	2.00	2.97	
Ethylbenzene*	**0.154**	0.050	02/04/2019	ND	2.06	103	2.00	3.15	
Total Xylenes*	**0.179**	0.150	02/04/2019	ND	5.99	99.8	6.00	0.740	
Total BTEX	**0.701**	0.300	02/04/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *100 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**48.0**	16.0	02/02/2019	ND	400	100	400	7.69	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/01/2019	ND	167	83.5	200	0.387	
DRO >C10-C28*	**20.1**	10.0	02/01/2019	ND	179	89.3	200	4.23	
EXT DRO >C28-C36	<10.0	10.0	02/01/2019	ND					

Surrogate: 1-Chlorooctane *94.4 %* *41-142*

Surrogate: 1-Chlorooctadecane *95.7 %* *37.6-147*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

ARDINAL LABORATORIES
101 East Marland, Hobbs, NM 88240 (505) 393-2326 FAX (505) 393-2476

Project Manager: Chase Settle
Company Name: EOG Y Resources Inc.
Company Address: 105 South 4th Street
City/State/Zip: Artesia, NM 88210
Telephone No: 575-748-4171 Fax No:
Sampler Signature:
e-mail: Chase_Settle@eogresources.com

Project Name: Jackson B #57
Project #: 2RP-5149
Project Loc: Jackson B #57
PO #: 205-0750
Report Format: [x] Standard [ ] TRRP [ ] NPDES

(lab use only)
ORDER #: H900340

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Preservation & # of Containers: Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Analyze For: TPH: 8015B EXTENDED	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX: 8021B	RCI	N.O.R.M.	Chlorides	SAR		RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
1	#1 Sidewalls	Sur	6'	1/29/2019	8:42 AM		1	X								S	X								X			X				X

Special Instructions: TPH EXTENDED NEEDED!

Relinquished by:	Date	Time	Received by:	Date	Time
	1-30-19	11:30	Tamara Oldaker	1-30-19	14:00
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT:	Date	Time

Laboratory Comments:

Sample Containers Intact?	(Y)	N
VOCs Free of Headspace?	(Y)	N
Labels on container(s)	(Y)	N
Custody seals on container(s)	(Y)	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered	(Y)	N
by Sampler/Client Rep. ?	(Y)	N

by Courier? UPS DHL FedEx Lone Star

Temperature Upon Receipt: 3.4° °C

#197

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

February 06, 2019

CHASE SETTLE

EOG Y RESOURCES, INC

105 SOUTH 4TH STREET

ARTESIA, NM 88210

RE: JACKSON B #57

Enclosed are the results of analyses for samples received by the laboratory on 01/30/19 14:00.

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Method EPA 524.4	Regulated VOCs (V1, V2, V3)

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Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

EOG Y RESOURCES, INC
CHASE SETTLE
105 SOUTH 4TH STREET
ARTESIA NM, 88210
Fax To: (575) 748-4131

Received:	01/30/2019	Sampling Date:	01/29/2019
Reported:	02/06/2019	Sampling Type:	Soil
Project Name:	JACKSON B #57	Sampling Condition:	Cool & Intact
Project Number:	2RP-5149	Sample Received By:	Tamara Oldaker
Project Location:	JACKSON B #57		

Sample ID: #1 - 7' (H900337-01)

BTEX 8021B mg/kg **Analyzed By: ms**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	**92.7**	5.00	02/04/2019	ND	2.19	110	2.00	1.83	
Toluene*	**440**	5.00	02/04/2019	ND	2.10	105	2.00	2.97	
Ethylbenzene*	**277**	5.00	02/04/2019	ND	2.06	103	2.00	3.15	
Total Xylenes*	**293**	15.0	02/04/2019	ND	5.99	99.8	6.00	0.740	
Total BTEX	**1100**	30.0	02/04/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *105 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**160**	16.0	02/02/2019	ND	400	100	400	3.92	

TPH 8015M mg/kg **Analyzed By: MS** **S-06**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	**9720**	50.0	02/01/2019	ND	210	105	200	4.32	
DRO >C10-C28*	**15600**	50.0	02/01/2019	ND	210	105	200	0.805	
EXT DRO >C28-C36	**2230**	50.0	02/01/2019	ND					

Surrogate: 1-Chlorooctane *352 %* *41-142*

Surrogate: 1-Chlorooctadecane *446 %* *37.6-147*

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Celey D. Keene, Lab Director/Quality Manager

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Analytical Results For:

EOG Y RESOURCES, INC
CHASE SETTLE
105 SOUTH 4TH STREET
ARTESIA NM, 88210
Fax To: (575) 748-4131

Received:	01/30/2019	Sampling Date:	01/29/2019
Reported:	02/06/2019	Sampling Type:	Soil
Project Name:	JACKSON B #57	Sampling Condition:	Cool & Intact
Project Number:	2RP-5149	Sample Received By:	Tamara Oldaker
Project Location:	JACKSON B #57		

Sample ID: #1 - 9' (H900337-02)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	**159**	5.00	02/04/2019	ND	2.19	110	2.00	1.83	
Toluene*	**516**	5.00	02/04/2019	ND	2.10	105	2.00	2.97	
Ethylbenzene*	**292**	5.00	02/04/2019	ND	2.06	103	2.00	3.15	
Total Xylenes*	**301**	15.0	02/04/2019	ND	5.99	99.8	6.00	0.740	
Total BTEX	**1270**	30.0	02/04/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL *103 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**3280**	16.0	02/02/2019	ND	400	100	400	7.69	QM-07

TPH 8015M mg/kg Analyzed By: MS S-06

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	**7250**	50.0	02/01/2019	ND	210	105	200	4.32	
DRO >C10-C28*	**11900**	50.0	02/01/2019	ND	210	105	200	0.805	
EXT DRO >C28-C36	**1790**	50.0	02/01/2019	ND					

Surrogate: 1-Chlorooctane *283 %* *41-142*

Surrogate: 1-Chlorooctadecane *356 %* *37.6-147*

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

EOG Y RESOURCES, INC
CHASE SETTLE
105 SOUTH 4TH STREET
ARTESIA NM, 88210
Fax To: (575) 748-4131

Received:	01/30/2019	Sampling Date:	01/29/2019
Reported:	02/06/2019	Sampling Type:	Soil
Project Name:	JACKSON B #57	Sampling Condition:	Cool & Intact
Project Number:	2RP-5149	Sample Received By:	Tamara Oldaker
Project Location:	JACKSON B #57		

Sample ID: #1 - 11' (H900337-03)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	**154**	5.00	02/04/2019	ND	2.19	110	2.00	1.83	
Toluene*	**424**	5.00	02/04/2019	ND	2.10	105	2.00	2.97	
Ethylbenzene*	**226**	5.00	02/04/2019	ND	2.06	103	2.00	3.15	
Total Xylenes*	**229**	15.0	02/04/2019	ND	5.99	99.8	6.00	0.740	
Total BTEX	**1030**	30.0	02/04/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *102 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**8260**	16.0	02/02/2019	ND	400	100	400	7.69	

TPH 8015M mg/kg Analyzed By: MS **S-06**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	**5310**	50.0	02/01/2019	ND	210	105	200	4.32	
DRO >C10-C28*	**8520**	50.0	02/01/2019	ND	210	105	200	0.805	
EXT DRO >C28-C36	**1310**	50.0	02/01/2019	ND					

Surrogate: 1-Chlorooctane *230 %* *41-142*

Surrogate: 1-Chlorooctadecane *286 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

EOG Y RESOURCES, INC
CHASE SETTLE
105 SOUTH 4TH STREET
ARTESIA NM, 88210
Fax To: (575) 748-4131

Received:	01/30/2019	Sampling Date:	01/29/2019
Reported:	02/06/2019	Sampling Type:	Soil
Project Name:	JACKSON B #57	Sampling Condition:	Cool & Intact
Project Number:	2RP-5149	Sample Received By:	Tamara Oldaker
Project Location:	JACKSON B #57		

Sample ID: #1 - 13' (H900337-04)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	**94.4**	5.00	02/04/2019	ND	2.19	110	2.00	1.83	
Toluene*	**347**	5.00	02/04/2019	ND	2.10	105	2.00	2.97	
Ethylbenzene*	**210**	5.00	02/04/2019	ND	2.06	103	2.00	3.15	
Total Xylenes*	**216**	15.0	02/04/2019	ND	5.99	99.8	6.00	0.740	
Total BTEX	**867**	30.0	02/04/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL *103 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**4720**	16.0	02/02/2019	ND	400	100	400	7.69	

TPH 8015M mg/kg Analyzed By: MS S-06

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	**4700**	50.0	02/01/2019	ND	210	105	200	4.32	
DRO >C10-C28*	**8200**	50.0	02/01/2019	ND	210	105	200	0.805	
EXT DRO >C28-C36	**1200**	50.0	02/01/2019	ND					

Surrogate: 1-Chlorooctane *180 %* *41-142*

Surrogate: 1-Chlorooctadecane *272 %* *37.6-147*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Analytical Results For:

EOG Y RESOURCES, INC
CHASE SETTLE
105 SOUTH 4TH STREET
ARTESIA NM, 88210
Fax To: (575) 748-4131

Received:	01/30/2019	Sampling Date:	01/29/2019
Reported:	02/06/2019	Sampling Type:	Soil
Project Name:	JACKSON B #57	Sampling Condition:	Cool & Intact
Project Number:	2RP-5149	Sample Received By:	Tamara Oldaker
Project Location:	JACKSON B #57		

Sample ID: #1 - 15' (H900337-05)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	**183**	5.00	02/04/2019	ND	2.19	110	2.00	1.83	
Toluene*	**491**	5.00	02/04/2019	ND	2.10	105	2.00	2.97	
Ethylbenzene*	**265**	5.00	02/04/2019	ND	2.06	103	2.00	3.15	
Total Xylenes*	**264**	15.0	02/04/2019	ND	5.99	99.8	6.00	0.740	
Total BTEX	**1200**	30.0	02/04/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID	*104 %*	*73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**8000**	16.0	02/02/2019	ND	400	100	400	7.69	

TPH 8015M mg/kg Analyzed By: MS S-06

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	**6990**	50.0	02/01/2019	ND	210	105	200	4.32	
DRO >C10-C28*	**10900**	50.0	02/01/2019	ND	210	105	200	0.805	
EXT DRO >C28-C36	**1660**	50.0	02/01/2019	ND					

Surrogate: 1-Chlorooctane	*289 %*	*41-142*
Surrogate: 1-Chlorooctadecane	*347 %*	*37.6-147*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

ARDINAL LABORATORIES
101 East Marland, Hobbs, NM 88240 (505) 393-2326 FAX (505) 393-2476

Project Manager: Chase Settle
Company Name: EOG Y Resources Inc.
Company Address: 105 South 4th Street
City/State/Zip: Artesia, NM 88210
Telephone No: 575-748-4171 Fax No:
Sampler Signature:
e-mail: Chase_Settle@eogresources.com

Project Name: Jackson B #57
Project #: 2RP-5149
Project Loc: Jackson B #57
PO #: 205-0750
Report Format: [x] Standard [ ] TRRP [ ] NPDES

(lab use only)
ORDER #: H900337

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Analyze For: TCLP: TPH: 8015B EXTENDED	TOTAL: TPH: TX 1005	TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX: 8021B	RCI	N.O.R.M.	Chlorides	SAR		RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
1	#1-7'	6'	6'	1/29/2019	9:33 AM		1	X								S	X								X			X				X
2	#1-9'	9'	9'	1/29/2019	9:36 AM		1	X								S	X								X			X				X
3	#1-11'	11'	11'	1/29/2019	9:40 AM		1	X								S	X								X			X				X
4	#1-13'	13'	13'	1/29/2019	9:43 AM		1	X								S	X								X			X				X
5	#1-15'	15'	15'	1/29/2019	9:49 AM		1	X								S	X								X			X				X

Special Instructions: TPH EXTENDED NEEDED!

Relinquished by:	Date	Time	Received by:	Date	Time
	1-30-19	11:30	Tamara Oldaker	1-30-19	14:00
~~Relinquished by:~~	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT:	Date	Time

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered	Y	N
by Sampler/Client Rep. ?	Y	N

by Courier? UPS DHL FedEx Lone Star

Temperature Upon Receipt: 3.4° °C

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

February 06, 2019

CHASE SETTLE

EOG Y RESOURCES, INC

105 SOUTH 4TH STREET

ARTESIA, NM 88210

RE: JACKSON B #57

Enclosed are the results of analyses for samples received by the laboratory on 01/30/19 14:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

EOG Y RESOURCES, INC
CHASE SETTLE
105 SOUTH 4TH STREET
ARTESIA NM, 88210
Fax To: (575) 748-4131

Received:	01/30/2019	Sampling Date:	01/29/2019
Reported:	02/06/2019	Sampling Type:	Soil
Project Name:	JACKSON B #57	Sampling Condition:	Cool & Intact
Project Number:	2RP-5149	Sample Received By:	Tamara Oldaker
Project Location:	JACKSON B #57		

Sample ID: #2 SIDEWALLS (H900341-01)

BTEX 8021B mg/kg **Analyzed By: ms**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/04/2019	ND	2.19	110	2.00	1.83	
Toluene*	**0.085**	0.050	02/04/2019	ND	2.10	105	2.00	2.97	
Ethylbenzene*	**0.073**	0.050	02/04/2019	ND	2.06	103	2.00	3.15	
Total Xylenes*	<0.150	0.150	02/04/2019	ND	5.99	99.8	6.00	0.740	
Total BTEX	<0.300	0.300	02/04/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *100 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**176**	16.0	02/02/2019	ND	400	100	400	7.69	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/01/2019	ND	167	83.5	200	0.387	
DRO >C10-C28*	**17.4**	10.0	02/01/2019	ND	179	89.3	200	4.23	
EXT DRO >C28-C36	<10.0	10.0	02/01/2019	ND					

Surrogate: 1-Chlorooctane *88.5 %* *41-142*

Surrogate: 1-Chlorooctadecane *89.8 %* *37.6-147*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

ARDINAL LABORATORIES
101 East Marland, Hobbs, NM 88240 (505) 393-2326 FAX (505) 393-2476

Project Manager: Chase Settle
Company Name: EOG Y Resources Inc.
Company Address: 105 South 4th Street
City/State/Zip: Artesia, NM 88210
Telephone No: 575-748-4171 Fax No:
Sampler Signature:

Project Name: Jackson B #57
Project #: 2RP-5149
Project Loc: Jackson B #57
PO #: 205-0750
Report Format: [x] Standard [ ] TRRP [ ] NPDES
e-mail: Chase_Settle@eogresources.com

(lab use only)
ORDER #: H900341

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Preservation & # of Containers: Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge	GW = Groundwater S=Soil/Solid	NP=Non-Potable Specify Other	Analyze For: TPH: 8015B EXTENDED	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX: 8021B	RCI	N.O.R.M.	Chlorides	SAR		RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
1	#2 Sidewalls	Sur	6'	1/29/2019	8:52 AM		1	X								S			X								X			X				X

Special Instructions: TPH EXTENDED NEEDED!

Relinquished by:	Date	Time	Received by:	Date	Time
	1-30-19	11:30	Tamara Oldaker	1-30-19	14:00
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT:	Date	Time

Laboratory Comments:

Sample Containers Intact?	(Y)	N
VOCs Free of Headspace?	(Y)	N
Labels on container(s)	(Y)	N
Custody seals on container(s)	(Y)	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered	(Y)	N
by Sampler/Client Rep. ?	(Y)	N

by Courier? UPS DHL FedEx Lone Star

Temperature Upon Receipt: 3.4° °C
#97

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

February 06, 2019

CHASE SETTLE

EOG Y RESOURCES, INC

105 SOUTH 4TH STREET

ARTESIA, NM 88210

RE: JACKSON B #57

Enclosed are the results of analyses for samples received by the laboratory on 01/30/19 14:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

EOG Y RESOURCES, INC
CHASE SETTLE
105 SOUTH 4TH STREET
ARTESIA NM, 88210
Fax To: (575) 748-4131

Received:	01/30/2019	Sampling Date:	01/29/2019
Reported:	02/06/2019	Sampling Type:	Soil
Project Name:	JACKSON B #57	Sampling Condition:	Cool & Intact
Project Number:	2RP-5149	Sample Received By:	Tamara Oldaker
Project Location:	JACKSON B #57		

Sample ID: #2 - 7' (H900338-01)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	**53.9**	2.00	02/04/2019	ND	2.19	110	2.00	1.83	
Toluene*	**228**	2.00	02/04/2019	ND	2.10	105	2.00	2.97	
Ethylbenzene*	**139**	2.00	02/04/2019	ND	2.06	103	2.00	3.15	
Total Xylenes*	**146**	6.00	02/04/2019	ND	5.99	99.8	6.00	0.740	
Total BTEX	**567**	12.0	02/04/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL *105 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**25600**	16.0	02/02/2019	ND	400	100	400	7.69	

TPH 8015M mg/kg Analyzed By: MS S-06

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	**4460**	50.0	02/01/2019	ND	210	105	200	4.32	
DRO >C10-C28*	**7860**	50.0	02/01/2019	ND	210	105	200	0.805	
EXT DRO >C28-C36	**1170**	50.0	02/01/2019	ND					

Surrogate: 1-Chlorooctane *216 %* *41-142*

Surrogate: 1-Chlorooctadecane *271 %* *37.6-147*

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

EOG Y RESOURCES, INC
CHASE SETTLE
105 SOUTH 4TH STREET
ARTESIA NM, 88210
Fax To: (575) 748-4131

Received:	01/30/2019	Sampling Date:	01/29/2019
Reported:	02/06/2019	Sampling Type:	Soil
Project Name:	JACKSON B #57	Sampling Condition:	Cool & Intact
Project Number:	2RP-5149	Sample Received By:	Tamara Oldaker
Project Location:	JACKSON B #57		

Sample ID: #2 - 9' (H900338-02)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	**44.1**	2.00	02/04/2019	ND	2.19	110	2.00	1.83	
Toluene*	**185**	2.00	02/04/2019	ND	2.10	105	2.00	2.97	
Ethylbenzene*	**119**	2.00	02/04/2019	ND	2.06	103	2.00	3.15	
Total Xylenes*	**125**	6.00	02/04/2019	ND	5.99	99.8	6.00	0.740	
Total BTEX	**473**	12.0	02/04/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID	*104 %*	*73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**24000**	16.0	02/02/2019	ND	400	100	400	7.69	

TPH 8015M mg/kg Analyzed By: MS S-06

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	**3730**	50.0	02/01/2019	ND	210	105	200	4.32	
DRO >C10-C28*	**7300**	50.0	02/01/2019	ND	210	105	200	0.805	
EXT DRO >C28-C36	**894**	50.0	02/01/2019	ND					

Surrogate: 1-Chlorooctane	*219 %*	*41-142*
Surrogate: 1-Chlorooctadecane	*263 %*	*37.6-147*

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

EOG Y RESOURCES, INC
CHASE SETTLE
105 SOUTH 4TH STREET
ARTESIA NM, 88210
Fax To: (575) 748-4131

Received:	01/30/2019	Sampling Date:	01/29/2019
Reported:	02/06/2019	Sampling Type:	Soil
Project Name:	JACKSON B #57	Sampling Condition:	Cool & Intact
Project Number:	2RP-5149	Sample Received By:	Tamara Oldaker
Project Location:	JACKSON B #57		

Sample ID: #2 - 11' (H900338-03)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	**21.7**	2.00	02/04/2019	ND	2.19	110	2.00	1.83	
Toluene*	**109**	2.00	02/04/2019	ND	2.10	105	2.00	2.97	
Ethylbenzene*	**78.0**	2.00	02/04/2019	ND	2.06	103	2.00	3.15	
Total Xylenes*	**83.9**	6.00	02/04/2019	ND	5.99	99.8	6.00	0.740	
Total BTEX	**292**	12.0	02/04/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL *106 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**26400**	16.0	02/02/2019	ND	400	100	400	7.69	

TPH 8015M mg/kg Analyzed By: MS S-06

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	**1810**	50.0	02/01/2019	ND	210	105	200	4.32	
DRO >C10-C28*	**3970**	50.0	02/01/2019	ND	210	105	200	0.805	
EXT DRO >C28-C36	**554**	50.0	02/01/2019	ND					

Surrogate: 1-Chlorooctane *168 %* *41-142*

Surrogate: 1-Chlorooctadecane *193 %* *37.6-147*

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Analytical Results For:

EOG Y RESOURCES, INC
CHASE SETTLE
105 SOUTH 4TH STREET
ARTESIA NM, 88210
Fax To: (575) 748-4131

Received:	01/30/2019	Sampling Date:	01/29/2019
Reported:	02/06/2019	Sampling Type:	Soil
Project Name:	JACKSON B #57	Sampling Condition:	Cool & Intact
Project Number:	2RP-5149	Sample Received By:	Tamara Oldaker
Project Location:	JACKSON B #57		

Sample ID: #2 - 13' (H900338-04)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	**21.8**	1.00	02/04/2019	ND	2.19	110	2.00	1.83	
Toluene*	**101**	1.00	02/04/2019	ND	2.10	105	2.00	2.97	
Ethylbenzene*	**72.1**	1.00	02/04/2019	ND	2.06	103	2.00	3.15	
Total Xylenes*	**77.6**	3.00	02/04/2019	ND	5.99	99.8	6.00	0.740	
Total BTEX	**273**	6.00	02/04/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL	*107 %*	*73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**26800**	16.0	02/02/2019	ND	400	100	400	7.69	

TPH 8015M mg/kg Analyzed By: MS S-06

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	**1810**	50.0	02/01/2019	ND	210	105	200	4.32	
DRO >C10-C28*	**4300**	50.0	02/01/2019	ND	210	105	200	0.805	
EXT DRO >C28-C36	**526**	50.0	02/01/2019	ND					

Surrogate: 1-Chlorooctane	*171 %*	*41-142*
Surrogate: 1-Chlorooctadecane	*197 %*	*37.6-147*

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CARDINAL Laboratories

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Analytical Results For:

EOG Y RESOURCES, INC
CHASE SETTLE
105 SOUTH 4TH STREET
ARTESIA NM, 88210
Fax To: (575) 748-4131

Received:	01/30/2019	Sampling Date:	01/29/2019
Reported:	02/06/2019	Sampling Type:	Soil
Project Name:	JACKSON B #57	Sampling Condition:	Cool & Intact
Project Number:	2RP-5149	Sample Received By:	Tamara Oldaker
Project Location:	JACKSON B #57		

Sample ID: #2 - 15' (H900338-05)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	**150**	5.00	02/04/2019	ND	2.19	110	2.00	1.83	
Toluene*	**439**	5.00	02/04/2019	ND	2.10	105	2.00	2.97	
Ethylbenzene*	**243**	5.00	02/04/2019	ND	2.06	103	2.00	3.15	
Total Xylenes*	**256**	15.0	02/04/2019	ND	5.99	99.8	6.00	0.740	
Total BTEX	**1090**	30.0	02/04/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL *104 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**8800**	16.0	02/02/2019	ND	400	100	400	7.69	

TPH 8015M mg/kg Analyzed By: MS S-06

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	**8570**	50.0	02/01/2019	ND	210	105	200	4.32	QM-07
DRO >C10-C28*	**13000**	50.0	02/01/2019	ND	210	105	200	0.805	QM-07
EXT DRO >C28-C36	**1930**	50.0	02/01/2019	ND					

Surrogate: 1-Chlorooctane *321 %* *41-142*

Surrogate: 1-Chlorooctadecane *393 %* *37.6-147*

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CARDINAL Laboratories

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Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

ARDINAL LABORATORIES
101 East Marland, Hobbs, NM 88240 (505) 393-2326 FAX (505) 393-2476

Project Manager: Chase Settle
Company Name: EOG Y Resources Inc.
Company Address: 105 South 4th Street
City/State/Zip: Artesia, NM 88210
Telephone No: 575-748-4171 Fax No:
Sampler Signature:
e-mail: Chase_Settle@eogresources.com

Project Name: Jackson B #57
Project #: 2RP-5149
Project Loc: Jackson B #57
PO #: 205-0750
Report Format: [x] Standard [ ] TRRP [ ] NPDES

(lab use only)
ORDER #: H900338

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Analyze For: TCLP: TPH: 8015B EXTENDED	TOTAL: TPH: TX 1005	TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX: 8021B	RCI	N.O.R.M.	Chlorides	SAR		RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
1	#2-7'	6'	6'	1/29/2019	10:01 AM		1	X								S	X								X			X				X
2	#2-9'	9'	9'	1/29/2019	10:04 AM		1	X								S	X								X			X				X
3	#2-11'	11'	11'	1/29/2019	10:07 AM		1	X								S	X								X			X				X
4	#2-13'	13'	13'	1/29/2019	10:10 AM		1	X								S	X								X			X				X
5	#2-15'	15'	15'	1/29/2019	10:16 AM		1	X								S	X								X			X				X

Special Instructions: TPH EXTENDED NEEDED!

	Date	Time		Date	Time
Relinquished by:	1-30-19	11:30	Received by: Tamara Oldaker	1-30-19	14:00
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT:	Date	Time

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered	Y	N
by Sampler/Client Rep. ?	Y	N

by Courier? UPS DHL FedEx Lone Star

Temperature Upon Receipt: 4.3° °C

Appendix B
USGS Groundwater Data

USGS
science for a changing world

National Water Information System: Map View

Sites | Map Layers

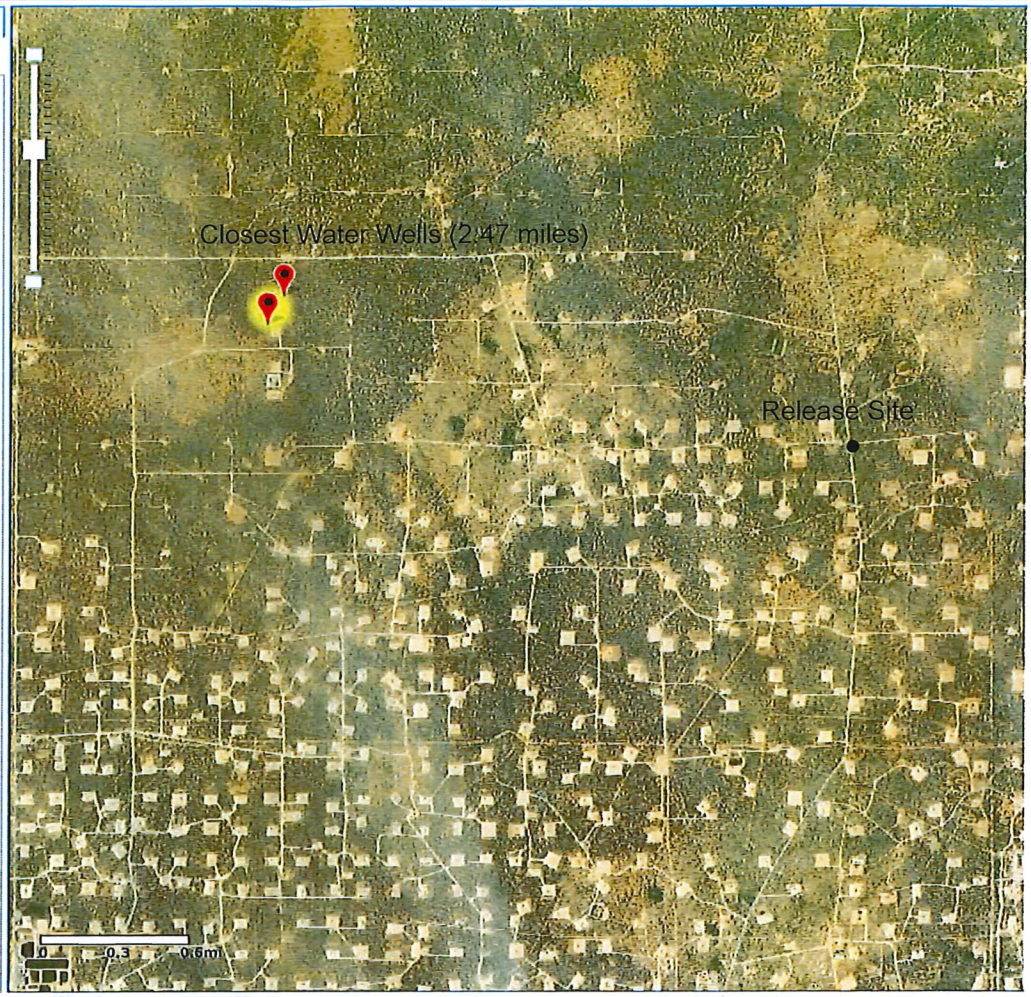
Search Results

Export Sites

Site Number	Site Name
325210103580101	16S.30E.33.44233
325216103575701	16S.30E.33.42443

Search Parameters

Explanation of Symbols



Click to hideNews Bulletins

- Please see news on new formats
- Full News

Groundwater levels for the Nation

Search Results -- 1 sites found

Agency code = usgs
site_no list =
- 325216103575701

Minimum number of levels = 1
Save file of selected sites to local disk for future upload

USGS 325216103575701 16S.30E.33.42443

Eddy County, New Mexico
Latitude 32°52'16", Longitude 103°57'57" NAD27
Land-surface elevation 3,729 feet above NAVD88
The depth of the well is 385 feet below land surface.
This well is completed in the Santa Rosa Sandstone (231SNRS) local aquifer.

Output formats

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

Date	Time	? Water-level date-time accuracy	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Water-level accuracy	? Status	? Method of measurement	? Measuring agency	? Source of measurement	? Water-level approval status
1986-04-25		D	362.44			2		U		U	A

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Water-level accuracy	2	Water level accuracy to nearest hundredth of a foot
Status		The reported water-level measurement represents a static level
Method of measurement	U	Unknown method.
Measuring agency		Not determined
Source of measurement	U	Source is unknown.
Water-level approval status	A	Approved for publication -- Processing and review completed.

Click to hideNews Bulletins

- Please see news on new formats
- Full News

Groundwater levels for the Nation

Search Results -- 1 sites found

Agency code = usgs
site_no list =
- 325210103580101

Minimum number of levels = 1
Save file of selected sites to local disk for future upload

USGS 325210103580101 16S.30E.33.44233

Eddy County, New Mexico
Latitude 32°52'10", Longitude 103°58'01" NAD27
Land-surface elevation 3,725 feet above NAVD88
The depth of the well is 433 feet below land surface.
This well is completed in the Santa Rosa Sandstone (231SNRS) local aquifer.

Output formats

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

Date	Time	? Water-level date-time accuracy	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Water-level accuracy	? Status	? Method of measurement	? Measuring agency	? Source of measurement	? Water-level approval status
1986-04-25		D	361.26			2		U		U	A

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Water-level accuracy	2	Water level accuracy to nearest hundredth of a foot
Status		The reported water-level measurement represents a static level
Method of measurement	U	Unknown method.
Measuring agency		Not determined
Source of measurement	U	Source is unknown.
Water-level approval status	A	Approved for publication -- Processing and review completed.

Appendix C
Form 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	2RP-5149
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party EOG Y Resources, Inc.	OGRID 25575
Contact Name Chase Settle	Contact Telephone 575-748-4171
Contact email chase_settle@eogresources.com	Incident # *(assigned by OCD)*
Contact mailing address 104 S. 4th	

Location of Release Source

Latitude 32.8623428 Longitude -103.9330673
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Jackson B #57	Site Type Facility
Date Release Discovered 12/1/18	API# *30-015-41003*

Unit Letter	Section	Township	Range	County
L	1	17S	30E	Eddy

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)

☒ Crude Oil	Volume Released (bbls) 2	Volume Recovered (bbls) 2
☒ Produced Water	Volume Released (bbls) 6	Volume Recovered (bbls) 5
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☒ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release
Lease Operator found fluid on surface near roadway. Traced back to source and found it was coming from underground, most likely cased crossing. Shut off all wells utilizing crossing and isolated flowlines.

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-5149
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☒ 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

☒ The source of the release has been stopped.
☒ The impacted area has been secured to protect human health and the environment.
☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not 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: Chase Settle Title: Rep Safety & Environmental II

Signature: for CS Date: 12/13/2018

email: chase_settle@eogresources.com Telephone: 575-748-4171

OCD Only

Received by: Date:

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-5149
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?	361 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☑ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☑ 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)?	☐ Yes ☑ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☑ 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?	☐ Yes ☑ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☑ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☑ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☑ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☑ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☑ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☑ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☑ Yes ☐ 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	
District RP	2RP-5149
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: Chase Settle Title: Rep Safety and Environmental II

Signature: Chase Settle Date: 02/27/2019

email: Chase_Settle@eogresources.com Telephone: 575-748-1471

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-5149
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: Chase Settle Title: Rep Safety and Environmental II

Signature: Chase Settle Date: 02/27/2019

email: Chase_Settle@eogresources.com Telephone: 575-748-1471

OCD Only

Received by: _____ Date: _____

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Signature: _____ Date: _____