

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural  
Resources Department

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

Form C-141  
Revised August 24, 2018  
Submit to appropriate OCD District office

Incident ID	
District RP	
Facility ID	
Application ID	

## Release Notification

### Responsible Party

Responsible Party EOG Y Resources, Inc.	OGRID
Contact Name Robert Asher	Contact Telephone 575-748-4217
Contact email Bob_Asher@eogresources.com	Incident # (assigned by OCD)
Contact mailing address 104 S. 4 <sup>th</sup> St., Artesia, NM 88210	

### Location of Release Source

Latitude 32.80320° Longitude -104.45833°  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Gossett EU #1	Site Type Former Battery
Date Release Discovered 11/14/2017	API# 30-015-21627

Unit Letter	Section	Township	Range	County
K	26	17S	25E	Eddy

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (The Brown Partnership, 6503 Torrey Pine Cove, Austin, TX 78746)

### Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 12	Volume Recovered (bbls) 0
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input checked="" type="checkbox"/> Condensate	Volume Released (bbls) 65	Volume Recovered (bbls) 0
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release Failure of the bottom of the production tank.


State of New Mexico  
Oil Conservation Division

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Was this a major release as defined by 19.15.29.7(A) NMAC?  <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?  
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Immediate notice was given to Mike Bratcher at the OCD via email on 11/14/17 at 2:02 PM.	

### Initial Response

*The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury*

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:  	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Bob Asher</u>	Title: <u>Environmental Supervisor</u>
Signature: 	Date: <u>12/12/2019</u>
email: <u>Bob_Asher@eogresources.com</u>	Telephone: <u>575-748-4217</u>
<b><u>OCD Only</u></b>	
Received by: _____	Date: _____

State of New Mexico  
Oil Conservation Division

Incident ID	NAB1734231833
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## Site Assessment/Characterization

*This information must be provided to the appropriate district office no later than 90 days after the release discovery date.*

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>150</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

**Characterization Report Checklist:** *Each of the following items must be included in the report.*

- ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☒ Field data
- ☒ Data table of soil contaminant concentration data
- ☒ Depth to water determination
- ☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- ☒ Boring or excavation logs
- ☒ Photographs including date and GIS information
- ☒ Topographic/Aerial maps
- ☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico  
Oil Conservation Division

Incident ID	NAB1734231833
District RP	
Facility ID	
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I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Bob Asher Title: Environmental Supervisor

Signature:  Date: 12/12/2019

email: Bob\_Asher@eogresources.com Telephone: 575-748-4217

**OCD Only**

Received by: Jocelyn Harimon Date: 11/30/2022



State of New Mexico  
Oil Conservation Division

Incident ID	NAB1734231833
District RP	
Facility ID	
Application ID	

## Remediation Plan

**Remediation Plan Checklist:** *Each of the following items must be included in the plan.*

- ☒ Detailed description of proposed remediation technique
- ☒ Scaled sitemap with GPS coordinates showing delineation points
- ☒ Estimated volume of material to be remediated
- ☒ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☒ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

**Deferral Requests Only:** *Each of the following items must be confirmed as part of any request for deferral of remediation.*

- ☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☐ Extents of contamination must be fully delineated.
- ☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Bob Asher Title: Environmental SupervisorSignature:  Date: 12/12/2019email: Bob\_Asher@eogresources.com Telephone: 575-748-4217**OCD Only**Received by: Jocelyn Harimon Date: 11/30/2022☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## NM OIL CONSERVATION

ARTESIA DISTRICT

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

DEC 07 2017

Form C-141  
Revised August 8, 2011

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

**RECEIVED** by to appropriate District Office in  
accordance with 19.15.29 NMAC.

## Release Notification and Corrective Action

NAB1734231833

## OPERATOR

☒ Initial Report ☐ Final Report

Name of Company EOG Y Resources, Inc.	OGRID Number 25575	Contact Robert Asher
Address 104 S. 4 <sup>th</sup> Street	Telephone No. 575-748-1471	
Facility Name Gossett EU #1	Facility Type Battery	

Surface Owner Fee	Mineral Owner Fee	API No. 30-015-21627
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## LOCATION OF RELEASE

Unit Letter K	Section 26	Township 17S	Range 25E	Feet from the 1650	North/South Line South	Feet from the 1980	East/West Line West	County Eddy
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Latitude 32.80361 Longitude 104.45809

## NATURE OF RELEASE

Type of Release Condensate & Produced Water	Volume of Release 65 B/C & 12 B/PW	Volume Recovered 0 B/C & 0 B/PW
Source of Release Production Tank	Date and Hour of Occurrence 11/14/2017; AM	Date and Hour of Discovery 11/14/2017; AM
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Mike Bratcher/NMOCD II	
By Whom? Amber Griffin/EOG Y	Date and Hour 11/14/2017; PM 2:02 PM * per email	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*


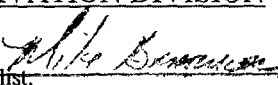
Describe Cause of Problem and Remedial Action Taken.\*

The bottom on the production tank failed, causing the release. Vacuum truck(s) and roustabout crews were called.

Describe Area Affected and Cleanup Action Taken.\*

An approximate area of 20'X 20'. Release was within the bermed unlined battery. The valves were closed, vacuum trucks were called and a roustabout crew was called to begin excavation impacted soils (all excavated soils have been placed on a liner and bermed with clean soils). A Characterization Plan will be submitted. Vertical and horizontal delineation samples will be taken and analysis ran for TPH & BTEX (chlorides for documentation). If initial analytical results for TPH & BTEX are under RRAL's (site ranking is 0) a Final Report, C-141/Closure Report will be submitted to the OCD requesting closure. If the analytical results are above the RRAL's a work plan will be submitted to the OCD. **Depth to Ground Water: >100' (approximately 185', per the USGS & NMOSE Groundwater Levels), Wellhead Protection Area: No, Distance to Surface Water Body: >1000', SITE RANKING IS 0.**

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Robert Asher	Signed By  Approved by Environmental Specialist.	
Title: Environmental Supervisor	Approval Date: 12/8/17	Expiration Date: N/A
E-mail Address: Robert_Asher@eogresources.com	Conditions of Approval: See Attached and note at page bottom	
Date: December 7, 2017	Phone: 575-748-4217	Attached <input type="checkbox"/> 2RP-4516

\* Attach Additional Sheets If Necessary

\*\*Chloride data will be considered for possible remedial actions

Incident ID	nAB1734231833
District RP	
Facility ID	
Application ID	

## Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

**Closure Report Attachment Checklist:** *Each of the following items must be included in the closure report.*

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Chase Settle Title: Rep Safety & Environmental II  
Signature: Chase Settle Date: 11/30/2022  
email: chase\_settle@eogresources.com Telephone: 575-748-4171

**OCD Only**

Received by: Jocelyn Harimon Date: 11/30/2022

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Brittany Hall Date: 5/8/2023  
Printed Name: Brittany Hall Title: Environmental Specialist

2135 S. Loop 250 W  
Midland, Texas 79703  
www.ghd.com

Our ref: 12573461-LTR-1

November 30, 2022

New Mexico Oil Conservation Division  
District 4  
1220 S St. Francis Dr.  
Santa Fe, New Mexico 87505

Site Closure Report  
Gossett EU #1  
EOG Resources Inc.  
Incident ID: nAB1734231833  
K-26-17S-25E, Eddy County, New Mexico

To Whom It May Concern:

## 1. Introduction

GHD Services Inc. (GHD), on behalf of EOG Resources (EOG), submits this Site Closure Report to the New Mexico Oil Conservation Division (NMOCD) District 2 Office. This Report provides documentation of remedial activities and analyses conducted at the Gossett EU #1 Site (Site). The Site is located in Unit K Section 26 of Township 17 South and Range 25 East in Eddy County, New Mexico. The GPS coordinates for the release site are 32.80361 N latitude and 104.5809 W longitude. The release was discovered originating from a tank located within the on-site unlined tank battery. Figure 1 depicts the Site location. The EOG production facility and other site details are depicted on Figure 2, Site Details Map.

## 2. Regulatory Information

A C-141, Release Notification, for this release was submitted to the NMOCD on December 7, 2017. The C-141 stated that approximately 65 barrels (bbls) of crude oil and 12 bbls of produced water were released. Upon discovery, an emergency vacuum truck was dispatched to the location but was unable to recover any of the released fluids. The incident was reported to the New Mexico Oil Conservation Division (NMOCD) via email on November 14, 2017. The Initial Notification form was submitted shortly after.

The release falls under the jurisdiction of the NMOCD District 2 Office in Santa Fe, New Mexico. The NMOCD assigned the release with Incident Number nAB1734231833. The Release Notification, Site Assessment/Characterization, Remediation, and Closure portions of Form C-141 are attached to the front of this report.



### 3. Groundwater and Site Characterization

Site characterization was completed by Ranger Environmental Services Inc. (Ranger) according to Table 1, Closure Criteria for Soils Impacted by a Release, from New Mexico Administrative Code (NMAC) Title 19, Chapter 15, Part 29, Section 12 (NMAC 19.15.29.12).

Ranger prepared the Site Characterization and Remediation Work Plan dated December 12, 2019 (Attachment 3). Details of the Site Characterization documentation and previously completed Site assessment activities can be found in the aforementioned Site Characterization and Remediation Work Plan. The soil and closure criteria are listed below:

#### General Site Characterization and Groundwater:

Site Characterization	Average Groundwater Depth (feet)
No Receptors Found	>100

#### Closure Criteria for Soils Impacted by a Release (NMAC 19.15.29.12)

Regulatory Standard	Chloride (mg/kg)	TPH (GRO+DRO+MRO) (mg/kg)	TPH (GRO+MRO) (mg/kg)	BTEX (mg/kg)	Benzene (mg/kg)
19.15.29.13 Restoration, Reclamation and Re-Vegetation (Impacted Area 0-4 Feet)	600	--	---	--	--
19.15.29.12 NMAC Table I Closure Criteria for Soils Impacted by a Release	20,000	2,500	1,000	50	10

### 4. Soil Delineation and Remedial Excavation Summary

To further address the Site soil impacts, EOG and Ranger completed treatment of approximately 575 cubic yards of excavated soil stockpiled on-site that were generated during November and December 2017 site activities. The stockpiled soils were treated and then utilized to backfill the excavation. A treatment cell was constructed on-site in the area of the historic pit location. The treatment cell was comprised of an earthen berm surrounding the treatment area and lined with a competent liner to control runoff from the cell. The bioremediation product *Liquid Remediate™* was utilized to treat the impacted material.

### 5. Soil Treatment Summary

#### 5.1 Excavated Soil Remediation Activities

As indicated in the previously submitted Site Characterization and Remediation Work Plan, excavated soils were treated with Remediate and aerated through tilling. Ranger oversaw the excavated soil remediation process and collected six composite confirmation soil samples following the treatment process. All soil samples were analyzed for BTEX by EPA Method 8021B, TPH by Method 8015B Modified, and chloride by EPA Method 300 by Hall Environmental Analysis Laboratory in Albuquerque, New Mexico.

Treatment cell soil samples (TC-1 through TC-6) were collected on May 3, 2022 to confirm stockpiled soils were remediated and the excavation could be backfilled. Analytical results indicated none of the confirmation

samples exhibited benzene, BTEX, TPH, or chloride concentrations above Table I Closure Criteria. Analytical results are provided on Table 1 and in the Laboratory Analytical Reports provided in Attachment 1.

Following confirmation of the soils to be below the applicable Table I Closure Criteria, the remedial excavation was backfilled with the treated soils.

## 5.2 Residual Soil Remediation Activities

As indicated in the Site Characterization and Remediation Work Plan, bioremediation injections were selected to treat the residual hydrocarbon affected soils at the Site. Based on previously completed site activities, it was estimated that 3 feet of affected soil remained at the Site, representing 400 square feet, equivalent of 45 cubic yards of soil to be remediated.

EOG selected GHD to provide drilling oversight and management of the treatment well installation activities and subsequent bioremediation activities. Installation of the treatment wells was conducted on April 26, 2022 and May 2, 2022 through May 4, 2022. A total of seven soil treatment wells (IW-1 through IW-7) were installed within the affected area to assist with the bioremediation and venting of the hydrocarbon impacts.

The wells consisted of 2-inch pvc pipe with slotted well screen installed for the last 5-10 feet of the well, well depth was staggered to ensure that the microbial product used to increase bioremediation made contact with all areas that required treatment. Monitoring well logs are provided in Attachment 2.

Following the completion of the bioremediation well installation activities, soil treatment activities were initiated. The product utilized for treatment was *Liquid Remediate™*, which is a concentrated solution of bacteria and microorganisms used to bioremediate hydrocarbons in soils. The *Liquid Remediate™* was absorbed into the surrounding soils, allowing for the digestion of organics and the breakdown of the hydrocarbons. The *Liquid Remediate™* was injected into the wells every 2 weeks for approximately 12 weeks, totalling six separate treatments. A total of 273 gallons of solution and 2,730 gallons of water was injected for the entire treatment period. The first treatment was completed the week of August 22, 2022 and the final treatment was completed the week of October 31, 2022.

## 6. Confirmation Soil Sampling Summary and Findings

On November 8, 2022, GHD contractor HCI Drilling advanced two soil borings for the purpose of collecting confirmation soil samples within the soil treatment area. This consisted of performing one sample boring per 200 square feet, with samples collected at 5-foot increments beginning at 35 feet bgs to a depth of 35 feet bgs. All soil samples were analyzed for BTEX by EPA Method 8021B, TPH by Method 8015B Modified, and chloride by EPA Method 300 by Hall Environmental Analysis Laboratory in Albuquerque, New Mexico.

Analytical results indicated none of the confirmation samples exhibited benzene, BTEX, TPH, or chloride concentrations above Table I Closure Criteria. Figure 3 depicts the locations of the confirmation borings. Analytical results are provided on Table 1 and in the Laboratory Analytical Reports provided in Attachment 1. Borehole information is provided in Attachment 2.

## 7. nAB1734231833 Closure Request

Site characterization, soil delineation, and remediation activities for Incident nAB1734231833 have been performed in accordance with applicable NMOCD guidance and regulations. Based upon supporting documentation provided in this report, GHD, on behalf of EOG, respectfully requests closure of nAB1734231833.

If you have any questions or comments concerning this Site Closure Report, please do not hesitate to contact our Midland office at (432) 686-0086.

Regards,



**Moshghan Mansoori**  
Senior Project Manager

+1 817 690 0204  
moshghan.mansoori@ghd.com



**JT Murrey**  
Project Director

+1 361 252-6136  
jt.murrey@ghd.com

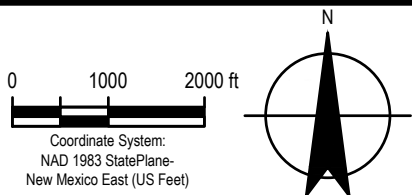
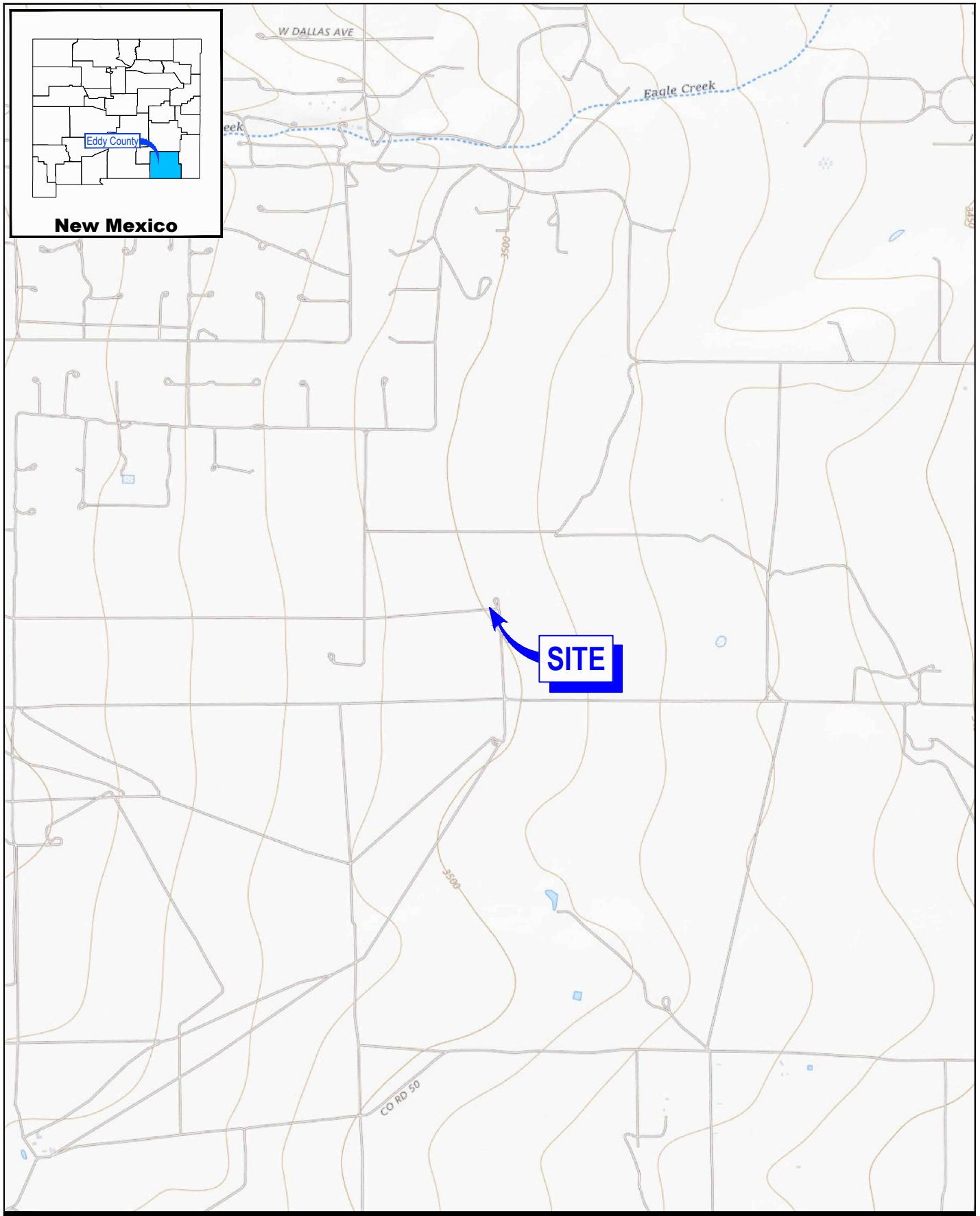
NR/mk

Encl.    Figure 1 – Site Location Map  
          Figure 2 – Site Details Map  
          Figure 3 – Confirmation Soil Analytical  
          Table 1 – Summary of Soil Analytical Data  
          Attachment 1 – Laboratory Analytical Reports and Chain-of-Custody Documentation  
          Attachment 2 – Well and Boring completion logs  
          Attachment 3 – Ranger Site Characterization and Remediation Work Plan

cc:       Chase Settle/Amber Griffin

# Figures





EOG RESOURCES  
EDDY COUNTY, NEW MEXICO  
GOSSETT EU #1

Project No. 12573461  
Date November 2022

SITE LOCATION MAP

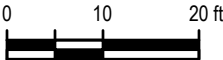
FIGURE 1



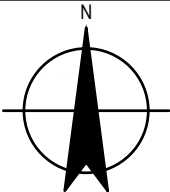


LEGEND

- SOIL BORING LOCATION
- CONFIRMATION SAMPLE LOCATION



Coordinate System:  
NAD 1983 (2011) StatePlane-  
New Mexico East (US Feet)



EOG RESOURCES  
EDDY COUNTY, NEW MEXICO  
GOSSETT EU #1

Project No. 12573461  
Date November 2022

SITE DETAILS MAP

FIGURE 2





CB-1	11/08/2022
DEPTH	32-35'
BENZENE	<0.025
BTEX	<0.10
TPH	<48
CHLORIDE	<59

CB-2	11/08/2022
DEPTH	32-35'
BENZENE	<0.024
BTEX	<0.10
TPH	<45
CHLORIDE	<60

LEGEND

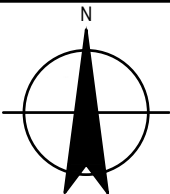
- CONFIRMATION SOIL BORING LOCATION
- DEPTH DEPTH OF SAMPLE (FT)
- BTEX BENZENE, TOLUENE, ETHYLBENZENE & XYLENES CONCENTRATION (MG/KG)
- TPH TOTAL PETROLEUM HYDROCARBONS CONCENTRATION (MG/KG)

NOTES:

- 1. RESULTS IN MILLIGRAMS PER KILOGRAM (MG/KG).
- 2. SEE TABLE 1 FOR FULL ANALYTICAL RESULTS/DETAILS.
- 3. YELLOW SHADED CELLS INDICATE EXCEEDANCE.



Coordinate System:  
NAD 1983 (2011) StatePlane-  
New Mexico East (US Feet)



EOG RESOURCES  
EDDY COUNTY, NEW MEXICO  
GOSSETT EU #1

Project No. 12573461  
Date November 2022

CONFIRMATION SOIL ANALYTICAL

FIGURE 3

# Table



## Summary of Soil Analytical Data

Sample ID	Sample Date	Depth (ft bgs)	Benzene	Toluene	Ethylbenzene	Xylenes	BTEX	Total Petroleum Hydrocarbons (TPH)					Chloride
								GRO (C6-C10)	DRO (C10-C28)	GRO+DRO	MRO (C28-C35)	Total GRO/DRO/MRO	
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	
Table I Closure Criteria for Soil <50 ft Depth to Groundwater 19.15.29 NMAC			10 mg/kg	---	---	---	50 mg/kg	---	---	---	---	100 mg/kg	600 mg/kg
Table I Closure Criteria for Soil 51-100 ft Depth to Groundwater 19.15.29 NMAC			10 mg/kg	---	---	---	50 mg/kg	---	---	1,000 mg/kg	---	2,500 mg/kg	10,000 mg/kg
Table I Closure Criteria for Soil >100 ft Depth to Groundwater 19.15.29 NMAC			10 mg/kg	---	---	---	50 mg/kg	---	---	1,000 mg/kg	---	2,500 mg/kg	20,000 mg/kg
Soil Boring Samples													
SB-1 (35')	4/26/22	35	<0.081	0.33	<0.16	8.4	8.73	390	180	570	<48	570	<60
SB-1 (45')	4/26/22	45	<0.10	<0.20	<0.20	1.5	1.5	110	<9.2	110	<46	110	<60
SB-1 (50')	4/26/22	50	<0.089	<0.18	<0.18	3.1	3.1	230	<9.4	230	<47	230	62
SB-1 (55')	4/26/22	55	<0.085	<0.17	<0.17	<0.34	<0.34	<17	<9.4	<17	<47	<47	60
SB-1 (60')	4/26/22	60	<0.090	<0.18	<0.18	0.5	0.5	90	<10	90	<50	90	67
SB-2 (35')	5/2/22	35	<0.12	<0.25	<0.25	<0.50	<0.50	<25	<9.6	<25	<48	<48	<60
SB-2 (40')	5/2/22	40	<0.024	<0.048	<0.048	<0.096	<0.096	110	28	138	<50	138	<60
SB-2 (45')	5/2/22	45	<0.024	<0.048	<0.048	<0.097	<0.097	<4.8	16	16	<45	16	<60
SB-2 (50')	5/2/22	50	<0.025	<0.050	<0.050	<0.10	<0.10	<5.0	<9.8	<9.8	<49	<49	91
SB-2 (55')	5/2/22	55	<0.024	<0.049	<0.049	<0.098	<0.098	5.6	<7.9	5.6	<39	5.6	83
SB-3 (35')	5/2/22	35	<0.12	<0.23	<0.23	0.84	0.84	130	14	144	<47	144	<60
SB-4 (35')	5/4/22	35	<0.023	<0.046	<0.046	<0.092	<0.092	<4.6	<9.1	<9.1	<45	<45	<60
SB-5 (35')	5/4/22	35	<0.025	<0.050	<0.050	<0.10	<0.10	<5.0	<9.9	<9.9	<50	<50	64
SB-6 (35')	5/3/22	35	<0.023	<0.047	<0.047	<0.094	<0.094	<4.7	<10	<10	<50	<50	71
SB-7 (35')	5/3/22	35	<0.025	<0.050	<0.050	<0.10	<0.10	<5.0	<9.2	<9.2	<46	<46	67
Treatment Cell Soil Samples													
TC-1	5/3/22	0-1	<0.025	<0.025	<0.025	<0.025	<0.1	<20.0	<25.0	<45.0	<50.0	<95.0	132
TC-2	5/3/22	0-1	<0.025	<0.025	<0.025	<0.025	<0.1	<20.0	38.5	38.5	<50.0	38.5	32.0
TC-3	5/3/22	0-1	<0.025	<0.025	<0.025	<0.025	<0.1	<20.0	<25.0	<45.0	<50.0	<95.0	38.9
TC-4	5/3/22	0-1	<0.025	<0.025	<0.025	<0.025	<0.1	<20.0	<25.0	<45.0	<50.0	<95.0	123
TC-5	5/3/22	0-1	<0.025	<0.025	<0.025	<0.025	<0.1	<20.0	<25.0	<45.0	<50.0	<95.0	125
TC-6	5/3/22	0-1	<0.025	<0.025	<0.025	<0.025	<0.1	<20.0	<25.0	<45.0	<50.0	<95.0	112
Bottom Hole Confirmation Samples													
CB-1 (32'-35')	11/8/22	32-35	<0.025	<0.050	<0.050	<0.099	<0.10	<5.0	<14	<14	<48	<48	<59
CB-2 (32'-35')	11/8/22	32-35	<0.024	<0.048	<0.048	<0.097	<0.10	<4.8	<13	<13	<45	<45	<60

1. Values reported in mg/kg

2. &lt; = Value Less than Reporting Limit (RL)

3. Bold Indicates Analyte Detected

4. BTEX analyses by EPA Method SW 8021B.

5. TPH analyses by EPA Method SW 8015 Mod.

6. GRO/DRO/MRO = Gasoline/Diesel/Motor Oil

7. Yellow shaded cells indicate analytical samples that exceed the NMAC 19.15.29.12 Table I Closure Criteria for the site.

8. J - the target analytes was positively identified below the quantitation limit and above the detection limit.

9. --- = not defined

B-BH-2 Sample Point Excavated

# Attachments

# **Attachment 1**

## **Laboratory Analytical Reports and Chain-of-Custody Documentation**

Report to:  
Will Kierdorf



# envirotech

*Practical Solutions for a Better Tomorrow*

## Analytical Report

EOG Resources Inc. - Carlsbad

Project Name: Gossett EU #1

Work Order: E105006

Job Number: 19034-0001

Received: 5/4/2021

Revision: 1

Report Reviewed By:

Walter Hinchman  
Laboratory Director  
5/7/21

5796 U.S. Hwy 64  
Farmington, NM 87401

Phone: (505) 632-1881  
Envirotech-inc.com



Envirotech Inc. certifies the test results meet all requirements of TNI unless noted otherwise.  
Statement of Data Authenticity: Envirotech Inc. attests the data reported has not been altered in any way.  
Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech Inc.  
Envirotech Inc. holds the Utah TNI certification NM00979 for data reported.  
Envirotech Inc. holds the Texas TNI certification T104704557 for data reported.



Date Reported: 5/7/21



Will Kierdorf  
104 South 4th Street  
Artesia, NM 88210

Project Name: Gossett EU #1  
Workorder: E105006  
Date Received: 5/4/2021 1:47:00PM

Will Kierdorf,

Thank you for choosing Envirotech, Inc. as your analytical testing laboratory for the sample(s) received on, 5/4/2021 1:47:00PM, under the Project Name: Gossett EU #1.

The analytical test results summarized in this report with the Project Name: Gossett EU #1 apply to the individual samples collected, identified and submitted bearing the project name on the enclosed chain-of-custody. Subcontracted sample analyses not conducted by Envirotech, Inc., are attached in full as issued by the subcontract laboratory.

Please review the Chain-of-Custody (COC) and Sample Receipt Checklist (SRC) for any issues regarding sample receipt temperature, containers, preservation etc. To best understand your test results, review the entire report summarizing your sample data and the associated quality control batch data.

All reported data in this analytical report were analyzed according to the referenced method(s) and are in compliance with the latest NELAC/TNI standards, unless otherwise noted. Samples or analytical quality control parameters not meeting specific QC criteria are qualified with a data flag. Data flag definitions are located in the Notes and Definitions section of this analytical report.

If you have any questions concerning this report, please feel free to contact Envirotech, Inc.

Respectfully,

**Walter Hinchman**  
Laboratory Director  
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Cell: 775-287-1762  
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Envirotech Web Address: [www.envirotech-inc.com](http://www.envirotech-inc.com)

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**Sample Summary**

EOG Resources Inc. - Carlsbad 104 South 4th Street Artesia NM, 88210	Project Name: Gossett EU #1 Project Number: 19034-0001 Project Manager: Will Kierdorf	<b>Reported:</b> 05/07/21 11:34
--	---	------------------------------------

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
TC-1	E105006-01A	Soil	05/03/21	05/04/21	Glass Jar, 4 oz.
TC-2	E105006-02A	Soil	05/03/21	05/04/21	Glass Jar, 4 oz.
TC-3	E105006-03A	Soil	05/03/21	05/04/21	Glass Jar, 4 oz.
TC-4	E105006-04A	Soil	05/03/21	05/04/21	Glass Jar, 4 oz.
TC-5	E105006-05A	Soil	05/03/21	05/04/21	Glass Jar, 4 oz.
TC-6	E105006-06A	Soil	05/03/21	05/04/21	Glass Jar, 4 oz.



## Sample Data

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

Project Name: Gossett EU #1  
Project Number: 19034-0001  
Project Manager: Will Kierdorf

**Reported:**  
5/7/2021 11:34:35AM

## TC-1

## E105006-01

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organics by EPA 8021B</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2119016
Benzene	ND	0.0250	1	05/05/21	05/06/21	
Ethylbenzene	ND	0.0250	1	05/05/21	05/06/21	
Toluene	ND	0.0250	1	05/05/21	05/06/21	
o-Xylene	ND	0.0250	1	05/05/21	05/06/21	
p,m-Xylene	ND	0.0500	1	05/05/21	05/06/21	
Total Xylenes	ND	0.0250	1	05/05/21	05/06/21	
Surrogate: 4-Bromochlorobenzene-PID	97.1 %	70-130		05/05/21	05/06/21	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2119016
Gasoline Range Organics (C6-C10)	ND	20.0	1	05/05/21	05/06/21	
Surrogate: 1-Chloro-4-fluorobenzene-FID	106 %	70-130		05/05/21	05/06/21	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>						
	mg/kg	mg/kg		Analyst: JL		Batch: 2119017
Diesel Range Organics (C10-C28)	ND	25.0	1	05/05/21	05/05/21	
Oil Range Organics (C28-C35)	ND	50.0	1	05/05/21	05/05/21	
Surrogate: n-Nonane	112 %	50-200		05/05/21	05/05/21	
<b>Anions by EPA 300.0/9056A</b>						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2119018
Chloride	132	20.0	1	05/05/21	05/05/21	



## Sample Data

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

Project Name: Gossett EU #1  
Project Number: 19034-0001  
Project Manager: Will Kierdorf

**Reported:**  
5/7/2021 11:34:35AM

## TC-2

## E105006-02

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organics by EPA 8021B</b>	mg/kg	mg/kg	Analyst: RKS		Batch: 2119016	
Benzene	ND	0.0250	1	05/05/21	05/06/21	
Ethylbenzene	ND	0.0250	1	05/05/21	05/06/21	
Toluene	ND	0.0250	1	05/05/21	05/06/21	
o-Xylene	ND	0.0250	1	05/05/21	05/06/21	
p,m-Xylene	ND	0.0500	1	05/05/21	05/06/21	
Total Xylenes	ND	0.0250	1	05/05/21	05/06/21	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		100 %	70-130	05/05/21	05/06/21	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>	mg/kg	mg/kg	Analyst: RKS		Batch: 2119016	
Gasoline Range Organics (C6-C10)	ND	20.0	1	05/05/21	05/06/21	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		109 %	70-130	05/05/21	05/06/21	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>	mg/kg	mg/kg	Analyst: JL		Batch: 2119017	
Diesel Range Organics (C10-C28)	38.5	25.0	1	05/05/21	05/05/21	
Oil Range Organics (C28-C35)	ND	50.0	1	05/05/21	05/05/21	
<i>Surrogate: n-Nonane</i>		109 %	50-200	05/05/21	05/05/21	
<b>Anions by EPA 300.0/9056A</b>	mg/kg	mg/kg	Analyst: RAS		Batch: 2119018	
Chloride	32.0	20.0	1	05/05/21	05/05/21	



## Sample Data

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

Project Name: Gossett EU #1  
Project Number: 19034-0001  
Project Manager: Will Kierdorf

**Reported:**  
5/7/2021 11:34:35AM

## TC-3

## E105006-03

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organics by EPA 8021B</b>	mg/kg	mg/kg	Analyst: RKS		Batch: 2119016	
Benzene	ND	0.0250	1	05/05/21	05/06/21	
Ethylbenzene	ND	0.0250	1	05/05/21	05/06/21	
Toluene	ND	0.0250	1	05/05/21	05/06/21	
o-Xylene	ND	0.0250	1	05/05/21	05/06/21	
p,m-Xylene	ND	0.0500	1	05/05/21	05/06/21	
Total Xylenes	ND	0.0250	1	05/05/21	05/06/21	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		97.0 %	70-130	05/05/21	05/06/21	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>	mg/kg	mg/kg	Analyst: RKS		Batch: 2119016	
Gasoline Range Organics (C6-C10)	ND	20.0	1	05/05/21	05/06/21	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		109 %	70-130	05/05/21	05/06/21	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>	mg/kg	mg/kg	Analyst: JL		Batch: 2119017	
Diesel Range Organics (C10-C28)	ND	25.0	1	05/05/21	05/05/21	
Oil Range Organics (C28-C35)	ND	50.0	1	05/05/21	05/05/21	
<i>Surrogate: n-Nonane</i>		111 %	50-200	05/05/21	05/05/21	
<b>Anions by EPA 300.0/9056A</b>	mg/kg	mg/kg	Analyst: RAS		Batch: 2119018	
Chloride	38.9	20.0	1	05/05/21	05/05/21	





## Sample Data

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

Project Name: Gossett EU #1  
Project Number: 19034-0001  
Project Manager: Will Kierdorf

**Reported:**  
5/7/2021 11:34:35AM

## TC-4

## E105006-04

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organics by EPA 8021B</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2119016
Benzene	ND	0.0250	1	05/05/21	05/06/21	
Ethylbenzene	ND	0.0250	1	05/05/21	05/06/21	
Toluene	ND	0.0250	1	05/05/21	05/06/21	
o-Xylene	ND	0.0250	1	05/05/21	05/06/21	
p,m-Xylene	ND	0.0500	1	05/05/21	05/06/21	
Total Xylenes	ND	0.0250	1	05/05/21	05/06/21	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
	94.6 %	70-130		05/05/21	05/06/21	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2119016
Gasoline Range Organics (C6-C10)	ND	20.0	1	05/05/21	05/06/21	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
	106 %	70-130		05/05/21	05/06/21	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>						
	mg/kg	mg/kg		Analyst: JL		Batch: 2119017
Diesel Range Organics (C10-C28)	ND	25.0	1	05/05/21	05/05/21	
Oil Range Organics (C28-C35)	ND	50.0	1	05/05/21	05/05/21	
<i>Surrogate: n-Nonane</i>						
	115 %	50-200		05/05/21	05/05/21	
<b>Anions by EPA 300.0/9056A</b>						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2119018
Chloride	123	20.0	1	05/05/21	05/05/21	



## Sample Data

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

Project Name: Gossett EU #1  
Project Number: 19034-0001  
Project Manager: Will Kierdorf

**Reported:**  
5/7/2021 11:34:35AM

## TC-5

## E105006-05

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organics by EPA 8021B</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2119016
Benzene	ND	0.0250	1	05/05/21	05/06/21	
Ethylbenzene	ND	0.0250	1	05/05/21	05/06/21	
Toluene	ND	0.0250	1	05/05/21	05/06/21	
o-Xylene	ND	0.0250	1	05/05/21	05/06/21	
p,m-Xylene	ND	0.0500	1	05/05/21	05/06/21	
Total Xylenes	ND	0.0250	1	05/05/21	05/06/21	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
	96.3 %	70-130		05/05/21	05/06/21	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2119016
Gasoline Range Organics (C6-C10)	ND	20.0	1	05/05/21	05/06/21	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
	103 %	70-130		05/05/21	05/06/21	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>						
	mg/kg	mg/kg		Analyst: JL		Batch: 2119017
Diesel Range Organics (C10-C28)	ND	25.0	1	05/05/21	05/06/21	
Oil Range Organics (C28-C35)	ND	50.0	1	05/05/21	05/06/21	
<i>Surrogate: n-Nonane</i>						
	109 %	50-200		05/05/21	05/06/21	
<b>Anions by EPA 300.0/9056A</b>						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2119018
Chloride	125	20.0	1	05/05/21	05/05/21	



## Sample Data

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

Project Name: Gossett EU #1  
Project Number: 19034-0001  
Project Manager: Will Kierdorf

**Reported:**  
5/7/2021 11:34:35AM

## TC-6

## E105006-06

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organics by EPA 8021B</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2119016
Benzene	ND	0.0250	1	05/05/21	05/06/21	
Ethylbenzene	ND	0.0250	1	05/05/21	05/06/21	
Toluene	ND	0.0250	1	05/05/21	05/06/21	
o-Xylene	ND	0.0250	1	05/05/21	05/06/21	
p,m-Xylene	ND	0.0500	1	05/05/21	05/06/21	
Total Xylenes	ND	0.0250	1	05/05/21	05/06/21	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
	93.8 %	70-130		05/05/21	05/06/21	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2119016
Gasoline Range Organics (C6-C10)	ND	20.0	1	05/05/21	05/06/21	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
	107 %	70-130		05/05/21	05/06/21	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>						
	mg/kg	mg/kg		Analyst: JL		Batch: 2119017
Diesel Range Organics (C10-C28)	ND	25.0	1	05/05/21	05/06/21	
Oil Range Organics (C28-C35)	ND	50.0	1	05/05/21	05/06/21	
<i>Surrogate: n-Nonane</i>						
	112 %	50-200		05/05/21	05/06/21	
<b>Anions by EPA 300.0/9056A</b>						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2119018
Chloride	112	20.0	1	05/05/21	05/05/21	



## QC Summary Data

EOG Resources Inc. - Carlsbad 104 South 4th Street Artesia NM, 88210	Project Name: Gossett EU #1 Project Number: 19034-0001 Project Manager: Will Kierdorf	Reported: 5/7/2021 11:34:35AM
--	---	----------------------------------

## Volatile Organics by EPA 8021B

Analyst: RKS

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
---------	-----------------	-----------------------------	-------------------------	---------------------------	----------	--------------------	----------	-------------------	-------

## Blank (2119016-BLK1)

Prepared: 05/05/21 Analyzed: 05/05/21

Benzene	ND	0.0250							
Ethylbenzene	ND	0.0250							
Toluene	ND	0.0250							
o-Xylene	ND	0.0250							
p,m-Xylene	ND	0.0500							
Total Xylenes	ND	0.0250							
Surrogate: 4-Bromochlorobenzene-PID	7.42		8.00		92.7	70-130			

## LCS (2119016-BS1)

Prepared: 05/05/21 Analyzed: 05/05/21

Benzene	4.96	0.0250	5.00		99.2	70-130			
Ethylbenzene	4.85	0.0250	5.00		96.9	70-130			
Toluene	5.07	0.0250	5.00		101	70-130			
o-Xylene	5.02	0.0250	5.00		100	70-130			
p,m-Xylene	9.87	0.0500	10.0		98.7	70-130			
Total Xylenes	14.9	0.0250	15.0		99.2	70-130			
Surrogate: 4-Bromochlorobenzene-PID	7.45		8.00		93.1	70-130			

## Matrix Spike (2119016-MS1)

Source: E105005-01 Prepared: 05/05/21 Analyzed: 05/05/21

Benzene	5.18	0.0250	5.00	ND	104	54-133			
Ethylbenzene	5.02	0.0250	5.00	ND	100	61-133			
Toluene	5.27	0.0250	5.00	ND	105	61-130			
o-Xylene	5.23	0.0250	5.00	ND	105	63-131			
p,m-Xylene	10.2	0.0500	10.0	ND	102	63-131			
Total Xylenes	15.4	0.0250	15.0	ND	103	63-131			
Surrogate: 4-Bromochlorobenzene-PID	7.56		8.00		94.6	70-130			

## Matrix Spike Dup (2119016-MSD1)

Source: E105005-01 Prepared: 05/05/21 Analyzed: 05/05/21

Benzene	5.12	0.0250	5.00	ND	102	54-133	1.09	20	
Ethylbenzene	4.98	0.0250	5.00	ND	99.5	61-133	0.868	20	
Toluene	5.21	0.0250	5.00	ND	104	61-130	1.22	20	
o-Xylene	5.18	0.0250	5.00	ND	104	63-131	1.01	20	
p,m-Xylene	10.1	0.0500	10.0	ND	101	63-131	0.747	20	
Total Xylenes	15.3	0.0250	15.0	ND	102	63-131	0.834	20	
Surrogate: 4-Bromochlorobenzene-PID	7.60		8.00		95.0	70-130			



## QC Summary Data

EOG Resources Inc. - Carlsbad 104 South 4th Street Artesia NM, 88210	Project Name: Gossett EU #1 Project Number: 19034-0001 Project Manager: Will Kierdorf	Reported: 5/7/2021 11:34:35AM
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## Nonhalogenated Organics by EPA 8015D - GRO

Analyst: RKS

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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## Blank (2119016-BLK1)

Prepared: 05/05/21 Analyzed: 05/05/21

Gasoline Range Organics (C6-C10)	ND	20.0							
Surrogate: 1-Chloro-4-fluorobenzene-FID	8.23		8.00		103	70-130			

## LCS (2119016-BS2)

Prepared: 05/05/21 Analyzed: 05/05/21

Gasoline Range Organics (C6-C10)	47.0	20.0	50.0		94.1	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	8.26		8.00		103	70-130			

## Matrix Spike (2119016-MS2)

Source: E105005-01 Prepared: 05/05/21 Analyzed: 05/05/21

Gasoline Range Organics (C6-C10)	48.4	20.0	50.0	ND	96.7	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	8.48		8.00		106	70-130			

## Matrix Spike Dup (2119016-MSD2)

Source: E105005-01 Prepared: 05/05/21 Analyzed: 05/05/21

Gasoline Range Organics (C6-C10)	48.9	20.0	50.0	ND	97.7	70-130	1.07	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	8.74		8.00		109	70-130			



## QC Summary Data

EOG Resources Inc. - Carlsbad 104 South 4th Street Artesia NM, 88210	Project Name: Gossett EU #1 Project Number: 19034-0001 Project Manager: Will Kierdorf	Reported: 5/7/2021 11:34:35AM
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## Nonhalogenated Organics by EPA 8015D - DRO/ORO

Analyst: JL

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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## Blank (2119017-BLK1)

Prepared: 05/05/21 Analyzed: 05/05/21

Diesel Range Organics (C10-C28)	ND	25.0							
Oil Range Organics (C28-C35)	ND	50.0							
Surrogate: n-Nonane	62.3		50.0		125	50-200			

## LCS (2119017-BS1)

Prepared: 05/05/21 Analyzed: 05/05/21

Diesel Range Organics (C10-C28)	485	25.0	500		97.1	38-132			
Surrogate: n-Nonane	53.5		50.0		107	50-200			

## Matrix Spike (2119017-MS1)

Source: E105001-01 Prepared: 05/05/21 Analyzed: 05/05/21

Diesel Range Organics (C10-C28)	487	25.0	500	ND	97.4	38-132			
Surrogate: n-Nonane	54.3		50.0		109	50-200			

## Matrix Spike Dup (2119017-MSD1)

Source: E105001-01 Prepared: 05/05/21 Analyzed: 05/05/21

Diesel Range Organics (C10-C28)	479	25.0	500	ND	95.9	38-132	1.61	20	
Surrogate: n-Nonane	53.3		50.0		107	50-200			





## QC Summary Data

EOG Resources Inc. - Carlsbad	Project Name:	Gossett EU #1	<b>Reported:</b>
104 South 4th Street	Project Number:	19034-0001	
Artesia NM, 88210	Project Manager:	Will Kierdorf	5/7/2021 11:34:35AM

## Anions by EPA 300.0/9056A

Analyst: RAS

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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## Blank (2119018-BLK1)

Prepared: 05/05/21 Analyzed: 05/05/21

Chloride	ND	20.0							
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## LCS (2119018-BS1)

Prepared: 05/05/21 Analyzed: 05/05/21

Chloride	248	20.0	250		99.1	90-110			
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## Matrix Spike (2119018-MS1)

Source: E105005-01 Prepared: 05/05/21 Analyzed: 05/05/21

Chloride	358	20.0	250	104	101	80-120			
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## Matrix Spike Dup (2119018-MSD1)

Source: E105005-01 Prepared: 05/05/21 Analyzed: 05/05/21

Chloride	355	20.0	250	104	100	80-120	0.856	20	
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## QC Summary Report Comment:

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



Definitions and Notes

EOG Resources Inc. - Carlsbad	Project Name:	Gossett EU #1	
104 South 4th Street	Project Number:	19034-0001	Reported:
Artesia NM, 88210	Project Manager:	Will Kierdorf	05/07/21 11:34

- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- RPD Relative Percent Difference
- DNI Did Not Ignite

Note (1): Methods marked with \*\* are non-accredited methods.

Note (2): Soil data is reported on an "as received" weight basis, unless reported otherwise.

## Project Information

## Chain of Custody

Page 1 of 1

Client: <u>EOG ARTESIA / RANGER ENV</u>		Bill To		Lab Use Only		TAT				EPA Program			
Project: <u>GOSSETT EW #1</u>		Attention: <u>BOB ASHER</u>		Lab WO# <u>E105006</u>		Job Number <u>19031-0001</u>		1D	2D	3D	Standard	CWA	SDWA
Project Manager: <u>W. KIERDORF</u>		Address: <u>105 S 4TH ST</u>									X		
Address: <u>PO BOX 201179</u>		City, State, Zip <u>ARTESEA NM, 88210</u>											RCRA
City, State, Zip <u>AUSTIN TX 78720</u>		Phone: <u>575-365-4021</u>											
Phone: <u>512-289-3272</u>		Email: <u>BOB-ASHER@EOGRESOURCES.COM</u>											
Email: <u>WEL@RANGERENV.COM</u>													
Report due by: <u>STANDARD TAT</u>		<u>2051032</u>											

Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number	DRO/ORO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	BGDOC NM	BGDOC TX	Remarks
1613	5/3/21	SOIL	1	TC-1	1	X	X	X			X			
1619			1	TC-2	2									
1625			1	TC-3	3									
1634			1	TC-4	4									
1640			1	TC-5	5									
1643			1	TC-6	6									

## Additional Instructions:

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action.

Sampled by: W. KIERDORF

Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Lab Use Only Received on ice: <u>Y</u> N T1 _____ T2 _____ T3 _____ AVG Temp °C <u>4</u>
<u>[Signature]</u>	<u>5/3/21</u>	<u>1720</u>	<u>[Signature]</u>	<u>5-3-21</u>	<u>1720</u>	
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	
<u>[Signature]</u>	<u>5-3-21</u>	<u>1900</u>	<u>[Signature]</u>	<u>5/4/21</u>	<u>13:47</u>	
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other \_\_\_\_\_

Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.

## Envirotech Analytical Laboratory

Printed: 5/4/2021 2:18:23PM

## Sample Receipt Checklist (SRC)

Instructions: Please take note of any NO checkmarks.

If we receive no response concerning these items within 24 hours of the date of this notice, all the samples will be analyzed as requested.

Client:	EOG Resources Inc. - Carlsbad	Date Received:	05/04/21 13:47	Work Order ID:	E105006
Phone:	(512) 289-3272	Date Logged In:	05/04/21 14:15	Logged In By:	Alexa Michaels
Email:	will@rangerenv.com	Due Date:	05/10/21 17:00 (4 day TAT)		

**Chain of Custody (COC)**

1. Does the sample ID match the COC? Yes
2. Does the number of samples per sampling site location match the COC? Yes
3. Were samples dropped off by client or carrier? Yes
4. Was the COC complete, i.e., signatures, dates/times, requested analyses? Yes
5. Were all samples received within holding time? Yes

Note: Analysis, such as pH which should be conducted in the field, i.e., 15 minute hold time, are not included in this discussion.

Carrier: Lynn Estes**Comments/Resolution****Sample Turn Around Time (TAT)**

6. Did the COC indicate standard TAT, or Expedited TAT? Yes

**Sample Cooler**

7. Was a sample cooler received? Yes
8. If yes, was cooler received in good condition? Yes
9. Was the sample(s) received intact, i.e., not broken? Yes
10. Were custody/security seals present? No
11. If yes, were custody/security seals intact? NA
12. Was the sample received on ice? If yes, the recorded temp is 4°C, i.e., 6°±2°C? Yes

Note: Thermal preservation is not required, if samples are received w/i 15 minutes of sampling

13. If no visible ice, record the temperature. Actual sample temperature: 4°C

**Sample Container**

14. Are aqueous VOC samples present? No
15. Are VOC samples collected in VOA Vials? NA
16. Is the head space less than 6-8 mm (pea sized or less)? NA
17. Was a trip blank (TB) included for VOC analyses? NA
18. Are non-VOC samples collected in the correct containers? Yes
19. Is the appropriate volume/weight or number of sample containers collected? Yes

**Field Label**

20. Were field sample labels filled out with the minimum information:
  - Sample ID? Yes
  - Date/Time Collected? Yes
  - Collectors name? Yes

**Sample Preservation**

21. Does the COC or field labels indicate the samples were preserved? No
22. Are sample(s) correctly preserved? NA
24. Is lab filtration required and/or requested for dissolved metals? No

**Multiphase Sample Matrix**

26. Does the sample have more than one phase, i.e., multiphase? No
27. If yes, does the COC specify which phase(s) is to be analyzed? NA

**Subcontract Laboratory**

28. Are samples required to get sent to a subcontract laboratory? No
29. Was a subcontract laboratory specified by the client and if so who? NA Subcontract Lab: NA

**Client Instruction**

Signature of client authorizing changes to the COC or sample disposition.

Date



envirotech Inc.

## TREATMENT CELL SOIL BTEX, TPH &amp; CHLORIDE ANALYTICAL DATA

EOG RESOURCES, INC.

GOSSETT EU #1 (2RP-4516)

EDDY COUNTY, NEW MEXICO

All values presented in parts per million (mg/Kg)

SAMPLE ID	DATE	DEPTH (FT)	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	TOTAL BTEX	TPH GRO C6-C10	TPH DRO C10-C28	TPH DRO EXT C28-C36	TPH (GRO+DRO)	TPH (GRO+DRO+ORO)	CHLORIDE
TREATMENT CELL ASSESSMENT SOIL SAMPLES													
TC-1	5/3/2021	0-1	<0.025	<0.025	<0.025	<0.025	<0.1	<20.0	<25.0	<50.0	<45.0	<95.0	132
TC-2	5/3/2021	0-1	<0.025	<0.025	<0.025	<0.025	<0.1	<20.0	38.5	<50.0	38.5	38.5	32.0
TC-3	5/3/2021	0-1	<0.025	<0.025	<0.025	<0.025	<0.1	<20.0	<25.0	<50.0	<45.0	<95.0	38.9
TC-4	5/3/2021	0-1	<0.025	<0.025	<0.025	<0.025	<0.1	<20.0	<25.0	<50.0	<45.0	<95.0	123
TC-5	5/3/2021	0-1	<0.025	<0.025	<0.025	<0.025	<0.1	<20.0	<25.0	<50.0	<45.0	<95.0	125
TC-6	5/3/2021	0-1	<0.025	<0.025	<0.025	<0.025	<0.1	<20.0	<25.0	<50.0	<45.0	<95.0	112
<b>19.15.29.12 NMAC Table 1 Closure Criteria for Soils Impacted by a Release (GW &gt;100')</b>			<b>10</b>	---	---	---	<b>50</b>	---	---	---	<b>1,000</b>	<b>2,500</b>	<b>20,000</b>
<b>19.15.29.13 NMAC Reclamation Criteria (0'-4' Soils Only)</b>			<b>10<sup>3</sup></b>				<b>50<sup>3</sup></b>					<b>100<sup>3</sup></b>	<b>600</b>

## Notes:

- Results exceeding the Table 1 Closure Criteria are presented in bold type and are highlighted yellow.
- Results exceeding the NMAC Restoration, Reclamation and re-vegetation chloride concentration requirements are presented in bold red type.
- Value derived from the State of New Mexico Energy, Minerals and Natural Resources Department document *Procedures for the Implementation of the Spill Rule* (19.15.29 NMAC) dated September 6, 2019.



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

November 21, 2022

Chase Settle

EOG

105 South Fourth Street

Artesia, NM 88210

TEL:

FAX:

RE: Gossett EU 1

OrderNo.: 2211719

Dear Chase Settle:

Hall Environmental Analysis Laboratory received 2 sample(s) on 11/11/2022 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](http://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 #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a light blue horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109



## Analytical Report

Lab Order 2211719

Date Reported: 11/21/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: CB-1 (32'-35')

Project: Gossett EU 1

Collection Date: 11/8/2022 2:20:00 PM

Lab ID: 2211719-001

Matrix: SOIL

Received Date: 11/11/2022 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>NAI</b>
Chloride	ND	59		mg/Kg	20	11/17/2022 11:26:35 AM	71571
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	11/16/2022 2:06:15 AM	71488
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/16/2022 2:06:15 AM	71488
Surr: DNOP	101	21-129		%Rec	1	11/16/2022 2:06:15 AM	71488
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/17/2022 2:30:53 AM	71483
Surr: BFB	87.0	37.7-212		%Rec	1	11/17/2022 2:30:53 AM	71483
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	11/17/2022 2:30:53 AM	71483
Toluene	ND	0.050		mg/Kg	1	11/17/2022 2:30:53 AM	71483
Ethylbenzene	ND	0.050		mg/Kg	1	11/17/2022 2:30:53 AM	71483
Xylenes, Total	ND	0.099		mg/Kg	1	11/17/2022 2:30:53 AM	71483
Surr: 4-Bromofluorobenzene	93.3	70-130		%Rec	1	11/17/2022 2:30:53 AM	71483

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 1 of 6

## Analytical Report

Lab Order 2211719

Date Reported: 11/21/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: CB-2 (32'-35')

Project: Gossett EU 1

Collection Date: 11/8/2022 3:20:00 PM

Lab ID: 2211719-002

Matrix: SOIL

Received Date: 11/11/2022 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>NAI</b>
Chloride	ND	60		mg/Kg	20	11/17/2022 11:39:00 AM	71571
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	13		mg/Kg	1	11/16/2022 2:29:31 AM	71488
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	11/16/2022 2:29:31 AM	71488
Surr: DNOP	97.0	21-129		%Rec	1	11/16/2022 2:29:31 AM	71488
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/17/2022 2:53:57 AM	71483
Surr: BFB	86.2	37.7-212		%Rec	1	11/17/2022 2:53:57 AM	71483
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	11/17/2022 2:53:57 AM	71483
Toluene	ND	0.048		mg/Kg	1	11/17/2022 2:53:57 AM	71483
Ethylbenzene	ND	0.048		mg/Kg	1	11/17/2022 2:53:57 AM	71483
Xylenes, Total	ND	0.097		mg/Kg	1	11/17/2022 2:53:57 AM	71483
Surr: 4-Bromofluorobenzene	92.8	70-130		%Rec	1	11/17/2022 2:53:57 AM	71483

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 2 of 6

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2211719

21-Nov-22

**Client:** EOG  
**Project:** Gossett EU 1

Sample ID: <b>MB-71571</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>71571</b>	RunNo: <b>92691</b>								
Prep Date: <b>11/17/2022</b>	Analysis Date: <b>11/17/2022</b>	SeqNo: <b>3335134</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-71571</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>71571</b>	RunNo: <b>92691</b>								
Prep Date: <b>11/17/2022</b>	Analysis Date: <b>11/17/2022</b>	SeqNo: <b>3335135</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	97.2	90	110			

### 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 Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

Page 3 of 6

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2211719

21-Nov-22

**Client:** EOG  
**Project:** Gossett EU 1

Sample ID: <b>MB-71488</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>71488</b>	RunNo: <b>92577</b>								
Prep Date: <b>11/14/2022</b>	Analysis Date: <b>11/15/2022</b>	SeqNo: <b>3332595</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.4		10.00		83.5	21	129			

Sample ID: <b>LCS-71488</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>71488</b>	RunNo: <b>92577</b>								
Prep Date: <b>11/14/2022</b>	Analysis Date: <b>11/15/2022</b>	SeqNo: <b>3332597</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	15	50.00	0	83.9	64.4	127			
Surr: DNOP	3.7		5.000		73.8	21	129			

**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 Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2211719

21-Nov-22

**Client:** EOG  
**Project:** Gossett EU 1

Sample ID: <b>mb-71483</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>PBS</b>	Batch ID: <b>71483</b>			RunNo: <b>92616</b>						
Prep Date: <b>11/14/2022</b>	Analysis Date: <b>11/16/2022</b>			SeqNo: <b>3332087</b>	Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	900		1000		89.7	37.7	212			

Sample ID: <b>lcs-71483</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>71483</b>			RunNo: <b>92616</b>						
Prep Date: <b>11/14/2022</b>	Analysis Date: <b>11/16/2022</b>			SeqNo: <b>3332088</b>	Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	96.3	72.3	137			
Surr: BFB	1800		1000		184	37.7	212			

Sample ID: <b>mb</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>PBS</b>	Batch ID: <b>B92672</b>			RunNo: <b>92672</b>						
Prep Date:	Analysis Date: <b>11/17/2022</b>			SeqNo: <b>3333776</b>	Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	920		1000		91.7	37.7	212			

Sample ID: <b>2.5ug gro lcs</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>B92672</b>			RunNo: <b>92672</b>						
Prep Date:	Analysis Date: <b>11/17/2022</b>			SeqNo: <b>3333777</b>	Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1900		1000		190	37.7	212			

**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 Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit



**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2211719

21-Nov-22

**Client:** EOG  
**Project:** Gossett EU 1

Sample ID: <b>mb-71483</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>71483</b>	RunNo: <b>92616</b>								
Prep Date: <b>11/14/2022</b>	Analysis Date: <b>11/16/2022</b>	SeqNo: <b>3332121</b>	Units: <b>mg/Kg</b>							
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	0.96		1.000		95.9	70	130			

Sample ID: <b>LCS-71483</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>71483</b>	RunNo: <b>92616</b>								
Prep Date: <b>11/14/2022</b>	Analysis Date: <b>11/16/2022</b>	SeqNo: <b>3332122</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.98	0.025	1.000	0	98.3	80	120			
Toluene	0.99	0.050	1.000	0	99.4	80	120			
Ethylbenzene	0.98	0.050	1.000	0	98.2	80	120			
Xylenes, Total	3.0	0.10	3.000	0	99.0	80	120			
Surr: 4-Bromofluorobenzene	0.98		1.000		98.2	70	130			

Sample ID: <b>mb</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>D92672</b>	RunNo: <b>92672</b>								
Prep Date:	Analysis Date: <b>11/17/2022</b>	SeqNo: <b>3333824</b>	Units: <b>%Rec</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.95		1.000		95.3	70	130			

Sample ID: <b>100ng btex lcs</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>D92672</b>	RunNo: <b>92672</b>								
Prep Date:	Analysis Date: <b>11/17/2022</b>	SeqNo: <b>3333825</b>	Units: <b>%Rec</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.98		1.000		97.8	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 Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

Page 45 of 156  
Received by OCD: 11/30/2022 1:32:33 PM  
Released to Imaging: 5/8/2023 9:59:02 AM



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

## Sample Log-In Check List

Client Name: EOG

Work Order Number: 2211719

RcptNo: 1

Received By: Juan Rojas

11/11/2022 10:30:00 AM

*Juan Rojas*

Completed By: Desiree Dominguez

11/11/2022 11:25:48 AM

*Desiree Dominguez*

Reviewed By: *scu 11/11/22*

### Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐

2. How was the sample delivered? Client

### Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐

4. Were all samples received at a temperature of >0° C to 6.0° C Yes ☒ No ☐ NA ☐

5. Sample(s) in proper container(s)? Yes ☒ No ☐

6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐

7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐

8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐

9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☐ No ☐ NA ☒

10. Were any sample containers received broken? Yes ☐ No ☒

11. Does paperwork match bottle labels? Yes ☒ No ☐

(Note discrepancies on chain of custody)

12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐

13. Is it clear what analyses were requested? Yes ☒ No ☐

14. Were all holding times able to be met? Yes ☒ No ☐

(If no, notify customer for authorization.)

# of preserved  
bottles checked  
for pH:

(<2 or >12 unless noted)

Adjusted? \_\_\_\_\_

Checked by: *KPA 11-11-22*

### Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

### 17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.6	Good	Not Present			

## Chain-of-Custody Record

Client: EOG  
 Mailing Address: Chase Suttle on file  
Amber Griffin on file  
JJ Murray on file  
 Phone #: \_\_\_\_\_

email or Fax#:	
QA/QC Package:	
<input type="checkbox"/> Standard	<input type="checkbox"/> Level 4 (Full Validation)
Accreditation:	<input type="checkbox"/> Az Compliance
<input type="checkbox"/> NELAC	<input type="checkbox"/> Other _____
<input type="checkbox"/> EDD (Type)	

Date	Time	Matrix	Sample Name
11/8/22	1420	soil	CB-1 (32'-35')
↓	1520	1	CB-2 (32'-35')

[illegible]

Turn-Around Time: ☒ Standard ☒ Rush 5 day

Project Name: Gossett Eu#1

Project #: 12573461

Project Manager:	Chase Suttle	
Sampler:		
On Ice:	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
# of Coolers:	1	

Cooler Temp (Including CF):	Preservative Type	HEAL No.
0.6-0-0.6 (°C)		2211719
		-001
		-002

[illegible]

# HALL ENVIRONMENTAL ANALYSIS LABORATORY

[www.hallenvironmental.com](http://www.hallenvironmental.com)

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

## Analysis Request

	X	X	BTEX / MTBE / TMB's (8021)
	X	X	TPH:8015D(GRO / DRO / MRO)
			8081 Pesticides/8082 PCB's
			EDB (Method 504.1)
			PAHs by 8310 or 8270SIMS
			RCRA 8 Metals
	X	X	Cd, F-, Br-, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub>
			8260 (VOA)
			8270 (Semi-VOA)
			Total Coliform (Present/Absent)

Remarks:

Received by: <i>Quinn</i>	Via:	Date	Time
		4/10/72	1300
Received by: <i>[Signature]</i>	Via:	Date	Time
		10/11/72	10:13

# **Attachment 2**

## **Well and Boring Completion Logs**



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 2

PROJECT NAME: Gossett EU #1

HOLE DESIGNATION: SB-1

PROJECT NUMBER: 12573461

DATE COMPLETED: April 26, 2022

CLIENT: EOG Resources

DRILLING METHOD: Air Rotary/Split Spoons

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: L. Mullins

DRILLING CONTRACTOR: HCI Drilling

DRILLER: K. Cooper

File: I:\LOG DATABASE\8-CHAR\1257-12573461 GOSSETT\12573461.CO.GPJ Library File: GHD\_ENVIRO\_V06.GLB Report: OVERBURDEN LOG Date: 6/1/22

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)	CHLORIDE (mg/kg)	TOTAL TPH (mg/kg)
2	Stratigraphy not recorded		Concrete					
4								
6								
8								
10								
12								
14								
16			Bentonite Chips					
18								
20								
22								
24								
26								
28								
30			7" Ø Borehole					
32			Sand					
34	ROCK SC-CLAYEY SAND, light brown, slightly moist	33.00	4" Ø Screen					
36		33.50		35'			<60	570
38								
40	CALICHE ROCK, unconsolidated	39.00				10		
42	ALLUVIAL ROCK (RIVER ROCK) and CLAY, light brown, dry	40.00						
44								
46				45'			<60	110

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS





# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 2 of 2

PROJECT NAME: Gossett EU #1

HOLE DESIGNATION: SB-1

PROJECT NUMBER: 12573461

DATE COMPLETED: April 26, 2022

CLIENT: EOG Resources

DRILLING METHOD: Air Rotary/Split Spoons

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: L. Mullins

DRILLING CONTRACTOR: HCI Drilling

DRILLER: K. Cooper

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)	CHLORIDE (mg/kg)	TOTAL TPH (mg/kg)
50				50'			62	230
52								
54				55'			60	<47
56								
58								
60	END OF BOREHOLE @ 60.00ft BGS	60.00	<p><u>WELL DETAILS</u>  Screened interval:  30.00 to 35.00ft BGS  Length: 5ft  Diameter: 4in  Slot Size: 0.010  Material: 8/16 Sand  Seal:  3.00 to 28.00ft BGS  Sand Pack:  28.00 to 60.00ft BGS  Material: Bentonite Chips</p>	60'			67	90
62								
64								
66								
68								
70								
72								
74								
76								
78								
80								
82								
84								
86								
88								
90								
92								
94								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ☐

File: I:\LOG DATABASE\8-CHAR\12-1257-12573461 GOSSETT\12573461.CO.GPJ Library File: GHD\_ENVIRO\_V06.GLB Report: OVERBURDEN LOG Date: 6/1/22



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 2

PROJECT NAME: Gossett EU #1

HOLE DESIGNATION: SB-2

PROJECT NUMBER: 12573461

DATE COMPLETED: May 2, 2022

CLIENT: EOG Resources

DRILLING METHOD: Air Rotary/Split Spoons

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: L. Mullins

DRILLING CONTRACTOR: HCI Drilling

DRILLER: K. Cooper

File: I:\LOG DATABASE\8-CHAR\12573461\12573461.GOSSETT\12573461.CO.GPJ Library File: GHD\_ENVIRO\_V06.GLB Report: OVERBURDEN LOG Date: 6/1/22

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)	CHLORIDE (mg/kg)	TOTAL TPH (mg/kg)
2	Stratigraphy not recorded		Concrete					
4								
6								
8								
10								
12								
14								
16			Bentonite Chips					
18								
20								
22								
24								
26								
28								
30			7" Ø Borehole					
32			Sand					
33.00	ROCK	33.00	2" Ø Screen					
33.50		33.50						
34	SC-SANDY CLAY, with river rock, light brown, dry			35'			<60	<48
36								
38								
39.00	SC-CLAYEY SAND, light brown, dry	39.00						
40				40'			<60	138
42								
44								
45				45'			<60	16
46								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 2 of 2

PROJECT NAME: Gossett EU #1

HOLE DESIGNATION: SB-2

PROJECT NUMBER: 12573461

DATE COMPLETED: May 2, 2022

CLIENT: EOG Resources

DRILLING METHOD: Air Rotary/Split Spoons

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: L. Mullins

DRILLING CONTRACTOR: HCI Drilling

DRILLER: K. Cooper

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)	CHLORIDE (mg/kg)	TOTAL TPH (mg/kg)
50				50'			91	<49
52								
54				55'			83	5.6
56	END OF BOREHOLE @ 55.00ft BGS	55.00	<b>WELL DETAILS</b> Screened interval: 30.00 to 35.00ft BGS Length: 5ft Diameter: 2in Slot Size: 0.010 Material: 8/16 Sand Seal: 3.00 to 28.00ft BGS Sand Pack: 28.00 to 55.00ft BGS Material: Bentonite Chips					
58								
60								
62								
64								
66								
68								
70								
72								
74								
76								
78								
80								
82								
84								
86								
88								
90								
92								
94								

**NOTES:** MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ☐

File: I:\LOG DATABASE\8-CHAR\12-1257-12573461.GOSSETT\12573461.CO.GPJ Library File: GHD\_ENVIRO\_V06.GLB Report: OVERBURDEN LOG Date: 6/1/22



## STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Gossett EU #1

HOLE DESIGNATION: SB-3

PROJECT NUMBER: 12573461

DATE COMPLETED: May 2, 2022

CLIENT: EOG Resources

DRILLING METHOD: Air Rotary/Split Spoons

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: L. Mullins

DRILLING CONTRACTOR: HCI Drilling

DRILLER: K. Cooper

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)	CHLORIDE (mg/kg)	TOTAL TPH (mg/kg)
0								
2	SP-SAND, with gravel, fine to medium grained sand		Concrete					
4								
6								
8								
10								
12								
14								
16			Bentonite Chips					
18								
20								
22								
24								
26								
28								
30	SM-SILTY SAND, with gravel, light brown, dry	29.00	7" Ø Borehole					
32			Sand					
34			2" Ø Screen					
36	END OF BOREHOLE @ 35.00ft BGS	35.00		35			<60	144
38			WELL DETAILS Screened interval: 30.00 to 35.00ft BGS Length: 5ft Diameter: 2in Slot Size: 0.010 Material: 8/16 Sand Seal: 3.00 to 28.00ft BGS Sand Pack: 28.00 to 35.00ft BGS Material: Bentonite Chips					
40								
42								
44								
46								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

## CHEMICAL ANALYSIS

**File:** I:\LOG DATABASE\8-CHAR\12-----\1257--\12573461 GOSSETT\12573461-CO.GPJ **Library File:** GHD ENVIRO V06.GLB **Report:** OVERBURDEN LOG **Date:** 6/1/22



## STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Gossett EU #1

HOLE DESIGNATION: SB-4

PROJECT NUMBER: 12573461

DATE COMPLETED: May 4, 2022

CLIENT: EOG Resources


DRILLING METHOD: Air Rotary/Split Spoons

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: L. Mullins

DRILLING CONTRACTOR: HCI Drilling

DRILLER: K. Cooper

BRIEFING CONTINUED FROM: Well Drilling				BRIEFING CONTINUED FROM: Well Drilling				
DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)	CHLORIDE (mg/kg)	TOTAL TPH (mg/kg)
2	SP-SAND, with gravel interbedded throughout, fine to medium grained sand, light brown, dry							
4								
6								
8								
10								
12								
14								
16								
18								
20								
22								
24								
26								
28			28.00					
30	SM-SILTY SAND, with gravel, light brown, dry							
32								
34	- bed of caliche from 34.00 to 34.50ft BGS							
36	END OF BOREHOLE @ 35.00ft BGS	35.00						
38			<b>WELL DETAILS</b> Screened interval: 30.00 to 35.00ft BGS Length: 5ft Diameter: 2in Slot Size: 0.010 Material: 8/16 Sand Seal: 3.00 to 28.00ft BGS Sand Pack: 28.00 to 35.00ft BGS Material: Bentonite Chips					
40								
42								
44								
46								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

## CHEMICAL ANALYSIS





# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Gossett EU #1

HOLE DESIGNATION: SB-5

PROJECT NUMBER: 12573461

DATE COMPLETED: May 4, 2022

CLIENT: EOG Resources

DRILLING METHOD: Air Rotary/Split Spoons

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: L. Mullins

DRILLING CONTRACTOR: HCI Drilling

DRILLER: K. Cooper

File: I:\LOG DATABASE\8-CHAR\12-1257-12573461.GOSSETT\12573461.CO.CPJ Library File: GHD\_ENVIRO\_V06.GLB Report: OVERBURDEN LOG Date: 6/1/22

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)	CHLORIDE (mg/kg)	TOTAL TPH (mg/kg)
2	SP-SAND, with gravel interbedded throughout, fine to medium grained sand, light brown, dry		<p>Concrete</p> <p>Bentonite Chips</p> <p>7" Ø Borehole</p> <p>Sand</p> <p>2" Ø Screen</p>					
4								
6								
8								
10								
12								
14								
16								
18								
20								
22								
24								
26								
28		28.00						
30								
32								
34								
36		35.00		35			64	<50
38								
40								
42								
44								
46								
	END OF BOREHOLE @ 35.00ft BGS		<b>WELL DETAILS</b> Screened interval: 30.00 to 35.00ft BGS Length: 5ft Diameter: 2in Slot Size: 0.010 Material: 8/16 Sand Seal: 3.00 to 28.00ft BGS Sand Pack: 28.00 to 35.00ft BGS Material: Bentonite Chips					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Gossett EU #1

HOLE DESIGNATION: SB-6

PROJECT NUMBER: 12573461

DATE COMPLETED: May 3, 2022

CLIENT: EOG Resources

DRILLING METHOD: Air Rotary/Split Spoons

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: L. Mullins

DRILLING CONTRACTOR: HCI Drilling

DRILLER: K. Cooper

File: I:\LOG DATABASE\8-CHAR\12-1257-12573461.GOSSETT\12573461.CO.CPJ Library File: GHD\_ENVIRO\_V06.GLB Report: OVERBURDEN LOG Date: 6/1/22

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)	CHLORIDE (mg/kg)	TOTAL TPH (mg/kg)
2	SP-SAND, with gravel interbedded throughout, fine to medium grained sand, light brown, dry		<p>Concrete</p> <p>Bentonite Chips</p> <p>7" Ø Borehole</p> <p>Sand</p> <p>2" Ø Screen</p>					
4								
6								
8								
10								
12								
14								
16								
18								
20								
22								
24								
26								
28		28.00						
30								
32								
34								
36		35.00		35			71	<50
38								
40								
42								
44								
46								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Gossett EU #1

HOLE DESIGNATION: SB-7

PROJECT NUMBER: 12573461

DATE COMPLETED: May 3, 2022

CLIENT: EOG Resources

DRILLING METHOD: Air Rotary/Split Spoons

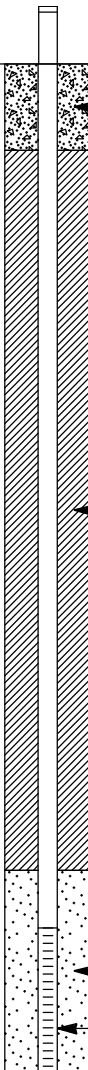

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: L. Mullins

DRILLING CONTRACTOR: HCI Drilling

DRILLER: K. Cooper

File: I:\LOG DATABASE\8-CHAR\12-1257-12573461.GOSSETT\12573461.CO.GPJ Library File: GHD\_ENVIRO\_V06.GLB Report: OVERBURDEN LOG Date: 6/1/22

DEPTH ft BGS		STRATIGRAPHIC DESCRIPTION & REMARKS		DEPTH BGS		MONITORING WELL		SAMPLE				
								NUMBER	INTERVAL	REC (%)	CHLORIDE (mg/kg)	TOTAL TPH (mg/kg)
												
2	SP-SAND, with gravel interbedded throughout, fine to medium grained sand, light brown, dry			27.00		<p>Concrete</p> <p>Bentonite Chips</p> <p>7" Ø Borehole</p> <p>Sand</p> <p>2" Ø Screen</p>		35'			67	<46
4												
6												
8												
10												
12												
14												
16												
18												
20												
22												
24												
26												
28	SM-SILTY SAND, with gravel, light brown, dry											
30	- bed of caliche from 34.00 to 35.00ft BGS											
32												
34	END OF BOREHOLE @ 35.00ft BGS											
36												
38												
40												
42												
44												
46												

**WELL DETAILS**  
Screened interval:  
30.00 to 35.00ft BGS  
Length: 5ft  
Diameter: 2in  
Slot Size: 0.010  
Material: 8/16 Sand  
Seal:  
3.00 to 28.00ft BGS  
Sand Pack:  
28.00 to 35.00ft BGS  
Material: Bentonite Chips

**NOTES:** MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS

File: N:\CA\WHITBY\PROJECTS\11111176698\FOUNDATION PROJECTS\2022 PROJECT\_GINT\_JOB\12573461 (LEE MULLINS)\ENV\RO\_V06\12573461 LOG-BACKFILL.GPJ Library File: GHD\_ENV\RO\_V06.GLB Report: OVERBURDEN LOG Date: 11/11/22



## STRATIGRAPHIC LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Gossett EU #1

HOLE DESIGNATION: CB-1

PROJECT NUMBER: 12573461

DATE COMPLETED: 8 November 2022

CLIENT: EOG Resources

DRILLING METHOD: Air Rotary

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: L. Mullins

DRILLING CONTRACTOR: HCI Drilling

DRILLER: K. Cooper

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	SAMPLE				
			NUMBER	INTERVAL	REC (%)	"N" VALUE	PID (ppm)
2	BACKFILL: caliche rock/sand						
4							
6							
8							
10							
12							
14							
16							
18							
20							
22							
24							
26		25.00					
28							
30		29.00					
32							
34			32-35'		100		8.8
36		35.00					
38							
40							
42							
44							
46							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



# STRATIGRAPHIC LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Gossett EU #1

HOLE DESIGNATION: CB-2

PROJECT NUMBER: 12573461

DATE COMPLETED: 8 November 2022

CLIENT: EOG Resources

DRILLING METHOD: Air Rotary

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: L. Mullins

DRILLING CONTRACTOR: HCI Drilling

DRILLER: K. Cooper

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	SAMPLE				
			NUMBER	INTERVAL	REC (%)	"N" VALUE	PID (ppm)
2	BACKFILL: caliche rock/sand						
4							
6							
8							
10							
12							
14							
16							
18							
20							
22							
24		24.00					
26							
28							
30		29.00					
32							
34			32 - 35		100		10.4
36		35.00					
38							
40							
42							
44							
46							
	END OF BOREHOLE @ 35.00ft BGS						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



# **Attachment 3**

## **Ranger Site Characterization and Remediation Work Plan**





## **SITE CHARACTERIZATION AND REMEDIATION WORK PLAN**

**GOSSETT EU #1 (2RP-4516)  
UNIT K, SECTION 26, TOWNSHIP 17S, RANGE 25E  
EDDY COUNTY, NEW MEXICO  
32.80361, -104.5809  
RANGER REFERENCE NO. 5375**

### **PREPARED FOR:**

**EOG RESOURCES, INC.  
ARTESIA DIVISION  
105 S 4TH STREET  
ARTESIA, NEW MEXICO 88210**

### **PREPARED BY:**

**RANGER ENVIRONMENTAL SERVICES, INC.  
P.O. BOX 201179  
AUSTIN, TEXAS 78720**

**DECEMBER 12, 2019**

A handwritten signature in blue ink, appearing to read "M. Cook", is positioned above a horizontal line.

**Max Cook  
Senior Project Manager**

A handwritten signature in blue ink, appearing to read "W. Kierdorf", is positioned above a horizontal line.

**William Kierdorf  
Project Manager**

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- Figure 4 – Delineation Soil Sample Location Map
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- Table 1 – Soil BTEX, TPH and Chloride Analytical Summary Table

### ATTACHMENTS

- Attachment 1 – C-141 Form and NMOCD Documentation
- Attachment 2 – USGS and NMOSE Water Well Data
- Attachment 3 – Site Photographs
- Attachment 4 – Laboratory Analytical Reports
- Attachment 5 – *Liquid Remediate*™ Safety Data Sheet



**SITE CHARACTERIZATION AND REMEDIATION WORK PLAN  
GOSSETT EU #1 (2RP-4516)  
UNIT K, SECTION 26, TOWNSHIP 17S, RANGE 25E  
EDDY COUNTY, NEW MEXICO  
32.80361, -104.5809  
RANGER REFERENCE NO. 5375**

## **1.0 SITE LOCATION AND BACKGROUND**

The Gossett EU #1 (Site) is located on private land, approximately 4.4 miles southwest of Artesia within Eddy County, New Mexico. The facility is situated in Unit K, Section 26, T17S-R25E at GPS coordinates 32.80361, -104.5809. Figures 1 and 2 are topographic and area maps which illustrate the site location and surrounding area.

On November 14, 2017, a release was discovered originating from a tank located within the on-site unlined tank battery. At the time of discovery it was estimated that approximately 65 barrels (bbls) of crude oil and 12 bbls of produced water were released. Upon discovery, an emergency vacuum truck was dispatched to the location but was unable to recover any of the released fluids. The incident was reported to the New Mexico Oil Conservation Division (NMOCD) via email on November 14, 2017. An Initial Notification Form C-141 was submitted on December 7, 2017 which was approved by the NMOCD on December 8, 2017, and remediation permit (2RP-4516) was issued for the release incident.

On April 3, 2018 a site Characterization Plan was submitted to the NMOCD. The Characterization Plan included information pertaining to the Site location, surface water and groundwater distance/depth determinations and a delineation sampling plan. The plan received approval from the NMOCD on May 14, 2018. For reference, the Initial Form C-141 Release Notification and associated documentation, and a copy of the previously-approved Site Characterization report, are provided in Attachment 1.

Delineation soil sampling activities were conducted at the Site in November and December 2017. Based on the results of the sampling activities, it appears that the horizontal extent of the release affected an area measuring approximately 20' x 19'. The vertical extent of the release was not defined as BTEX and TPH concentrations at a depth of 32 feet were still in excess of the proposed Site delineation criteria.

The following characterization and remediation plan has been prepared to address the remaining impacts at the Site. EOG Resources, Inc. (EOG) has engaged Ranger Environmental Services, Inc. (Ranger) to assist in the assessment, remediation, and reclamation efforts at the Site. Photographs depicting the current condition of the Site are included as Attachment 3.

## 2.0 SITE CHARACTERIZATION

### 2.1 Depth to Groundwater

To determine the depth to groundwater in the vicinity of the Site, data available from the U.S. Geological Survey (USGS) and the New Mexico Office of the State Engineer (NMOSE) was reviewed. Based upon the reviewed information, depth to groundwater in the area of the Site is greater than 100 feet.

Copies of the well location and depth-to-groundwater information are provided in Attachment 2. A map depicting the Site location and area water well locations is included as Figure 3.

### 2.2 Wellhead Protection Area

Based upon the reviewed USGS and NMOSE information, no known water sources were located within a half-mile of the Site.

### 2.3 Distance to Nearest Significant Watercourse

Based upon available online resources, no significant watercourses are located within a half-mile of the Site. Additionally, no mapped and classified wetlands are identified on the U.S. Fish and Wildlife Service National Wetlands Map within a half-mile of the Site. The Site is located outside of the FEMA 100-year flood plain in a minimal flood hazard area.

### 2.4 Proposed Closure Criteria

Based upon the site characterization details, Ranger proposes that the Site be remediated to Table 1 19.15.29.12 NMAC (groundwater >100 feet) criteria. Additionally, Site remediation activities will also be conducted to bring the site into compliance with the Restoration, Reclamation and Re-Vegetation criteria detailed in 19.15.29.13 NMAC. The proposed closure criteria are detailed below:

Parts Per Million (mg/Kg)					
REGULATORY STANDARD	CHLORIDE	TPH (GRO+DRO +MRO)	TPH (GRO+DRO)	BTEX	BENZENE
19.15.29.12 NMAC Table 1 Closure Criteria for Soils Impacted by a Release (GW > 100')*	20,000	2,500	1,000	50	10
19.15.29.13 NMAC Restoration, Reclamation and Re- Vegetation (Soils 0'-4')	600	---	---	---	---

\*See Section 4.5 for proposed substitution of 100 ppm<sub>v</sub> OVM reading to confirm when the proposed site passive bioventing and bioremediation injection remedial activities may be terminated.

### 3.0 SITE DELINEATION STATUS

On November 17, 2017, representatives for EOG initiated the soil delineation activities at the Site. Initial soil removal operations were conducted in the impacted area to a depth of approximately 13 feet below ground surface (bgs). During the November 2017 assessment activities, a total of nine delineation soil samples were collected for laboratory analysis. Four of these samples were collected from the excavation sidewalls at a depth of approximately nine feet bgs. The remaining five soil samples were collected at depths ranging from 9 to 13 feet bgs at sample location "S-1", in the approximate middle of the impact/excavation area.

The soil samples were submitted for laboratory analysis of benzene, toluene, ethylbenzene and xylenes (BTEX), total petroleum hydrocarbons (TPH), and chloride. The four excavation sidewall samples were found to be well below the proposed Site closure criteria, indicating minimal horizontal spreading of the release. However, the samples collected from 9 to 13 feet bgs at sample location "S-1" were documented to be in exceedance of the proposed Site closure criteria for both BTEX and TPH. It should be noted that no significant chloride impacts were documented, as all soil chloride analytical results were found to be well below 600 mg/kg.

Based on the November 2017 soil sample analytical results, additional delineation sampling activities were conducted on December 7, 2017. A test excavation was completed in the "S-1" sample location area to a depth of approximately 32 feet bgs. A total of eight soil samples were collected from varying depths within the test excavation for laboratory analysis of BTEX, TPH and chloride. These soil samples were all documented to contain BTEX and TPH concentrations in excess of the proposed Site closure criteria. Thus, the vertical extent of the soil impact has not yet been delineated. As was the case with the November 2017 soil samples, no elevated chloride concentrations were found to be present. As such, chloride impacts do not appear to be an issue at the Site.

In total, approximately 575 cubic yards of excavated soil were generated during the performance of the November and December, 2017 site activities. These soils are currently stockpiled on-site surrounded by an earthen berm. Following the completion of the November 2017 soil removal operations, two composite soil samples were collected from the soil stockpiles and analyzed for BTEX, TPH and chloride. No elevated chloride concentrations were found in the stockpiled soils; however, BTEX and TPH concentrations in excess of the proposed Site closure criteria were documented to be present.

A map depicting the sample locations is presented in Figure 4. The November and December, 2017 soil sample analytical results are summarized in the attached soil analytical table. Copies of the laboratory analytical reports are included in Attachment 4.

### 4.0 PROPOSED DELINEATION AND REMEDIATION ACTIVITIES

To further address the Site soil impacts, EOG and Ranger propose the following vertical delineation and soil remedial activities. It should be noted that further vertical delineation of the soil impacts is not currently possible until the excavated area has been backfilled and compacted so that a drilling rig can access the affected area. Thus, the initial proposed activity is to treat the soils currently stockpiled on-site so that they can be used to backfill the excavation. At that point, a drilling rig can be brought in to finish the vertical delineation activities and to install vent/injection wells in the affected area.

#### **4.1 Excavated Soil Bioremediation**

As summarized above, the initial proposed site activity is to bioremediate the stockpiled soils at the Site so that they can be used to backfill the excavated area in order to allow for drilling rig access. A treatment cell will be constructed on-site in the area of the historic pit location. The treatment cell will be comprised of an earthen berm surrounding the treatment area and lined with a competent liner to control runoff from the cell. The excavated material will be placed within the cell in a 6 to 12 inch lift for treatment. The bioremediation product *Liquid Remediate*™ will be utilized to treat the impacted material. *Liquid Remediate*™ is an active mixture of hydrocarbon-oxidizing, naturally occurring, single-celled micro-organisms that assist in remediating soils impacted by oil and gas operations. The application process will include the mixing of the *Liquid Remediate*™ and freshwater to the manufacturers specifications, spraying the mixture via a water truck onto the impacted soil, and physically tilling the liquid mixture into the soil. To assist in the bioremediation process, periodic tilling of the treated soils and freshwater hydration events will be conducted. It is anticipated that the bioremediation process will take approximately 90 days to complete.

Upon completion of the estimated 90-day bioremediation process, three composite soil samples will be collected from the treated material to confirm that the soil BTEX and TPH concentrations have attained the proposed Site closure criteria. The samples will be collected as five-part composite samples and will be submitted to the laboratory for BTEX, TPH and chloride analysis. If the treatment confirmation sample analytical results indicate that soil concentrations are still in excess of the proposed Site closure criteria, then additional treatment activities will be conducted and additional confirmation samples will be collected as necessary.

A copy of the *Liquid Remediate*™ safety data sheet is included in Attachment 5.

#### **4.2 Excavation Backfilling**

Upon completion of the proposed soil treatment activities, and confirmation that the soils were remediated to levels below the proposed Site closure criteria, the treated material will be utilized to backfill the Site excavation to a depth of approximately one foot bgs. The remaining one foot of the excavation will be backfilled with topsoil bringing the excavation area back to grade.

#### **4.3 Vertical Delineation**

Once the Site excavation has been backfilled, a drilling rig will be brought to the Site to complete the vertical delineation of the soil impacts. A soil boring will be installed within the impacted area offset to former sample location "S-1". The boring will be completed to a depth where field readings appear to indicate that soil concentrations are at, or below, the proposed Site closure criteria. After installing the boring through the upper 32 feet of treated backfill material, a minimum of two soil samples will be collected for laboratory analysis of BTEX, TPH and chloride. The samples will be collected from the interval exhibiting the highest OVM reading (or other field indication of hydrocarbon impact), and from the boring total depth. Additional samples may also be collected if warranted based upon observed field conditions.

During the boring installation process, the encountered subsurface soils will be described by a Ranger geologist on the basis of lithology, color, texture, and visual determination of petroleum hydrocarbons. The soils will also be screened with an organic vapor monitor (OVM) for the presence and concentration of volatile organic vapors.





#### **4.4 Passive Bioventing with Bioremediation Injections**

Ranger proposes to utilize passive bioventing in conjunction with bioremediation injections in order to bioremediate the deep subsurface soil impacts that were unable to be overexcavated. In order to accomplish this, the proposed vertical delineation soil boring will be converted to a passive bioventing well installed in the center of the affected area. Additionally, a network of bioventing/bioremediation injection wells will be installed within the affected area. Based on conditions observed during the well installation process, the well network will be utilized as passive bioventing wells and/or bioremediation injection points. Throughout the bioventing and bioremediation injection process, the well network will be utilized as vapor monitoring points.

Bioventing is a process of aerating vadose zone soils to stimulate in situ biologic activity and promote the bioremediation of petroleum hydrocarbons. Passive bioventing utilizes the difference between atmospheric and subsurface gas pressures, which develop with changes in barometric pressure, to drive air through vent wells for aerating contaminated soils and stimulating in-situ aerobic biologic activity. Microbes then transform the petroleum hydrocarbons into biomass and carbon dioxide. This technology is applicable to both the volatile and semivolatile fractions of petroleum hydrocarbons.

To conduct passive bioventing, a one-way passive valve is used to control the direction of vent-well airflow, allowing air to flow into the vent well when the atmospheric pressure is greater than in the subsurface. The valve closes when the subsurface pressure is greater than atmospheric pressure, preventing the exhalation of oxygen from the bioventing well. The operation of the one-way valve results in an expanding subsurface treatment area through successive atmospheric-pressure driven air injection events. Ranger proposes to utilize BaroBall® passive valves on the bioventing wells. BaroBall® was developed by researchers at the Department of Energy's Savannah River Site in Aiken, South Carolina.

In order to enhance the vadose zone bioremediation associated with the passive bioventing activities, periodic liquid bioremediation injection events will also be performed using Liquid Remediact™ microbial hydrocarbon remediation formula. The Liquid Remediact™ will be poured into the wells designated as injection wells. Prior to injection, the Liquid Remediact™ will be mixed with freshwater to the manufactures recommended ratio.

The proposed vertical delineation soil boring and passive bioventing well will be completed as follows:

- 4-inch diameter schedule 40 PVC well pipe assembly;
- 0.010-foot machine-slotted well screen intervals will be installed from a depth of approximately 32 feet bgs to the terminal depth of the boring with a sufficient length of riser pipe to reach the surface;
- 20-40 graded silica sand placed in the annular space between the borehole and the casing from the bottom of the hole to two feet above the screened interval;
- A minimum of two feet of hydrated bentonite pellets place above the sand pack;
- Portland cement grout mixture placed from the top of the bentonite pack to surface; and,
- A concrete surface completion with protective bollards.

The bioventing/bioremediation injection wells will be completed similarly to the passive bioventing well except that they will be constructed of 2-inch diameter schedule 40 PVC well pipe assembly. The wells selected exclusively as bioremediation injection wells will be kept sealed from outside

air except when in use for the liquid bioremediation injection events, and will incorporate a sampling port and tubing run to the base of the wells for vapor monitoring purposes. It should be noted that the well specifications and number of bioremediation injection wells will be determined based upon the observed field conditions. In addition, the wells selected as injection wells may ultimately be converted to passive bioventing wells if determined to be needed. However, it is anticipated that at least one well will remain in use solely for liquid bioremediation injection and air monitoring purposes.

The proposed anticipated soil boring/vent well and injection well locations are illustrated in the attached Figure 5 "*Proposed Soil Boring, Vent Well and Injection Well Location Map.*" A copy of the *Liquid Remediate*<sup>TM</sup> safety data sheet is included in Attachment 5.

#### **4.5 Remedial Progress Monitoring and Site Closure**

Bi-weekly vapor monitoring activities will be conducted to monitor the progress of the site bioremediation activities. An organic vapor monitor (OVM) will be utilized to collect vapor readings from each of the bioremediation injection/vapor monitoring wells. Vapor readings will not be collected from the passive bioventing well as the vapors in this well will be diluted with the injected fresh/outside air. The vapor readings will be collected from the sealed injection wells prior to opening the wells for the bioremediation injection events. As discussed above, the samples will be collected from the vapor sampling tubing installed near the base of each well. The tubing will first be purged of three tubing volumes of air, and then OVM readings will be documented every minute for five consecutive minutes. The highest OVM reading documented during the five minute monitoring period will be utilized as the representative reading for the well.

In order to determine when the site has been adequately remediated and when the passive bioventing and bioremediation injection activities may cease, Ranger proposes that an OVM concentration of 100 parts per million vapor (ppm<sub>v</sub>) be utilized as a substitutionary site closure criteria in lieu of the Table 1 19.15.29.12 NMAC criteria. Use of a drilling rig to conduct confirmatory soil borings within the affected area may not be possible due to the tightly-spaced recovery well network, and could potentially damage the installed recovery wells. Thus, Ranger proposes that site closure be issued upon achieving four consecutive monitoring events with OVM readings below 100 ppm<sub>v</sub>.

Upon achieving four consecutive vapor monitoring events with maximum OVM readings below 100 ppm<sub>v</sub>, a Form C-141 Closure Report will be prepared and submitted to NMOCD. The Closure Report will be completed in compliance with the 19.15.29.12(E) NMAC criteria.

#### **4.6 Backfilling & Reseeding**

In order to comply with the 19.15.29.13 NMAC "*Restoration, Reclamation and Re-Vegetation*" criteria, the former excavated area will be reseeded during the first favorable growing season following issuance of site closure.

## 5.0 REMEDIATION SCHEDULE

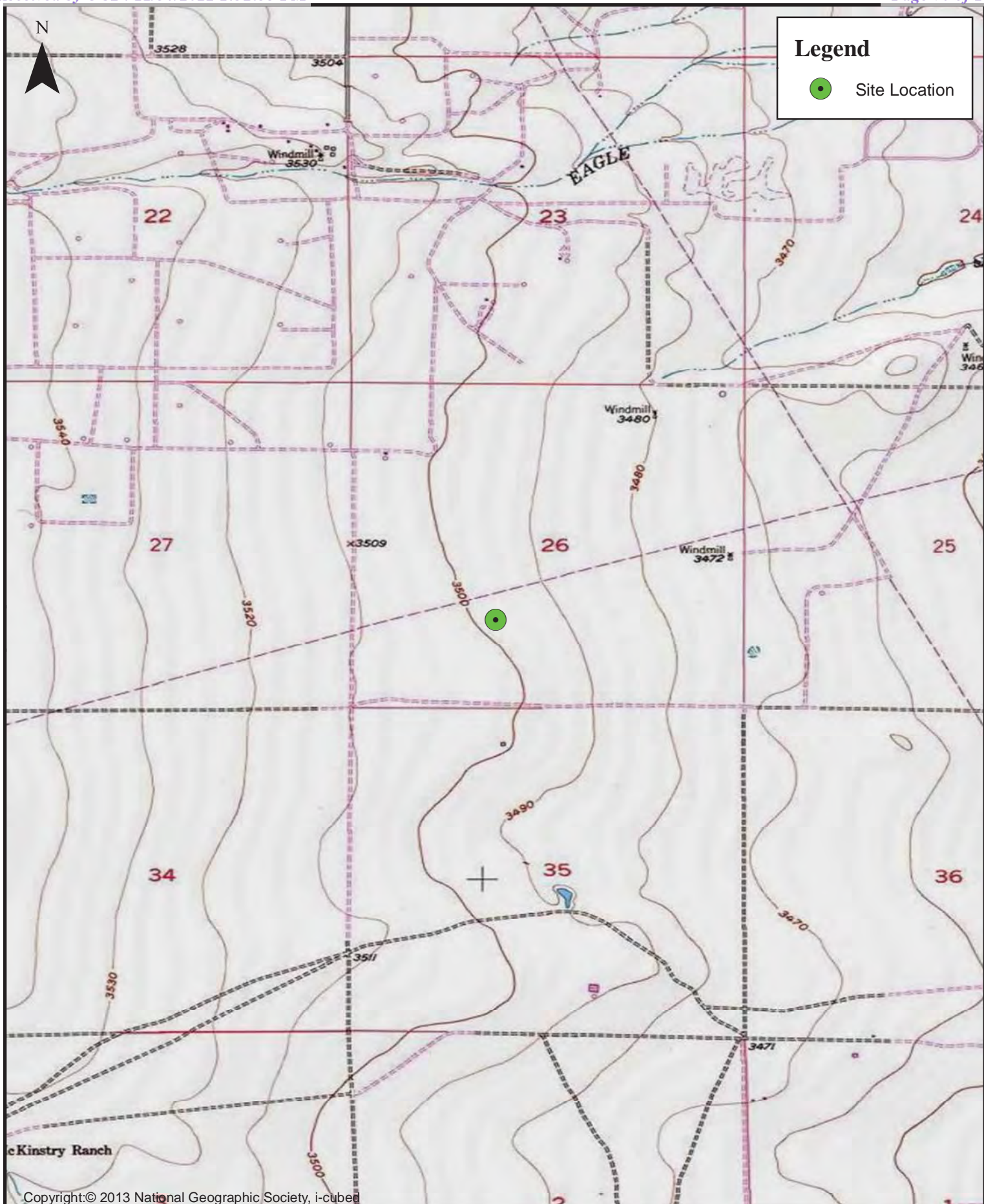
Upon approval of the Remediation Plan, the proposed field activities will be scheduled as soon as practicably possible. The proposed remedial actions and estimated timeframe to complete these items is detailed below:

<b><u>Task</u></b>	<b><u>Estimated Time Frame</u></b>
Excavated Soil Bioremediation	3 Months
Backfill Excavated Area	0.5 Month
Soil Boring/Vent/Injection Well Installations	0.5 Month (dependent on driller availability)
Passive Bioventing/Bioremediation Injections	<u>8 Months</u>
<b>TOTAL</b>	<b>12 Months</b>

**Contingency:** In the event that the target OVM concentration of 100 ppm<sub>v</sub> is not attained within the proposed timeframe, the NMOCD will be provided with a brief project status letter including a request for an extension in order to continue the site remedial efforts. This will also detail any proposed modifications to the Remediation Plan for the continued site remedial efforts.

## FIGURES

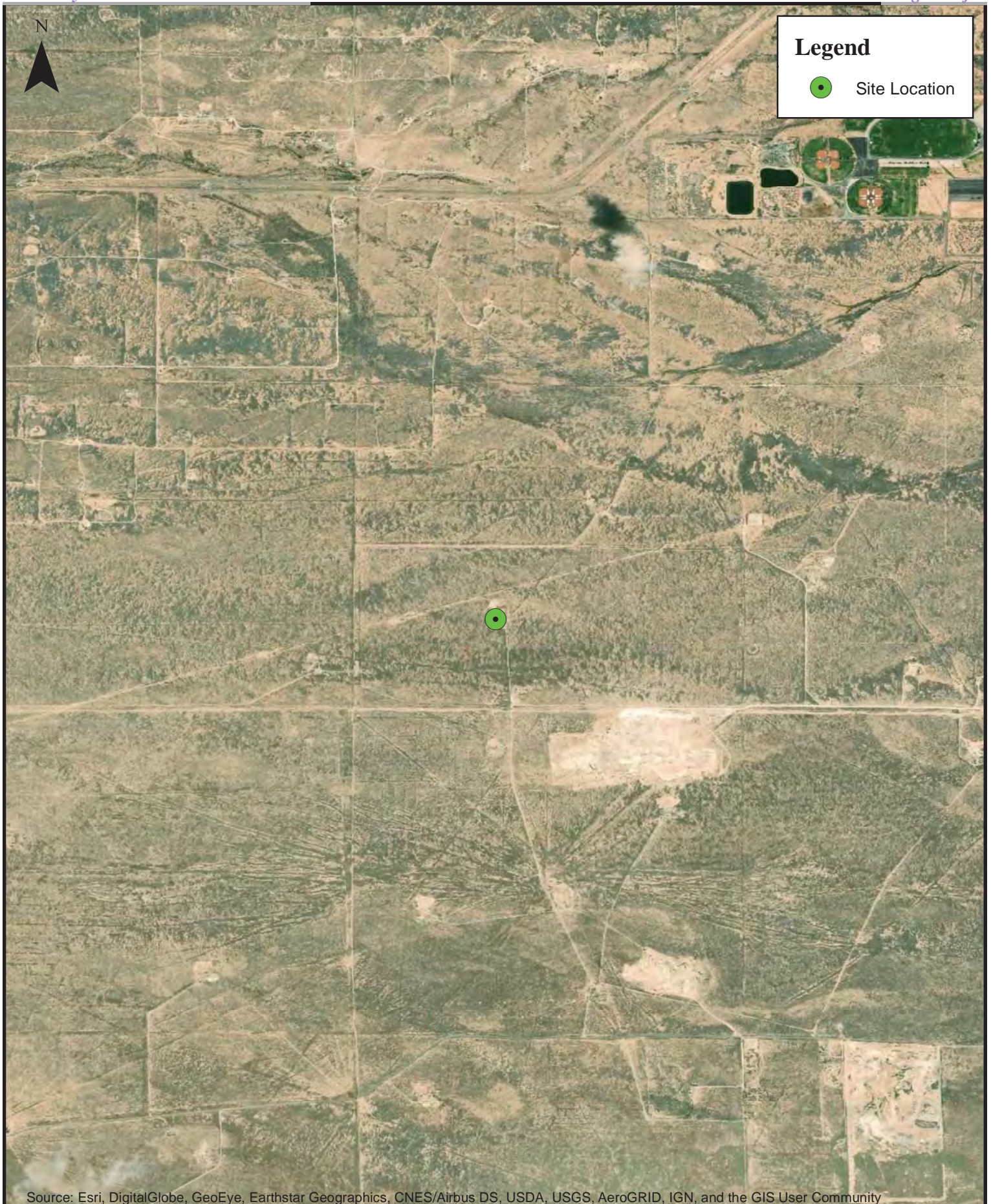




0 600 1,200 2,400 3,600 4,800  
Feet

**FIGURE 1 - TOPOGRAPHIC MAP**  
GOSSETT EU #1  
EOG RESOURCES, INC.





Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



0 600 1,200 2,400 3,600 4,800 Feet

**FIGURE 2 - AREA MAP**  
GOSSETT EU #1  
EOG RESOURCES, INC.







0 875 1,750 3,500 5,250 7,000  
Feet



**FIGURE 3 - WATER WELL LOCATION MAP**  
GOSSETT EU #1  
EOG RESOURCES, INC.



**Legend**

-  EOG Sample Location
-  Excavation/Proposed Remediation Area

**NOTES:**

1. ALL PROPERTY BOUNDARIES ARE APPROXIMATE AND NOT TO BE USED FOR CONSTRUCTION PURPOSES.
2. AERIAL IMAGERY IS UTILIZED AS A POINT OF REFERENCE; SITE DETAIL LOCATIONS ARE APPROXIMATE.
3. AERIAL MAP IS AN ARCHIVED IMAGE AND MAY NOT REFLECT CURRENT CONDITIONS.

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



0 5 10 20 30 40 Feet

**FIGURE 4 - DELINEATION SOIL SAMPLE MAP**

GOSSETT EU #1  
EOG RESOURCES, INC.



0 5 10 20 30 40 Feet

**FIGURE 5 - PROPOSED SOIL BORING,  
VENT WELL AND INJECTION WELL  
LOCATION MAP  
GOSSETT EU #1  
EOG RESOURCES, INC.**

## TABLES



Analytical Report	Sample Area	Latitude/Longitude	Sample Date	Sample Type	Depth	BTEX	GRO	DRO	EXT DRO	Chlorides
S-1.9	Excavation Area (BH)	32.803217 104.458359	11/17/2017	Grab/Backhoe	9'	685.0	17300	4640	<10.0	64
S-1.10	Excavation Area (BH)	"	11/17/2017	Grab/Backhoe	10'	1430.0	38600	6910	<10.0	16
S-1.11	Excavation Area (BH)	"	11/17/2017	Grab/Backhoe	11'	1330.0	44300	8240	<10.0	48
S-1.12	Excavation Area (BH)	"	11/17/2017	Grab/Backhoe	12'	639.0	9860	1890	<10.0	80
S-1.13	Excavation Area (BH)	"	11/17/2017	Grab/Backhoe	13'	1160.0	35200	8190	<10.0	16
CP-1	North Sidewall	32.803237 104.458363	11/17/2017	Grab/Backhoe	9' X 1'	1.2	<10.0	<10.0	<10.0	32
CP-2	South Sidewall	32.803196 104.458361	11/17/2017	Grab/Backhoe	9' X 1'	<0.30	<10.0	<10.0	<10.0	128
CP-3	East Sidewall	32.803215 104.458336	11/17/2017	Grab/Backhoe	9' X 1'	0.316	<10.0	<10.0	<10.0	96
CP-4	West Sidewall	32.803217 104.458385	11/17/2017	Grab/Backhoe	9' X 1'	<0.30	<10.0	<10.0	<10.0	48
SP-1	Stockpile #1		11/17/2017	Grab/Shovel	1'	39.8	450	176	<10.0	160
SP-2	Stockpile #2		11/17/2017	Grab/Shovel	1'	252.0	3060	630	<10.0	112
Analytical Report	Sample Area	Latitude/Longitude	Sample Date	Sample Type	Depth	BTEX	GRO	DRO	EXT DRO	Chlorides
S-1.15	Excavation Area (BH)	32.803217 104.458359	12/7/2017	Grab/Backhoe	15'	881.0	29000	6410	<10.0	32
S-1.18	Excavation Area (BH)	"	12/7/2017	Grab/Trackhoe	18'	629.0	9290	2080	<10.0	<16
S-1.20	Excavation Area (BH)	"	12/7/2017	Grab/Trackhoe	20'	1230.0	13200	3060	<10.0	<16
S-1.22	Excavation Area (BH)	"	12/7/2017	Grab/Trackhoe	12'	488.0	8110	1870	<10.0	<16
S-1.25	Excavation Area (BH)	"	12/7/2017	Grab/Trackhoe	25'	750.0	13100	3150	<10.0	32
S-1.28	Excavation Area (BH)	"	12/7/2017	Grab/Trackhoe	28'	921.0	14000	3300	<10.0	16
S-1.30	Excavation Area (BH)	"	12/7/2017	Grab/Trackhoe	30'	891.0	19000	4440	<10.0	32
S-1.32	Excavation Area (BH)	"	12/7/2017	Grab/Backhoe	32'	651.0	16300	4020	<10.0	16

Site Ranking is Zero (0). Depth to Ground Water >100' (approx. 185', per USGS & NMOSE).

All results are ppm. BSL - Below Surface Level

ATTACHMENT 1 – C-141 FORM AND NMOCD  
DOCUMENTATION

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural  
Resources Department  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-141  
Revised August 24, 2018  
Submit to appropriate OCD District office

Incident ID	
District RP	
Facility ID	
Application ID	

## Release Notification

### Responsible Party

Responsible Party EOG Y Resources, Inc.	OGRID
Contact Name Robert Asher	Contact Telephone 575-748-4217
Contact email Bob_Asher@eogresources.com	Incident # (assigned by OCD)
Contact mailing address 104 S. 4 <sup>th</sup> St., Artesia, NM 88210	

### Location of Release Source

Latitude 32.80320° Longitude -104.45833°  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Gossett EU #1	Site Type Former Battery
Date Release Discovered 11/14/2017	API# 30-015-21627

Unit Letter	Section	Township	Range	County
K	26	17S	25E	Eddy

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (The Brown Partnership, 6503 Torrey Pine Cove, Austin, TX 78746)

### Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 12	Volume Recovered (bbls) 0
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input checked="" type="checkbox"/> Condensate	Volume Released (bbls) 65	Volume Recovered (bbls) 0
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release Failure of the bottom of the production tank.




State of New Mexico  
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

<p>Was this a major release as defined by 19.15.29.7(A) NMAC?</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>If YES, for what reason(s) does the responsible party consider this a major release?</p>
<p>If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Immediate notice was given to Mike Bratcher at the OCD via email on 11/14/17 at 2:02 PM.</p>	

## Initial Response

*The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury*

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Bob Asher</u>	Title: <u>Environmental Supervisor</u>
Signature: 	Date: <u>12/12/2019</u>
email: <u>Bob_Asher@eogresources.com</u>	Telephone: <u>575-748-4217</u>
<b><u>OCD Only</u></b>	
Received by: _____	Date: _____

State of New Mexico  
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

## Site Assessment/Characterization

*This information must be provided to the appropriate district office no later than 90 days after the release discovery date.*

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>150</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

**Characterization Report Checklist:** *Each of the following items must be included in the report.*

- ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☒ Field data
- ☒ Data table of soil contaminant concentration data
- ☒ Depth to water determination
- ☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- ☒ Boring or excavation logs
- ☒ Photographs including date and GIS information
- ☒ Topographic/Aerial maps
- ☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico  
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Bob Asher Title: Environmental Supervisor

Signature:  Date: 12/12/2019

email: Bob\_Asher@eogresources.com Telephone: 575-748-4217

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_



Incident ID	
District RP	
Facility ID	
Application ID	

## Remediation Plan

**Remediation Plan Checklist:** *Each of the following items must be included in the plan.*

- ☒ Detailed description of proposed remediation technique
- ☒ Scaled sitemap with GPS coordinates showing delineation points
- ☒ Estimated volume of material to be remediated
- ☒ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☒ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

**Deferral Requests Only:** *Each of the following items must be confirmed as part of any request for deferral of remediation.*

- ☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☐ Extents of contamination must be fully delineated.
- ☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Bob Asher Title: Environmental Supervisor

Signature:  Date: 12/12/2019

email: Bob\_Asher@eogresources.com Telephone: 575-748-4217

### OCD Only

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## NM OIL CONSERVATION

ARTESIA DISTRICT

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

DEC 07 2017

Form C-141  
Revised August 8, 2011

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

RECEIVED by to appropriate District Office in  
accordance with 19.15.29 NMAC.

## Release Notification and Corrective Action

NAB1734231833

## OPERATOR

☒ Initial Report ☐ Final Report

Name of Company EOG Y Resources, Inc.	OGRID Number 25575	Contact Robert Asher
Address 104 S. 4 <sup>th</sup> Street	Telephone No. 575-748-1471	
Facility Name Gossett EU #1	Facility Type Battery	

Surface Owner Fee	Mineral Owner Fee	API No. 30-015-21627
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## LOCATION OF RELEASE

Unit Letter K	Section 26	Township 17S	Range 25E	Feet from the 1650	North/South Line South	Feet from the 1980	East/West Line West	County Eddy
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Latitude 32.80361 Longitude 104.45809

## NATURE OF RELEASE

Type of Release Condensate & Produced Water	Volume of Release 65 B/C & 12 B/PW	Volume Recovered 0 B/C & 0 B/PW
Source of Release Production Tank	Date and Hour of Occurrence 11/14/2017; AM	Date and Hour of Discovery 11/14/2017; AM
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Mike Bratcher/NMOCD II	
By Whom? Amber Griffin/EOG Y	Date and Hour 11/14/2017; PM 2:02 PM * per email	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*


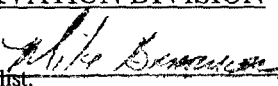
Describe Cause of Problem and Remedial Action Taken.\*

The bottom on the production tank failed, causing the release. Vacuum truck(s) and roustabout crews were called.

Describe Area Affected and Cleanup Action Taken.\*

An approximate area of 20'X 20'. Release was within the bermed unlined battery. The valves were closed, vacuum trucks were called and a roustabout crew was called to begin excavation impacted soils (all excavated soils have been placed on a liner and bermed with clean soils). A Characterization Plan will be submitted. Vertical and horizontal delineation samples will be taken and analysis ran for TPH & BTEX (chlorides for documentation). If initial analytical results for TPH & BTEX are under RRAL's (site ranking is 0) a Final Report, C-141/Closure Report will be submitted to the OCD requesting closure. If the analytical results are above the RRAL's a work plan will be submitted to the OCD. Depth to Ground Water: >100' (approximately 185', per the USGS & NMOSE Groundwater Levels), Wellhead Protection Area: No, Distance to Surface Water Body: >1000', SITE RANKING IS 0.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	OIL CONSERVATION DIVISION	
Printed Name: Robert Asher	Signed By  Approved by Environmental Specialist.	
Title: Environmental Supervisor	Approval Date: 12/8/17	Expiration Date: N/A
E-mail Address: Robert_Asher@eogresources.com	Conditions of Approval: See Attached and note at page bottom	
Date: December 7, 2017	Phone: 575-748-4217	Attached <input type="checkbox"/> 2RP-4516

\* Attach Additional Sheets If Necessary

\*\*Chloride data will be considered for possible remedial actions

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 12/7/2017 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number 2RP-4516 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 division-approved corrective action 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 2 office in ARTESIA on or before 1/7/2018. 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; C<sub>6</sub> thru C<sub>36</sub>), 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; C<sub>6</sub> thru C<sub>36</sub>), 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



**Bratcher, Mike, EMNRD**

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**From:** Bob Asher <Bob\_Asher@eogresources.com>  
**Sent:** Thursday, December 7, 2017 3:59 PM  
**To:** Bratcher, Mike, EMNRD; Weaver, Crystal, EMNRD; NMSLO (Carlsbad/Ion Dolly) (idolly@slo.state.nm.us); NMSLO (Hobbs/Amber Grroves); NMSLO (Hobbs/Mathew Hagman) (mhagman@slo.state.nm.us); NMSLO (Roswell/Mark Najanjo) (mnaranjo@slo.state.nm.us); NMSLO (Santa Fe/Dana Vackar Strang) (dvstrang@slo.state.nm.us)  
**Subject:** Form C-141 Initial Report (Gossett EU #1)  
**Attachments:** Form C-141 Initial Report (Gossett EU #1).pdf

Thank you,

**Robert C. "Bob" Asher**  
**Environmental Supervisor**  
Safety & Environmental Department  
EOG Resources, Inc.  
Artesia Division  
Artesia, NM 88210  
575-748-4217 (Office)  
575-365-4021 (Cell)  
EOG Safety Begins With YOUR Safety



**Bratcher, Mike, EMNRD**

---

**From:** Amber Griffin <Amber\_Griffin@eogresources.com>  
**Sent:** Tuesday, November 14, 2017 2:02 PM \*  
**To:** Bratcher, Mike, EMNRD; Weaver, Crystal, EMNRD  
**Cc:** Bob Asher; Chase Settle; Katie Parker  
**Subject:** Release Notification (Gossett EU #1)

**EOG Y Resources, Inc. is reporting a release at the following location (11/14/2017, approximately 1:45 PM).**

Gossett EU #1  
Section 26, T17S-R25E  
Eddy County, New Mexico  
API 30-015-21627

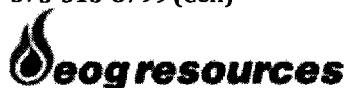
**Released: >25 bbls crude oil**

Cause of the release appears to be from a hole in the bottom of the production tank. No further information at this time. A Form C-141 with complete information will be submitted.

Thank you,

***Amber Griffin***

Rep Safety & Environmental II  
EOG Resources – Artesia Division  
105 S. 4<sup>th</sup> Street  
Artesia, NM 88210  
575-748-4111 (Office)  
575-513-8799 (Cell)





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

**EOG Y Resources, Inc.**

***Characterization Plan***

**Gossett EU #1**

**30-015-21627**

**Section 26, T17S-R25E**

**Eddy County, New Mexico**

**April 3, 2018**

**1RP-4516**

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**Figures:**

Figure 1: Site Map

Figure 2: Site Map with Vertical Sample Point(s)

Figure 3: Site Map with Horizontal Sample Point(s)

**Photos****Appendices:**

Appendix A: Water Well Data Site Map

Appendix B: NMOSE Point of Diversion Summary

Appendix C: USGS Water Information System

Appendix D: Form C-141 Initial



## I. Location

From Artesia, NM travel West on Main Street (US 82). Turn left (South) onto 26<sup>th</sup> street, in 3 miles turn right (West) onto lease road (lease road intersects with Fairgrounds Road), continue on lease road for approximately 1.6 miles, turn right (North) and continue for 0.3 miles to the Southeast corner of the well pad.

## II. Background

On November 14, 2017, EOG Y Resources, Inc. submitted to the NMOCD District II office a Form C-141 for the release of 65 B/O & 12 B/PW with 0 B/O & 0 B/PW recovered. The affected area is approximately 20' X 20' within the primary berm of the battery. The release was caused by a hole in the bottom of the production tank, which caused the release. A vacuum truck was called but did not recover any oil and or produced water. A backhoe was dispatched to excavate impacted soils which were stockpiled on the location on a liner and bermed. A roustabout crew repaired the tank and relocated the tank/battery to the west of the excavation. That battery is now lined with a 20 millimeter liner.

## III. Surface and Ground Water

Area surface geology is Cenozoic Pleistocene. Based on information regarding this location (Section 26, T8S-R33E), the New Mexico Office of the State Engineer (NMOSE) Point of Diversion Summary indicates the depth to groundwater as follows: (NMOSE-RA03590, DTGW @ 150' & NMOSE-RA04012, DTGW @ 171'), the United States Geological Survey National Water Information System, indicates the depth to groundwater as follows: (USGS #324728104271902, DTGW @ 192' & USGS #324831104283201, DTGW @ 225'). The depth to groundwater is >100, per USGS and NMOSE groundwater level. **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 Brantley Lake (14.5 miles, SE direction).

## 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	100 ppm
Chlorides	No established RRAL



**V. Sampling Procedure**

Vertical delineation samples will be collected at 1 sample point (S-1) within the release area. Due to the nature of the release (oil & produced water), vertical delineation soil samples will be analyzed for Benzene, BTEX, TPH extended, and Chlorides (for documentation, with no established RRAL's for chlorides). If these samples are below RRALs for Benzene, BTEX, and TPH extended, no further sampling for these constituents will occur. If these samples are above RRALs for Benzene, BTEX, and TPH extended, further soil samples will be collected. All samples will be sent to a NMOCD approved laboratory for analysis.

Horizontal delineation samples will be collected at 4 sample points (CP1-CP4) at what is believed to be the outer edge of the release area. Due to the nature of the release (oil & produced water), vertical delineation soil samples will be analyzed for Benzene, BTEX, TPH extended, and Chlorides (for documentation, with no established RRAL's for chlorides). If these samples are below RRALs for Benzene, BTEX, and TPH extended, no further sampling for these constituents will occur. If these samples are above RRALs for Benzene, BTEX, and TPH extended, further soil samples will be collected. All samples will be sent to a NMOCD approved laboratory for analysis.

Latitude/Longitude Coordinates for Sample Points

S-1	32.803217°; -104.458359°
CP-1	32.803237°; -104.458361°
CP-2	32.803196°; -104.458361°
CP-3	32.803215°; -104.458336°
CP-4	32.803217°; -104.458358 °

Gossett EU#1  
Characterization Plan



April 3, 2018

---

# Figure 1

## Site Map



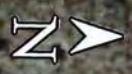
**Gossett EU #1**  
Section 26, T17S-R25E  
Eddy County, New Mexico

**Legend**  
○ Gossett EU #1

Gossett EU #1

Google Earth

100 ft





Gossett EU#1  
Characterization Plan



April 3, 2018

---

## Figure 2

### Vertical Sample Point(s)

**Gossett EU #1**

Section 26, T17S-R25E  
Eddy County, New Mexico

**Legend**

- Vertical Sample Points



Google Earth

© 2018 Google

30 ft



Gossett EU#1  
Characterization Plan



April 3, 2018

---

## Figure 3

### Horizontal Sample Point(s)



# Gossett EU #1

Section 26, T17S-R25E  
Eddy County, New Mexico

## Legend

- Horizontal Sample Points



## Figure 4

### Stockpile Sample Point(s)



**Gossett EU #1**  
Section 26, T17S-R25E  
Eddy County, New Mexico

- Legend**
- Gossett EU #1
  - SP-1 (Stockpile)
  - SP-2 (Stockpile)

- SP-2  
SP-1  
SP-2  
SP-1  
SP-2  
SP-1  
SP-2  
SP-1  
SP-2  
SP-1

Gossett EU #1





## Bratcher, Mike, EMNRD

---

**From:** Bratcher, Mike, EMNRD  
**Sent:** Monday, May 14, 2018 8:00 AM  
**To:** 'Bob Asher'; Weaver, Crystal, EMNRD  
**Cc:** Yvette Moore  
**Subject:** RE: Gossett EU #1 Characterization Plan (Part 1)

RE: EOG Y \* Gossett EU 1 \* **2RP-4516** \* DOR \* 11/14/17

Bob,

Your characterization plan for the above referenced release is approved. Delineation goal for chloride impact is 600 mg/kg.

Thank you,

Mike Bratcher  
NMOCD District 2  
811 South First Street  
Artesia, NM 88210  
575-748-1283 Ext 108

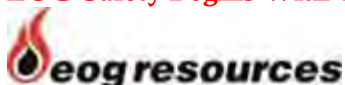
OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

---

**From:** Bob Asher <Bob\_Asher@eogresources.com>  
**Sent:** Tuesday, April 3, 2018 4:00 PM  
**To:** Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Weaver, Crystal, EMNRD <Crystal.Weaver@state.nm.us>  
**Cc:** Yvette Moore <Yvette\_Moore@eogresources.com>  
**Subject:** Gossett EU #1 Characterization Plan (Part 1)

Thank you,

**Robert C. "Bob" Asher**  
**Environmental Supervisor**  
Safety & Environmental Department  
EOG Resources, Inc.  
Artesia Division  
Artesia, NM 88210  
575-748-4217 (Office)  
575-365-4021 (Cell)  
**EOG Safety Begins With YOUR Safety**



ATTACHMENT 2 - USGS AND NMOSE WATER  
WELL DATA



# New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced,  
O=orphaned,  
C=the file is closed)

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

(quarters are smallest to largest) (NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
<a href="#">RA 03525</a>	RA	ED		2	3	4	27	17S	25E	549630	3629446*	1122	250	200	50
<a href="#">RA 05055</a>	RA	ED			1	4	35	17S	25E	551160	3628136*	1568	245	185	60
<a href="#">RA 05286</a>	RA	ED		2	1	3	23	17S	25E	550426	3631456*	1836	285	196	89
<a href="#">RA 04012</a>	RA	ED		3	3	1	23	17S	25E	550224	3631658*	2076	247	171	76
<a href="#">RA 11958 POD1</a>	RA	ED		4	1	2	25	17S	25E	552770	3630496	2206	300	179	121
<a href="#">RA 04008</a>	RA	ED		2	4	2	22	17S	25E	550017	3631858*	2326	325	200	125
<a href="#">RA 02776</a>	RA	ED		1	3	4	24	17S	25E	552658	3631062*	2388	218		
<a href="#">RA 04791</a>	RA	ED			3	1	24	17S	25E	551943	3631765*	2439	1107		
<a href="#">RA 03590</a>	RA	CH		4	4	4	25	17S	25E	553273	3629250*	2568	266	150	116
<a href="#">RA 10090</a>	RA	ED		2	1	1	01	18S	25E	552074	3627435*	2584	234	170	64
<a href="#">RA 10090 POD2</a>	RA	CH		2	1	1	01	18S	25E	552074	3627435*	2584	234	170	64
<a href="#">RA 08103</a>	RA	ED				2	02	18S	25E	551372	3627128*	2596	200		
<a href="#">RA 06077</a>	RA	ED			1	1	01	18S	25E	551975	3627336*	2621	325	187	138
<a href="#">RA 12642 POD1</a>	RA	ED		3	1	3	30	17S	26E	553412	3629567	2677	250	168	82
<a href="#">RA 04170</a>	RA	ED		3	3	4	36	17S	25E	552680	3627635*	2797	207		
<a href="#">RA 07251</a>	RA	ED			4	2	02	18S	25E	551574	3626930*	2842	215	175	40
<a href="#">RA 11661 POD1</a>	RA	ED		2	3	1	01	18S	25E	552131	3627004	2987	270	171	99
<a href="#">RA 01535</a>	RA	ED		3	3	1	31	17S	26E	553483	3628444*	2999	219		

Average Depth to Water: **178 feet**

Minimum Depth: **150 feet**

Maximum Depth: **200 feet**

Record Count: 18

**UTM NAD83 Radius Search (in meters):**

**Easting (X):** 550735.1

**Northing (Y):** 3629645.5

**Radius:** 3000

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

4/19/19 2:48 PM

Page 1 of 1

WATER COLUMN/ AVERAGE  
DEPTH TO WATER

USGS 324728104271902 17S.25E.35.411113A



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[USGS Water Resources](#)

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Site Information



Geographic Area:

United States



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## USGS 324728104271902 17S.25E.35.411113A

Available data for this site

SUMMARY OF ALL AVAILABLE DATA

GO

### Well Site

#### DESCRIPTION:

Latitude 32°47'28", Longitude 104°27'19" NAD27

Eddy County, New Mexico

Well depth: 245 feet

Land surface altitude: 3,492 feet above NAVD88.

Well completed in "Alluvium, Bolson Deposits and Other Surface Deposits" (110AVMB) local aquifer

#### AVAILABLE DATA:

Data Type	Begin Date	End Date	Count
<a href="#">Field groundwater-level measurements</a>	1979-03-28	1994-02-23	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](#)

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**Title: NWIS Site Information for USA: Site Inventory**

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



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0.43 0.41 vaww02





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Data Category:

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Geographic Area:

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Groundwater levels for the Nation

### Search Results -- 1 sites found

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- 324728104271902

Minimum number of levels = 1

[Save file of selected sites](#) to local disk for future upload

### USGS 324728104271902 17S.25E.35.411113A

Available data for this site

Groundwater: Field measurements

GO

Eddy County, New Mexico

Hydrologic Unit Code --

Latitude 32°47'28", Longitude 104°27'19" NAD27

Land-surface elevation 3,492 feet above NAVD88

The depth of the well is 245 feet below land surface.

This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

#### Output formats

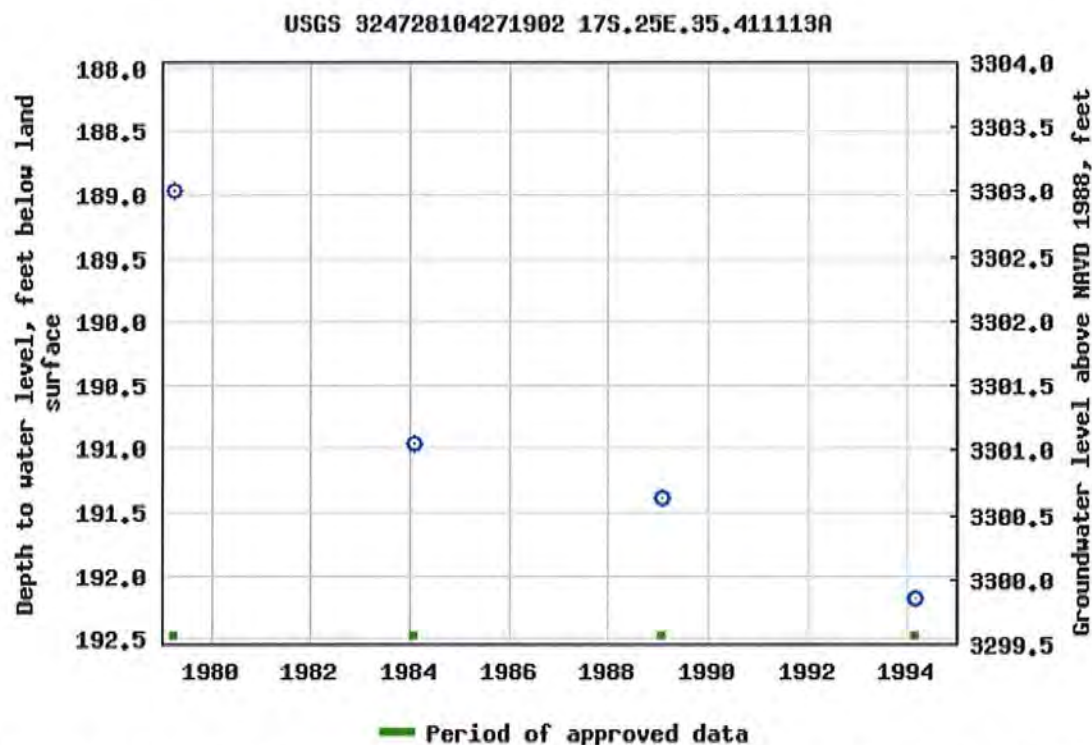
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**Title: Groundwater for USA: Water Levels**

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1.05 0.91 nadww01



USGS 324831104283201 17S.25E.27.141413

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## USGS 324831104283201 17S.25E.27.141413

Available data for this site

SUMMARY OF ALL AVAILABLE DATA ▼

GO

### Well Site

#### DESCRIPTION:

Latitude 32°48'31", Longitude 104°28'32" NAD27

Eddy County, New Mexico , Hydrologic Unit 13060007

Well depth: 250 feet

Land surface altitude: 3,538 feet above NAVD88.

Well completed in "Roswell Basin aquifer system" (S400RSWLBS) national aquifer.

Well completed in "Alluvium, Bolson Deposits and Other Surface Deposits" (110AVMB) local aquifer

#### AVAILABLE DATA:

Data Type	Begin Date	End Date	Count
<a href="#">Field groundwater-level measurements</a>	1979-03-28	2015-01-15	18

#### 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](#)[Questions about sites/data?](#)[Feedback on this web site](#)

USGS 324831104283201 17S.25E.27.141413

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**Title: NWIS Site Information for USA: Site Inventory**

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



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0.43 0.42 vaww02



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## National Water Information System: Web Interface

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Data Category:

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Geographic Area:

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Groundwater levels for the Nation

### Search Results -- 1 sites found

site\_no list =

- 324831104283201

Minimum number of levels = 1

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### USGS 324831104283201 17S.25E.27.141413

Available data for this site

Groundwater: Field measurements

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Eddy County, New Mexico

Hydrologic Unit Code 13060007

Latitude 32°48'31", Longitude 104°28'32" NAD27

Land-surface elevation 3,538 feet above NAVD88

The depth of the well is 250 feet below land surface.

This well is completed in the Roswell Basin aquifer system (S400RSWLBS) national aquifer.

This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

#### Output formats

[Table of data](#)

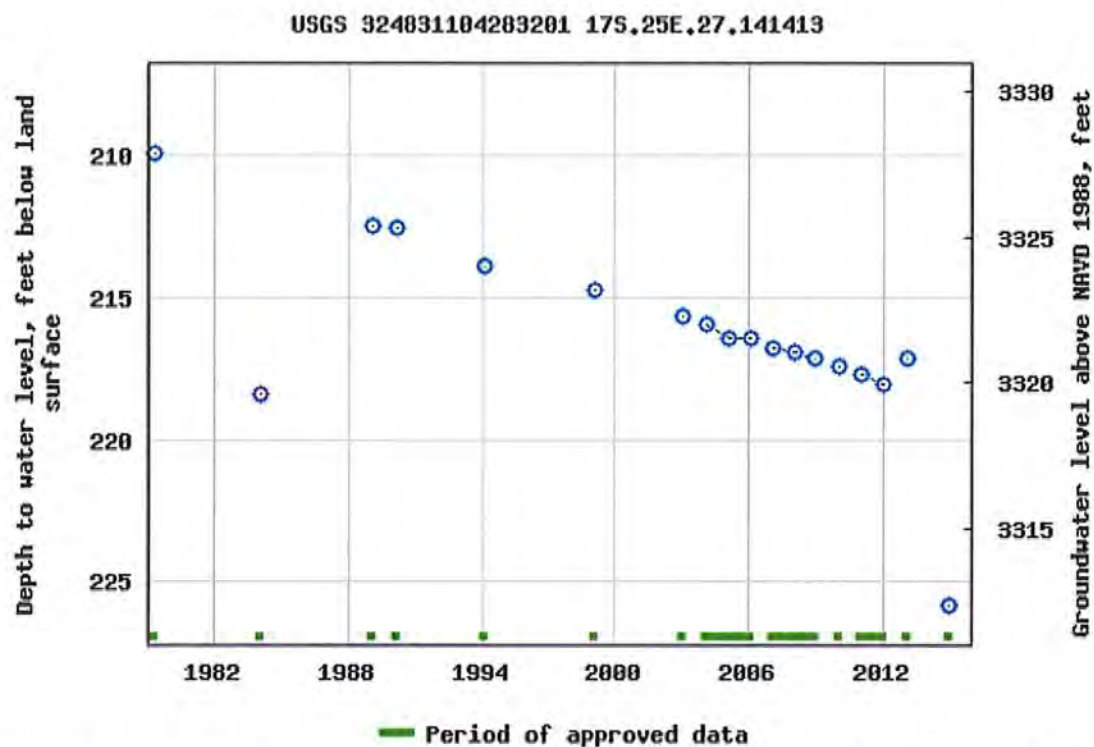
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Page Contact Information: [USGS Water Data Support Team](#)

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1.17 1.02 nadww01

## ATTACHMENT 3 – SITE PHOTOGRAPHS



**PHOTOGRAPH NO. 1 – A view of the impacted/excavated area at the Site on April 17, 2019. The view is towards the southwest.**



**PHOTOGRAPH NO. 1 – A view of the excavated material currently stockpiled on-site. The view is towards the north.**

## ATTACHMENT 4 – LABORATORY ANALYTICAL REPORTS





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

---

November 27, 2017

ROBERT ASHER

EOG Y RESOURCES, INC

105 SOUTH 4TH STREET

ARTESIA, NM 88210

RE: GOSSETT EU#1

Enclosed are the results of analyses for samples received by the laboratory on 11/17/17 11:25.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. 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](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received: 11/17/2017  
 Reported: 11/27/2017  
 Project Name: GOSSETT EU#1  
 Project Number: 30-015-21627  
 Project Location: EDDY CO NM

Sampling Date: 11/17/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: S-9 9' (H703217-01)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	11/20/2017	ND	432	108	400	3.77	

**Sample ID: S-10 10' (H703217-02)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	11/20/2017	ND	448	112	400	3.64	

**Sample ID: S-11 11' (H703217-03)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	11/20/2017	ND	448	112	400	3.64	

**Sample ID: S-12 12' (H703217-04)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	11/20/2017	ND	448	112	400	3.64	

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received: 11/17/2017  
 Reported: 11/27/2017  
 Project Name: GOSSETT EU#1  
 Project Number: 30-015-21627  
 Project Location: EDDY CO NM

Sampling Date: 11/17/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: S-13 13' (H703217-05)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	11/20/2017	ND	448	112	400	3.64		

**Sample ID: CP-1 9' (H703217-06)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	11/20/2017	ND	448	112	400	3.64		

**Sample ID: CP-2 9' (H703217-07)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	96.0	16.0	11/20/2017	ND	448	112	400	3.64		

**Sample ID: CP-3 9' (H703217-08)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	11/20/2017	ND	448	112	400	3.64	

**Sample ID: CP-4 9' (H703217-09)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	11/20/2017	ND	448	112	400	3.64		

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received: 11/17/2017  
 Reported: 11/27/2017  
 Project Name: GOSSETT EU#1  
 Project Number: 30-015-21627  
 Project Location: EDDY CO NM

Sampling Date: 11/17/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP-1 1' (H703217-10)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	11/20/2017	ND	448	112	400	3.64	

**Sample ID: SP-2 1' (H703217-11)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	112	16.0	11/20/2017	ND	448	112	400	3.64		

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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### 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

---

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A handwritten signature in black ink, appearing to read "C. D. Keene", is written over a horizontal line.

---

Celey D. Keene, Lab Director/Quality Manager



**ARDINAL LABORATORIES**  
101 East Marland, Hobbs, NM 88240

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

# CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Robert Asher

Company Name: EOG Resources, Inc.

Company Address: 104 South 4th Street

City/State/Zip: Artesia, NM 88210

Telephone No: 575-748-4171

Sampler Signature: EOG

e-mail: bob\_asher@eogresources.com

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Project Name: Gossett EU #1

Project #: 30-015-21627

Project Loc: Eddy County

PO #: 205632

(lab use only)  
ORDER #: H703218-

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Preservation & # of Containers	Matrix	TPH: 8015M Extended	TPH: TX 1005	TPH: TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
1	S-9	9'	9'	11/17/2017	7:05 AM		1	X															
2	S-10	10'	10'	11/17/2017	7:07 AM		1	X															
3	S-11	11'	11'	11/17/2017	7:10 AM		1	X															
4	S-12	12'	12'	11/17/2017	7:15 AM		1	X															
5	S-13	13'	13'	11/17/2017	7:18 AM		1	X															
6	CP-1	9'	9'	11/17/2017	7:21 AM		1	X															
7	CP-2	9'	9'	11/17/2017	7:26 AM		1	X															
8	CP-3	9'	9'	11/17/2017	7:32 AM		1	X															
9	CP-4	9'	9'	11/17/2017	7:36 AM		1	X															
10	SP-1	1'	1'	11/17/2017	7:44 AM		1	X															

Special Instructions: **TPH EXTENDED/Chlorides on Separate Results.** ALL results in mg/kg. Thank you.

Laboratory Comments:

Sample Containers Intact?

VOGs Free of Headspace?

Labels on container(s)

Custody seals on container(s)

Sample Hand Delivered

by Sampler/Client Rep.?

by Courier?

UPS

DHL

FedEx

Lone Star

Temperature Upon Receipt: 39°

4.15c





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## CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Name: Gossett EU #1

Project #: 30-015-21627


Project Loc: Eddy County

PO #: 205632

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

City/State/Zip: Artesia, NM 88210

Telephone No: 575-748-4471

Sampler Signature: 

Fax No: \_\_\_\_\_

e-mail: \_\_\_\_\_

[bob\\_asher@eogresources.com](mailto:bob_asher@eogresources.com)

(lab use only)

ORDER #: H703217

(lab use only)					
ORDER #:		H703217			
LAB # (lab use only)					
FIELD CODE					
Beginning Depth		1'			
Ending Depth		1'			
Date Sampled		11/17/2017			
Time Sampled		7:51 AM			
Field Filtered					
Total #. of Containers		1			
Ice		X			
HNO <sub>3</sub>					
HCl					
H <sub>2</sub> SO <sub>4</sub>					
NaOH					
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>					
None					
Other ( Specify )					
Matrix		S			
DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other					
TPH: 8015M Extended		X			
TPH: TX 1005 TX 1006					
Cations (Ca, Mg, Na, K)					
Anions (Cl)		X			
SAR / ESP / CEC					
Metals: As Ag Ba Cd Cr Pb Hg Se					
Volatiles					
Semivolatiles					
BTEx 8021B/5030 or BTEx 8260		X			
RCI					
N.O.R.M.					
RUSH TAT (Pre-Schedule) 24, 48, 72 hrs					
Standard TAT		X			

Special Instructions:		TPH EXTENDED/Chlorides on Separate Results. ALL results in mg/kg. Thank you.	
Relinquished by:		Date	Time
Relinquished by:		Date	Time
Relinquished by:		Date	Time

Received by:		Date	Time
Received by:		Date	Time
Received by ELDT:		Date	Time

Laboratory Comments:		Sample Containers Intact?		N
VOCs Free of Headspace?				N
Labels on container(s)?				N
Custody seals on container(s)?				N
Custody seals on cooler(s)?				N
Sample Hand Delivered by Sampler/Client Rep.? ?				N
by Courier? UPS DHL FedEx Lone Star				N
Temperature Upon Receipt:		3.9°C		
		Corrected 4.5°C		



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November 27, 2017

ROBERT ASHER

EOG Y RESOURCES, INC

105 SOUTH 4TH STREET

ARTESIA, NM 88210

RE: GOSSETT EU#1

Enclosed are the results of analyses for samples received by the laboratory on 11/17/17 11:25.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. 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](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style with a large, stylized 'C' and 'K'.

Celey D. Keene

Lab Director/Quality Manager



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**Analytical Results For:**

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

Received: 11/17/2017  
 Reported: 11/27/2017  
 Project Name: GOSSETT EU#1  
 Project Number: 30-015-21627  
 Project Location: EDDY CO NM

Sampling Date: 11/17/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: S-9 9' (H703217-01)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<10.0	10.0	11/21/2017	ND	1.84	92.1	2.00	0.779	
Toluene*	87.1	10.0	11/21/2017	ND	1.83	91.7	2.00	0.931	
Ethylbenzene*	63.9	10.0	11/21/2017	ND	1.79	89.3	2.00	0.531	
Total Xylenes*	534	30.0	11/21/2017	ND	5.69	94.8	6.00	0.550	
Total BTEX	685	60.0	11/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 112 % 72-148

TPH 8015M		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	17300	100	11/20/2017	ND	203	102	200	18.5	
DRO >C10-C28	4640	10.0	11/17/2017	ND	195	97.3	200	12.2	
EXT DRO >C28-C36	<10.0	10.0	11/17/2017	ND					

Surrogate: 1-Chlorooctane 1690 % 28.3-164

Surrogate: 1-Chlorooctadecane 106 % 34.7-157

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**Analytical Results For:**

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

Received: 11/17/2017  
 Reported: 11/27/2017  
 Project Name: GOSSETT EU#1  
 Project Number: 30-015-21627  
 Project Location: EDDY CO NM

Sampling Date: 11/17/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: S-10 10' (H703217-02)**

BTEx 8021B		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<20.0	20.0	11/21/2017	ND	1.84	92.1	2.00	0.779	
Toluene*	290	20.0	11/21/2017	ND	1.83	91.7	2.00	0.931	
Ethylbenzene*	107	20.0	11/21/2017	ND	1.79	89.3	2.00	0.531	
Total Xylenes*	1030	60.0	11/21/2017	ND	5.69	94.8	6.00	0.550	
Total BTEX	1430	120	11/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 72-148

TPH 8015M		mg/kg	Analyzed By: MS							S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	38600	100	11/20/2017	ND	203	102	200	18.5		
DRO >C10-C28	6910	10.0	11/17/2017	ND	195	97.3	200	12.2		
EXT DRO >C28-C36	<10.0	10.0	11/17/2017	ND						

Surrogate: 1-Chlorooctane 2440 % 28.3-164

Surrogate: 1-Chlorooctadecane 86.2 % 34.7-157

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**Analytical Results For:**

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

Received: 11/17/2017  
 Reported: 11/27/2017  
 Project Name: GOSSETT EU#1  
 Project Number: 30-015-21627  
 Project Location: EDDY CO NM

Sampling Date: 11/17/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: S-11 11' (H703217-03)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<20.0	20.0	11/21/2017	ND	1.84	92.1	2.00	0.779	
<b>Toluene*</b>	<b>262</b>	20.0	11/21/2017	ND	1.83	91.7	2.00	0.931	
<b>Ethylbenzene*</b>	<b>101</b>	20.0	11/21/2017	ND	1.79	89.3	2.00	0.531	
<b>Total Xylenes*</b>	<b>970</b>	60.0	11/21/2017	ND	5.69	94.8	6.00	0.550	
<b>Total BTEX</b>	<b>1330</b>	120	11/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 107 % 72-148

TPH 8015M		mg/kg		Analyzed By: MS						S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10</b>	<b>44300</b>	100	11/20/2017	ND	203	102	200	18.5		
<b>DRO &gt;C10-C28</b>	<b>8240</b>	10.0	11/17/2017	ND	195	97.3	200	12.2		
EXT DRO >C28-C36	<10.0	10.0	11/17/2017	ND						

Surrogate: 1-Chlorooctane 836 % 28.3-164

Surrogate: 1-Chlorooctadecane 82.9 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received: 11/17/2017  
 Reported: 11/27/2017  
 Project Name: GOSSETT EU#1  
 Project Number: 30-015-21627  
 Project Location: EDDY CO NM

Sampling Date: 11/17/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: S-12 12' (H703217-04)**

BTEx 8021B		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<5.00	5.00	11/21/2017	ND	1.84	92.1	2.00	0.779	
<b>Toluene*</b>	<b>97.2</b>	5.00	11/21/2017	ND	1.83	91.7	2.00	0.931	
<b>Ethylbenzene*</b>	<b>62.2</b>	5.00	11/21/2017	ND	1.79	89.3	2.00	0.531	
<b>Total Xylenes*</b>	<b>480</b>	15.0	11/21/2017	ND	5.69	94.8	6.00	0.550	
<b>Total BTEX</b>	<b>639</b>	30.0	11/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 117 % 72-148

TPH 8015M		mg/kg	Analyzed By: MS							S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10</b>	<b>9860</b>	100	11/20/2017	ND	203	102	200	18.5		
<b>DRO &gt;C10-C28</b>	<b>1890</b>	10.0	11/17/2017	ND	195	97.3	200	12.2		
EXT DRO >C28-C36	<10.0	10.0	11/17/2017	ND						

Surrogate: 1-Chlorooctane 742 % 28.3-164

Surrogate: 1-Chlorooctadecane 84.6 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received: 11/17/2017  
 Reported: 11/27/2017  
 Project Name: GOSSETT EU#1  
 Project Number: 30-015-21627  
 Project Location: EDDY CO NM

Sampling Date: 11/17/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: S-13 13' (H703217-05)**

<b>BTEX 8021B</b>		<b>mg/kg</b>	<b>Analyzed By: MS</b>						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<20.0	20.0	11/21/2017	ND	1.84	92.1	2.00	0.779	
<b>Toluene*</b>	<b>241</b>	20.0	11/21/2017	ND	1.83	91.7	2.00	0.931	
<b>Ethylbenzene*</b>	<b>88.8</b>	20.0	11/21/2017	ND	1.79	89.3	2.00	0.531	
<b>Total Xylenes*</b>	<b>833</b>	60.0	11/21/2017	ND	5.69	94.8	6.00	0.550	
<b>Total BTEX</b>	<b>1160</b>	120	11/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 107 % 72-148

<b>TPH 8015M</b>		<b>mg/kg</b>	<b>Analyzed By: MS</b>							<b>S-04</b>
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10</b>	<b>35200</b>	100	11/20/2017	ND	203	102	200	18.5		
<b>DRO &gt;C10-C28</b>	<b>8190</b>	10.0	11/17/2017	ND	195	97.3	200	12.2		
EXT DRO >C28-C36	<10.0	10.0	11/17/2017	ND						

Surrogate: 1-Chlorooctane 829 % 28.3-164

Surrogate: 1-Chlorooctadecane 96.8 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

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

Received: 11/17/2017  
 Reported: 11/27/2017  
 Project Name: GOSSETT EU#1  
 Project Number: 30-015-21627  
 Project Location: EDDY CO NM

Sampling Date: 11/17/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: CP-1 9' (H703217-06)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/21/2017	ND	2.02	101	2.00	1.36	
<b>Toluene*</b>	<b>0.444</b>	0.050	11/21/2017	ND	2.01	100	2.00	0.890	
<b>Ethylbenzene*</b>	<b>0.096</b>	0.050	11/21/2017	ND	1.97	98.6	2.00	1.73	
<b>Total Xylenes*</b>	<b>0.679</b>	0.150	11/21/2017	ND	6.28	105	6.00	2.20	
<b>Total BTEX</b>	<b>1.22</b>	0.300	11/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 72-148

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/20/2017	ND	203	102	200	18.5	
DRO >C10-C28	<10.0	10.0	11/20/2017	ND	195	97.3	200	12.2	
EXT DRO >C28-C36	<10.0	10.0	11/20/2017	ND					

Surrogate: 1-Chlorooctane 73.2 % 28.3-164

Surrogate: 1-Chlorooctadecane 69.4 % 34.7-157

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received: 11/17/2017  
 Reported: 11/27/2017  
 Project Name: GOSSETT EU#1  
 Project Number: 30-015-21627  
 Project Location: EDDY CO NM

Sampling Date: 11/17/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: CP-2 9' (H703217-07)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/21/2017	ND	2.02	101	2.00	1.36	
Toluene*	0.056	0.050	11/21/2017	ND	2.01	100	2.00	0.890	
Ethylbenzene*	<0.050	0.050	11/21/2017	ND	1.97	98.6	2.00	1.73	
Total Xylenes*	0.259	0.150	11/21/2017	ND	6.28	105	6.00	2.20	
Total BTEX	0.316	0.300	11/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 72-148

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/20/2017	ND	203	102	200	18.5	
DRO >C10-C28	<10.0	10.0	11/20/2017	ND	195	97.3	200	12.2	
EXT DRO >C28-C36	<10.0	10.0	11/20/2017	ND					

Surrogate: 1-Chlorooctane 92.1 % 28.3-164

Surrogate: 1-Chlorooctadecane 87.7 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received: 11/17/2017  
 Reported: 11/27/2017  
 Project Name: GOSSETT EU#1  
 Project Number: 30-015-21627  
 Project Location: EDDY CO NM

Sampling Date: 11/17/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: CP-3 9' (H703217-08)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/21/2017	ND	2.02	101	2.00	1.36	
Toluene*	0.054	0.050	11/21/2017	ND	2.01	100	2.00	0.890	
Ethylbenzene*	<0.050	0.050	11/21/2017	ND	1.97	98.6	2.00	1.73	
Total Xylenes*	<0.150	0.150	11/21/2017	ND	6.28	105	6.00	2.20	
Total BTEX	<0.300	0.300	11/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 72-148

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/17/2017	ND	203	102	200	18.5	
DRO >C10-C28	<10.0	10.0	11/17/2017	ND	195	97.3	200	12.2	
EXT DRO >C28-C36	<10.0	10.0	11/17/2017	ND					

Surrogate: 1-Chlorooctane 101 % 28.3-164

Surrogate: 1-Chlorooctadecane 92.3 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received: 11/17/2017  
 Reported: 11/27/2017  
 Project Name: GOSSETT EU#1  
 Project Number: 30-015-21627  
 Project Location: EDDY CO NM

Sampling Date: 11/17/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: CP-4 9' (H703217-09)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/21/2017	ND	2.02	101	2.00	1.36	
Toluene*	0.072	0.050	11/21/2017	ND	2.01	100	2.00	0.890	
Ethylbenzene*	<0.050	0.050	11/21/2017	ND	1.97	98.6	2.00	1.73	
Total Xylenes*	<0.150	0.150	11/21/2017	ND	6.28	105	6.00	2.20	
Total BTEX	<0.300	0.300	11/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 72-148

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/17/2017	ND	203	102	200	18.5	
DRO >C10-C28	<10.0	10.0	11/17/2017	ND	195	97.3	200	12.2	
EXT DRO >C28-C36	<10.0	10.0	11/17/2017	ND					

Surrogate: 1-Chlorooctane 99.3 % 28.3-164

Surrogate: 1-Chlorooctadecane 94.9 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

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

Received: 11/17/2017  
 Reported: 11/27/2017  
 Project Name: GOSSETT EU#1  
 Project Number: 30-015-21627  
 Project Location: EDDY CO NM

Sampling Date: 11/17/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP-1 1' (H703217-10)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	11/21/2017	ND	2.02	101	2.00	1.36	
Toluene*	2.51	0.200	11/21/2017	ND	2.01	100	2.00	0.890	
Ethylbenzene*	4.26	0.200	11/21/2017	ND	1.97	98.6	2.00	1.73	
Total Xylenes*	33.0	0.600	11/21/2017	ND	6.28	105	6.00	2.20	
Total BTEX	39.8	1.20	11/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 144 % 72-148

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	450	10.0	11/20/2017	ND	188	93.9	200	3.43	
DRO >C10-C28	176	10.0	11/20/2017	ND	194	96.9	200	2.99	
EXT DRO >C28-C36	<10.0	10.0	11/20/2017	ND					

Surrogate: 1-Chlorooctane 133 % 28.3-164

Surrogate: 1-Chlorooctadecane 65.5 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received: 11/17/2017  
 Reported: 11/27/2017  
 Project Name: GOSSETT EU#1  
 Project Number: 30-015-21627  
 Project Location: EDDY CO NM

Sampling Date: 11/17/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP-2 1' (H703217-11)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<2.00	2.00	11/21/2017	ND	2.02	101	2.00	1.36	
<b>Toluene*</b>	<b>24.5</b>	2.00	11/21/2017	ND	2.01	100	2.00	0.890	
<b>Ethylbenzene*</b>	<b>25.6</b>	2.00	11/21/2017	ND	1.97	98.6	2.00	1.73	
<b>Total Xylenes*</b>	<b>202</b>	6.00	11/21/2017	ND	6.28	105	6.00	2.20	
<b>Total BTEX</b>	<b>252</b>	12.0	11/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 124 % 72-148

TPH 8015M		mg/kg		Analyzed By: MS						S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10</b>	<b>3060</b>	10.0	11/20/2017	ND	188	93.9	200	3.43		
<b>DRO &gt;C10-C28</b>	<b>630</b>	10.0	11/20/2017	ND	194	96.9	200	2.99		
EXT DRO >C28-C36	<10.0	10.0	11/20/2017	ND						

Surrogate: 1-Chlorooctane 192 % 28.3-164

Surrogate: 1-Chlorooctadecane 67.1 % 34.7-157

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### Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
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.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



**ARDINAL LABORATORIES**  
101 East Marland, Hobbs, NM 88240

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

# CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Robert Asher

Company Name: EOG Resources, Inc.

Company Address: 104 South 4th Street

City/State/Zip: Artesia, NM 88210

Telephone No: 575-748-4171

Sampler Signature: EOG

(lab use only)

ORDER #: H703218-

Fax No:

e-mail:

bob\_asher@eogresources.com

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Project Name: Gossett EU #1

Project #: 30-015-21627

Project Loc: Eddy County

PO #: 205632

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Preservation & # of Containers	Matrix	TPH: 8015M Extended	TPH: TX 1005	TPH: TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
1	S-9	9'	9'	11/17/2017	7:05 AM		1	X															
2	S-10	10'	10'	11/17/2017	7:07 AM		1	X															
3	S-11	11'	11'	11/17/2017	7:10 AM		1	X															
4	S-12	12'	12'	11/17/2017	7:15 AM		1	X															
5	S-13	13'	13'	11/17/2017	7:18 AM		1	X															
6	CP-1	9'	9'	11/17/2017	7:21 AM		1	X															
7	CP-2	9'	9'	11/17/2017	7:26 AM		1	X															
8	CP-3	9'	9'	11/17/2017	7:32 AM		1	X															
9	CP-4	9'	9'	11/17/2017	7:36 AM		1	X															
10	SP-1	1'	1'	11/17/2017	7:44 AM		1	X															

Special Instructions: **TPH EXTENDED/Chlorides on Separate Results.** ALL results in mg/kg. Thank you.

Laboratory Comments:

Sample Containers Intact?

VOGs Free of Headspace?

Labels on container(s)

Custody seals on container(s)

Sample Hand Delivered

by Sampler/Client Rep.?

by Courier?

UPS

DHL

FedEx

Lone Star

Temperature Upon Receipt: 39°

4.15c





**ARDINAL LABORATORIES**  
101 East Marland, Hobbs, NM 88240

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

# CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Robert Asher

Company Name: EOG Resources, Inc.

Company Address: 104 South 4th Street

City/State/Zip: Artesia, NM 88210

Telephone No: 575-748-4471

Sampler Signature: EOG e-mail: bob\_asher@eogresources.com

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Project Name: Gossett EU #1

Project #: 30-015-21627

Project Loc: Eddy County

PO #: 205632

Page 15 of 15

LAB # (lab use only)		FIELD CODE		Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Preservation & # of Containers							Matrix	Analyze For:		RUSH TAT (Pre-Schedule) 24, 48, 72 hrs												
LAB #	SP-2	1'	1'	11/17/2017	7:51 AM				1	Ice	HNO <sub>3</sub>	HCl	H <sub>2</sub> SO <sub>4</sub>	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	None	Other (Specify)	DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	TPH: 8015M Extended	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	Standard TAT		



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---

December 15, 2017

ROBERT ASHER

EOG Y RESOURCES, INC

105 SOUTH 4TH STREET

ARTESIA, NM 88210

RE: GOSSETT EU#1

Enclosed are the results of analyses for samples received by the laboratory on 12/08/17 12:25.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. 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](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is fluid and cursive, with the first name "Celey" and last name "Keene" clearly distinguishable.

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	12/08/2017	Sampling Date:	12/07/2017
Reported:	12/15/2017	Sampling Type:	Soil
Project Name:	GOSSETT EU#1	Sampling Condition:	Cool & Intact
Project Number:	30-015-21627	Sample Received By:	Tamara Oldaker
Project Location:	EDDY CO NM		

**Sample ID: S-1.15 (H703398-01)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	12/12/2017	ND	432	108	400	0.00	

**Sample ID: S-1.18 (H703398-02)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	12/12/2017	ND	432	108	400	0.00	

**Sample ID: S-1.20 (H703398-03)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	12/12/2017	ND	432	108	400	0.00	

**Sample ID: S-1.22 (H703398-04)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	12/12/2017	ND	432	108	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received: 12/08/2017  
 Reported: 12/15/2017  
 Project Name: GOSSETT EU#1  
 Project Number: 30-015-21627  
 Project Location: EDDY CO NM

Sampling Date: 12/07/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: S-1.25 (H703398-05)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	12/12/2017	ND	432	108	400	0.00	

**Sample ID: S-1.28 (H703398-06)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	12/12/2017	ND	432	108	400	0.00	

**Sample ID: S-1.30 (H703398-07)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	12/12/2017	ND	432	108	400	0.00	

**Sample ID: S-1.32 (H703398-08)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	12/12/2017	ND	432	108	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager



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### 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

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A handwritten signature in black ink, appearing to read "C. D. Keene", is written over a horizontal line.

Celey D. Keene, Lab Director/Quality Manager





**ARDINAL LABORATORIES**  
101 East Marland, Hobbs, NM 88240

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

# CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Robert Asher

Company Name: EOG Resources, Inc.

Company Address: 104 South 4th Street

City/State/Zip: Artesia, NM 88210

Telephone No: 575-748-4171

Sampler Signature: \_\_\_\_\_

Fax No: \_\_\_\_\_

e-mail: \_\_\_\_\_

bob\_asher@eogresources.com

Project Name: Gossett EU #1

Project #: 30-015-21627

Project Loc: Eddy County

PO #: 205632

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

(lab use only)

ORDER #: H703398

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Ice	HNO <sub>3</sub>	HCl	H <sub>2</sub> SO <sub>4</sub>	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	None	Other (Specify)	DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Matrix	TPH: 8015M Extended	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
1	S-1.15	15'	15'	12/7/2017	8:15 AM		1	X									S	X												X
2	S-1.18	18'	18'	12/7/2017	8:17 AM		1	X									S	X												X
3	S-1.20	20'	20'	12/7/2017	8:21 AM		1	X									S	X												X
4	S-1.22	22'	22'	12/7/2017	8:24 AM		1	X									S	X												X
5	S-1.25	25'	25'	12/7/2017	8:29 AM		1	X									S	X												X
6	S-1.28	28'	28'	12/7/2017	7:21 AM		1	X									S	X												X
7	S-1.30	30'	30'	12/7/2017	8:39 AM		1	X									S	X												X
8	S-1.32	32'	32'	12/7/2017	8:44 AM		1	X									S	X												X

**TPH EXTENDED/Chlorides on Separate Results.** ALL results in mg/kg. Thank you.

## Laboratory Comments:

Sample Containers Intact? ☒ Y  
VOCs Free of Headspace? ☒ Y  
Labels on container(s) ☒ Y  
Custody seals on container(s) ☒ Y  
Sample Hand Delivered by Sampler/Client Rep. ? ☒ Y  
by Courier? ☒ UPS ☒ DHL ☒ FedEx ☒ Lone Star  
Temperature Upon Receipt: 2.3°C  
2.5°C



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---

December 15, 2017

ROBERT ASHER

EOG Y RESOURCES, INC

105 SOUTH 4TH STREET

ARTESIA, NM 88210

RE: GOSSETT EU#1

Enclosed are the results of analyses for samples received by the laboratory on 12/08/17 12:25.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. 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](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is fluid and cursive, with the first name "Celey" and last name "Keene" clearly distinguishable.

Celey D. Keene

Lab Director/Quality Manager



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**Analytical Results For:**

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

Received: 12/08/2017  
 Reported: 12/15/2017  
 Project Name: GOSSETT EU#1  
 Project Number: 30-015-21627  
 Project Location: EDDY CO NM

Sampling Date: 12/07/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: S-1.15 (H703398-01)**

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>4.37</b>	2.00	12/12/2017	ND	1.92	96.1	2.00	0.215	
<b>Toluene*</b>	<b>164</b>	2.00	12/12/2017	ND	1.91	95.4	2.00	0.463	
<b>Ethylbenzene*</b>	<b>85.6</b>	2.00	12/12/2017	ND	1.85	92.4	2.00	0.133	
<b>Total Xylenes*</b>	<b>627</b>	6.00	12/12/2017	ND	5.71	95.2	6.00	0.177	
<b>Total BTX</b>	<b>881</b>	12.0	12/12/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 122 % 72-148

TPH 8015M		mg/kg		Analyzed By: MS						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10</b>	<b>29000</b>	100	12/14/2017	ND	202	101	200	0.119		
<b>DRO &gt;C10-C28</b>	<b>6410</b>	100	12/14/2017	ND	226	113	200	1.73		
EXT DRO >C28-C36	<100	100	12/14/2017	ND						

Surrogate: 1-Chlorooctane 537 % 28.3-164

Surrogate: 1-Chlorooctadecane 78.0 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received: 12/08/2017  
 Reported: 12/15/2017  
 Project Name: GOSSETT EU#1  
 Project Number: 30-015-21627  
 Project Location: EDDY CO NM

Sampling Date: 12/07/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: S-1.18 (H703398-02)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>2.51</b>	2.00	12/12/2017	ND	1.92	96.1	2.00	0.215	
<b>Toluene*</b>	<b>106</b>	2.00	12/12/2017	ND	1.91	95.4	2.00	0.463	
<b>Ethylbenzene*</b>	<b>59.3</b>	2.00	12/12/2017	ND	1.85	92.4	2.00	0.133	
<b>Total Xylenes*</b>	<b>461</b>	6.00	12/12/2017	ND	5.71	95.2	6.00	0.177	
<b>Total BTEX</b>	<b>629</b>	12.0	12/12/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 123 % 72-148

TPH 8015M		mg/kg		Analyzed By: MS						S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10</b>	<b>9290</b>	10.0	12/14/2017	ND	202	101	200	0.119		
<b>DRO &gt;C10-C28</b>	<b>2080</b>	10.0	12/14/2017	ND	226	113	200	1.73		
EXT DRO >C28-C36	<10.0	10.0	12/14/2017	ND						

Surrogate: 1-Chlorooctane 178 % 28.3-164

Surrogate: 1-Chlorooctadecane 79.8 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

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

Received: 12/08/2017  
 Reported: 12/15/2017  
 Project Name: GOSSETT EU#1  
 Project Number: 30-015-21627  
 Project Location: EDDY CO NM

Sampling Date: 12/07/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: S-1.20 (H703398-03)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>7.79</b>	2.00	12/12/2017	ND	1.92	96.1	2.00	0.215	
<b>Toluene*</b>	<b>250</b>	2.00	12/12/2017	ND	1.91	95.4	2.00	0.463	
<b>Ethylbenzene*</b>	<b>117</b>	2.00	12/12/2017	ND	1.85	92.4	2.00	0.133	
<b>Total Xylenes*</b>	<b>855</b>	6.00	12/12/2017	ND	5.71	95.2	6.00	0.177	
<b>Total BTEX</b>	<b>1230</b>	12.0	12/12/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 129 % 72-148

TPH 8015M		mg/kg		Analyzed By: MS						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10</b>	<b>13200</b>	100	12/14/2017	ND	202	101	200	0.119		
<b>DRO &gt;C10-C28</b>	<b>3060</b>	100	12/14/2017	ND	226	113	200	1.73		
EXT DRO >C28-C36	<100	100	12/14/2017	ND						

Surrogate: 1-Chlorooctane 318 % 28.3-164

Surrogate: 1-Chlorooctadecane 74.0 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

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

Received: 12/08/2017  
 Reported: 12/15/2017  
 Project Name: GOSSETT EU#1  
 Project Number: 30-015-21627  
 Project Location: EDDY CO NM

Sampling Date: 12/07/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: S-1.22 (H703398-04)**

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	2.08	2.00	12/12/2017	ND	1.92	96.1	2.00	0.215	
Toluene*	79.7	2.00	12/12/2017	ND	1.91	95.4	2.00	0.463	
Ethylbenzene*	45.9	2.00	12/12/2017	ND	1.85	92.4	2.00	0.133	
Total Xylenes*	360	6.00	12/12/2017	ND	5.71	95.2	6.00	0.177	
Total BTX	488	12.0	12/12/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 116 % 72-148

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	8110	10.0	12/14/2017	ND	202	101	200	0.119	
DRO >C10-C28	1870	10.0	12/14/2017	ND	226	113	200	1.73	
EXT DRO >C28-C36	<10.0	10.0	12/14/2017	ND					

Surrogate: 1-Chlorooctane 161 % 28.3-164

Surrogate: 1-Chlorooctadecane 79.0 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received: 12/08/2017  
 Reported: 12/15/2017  
 Project Name: GOSSETT EU#1  
 Project Number: 30-015-21627  
 Project Location: EDDY CO NM

Sampling Date: 12/07/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: S-1.25 (H703398-05)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>3.10</b>	2.00	12/12/2017	ND	1.92	96.1	2.00	0.215	
<b>Toluene*</b>	<b>127</b>	2.00	12/12/2017	ND	1.91	95.4	2.00	0.463	
<b>Ethylbenzene*</b>	<b>73.6</b>	2.00	12/12/2017	ND	1.85	92.4	2.00	0.133	
<b>Total Xylenes*</b>	<b>546</b>	6.00	12/12/2017	ND	5.71	95.2	6.00	0.177	
<b>Total BTEX</b>	<b>750</b>	12.0	12/12/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 124 % 72-148

TPH 8015M		mg/kg		Analyzed By: MS						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10</b>	<b>13100</b>	100	12/14/2017	ND	224	112	200	4.14	QM-07	
<b>DRO &gt;C10-C28</b>	<b>3150</b>	100	12/14/2017	ND	236	118	200	6.32	QM-07	
EXT DRO >C28-C36	<100	100	12/14/2017	ND						

Surrogate: 1-Chlorooctane 348 % 28.3-164

Surrogate: 1-Chlorooctadecane 96.0 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received: 12/08/2017  
 Reported: 12/15/2017  
 Project Name: GOSSETT EU#1  
 Project Number: 30-015-21627  
 Project Location: EDDY CO NM

Sampling Date: 12/07/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: S-1.28 (H703398-06)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>5.23</b>	2.00	12/12/2017	ND	1.92	96.1	2.00	0.215	
<b>Toluene*</b>	<b>180</b>	2.00	12/12/2017	ND	1.91	95.4	2.00	0.463	
<b>Ethylbenzene*</b>	<b>86.4</b>	2.00	12/12/2017	ND	1.85	92.4	2.00	0.133	
<b>Total Xylenes*</b>	<b>650</b>	6.00	12/12/2017	ND	5.71	95.2	6.00	0.177	
<b>Total BTEX</b>	<b>921</b>	12.0	12/12/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 124 % 72-148

TPH 8015M		mg/kg		Analyzed By: MS						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10</b>	<b>14000</b>	100	12/14/2017	ND	224	112	200	4.14		
<b>DRO &gt;C10-C28</b>	<b>3300</b>	100	12/14/2017	ND	236	118	200	6.32		
EXT DRO >C28-C36	<100	100	12/14/2017	ND						

Surrogate: 1-Chlorooctane 353 % 28.3-164

Surrogate: 1-Chlorooctadecane 92.5 % 34.7-157

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received: 12/08/2017  
 Reported: 12/15/2017  
 Project Name: GOSSETT EU#1  
 Project Number: 30-015-21627  
 Project Location: EDDY CO NM

Sampling Date: 12/07/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: S-1.30 (H703398-07)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>5.13</b>	2.00	12/12/2017	ND	1.92	96.1	2.00	0.215	
<b>Toluene*</b>	<b>171</b>	2.00	12/12/2017	ND	1.91	95.4	2.00	0.463	
<b>Ethylbenzene*</b>	<b>84.8</b>	2.00	12/12/2017	ND	1.85	92.4	2.00	0.133	
<b>Total Xylenes*</b>	<b>630</b>	6.00	12/12/2017	ND	5.71	95.2	6.00	0.177	
<b>Total BTEX</b>	<b>891</b>	12.0	12/12/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 125 % 72-148

TPH 8015M		mg/kg		Analyzed By: MS						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10</b>	<b>19000</b>	100	12/14/2017	ND	224	112	200	4.14		
<b>DRO &gt;C10-C28</b>	<b>4440</b>	100	12/14/2017	ND	236	118	200	6.32		
EXT DRO >C28-C36	<100	100	12/14/2017	ND						

Surrogate: 1-Chlorooctane 448 % 28.3-164

Surrogate: 1-Chlorooctadecane 108 % 34.7-157

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received: 12/08/2017  
 Reported: 12/15/2017  
 Project Name: GOSSETT EU#1  
 Project Number: 30-015-21627  
 Project Location: EDDY CO NM

Sampling Date: 12/07/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: S-1.32 (H703398-08)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>2.80</b>	2.00	12/12/2017	ND	1.92	96.1	2.00	0.215	
<b>Toluene*</b>	<b>108</b>	2.00	12/12/2017	ND	1.91	95.4	2.00	0.463	
<b>Ethylbenzene*</b>	<b>61.8</b>	2.00	12/12/2017	ND	1.85	92.4	2.00	0.133	
<b>Total Xylenes*</b>	<b>479</b>	6.00	12/12/2017	ND	5.71	95.2	6.00	0.177	
<b>Total BTEX</b>	<b>651</b>	12.0	12/12/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 117 % 72-148

TPH 8015M		mg/kg		Analyzed By: MS						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10</b>	<b>16300</b>	100	12/14/2017	ND	224	112	200	4.14		
<b>DRO &gt;C10-C28</b>	<b>4020</b>	100	12/14/2017	ND	236	118	200	6.32		
EXT DRO >C28-C36	<100	100	12/14/2017	ND						

Surrogate: 1-Chlorooctane 433 % 28.3-164

Surrogate: 1-Chlorooctadecane 111 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager



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### Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
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

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

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Celey D. Keene, Lab Director/Quality Manager



ATTACHMENT 5 – *LIQUID REMEDIACT*™  
SAFETY DATA SHEET

# Material Safety Data Sheet

## SpillAway Projects Ltd

37 Underhill, Moultsford, Oxfordshire UK OX10 9JH

Emergency Tel No: +44 (0)7767 018418

### Section 1 – Product Identification

**Product:** Liquid Remediate™**Description:** Bioremedial Cleaner for Hydrocarbon Contamination in water and soil.

### Section 2 – Ingredients Classification

**Hazardous Components:** None**Typical Composition:** An aqueous-water based solution of single-celled micro-organisms in a solution of micronutrients, extracts and bio-surfactants with natural food colour added for identification.

NAME	EC NUMBER	CAS NUMBER	CONTENT
NON-IONIC SHORT CHAIN ALCOHOL	500-019-9	9005-65-6	4-<5%
BACTERIAL CULTURES		N/A	5-<6%
FOLDED ORANGE OIL	232-433-8	8028-48-6	5-<6%

All contents are non-hazardous and readily biodegradable.

### Section 3 – Hazards Identification

**Hazardous Components:** None**SARA Hazard:** *Title III Section 313:* Not Listed  
*Fire-(Section 311/312):* None Noted

### Section 4 – Emergency First Aid Measures

**Follow Standard First Aid Procedures:****Swallowing:** Call Physician or poison control centre  
**Skin Contact:** Wash affected area with water  
**Eye Contact:** Flush eyes with cool water for at least 15 minutes  
**Inhalation:** Remove victim to fresh air

### Section 5 – Fire & Explosion Hazards

**Flash Point & Method Used:** N/A  
**Flammable Limits:** N/A  
**NFPA Rating:** NO NFPA RATING**HMIS Rating:** Health: 0 Fire: 0 Reactivity: 0**Special fire fighting procedures & precautions:** NONE  
**Unusual Fire & Explosion Hazards:** NONE

## Section 6 – Accidental Release Measures

**Spill or Leak Precautions:** None  
**Waste Disposal:** May be disposed of in normal waste stream according to local government rules and other by-law requirements

## Section 7 – Precautions: Handling, Storage & Usage

Although there are no special precautions to be taken in handling, storage or usage of this product that will change its safe use, it is recommended that it be kept at a temperature between 32° F. & 120° F. in order for it to be most effective.

## Section 8 – Exposure Controls & Personal Protection

**Exposure Limits:** **WEL:** NO OSHA WEL **TLV:** NO ACGIH TLV

**Employee Protection:**

**Control Measures:** Adequate Ventilation  
**Respiratory Protection:** None Required  
**Protective Clothing:** None Required  
**Eye Protection:** None Required, but recommended

## Section 9 – Physical Data

**Boiling Point:** 212° F.  
**Melting Point:** N/A  
**Vapour Pressure:** MM/HG: <0.01 @ 20°C  
**Specific Gravity:** H<sub>2</sub>O=1 1.00=+/- 0.1  
**Solubility in Water:** Complete  
**Appearance:** Liquid  
**Odour:** Mild Citrus  
**Colour:** Colourless  
**pH:** 6.9 to 7.2

## Section 10 – Stability & Reactivity

**Stability:** Stable  
**Hazardous Polymerization:** None  
**Materials to Avoid:** Strong oxidizing agents & strong acids  
**Hazardous Decomposition Products:** None  
**Conditions to Avoid:** Do not quick freeze or expose to temperatures over 150° F. These temperatures pose no hazard but they are not compatible to this product.



## Section 11 – Toxicological Information

### Effects of Overexposure:

**Inhalation:** No Known Problem  
**Ingestion:** May Cause Mild Transient Gastrointestinal Irritation.  
**Eye Contact:** May Cause Mild Transient Irritation. Not Classified.  
**Skin Contact:** Not Classified As A Skin Irritant Or Corrosive Material.

## Section 12 – Environmental Information

**Environmental Protection:** None. This product is environmentally safe even when large quantities are released into the environment.  
**Spill or Leak Precautions:** None

## Section 13 – Disposal Consideration

**Waste Disposal:** May be disposed of in normal waste stream according to federal, state or local requirements

## Section 14 – Transport Information

**Special Precautions:** None  
**DOT Classification:** Class 55  
**DOT Proper Shipping Name:** Cleaning Compounds

## Section 15 – Regulatory Information

**DOT Classification:** Class 55  
**DOT Proper Shipping Name:** Cleaning Compounds  
**Other Regulatory Requirements:** None

## Section 16 – Other Information

This information relates only to the specific material designated & may not be valid for such material used in combination with any other materials or in any other process. The stated M.S.D.S. is reliable to the best of the company's knowledge & believed to be accurate as of the date indicated. However, no representation, warranty or guarantee of any kind, expressed or implied, is made as to its accuracy, reliability or completeness & we assume no responsibility for any loss, damage or expense, direct or consequential, arising out of use. It is the user's responsibility to satisfy himself or herself as to the suitability & completeness of such information for his or her own particular use.

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Revision Date: 30/03/2009  
Prepared By: Mark Weinberg

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**State of New Mexico**  
**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
**1220 S. St Francis Dr.**  
**Santa Fe, NM 87505**

CONDITIONS

Action 162655

CONDITIONS

Operator: EOG RESOURCES INC P.O. Box 2267 Midland, TX 79702	OGRID: 7377
	Action Number: 162655
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
bhall	Site will need to meet the requirements of 19.15.29.13 NMAC at time of plugging and abandonment.	5/8/2023