PRELIMINARY RESULTS



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

March 21, 2018

Ms. Olivia Yu NMOCD District I 1625 N. French Drive Hobbs, NM 88210

Re:

Big Sky ABY State #1

1RP-4792 30-005-21020

Section 26, T8S-R33E Chaves County, New Mexico

Dear Ms. Yu,

EOG Y Resources, Inc. is submitting the enclosed remediation work plan for the above referenced site.

If there are no objections with the scope of work described in the plan, EOG Y Resources, Inc. will have a contractor begin work on or before April 3, 2018.

If you have any questions call me at (575) 748-4217

Thank you.

Robert Asher Environmental Supervisor EOG Y Resources, Inc.



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

March 21, 2018

Ms. Olivia Yu NMOCD District I 1625 N. French Drive Hobbs, NM 88210

Re:

Big Sky ABY State #1

1RP-4792 30-005-21020

Section 26, T8S-R33E

Chaves County, New Mexico

Dear Ms. Yu,

EOG Y Resources, Inc. is submitting the enclosed remediation work plan for the above referenced site.

If there are no objections with the scope of work described in the plan, EOG Y Resources, Inc. will have a contractor begin work on or before April 3, 2018.

If you have any questions call me at (575) 748-4217

Thank you.

Robert Asher Environmental Supervisor EOG Y Resources, Inc.



I. Location

From the intersection of LeDoux Road and Ruidoso Road, take LeDoux Road east/southeast for approximately 2.6 miles (to ranch house), then follow the road northeast for approximately 0.5 miles, then turn left (north) at the entrance of the location.

II. Background

On August 6, 2017, EOG Y Resources, Inc. submitted to the NMOCD District I office a Form C-141 for the release of 20 B/PW with 8 B/PW recovered. The affected area is approximately 35 feet by 50 feet within the primary berm of the production facility and was contained within the bermed battery. The release was caused by a hole in heater from vandalism (gunshot). A vacuum truck was dispatched to recover the remaining produced water and a backhoe crew was contracted to excavate visually impacted soils (approximately 35' X 50' X1" deep).

III. Surface and Ground Water

Area surface geology is Cenozoic Tertiary. Based on information regarding this location (Section 26, T8S-R33E), the New Mexico Office of the State Engineer (NMOSE) database depth to groundwater is approximately 157 feet – 165 feet (NMOSE-CL00314 POD1, Section 34, T8S-R33E & NMOSE-CL00307 POD1, Section 13, T8S-R32E), the United States Geological Survey National Water Information System (USGS-333503103325801, Section 34, T8S-R33E & USGS-333522103302901, Section 25, T8S-R33E) depth to groundwater is approximately 147.4 feet – 157 feet. Based on this information the Site Ranking is a Zero (0).

Watercourses in the area are dry except for infrequent flows in response to major precipitation events, with the nearest body of surface water being Lane Salt Lake at 8.5 miles away.

IV. NMOCD Ranking Criteria

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

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

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

 Benzene
 10 ppm

 BTEX
 50 ppm

 TPH
 5,000 ppm

Chlorides No established RRAL



V. Soils

The area consists of soils that are loam based topsoil with deeper layers of consisting of a cemented hardpan caliche layer in the subsurface that is impenetrable, which provides a permeability barrier to prohibit percolation of contaminants into the subsurface water system.

VI. Scope of work

During the sampling of 2/5/2018, backhoe refusal did not allow EOG Y to sample any further than the point of four (4) feet below surface. Based off of that fact and the enclosed analytical results, EOG Y Resources, Inc. will excavate four (4) feet of impacted soils from the release area to the hardpan caliche layer. A six (6) inch layer of clean native or like soil will be placed in the bottom of the excavation to cushion a 20 millimeter synthetic liner, this will protect the liner from puncture or damage. The excavation will then be backfilled with approximately 42-46 inches of clean native or like soil to be slightly above grade to allow for settling.

When the remediation work is completed, a Form C-141, Final Report/Closure Report will be submitted requesting closure.

With the well being plugged and the site abandoned after this release occurred the site will be reclaimed per State Land Office rules and reseeded per the SLO's recommended seed and seed rate.

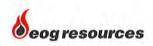


Table 1 Soil Analytical Data

Analytical Report	Sample Area	Latitude/Longitude	Sample Date	Sample Type	Depth	BTEX	GRO	DRO	EXT	Chlorides
S-1.Surface	Excavation Area	33.58575 103.54311	8/15/2017	Grab/Auger	Surface (1' BSL)	ND	10	5000	2200	210
S-1,1	Excavation Area	ii .	8/15/2017	Grab/Auger	1' (2' BSL)	0.2	61	5500	1800	71
S-1.2	Excavation Area		8/15/2017	Grab/Auger	2' (3' BSL)	ND	5	1500	750	100
Analytical Report	Sample Area	Latitude/Longitude	Sample Date	Sample Type	Depth	BTEX	GRO	DRO	EXT DRO	Chlorides
SP-3	Excavation Area	33.58575 103.54311	2/1/2018	Grab/Backhoe	3' (4' BSL)		74.7	2700	228	
SP-4*	Excavation Area	4	2/1/2018	Grab/Backhoe	4' (5' BSL)		305	5270	667	
Analytical Report	Sample Area	Latitude/Longitude	Sample Date	Sample Type	Depth	BTEX	GRO	DRO	EXT DRO	Chlorides
S-2.Surface	Excavation Area	33.585777 103.543130	2/5/2018	Grab/Backhoe	Surface (1' BSL)	<0.3	<10.0	74.1	14.2	2320
S-2.1	Excavation Area	0	2/5/2018	Grab/Backhoe	1' (2' BSL)	<0.3	<10.0	117	24.1	864
S-2.2	Excavation Area		2/5/2018	Grab/Backhoe	2' (3' BSL)	<0.3	<10.0	<10.0	<10.0	1100
S-2.3**	Excavation Area	u u	2/5/2018	Grab/Backhoe	3' (4' BSL)	<0.3	<10.0	<10.0	<10.0	1150
Analytical Report	Sample Area	Latitude/Longitude	Sample Date	Sample Type	Depth	BTEX	GRO	DRO	EXT DRO	Chlorides
S-3.Surface	Excavation Area	33.585728 103.543132	2/5/2018	Grab/Backhoe	Surface (1' BSL)	<0.3	<10.0	<10.0	<10.0	48
S-3.1	Excavation Area	Ü	2/5/2018	Grab/Backhoe	1' (2' BSL)	<0.3	<10.0	<10.0	<10.0	192
S-3.2	Excavation Area	п	2/5/2018	Grab/Backhoe	2' (3' BSL)	<0.3	<10.0	<10.0	<10.0	240
S-3.3**	Excavation Area	u	2/5/2018	Grab/Backhoe	3' (4' BSL)	<0.3	<10.0	<10.0	<10.0	208
Analytical Report	Sample Area	Latitude/Longitude	Sample Date	Sample Type	Depth	BTEX	GRO	DRO	EXT DRO	Chlorides
S-4.Surface	Excavation Area	33.585723 103.543036	2/5/2018	Grab/Backhoe	Surface (1' BSL)	<0.3	<10.0	<10.0	<10.0	3200
S-4.1	Excavation Area	u	2/5/2018	Grab/Backhoe	1' (2' BSL)	<0.3	<10.0	76	<10.0	2360
S-4.2	Excavation Area	"	2/5/2018	Grab/Backhoe	2' (3' BSL)	9.4	363	5150	468	1920
S-4.3**	Excavation Area	u	2/5/2018	Grab/Backhoe	3' (4' BSL)	24.9	561	4590	367	432
Analytical Report	Sample Area	Latitude/Longitude	Sample Date	Sample Type	Depth	BTEX	GRO	DRO	EXT DRO	Chlorides
S-5.Surface	Excavation Area	33.585768 103.543031	2/5/2018	Grab/Backhoe	Surface (1' BSL)	<0.3	<10.0	609	94.6	480
S-5.1	Excavation Area	u.	2/5/2018	Grab/Backhoe	1' (2' BSL)	1.2	<10.0	32.2	<10.0	688
S-5.2	Excavation Area	n	2/5/2018	Grab/Backhoe	2' (3' BSL)	<0.3	<10.0	<10.0	<10.0	1650
S-5.3**	Excavation Area		2/5/2018	Grab/Backhoe	3' (4' BSL)	<0.3	<10.0	<10.0	<10.0	1550

Site Ranking is Twenty (20). Depth to Ground Water >100' (approx. 185', per USGS & NMOSE). Distance to Surface Water Body <200'

All results are ppm. BSL - Below Surface Level. **- Backhoe refusal @ 3'. *- Backhoe refusal @ 4'.

Analytical Report	Sample Area	Latitude/Longitude	Sample Date	Sample Type	Depth	BTEX	GRO	DRO	EXT DRO	Chlorides
CP-1	North Sidewall	33.58576 103.54316	8/15/2017	Grab/Auger	Surface (2' BSL)	ND	ND	200		900
CP-1.2			2/1/2018	Grab/Backhoe	2' (3' BSL)		<10	<10		752
CP-1.3**	u	v.	2/1/2018	Grab/Backhoe	3' (4' BSL)		<10	<10		688
Analytical Report	Sample Area	Latitude/Longitude	Sample Date	Sample Type	Depth	BTEX	GRO	DRO	DRO	Chlorides
CP-2	East Sidewall	33.58577 103.54310	8/15/2017	Grab/Auger	Surface (2' BSL)	ND	ND	87		ND
CP-2.2	ii .	ii .	2/1/2018	Grab/Backhoe	2' (3' BSL)		<10	12.1		
CP-2.3**	п	=	2/1/2018	Grab/Backhoe	3' (4' BSL)		<10	<10		
Analytical Report	Sample Area	Latitude/Longitude	Sample Date	Sample Type	Depth	BTEX	GRO	DRO	DRO	Chlorides
CP-3	South Sidewall	33.58573 103.54302	8/15/2017	Grab/Auger	Surface (2' BSL)	ND	ND	25		610
CP-3.2	н		2/1/2018	Grab/Backhoe	2' (3' BSL)					112
CP-3.3**	"		2/1/2018	Grab/Backhoe	3' (4' BSL)					176
Analytical Report	Sample Area	Latitude/Longitude	Sample Date	Sample Type	Depth	BTEX	GRO	DRO	DRO DRO	Chlorides
CP-4	West Sidewall	33.589829 103.538936	8/15/2017	Grab/Auger	Surface (2' BSL)	4.3	63	310		470
CP-4.2	u	ii ii	2/1/2018	Grab/Backhoe	2' (3' BSL)		<10	<10		
CP-4.3**	u		2/1/2018	Grab/Backhoe	3' (4' BSL)		<10	<10		
Analytical Report	Sample Area	Latitude/Longitude	Sample Date	Sample Type	Depth	BTEX	GRO	DRO	DRO	Chlorides
BG-Surface	Background	33.585878 103.543255	2/1/2018	Grab/Backhoe	Surface	<0.3	<10	<10	<10	16
BG-1		u	2/1/2018	Grab/Backhoe	1'	<0.3	<10	<10	<10	16
BG-2		ú	2/1/2018	Grab/Backhoe	2'	<0.3	<10	<10	<10	<16.0
BG-3		u u	2/1/2018	Grab/Backhoe	3'	<0.3	<10	<10	<10	64

Site Ranking is Twenty (20). Depth to Ground Water >100' (approx. 185', per USGS & NMOSE). Distance to Surface Water Body <200' All results are ppm. BSL - Below Surface Level. *- Backhoe refusal @ 4'. **- Backhoe refusal @ 3'.



Figure 1

Site Map





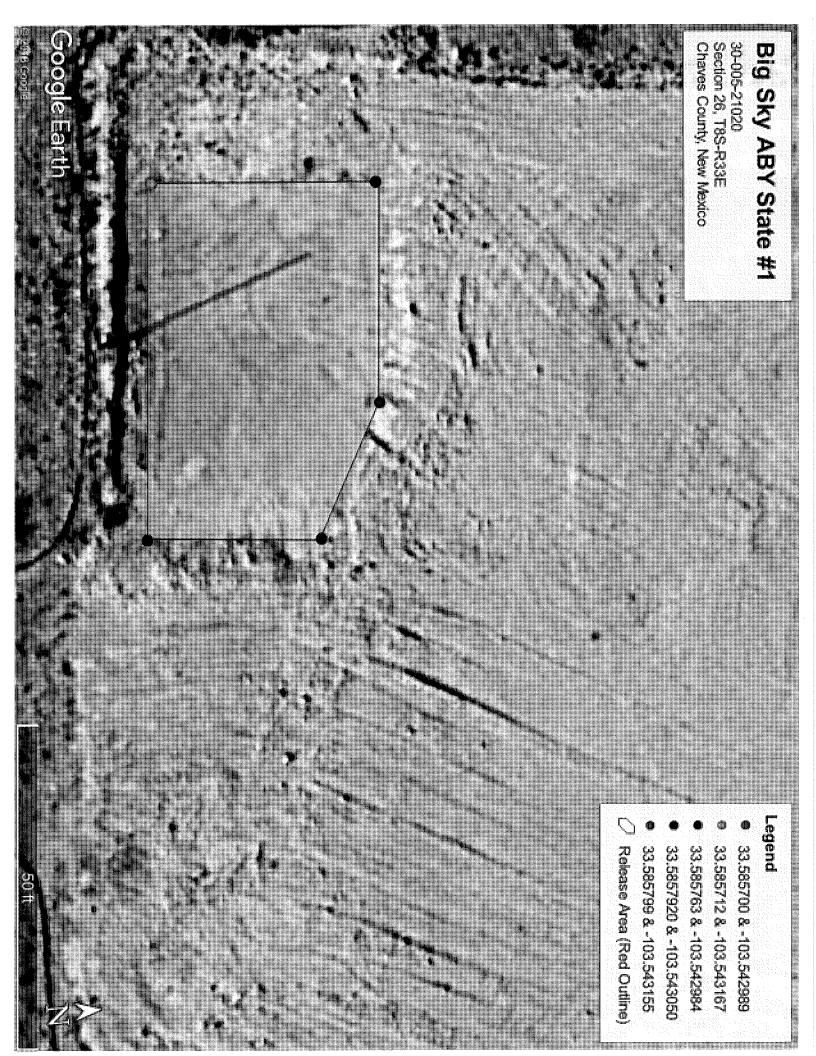




Figure 2

Vertical Sample Point(s)

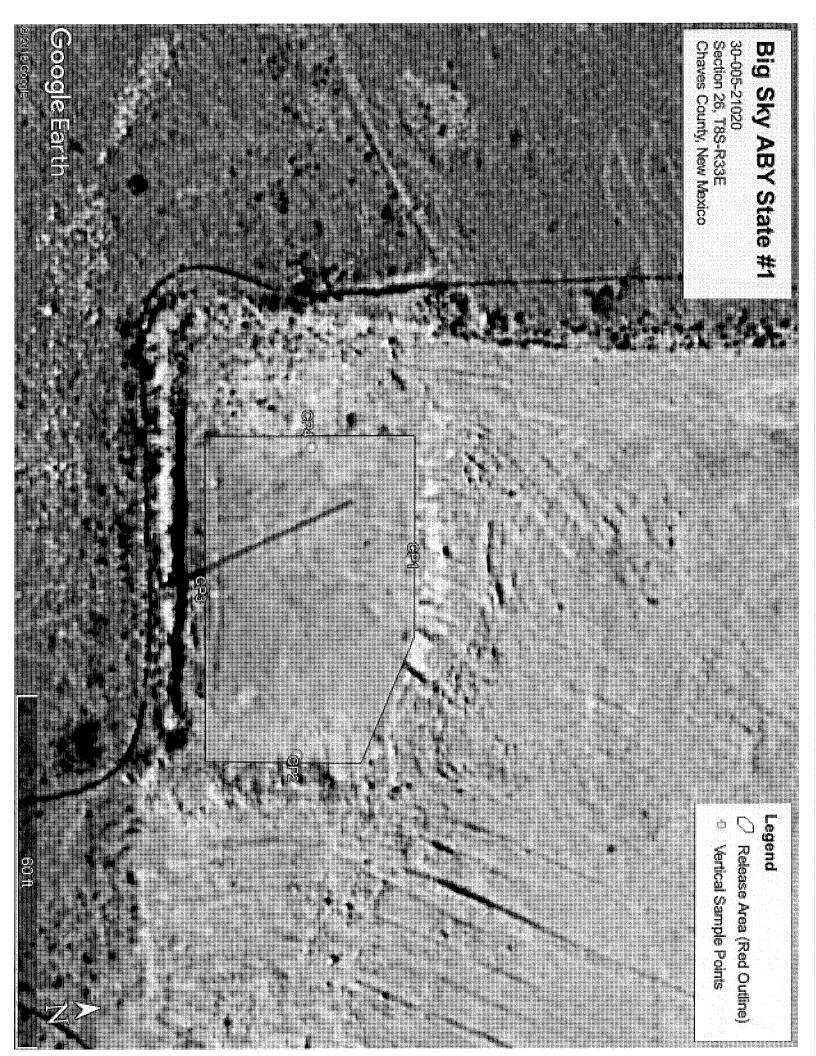




Figure 3 Horizontal Sample Point(s)

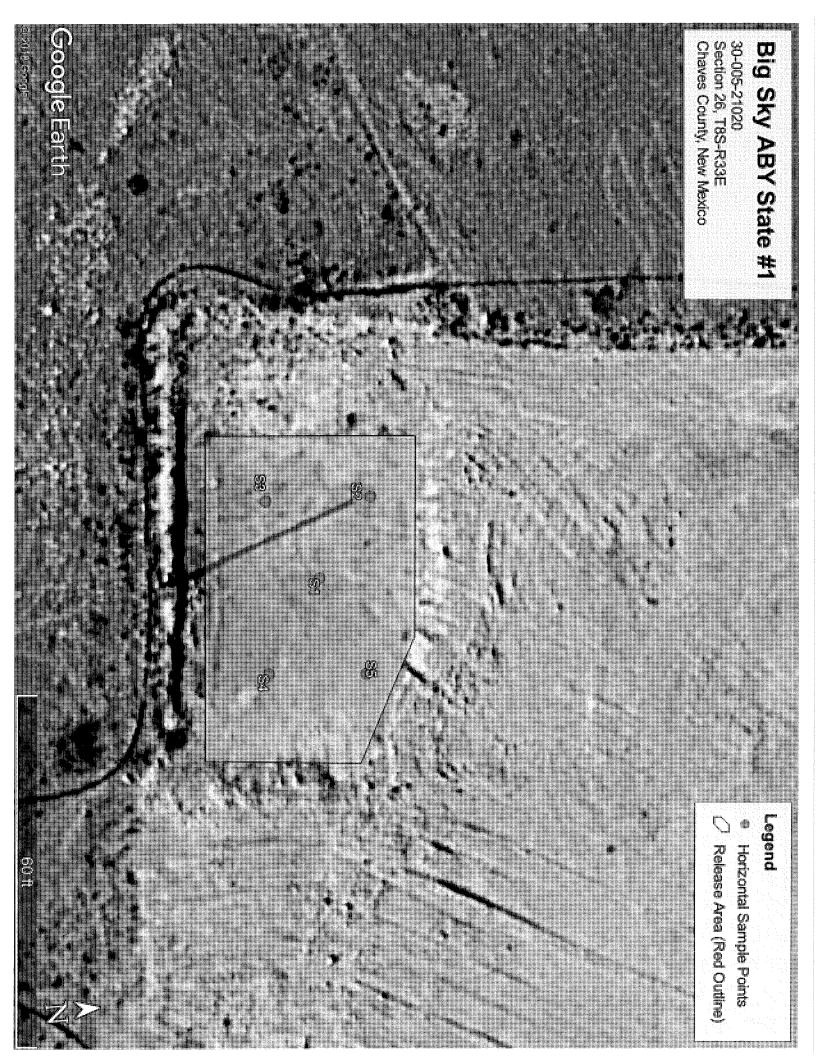
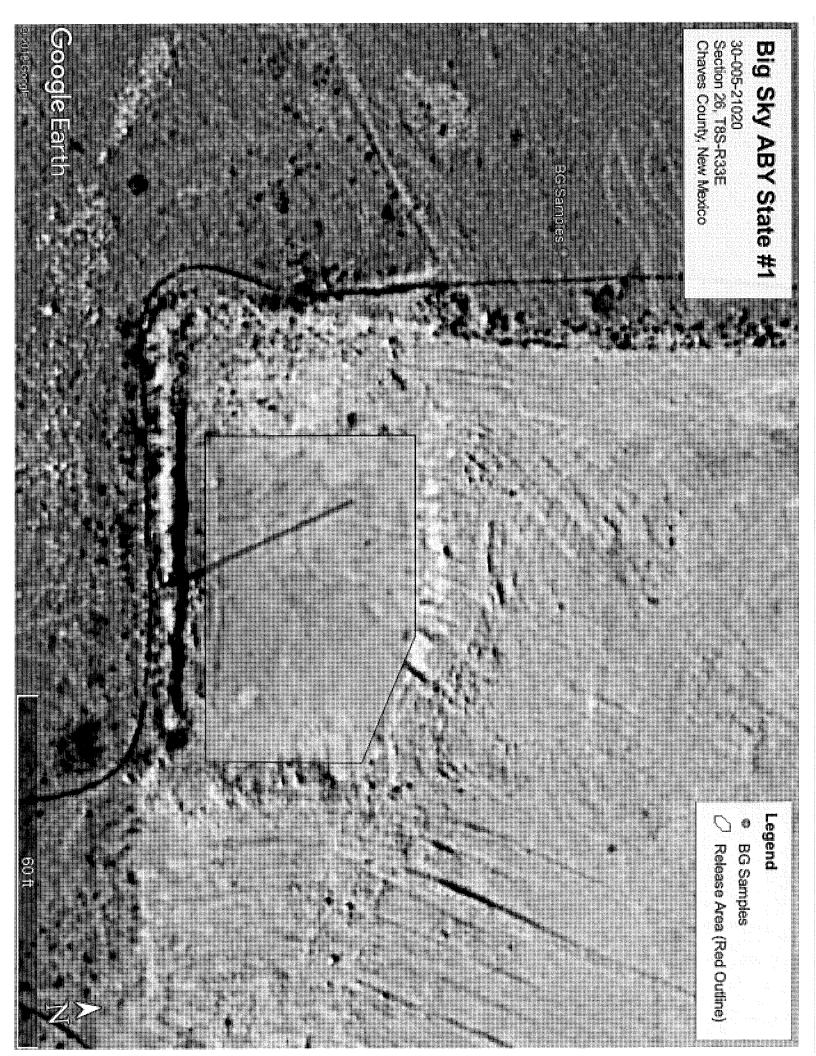




Figure 4

Background Sample Point(s)





Appendix A Water Well Date Site Map







Appendix B NMOSE Well Log



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

CL 00314 POD1

2 34 08S 33E 634611 3716897

Driller License: 1626

Driller Company: TAYLOR, ROY ALLEN

Driller Name:

TAYLOR, ROY A.

Drill Start Date: 04/18/2016

Drill Finish Date:

04/20/2016

Plug Date:

Log File Date:

PCW Rcv Date:

Source:

Shallow

04/29/2016

Estimated Yield: 5 GPM

Pump Type: Casing Size:

Pipe Discharge Size: 5.00

Depth Well:

220 feet

Depth Water:

157 feet

Water Bearing Stratifications:

Top Bottom Description

116

Sandstone/Gravel/Conglomerate

135

Sandstone/Gravel/Conglomerate

182

Sandstone/Gravel/Conglomerate

Casing Perforations:

Top Bottom

160

220



New Mexico Office of the State Engineer **Point of Diversion Summary**

13 08S 32E

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

Well Tag

POD Number CL 00307 POD1 Q64 Q16 Q4 Sec Tws Rng

X

3720298

Estimated Yield: 1 GPM

Driller License: 1497

Driller Company: COX DRILLING

4

Driller Name:

COX, TOM W.

Drill Start Date: 05/15/2015

Drill Finish Date:

05/15/2015

Plug Date:

Log File Date:

05/29/2015

PCW Rcv Date:

Pipe Discharge Size:

Source:

628014

Shallow

Pump Type: Casing Size:

5.00

Depth Well:

195 feet

Depth Water:

165 feet

Water Bearing Stratifications:

Top Bottom Description

165

175 Sandstone/Gravel/Conglomerate

Casing Perforations:

Top Bottom

125

195



Appendix C

USGS Groundwater Level Information



USGS Home Contact USGS Search USGS

National Water Information System: Web Interface

USGS Water Resources

Data Category:	1	Geographic Area:		
Site Information	V	United States	~	GO

Click to hideNews Bulletins

- Please see news on new formats
- Full News

USGS 333522103302901 08S.33E.25.42422

Available data for this site SUMMARY OF ALL AVAILABLE DATA V

Well Site

DESCRIPTION:

Latitude 33°35'23", Longitude 103°30'37" NAD27

Roosevelt County, New Mexico , Hydrologic Unit 12080001

Well depth: 151 feet

Land surface altitude: 4,315.00 feet above NGVD29.

Well completed in "Ogallala Formation" (1210GLL) local aquifer

AVAILABLE DATA:

Data Type	Begin Date	End Date	Count
Field groundwater-level	1980-02-	1995-01-	1
<u>measurements</u>	07	26	4

OPERATION:

Record for this site is maintained by the USGS New Mexico Water Science Center

Email questions about this site to New Mexico Water Science Center Water-**Data Inquiries**

Ouestions about sites/data? Feedback on this web site Automated retrievals Help

Data Tips
Explanation of terms
Subscribe for system changes
News

Accessibility

Plug-Ins

FOIA

Privacy

Policies and Notices

<u>U.S. Department of the Interior</u> | <u>U.S. Geological Survey</u> **Title: NWIS Site Information for USA: Site Inventory**

URL: https://waterdata.usgs.gov/nwis/inventory?

Page Contact Information: <u>USGS Water Data Support Team</u>

Page Last Modified: 2017-11-03 17:11:55 EDT

0.31 0.29 caww01





USGS Home Contact USGS Search USGS

National Water Information System: Web Interface

HEGE	Water	Resources
0303	water	Resources

Data Category:		Geographic Area:			
Groundwater	~	United States	~	GO	

Click to hideNews Bulletins

- Please see news on new formats
- Full News

Groundwater levels for the Nation

Search Results -- 1 sites found

site_no list =

• 333522103302901

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

USGS 333522103302901 08S.33E.25.42422

Available data for this site	Groundwater:	Field measurements	~	GO
Roosevelt County, New Me:	xico			
Hydrologic Unit Code 1208	0001			

Latitude 33°35'23", Longitude 103°30'37" NAD27

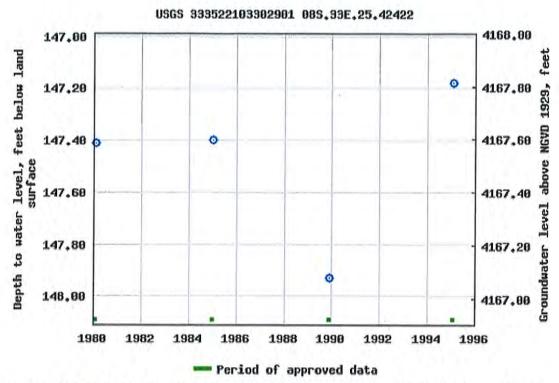
Land-surface elevation 4,315.00 feet above NGVD29

The depth of the well is 151 feet below land surface.

This well is completed in the Ogallala Formation (1210GLL) 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.

Download a presentation-quality graph

Questions about sites/data?
Feedback on this web site
Automated retrievals
Help
Data Tips
Explanation of terms
Subscribe for system changes
News

Accessibility

Plug-Ins

FOIA

Privacy

Policies and Notices

U.S. Department of the Interior | U.S. Geological Survey

Title: Groundwater for USA: Water Levels

URL: https://nwis.waterdata.usgs.gov/nwis/gwlevels?

Page Contact Information: USGS Water Data Support Team

Page Last Modified: 2017-11-03 17:12:02 EDT

1.03 0.87 nadww01





USGS Home Contact USGS Search USGS

National Water Information System: Web Interface

USGS Water Resources

Data Category:		Geographic Area:		
Site Information	V	United States	~	GO

Click to hideNews Bulletins

- Please see news on new formats
- Full News

USGS 333503103325801 08S.33E.34.212211

Available data for this site | SUMMARY OF ALL AVAILABLE DATA V | GO

Well Site

DESCRIPTION:

Latitude 33°35'03", Longitude 103°32'58" NAD27

Chaves County, New Mexico , Hydrologic Unit 12080001

Well depth: 180 feet

Land surface altitude: 4,355 feet above NGVD29.

AVAILABLE DATA:

Data Type	Begin Date	End Date	Count
Field groundwater-level	1995-02-	1995-02-	100
<u>measurements</u>	21	21	1

OPERATION:

Record for this site is maintained by the USGS New Mexico Water Science

Email questions about this site to New Mexico Water Science Center Water-**Data Inquiries**

Questions about sites/data? Feedback on this web site Automated retrievals Help **Data Tips Explanation of terms**

Subscribe for system changes News

Accessibility

Plug-Ins

FOIA

Privacy

Policies and Notices

U.S. Department of the Interior | U.S. Geological Survey

Title: NWIS Site Information for USA: Site Inventory URL: https://waterdata.usgs.gov/nwis/inventory?

USA.gov

Page Contact Information: USGS Water Data Support Team

Page Last Modified: 2017-11-03 17:07:05 EDT

0.28 0.25 caww01



USGS Home Contact USGS Search USGS

National Water Information System: Web Interface

USGS	Water	Resources
------	-------	-----------

Data Category:	Geographic Area:	Geographic Area:	
Groundwater	✓ United States	~	GO

Click to hideNews Bulletins

- Please see news on new formats
- Full News

Groundwater levels for the Nation

Search Results -- 1 sites found

site_no list =

• 333503103325801

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

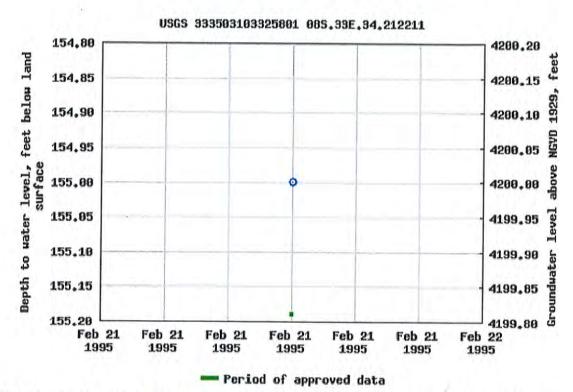
USGS 333503103325801 08S.33E.34.212211

Available data for this site Groundwater: Field measurements

Chaves County, New Mexico
Hydrologic Unit Code 12080001
Latitude 33°35'03", Longitude 103°32'58" NAD27
Land-surface elevation 4,355 feet above NGVD29
The depth of the well is 180 feet below land surface.

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.

Download a presentation-quality graph

Questions about sites/data?
Feedback on this web site
Automated retrievals
Help
Data Tips
Explanation of terms
Subscribe for system changes
News

Accessibility

Plug-Ins

FOIA

Privacy

Policies and Notices

U.S. Department of the Interior | U.S. Geological Survey

Title: Groundwater for USA: Water Levels

URL: https://nwis.waterdata.usgs.gov/nwis/gwlevels?

Page Contact Information: USGS Water Data Support Team

Page Last Modified: 2017-11-03 17:07:35 EDT

1.01 0.88 nadww01





Appendix D

Soil Sample Laboratory Data



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 25, 2017

Robert Asher
EOG
105 South Fourth Street
Artesia, NM 88210
TEL:
FAX

RE: Big Sky ABY State 1 OrderNo.: 1708B37

Dear Robert Asher:

Hall Environmental Analysis Laboratory received 7 sample(s) on 8/17/2017 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 1708B37

Date Reported: 8/25/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: CP-1

Project:

Big Sky ABY State 1

Collection Date: 8/15/2017 12:12:00 PM

Lab ID:

1708B37-001

Matrix: SOIL

Received Date: 8/17/2017 8:45:00 AM

Analyses	Result	PQL Q	ual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analys	st: TOM
Diesel Range Organics (DRO)	200	100		mg/Kg	10	8/22/2017 1:15:37 AM	33449
Surr: DNOP	0	70-130	S	%Rec	10	8/22/2017 1:15:37 AM	33449
EPA METHOD 8015D: GASOLINE RANGE						Analys	st: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/21/2017 10:17:39 Pf	M 33452
Surr: BFB	75.6	54-150		%Rec	1	8/21/2017 10:17:39 PI	M 33452
EPA METHOD 8021B: VOLATILES						Analys	st: NSB
Benzene	ND	0.023		mg/Kg	1	8/21/2017 10:17:39 Pf	M 33452
Toluene	ND	0.047		mg/Kg	1	8/21/2017 10:17:39 Pf	M 33452
Ethylbenzene	ND	0.047		mg/Kg	1	8/21/2017 10:17:39 Pf	M 33452
Xylenes, Total	ND	0.094		mg/Kg	1	8/21/2017 10:17:39 Pf	vi 33452
Surr: 4-Bromofluorobenzene	107	66.6-132		%Rec	1	8/21/2017 10:17:39 Pf	M 33452

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1708B37

Date Reported: 8/25/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: CP-2

Project:

Big Sky ABY State 1

Collection Date: 8/15/2017 12:22:00 PM

Lab ID:

1708B37-002

Matrix: SOIL

Received Date: 8/17/2017 8:45:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS					Analy	st: TOM
Diesel Range Organics (DRO)	87	9.7	mg/Kg	1	8/22/2017 12:42:01 F	PM 33449
Surr: DNOP	97.9	70-130	%Rec	1	8/22/2017 12:42:01 F	PM 33449
EPA METHOD 8015D: GASOLINE RA	NGE				Analy	/st: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	8/21/2017 10:41:32 F	PM 33452
Surr: BFB	78.6	54-150	%Rec	1	8/21/2017 10:41:32 F	PM 33452
EPA METHOD 8021B: VOLATILES					Analy	/st: NSB
Benzene	ND	0.025	mg/Kg	1	8/21/2017 10:41:32 F	PM 33452
Toluene	ND	0.049	mg/Kg	1	8/21/2017 10:41:32 F	PM 33452
Ethylbenzene	ND	0.049	mg/Kg	1	8/21/2017 10:41:32 F	PM 33452
Xylenes, Total	ND	0.098	mg/Kg	1	8/21/2017 10:41:32 F	PM 33452
Surr: 4-Bromofluorobenzene	109	66.6-132	%Rec	1	8/21/2017 10:41:32 F	PM 33452

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Η Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit ND
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Ε Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RLReporting Detection Limit
- Sample container temperature is out of limit as specified

Lab Order 1708B37

Date Reported: 8/25/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: CP-3

Project:

Big Sky ABY State 1

Collection Date: 8/15/2017 12:36:00 PM

Lab ID:

1708B37-003

Matrix: SOIL

Received Date: 8/17/2017 8:45:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANIC	S			Analys	t: TOM
Diesel Range Organics (DRO)	25	9.6	mg/Kg	1	8/22/2017 1:10:15 PM	33449
Surr: DNOP	96.6	70-130	%Rec	1	8/22/2017 1:10:15 PM	33449
EPA METHOD 8015D: GASOLINE RA	ANGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	8/21/2017 5:45:38 PM	33452
Surr: BFB	91.2	54-150	%Rec	1	8/21/2017 5:45:38 PM	33452
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.023	mg/Kg	1	8/21/2017 5:45:38 PM	33452
Toluene	ND	0.047	mg/Kg	1	8/21/2017 5:45:38 PM	33452
Ethylbenzene	ND	0.047	mg/Kg	1	8/21/2017 5:45:38 PM	33452
Xylenes, Total	ND	0.094	mg/Kg	1	8/21/2017 5:45:38 PM	33452
Surr: 4-Bromofluorobenzene	103	66.6-132	%Rec	1	8/21/2017 5:45:38 PM	33452

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1708B37

Date Reported: 8/25/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: CP-4

Project:

Big Sky ABY State 1

Collection Date: 8/15/2017 12:48:00 PM

Lab ID:

1708B37-004

Matrix: SOIL

Received Date: 8/17/2017 8:45:00 AM

Analyses	Result	PQL (Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAI	NGE ORGANIC	8				Analys	t: TOM
Diesel Range Organics (DRO)	310	9.3		mg/Kg	1	8/22/2017 1:38:24 PM	33449
Surr: DNOP	102	70-130		%Rec	1	8/22/2017 1:38:24 PM	33449
EPA METHOD 8015D: GASOLINE RA	NGE					Analys	t: NSB
Gasoline Range Organics (GRO)	63	9.7		mg/Kg	2	8/21/2017 6:09:17 PM	33452
Surr: BFB	251	54-150	s	%Rec	2	8/21/2017 6:09:17 PM	33452
EPA METHOD 8021B: VOLATILES						Analys	t: NSB
Benzene	ND	0.048		mg/Kg	2	8/21/2017 6:09:17 PM	33452
Toluene	0.53	0.097		mg/Kg	2	8/21/2017 6:09:17 PM	33452
Ethylbenzene	1.7	0.097		mg/Kg	2	8/21/2017 6:09:17 PM	33452
Xylenes, Total	2.1	0.19		mg/Kg	2	8/21/2017 6:09:17 PM	33452
Surr: 4-Bromofluorobenzene	119	66.6-132		%Rec	2	8/21/2017 6:09:17 PM	33452

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1708B37

Date Reported: 8/25/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: SP-Surface

Project:

Big Sky ABY State 1

Collection Date: 8/15/2017 12:58:00 PM

Lab ID:

1708B37-005

Matrix: SOIL

Received Date: 8/17/2017 8:45:00 AM

Analyses	Result	PQL (Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAM	NGE ORGANICS	5				Analys	t: TOM
Diesel Range Organics (DRO)	5000	100		mg/Kg	10	8/22/2017 3:09:24 AM	33449
Surr: DNOP	0	70-130	S -	%Rec	10	8/22/2017 3:09:24 AM	33449
EPA METHOD 8015D: GASOLINE RA	NGE					Analys	t: NSB
Gasoline Range Organics (GRO)	10	4.6		mg/Kg	1	8/21/2017 6:33:00 PM	33452
Surr: BFB	173	54-150	S	%Rec	1	8/21/2017 6:33:00 PM	33452
EPA METHOD 8021B: VOLATILES						Analys	t: NSB
Benzene	ND	0.023		mg/Kg	1	8/21/2017 6:33:00 PM	33452
Toluene	ND	0.046		mg/Kg	1	8/21/2017 6:33:00 PM	33452
Ethylbenzene	ND	0.046		mg/Kg	1	8/21/2017 6:33:00 PM	33452
Xylenes, Total	ND	0.093		mg/Kg	1	8/21/2017 6:33:00 PM	33452
Surr: 4-Bromofluorobenzene	112	66.6-132		%Rec	1	8/21/2017 6:33:00 PM	33452

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1708B37

Date Reported: 8/25/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: SP-1.0

Project:

Big Sky ABY State 1

Collection Date: 8/15/2017 1:05:00 PM

Lab ID:

1708B37-006

Matrix: SOIL

Received Date: 8/17/2017 8:45:00 AM

Analyses	Result	PQL (Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	GE ORGANICS	8				Analys	t: TOM
Diesel Range Organics (DRO)	5500	98		mg/Kg	10	8/22/2017 3:37:39 AM	33449
Surr: DNOP	0	70-130	S	%Rec	10	8/22/2017 3:37:39 AM	33449
EPA METHOD 8015D: GASOLINE RAN	IGE					Analys	t: NSB
Gasoline Range Organics (GRO)	61	9.4		mg/Kg	2	8/21/2017 6:56:44 PM	33452
Surr: BFB	336	54-150	S	%Rec	2	8/21/2017 6:56:44 PM	33452
EPA METHOD 8021B: VOLATILES						Analys	t: NSB
Benzene	ND	0.047		mg/Kg	2	8/21/2017 6:56:44 PM	33452
Toluene	ND	0.094		m g/Kg	2	8/21/2017 6:56:44 PM	33452
Ethylbenzene	ND	0.094		mg/Kg	2	8/21/2017 6:56:44 PM	33452
Xylenes, Total	0.23	0.19		mg/Kg	2	8/21/2017 6:56:44 PM	33452
Surr: 4-Bromofluorobenzene	127	66.6-132		%Rec	2	8/21/2017 6:56:44 PM	33452

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Analytical Report Lab Order 1708B37

Date Reported: 8/25/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: SP-2.0

Project: B

Big Sky ABY State 1

Collection Date: 8/15/2017 1:16:00 PM

Lab ID:

1708B37-007

Matrix: SOIL

Received Date: 8/17/2017 8:45:00 AM

Analyses	Result	PQL ()ual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS	3				Analys	: TOM
Diesel Range Organics (DRO)	1500	97		mg/Kg	10	8/22/2017 4:05:59 AM	33449
Surr: DNOP	0	70-130	S	%Rec	10	8/22/2017 4:05:59 AM	33449
EPA METHOD 8015D: GASOLINE RAI	NGE					Analys	: NSB
Gasoline Range Organics (GRO)	5.0	5.0		mg/Kg	1	8/21/2017 7:44:05 PM	33452
Surr: BFB	126	54-150		%Rec	1	8/21/2017 7:44:05 PM	33452
EPA METHOD 8021B: VOLATILES						Analys	: NSB
Benzene	ND	0.025		mg/Kg	1	8/21/2017 7:44:05 PM	33452
Toluene	ND	0.050		mg/Kg	1	8/21/2017 7:44:05 PM	33452
Ethylbenzene	ND	0.050		mg/Kg	1	8/21/2017 7:44:05 PM	33452
Xylenes, Total	ND	0.10		mg/Kg	1	8/21/2017 7:44:05 PM	33452
Surr: 4-Bromofluorobenzene	108	66.6-132		%Rec	1	8/21/2017 7:44:05 PM	33452

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1708B37

25-Aug-17

Client:

EOG

Project:

Big Sky ABY State 1

Troject. Dig 5ky	/ AD1 State 1		
Sample ID LCS-33449	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics	
Client ID: LCSS	Batch ID: 33449	RunNo: 45091	
Prep Date: 8/18/2017	Analysis Date: 8/21/2017	SeqNo: 1427877 Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Q	ual
Diesel Range Organics (DRO)	51 10 50.00	0 102 73.2 114	
Surr: DNOP	4.7 5.000	93.5 70 130	
Sample ID MB-33449	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics	
Client ID: PBS	Batch ID: 33449	RunNo: 45091	
Prep Date: 8/18/2017	Analysis Date: 8/21/2017	SeqNo: 1427878 Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qu	ual
Diesel Range Organics (DRO)	ND 10		
Surr: DNOP	9.2 10.00	91.7 70 130	
Sample ID LCS-33448	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics	
Client ID: LCSS	Batch ID: 33448	RunNo: 45117	
Prep Date: 8/18/2017	Analysis Date: 8/21/2017	SeqNo: 1428776 Units: %Rec	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qu	ual
Surr: DNOP	3.9 5.000	77.7 70 130	
Sample ID MB-33448	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics	
Client ID: PBS	Batch ID: 33448	RunNo: 45117	
Prep Date: 8/18/2017	Analysis Date: 8/21/2017	SeqNo: 1428777 Units: %Rec	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qu	ual
Surr: DNOP	8.4 10.00	84.0 70 130	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Page 9 of 13

Hall Environmental Analysis Laboratory, Inc.

WO#:

1708B37

25-Aug-17

Client:

EOG

Project:

Big Sky ABY State 1

Sample ID MB-33452	SampT	ype: Mi	BLK	Tes	tCode: El	PA Method	8015D: Gaso	oline Rang	е	
Client ID: PBS	Batch	1D: 33	452	F	RunNo: 4	5097				
Prep Date: 8/18/2017	Analysis D	ate: 8/	21/2017	5	SeqNo: 1	428026	Units: mg/h	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	840		1000		84.3	54	150			
Sample ID LCS-33452	SampT	ype: LC	s	Tes	tCode: El	PA Method	8015D: Gaso	oline Rang	е	
Client ID: LCSS	Batch	iD: 33	452	F	RunNo: 4	5097				
Prep Date: 8/18/2017	Analysis D	ate: 8/	21/2017	S	SeqNo: 1	428027	Units: mg/F	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	93.0	76.4	125		·	
Surr: BFB	920		1000		92.2	54	150			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Page 10 of 13

Hall Environmental Analysis Laboratory, Inc.

WO#: **1708B37**

25-Aug-17

Client:

EOG

Project:

Big Sky ABY State 1

Sample ID MB-33452	SampT	уре: МЕ	BLK	Tes	tCode: El	PA Method	8021B: Vola	tiles		
Client ID: PBS	Batch	ı ID: 33	452	F	RunNo: 4	5097				
Prep Date: 8/18/2017	Analysis D	ate: 8/	21/2017	8	SeqNo: 1	428054	Units: mg/F	ζg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.2		1.000		119	66.6	132			

Sample ID LCS-33452	Samp	Type: LC	s	Tes	tCode: E	PA Method	8021B: Vola	tiles		
Client ID: LCSS	Batc	h ID: 33	452	F	RunNo: 4	5097				
Prep Date: 8/18/2017	Analysis [Date: 8/	21/2017	8	SeqNo: 1	428055	Units: mg/F	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	109	80	120			
Toluene	1.1	0.050	1.000	0	108	80	120			
Ethylbenzene	1.1	0.050	1.000	0	107	80	120			
Xylenes, Total	3.3	0.10	3.000	0	108	80	120			
Surr: 4-Bromofluorobenzene	1.2		1.000		123	66.6	132			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Page 11 of 13



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquergue, NM 87109

Sample Log-In Check List

TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com Work Order Number: 1708B37 Client Name: EOG/Yates RcptNo: 1 8-11-17 8/18/2017 8:45:00 AM Received By: Erin Melendrez 8/18/2017 11:01:39 AM Completed By: Ashley Gallegos 8/18/2017 Reviewed By: CMI Chain of Custody Yes 🗌 No 🗌 Not Present 1 Custody seals intact on sample bottles? No 🗆 Not Present Yes 🗹 2. Is Chain of Custody complete? 3. How was the sample delivered? Courier Log In NA 🗆 4. Was an attempt made to cool the samples? Yes 🗹 No 🗆 5. Were all samples received at a temperature of >0° C to 6.0°C No \square NA 🗍 Yes 🔽 Yes 🔽 No \square 6. Sample(s) in proper container(s)? No 🗆 7. Sufficient sample volume for indicated test(s)? Yes 🔽 8. Are samples (except VOA and ONG) properly preserved? Yes 🔽 No 🗌 NA 🗀 9. Was preservative added to bottles? Yes 🗀 No ✓ No VOA Vials 🗹 Yes 🗌 No 🗌 10.VOA vials have zero headspace? Yes 🗆 No 🗸 11. Were any sample containers received broken? # of preserved bottles checked 12. Does paperwork match bottle labels? Yes 🗹 No 🗆 for pH: (<2 or >12 unless noted) (Note discrepancies on chain of custody) Adjusted? No. 🗌 13. Are matrices correctly identified on Chain of Custody? Yes 🔽 Yes 🔽 No 🗍 14. Is it clear what analyses were requested? No 🗌 Checked by: Yes 🗸 15. Were all holding times able to be met? (If no, notify customer for authorization.) Special Handling (if applicable) Yes 🗌 16. Was client notified of all discrepancies with this order? No 🗆 NA 🔽 Person Notified: Date By Whom: Via: eMail Phone Fax In Person Regarding: **Client Instructions:** 17. Additional remarks: 18. Cooler Information Cooler No Temp °C Seal Intact | Seal No | Seal Date Condition

4.6

Clear Color Resources, Inc. Color Resources, Inc. Project Name: Projec	Client: EOG Resourc	ces, In							ì	•	2	2	2	2		
Project Name: Www.Hallenvironmental.com Big Sky ABY State #!			5		Rush			V	4	IV	V	U	AB	DAT	200	
Big Sky ABY State #1 4901 Hawkins NE - Albuquerque, NM 87109 Project #1 1005-21020 Project Manager Project M				Project Name					•					5	2	
Volicit #. Project #. Tel. 505-345-3975 Pax 505-345-4107 Validation Polect Menager. Robert Asher Robert Asher Robert Asher Robert Asher Validation Polect Menager. Robert Asher Robert Asher Robert Asher Validation Polect Polect Menager Robert Asher Robert Asher Validation Polect Robert Asher Robert Asher Robert Asher Validation Polect Robert Asher Robert Asher Robert Asher Robert Asher Validation Polect Robert Asher Robert Validation Polect Robert Robert Validation Polect Robert Robert Robert Validation Polect Robert Robert Robert Robert Validation Polect Robert	g Address: 105 So	outh 4		Big Sky ABY	State #1		,	1901	lawkir	IS NE	- Albi	duero	le. N	M 87109	1	
Validation Potest Manager: Robert Asher Robert Robert Asher Robert Asher Robert Asher Robert Robert Robert Asher Robert	Artesia, NM 88210			Project #:				Tel. 5	05-34	5-397		3x 50	345	4107		
Veridation Polject Manager: Robert Asher Robert Asher Robert Asher Robert Asher Robert Asher Robert Asher Sampler: Robert Asher Sa	:#: (575) 748-421	7		30-005-21020	-					4	aly	Requ	rest			100
Cother A contract Cother	Robert_Asher@e	eogre	sources.com	Project Mana	Jer:		_			H		H				
Dite:	Package:			Robert Ashe								a'B				
Container Sampler Robert Aster Container Conta	ndard		□ Level 4 (Full Validation)	PO# 205632			_	_) bC	2000			
Container CP-1				Sampler: Rol	bert Asher			_	_			2808				(1
Matrix Sample Request ID Type and # Type		Other		On Ice:	X Yes	□ No			_			8/1		(A		<i>A</i> 10
Time Matrix Sample Request ID Type and # Type Typ				Sample Temp	erature: 4, (0					_		_	'ΟΛ) Y)
2:12 PM Soil CP-1 1-4cz. Ice —OO1 X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X		latrix	Sample Request ID	Container Type and #	Preservative Type	HEAL NO. 1768/1837		The second second		The second second second	Control of the second of the	The state of the s		-ime2) 07 <u>2</u> 8		Air Bubbles
2:22 PM Soil CP-3 1 - 4oz. Ice -003 2:36 PM Soil CP-4 1 - 4oz. Ice -004 2:48 PM Soil SP-Surface 1 - 4oz. Ice -004 2:58 PM Soil SP-Surface 1 - 4oz. Ice -004 2:58 PM Soil SP-2.0 1 - 4oz. Ice -004 1:16 PM Soil SP-2.0 1 - 4oz. Ice -001 1:16 PM Soil SP-2.0 1 - 4oz. Ice -001 1:10 PM Soil SP-2.0 1 - 4oz. Ice -001 1:16 PM Soil SP-2.0 1 - 4oz. Ice -001 1:10 PM Soil SP-2.0 1 - 4oz. Ice -001 1:10 PM Soil SP-2.0 1 - 4oz. Ice -001 1:10 PM Soil SP-2.0 1 - 4oz. Ice -001 1:10 PM Soil SP-2.0 1 - 4oz. Ice	1	Soil	CP-1	1 - 4cz.	lce	100-	×	×				×				
2:36 PM Soil CP-3 1-402. Ice003 2:48 PM Soil CP-4 1-402. Ice004 2:58 PM Soil SP-Surface 1-402. Ice005 1:05 PM Soil SP-1.0 1-402. Ice005 1:16 PM Soil SP-2.0 1-402. Ice007 1:16 PM Soi	2.65	Soil	CP-2	1 - 40z.	lce	-002	×	×				×	9 0			
2:48 PM Soil CP-4 1-402. Ice004 2:58 PM Soil SP-2.0 1-402. Ice005 1:05 PM Soil SP-2.0 1-402. Ice00 to	12:36 PM	Soil	CP-3	1 - 40z.	lce	-003	×	×				×				
2:58 PM Soil SP-Surface 1-40z. Ice -00S 1:05 PM Soil SP-2.0 1-40z. Ice -000 to 1 -00	12:48 PM	Soil	CP4	1 - 40Z.	eg e	-004	×	×				×				
1.05 PM Soil SP-1.0 1-40z. Ice -000 to 1.16 PM Soil SP-2.0 1-40z. Ice -007 1.16 PM Soil SP-2.0 Ice -007 1.17 PM Soil SP-2.0 Ice -007 1.18 PM SOil SOil SOil SOil Ice -007 1.18 PM SOil	12:58 PM	Soil	SP-Surface	1 - 40Z.	lce.	S00-	×	×	-			×				
1:16 PM Soil SP-2.0 1-402. Ice007 he: Relinquished by: Received by. Date Time. Time.	1:05 PM	Soil	SP-1.0	1 - 40z.	<u>8</u>	-000	×	×				×				
ne: Relinquished by: 10:09 AW Received by: Received by: AIT/IT	1:16 PM	Soil	SP-2.0	1 - 4oz.	8	L00-	×	×				×				
ne: Relinquished by: Received by: Received by: Received by: Received by: Received by: Received by: S/17/17 Sate Time																
10:09 AW Received by: Received by: Bate Tine 1 Received by Bate Time	Pa							70								
ne: Relinquished 5) Received 5) Date Time	ле: 10:09 АМ	linquish	od by:	Received by:			Analy	ytica	l Res	Sil	oy 8/	3/20				4.4
	re;	linquish	S S S S S S S S S S S S S S S S S S S	Received by		ľ	Remar	ks: C	loride	s on s	parate	repor	, plea	ej.		



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

August 25, 2017

Robert Asher
EOG
105 South Fourth Street
Artesia, NM 88210
TEL:
FAX

RE: Big Sky ABY State 1 OrderNo.: 1708B37

Dear Robert Asher:

Hall Environmental Analysis Laboratory received 7 sample(s) on 8/17/2017 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order: 1708B37

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 8/25/2017

CLIENT: EOG Lab Order: 1708B37 Big Sky ABY State 1 Project: 1708B37-001 Collection Date: 8/15/2017 12:12:00 PM Lab ID: Matrix: SOIL Client Sample ID: CP-1 PQL Qual Units **DF** Date Analyzed Analyses Result Batch ID Analyst: MRA **EPA METHOD 300.0: ANIONS** 8/22/2017 3:04:05 PM Chloride 990 30 33484 mq/Kq Lab ID: 1708B37-002 Collection Date: 8/15/2017 12:22:00 PM Client Sample ID: CP-2 Matrix: SOIL PQL Qual Units **DF** Date Analyzed Analyses Result **Batch ID EPA METHOD 300.0: ANIONS** Analyst: MRA Chloride ND 30 mg/Kg 8/22/2017 3:16:30 PM 33484 1708B37-003 Collection Date: 8/15/2017 12:36:00 PM Lab ID: Matrix: SOIL Client Sample ID: CP-3 PQL Qual Units **DF** Date Analyzed Batch ID Result Analyses Analyst: MRA **EPA METHOD 300.0: ANIONS** Chloride 610 30 mg/Kg 8/22/2017 3:53:44 PM 33484 1708B37-004 Collection Date: 8/15/2017 12:48:00 PM Lab ID: Matrix: SOIL Client Sample ID: CP-4 PQL Qual Units **DF** Date Analyzed Result Batch ID Analyses Analyst: MRA **EPA METHOD 300.0: ANIONS** 8/22/2017 4:06:09 PM Chloride 470 30 mg/Kg 33484 Collection Date: 8/15/2017 12:58:00 PM Lab ID: 1708B37-005 Client Sample ID: SP-Surface Matrix: SOIL **Analyses** Result PQL Qual Units **DF** Date Analyzed **Batch ID EPA METHOD 300.0: ANIONS** Analyst: MRA 8/22/2017 4:18:33 PM 33484 Chloride 210 30 mg/Kg

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit Page 2 of 6
- W Sample container temperature is out of limit as specified

Lab Order: 1708B37

Date Reported: 8/25/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Project:

EOG

Big Sky ABY State 1

Lab Order:

1708B37

Lab ID:

1708B37-006

Collection Date: 8/15/2017 1:05:00 PM

Client Sample ID: SP-1.0

Matrix: SOIL

Analyses

PQL Qual Units

DF Date Analyzed

Batch ID

EPA METHOD 300.0: ANIONS

Result

Result

100

30

30

Analyst: MRA

Chloride

71

mg/Kg

8/22/2017 4:30:58 PM

33484

Lab ID:

1708B37-007

Collection Date: 8/15/2017 1:16:00 PM

Matrix: SOIL

Analyses

Client Sample ID: SP-2.0

PQL Qual Units

DF Date Analyzed

Batch ID

EPA METHOD 300.0: ANIONS

Chloride

mg/Kg

8/22/2017 4:43:22 PM

Analyst: MRA

33484

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Η Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Ε Value above quantitation range
- Analyte detected below quantitation limits J
- P Sample pH Not In Range
- RLReporting Detection Limit

Page 3 of 6

Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1708B37

25-Aug-17

Client:

EOG

Project:

Big Sky ABY State 1

Sample ID MB-33484

SampType: mblk

TestCode: EPA Method 300.0: Anions

LowLimit

Client ID:

PBS

Batch ID: 33484

RunNo: 45131

PQL

Prep Date: 8/22/2017

Analysis Date: 8/22/2017

SeqNo: 1429509

Units: mg/Kg

Analyte

SPK value SPK Ref Val %REC

HighLimit

RPDLimit

Qual

Chloride

ND 1.5

Sample ID LCS-33484

SampType: Ics

TestCode: EPA Method 300.0: Anions

Client ID: LCSS

Batch ID: 33484

RunNo: 45131

Prep Date: 8/22/2017

Analysis Date: 8/22/2017

SeqNo: 1429510

Units: mg/Kg

Analyte

SPK value SPK Ref Val %REC

LowLimit HighLimit **RPDLimit**

Result PQL

15.00

92.9

90

%RPD

%RPD

Qual

Chloride

14

1.5

110

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Holding times for preparation or analysis exceeded Η
- ND Not Detected at the Reporting Limit
- Practical Quanitative Limit PQL
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- Reporting Detection Limit RL
- Sample container temperature is out of limit as specified

Page 4 of 6



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquergue, NM 87109

TEL: 505-345-3975 FAX: 505-345-4107

Sample Log-In Check List

Website: www.hallenvironmental.com 120/22/17 Work Order Number: 1708B37 Client Name: EOG/Yates RcptNo: 1 8-17-17 8/18/2017 8:45:00 AM Received By: Erin Melendrez Completed By: Ashley Gallegos 8/18/2017 11:01:39 AM 8/18/2017 Reviewed By: CMT Chain of Custody Yes \square No 🗆 Not Present 1. Custody seals intact on sample bottles? No 🔲 2. Is Chain of Custody complete? Yes 🔽 Not Present 3. How was the sample delivered? <u>Courier</u> Log In No 🗆 NA 🔲 4. Was an attempt made to cool the samples? Yes 🗹 No ... NA \square 5. Were all samples received at a temperature of >0° C to 6.0°C Ýes 🗹 No 🗆 Yes 🗹 Sample(s) in proper container(s)? No 🗆 7. Sufficient sample volume for indicated test(s)? Yes 🗹 Yes 🔽 No 🗆 8. Are samples (except VOA and ONG) properly preserved? Yes 🗌 No 🗹 NA 🗍 9. Was preservative added to bottles? No 🗆 10.VOA vials have zero headspace? Yes 🗌 No VOA Vials Yes \square No 🗹 11. Were any sample containers received broken? # of preserved bottles checked No 🗆 for pH: 12. Does paperwork match bottle labels? Yes 🗹 (<2 or >12 unless noted) (Note discrepancies on chain of custody) Adjusted? No. 🗆 13. Are matrices correctly identified on Chain of Custody? Yes 🗹 Yes 🔽 No 🔲 14. Is it clear what analyses were requested? No 🗆 Checked by: Yes 🔽 15. Were all holding times able to be met? (If no, notify customer for authorization.) Special Handling (if applicable) Yes 16. Was client notified of all discrepancies with this order? No 🗌 NA 🔽 Person Notified: Date By Whom: Via: _____eMail ___ Phone ___ Fax In Person Regarding: **Client Instructions:** 17. Additional remarks: 18. Cooler Information Condition Seal Intact Seal No Seal Date Signed By Cooler No Temp °C 4.6

HALL BOLK Recurres, Inc. Standard Rush Project Name: P	5	Tain-or	-Cusi	Chain-or-Custody Record	חושטוביוושו	ııııe.										
Project Name: Project Name	Client:	EOG Reso	urces, h	ПС.		Rush				E S	3	N S	IRC		ENTA	, >
15 15 15 15 15 15 15 15					Project Name	w						770	5			5
Project ## Pro	Mailing Ad	dress: 105	South 4		Big Sky ABY	State #1		4	1901 F	lawkins	NE -	Albuq	nergue	NM.	37109	
Container Cont	Artesia, N	M 88210			Project #:				Tel. 50	5-345	3975	Fa	505	345-4	20	
Container Cont	Phone #:	(575) 748-4	217		30-005-21020)					An	lysis	Redne	st		
C Package C Pa	email: Rol	bert_Asher	@eogre	sources.com	Project Mana	ger:						-		H		-
Sample: Robert Asher Continuer Preservative Continuer Continuer Preservative Continuer	OA/QC Pac	kage:			Robert Ashe							_	8,8			
Sampler Robert Aster Sampler Robert Aster Sampler Robert Aster Don foe; Fee Don foe; Do	X Standar	D.		☐ Level 4 (Full Validation)	PO# 205632			-	_				ьC			
Time Matrix Sample Request ID Container Preservative HEAL No. Factorial Preservative HEAL No. Factorial Preservative HEAL No. HEAL H.	Accreditati	on:			Sampler: Ro	bert Asher		_					3082	-		(1
Time Matrix Sample Request ID Type and # Type	O NELAP		□ Othe		On Ice:	X Yes	□ No	_		_			3 / 5	14	-	110
Time Matrix Sample Request ID Type and # Type Ty	□ EDD (T	ype)			Sample Temp	erature: 4,	0			_					-) (Y o
3/17 12:22 PM Soil CP-1 1 - 4cz. loe -CO1 X X 3/17 12:26 PM Soil CP-2 1 - 4cz. loe -CO2 X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X	Date	Time	Matrix	Com.	Container Type and #					activities and activities and	The County of the Park		200	A COLUMN TO SECULO SECU		Air Bubbles
5/17 12:22 PM Soil CP-2 1-40z. Ice -002 5/17 12:36 PM Soil CP-3 1-40z. Ice -003 5/17 12:58 PM Soil SP-Surface 1-40z. Ice -004 5/17 1:58 PM Soil SP-Surface 1-40z. Ice -007 5/17 1:16 PM Soil SP-2.0 1-40z. Ice -00 Lp 5/17 1:16 PM Soil SP-2.0 1-40z. Ice -00 Lp 5/17 1:16 PM Soil SP-2.0 1-40z. Ice -00 Lp 5/17 1:16 PM Soil SP-2.0 1-40z. Ice -00 Lp 5/17 1:16 PM Soil SP-2.0 1-40z. Ice -00 Lp 60 1me: Relinquished by: Received by: Received by: Bate Time 1 me: Received by: Received by: Bate Time Image: Time	8/15/17	12:12 PM	Soil	CP-1	1 - 4cz.	<u>S</u>	100-	×	×			×	1000			
5/17 12:36 PM Soil CP-3 1-40z. Ice -003 5/17 12:48 PM Soil SP-Surface 1-40z. Ice -004 5/17 12:58 PM Soil SP-Surface 1-40z. Ice -005 5/17 1:05 PM Soil SP-2:0 1-40z. Ice -00 fo 5/17 1:16 PM Soil SP-2:0 1-40z. Ice -00 fo 5/17 1:16 PM Soil SP-2:0 1-40z. Ice -00 fo 6 7 1:0:09 AM Reinquished by: Received by: Received by: Bate Time 6 7 1:0:09 AM Reinquished by: Received by: Bate Time	8/15/17	12:22 PM	Soil	CP-2	1 - 40z.	lce	-002	×	×			×				
5/17 12:48 PM Soil CP-4 1-40z. Ice -004 5/17 1:05 PM Soil SP-1.0 1-40z. Ice -00 Co 5/17 1:05 PM Soil SP-2.0 1-40z. Ice -00 Co 5/17 1:16 PM Soil SP-2.0 1-40z. Ice -00 Co 5/17 1:16 PM Soil SP-2.0 1-40z. Ice -00 Co 5/17 1:16 PM Soil SP-2.0 1-40z. Ice -00 Co 5/17 1:16 PM Soil SP-2.0 1-40z. Ice -00 Co 5/17 1:16 PM Soil SP-2.0 1-40z. Ice -00 Co 5/17 1:16 PM Soil SP-2.0 1-40z. Ice -00 Co 5/17 1:16 PM Soil SP-2.0 1-40z. Ice -00 Co 5/17 1:16 PM Soil SP-2.0 1-40z. Ice -00 Co 5/17 1:16 PM	8/15/17	12:36 PM	Soil	CP-3	1 - 40z.	<u>S</u>	-003	×	×			×				
5/17 12:58 PM Soil SP-Surface 1 - 4oz. Ice - 00 Lo 5/17 1:16 PM Soil SP-2.0 1 - 4oz. Ice - 00 Lo 5/17 1:16 PM Soil SP-2.0 1 - 4oz. Ice - 00 Lo 5/17 1:16 PM Soil SP-2.0 1 - 4oz. Ice - 00 Lo 5/17 1:16 PM Soil SP-2.0 1 - 4oz. Ice - 00 Lo 5/17 5/17 5/17 5/17 5/17 5/17 5/17 6 7 7 7 7 5/17 5/17 8/17 10:09 AM 8/17/17 8/17/17 5/17 5/17 8/17 10:09 AM 10:09 AM Received by: Date Time	8/15/17	12:48 PM	Soil	CP-4	1 - 4oz.	<u>9</u>	-004	×	×	- 20		×				
5/17 1:05 PM Soil SP-1.0 1-40z. Ice -00 to 5/17 1:16 PM Soil SP-2.0 1-40z. Ice -00 to 5/17 1:16 PM Soil SP-2.0 1-40z. Ice -00 to 5/17 1:0:09 AM Relinquished by: Received by: Received by: 8/17/17 6/17 10:09 AM Relinquished by: Received by: Batte Time	_	12:58 PM	Soil	SP-Surface	1 - 40z.	<u> </u>	S00-	×	×			×				
7/17 1:16 PM Soil SP-2.0 1-402. Ice007	8/15/17	1:05 PM	Soil	SP-1.0	1 - 4oz.	<u>e</u>	0,00-	×	×			×				
Time: Relinquished by: Received by: Receiv	8/15/17	1:16 PM	Soil	SP-2.0	1 - 402.	90	-00J	×	×			×				
Time: Relinquished by: Time: Relinquished by: Time: Relinquished by: Received by: Received by: Date Time Time Date Time														\vdash		Н
Time: Relinquished by: Received by: Receiv						y			,	4				+		
Time: Relinquished by: Received by: Received by: Received by: Date Time S/17/17 Received by: Date Time	Pa															
Relinquished by Time Date Time	ige 6 of	Time; 10:09 AM	Relinquish	ed by:	Received by:] In	1901 ateo	Analy	rtical	Resu	lfs b	/ 8/23	/2017			
The second secon	5	Time;	Relinquist) (apa	Received by			Remar	ks: Ch	lorides	des uo	arate n	sport, p	lease.		
TATALANCE AND ADDRESS OF THE PARTY OF THE PA			4	Line 10 cm												



February 12, 2018

ROBERT ASHER
EOG Y RESOURCES, INC
105 SOUTH 4TH STREET
ARTESIA, NM 88210

RE: BIG SKY ABY STATE #1 (S-2)

Enclosed are the results of analyses for samples received by the laboratory on 02/07/18 11:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. 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/ga/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.

Celey D. Keene

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

Lab Director/Quality Manager



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

Received:

02/07/2018

Reported:

02/12/2018

Project Name:

BIG SKY ABY STATE #1 (S-2)

Project Number:

30-005-21020

Project Location:

CHAVES COUNTY

Sampling Date:

02/05/2018

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact

Tamara Oldaker

Sample ID: S -2. SURFACE (H800397-01)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/09/2018	ND	2.05	103	2.00	1.96	QR-03
Toluene*	<0.050	0.050	02/09/2018	ND	2.01	100	2.00	2.18	QR-03
Ethylbenzene*	<0.050	0.050	02/09/2018	ND	1.97	98.6	2.00	1.49	QR-03
Total Xylenes*	< 0.150	0.150	02/09/2018	ND	6.01	100	6.00	1.60	QR-03
Total BTEX	<0.300	0.300	02/09/2018	ND					
Surrogate: 4-Bromofluorobenzene (PIE	103 9	% 72-148		-14					
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/09/2018	ND	214	107	200	13.9	
DRO >C10-C28*	74.1	10.0	02/09/2018	ND	225	112	200	18.6	
EXT DRO >C28-C36	14.2	10.0	02/09/2018	ND					
Surrogate: 1-Chlorooctane	54.3	% 41-142							
Surrogate: 1-Chlorooctadecane	61.0	% 37.6-14	7						

Cardinal Laboratories

*=Accredited Analyte

PLEASE FIGHTS: Utability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whistoever shall be deemed wished unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the allowatories.

Celeg & Keine



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

Received:

02/07/2018

Reported:

02/12/2018

Project Name:

BIG SKY ABY STATE #1 (S-2)

Project Number: Project Location: 30-005-21020 CHAVES COUNTY

Sampling Date:

02/05/2018

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Tamara Oldaker

Sample ID: S -2. 1 (H800397-02)

BTEX 8021B	mg/l	¢g	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/09/2018	ND	2.05	103	2.00	1.96	
Toluene*	<0.050	0.050	02/09/2018	ND	2.01	100	2.00	2.18	
Ethylbenzene*	<0.050	0.050	02/09/2018	ND	1.97	98.6	2.00	1.49	
Total Xylenes*	<0.150	0.150	02/09/2018	ND	6.01	100	6.00	1.60	
Total BTEX	<0.300	0.300	02/09/2018	ND					
Surrogate: 4-Bromofluorobenzene (PIE	102 %	72-148							
TPH 8015M	mg/l	(g	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/09/2018	ND	214	107	200	13.9	
DRO >C10-C28*	117	10.0	02/09/2018	ND	225	112	200	18.6	
EXT DRO >C28-C36	24.1	10.0	02/09/2018	ND					
Surrogate: 1-Chlorooctane	52.9 %	6 41-142	t,						
Surrogate: 1-Chlorooctadecane	61.7%	6 37.6-14	7						

Cardinal Laboratories

*=Accredited Analyte

PLEASE (KOTE: Liability and Damages, Cardinal's liability and client's exclusive remedy for any claim origing, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.





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

Received:

02/07/2018

02/07/2018

Reported: Project Name:

BIG SKY ABY STATE #1 (S-2)

Project Number:

30-005-21020

Project Location:

CHAVES COUNTY

Sampling Date:

02/05/2018

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Tamara Oldaker

Sample ID: S -2. 2 (H800397-03)

BTEX 8021B	mg/	kg	Analyze	ed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	< 0.050	0.050	02/09/2018	ND	2.05	103	2.00	1.96	
Toluene*	< 0.050	0.050	02/09/2018	ND	2.01	100	2.00	2.18	
Ethylbenzene*	<0.050	0.050	02/09/2018	ND	1.97	98.6	2.00	1.49	
Total Xylenes*	<0.150	0.150	02/09/2018	ND	6.01	100	6.00	1.60	
Total BTEX	<0.300	0.300	02/09/2018	ND					
Surrogate: 4-Bromofluorobenzene (PIL	104%	6 72-148							
TPH 8015M	mg/l	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/09/2018	ND	214	107	200	13.9	
DRO >C10-C28*	<10.0	10.0	02/09/2018	ND	225	112	200	18.6	
EXT DRO >C28-C36	<10.0	10.0	02/09/2018	ND					
Surrogate: 1-Chlorooctane	62.3 9	6 41-142							
Surrogate: 1-Chlorooctadecane	59.79	6 37.6-147							

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whitsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, it is subsidiated, without limitation, business interruptions, loss of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the surples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.





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

Received:

Reported:

02/12/2018

Project Name:

BIG SKY ABY STATE #1 (S-2)

Project Number: Project Location: 30-005-21020 CHAVES COUNTY

02/07/2018

Sampling Date: Sampling Type: 02/05/2018

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Tamara Oldaker

Sample ID: S -2. 3 (H800397-04)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/09/2018	ND	1.75	87.4	2.00	23.7	QR-03
Toluene*	<0.050	0.050	02/09/2018	ND	1.77	88.5	2.00	22.3	
Ethylbenzene*	<0.050	0.050	02/09/2018	ND	1.76	87.9	2.00	23.4	
Total Xylenes*	<0.150	0.150	02/09/2018	ND	5.25	87.5	6.00	22.5	
Total BTEX	<0.300	0.300	02/09/2018	ND					
Surrogate: 4-Bromofluorobenzene (PIL	111 %	6 72-148							
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/09/2018	ND	214	107	200	13.9	
DRO >C10-C28*	<10.0	10.0	02/09/2018	ND	225	112	200	18.6	
EXT DRO >C28-C36	<10.0	10.0	02/09/2018	ND					
Surrogate: 1-Chlorooctane	68.49	6 41-142							
Surrogate: 1-Chlorooctadecane	66.79	6 37.6-147							

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardnah's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed walved unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or auccessors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.





Notes and Definitions

QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.

QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.

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

Cardinal Laboratories

*=Accredited Analyte

PLEASE RIOTE: Liability and Damages. Cardinal's kability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whistoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

alex There



ARDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240

(505) 393-2326 FAX (505) 393-2476

Relinquished by: Date Date Date Time Received by: Date Date Time Received by: Date Time Date Time Date Time Date Time Date Time Received by: Date Time Received by: Date Time Date Time Date Time Date Time Date Time Date Time Date Date	Date Time Received by: Date Time Received by:	ctions:									4 S-2.3 3' 3' 2/5/2018 10:11 AM 1 X S X	3 S-2.2 2' 2' 2/5/2018 10:09 AM 1 X S X	2 S-2.1 1' 1' 2/5/2018 10:08 AM 1 X S X	S-2.Surface 4" 4" 2/5/2018 10:05 AM 1 X S X	Ending Depth Ending Depth Ending Depth Date Sampled Time Sampled Field Filtered Total #, of Containers Ice HNO3 HCI H ₂ SO ₄ NaOH Na ₂ S ₂ O ₃ None Other (Specify) DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Soild NP=Non-Potable Specify Other TPH: 8015M Extended TPH: TX 1005 TX 1006	ORDER #: / 'OV' / Preservation & # of Containers Matrix	H800307		Sampler Signature: e-mail: boba@yatespetroleum.com	Telephone No: 575-748-4174 Fax No: Report Format:	City/State/Zip: Artesia, NM 88210	Company Address: 104 South 4th Street Project Loc: Chaves County	Company Name EOG Resources, Inc. Project #: 30-005-21020	Project Manager: Robert Asher Project Name: Big Sky ABY State #1 (s-2)
A P	A F	, AE	ALT.								M	M	M	M	Field Filtered				nail:	No:				
A rest	rest	resc	resi	-		-	-	177		-	_	_	_	1		-		T	bo	-				110
6	1	1		ults							_	_	_			1	1		ba					
U		1		in									_	-	24121	Pre			©V:					
1		19		ng/k								-				serva			ates					
		0		G. T												tion &			petr					
				Thar									-		NaOH				role					
				nk y											Na ₂ S ₂ O ₃	Conta			ım.					
e	1			or.											None	ainers			COM					
00 7	1	Da																	1					
g 3	>	6														Ma				20				
-											S	S	S	S		xirit				epoi		_		P
		7									×	×	×	×		_	T	П		t Fo		Proj	P	ojec
$\mathcal{U}_{\mathbb{R}}$	1	ne			_										The second second second			П		rma	ס	ect L	rojec	tNa
S 5 5	5	La	5	Sa											Cations (Ca, Mg, Na, K)			П		IT	#	00:	# 12	me:
Custody seals on container(s) Custody seals on container(s) Custody seals on cooler(s) Sample Hand Delivered	stod	1	SO	mple							×	×	×	×	Anions (CI)		7 7	Н		×	Po #: 205632	유	30	Bio
y se		Labels on container(s) Custody seals on cont	ree	Co											SAR / ESP / CEC		TOTAL:	П		x Standard	563	ave	005	S
als o	als c	onta	of T	Con							.)				Metals: As Ag Ba Cd Cr Pb Hg	Se		3		ndan	2	SC	-21	y A
on oc	in oc	iner	lead	mme											Volatiles			alyz		a.		nno	020	BY
Custody seals on container Custody seals on cooler(s) Sample Hand Delivered	nian	(8)	VOCs Free of Headspace?	Laboratory Comments: Sample Containers Intact?											Semivolatiles			Analyze For:				Ą.		Sta
S		ner(s	S.	7							×	×	×	×	BTEX 8021B/5030 or BTEX 82	60		"		\Box				te #
	17	2						_	-		_	_		-	RCI N.O.R.M.			۱I		TRRP				(8
3< B					100			_						_	THO AND THE	_	_	Ηl						2
3-13	B	3	B	(4)				_		_				_				1 I						
			1												Carrie His Comm			11		NP				
z (2):)	zz	z	z											RUSH TAT (Pre-Schedule) 24,	48, 7	2 hrs			NPDES				
	Ĭ										×	×	×	×	Standard TAT									



February 12, 2018

ROBERT ASHER
EOG Y RESOURCES, INC
105 SOUTH 4TH STREET
ARTESIA, NM 88210

RE: BIG SKY ABY STATE #1 (S-2)

Enclosed are the results of analyses for samples received by the laboratory on 02/07/18 11:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. 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/ga/lab accredited 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.

Celey D. Keine

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

Lab Director/Quality Manager



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

1 42

Received: 02/07/2018 Reported: 02/12/2018

Project Name: BIG SKY ABY STATE #1 (S-2)

Project Number: 30-005-21020
Project Location: CHAVES COUNTY

Sampling Date: 02/05/2018

Sampling Type: Soil

Sampling Condition: Sample Received By: Cool & Intact Tamara Oldaker

Qualifier

Sample ID: S -2. SURFACE (H800397-01)

Chloride, SM4500CI-B mg/kg Analyzed By: AC

Analyte Result Reporting Limit Analyzed Method Blank BS True Value QC RPD % Recovery Chloride 2320 16.0 ND 02/12/2018 416 104 400 3.77

Sample ID: S -2. 1 (H800397-02)

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

Analyte Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC RPD Qualifier Chloride 864 16.0 02/12/2018 ND 416 104 400 3.77

Sample ID: S -2. 2 (H800397-03)

Chloride, SM4500CI-B Analyzed By: AC mg/kg Reporting Limit Analyte Result Analyzed Method Blank BS % Recovery True Value QC RPD Qualifier Chloride 1100 16.0 02/12/2018 ND 416 104 400 3.77

Sample ID: S -2. 3 (H800397-04)

Chloride, SM4500Cl-B Analyzed By: AC mg/kg Analyte Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC RPD Qualifier 02/12/2018 Chloride 1150 16.0 ND 416 104 400 3.77

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Uability and Damages. Cardinal's Bability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waked unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidence or consequential damages, including, without limitation, business interruptions, loss of use, or loss of use, or loss of profits incurred by client is subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results related only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey Z. Keene



Notes and Definitions

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

Cardinal Laboratories

*=Accredited Analyte

PLEASE RIOTE: Liability and Damages. Cardnal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whistoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardnal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celeg T. Keine



ARDINAL LABORATORIES 101 East Mariand, Hobbs, NM 88240

(505) 393-2326 FAX (505) 393-2476

	Relinquished by:	xelinquished b		Special							4	w	2	/	LAB# (lab use only)	טאטבא #.	000000	(lab use only)							
	red by:			Special Instructions: TPI							S-2.3	3 S-2.2	2 8-2.1	S-2.Surface	FIELD CODE		# HX00397			Sampler Signature:	Telephone No: 575-748-417	City/State/Zip: Artesia, NM 88210	Company Address: 104 South 4th Street	Company Name EOG Resources, Inc.	Project Manager: Robert Asher
	Date	02/06/18		HEXTENDED												100				Za C	F	И 88210	4th Street	urces, Inc.	ier
		3:3		. Chl							ယ္	12	1	4	Beginning Depth				ľ	ح					
	ime ime	3:31 PM		oride							ω	2	4	4	Ending Depth					~					
reconstruction by LEO I.	Received by:	Received by:		TPH EXTENDED. Chlorides on Separate Results. ALL results in mg/kg. Thank you.							2/5/2018	2/5/2018	2/5/2018	2/5/2018	Date Sampled										
C.	OT:	iona de		Results. AL							10:11 AM	10:09 AM	10:08 AM	10:05 AM	Time Sampled					e-mail:	Fax No:				
		1	7	- I											Field Filtered										
		9		Sult.								>	-	-	Total #. of Containers		,			5				1	
	(W.		D.	-	-	_	-	-	-	×	×	×	×	Ice	- 2	1		ģ	9		1			
		10		g.	\dashv	-		-	-	_	_	_	_	_	HNO ₃	Preservation & #	L			boha@vatespetrol					
		0	,	κ <u>α</u>	-	-	-	-	+	_	_	-	_	_	HCI H ₂ SO ₄	ration	ı			S C C					
				굸	-	-	\dashv	-	+			_	_	-	NaOH	##	ı			3					
				킂	_			_	_		_			_	Na ₂ S ₂ O ₃	Š	ı			P		42			
- 15		e		ě					_						None	of Containers	ı			3					
		1 -	1												Other (Specify)	2	L		E	3					
200	Date	7-18		Ì											DW=Drinking Water SL=Sludge	1,	1								
		000									S	S	S	S	GW = Groundwater S=Soil/Solid	Matrix					Report Format:				-
		-		ŀ	_		_	_			_				NP=Non-Potable Specify Other	ľ	L	_	_		유		Pro	-	roje
ā	B B	Si BE		-							×	×	×	×	TPH: 8015M Extended TPH: TX 1005 TX 1006	_	-	Н	1		om		ojec	Proj.	Ct Z
-	()		< 0	-	-	-	-	-	-	-	_	_	-	_	TPH: TX 1005 TX 1006 Cations (Ca, Mg, Na, K)	-	1	Н	1		at:	PO #	6	ect t	ame
emp	amp	abel	amp	abo		-	-	_	-		×	×	×	×	Anions (CI)		_	5/	1		×	12	10	100	100
erat	Sar Cou	s on dy s	le C	rato							^			^	SAR / ESP / CEC		OTAL	TCLP:	1		x Standard	205632	Project Loc: Chaves County	Project #: 30-005-21020	gs
Te .	and mple mier	con eals	onta e of	0					_	\dashv				_	Metals: As Ag Ba Cd Cr Pb Hg	Se	1.		ь		and	32	Se	5-2	Š
bo	Deli //Clie	on	iner	<u>a</u> -											Volatiles			Π.	nal		a.		5	102	AB
1 Re	Sample Hand Delivered by Sampler/Client Rep. ? by Courier? UPS	Labels on container(s) Custody seals on container(s) Custody seals on cooler(s)	Sample Containers Intact? VOCs Free of Headspace?	Laboratory Comments:	\neg										Semivolatiles				Analyze For:				nty	0	Project Name: Big Sky ABY State #1
Sei D	O B D	aine er(s)	act?	S							×	×	×	×	BTEX 8021B/5030 or BTEX 82	60			9						ate
1/K	무	(S)													RCI] TRRP				
1.00					33										N.O.R.M.						P				(5-2)
Temperature Upon Receipt: 1.86	E CO	n	00	1																	_				_
2	X CA	× 16	106																						
. 6	Lone	6					_												4		NPDES				
400	N Lone Star	SZZ	22			_	4	4	_	_				_	RUSH TAT (Pre-Schedule) 24,	48, 7	2 hr	8			ES				
a	The same	4.6	21,00								×	×	×	×	Standard TAT										



February 12, 2018

ROBERT ASHER
EOG Y RESOURCES, INC
105 SOUTH 4TH STREET
ARTESIA, NM 88210

RE: BIG SKY ABY STATE #1 (S-3)

Enclosed are the results of analyses for samples received by the laboratory on 02/07/18 11:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. 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 accredited 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)

Celeg D. Keene

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

Lab Director/Quality Manager



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

Received:

02/07/2018

Reported:

02/12/2018

Project Name:

BIG SKY ABY STATE #1 (S-3)

Project Number: Project Location: 30-005-21020

CHAVES COUNTY

Sampling Date:

02/05/2018

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact

Tamara Oldaker

Sample ID: S -3.SURFACE (H800394-01)

BTEX 8021B	mg/l	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	< 0.050	0.050	02/08/2018	ND	2.25	113	2.00	11.8	
Toluene*	< 0.050	0.050	02/08/2018	ND	2,28	114	2.00	12.8	
Ethylbenzene*	< 0.050	0.050	02/08/2018	ND	2.30	115	2.00	14.6	
Total Xylenes*	< 0.150	0.150	02/08/2018	ND	6.74	112	6.00	14.5	
Total BTEX	<0.300	0.300	02/08/2018	ND					
Surrogate: 4-Bromofluorobenzene (PIL	117%	72-148							
TPH 8015M	mg/l	kg .	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/08/2018	ND	214	107	200	13.9	
DRO >C10-C28*	<10.0	10.0	02/08/2018	ND	225	112	200	18.6	
EXT DRO >C28-C36	<10.0	10.0	02/08/2018	ND					
Surrogate: 1-Chlorooctane	78.2 %	6 41-142							
Surrogate: 1-Chlorooctadecane	76.19	6 37.6-147	i						

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Uability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thinty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.





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

Received:

02/07/2018

Reported:

02/12/2018

Project Name:

BIG SKY ABY STATE #1 (S-3)

Project Number:

30-005-21020

Project Location:

CHAVES COUNTY

Sampling Date:

02/05/2018

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact

Tamara Oldaker

Sample ID: S -3.1 (H800394-02)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	< 0.050	0.050	02/08/2018	ND	2.25	113	2.00	11.8	
Toluene*	< 0.050	0.050	02/08/2018	ND	2.28	114	2.00	12.8	
Ethylbenzene*	<0.050	0.050	02/08/2018	ND	2.30	115	2.00	14.6	
Total Xylenes*	< 0.150	0.150	02/08/2018	ND	6.74	112	6.00	14.5	
Total BTEX	<0.300	0.300	02/08/2018	ND					
Surrogate: 4-Bromofluorobenzene (PIL	1169	6 72-148							
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/08/2018	ND	214	107	200	13.9	
DRO >C10-C28*	<10.0	10.0	02/08/2018	ND	225	112	200	18.6	
EXT DRO >C28-C36	<10.0	10.0	02/08/2018	ND					
Surrogate: 1-Chlorooctane	80.0 9	6 41-142							
Surrogate: 1-Chlorooctadecane	75.59	6 37.6-14	7						

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whistoever shall be deemed walved unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liabile for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keine



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

Received:

02/07/2018

Reported:

02/12/2018

Project Name:

BIG SKY ABY STATE #1 (S-3)

Project Number:

30-005-21020

Project Location:

CHAVES COUNTY

Sampling Date:

02/05/2018

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact

Tamara Oldaker

Sample ID: S -3.2 (H800394-03)

BTEX 8021B	mg/l	kg .	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/08/2018	ND	2.25	113	2.00	11.8	
Toluene*	<0.050	0.050	02/08/2018	ND	2.28	114	2.00	12.8	
Ethylbenzene*	<0.050	0.050	02/08/2018	ND	2.30	115	2.00	14,6	
Total Xylenes*	<0.150	0.150	02/08/2018	ND	6.74	112	6.00	14.5	
Total BTEX	<0.300	0.300	02/08/2018	ND					
Surrogate: 4-Bromofluorobenzene (PIL	112 %	72-148							
TPH 8015M	mg/l	kg .	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/09/2018	ND	214	107	200	13.9	
DRO >C10-C28*	<10.0	10.0	02/09/2018	ND	225	112	200	18.6	
EXT DRO >C28-C36	<10.0	10.0	02/09/2018	ND					
Surrogate: 1-Chlorooctane	50.79	6 41-142	ul .						
Surrogate: 1-Chlorooctadecane	53.29	37.6-14	7						

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages, Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss or profits incurred by client, its subsidiances, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with writter, approval of Cardinal Laboratonies.

Celey & Keine



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

Received:

02/07/2018

Reported:

02/12/2018

Project Name:

BIG SKY ABY STATE #1 (S-3)

Project Number: Project Location: 30-005-21020

CHAVES COUNTY

Sampling Date:

02/05/2018

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact

Tamara Oldaker

Sample ID: S -3.3 (H800394-04)

mg/l	kg	Analyze	d By: MS					
Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<0.050	0.050	02/08/2018	ND	2.25	113	2.00	11.8	
<0.050	0.050	02/08/2018	ND	2.28	114	2.00	12.8	
<0.050	0.050	02/08/2018	ND	2.30	115	2.00	14.6	
<0.150	0.150	02/08/2018	ND	6.74	112	6.00	14.5	
<0.300	0.300	02/08/2018	ND					
120 %	6 72-148	1 1 1 1						
mg/l	kg	Analyze	d By: MS					
Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<10.0	10.0	02/08/2018	ND	214	107	200	13.9	
<10.0	10.0	02/08/2018	ND	225	112	200	18.6	
<10.0	10.0	02/08/2018	ND					
<10.0 71.8 %	The state of the s	02/08/2018	ND					
	Result <0.050 <0.050 <0.050 <0.150 <0.300 /20 % mg/H	<0.050	Result Reporting Limit Analyzed <0.050	Result Reporting Limit Analyzed Method Blank <0.050	Result Reporting Limit Analyzed Method Blank BS <0.050	Result Reporting Limit Analyzed Method Blank BS % Recovery <0.050	Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC <0.050	Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC RPD <0.050

Cardinal Laboratories

*=Accredited Analyte

PLEASE HOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celley & Kreene



Notes and Definitions

QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC

batch were accepted based on percent recoveries and completeness of QC data.

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

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whistoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, it is subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Kiene

ARDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240

(505) 393-2326 FAX (505) 393-2476

Project Name Name Project Name Name Project Name Name Project Name Na		Relinquished by:	Relinquished by:	Relinquished by:	Special Instructions: TPH						S-3.3	S-3.2	2 S-3.1		LAB # (lab use only) FIELD CODE		ORDER # TROOKS	(lab use only)	Sampler Signature:	Telephone No: 575-748-417	City/State/Zip: Artesia, NM 88210	Company Address: 104 South 4th Street	Company Name EOG Resources, Inc.	Project Manager: Robert Asher
Project Name: Big Sky ABY State #1 (5-3) Project Name: Big Sky ABY Stat		Date	02/06/18 Date	Date	EXTENDED															77	88210	4th Street	urces, Inc.	ег
Project Name: Big Sky ABY State #1 (5-3) Project Name: Big Sky ABY Stat		1	3:30 Ti	=	Chi						ω	12	-7	4	Beginning Depth	1		(-					
Project Name: Big Sky ABY State #1 (5-3) Project Name: Big Sky ABY Stat		Te) PM	me	orides						ယ္	2	÷	4,	Ending Depth			ĺ						
Project Name: Big Sky ABY State #1 (5-3) Project Name: Big Sky ABY Stat	The state of the s	Received by ELO	Received w	Received by:	on Separate						2/5/2018	2/5/2018	2/5/2018	2/5/2018	Date Sampled									
Project Name: Big Sky ABY State #1 (5-3) Project Name: Big Sky ABY Stat	1		Legal		Results, Al						10:18 AM	10:17 AM	10:15 AM	10:14 AM	Time Sampled				e-mail:	Fax No:				
Project Name: Big Sky ABY State #1 (5-3) Project Name: Big Sky ABY Stat					Tes -	-																		
Project Name: Big Sky ABY State #1 (5-3) Project Name: Big Sky ABY Stat		1	\bigcirc		-	+	-		-	-			_				1		bob					
Project Name: Big Sky ABY State #1 (5-3) Project Name: Big Sky ABY Stat			6		3.	+	+	+	+	+	×	×	×	×	200	g			a (0)					
Project Name: Big Sky ABY State #1 (5-3) Project Name: Big Sky ABY Stat			2	ď	3	+	+	+	+	+	-			-		Nese	ı		yate					
Project Name: Big Sky ABY State #1 (5-3) Project Name: Big Sky ABY Stat			7)	ď	<u> </u>	+	+	+	+	+		_	-			ation			spe					
Project Name: Big Sky ABY State #1 (5-3) Project Name: Big Sky ABY Stat			1	2	궁는	+	+	-	+	+		_			11									
Project Name: Big Sky ABY State #1 (5-3) Project Name: Big Sky ABY Stat)	1 3	3		+									Š			eun					
Project Name: Big Sky ABY State #1 (S.3) Project Loc: Chaves County Project Loc: Chaves Sealivation Trup: T			8	9												itaine			1.00					
Project Name: Big Sky ABY State #1 (5-3) Project Loc: Chaves County Project Loc: Chaves County Project Loc: Chaves County Project #: 30-005-21020 Project #: 30-005-21020 Project #: 30-005-21020 Project Loc: Chaves County Project Loc: Chaves County Project #: 30-005-21020 Project Loc: Chaves County Projec	D		13	2											Other (Specify)	S			13					
Project Name: Big Sky ABY State #1 (\$.3) Project Loc: Chaves County Po #: 205632 Analyze For: TOTAL: Time Laboratory Comments: Sample Hand Delivered by Sample Hand Delivered by Sample Hand Delivered by Courier? Ups DH. Temperature Upon Receipt: RUSH TAT (Pre-Schedule) 24, 48, 72 hrs RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	6	6	1	5	Г		T		Т						DW=Drinking Water SL=Sludge	>	1				'	'		
Project Name: Big Sky ABY State #1 (\$.3) Project Loc: Chaves County Po #: 205632 Analyze For: TOTAL: Time Laboratory Comments: Sample Hand Delivered by Sample Hand Delivered by Sample Hand Delivered by Courier? Ups DH. Temperature Upon Receipt: RUSH TAT (Pre-Schedule) 24, 48, 72 hrs RUSH TAT (Pre-Schedule) 24, 48, 72 hrs			OÚ.	-							တ	S	S	S		latrio				Rep				-
#: 30-005-21020 #: 30-005-21020 #: 205632 #: 205632 #: 205632 #: 205632 #: 205632 #: 205632 #: 205632 #: 205632 #: 205632 #: 205632 #: 205632 Analyze For: TOTAL: TO	=	=		1	-	+	+	-	+	-	U					Ĺ	-			ñ.		Pro		roje
#: 30-005-21020 #: 30-005-21020 #: 205632 #: 205632 #: 205632 #: 205632 #: 205632 #: 205632 #: 205632 #: 205632 #: 205632 #: 205632 #: 205632 Analyze For: TOTAL: TO	i e	ne	80 g	3	-	+	+	+		-		^	^	×		_		П		orm		ojec	Proj	ct
0° 0° Z Z Z Z Z Z RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Te	C)	552	S S E		+	+	-	+									П		at	PO	L Loc	ect #	lame
0° 0° Z Z Z Z Z Z RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	mpe	なる日	stoc	mpl mpl							×	×	×	×			7	П		×	12	lo lo	. **	l m
0° 0° Z Z Z Z Z Z RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	ratu	Sam Cour	y se	e Co Free				T							SAR / ESP / CEC		OTAL	П		St	056	hav	000	ğ
0° 0° Z Z Z Z Z Z RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	e U	pler/	als o	of H	3										Metals: As Ag Ba Cd Cr Pb Hg !	Se	11 11	1. 1		anda	32	es)5-2	Š
0° 0° Z Z Z Z Z Z RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	9	Clien	on oc	ners											Volatiles			naly		a		ou	102	AB)
0° 0° Z Z Z Z Z Z RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Rece	t Rep UPS	ontai oler	Inta											Semivolatiles							nty	0	St
0° 0° Z Z Z Z Z Z RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	pipt	2.3	ner(s	8 3	L						×	×	×			0		S.				11		ate
0° 0° Z Z Z Z Z Z RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	35	Ĭ	S	1	_	-	-	-					_	_				$\ \ $		TRR				生
0° 0° Z Z Z Z Z Z RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	4			100	-	+	-	-	-			-	-		N.O.R.M.			$\ \ $		Ö				S-3)
C S S Z Z Z Z Z RUSH TAT (Pre-Schedule) 24, 48, 72 hrs		De S	×36	000	-	-	-				\dashv	-	-	-				$\ \ $						
RUSH TAT (Pre-Schedule) 24, 48, 72 hrs					-	-					-	+	+	-				1		z				
×××× Standard TAT	ဂိ	e z z	Zzz	zz	-								+	-	RUSH TAT (Pre-Schedule) 24, 48	3, 72	hrs	Ч		PDE				
		न	Ĭ	3							× ;	× ;	< >	_			N I	_		S				



February 12, 2018

ROBERT ASHER
EOG Y RESOURCES, INC
105 SOUTH 4TH STREET
ARTESIA, NM 88210

RE: BIG SKY ABY STATE #1 (S-3)

Enclosed are the results of analyses for samples received by the laboratory on 02/07/18 11:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. 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.

Celeg D. Keene

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

Lab Director/Quality Manager



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

Received:

02/07/2018

Reported:

02/12/2018

Project Name: Project Number: BIG SKY ABY STATE #1 (S-3)

30-005-21020

Project Location:

CHAVES COUNTY

Sampling Date:

Sampling Type:

02/05/2018

Soil

Sampling Condition: Sample Received By: Cool & Intact

Tamara Oldaker

Sample ID: S -3.SURFACE (H800394-01)

Chloride, SM4500CI-B

Chloride

Chloride

Chloride

Chloride

mg/kg

Analyzed By: AC

Analyte

Result Reporting Limit

16.0

Analyzed

02/09/2018

Method Blank ND

BS

400

% Recovery

100

True Value QC 400

RPD

0.00

Qualifier

Sample ID: S -3.1 (H800394-02)

Chloride, SM4500Cl-B

mg/kg

Analyzed By: AC

Analyte

Analyte

Analyte

Result 192

Result

240

Result

208

48.0

Reporting Limit 16.0

Analyzed 02/09/2018 Method Blank ND

BS 400 % Recovery 100

True Value QC 400

RPD

0.00

Qualifier

Sample ID: S -3.2 (H800394-03)

Chloride, SM4500Cl-B

mg/kg

Analyzed By: AC

Reporting Limit

16.0

Reporting Limit

16.0

Analyzed 02/09/2018 Method Blank ND

BS 416 % Recovery 104

True Value QC 400

RPD

Qualifier

Sample ID: S -3.3 (H800394-04)

Chloride, SM4500CI-B

mg/kg

Analyzed By: AC

Analyzed

02/09/2018

Method Blank ND

BS 416 % Recovery 104

True Value QC 400

RPD 3.77

3.77

Qualifier

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Uability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise, Results relate only to the samples identified above. This report shall not be reproduced except in full with written approved of Cardinal Laboratories,

Celeg Dities



Notes and Definitions

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

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exchasive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analysiss. All claims, including those for negligence and any other cause whatevery shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without irritation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services bereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results related only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Kreene

ARDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240

(505) 393-2326 FAX (505) 393-2476

6	200	2	Reli	9	2			7								T	0 7	n a						
di di	inquisi		nquish	ecial	5	17 8					_	C	2	-	LAB # (lab use only)		RDEF	flab use only						
remiquished by:	Relinquished by:	0	Relinquished by:	Special instructions:							S-3 3	S-3.2	S-3.1	S-3.Surface	FIELD CODE		ORDER # 4800294	only	Sampler Signature:	Telephone No: 575-748-4171	City/State/Zip: Artesia, NM 88210	Company Address: 104 South 4th Street	Company Name EOG Res	Project Manager: Robert Asher
Date	Date	02/06/18	Date	EXTENDED											· ·				200	171	W 88210	4th Street	EOG Resources, Inc.	her
Time	Time	3:30 PM	1), Chlo						c	ي	ń	1.	4"	Beginning Depth			3	. 0					
		PM	D	rides						c	٥	12	1'	4	Ending Depth			1						
Received by ELOT:	Received by:	Necessary Dy.	Dogwood	TPH EXTENDED. Chlorides on Separate Results. ALL results in mg/kg. Th						81.07/5/7	01110040	2/5/2018	2/5/2018	2/5/2018	Date Sampled									
)T:				Results. ALI						10:18 AM	10.10.11	10:17 AM	10:15 AM	10:14 AM	Time Sampled				e-mail:	Fax No:				
		_	-	. res	_	-					-				Field Filtered				_	,				
				ults	_	\vdash				×	_	×		1	Total #. of Containers	-	1		boba@yatespetroleum.com					
- 7	6	-		2					-	+^	+		$\widehat{}$	×	HNO ₃	P			9					
		4		ng/	-					+	+	-	-		HCI	Preservation &			ate					
	ě	10		í,							+	-			H ₂ SO ₄	ation			spe					
	1			Tha							+	+			NaOH	74:			70					
		1		nank you.							+				Na ₂ S ₂ O ₃	ç			mue					
-	Q	9	1	6							T				None	of Containers		1	8					
Date	Date	Date													Other (Specify)	S		ľ	В					
6	ie	I fo									,				DW=Drinking Water SL=Sludge	N					'			•
-		χį								S	U)	0		GW = Groundwater S=Soil/Solid	Matrix		-		Rep				
=	=	- 1		-	-					U					NP=Non-Potable Specify Other	Ĺ	_	Н		<u> </u>		P		roj
Time	E E	Si me	-	-	_		_		_	×	>	,	×	-	TPH: 8015M Extended TPH: TX 1005 TX 1006	_		П		Report Format:		Project Loc: Chaves County	Project #: 30-005-21020	Ct.
급	S) C	552	< V	<u></u>						+	+	+	+		Cations (Ca, Mg, Na, K)	_				lat	PO #:	Ę.	55	lam
mp oy	Sample Hand Delivered by Sampler/Client Rep. 1	Labels on container(s) Custody seals on container(s)	Sample Containers Intact? VOCs Free of Headspace?	Laboratory Comments:						×	×		× :		Anions (CI)		٦	1			# 12	10	±	i.e.
eratu	e Ha	dy s	Free	ator			_			-	f	+	<u> </u>		SAR / ESP / CEC	_	TCLP:	1		x Standard	205632	ha	9	ğ
Tre C	and	cont	e of	VC.							+	+	+	_	Metals: As Ag Ba Cd Cr Pb Hg 5					tand	33	/es	95	Sky
pon	Deliv Clie	one	Hea	B							+	1	1	_	/olatiles		+	Analyze		ard		င္ပ	210	Æ
Re c	vere	ont:	sint	ent							+	+	+		Semivolatiles	\dashv		yze				Inty	20	Ϋ́ (2)
ceipt	nple Hand Delivered by Sampler/Client Rep. ?	aine	act?	i.						×	×	>	< >	< 1	BTEX 8021B/5030 or BTEX 826	60	\vdash	For						itat
Temperature Upon Receipt: 10 0	2	(S)	F W								T	1	1	-	RCI					고				Project Name: Big Sky ABY State #1 (S-3)
				W.										1	1.O.R.M.					TRRP				S
o rear	0		0			A																		3
×		00	SK	(,)																				
C °C	770	77			4							-	1							NPDES				
°C Star	zze	5-			+	-	_	_	_		-	+	1	_	RUSH TAT (Pre-Schedule) 24, 48	3, 72	hrs			ES				
		The second second								1 2 4		1.5		a 100	tondeed TAT									



February 12, 2018

ROBERT ASHER
EOG Y RESOURCES, INC
105 SOUTH 4TH STREET
ARTESIA, NM 88210

RE: BIG SKY ABY STATE #1 (S-4)

Enclosed are the results of analyses for samples received by the laboratory on 02/07/18 11:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. 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/ga/lab accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/ga/lab accredited analytes are denoted by www.tceq.texas.gov/field/ga/lab accredited analytes are denoted b

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.

Celeg D. Keens

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

Lab Director/Quality Manager



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

Received: Reported: 02/07/2018

02/12/2018

Project Name:

BIG SKY ABY STATE #1 (S-4)

Project Number: Project Location: 30-005-21020

CHAVES COUNTY

Sampling Date:

Sampling Type:

02/05/2018

Soil

Sampling Condition: Sample Received By: Cool & Intact

Tamara Oldaker

Sample ID: S -4. SURFACE (H800398-01)

BTEX 8021B	mg/	/kg	Analyze	d By; MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/09/2018	ND	1.75	87.4	2.00	23.7	
Toluene*	<0.050	0.050	02/09/2018	ND	1.77	88.5	2.00	22.3	
Ethylbenzene*	<0.050	0.050	02/09/2018	ND	1.76	87.9	2.00	23.4	
Total Xylenes*	<0.150	0.150	02/09/2018	ND	5.25	87.5	6.00	22.5	
Total BTEX	<0.300	0.300	02/09/2018	ND					
Surrogate: 4-Bromofluorobenzene (PIL	111 9	% 72-148	2	7.1					
TPH 8015M	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/09/2018	ND	214	107	200	13.9	
DRO >C10-C28*	<10.0	10.0	02/09/2018	ND	225	112	200	18.6	
EXT DRO >C28-C36	<10.0	10.0	02/09/2018	ND					
Surrogate: 1-Chlorooctane	87.3	% 41-142							
Surrogate: 1-Chlorooctadecane	88.0	% 37.6-14	7						

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analysiss. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, airfuliates or successors arising out of or related to the performance of the services bereunder by Cardinal, regardless of whether such



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

Received:

02/07/2018

Reported:

02/12/2018

Project Name:

BIG SKY ABY STATE #1 (S-4)

Project Number: Project Location: 30-005-21020 CHAVES COUNTY Sampling Date:

02/05/2018

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact

Tamara Oldaker

Sample ID: S -4. 1 (H800398-02)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	< 0.050	0.050	02/09/2018	ND	1.75	87.4	2.00	23.7	
Toluene*	< 0.050	0.050	02/09/2018	ND	1.77	88.5	2.00	22.3	
Ethylbenzene*	< 0.050	0.050	02/09/2018	ND	1.76	87.9	2.00	23,4	
Total Xylenes*	< 0.150	0.150	02/09/2018	ND	5.25	87.5	6.00	22.5	
Total BTEX	<0.300	0,300	02/09/2018	ND					
Surrogate: 4-Bromofluorobenzene (PIL	118 %	6 72-148							
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/09/2018	ND	214	107	200	13.9	
DRO >C10-C28*	76.0	10.0	02/09/2018	ND	225	112	200	18.6	
EXT DRO >C28-C36	<10.0	10,0	02/09/2018	ND					
Surrogate: 1-Chlorooctane	74.4 9	6 41-142							
Surrogate: 1-Chlorooctadecane	78.09	6 37.6-14	7						

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Uability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whistoever shall be deemed waited unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, adiliates or successors arising out of or related to the performance of the services believed by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celeg D. Keine



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

Received:

02/07/2018

Reported:

DTEV 90310

02/12/2018

Project Name: Project Number: BIG SKY ABY STATE #1 (S-4)

Project Location:

30-005-21020

see or Hom

CHAVES COUNTY

Sampling Date:

02/05/2018

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Tamara Oldaker

Sample ID: S -4. 2 (H800398-03)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	< 0.050	0.050	02/09/2018	ND	1.75	87.4	2.00	23.7	
Toluene*	0.637	0.050	02/09/2018	ND	1.77	88.5	2.00	22.3	
Ethylbenzene*	1.98	0.050	02/09/2018	ND	1.76	87.9	2.00	23.4	
Total Xylenes*	6.79	0.150	02/09/2018	ND	5.25	87.5	6.00	22.5	
Total BTEX	9.40	0.300	02/09/2018	ND					
Surrogate: 4-Bromofluorobenzene (PIL	1149	6 72-148							
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifler
GRO C6-C10*	363	50.0	02/09/2018	ND	214	107	200	13.9	
DRO >C10-C28*	5150	50.0	02/09/2018	ND	225	112	200	18.6	
EXT DRO >C28-C36	468	50.0	02/09/2018	ND					
Surrogate: 1-Chlorooctane	118 %	6 41-142	VI						
Surrogate: 1-Chlorooctadecane	140 9	6 37.6-14	7						

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Uability and Damages, Cardinal's fiability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analysiss. All claims, including those for negligence and any other cause whatsoever shall be deemed walved unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celley D. Ke



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

Received:

02/07/2018

Reported:

02/12/2018

Project Name:

BIG SKY ABY STATE #1 (S-4)

Project Number:

30-005-21020

Project Location:

CHAVES COUNTY

Sampling Date:

02/05/2018

Sampling Type:

Sampling Condition:

Cool & Intact

Tamara Oldaker

Sample Received By:

Sample ID: S -4. 3 (H800398-04)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/09/2018	ND	1.75	87.4	2.00	23.7	
Toluene*	0.257	0.050	02/09/2018	ND	1.77	88.5	2.00	22.3	
Ethylbenzene*	1.46	0.050	02/09/2018	ND	1.76	87.9	2.00	23.4	
Total Xylenes*	23.2	0.150	02/09/2018	ND	5,25	87.5	6.00	22.5	
Total BTEX	24.9	0.300	02/09/2018	ND					
Surrogate: 4-Bromofluorobenzene (PIE	124 9	6 72-148							
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	561	50.0	02/09/2018	ND	214	107	200	13.9	
DRO >C10-C28*	4590	50.0	02/09/2018	ND	225	112	200	18.6	
EXT DRO >C28-C36	367	50.0	02/09/2018	ND					
Surrogate: 1-Chlorooctane	140 9	6 41-142							
Surrogate: 1-Chlorooctadecane	1329	6 37.6-14	7						

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. In no event shall Cardinal be liable for incidental or consequential damages, any other cause whatsoever shell be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such chalm is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
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.
8	Chloride by SM4500CI-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

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: UsbBitly and Damages. Cardinal's Bability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whitstoewer shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be Bable for incidental or corresponding damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results related only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celeg D. Keens

ARDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240

(505) 393-2326 FAX (505) 393-2476

romqueirou bj.	dinquis		Selinguished hy-	Special					-	4	w	es	/	LAB # (lab use only)	אַכוּרָג #:		ab use only)							
and by.	Selinquished by:		הפל דני	Special Instructions:						\$43	\$-4.2	S-4.1	S-4.Surface	FIELD CODE	# 1800 270	1	only)	6	Sampler Signature:	Telephone No: 575-748-4171	City/State/Zip: Artesia, N	Company Address: 104 Sout	Company Name EOG Res	Project Manager: Robert Asher
500	Date of	02/06/18	Date	H EXTENDE														60	0	1171	Artesia, NM 88210	104 South 4th Street	EOG Resources, Inc.	her
		ω 		D. Ch					,	ين	2	- <u>i</u>	4	Beginning Depth				()					
ē	1 1	3:30 PM	Be	loride					(ين	2	- <u>7</u>	4"	Ending Depth				Ç						
Neceived by ELOT.	Received by.	2	Density of her	TPH EXTENDED. Chlorides on Separate Results. ALL results in mg/kg. Thank you.					Ti di Lo	2/5/2018	2/5/2018	2/5/2018	2/5/2018	Date Sampled										
Ċ	3	nava a		e Results. Al					.0.10	10-26 AM	10:24 AM	10:22 AM	10:21 AM	Time Sampled					e-mail:	Fax No:				
		1	2	L Te										Field Filtered										
		40		Sults				\vdash	_		_	1	-	Total #. of Containers	-	1			000					
		1	•	≅.	_			+		×	×	×	×	HNO ₃	P	1		ě	9					
		(1)		mg/	_	-		\vdash	-	_	_	_	_	HCI	Preservation	ı		1	boba@vatespetrolei					
	`	101		kg.	_		-	-	-		_	-	-	H ₂ SO ₄	ation	1		1	Spe					
		0		The	_	-			_	_				NaOH	&# of</td><td>1</td><td></td><td></td><td>0</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td>Ž.</td><td>_</td><td></td><td></td><td>+</td><td></td><td></td><td></td><td></td><td></td><td>Na₂S₂O₃</td><td>70</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td>0.</td><td>1</td><td>you</td><td>_</td><td></td><td></td><td>+</td><td></td><td></td><td></td><td></td><td>+</td><td>None</td><td>ontainers</td><td>1</td><td></td><td></td><td>m com</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td>es in</td><td>_</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Other (Specify)</td><td>3</td><td>ı</td><td></td><td>18</td><td>3</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>200</td><td>Date Cate</td><td>7-18</td><td>3</td><td></td><td></td><td></td><td></td><td>\Box</td><td>T</td><td></td><td></td><td></td><td></td><td>DW=Drinking Water SL=Sludge</td><td>Į</td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td>9</td><td></td></tr><tr><td>-</td><td></td><td>00</td><td></td><td></td><td></td><td></td><td></td><td></td><td>(</td><td>n</td><td>S</td><td>S</td><td>S</td><td>GW = Groundwater S=Soil/Solid</td><td>Matrix</td><td></td><td></td><td></td><td></td><td>Report Format:</td><td></td><td></td><td></td><td>70</td></tr><tr><td></td><td></td><td>></td><td>4</td><td></td><td>_</td><td></td><td>_</td><td></td><td>_</td><td>_</td><td>_</td><td></td><td>_</td><td>NP=Non-Potable Specify Other</td><td>Ľ</td><td>L</td><td></td><td></td><td></td><td>Ħ.</td><td></td><td>Pro</td><td>_</td><td>Joje</td></tr><tr><td>ā</td><td></td><td>8:1</td><td>3</td><td></td><td></td><td></td><td></td><td></td><td>,</td><td>×</td><td>×</td><td>×</td><td>×</td><td>TPH: 8015M Extended</td><td>_</td><td></td><td>П</td><td>П</td><td></td><td>OTT</td><td></td><td>ojec</td><td>Proj.</td><td>ST</td></tr><tr><td>E 1</td><td></td><td>_</td><td></td><td>0 5</td><td></td><td>_</td><td></td><td></td><td>-</td><td>_</td><td>_</td><td>_</td><td>_</td><td>TPH: TX 1005 TX 1006</td><td>_</td><td>1</td><td></td><td>П</td><td></td><td>at</td><td>PO #:</td><td>5</td><td>ect</td><td>lam</td></tr><tr><td>em</td><td>b b 1</td><td>ust</td><td>000</td><td>abo</td><td>_</td><td>_</td><td>-</td><td></td><td></td><td></td><td></td><td></td><td></td><td>Cations (Ca, Mg, Na, K) Anions (Cl)</td><td>-</td><td>-</td><td></td><td>П</td><td></td><td></td><td>12</td><td>lo</td><td>.*</td><td>l m</td></tr><tr><td>Temperature Upon Receipt:</td><td>by Sampler/Client Rep. by Courier? UPS</td><td>Custody seals on cooler(s) Custody seals on cooler(s)</td><td>VOCs Free of Headspace?</td><td>Laboratory Comments:</td><td>_</td><td></td><td>_</td><td></td><td>,</td><td>×</td><td>×</td><td>×</td><td>×</td><td>SAR/ESP/CEC</td><td>_</td><td>OTA</td><td>TCLP:</td><td>П</td><td></td><td>x Standard</td><td>205632</td><td>Project Loc: Chaves County</td><td>Project #: 30-005-21020</td><td>ġ</td></tr><tr><td>ture</td><td>mple</td><td>seal</td><td>ee o</td><td>NV C</td><td>_</td><td>-</td><td>-</td><td></td><td>-</td><td>-</td><td>_</td><td>_</td><td>_</td><td>Metals: As Ag Ba Cd Cr Pb Hg</td><td>Se</td><td>L</td><td>Ġ.</td><td></td><td></td><td>tand</td><td>32</td><td>les</td><td>95-2</td><td>Sky</td></tr><tr><td>15</td><td>2 CI</td><td>Son</td><td>f He</td><td>mo</td><td>_</td><td></td><td></td><td></td><td>-</td><td>-</td><td></td><td>_</td><td></td><td>Volatiles</td><td>-</td><td>-</td><td>Н</td><td>Analyze For:</td><td></td><td>ard</td><td></td><td>်</td><td>210</td><td>AB</td></tr><tr><td>n R</td><td>ient</td><td>000</td><td>ads</td><td>mer</td><td>_</td><td></td><td></td><td></td><td>-</td><td>-</td><td>_</td><td>_</td><td>-</td><td>Semivolatiles</td><td>-</td><td>\vdash</td><td>-</td><td>yze</td><td></td><td></td><td></td><td>inty.</td><td>20</td><td>Y'S</td></tr><tr><td>pon Receipt</td><td>nt Rep.</td><td>tain ler(s</td><td>Dace</td><td>its:</td><td></td><td>-</td><td>-</td><td></td><td></td><td>×</td><td>×</td><td>×</td><td>×</td><td>BTEX 8021B/5030 or BTEX 82</td><td>160</td><td>H</td><td>Н</td><td>For:</td><td></td><td>П</td><td></td><td></td><td></td><td>tat</td></tr><tr><td>F</td><td>- "</td><td>er(s)</td><td>15</td><td>,</td><td></td><td>_</td><td>_</td><td></td><td></td><td>_</td><td></td><td></td><td>_</td><td>RCI</td><td></td><td>_</td><td>Н</td><td></td><td></td><td>井</td><td></td><td></td><td></td><td>生</td></tr><tr><td>1</td><td>PH</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>N.O.R.M.</td><td></td><td>_</td><td></td><td></td><td></td><td>TRRP</td><td></td><td></td><td></td><td>Project Name: Big Sky ABY State #1 (S.4)</td></tr><tr><td>300</td><td>Te .</td><td>N.</td><td>00</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>4</td></tr><tr><td>1.82 28.C</td><td>FedEx Lone Star</td><td>(-)</td><td>3/4/</td><td>}</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>3</td><td>5</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>NP</td><td></td><td></td><td></td><td></td></tr><tr><td>CO</td><td>e Z Z</td><td>ZZ Z</td><td>ZZZ</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>RUSH TAT (Pre-Schedule) 24,</td><td>48, 7</td><td>2 hr</td><td>6</td><td></td><td></td><td>NPDES</td><td></td><td></td><td></td><td></td></tr><tr><td>T</td><td>리</td><td>101</td><td>14.1</td><td>10</td><td></td><td></td><td></td><td></td><td>1</td><td>×</td><td>×</td><td>×</td><td>×</td><td>Standard TAT</td><td></td><td></td><td></td><td></td><td></td><td>10</td><td></td><td></td><td></td><td></td></tr></tbody></table>									



February 12, 2018

ROBERT ASHER
EOG Y RESOURCES, INC
105 SOUTH 4TH STREET
ARTESIA, NM 88210

RE: BIG SKY ABY STATE #1 (S-4)

Enclosed are the results of analyses for samples received by the laboratory on 02/07/18 11:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. 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/ga/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.

Celey D. Keens

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

Lab Director/Quality Manager



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

Received:

02/07/2018

Reported:

02/12/2018

Project Name: Project Number: BIG SKY ABY STATE #1 (S-4)

Project Location:

30-005-21020

Sampling Date:

: 02/05/2018 :: Soil

Sampling Type:

Sampling Condition: Sample Received By: Cool & Intact

Tamara Oldaker

A Second Transfer

CHAVES COUNTY

Sample ID: S -4. SURFACE (H800398-01)

Chloride, SM4500Cl-B

Chloride

Chloride

Chloride

mg/kg

Analyzed By: AC

Analyte

Result

3200

2360

Result

1920

Reporting Limit 16.0 Analyzed 02/12/2018

Method Blank ND BS 416

% Recovery 104

% Recovery

104

104

104

True Value QC 400 RPD

Qualifier

Qualifier

3.77

Sample ID: S -4. 1 (H800398-02)

Chloride, SM4500CI-B

mg/kg

Analyzed By: AC

Analyte Result

Reporting Limit

16.0

Reporting Limit

16.0

Reporting Limit

Analyzed 02/12/2018

Method Blank ND

416

BS

BS

416

True Value QC 400 RPD

3.77

Sample ID: S -4. 2 (H800398-03)

Chloride, SM4500CI-B

Analyte

Analyte

mg/kg

Analyzed By: AC

Analyzed

02/12/2018

yzed by. Ac

Method Blank

% Recovery

True Value QC

400

RPD 3.77

Qualifier

Sample ID: S -4. 3 (H800398-04)

Chloride, SM4500CI-B

mg/kg

Analyzed By: AC

Analyzed by:

Method Blank

% Recovery

True Value QC

400

RPD Qualifler

Chloride

432

Result

16.0 02,

02/12/2018

Analyzed

ND

416

BS

3.77

Cardinal Laboratories

*=Accredited Analyte

PUIASE ROTE: Uability and Damages. Cardnal's fability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, uithout limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successions arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celeg D. Keine



Notes and Definitions

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

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardnal's Bability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whistoever shall be deemed waited uriess made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celeg D. Kreine

ARDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240

(505) 393-2326 FAX (505) 393-2476

	Relinquished by:	Relinquished by		Relinquished by:		Special						-	4	w	2	/	LAB # (lab use only)	טאטרא #:		lab use only)							
	hed by:	hea by	0	hed by:		Special Instructions: TPH							\$4.3	\$-4.2	S-4.1	S-4.Surface	FIELD CODE	TOUCOTO #	-	only)		Sampler Signature:	Telephone No: 575-748-4171	City/State/Zip: Artesia, NM 88210	Company Address: 104 South 4th Street	Company Name EOG Resources, Inc.	Project Manager: Robert Asher
	Date	Date	02/06/18	Date		EXTENDED													, ,		6		_	88210	h Street	ces, Inc.	
	1	_	33	_		Chi							ω	2'	-	4"	Beginning Depth				()					
	Time	lime	3:30 PM	Time		oride						1	ω	2	4	4"	Ending Depth				Ç	5					
	Received by ELOT:	Received by:	Jan	Received by:		TPH EXTENDED. Chlorides on Separate Results. ALL results in mg/kg. Than							2/5/2018	2/5/2018	2/5/2018	2/5/2018	Date Sampled										
	OT:		mara d			e Results. AL							10:26 AM	10:24 AM	10:22 AM	10:21 AM	Time Sampled					e-mail:	Fax No:				
			1	7		Le											Field Filtered					lever.					
			4	1		SEL.						_	_	_	1	1	Total #. of Containers	-	7			ooba		1	1		
			10			<u> </u>	-		_	_	-	- 1	×	×	×	×	HNO ₃	Pr	1			9					
		-	(1)			<u>a</u> .	_	_				+	_					Preservation & # of	ı			boba@yatespetrole					
			KI			8			_		_	+	_	_		_	HCI H ₂ SO ₄	ation				spe					
			0			ᆰ	_	-		_	_	+	_	_	_	_	NaOH	çο #±				tro					
						影	-	-	_	-	-	+		-	_		Na ₂ S ₂ O ₃					eun					
-	-	_				nk vou.		_		-		+	_	-	-	-	None	Containers				um.com					
			do			-		\exists				\forall					Other (Specify)	23	ı			3					
	Date	Date	7-18	Date		ŀ						\forall				_	DW=Drinking Water SL=Sludge		1				١.	'	,		
			00			1						- (n	S	S	S	GW = Groundwater S=Soil/Solid	Matrix					Report Format:				12
			/	7													NP=Non-Potable Specify Other	×	L	_			DT.		Pr		roj
	Time	E E	1:30	ime								,	×	×	×	×	TPH: 8015M Extended				П		For		Project Loc: Chaves County	Pro	ect
																	TPH: TX 1005 TX 1006				Ш		nat:	PO #	Ë	ject	Nam
Tem		Sam	Cus	200	Sam	Lab						_					Cations (Ca, Mg, Na, K)	_			Ш				ŭ	井	E.
pera	3	Sample Hand Delivered by Sampler/Client Rep by Courier? UPS	ody	/OCs Free of Headsp	ple	orat						,	×	×	×	×	Anions (CI)		TOTAL	TCLP:	Ш		x Standard	205632	िर्भव	Project #: 30-005-21020	3ig
ature	-	Han amp	sea	ee c	Con	3					_	_	_			_	SAR / ESP / CEC	-	F.	Ġ.	Ш		Stan	632	ves	05	Sky
15		2 ed D	is or	of He	taine	ရှိ မ		_					_			_	Metals; As Ag Ba Cd Cr Pb Hg	Se	H	-	Ana		dard		8	210	AE
S F		lient	000	ads	SIS	me	_	-			_	+	_	_	_	_	Volatiles	-	-	-	Analyze)20	Ϋ́
Temperature Upon Receipt:	-	nple Hand Delivered by Sampler/Client Rep. by Courier? UPS	Custody seals on container(s) Custody seals on cooler(s)	VOCs Free of Headspace?	Sample Containers Intact?	Laboratory Comments:											Semivolatiles BTEX 8021B/5030 or BTEX 82	BD	H	-	For:				_		Stat
· Pi		2	er(s	:3	2		_	-	_			- 2	×	×	×	×		00		_			ᆛ			1	#
1	i	모	30		8.0	(-			_	+	_	_			N.O.R.M.	_	_		П		TRRP				Project Name: Big Sky ABY State #1 (S-4)
20	0 -	n			0	1	_	-	_				-	-			THE STATE OF THE S	_	_	-	П		,				7
1.80 CC	0	部分	KA	7	11		-	-				+						_	_		П						
2	-			u	V	-						+									П		Z.				
6	0	ZZ	Zz:	zz	z												RUSH TAT (Pre-Schedule) 24, 4	18, 7	2 hr	s			NPDES				
F	igi	र्य				1						1	×	×	×	×	Standard TAT	Г			_		S				



February 12, 2018

ROBERT ASHER
EOG Y RESOURCES, INC
105 SOUTH 4TH STREET
ARTESIA, NM 88210

RE: BIG SKY ABY STATE #1 (S-5)

Enclosed are the results of analyses for samples received by the laboratory on 02/07/18 11:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. 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/ga/lab accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/ga/lab accredited 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.

Celeg D. Keene

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

Lab Director/Quality Manager



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

Received:

02/07/2018

Reported:

02/12/2018

Project Name:

BIG SKY ABY STATE #1 (S-5)

Project Number:

30-005-21020

Project Location:

CHAVES COUNTY

Sampling Date:

02/05/2018

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact

Tamara Oldaker

Sample ID: S -5.SURFACE (H800395-01)

BTEX 8021B	mg/i	(g	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	< 0.050	0.050	02/09/2018	ND	2.25	113	2.00	11.8	
Toluene*	<0.050	0.050	02/09/2018	ND	2.28	114	2.00	12.8	
Ethylbenzene*	<0.050	0.050	02/09/2018	ND	2.30	115	2.00	14.6	
Total Xylenes*	< 0.150	0.150	02/09/2018	ND	6.74	112	6.00	14.5	
Total BTEX	<0.300	0,300	02/09/2018	ND					
Surrogate: 4-Bromofluorobenzene (PIE	122 %	72-148							
TPH 8015M	mg/k	g	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/08/2018	ND	214	107	200	13.9	
DRO >C10-C28*	609	10.0	02/08/2018	ND	225	112	200	18.6	
EXT DRO >C28-C36	94.6	10.0	02/08/2018	ND					
Surrogate: I-Chlorooctane	75.9 %	41-142							
Surrogate: 1-Chlorooctadecane	80.7 %	37.6-147							

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed valved unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.





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

Received:

02/07/2018

Reported:

02/12/2018

Project Name:

BIG SKY ABY STATE #1 (S-5)

Project Number:

30-005-21020

Project Location:

CHAVES COUNTY

Sampling Date:

02/05/2018

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Tamara Oldaker

Sample ID: S -5.1 (H800395-02)

BTEX 8021B	mg/	kg	Analyze	ed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/09/2018	ND	2.25	113	2.00	11.8	
Toluene*	0.083	0.050	02/09/2018	ND	2.28	114	2.00	12.8	
Ethylbenzene*	0.429	0.050	02/09/2018	ND	2.30	115	2.00	14.6	
Total Xylenes*	0.733	0.150	02/09/2018	ND	6.74	112	6.00	14.5	
Total BTEX	1.24	0.300	02/09/2018	ND					
Surrogate: 4-Bromofluorobenzene (PIL	122 %	6 72-148							
TPH 8015M	mg/l	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/08/2018	ND	214	107	200	13.9	
DRO >C10-C28*	39.2	10.0	02/08/2018	ND	225	112	200	18.6	
EXT DRO >C28-C36	<10.0	10.0	02/08/2018	ND					
Surrogate: 1-Chlorooctane	63.8 %	6 41-142							
Surrogate: 1-Chlorooctadecane	64.49	6 37.6-147							

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages, Cardnal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed wared unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Kreene



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

Received:

02/07/2018

Reported:

02/12/2018

Project Name:

BIG SKY ABY STATE #1 (S-5)

Project Number:

30-005-21020

Project Location:

CHAVES COUNTY

Sampling Date:

02/05/2018

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Tamara Oldaker

Sample ID: S -5.2 (H800395-03)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	< 0.050	0.050	02/09/2018	ND	2.25	113	2.00	11.8	
Toluene*	<0.050	0.050	02/09/2018	ND	2.28	114	2.00	12.8	
Ethylbenzene*	<0.050	0.050	02/09/2018	ND	2.30	115	2.00	14.6	
Total Xylenes*	<0.150	0.150	02/09/2018	ND	6.74	112	6.00	14.5	
Total BTEX	<0.300	0.300	02/09/2018	ND					
Surrogate: 4-Bromofluorobenzene (PIL	115 %	6 72-148							
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/08/2018	ND	214	107	200	13.9	
DRO >C10-C28*	<10.0	10.0	02/08/2018	ND	225	112	200	18.6	
EXT DRO >C28-C36	<10.0	10.0	02/08/2018	ND					
Surrogate: 1-Chlorooctane	74.2 9	6 41-142							
Surrogate: 1-Chlorooctadecane	73.2 9	6 37.6-14	7						

Cardinal Laboratories

*=Accredited Analyte

PLEASE RIOTE: Liability and Damages. Cardinal's Rability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whitsoever shall be derived winked unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event, shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incrured by client, is subclishing, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene



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

Received:

02/07/2018

Reported:

02/12/2018

Project Name: Project Number: BIG SKY ABY STATE #1 (S-5)

Project Location:

CHAVES COUNTY

30-005-21020

Sampling Date:

02/05/2018

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact

Tamara Oldaker

Sample ID: S -5.3 (H800395-04)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/09/2018	ND	2.25	113	2.00	11.8	
Toluene*	< 0.050	0.050	02/09/2018	ND	2.28	114	2.00	12.8	
Ethylbenzene*	< 0.050	0.050	02/09/2018	ND	2,30	115	2.00	14.6	
Total Xylenes*	<0.150	0.150	02/09/2018	ND	6.74	112	6.00	14.5	
Total BTEX	<0.300	0.300	02/09/2018	ND					
Surrogate: 4-Bromofluorobenzene (PIL	1169	6 72-148							
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/08/2018	ND	214	107	200	13.9	
DRO >C10-C28*	<10.0	10.0	02/08/2018	ND	225	112	200	18.6	
EXT DRO >C28-C36	<10.0	10.0	02/08/2018	ND					
Surrogate: 1-Chlorooctane	68.0 9	6 41-142							
Surrogate: 1-Chlorooctadecane	66.49	6 37.6-14	7						

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Ulability and Damages. Cardinal's liability and clients exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by clent for analysis. All claims, including those for negligence and any other cause whatboever shall be deemed walved unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such dalim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.





Notes and Definitions

QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC

batch were accepted based on percent recoveries and completeness of QC data.

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

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Utability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whistoever shall be deemed waited urises made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptors, loss of use, or loss of profits including, defined, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celeg & Keine

ARDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240

(505) 393-2326 FAX (505) 393-2476

		lelinquished by: Date	Relinquished by: 02/06/18	₹elinquished-by: Date	Thank you	Special Instructions: TPH EXTENDED							4 S-5-3	S-5.2	2 8-5.1	S-5.Surface	LAB # (lab use only)		ORDER#: + 800 395	(lab use only)		Sampler Signature:	Telephone No: 575-748-4171	City/State/Zip: Artesia, NM 88210	Company Address: 104 South 4th Street	Company Name EOG Resources, Inc.	Project Manager: Robert Asher
		3	3:32 PM Time	Time		Chlo						ιω	1	2 -	4	4	Beginning Depth			(-						
						rides						ω	7.	-	-	4"	Ending Depth			,	-						
	Received by ELOT:		Received by:	Received by:	on ocharate	on Senarato						2/5/2018	2/5/2018	8107/6/7	OFFICE	2/5/2018	Date Sampled										
			ora M		Results. ALL							10:33 AM	10:31 AM	10:30 AM	INIV OZO	10-29 AM	Time Sampled				e-mail:	Fax No:	7				
				1	resu	-	-	-		-	-	1	_		-	-	Field Filtered										
			8		ts ir							×	×	×	+	_	Ice	+	7		boba@yatespetroleum.com						
		1	18		ĵm ι										1	_	HNO ₃	Pres	,		@y						
			1	Y	/kg.												HCI	Preservation &			ates						
					The	_	_			-		_			+	-	H ₂ SO ₄	on & #			petr						
III UES					nk)	_				-			-	-	+	_	NaOH Na ₂ S ₂ O ₃	e c			oleu						
			le		, 0U.										+	-	None	of Containers			m.c						
	Date	Date	7 Pale	2											T	(Other (Specify)	ers			E						
		ю	17.18	Ì												D	W=Drinking Water SL=Sludge	7		-		1	1	3	1	- 1	
			1	1							ľ	S	S	S	S	-	W = Groundwater S=Soil/Solid	Matrix				Rep					
	Time	Time	1.32 IIIIe	1							1	×	×	×	×		P=Non-Potable Specify Other PH: 8015M Extended			Н		Report Format:		77		Š	5
			0													TF	PH: TX 1005 TX 1006			П		orm		oject	Project #:		1
9	9 0	Samp	abe Custo Custo	VOC	Lab											Ca	ations (Ca, Mg, Na, K)					17	PO #:	Loc	# 15 6Ct	dille	
giat	y Co	y Sar	Labels on container(s) Custody seals on container Custody seals on coole	ple C	orato			_	_		>	< :	×	×	×	Ar	nions (CI)		70 70			×	120	19	18		0
00	in eg	and	con	onta e of	TY C	-		+	-	-	+	+	-	_	_	-	R/ESP/CEC		TCLP:	1		x Standard	205632	lave	00	90	2
Spon		Deliv /Clie	on c	Hea	e e	1	+			+	+	+	+	-			itals: As Ag Ba Cd Cr Pb Hg S latiles	Se	\perp	Ą		ndare	12	S C	22	SY A	
Correct Correct	UP	Sample Hand Delivered by Sampler/Client Rep. ?	Labels on container(s) Custody seals on container(s) Custody seals on cooler(s)	Sample Containers Intact? VOCs Free of Headspace?	Laboratory Comments:					+	+	+			-	-	mivolatiles	+	+	Analyze For:		4		Project Loc: Chaves County	30-005-21020	Solution of the state of the st	
Selbi:		2	iner((S)	Y.						>	(>	< ;	×	×	-	EX 8021B/5030 or BTEX 826	0	+	For				Y		Sta	2
21	¥		(S)													RC		_	-			큐				te #	
-	o m				1		_	-								N.C	D.R.M.					TRRP				1 (S	
20	editx	R)-	RAP	RA	-	-	-	+	-	-	-	+	1	-												5	
3	Log	W,	00	VV		+		+	+	+	+	-	+	-		_											
20500	one Star	ZZ	zz	zz		+		+		+		+	+	+		RU	SH TAT (Pre-Schedule) 24, 48,	721	rs	-		NPDES					
3	=			. 180	16						×	×	: >	< ;	×		ndard TAT	(1		S					
1																							1				



February 12, 2018

ROBERT ASHER
EOG Y RESOURCES, INC
105 SOUTH 4TH STREET
ARTESIA, NM 88210

RE: BIG SKY ABY STATE #1 (S-5)

Enclosed are the results of analyses for samples received by the laboratory on 02/07/18 11:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. 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/ga/lab accredited 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.

Celey D. Keene

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

Lab Director/Quality Manager



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

Received:

02/07/2018

Reported:

Chloride

02/12/2018

Project Name: Project Number: BIG SKY ABY STATE #1 (S-5)

16.0

Project Location:

CHAVES COUNTY

480

30-005-21020

Sampling Date:

02/05/2018

Sampling Type:

Soil

400

Sampling Condition:

Cool & Intact

Sample Received By:

104

Tamara Oldaker

3.77

Qualifier

Sample ID: S -5.SURFACE (H800395-01)

Chloride, SM4500CI-B	mg	/kg	Analyz	ed By: AC				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD

02/12/2018

Sample ID: S -5.1 (H800395-02)

Chloride, SM4500CI-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	688	16.0	02/12/2018	ND	416	104	400	3.77	

Sample ID: S -5.2 (H800395-03)

Chloride, SM4500CI-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1650	16.0	02/12/2018	ND	416	104	400	3.77	

Sample ID: S -5.3 (H800395-04)

Chloride, SM4500CI-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1550	16.0	02/12/2018	ND	416	104	400	3.77	

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whistoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of prefits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results related only to the samples identified above. This report shall not be reproduced except in full with written approal of Cardinal Laborataries.





Notes and Definitions

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

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Uability and Damages, Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whistowers shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of prefits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene

ARDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240

(505) 393-2326 FAX (505) 393-2476

	Date		Relinquished by: 02/06/18	Relinquished by:	Thank you	Special Instructions: TPH EXTENDED.						200		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	_	S-5.Surface	LAB # (lab use only) FIELD CODE		ORDER# + 800 395	(lab use only)	1	Sampler Signature:	Telephone No: 575-748-4171	City/State/Zip: Artesia, NM 88210	Company Address: 104 South 4th Street	Company Name EOG Resources, Inc.	Project Manager: Robert Asher
	Time		3:32 PM	Time		Chlo						ω	N	1	4	4"	Beginning Depth			(-						
			_			ides_						ယ္	2	1	4	A"	Ending Depth				0						
	Received by ELOT:	received by.	Man	Received by:	on ocharate	on Senante						2/5/2018	2/5/2018	2/5/2018	8107/6/7	OFFICE	Date Sampled										
	14	,	era M		results. ALL							10:33 AM	10:31 AM	10:30 AM	10:29 AM	40.00	Time Sampled				e-mail:	T AX NO.	E av Nia				
				1	resu	-		-			-	1	1	1	1	-	ield Filtered otal #. of Containers										
			B.		ts							×	×	×	×	_	Ice	+	7		boba@yatespetroleum.com						
		1	10		gm (_	HNO ₃	7	P		®y:		-				
			1.		/kg.	_										1	HCI	eservation &			ates						
					The	_			_		_					-	H ₂ SO ₄	on &			petr						
					nk)				-		_	-	_	_	_	-	NaOH	# of C			oleu					П	
	11.7		el	1	/ou.										_	+	la ₂ S ₂ O ₃	of Containers			m.c						
	Date	Date	' -	2												-	Other (Specify)	iers	ı		3						
	(D)	æ	7-18													-	V=Drinking Water SL=Sludge		1			١.	- 1	- 1	- 1	- !	
78			-/-	1							1	0	S	S	S		V = Groundwater S=Soil/Solid	Matrix				Rep					
	Time	Time	Time									×	×	×	×		P=Non-Potable Specify Other H: 8015M Extended	Ľ	-			Report Format:		7	,	2	0
100		Ф	8. 19								Ť	,			^	-	H: TX 1005 TX 1006	_		П		9		ojec			2
Tem		Sam	Cus	VOC	ᇣ											-	tions (Ca, Mg, Na, K)			П		at	PO #:	1.0	Project #:	Nam	
pera	Co	ple	els o	S Fr	orat						>	< >	< :	< :	×	Ani	ions (CI)		7 07	П		×	12	lo lo	12		,
ture	by Courier?	dand	n con seal	Cont	37	-	_	-	_	_						SAI	R/ESP/CEC		TOTAL:			Sta	205632	hav	9	g	
Popul	200	Deli	ntain s on	ainer f Hea	ě ·	-	+	+	+	+	+	+	+	-			tals: As Ag Ba Cd Cr Pb Hg S	e		3		x Standard	2	SS C	2	Ž	
Temperature Upon Receipt:	by Courier? UPS	Sample Hand Delivered	Labels on container(s) Custody seals on container(s) Custody seals on container(s)	Sample Containers Intact? VOCs Free of Headspace?	Laboratory Comments:	-	+	+	-	+	-	+	+	+	-		atiles	-	\perp	Analyze For:		d		Project Loc: Chaves County	30-005-21020	Froject Name: Big Sky ABY State #1 (s.s.	
Z E	S eb	Ti	ainer	act?	Si						>	· >	< >	< >	_	_	nivolatiles EX 8021B/5030 or BTEX 8260		+	For				Ţ	10	St	
31	물		(8)	By a									-	-	_	RCI			1	11						ite #	
	70															N.O.	.R.M.					TRRP				(S	
50		P)~	RRY	30	-	+			-		1															3	
3	-	N	UCI	UU		+		+	-	-	+	+	-	-	-												
2.0500	N one Star	ZZ	zzz	zz	-	+	-	+	-	+	+	+	+	+	-	5116	SH TAT (D. C.)					NPDES					
#	न्			1	-			+	+	+	×	×	×	×	_	_	SH TAT (Pre-Schedule) 24, 48, Indard TAT	721	hrs			ES					
1										_		_	-	-		-	ACCOUNT OF THE PARTY OF THE PAR						1				



February 12, 2018

ROBERT ASHER
EOG Y RESOURCES, INC
105 SOUTH 4TH STREET
ARTESIA, NM 88210

RE: BIG SKY ABY STATE #1 (SP-3,4; CP-1,2,3,4)

Enclosed are the results of analyses for samples received by the laboratory on 02/07/18 11:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. 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.

Celey D. Keene

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

Lab Director/Quality Manager



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

Received:

02/07/2018

Reported:

02/12/2018

Project Name: Project Number: BIG SKY ABY STATE #1 (SP-3,4; CP-1,2,

Project Location:

30-005-21020

CHAVES COUNTY

Sampling Date:

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact

02/01/2018

Tamara Oldaker

Sample ID: SP - 3 (H800400-01)

TPH 8015M	mg/k	(g	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	74.7	10.0	02/11/2018	ND	226	113	200	0.572	
DRO >C10-C28*	2700	10.0	02/11/2018	ND	221	111	200	2.83	QM-07
EXT DRO >C28-C36	228	10.0	02/11/2018	ND					
Surrogate: 1-Chlorooctane	90.3 %	6 41-142							
Surrogate: 1-Chloroociadecane	117%	37.6-14	7						

Sample ID: SP - 4 (H800400-02)

TPH 8015M	mg/	kg	Analyze	d By: MS					S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	305	10.0	02/11/2018	ND	226	113	200	0.572	
DRO >C10-C28*	5270	10.0	02/11/2018	ND	221	111	200	2.83	
EXT DRO >C28-C36	667	10.0	02/11/2018	ND					
Surrogate: 1-Chlorooctane	128 9	% 41-142							
Surrogate: 1-Chlorooctadecane	225 9	37.6-14	7						

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Uability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or toxt, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whistoever shall be deemed walved unless made in writing and received by Cardinal within thirty ((0) days after completion of the applicable service. In no event shall cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arizing out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approved of Cardinal Laboratories.

Celeg D. Frence



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

Received:

02/07/2018

Reported:

02/12/2018

Project Name: Project Number: BIG SKY ABY STATE #1 (SP-3,4; CP-1,2,

Project Location:

30-005-21020

CHAVES COUNTY

Sampling Date:

02/01/2018

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact

Tamara Oldaker

Sample ID: CP - 2.2 (H800400-05)

mg/l	kg	Analyze	d By: MS					
Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<10.0	10.0	02/11/2018	ND	226	113	200	0.572	
12.1	10.0	02/11/2018	ND	221	111	200	2.83	
<10.0	10.0	02/11/2018	ND					
87.7 %	6 41-142							
91,9%	6 37.6-14	7						
	Result <10.0 12.1 <10.0	<10.0 10.0 12.1 10.0 <10.0 10.0 87.7 % 41-142	Result Reporting Limit Analyzed <10.0	Result Reporting Limit Analyzed Method Blank <10.0	Result Reporting Limit Analyzed Method Blank BS <10.0	Result Reporting Limit Analyzed Method Blank BS % Recovery <10.0	Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC <10.0	Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC RPD <10.0

Sample ID: CP - 2.3 (H800400-06)

TPH 8015M	mg/	'kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/11/2018	ND	226	113	200	0.572	
DRO >C10-C28*	<10.0	10.0	02/11/2018	ND	221	111	200	2,83	
EXT DRO >C28-C36	<10.0	10.0	02/11/2018	ND					
Surrogate: 1-Chlorooctane	86.4	% 41-142							
Surrogate: 1-Chlorooctadecane	88.3 5	% 37.6-14	7						

Cardinal Laboratories

*=Accredited Analyte

PLEASE MOTE: Uability and Damages. Cardinal's liability and client's exclusive remedy for any claim aisting, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whistoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celegis Ken



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

Received:

02/07/2018

Reported:

02/12/2018

Project Name:

BIG SKY ABY STATE #1 (SP-3,4; CP-1,2,

Project Number:

30-005-21020

Project Location:

CHAVES COUNTY

Sampling Date:

Sampling Type:

02/01/2018

Sampling Condition: Sample Received By: Cool & Intact

Tamara Oldaker

Soil

Sample ID: CP - 1.2 (H800400-07)

TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/11/2018	ND	226	113	200	0.572	
DRO >C10-C28*	<10.0	10.0	02/11/2018	ND	221	111	200	2.83	
EXT DRO >C28-C36	<10.0	10.0	02/11/2018	ND					
Surrogate: 1-Chlorooctane	74.79	% 41-142							
Surrogate: 1-Chlorooctadecane	74.69	37.6-14	7						

Sample ID: CP - 1.3 (H800400-08)

TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifie
GRO C6-C10*	<10.0	10.0	02/11/2018	ND	226	113	200	0,572	
DRO >C10-C28*	<10.0	10.0	02/11/2018	ND	221	111	200	2,83	
EXT DRO >C28-C36	<10.0	10.0	02/11/2018	ND					
Surrogate: 1-Chlorooctane	79.3 9	6 41-142	v.						
Surrogate: 1-Chlorooctadecane	80.09								

Cardinal Laboratories

*=Accredited Analyte

PLEASE HOTE: Liability and Damages. Cardinal's flability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed walved unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors anxing out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.





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

Received:

02/07/2018

Reported:

02/12/2018

Project Name: Project Number: BIG SKY ABY STATE #1 (SP-3,4; CP-1,2,

30-005-21020

Project Location:

CHAVES COUNTY

Sampling Date:

02/01/2018

Sampling Type:

Soll

Sampling Condition:

Cool & Intact

Sample Received By:

Tamara Oldaker

Sample ID: CP - 4.2 (H800400-09)

TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/11/2018	ND	226	113	200	0.572	
DRO >C10-C28*	<10.0	10.0	02/11/2018	ND	221	111	200	2.83	
EXT DRO >C28-C36	<10.0	10.0	02/11/2018	ND					
Surrogate: 1-Chlorooctane	77.65	% 41-142							
Surrogate: 1-Chlorooctadecane	77.85	% 37.6-14	7						

Sample ID: CP - 4.3 (H800400-10)

TPH 8015M	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/11/2018	ND	226	113	200	0.572	
DRO >C10-C28*	<10.0	10.0	02/11/2018	ND	221	111	200	2.83	
EXT DRO >C28-C36	<10.0	10.0	02/11/2018	ND					
Surrogate: 1-Chlorooctane	85.9	% 41-142							
Surrogate: 1-Chlorooctadecane	86.5	% 37.6-14							

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's hability and client's exclusive remedy for any claim arising, whether based in contract or tout, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, diffiliates or successions arising out of or related to the performance of the services hereuniter by Cardinal, regardless of whether such dairn is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey Dite



Notes and Definitions

S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.

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

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages, Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within tilvity (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or corsequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celeg D. Keene

ARDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240

(505) 393-2326 FAX (505) 393-2476

		Relinquished by:	Relinquished by:	Relinquished by:		ns:		100	& CP-13	0 CF-2:3			100	1	7 SP-4	/ SP-3	LAB # (lab use only) FIELD CODE		ORDER #: H800 400	(lab use only)	oarilpier olgnature:		Telephone No: 575-748-4171	City/State/Zip: Artesia, NM 88210	Company Address: 104 South 4th Street	company name EOG Resources, Inc.	
	Date		02/06/18 Date	Date		TENDED													<u>L</u>		6	J		8210	Street	es, Inc.	
	Time		3:21 PM	Time		Chlor	5 V	2 4	2	u	2	u	2	4.		ń	Beginning Depth				6	5					
				(D	į	ides 4	2 1	e Lu	2	ယ္	12	ယ္	12	4		ي	Ending Depth				C						
	Received by ELOT:		Received by:	Received by:	on Schalate Nesults. ALL results in mg/kg.	2/1/2018	2/1/2018	2/1/2018	2/1/2018	2/1/2018	2/1/2018	2/1/2018	2/1/2018	2/1/2018	2/1/2018	DIA MONAO	Date Sampled										
	17		ara Ne		Vesuits. ALL	10:38 AM	10:36 AM	10:33 AM	10:31 AM	10:27 AM	10:25 AM	10:21 AM	10:16 AM	10:09 AM	10:06 AM	1000	Time Sampled				e-mail:	I dx IVO	Eav No.				
			h	-	les											-	ield Filtered					ĺ					
			6,		SIIIIS	1	1	-	-	-		_	1	-1	-	_	otal #. of Containers		,		bot	7	-		0.0	7	4
		(D	-	ī	1	×	×	×	×	×	×	×	×	×	-	Ice	P			boba@yatespetrol						
			10,	\	ng/k		+								-	-	HOO ₃	resen	ı		yate						
	ш		0		Ģ.			1							-	-	H ₂ SO ₄	Preservation & #			Spe						
	77				Ihar											-	NaOH	₽°			trol		- 1				
					nk you.							100				1	Na ₂ S ₂ O ₃	Cor			eum						
			es		9											1	None	Containers			eum.com						
	Date	Date	-7-1	Date												(Other (Specify)	S			13						
	(0)	O	200	0		10							54		01		W=Drinking Water SL=Sludge	M	1			_					'
			1	-		S	S	S	S	S	S	S	S	S	S		W = Groundwater S=Soil/Solid P=Non-Potable Specify Other	Matrix				Report Format:					-
	Time	Time	100	Time		×	×	×	×	×	×	19.00	1	×	×	_	PH: 8015M Extended			T		Ä			Pro		roje
	2		0												2000	_	PH: TX 1005 TX 1006					orma			ject	roje	Ct N
emperature Upon Receipt:		Sample Hand Delivered by Sampler/Client Rep	Custody seals on cooler(s) Custody seals on cooler(s)	100 100	Laboratory Comments: Sample Containers Intacto											Ca	ations (Ca, Mg, Na, K)			1		17		P .	Project Loc: Chaves County	Project #: 30-005-21020	Project Name:
рега	by Counier?	nple Hand Delivered by Sampler/Client Rep. ?	Custody seals on cools Custody seals on cools	VOCs Free of Headspace?	Laboratory Comments: Sample Containers Intac			×	×			×	×			Ar	nions (CI)		10.	4		×] [8	3	 오	3	<u>B</u>
ture	une	Hand	seal seal	ee o	oy (-								-	AR / ESP / CEC		TOTAL:	9		x Standard	. 8	205632	lave	00	gS
PE		De In/Cli	s on	f He	Com	-		_	_	-	-	_				-	etals: As Ag Ba Cd Cr Pb Hg S	Se	1	3		ndar	1	٥	C C	5-21	N/A
n Re	<u>_</u>	ivere	con con	adsp	men		-	_	-	-	-	-				-	latiles	-	-	alyz		a			S S	020	BY
on Receipt:	UPS	ep ed) taine ler(s)	ace.	ts:				-			-	-		-		mivolatiles EX 8021B/5030 or BTEX 8260		+	Analyze For:			.		₹	_	Sta
			S)	.> .			_				-	_	+			RC		0		- 17		\Box					ite #
8.00	0			Ш						+		1				_	D.R.M.	_	_	11		TRRP					11
S.	Fed	~	20										1						_	11		0					Big Sky ABY State #1 (SP-3,4; CP-1,2,3,4)
2	Ž,	2(4)	< 86	DOG	0															11							#; CF
000	Lone Star	276	zz	2 2		_														П		NPDES					-1,2
2.05 8C#1	Star	77			-	-	_				-		1		_	_	SH TAT (Pre-Schedule) 24, 48,	721	hrs			SES					3,4)
d		Person	1 68		1			× ;	× >	< >	< >	× >	< >	× :	×	Sta	indard TAT										



February 12, 2018

ROBERT ASHER
EOG Y RESOURCES, INC
105 SOUTH 4TH STREET
ARTESIA, NM 88210

RE: BIG SKY ABY STATE #1 (SP-3,4; CP-1,2,3,4)

Enclosed are the results of analyses for samples received by the laboratory on 02/07/18 11:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. 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/ga/lab accredited 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.

Celeg D. Keine

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

Lab Director/Quality Manager



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

Received: Reported: 02/07/2018

02/12/2018

Project Name: Project Number: BIG SKY ABY STATE #1 (SP-3,4; CP-1,2,

Project Location:

30-005-21020 CHAVES COUNTY Sampling Date:

Sampling Type:

Sampling Condition: Sample Received By: Cool & Intact

02/01/2018

Soil

Tamara Oldaker

Sample ID: CP - 3.2 (H800400-03)

Chloride, SM4500CI-B

Chloride

Chloride

Chloride

Chloride

mg/kg

Analyzed By: AC

Analyte

Analyte

Result

112

Result

176

Reporting Limit 16.0

Reporting Limit

16.0

Reporting Limit

16.0

Analyzed 02/12/2018

02/12/2018

Analyzed

Method Blank ND

ND

108

% Recovery

True Value QC 400

RPD 0.00

RPD

0.00

Qualifier

Sample ID: CP - 3.3 (H800400-04)

Chloride, SM4500CI-B

mg/kg

Analyzed By: AC

Analyzed

Method Blank

BS 432

BS

432

% Recovery

True Value QC 400

Qualifier

Sample ID: CP - 1.2 (H800400-07)

Chloride, SM4500Cl-B

mg/kg

Analyzed By: AC

Analyte Result Reporting Limit 752

16.0 02/12/2018 Method Blank ND

BS 432 % Recovery 108

108

True Value QC 400

RPD 0.00

Qualifier

Sample ID: CP - 1.3 (H800400-08)

Chloride, SM4500CI-B

Analyte

mg/kg

Result

688

Analyzed By: AC

Analyzed 02/12/2018 Method Blank ND

BS 432 % Recovery 108

True Value QC 400

RPD 0.00 **Oualifier**

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Clamages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

alex There



Notes and Definitions

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

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whistoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in fill with written approval of Cardinal Laboratories.

Celey & Kreena

ARDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240

(505) 393-2326 FAX (505) 393-2476

	Relinquished by:	65000	Relinquished by	Relinquished by:		ns:	/U CP-4.3	9 CP4.2	8 CP-1.3	7 CP-1.2	6 CP-2.3	5 CP-2.2	9 CP-3.3	5 CP-3.2		100	LAB # (lab use only)		ORDER #: 4800 400	(lab use only)	Sampler Signature:	0/0-/48-41/1	575 740 44	City/State/Zip: Artesia, NM	Company Address: 104 South 4th Street	Company Name EOG Resources, Inc.	Robert Asher
	Date	Calc	02/06/18	Date		XTENDE															6)		88210	h Street	ces, Inc.	
	Time		3:21 PM	Time		D. Chlo	ا ير	ي ر	ا يد	2	c ₂	2"	ω	2"	4.	ω	Beginning Depth				1						
	Ф	æ	Me	Œ		de	ت ا	ي ر	ا يد	ي	ယ္	2	ω	15	4	ω	Ending Depth				E						
	Received by ELOT:	Received by:	Shun	Received by:	ALL results in mg/kg. I nank you	on Separate	2/1/2010	2/1/2010	211/2010	2/1/2010	2/1/2018	2/1/2018	2/1/2018	2/1/2018	2/1/2018	2/1/2018	Date Sampled										
)T:		ara Se		TV-entre-VE	TO:38 AM	10:30 AM	10.33 AM	10.31 AM	INC 17.01	10-27 AM	10:25 AM	10:21 AM	10:16 AM	10:09 AM	10:06 AM	Time Sampled				e-mail:	Fax No:					
-			h	1	g												Field Filtered										
			6.		UIIS		-					-	_	_		1	Total #. of Containers				bob						
		1	N	•	5	. ×	×	×	×	>		×	×	×	×	×	Ice	7			aa	1					1
			101		mg/		-										HNO ₃	reser			yat	1					
			1		Ğ.	-	+			-			-				HCI	Preservation &	ı		boba@yatespetroleum.com	1					
10					in:	1	+				+						H ₂ SO ₄	n & #			etro						
100					Š	-			-	-	+				-		NaOH	of C			oleu						l
- 1			12		you		+				-		-			-	Na ₂ S ₂ O ₃	of Containers			m.c			- 1			
	0	0									+						None Other (Specify)	ners			ğ			- 1			
	Date	Date	17	D D									-				DW=Drinking Water SL=Sludge	Н									
		(1			S	S	S	S	co	0	0	0 0	0	S	S	GW = Groundwater S=Soil/Solid	Matrix				Z					
1100			1													100	NP=Non-Potable Specify Other	Š.				Report Format:					P
1	3	ime	i is	3		×	×	×	×	×	×	4		:	×	×	TPH: 8015M Extended		T	T	1	t Fo		Claves Coulty	5	ס	ojec
			0						1								TPH: TX 1005 TX 1006			П		ma	70	Ş	2	Project #: 30-005-21020	ž N
Tem		Sample Hand Delivered	Cus	VOCs Free of Headspace?	Laboratory Comments: Sample Containers Intact?											(Cations (Ca, Mg, Na, K)	┑		П		ii.	PO #:	Ş	3	유 #	ame
pera	by C	ple	tody	SE	orat			×	×			>	< >	<		-	Anions (CI)		7 -	Ш		×	120	19	2	<u>ن</u> ا	œ
ature	amp	Han	Custody seals on cont	ее	200												SAR / ESP / CEC		TOTAL:			x Standard	205632	Į Q		E I	Q S
P.	17 PF	d D	onta ils o	of H	Cor											1	Metals: As Ag Ba Cd Cr Pb Hg S			1. 1		Spure	123	8	3	5	Š
23	lien	elive	n co	ead	nme											1	/olatiles			naly		ā		Š	1	5	AB
rece 7	by Sampler/Client Rep. ? by Courier? UPS	red	(s) ntai	spac	nts											8	emivolatiles			Analyze For:				IIIy	1	š	Ϋ́S
Temperature Upon Receipt: / 8c	~	(V)	Custody seals on container(s)	, es	4											E	TEX 8021B/5030 or BTEX 8260	0		9							tate
1.8	머		(S)													R	CI			11		코					#
00	T				1/						L					N	l.O.R.M.			11		TRRP				1	Project Name: Big Sky ABY State #1 (Sp.3.4: Cp.1.2.3.4)
S.	EC	0	00	Da																11						5	
20	XO	CAS	06	NOK	S															11						9	3
00.	N Lone Star	-0	zz	_			_															NPDES				1	3
2.05 EC#1	Star	- 0		Z 2	1						_		1	_		R	USH TAT (Pre-Schedule) 24, 48,	, 72 h	rs			DES				10,00	3
4	200	13	11/2					×	×	×	×	×	×	×	· >	S	tandard TAT					7.5					



February 12, 2018

ROBERT ASHER
EOG Y RESOURCES, INC
105 SOUTH 4TH STREET
ARTESIA, NM 88210

RE: BIG SKY ABY STATE #1 (BG)

Enclosed are the results of analyses for samples received by the laboratory on 02/07/18 11:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. 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/ga/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.

Celey D. Keens

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

Lab Director/Quality Manager



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

Received:

02/07/2018

Reported:

DTEV 0031D

02/12/2018

Project Name:

BIG SKY ABY STATE #1 (BG)

Project Number: Project Location: 30-005-21020 CHAVES COUNTY Sampling Date:

02/01/2018

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Tamara Oldaker

Sample ID: BG- SURFACE (H800396-01)

Analyte nzene* uene* nylbenzene*	Result Rep <0.050 <0.050	porting Limit 0.050 0.050	Analyzed 02/09/2018	Method Blank ND	BS 2.25	% Recovery	True Value QC 2,00	RPD 11.8	Qualifier
uene*			02/09/2018	ND	2.25	113	2.00	11.8	
	<0.050	0.050					77177	22.0	
ylbenzene*		0.050	02/09/2018	ND	2,28	114	2.00	12.8	
	<0.050	0.050	02/09/2018	ND	2.30	115	2.00	14.6	
al Xylenes*	<0.150	0.150	02/09/2018	ND	6.74	112	6.00	14,5	
al BTEX	<0.300	0.300	02/09/2018	ND					
rogate: 4-Bromofluorobenzene (Pl	114 %	72-148							
H 8015M	mg/kg		Analyzed	d By: MS					
Analyte	Result Rep	porting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
O C6-C10*	<10.0	10.0	02/08/2018	ND	214	107	200	13.9	
O >C10-C28*	<10.0	10.0	02/08/2018	ND	225	112	200	18.6	
	<10.0	10.0	02/08/2018	ND					
Γ DRO >C28-C36									
T DRO >C28-C36 rogate: I-Chlorooctane	71.7%	41-142							
Γ DRO >C28-C36									

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whistoever shall be deemed waved unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without invitation, business interruptions, loss of year, or loss of profits incurred by client is subsidiaries, efficiency and accessors arising out of or celated to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celeg D. Keene



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

Received:

02/07/2018

Reported:

02/12/2018

Project Name:

BIG SKY ABY STATE #1 (BG)

Project Number: 30-005
Project Location: CHAVE

30-005-21020 CHAVES COUNTY

57.9%

37.6-147

Sampling Date:

02/01/2018

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact

Tamara Oldaker

Sample ID: BG- 1 (H800396-02)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/09/2018	ND	2.25	113	2.00	11.8	
Toluene*	<0.050	0,050	02/09/2018	ND	2.28	114	2.00	12.8	
Ethylbenzene*	<0.050	0.050	02/09/2018	ND	2.30	115	2.00	14.6	
Total Xylenes*	<0.150	0.150	02/09/2018	ND	6.74	112	6.00	14.5	
Total BTEX	<0.300	0.300	02/09/2018	ND					
Surrogate: 4-Bromofluorobenzene (PIE	1179	6 72-148							
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/08/2018	ND	214	107	200	13.9	
DRO >C10-C28*	<10.0	10.0	02/08/2018	ND	225	112	200	18.6	
EXT DRO >C28-C36	<10.0	10.0	02/08/2018	ND					
Surrogate: 1-Chlorooctane	59.2	% 41-142							

Cardinal Laboratories

Surrogate: 1-Chlorooctadecane

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and clients's exclusive remedy for any claim arising, whether based in contract or bort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whistoever shall be deemed walved unless made in writing and neceived by Cardinal within thinty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Kreene



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

Received:

02/07/2018

Reported:

02/12/2018

Project Name:

BIG SKY ABY STATE #1 (BG)

Project Number: Project Location:

30-005-21020

CHAVES COUNTY

Sampling Date:

02/01/2018

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Tamara Oldaker

Sample ID: BG- 2 (H800396-03)

BTEX 8021B	mg/l	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	< 0.050	0.050	02/09/2018	ND	2.25	113	2.00	11.8	
Toluene*	<0.050	0.050	02/09/2018	ND	2.28	114	2.00	12.8	
Ethylbenzene*	<0.050	0.050	02/09/2018	ND	2.30	115	2.00	14.6	
Total Xylenes*	<0.150	0.150	02/09/2018	ND	6.74	112	6.00	14.5	
Total BTEX	<0.300	0.300	02/09/2018	ND					
Surrogate: 4-Bromofluorobenzene (PIE	118 %	72-148							
трн 8015м	mg/l	(g	Analyze	d'By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/08/2018	ND	214	107	200	13.9	
DRO >C10-C28*	<10.0	10.0	02/08/2018	ND	225	112	200	18.6	
EXT DRO >C28-C36	<10.0	10,0	02/08/2018	ND					
Surrogate: 1-Chlorooctane	64.9 %	6 41-142							
Surrogate; 1-Chlorooctadecane	61.0%	37.6-147							

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Uability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatevever shall be deemed walved unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptors, loss of use, or loss of profits incurred by clernt, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approved of Cardinal Laboratories.

Celley & Freene



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

Received:

02/07/2018

Reported:

02/12/2018

Project Name:

BIG SKY ABY STATE #1 (BG)

Project Number:

30-005-21020

Project Location:

CHAVES COUNTY

Sampling Date:

02/01/2018

Sampling Type:

Sc

Sampling Condition: Sample Received By: Cool & Intact

Tamara Oldaker

Sample ID: BG- 3 (H800396-04)

BTEX 8021B	mg/l	¢g .	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/09/2018	ND	2.25	113	2.00	11.8	
Toluene*	<0.050	0.050	02/09/2018	ND	2.28	114	2.00	12.8	
Ethylbenzene*	<0.050	0.050	02/09/2018	ND	2,30	115	2.00	14.6	
Total Xylenes*	<0.150	0.150	02/09/2018	ND	6.74	112	6.00	14.5	
Total BTEX	<0.300	0.300	02/09/2018	ND					
Surrogate: 4-Bromofluorobenzene (PIE	115 %	72-148							
TPH 8015M	mg/k	(g	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10,0	02/09/2018	ND	214	107	200	13.9	
DRO >C10-C28*	<10.0	10.0	02/09/2018	ND	225	112	200	18.6	
EXT DRO >C28-C36	<10.0	10.0	02/09/2018	ND					
Surrogate: 1-Chlorooctane	66.1 %	6 41-142							
Surrogate: 1-Chlorooctadecane	62.2 %	37.6-147							

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whistoever shall be deemed varied unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be labble for incidental or consequential damages, including, without limitation, business infermyptions, loss of use, or loss of prefits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celley & Keene



Notes and Definitions

QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC

batch were accepted based on percent recoveries and completeness of QC data,

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

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Uability and Damages, Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whistoever shall be deemed waived unless made in witting and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results related only to the samples identified above. This report shall not be reproduced except in full with written approved of Cardinal Laboratories.

Celey & Kreene

ARDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240

(505) 393-2326 FAX (505) 393-2476

Relinquished by:	Relinquished by:		Special Instructions:					4 BG-3	3 BG-2			LAB # (lab use only)		ORDER # 4800396	(lab use only)	Sampler Signature:	Telephone No: 575-748-417	City/State/Zip: Artesia, NM	Company Address: 104 South 4th Street	Company Name EOG Resources, Inc.	
Date	02/06/18 3: Date		TENDED C					ω	2'		4"	Beginning Depth				Cos ()	88210	th Street	irces, Inc.	
ime	Time 3:22 PM Time	liorid	_	-		-					-		-			بع	1				
Received by ELOT:	Received by:	The Company of the Co						-	2' 2/1/2018	1' 2/1/2018	4" 2/1/2018	Ending Depth Date Sampled									
)T	uera da	Results. ALL					10.75 AW	10:45 AM	10:44 AM	10:43 AM	10:42 AM	Time Sampled			C III dill.	e-mail·	Fax No:				
-	All of	resu		-	4	0			<u>.</u>	_		Field Filtered Total #. of Containers			lic						
	la	ES.					>	-	_	_	×	Ice	+	7	uoual@yatespetroleum.com	3					
	K	mg I mg										HNO ₃	T g	7	W.V.	9					
	1,	/kg										HCI	eservation &		ales						
		긁						1				H₂SO ₄	on &		petr						
		ank	-	-	-		-	+	+	4	_	NaOH	# 01		olet						
1	0.	ank you.	-	-		-		+	+	+	-	Na ₂ S ₂ O ₃	of Containers		J.						
D	2 2					+	-	+	+	1	-	None Other (Specify)	- ners) E						
Date	Date - 7-/8	İ						+	+	$^{+}$	_	DW=Drinking Water SL=Sludge	+	ł		I.	- 1	- 1	- 1	- 1	
Time	1					_	ς,	S			0 0	GW = Groundwater S=Soil/Soild NP=Non-Potable Specify Other PH; 8015M Extended	Matrix			Report Format:		2	ņ		
(6)	R. III							1		+		PH: TX 1005 TX 1006	_		ı	MIO.		PO#: 205632	inget I am	0	
9	Lab Cus Cus	Lab San									_	ations (Ca, Mg, Na, K)			П	at		PO#			
by Co	S Fi	orat					×	×	×	>		nions (CI)		70 7	L	×		2		2	
ample	n co seal seal	Con									S	AR/ESP/CEC		TCLP:	ı	x Standard	7	205632	3		i
200	ntair s on	Com	-	-		4					М	etals: As Ag Ba Cd Cr Pb Hg	Se			anda	Įì	S	20	5	
by Sampler/Client Rep. ? by Counier? UPS	VOCs Free of Headspace? Labels on container(s) Custody seals on container(s) Custody seals on cooler(s) Custody seals on cooler(s)	Laboratory Comments: Sample Containers Intact?	-	-		-	-	-	-	-	-	olatiles		Milalyze		3		ò	00-000-21020	3	
by Sampler/Client Rep. ? by Counier? UPS	pace) taine ler(s	its:	+			-				-	_	emivolatiles		ZE FOI:				TTY	. C	Project #- 20 ONE SASSA	٥
PHL PHL	(S)	-	-			+	×	×	×	×	_	TEX 8021B/5030 or BTEX 820	60	i	1	L] [6	d
									-	+	RO	O.R.M.				TRRP				3	1
Fedico	000	2	+						-	+	1,4,	S.I.V.IVI.	_			ď				(90)	
×)< BB()	0							-		+		_				,				
N Lone Sta											1		_			Z	'				
Sta	ZZZZ	Z									RL	JSH TAT (Pre-Schedule) 24, 4	8, 72	hrs		NPDES					
1000 50							×	×	×	×	Sta	andard TAT				S					



February 12, 2018

ROBERT ASHER
EOG Y RESOURCES, INC
105 SOUTH 4TH STREET
ARTESIA, NM 88210

RE: BIG SKY ABY STATE #1 (BG)

Enclosed are the results of analyses for samples received by the laboratory on 02/07/18 11:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. 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/ga/lab accredited 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.

Celeg D. Keene

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

Lab Director/Quality Manager



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

Received:

02/07/2018

Reported:

02/12/2018

Project Name:

BIG SKY ABY STATE #1 (BG)

Project Number:

30-005-21020

Project Location:

CHAVES COUNTY

Sampling Date:

02/01/2018

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By: Tamara Oldaker

Sample ID: BG- SURFACE (H800396-01)

Chloride, SM4500CI-B

mg/kg

Analyzed By: AC

Analyte

Result Reporting Limit

Method Blank

BS

True Value QC % Recovery

RPD

3.77

3.77

Qualifier

16.0 16.0 02/12/2018

Analyzed

ND

416

104

400

Sample ID: BG- 1 (H800396-02)

Analyte

Chloride, SM4500Cl-B

mg/kg

Result

16.0

Analyzed By: AC

% Recovery

True Value QC RPD

Qualifier

Chloride

Chloride

16.0

Reporting Limit

Reporting Limit

Reporting Limit

16.0

Analyzed 02/12/2018 Method Blank ND

BS 416

104

400

Sample ID: BG- 2 (H800396-03)

Chloride, SM4500CI-B

Analyte

Analyte

mg/kg

Analyzed By: AC

Analyzed Method Blank BS

% Recovery

True Value QC

RPD

Qualifier

Chloride

Chloride

<16.0

Result

64.0

Result

16.0 02/12/2018 ND

416

104

400

3.77

Sample ID: BG-3 (H800396-04)

Chloride, SM4500CI-B

mg/kg

Analyzed By: AC

Analyzed

02/12/2018

Method Blank

ND

BS

416

% Recovery

104

True Value OC

400

RPD

3.77

Oualifier

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's evolutive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celley Theene



Notes and Definitions

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

Cardinal Laboratories

*=Accredited Analyte

PLEASE ROTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whistoever shall be deemed walled unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celeg & Keine

ARDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240

(505) 393-2326 FAX (505) 393-2476

Relinquished by:	Relinquished by	Relinquished		pecial Ins					4	120		7	LAB # (lab use only)	ORDER #:	(lab use only)					
by:	JAN ())	on delication of	Special Instructions:					BG-3	BG-2	00-1	DO-Sullace		# H800396	nly)	Sampler Signature:	Telephone No:	City/State/Zip:	Company Address	Company Name
Date	02/06/18 Date	Date	IPH EXTENDED, Chlorides on Separate Results. ALL results in mg/kg. Than										FIELD CODE	396		: 	575-748-4171	Artesia, NM 88210	Company Address: 104 South 4th Street	EOG Resources, Inc.
=	3:22 PM Time	=	D. Chi						ယ္	2	<u>~</u>	4	Beginning Depth			-	5			
Time	1	Time	orides						ယ္	2		4"	Ending Depth			چ				
Received by ELOT:	Received by:	Received by:	on Separate						2/1/2018	2/1/2018	2/1/2018	2/1/2018	Date Sampled							
ä	uara k		Results. AL						10:45 AM	10:44 AM	10:43 AM	10:42 AM	Time Sampled			e-mail·	Fax No:			
	The state of the s	1	Les							1,727			Field Filtered			7	Α.			
	" all		ıts		+				×	×	1 X	1 X	Total #. of Containers		boudi@yalespetrol	3	100-			
	W		3								$\hat{}$	^	HNO ₃	Pre	ale.					
	101		g l			+							HCI	Preservation & #	Vale					
	0		9,1										H ₂ SO ₄	ation	Spe					
			han [NaOH	\$0 #±	0.00					
			nk you.	_									Na ₂ S ₂ O ₃	f Con	mule					
	2		=	_									None	Containers	eum.com					
Date	Date Date		-		+	-			-	_			Other (Specify)	C/S	IS					
	7-/8 Date							c					DW=Drinking Water SL=Sludge	M		١.				'
10	1							١	1	0	0		GW = Groundwater S≈Soll/Solid NP≈Non-Potable Specify Other	Matrix		Report Format:				
Time	Time							>	< >	< >	< >	_	TPH: 8015M Extended		-	Ĭ.F		7	9	
	0												TPH: TX 1005 TX 1006	7/1/	1	om		Froject Loc: Chaves County	Liolect #:	
by Sampler/Client Rep by Courier? UPS	Labe Cust Cust	Sample Containers Intac	2									(Cations (Ca, Mg, Na, K)		1	17	70	5		
bie o	ody ody	ple S						>	· >	< >	< >	< /	Anions (CI)	7 7		×		3 15	10	2 1
umple	n co seal seal	Cont	4	-					_			8	BAR / ESP / CEC	TCLP:	1	Sta	200632	nav	3	
Par/Cil	abels on container(s) Custody seals on cont Custody seals on cool Custody seals on cool	aine	<u> </u>	-	-				-			N	Metals: As Ag Ba Cd Cr Pb Hg S	0	P	x Standard	×	Ses	30-003-21020	
ent F	con con	rs In	-	+	_	-	_	-	+	_	_	V	/olatiles		Analyze	a		ò	202	
by Sampler/Client Rep. ? by Courier? UPS	Labels on container(s) Custody seals on container(s) Custody seals on cooler(s) Sample Hand Delicated	Sample Containers Intact? VOCs Free of Headsnace?	-					-				_	emivolatiles		For	_		VIC	C	9
DHL S) (s)	5 .5	-	-		_	-	×	×	×	×	_	TEX 8021E/5030 or BTEX 8260		7					British 20 COE CASCO
F		1				-	-		+	+	+	-	CI			TRRP				*
Per -		2						-	+	+	+	-N	.O.R.M.		1	õ				(BG
₽	\< \B(\text{\beta}\)	36					+	-	+	+	+	+								
Lona										-		+			1	7				
N Lone Star	ZZZZ	Z			-						T	R	USH TAT (Pre-Schedule) 24, 48,	72 hrs	1	NPDES				
500	1.10							×	×	×	×	_	andard TAT	A COURT - I I		S	1			



Appendix E

Form C-141 Initial

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

Form C-141 Revised August 8, 2011

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505

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

		,	Rel	ease Notifi	catio	n and C	orrective .	Action	a						
						OPERA	TOR		Init	ial Report		Final Repo			
Name of C EOG Y Re		ic				Contact Robert Ash	or								
Address	sources, m	101				Telephone		-			-				
		sia, NM 882	10			575-748-14	71								
Facility Na Big Sky Al		1				Facility Typ Well	oe .								
Surface Ov State	ner			Mineral (State	Owner				API No 30-005	o. i-21020					
				LOCA	ATIO	ATION OF RELEASE									
Unit Letter M	Section 26	Township 8S	Range 33E	Feet from the 660	North	rth/South Line Feet from the South 660			West Line West	County Chaves					
				Latitude 3	3.5861	2 Longitud	-103.54252								
				NAT	URE	OF REL	The state of the s								
Type of Rele Produced Wa Source of Re	iter					Volume of 20 B/PW	24 (28 4) () ()		8 B/PW	Recovered					
Heater Treate						08/06/2017	lour of Occurrent; PM	ice	Date and Hour of Discovery 08/06/2017; PM						
Was Immedi	ate Notice C		Yes 🗵	No Not Re	equired	If YES, To N/A		ECEI	10 K K K K T						
By Whom?						Date and H	lour B	Inter Inches	all threat wall in a	5:42 pm,	Aua	18, 2017			
Was a Water	course Reac		Yes 🛭	No		If YES, Vo	lume Impac	the UAN	NPAU/Se Y		3				
If a Watercou	rse was Imi	pacted, Descri	be Fully.	N/A				_	-						
Describe Cau Hole in heate	se of Proble r treater from	en and Reme m vandalism (dial Action	n Taken.* caused the releas	c. Vacu	um truck(s) a	nd roustabout c	ews were	e called.			11			
Describe Are An approxim excavated (1' collected (8/1 T8S-R33E, p I hereby certi- regulations al public health should their o	a Affected a ate area of 5 depth) and I 5/2017) to b er NMOSE fy that the in I operators a or the environment. In ac-	and Cleanup A 50'X35'. The hauled to an Nobe analyzed for by Wellhead information gives are required to conment. The ave failed to a lidition, NMO	Action Tak well and MMOCD a or TPH & Protection yen above o report an acceptance dequately CD accept	ten. valves were close pproved facility. BTEX (chlorides n Aren: No, Dista is true and compl d/or file certain re e of a C-141 repe investigate and re tance of a C-141 r	d. Vacua Site che for docu ince to s lete to the elease no rt by the	um truck reco ck on 8/15/20 imentation). Surface Wat- the best of my otifications are NMOCD managements	vered remaining 17 and initial verthe to Grounder Body: >1000 knowledge and ad perform correstrated as "Final I on that pose a the operator of	produce ertical and d Water ', SITE I understan ctive acti- Report" de reat to greesponsil	d water, T d horizonta :: >100' (a RANKING d that purs ons for rele oes not reli ound water bility for co	I delineation s pproximately IS 0. uant to NMO0 eases which m eve the operat ; surface wate ompliance with	cample 157', CD rule ay end or of li r, hum h any c	s were Section 34, les and langer lability			
Signature:	C	24C	u	•					191	DIVISION	Ī				
Printed Name	Robert As	sher			^	Approved by I	Environmental S	pecialist:	0	J					
Title: Enviror	mental Sup	ervisor			1	Approval Date	8/18/201	7 E	xpiration I	Pate:					
E-mail Address: Robert_asher@eogresources.com						Conditions of		vo 1		Attached [J/				
Date: August	16, 2017		Phon	ie: 575-748-4217		see allac	hed directi	ve		V A SAMANA P					
Attach Additi	onal Sheet	s If Necessa	ry		1	RP-4792	- COVII	70000	1011	1	006				

nOY1723064014

pOY1723064269





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

APPROVED

By Olivia Yu at 9:11 am, Dec 08, 2017

EOG Y Resources, Inc.

Characterization Plan

Big Sky ABY State #1

30-005-21020

Section 26, T8S-R33E

Chaves County, New Mexico

November 3, 2017

1RP-4792

NMOCD approves of the proposed delineation for 1RP-4792 with these modifications due the presence of a playa within 200 ft. of the release location:

- 1) RRAL is 20.
- 2) Vertically delineate to 5 ft. bgs.
- 3) Establish the background sample location in the pasture, West of the heater treater.

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

Form C-141 Revised August 8, 2011

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe. NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

1220 B. St. Fla	neis Dr., San	ta Pe, 19M 6750	3	S	anta F	e, NM 875	505						
			Rele	ase Notifi	catio	n and Co	orrectiv	e A	ction				
						OPERA'	TOR		⊠ In	itial Report	Г	Final Rep	
Name of C EOG Y Re		ic.				Contact Robert Ash						3 2 11.41 2009	
Address 104 S. 4th S	Street Arte	sia, NM 882	10			Telephone 1 575-748-14							
Facility Na Big Sky Al		1				Facility Typ Well	oe .						
Surface Ov State	vner			Mineral 6	Owner				API 30-0	No. 05-21020			
- Cimo					ATIO	MORDE	TAGE		1500	05 21020			
Unit Letter	Section	Township	Range	Feet from the		N OF RE	Feet from	the	East/West Lin	e County			
M	26	8S	33E	660		South	660		West	Chaves	3		
				Latitude 3	3.5861	2 Longitude	-103.542	52		-17-5-4			
				NAT	TURE	OF REL	EASE						
Type of Rele Produced W						Volume of 20 B/PW	301630040471	8 B/PV	Volume Recovered 8 B/PW				
Source of Re Heater Treat	er					08/06/2017		Date and Hour of Discovery 08/06/2017; PM					
Was Immedi	iate Notice (Yes 🛛	No 🔲 Not R	equired	If YES, To N/A	Whom?	RE	CEIVED				
By Whom? Was a Water	rcourse Read	ched?	Yes 🛛	No		Date and Hour By Olivia Yu at 5:42 pm, Aug						g 18, 2017	
IC - Wateres	T		1000										
Describe Car	urse was im use of Probl	pacted, Descr em and Reme	dial Action	Taken,*	110			-				_	
				caused the releas	se. Vacu	uum truck(s) a	nd roustabo	out crev	vs were called.			*	
An approximexcavated (1 collected (8/ T8S-R33E,	ate area of depth) and 15/2017) to per NMOS	hauled to an I be analyzed fo E), Wellhead	well and von WMOCD ap or TPH & B Protection	alves were close proved facility. TEX (chlorides Area: No, Dist	Site che for doc	eck on 8/15/20 umentation). Surface Wat	017 and init Depth to G er Body: >:	ial vert round 1000', s	ical and horizo Water: >100' SITE RANKII	ntal delineati (approxima NG IS 0.	ion sam itely 15	ples were 57', Section 34	
I hereby cert regulations a public health should their or the enviro	ify that the i all operators for the envi- operations h onment. In a	information gi are required to ronment. The ave failed to a	iven above i o report and acceptance adequately i OCD accepta	is true and comp Vor file certain of a C-141 repe nvestigate and i ance of a C-141	elete to the release n ort by the remediat	he best of my otifications ar e NMOCD m e contaminati	knowledge nd perform of arked as "Fi on that pose e the operat	and uncorrectional Report of the correction of t	derstand that p ve actions for a port" does not a at to ground wa sponsibility for	ursuant to Ni releases whice relieve the op- iter, surface v r compliance	ch may o perator o water, h	endanger of liability uman health	
Signature:	(2MC	u.	×					ERVATIO 17	N DIVISI	<u>ON</u>		
Printed Nam	e: Robert A	sher	area Tib			Approved by	Environme	ntal Spe	ecialist:	(
Title: Enviro	onmental Su	pervisor				Approval Dat	e: 8/18/	2017	Expiration	n Date:			
E-mail Addre	ess: Robert	asher@eogre	sources.com	n		Conditions of				Attache	ed 🗹	/	
Date: Augus	st 16, 2017		Phone	e: 575-748-421	7	see atta	cned dir	ective	Э	A Property			

* Attach Additional Sheets If Necessary

1RP-4792

nOY1723064014

pOY1723064269

Operator/Responsible Party,

The OCD has received the form C-141 you provided on _8/16/2017_ regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number _1RP-4792__ has been assigned. Please refer to this case number in all future correspondence.

It is the Division's obligation under both the Oil & Gas Act and Water Quality Act to provide for the protection of public health and the environment. Our regulations (19.15.29.11 NMAC) state the following,

The responsible person shall complete <u>division-approved corrective action</u> for releases that endanger public health or the environment. The responsible person shall address releases in accordance with a remediation plan submitted to and approved by the division or with an abatement plan submitted in accordance with 19.15.30 NMAC. [emphasis added]

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District _1_ office in __Hobbs____ on or before _9/18/2017_. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.

The goals of a characterization effort are: 1) determination of the lateral and vertical extents along with the magnitude of soil contamination. 2) determine if groundwater or surface waters have been impacted. 3) If groundwater or surface waters have been impacted, what are the extents and magnitude of that impact. 4) The characterization of any other adverse impacts that may have occurred (examples: impacts on vegetation, impacts on wildlife, air quality, loss of use of property, etc.). To meet these goals as quickly as possible, the following items must, at a minimum, be addressed in the release characterization workplan and subsequent reporting:

- Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.
- Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.
- Nominal detection limits for field and laboratory analyses must be provided.
- Composite sampling is not generally allowed.
- Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted

for laboratory analysis from each borehole or test pit (highest observed contamination and deepest depth investigated). Copies of the actual laboratory results must be provided including chain of custody documentation.

- •Probable depth to shallowest protectable groundwater and lateral distance to nearest surface water. If there is an estimate of groundwater depth, the information used to arrive at that estimate must be provided. If there is a reasonable assumption that the depth to protectable water is 50 feet or less, the responsible party should anticipate the need for at least one groundwater monitoring well to be installed in the area of likely maximum contamination.
- If groundwater contamination is encountered, an additional investigation workplan may be required to determine the extents of that contamination. Groundwater and/or surface water samples, if any, must be analyzed by a competent laboratory for volatile organic hydrocarbons (typically Method 8260 full list), total dissolved solids, pH, major anions and cations including chloride and sulfate, dissolved iron, and dissolved manganese. The investigation workplan must provide the groundwater sampling method(s) and sample handling protocols. To the fullest extent possible, aqueous analyses must be undertaken using nominal method detection limits. As with the soil analyses, copies of the actual laboratory results must be provided including chain of custody documentation.
- Accurately scaled and well-drafted site maps must be provided providing the location of borings, test pits, monitoring wells, potentially impacted areas, and significant surface features including roads and site infrastructure that might limit either the release characterization or remedial efforts. Field sketches may be included in subsequent reporting, but should not be considered stand-alone documentation of the site's layout. Digital photographic documentation of the location and fieldwork is recommended, especially if unusual circumstances are encountered.

Nothing herein should be interpreted to preclude emergency response actions or to imply immediate remediation by removal cannot proceed as warranted. Nonetheless, characterization of impacts and confirmation of the effectiveness of remedial efforts must still be provided to the OCD before any release incident will be closed.

Jim Griswold
OCD Environmental Bureau Chief
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
505-476-3465

jim.griswold@state.nm.us