



November 19, 2021

Vertex Project #: 21E-03278-09

Spill Closure Report: Rio Pecos GB Com #1
Section 29, Township 18 South, Range 27 East
API: 30-015-21889
County: Eddy
Incident Report: NAB1802538319/2RP-4580

Prepared For: EOG Y Resources, Inc.
104 South 4th Street
Artesia, New Mexico 88210

New Mexico Oil Conservation Division – District 2

811 South 1st Street
Artesia, New Mexico 88210

EOG Y Resources, Inc. (EOG) retained Vertex Resource Services Inc. (Vertex) to conduct a Spill Assessment and Remediation for a release of produced water and crude oil caused by a frozen ball valve on the fiberglass water tank at Rio Pecos GB Com #1, API 30-015-21889, Incident NAB1802538319/2RP-4580 (hereafter referred to as “Rio Pecos”). EOG provided notification to New Mexico Oil Conservation District (NMOCD) District 2 and the State of New Mexico Land office, who own the land, via submission of an initial C-141 Release Notification (Attachment 1). This letter provides a description of the Spill Assessment and Remediation, and includes a request for Spill Closure. The spill area is located at N 32.7242203, W -104.302948.

Background

The site is located approximately 4.82 miles east of Dayton, New Mexico. The legal location for the site is Section 29, Township 18 South and Range 27 East in Eddy County, New Mexico. The spill area is located on State property. An aerial photograph and site schematic are included in Attachment 2.

The Geological Map of New Mexico (New Mexico Bureau of Geology and Mineral Resources, 2021) indicates the site’s surface geology is comprised primarily of Pat - Artesia Group (Guadalupean) and is characterized as residuum weathered from gypsum. Predominant soil texture on the site is Arno-Harkey complex and gypsum land. Ecological settings of the area consist of grasslands with uniformly distributed grass patches on fine textured soils. Dominant vegetation within this area includes alkali sacaton and minor components of shrubs. Mesquite, whitehorn, and creosotebush can be invaders where hydrology has been altered through downcutting. Lovegrass, Russian thistle, kochia, and other nonnative annuals may initially invade following disturbance.

The surrounding landscape is associated with alluvial fans, flood plains, hills, plains and ridges typical of elevations between 1,100 to 5,000 feet. The climate is semi-arid with an average annual precipitation ranging between 4 to 16 inches. This soil tends to be moderately well drained with a very high runoff with a profile of silty clay loam, very fine sandy loam to gypsum (United States Department of Agriculture, Natural Resource Conservation Service, 2021).

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There is no surface water located on-site. The nearest significant watercourse, as defined in Subsection P of 19.15.17.7 of the New Mexico Administrative Code (NMAC), is the Pecos River, located approximately 0.09 miles west of the site (United States Fish and Wildlife Service, 2021). There are no continuously flowing watercourses, lakebeds, sinkholes, play lakes, or other critical water or community features at Rio Pecos, as outlined in Paragraph (4) of Subsection C of 19.15.29.12 NMAC.

Incident Description

The spill occurred on January 5, 2018, due to the ball valve on the fiberglass produced water tank on the load line freezing and breaking. The spill was reported on January 23, 2018, and involved the release of approximately 0.5 barrels (bbl.) of crude oil and 12 barrels (bbl.) of produced water into the earthen bermed containment. Approximately 11.5 bbl. of free fluid was removed during initial spill clean-up. The New Mexico Oil Conservation Division (NMOCD) C-141 Report: NAB1702538319/2RP-4580 is included in Attachment 1. The Daily Field Report (DFRs) and site photographs are included in Attachment 3.

Closure Criteria Determination

The depth to groundwater was determined using information from Oil and Gas Drilling records and the New Mexico Office of the State Engineer Water Column/Average Depth to Water report and United States Department of the Interior, United States Geological Survey. A 0.5 mile search radius was used to determine groundwater depth. The closest recorded depth to groundwater was determined to be 17 feet below ground surface (bgs) and 0.76 miles from the site. Included within closure criteria determination, karst potential is considered high at Rio Pecos. Documentation used in Closure Criteria Determination research is included in Attachment 4.

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Closure Criteria Worksheet				
Site Name: Rio Pecos GB Com #1				
Spill Coordinates:		X: 32.7242203	Y: -104.302948	
Site Specific Conditions		Value	Unit	Reference
1	Depth to Groundwater	17	feet	1
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	477	feet	2
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	20,526	feet	3
4	Within 300 feet from an occupied residence, school, hospital, institution or church	13,170	feet	4
5	i) Within 500 feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or	1,315	feet	5
	ii) Within 1000 feet of any fresh water well or spring	1,315	feet	5
6	Within incorporated municipal boundaries or within a defined municipal fresh water field covered under a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978 as amended, unless the municipality specifically approves	No	(Y/N)	6
7	Within 300 feet of a wetland	6,264	feet	7
8	Within the area overlying a subsurface mine	No	(Y/N)	8
9	Within an unstable area (Karst Map)	High	Critical High Medium Low	9
10	Within a 100-year Floodplain	>500	year	10
11	Soil Type	Arno-Harkey complex, Gypsum land		11
12	Ecological Classification	Salty Bottomland		12
13	Geology	Pat		13
	NMAC 19.15.29.12 E (Table 1) Closure Criteria	<50'	<50' 51-100' >100'	

The closure criteria determined for the site are associated with the following constituent concentration limits as presented in Table 1.

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Table 1. Closure Criteria for Soils Impacted by a Release		
Minimum depth below any point within the horizontal boundary of the release to groundwater less than 10,000 mg/l TDS	Constituent	Limit
< 50 feet	Chloride	600 mg/kg
	TPH (GRO+DRO+MRO)	100 mg/kg
	BTEX	50 mg/kg
	Benzene	10 mg/kg

TDS – total dissolved solids, TPH – total petroleum hydrocarbons, GRO – gas range organics, DRO – diesel range organics, MRO – motor oil range organics, BTEX – benzene, toluene, ethylbenzene and xylenes

Remedial Actions Taken

An initial site inspection of the spill area was completed on September 22, 2021, which identified the area of the spill specified in the initial C-141 Report, estimated the approximate volume of the spill and white lined the area required for the 811 One Call request. The impacted area was determined to be approximately 16 feet long and 12 feet wide; the total affected area was determined to be 88 square feet. Laboratory analysis and field screens results used to determinate the area to be excavated are provided in Table 2 (Attachment 5). The DFR associated with the site inspection is included in Attachment 3.

Remediation efforts began on October 29, 2021, and backfill was completed on November 10, 2021. Vertex personnel supervised the excavation of impacted soils. Field screening was completed on a total of nine sample points and consisted of analysis using a Photo Ionization Detector (volatile hydrocarbons), Dextsil Petroflag using EPA SW-846 Method 9074 (extractable hydrocarbons) and titration (chlorides). Field screening results were used to identify areas requiring further remediation from those areas showing concentrations below determined closure criteria levels. Soils were removed to a depth of 1 foot bgs. Impacted soil was transported by a licensed waste hauler and disposed of at an approved waste management facility. Field screening results are presented in Attachment 5, as well as in the DFRs in Attachment 3.

Additional sampling took place in the northeastern portion of the containment, noted as an area of concern by EOG, to determine if contamination was present. Excavation of the area was extended an additional 0.5 feet. Areas that were determined above closure criteria were also excavated (Attachment 2 – Figure 2).

Notification that confirmatory samples were being collected was provided to the NMOCD on October 20, 2021, and is included in Attachment 6 as required by Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC.

A GeoExplorer 7000 Series Trimble global positioning system (GPS) unit, or equivalent, was used to map the approximate center of each of the five-point composite samples.

Confirmatory composite samples were collected from the base and walls of the excavation. Each composite sample was representative of no more than 200 square feet per the alternate sampling method outlined in Subparagraph (c) of Paragraph (1) of Subsection D 19.15.29.12 NMAC, which does not require prior NMOCD approval. A total of nine (9) samples were collected for laboratory analysis following NMOCD soil sampling procedures. Samples were submitted to vertex.ca

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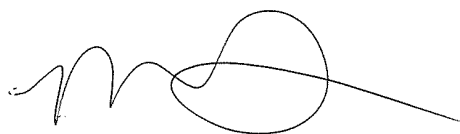
Hall Environmental Analysis Laboratory under chain-of-custody protocols and analyzed for BTEX (EPA Method 8021B), total petroleum hydrocarbons (GRO, DRO, MRO – EPA Method 8015D) and total chlorides (EPA Method 300.0). Laboratory results are included in Table 3 (Attachment 5) and the laboratory data report is included in Attachment 7. All confirmatory samples collected and analyzed were below closure criteria for the site.

Closure Request

The spill area was fully delineated, remediated and backfilled with local soils placed to meet the site's existing grade to prevent ponding of water and erosion by November 10, 2021. The Confirmatory Sample Notification email is included in Attachment 6. Confirmatory samples were analyzed by the laboratory and found to be below allowable concentrations as per the NMAC Closure Criteria for Soils Impacted by a Release locations "under 50 feet to groundwater and high karst potential".

Vertex requests that this incident (NAB1802538319/2RP-4580) be closed as all closure requirements set forth in Subsection E of 19.15.29.12 NMAC have been met. EOG certifies that all information in this report and the attachments is correct, and that they have complied with all applicable closure requirements and conditions specified in Division rules and directives to meet NMOCD requirements to obtain closure on the January 5, 2018, release at Rio Pecos. Based on these findings, EOG requests that this spill be closed.

Should you have any questions or concerns, please do not hesitate to contact Monica Peppin at 575.361.9880 or mpeppin@vertex.ca.



Monica Peppin
SENIOR ENVIRONMENTAL TECHNICIAN, REPORTING

December 8, 2021

Date



Dhugal Hanton, B.Sc., P.Ag SR/WA, P.Biol
VP – US OPERATIONS, REPORT REVIEW

December 8, 2021

Date

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Attachments

- Attachment 1. NMOCD C-141 Report
- Attachment 2. Site Figures
- Attachment 3. Daily Field Report(s) with Pictures
- Attachment 4. Closure Criteria for Soils Impacted by a Release Research Determination Documentation
- Attachment 5. Characterization and Confirmatory Sampling Laboratory Results Tables
- Attachment 6. Required 48-hr Notification of Confirmation Sampling to Regulatory Agencies
- Attachment 7. Laboratory Data Reports and Chain of Custody Forms

References

- Water Column/Average Depth to Water Report.* New Mexico Water Rights Reporting System, (2021). Retrieved from <http://nmwrrs.ose.state.nm.us/nmwrrs/waterColumn.html>
- Assessed and Impaired Waters of New Mexico.* New Mexico Department of Surface Water Quality Bureau, (2021). Retrieved from <https://gis.web.env.nm.gov/oem/?map=swqb>
- Groundwater for New Mexico: Water Levels.* United States Department of the Interior, United States Geological Survey, (2020). Retrieved from <https://nwis.waterdata.usgs.gov/nm/nwis/gwlevels?>
- Interactive Geologic Map.* New Mexico Bureau of Geology and Mineral Resources, (2021). Retrieved from <http://geoinfo.nmt.edu>
- Measured Distance from the Subject Site to Residence.* Google Earth Pro, (2021). Retrieved from <https://earth.google.com>
- Point of Diversion Location Report.* New Mexico Water Rights Reporting System, (2019). Retrieved from <http://nmwrrs.ose.state.nm.us/nmwrrs/wellSurfaceDiversion.html>
- Measured Distance from the Subject Site to Municipal Boundaries.* Google Earth Pro, (2021). Retrieved from <https://earth.google.com>
- National Wetland Inventory Surface Waters and Wetland.* United State Fish and Wildlife Service, (2019). Retrieved from <https://www.fws.gov/wetlands/data/mapper.html>
- Coal Mine Resources in New Mexico.* NM Mining and Minerals Division, (2019). Retrieved from <http://www.emnrd.state.nm.us/MMD/gismapminedata.html>
- New Mexico Cave/Karsts.* United States Department of the Interior, Bureau of Land Management, (2019) Retrieved from <https://www.blm.gov/programs/recreation/recreation-programs/caves/new-mexico>
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- Well Log/Meter Information Report.* NM Office of the State Engineer, New Mexico Water Rights Reporting System. (2019). Retrieved from <http://nmwrrs.ose.state.nm.us/nmwrrs/meterReport.html>
- Natural Resources and Wildlife Oil and Gas Releases.* New Mexico Oil Conservation Division, (2019). Santa Fe, New Mexico.

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Soil Survey, New Mexico. United States Department of Agriculture, Soil Conservation Service in Cooperation with New Mexico Agricultural Experiment Station. (1971). Retrieved from http://www.wipp.energy.gov/library/Information_Repository_A/Supplemental_Information/Chugg%20et%20al%201971%20w-map.pdf

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Limitations

This report has been prepared for the sole benefit of EOG Y Resources, Inc. This document may not be used by any other person or entity, with the exception of the New Mexico Oil Conservation Division, without the express written consent of Vertex Resource Services Inc. (Vertex) and EOG Y Resources, Inc. Any use of this report by a third party, or any reliance on decisions made based on it, or damages suffered as a result of the use of this report are the sole responsibility of the user.

The information and conclusions contained in this report are based upon work undertaken by trained professional and technical staff in accordance with generally accepted scientific practices current at the time the work was performed. The conclusions and recommendations presented represent the best judgement of Vertex based on the data collected during the assessment. Due to the nature of the assessment and the data available, Vertex cannot warrant against undiscovered environmental liabilities. Conclusions and recommendations presented in this report should not be considered legal advice.

ATTACHMENT 1

NM OIL CONSERVATION
ARTESIA DISTRICT

JAN 23 2018

Form C-141
Revised April 3, 2017

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

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

RECEIVED

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company EOG Y Resources, Inc. <i>25575</i>		Contact Chase Settle
Address 104 S. 4 th Street Artesia NM 88210		Telephone No. 575-748-1471
Facility Name Rio Pecos GB Com #1		Facility Type Well
Surface Owner Fee	Mineral Owner Fee	API No. 30-015-21889

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
C	29	18S	27E	660	North	1980	West	Eddy

Latitude 32.7242203 Longitude -104.302948 NAD83

NATURE OF RELEASE

Type of Release Oil & Produced Water	Volume of Release 0.5 B/O & 12 B/PW	Volume Recovered 0.5 B/O & 11 B/PW
Source of Release Ball valve on load line	Date and Hour of Occurrence 1/5/2018; 2:30 PM	Date and Hour of Discovery 1/5/2018; 3:00 PM
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom? N/A	
By Whom? N/A	Date and Hour N/A	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.* N/A

Describe Cause of Problem and Remedial Action Taken.*

A ball valve on the fiberglass produced water tank on the load line froze and broke causing the release. A vacuum truck was called to recover oil (100%) and produced water (92%). A backhoe was dispatched to excavate impacted soils and a crew replaced the valve.

Describe Area Affected and Cleanup Action Taken.*

The impacted area is approximately 65' X 5', 30' X 5' & 25' X 5' within the primary berm of the battery. Impacted soils have been removed and taken to an NMOCD approved facility. A Characterization plan will be submitted to the NMOCD. Vertical and horizontal delineation samples will be taken and analysis ran for TPH & BTEX (chlorides for documentation). Based off of analytical results for TPH & BTEX for the RRAL's and the site ranking of 0, if the analytical results are above the RRAL's a work plan will be submitted to the NMOCD, if the analytical results are below the RRAL's a closure report and Final C-141 will be submitted to the NMOCD. Depth to Ground Water: >100' (123', per NMOSE), Wellhead Protection Area: No, Distance to Surface Water Body: >1000', SITE RANKING IS 0.

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

Signature: <i>Robert Asher</i>	OIL CONSERVATION DIVISION	
Printed Name: Robert Asher	Approved by Environmental Specialist: <i>[Signature]</i>	
Title: Environmental Supervisor	Approval Date: <i>1/23/18</i>	Expiration Date: <i>N/A</i>
E-mail Address: robert.asher@eogresources.com	Conditions of Approval: <i>See Attached</i>	Attached: <i>ARP-4580</i>
Date: January 23, 2018	Phone: 575-748-4217	

* Attach Additional Sheets If Necessary

Incident ID	NAB1802538319
District RP	2RP-4580
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped.	
<input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment.	
<input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.	
<input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Chase Settle</u>	Title: <u>Rep Safety & Environmental Sr</u>
Signature: <u>Chase Settle</u>	Date: <u>02/08/2022</u>
email: <u>chase_settle@eogresources.com</u>	Telephone: <u>575-748-4171</u>
<u>OCD Only</u>	
Received by: _____	Date: _____

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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><50</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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

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

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

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

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

State of New Mexico
Oil Conservation Division

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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: Chase Settle Title: Rep Safety & Environmental SrSignature: Chase Settle Date: 02/08/2022email: chase_settle@eogresources.com Telephone: 575-748-4171**OCD Only**

Received by: _____ Date: _____

Incident ID	NAB1802538319
District RP	2RP-4580
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 Sr

Signature: Chase Settle Date: 02/08/2022

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

OCD Only

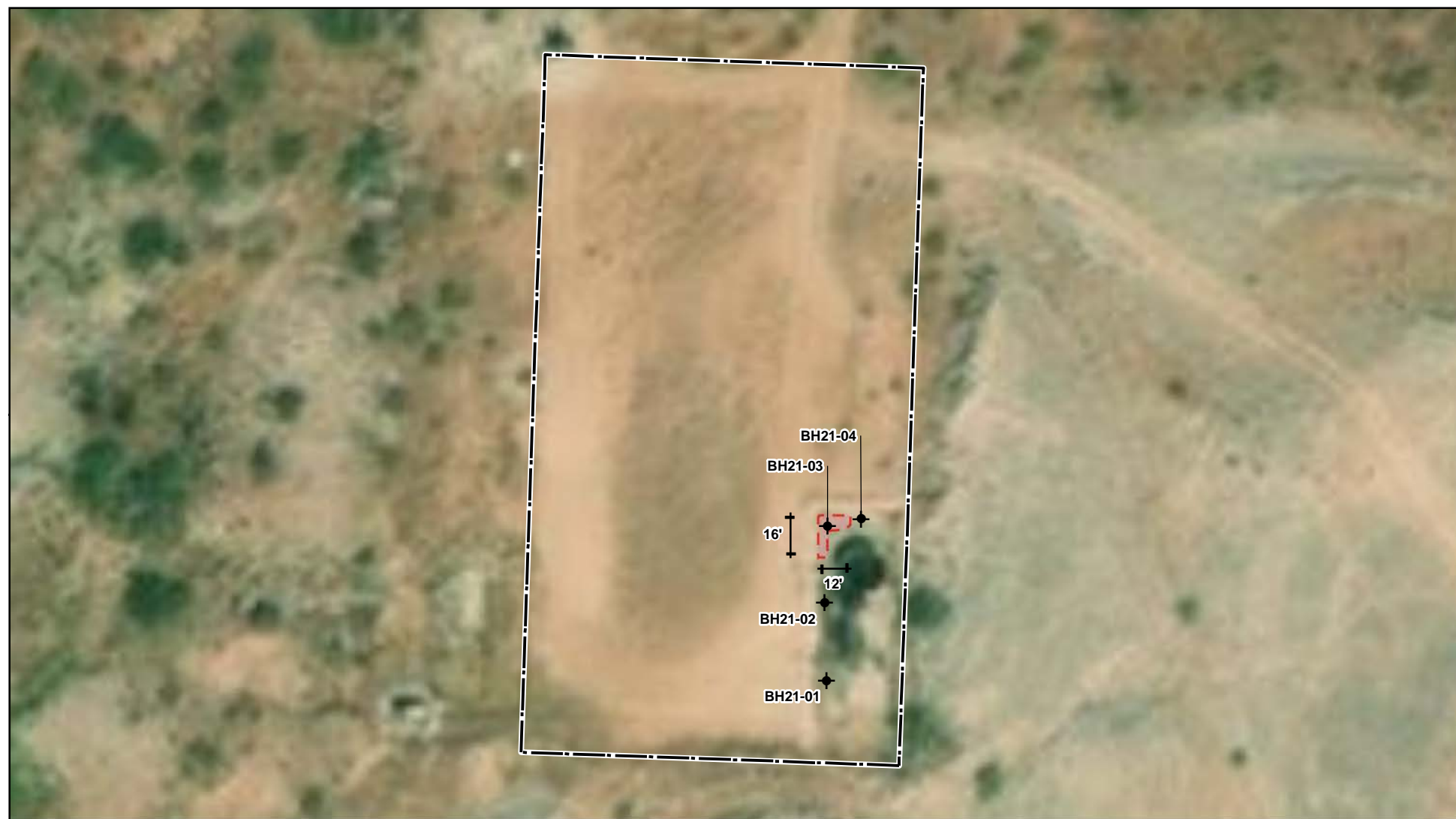
Received by: _____ Date: _____

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: Jennifer Nobui Date: 03/24/2022

Printed Name: Jennifer Nobui Title: Environmental Specialist A

ATTACHMENT 2



- ◆ Borehole
- Approximate Lease Boundary
- Approximate Spill Extent (88 sq. ft.)



0 10 20 40 60 ft
 Map Center:
 Lat/Long: 32.724194, -104.302949

NAD 1983 UTM Zone 13N
 Date: Oct 15/21



Initial Characterization Rio Pecos GB Com 1

FIGURE:

1



Geospatial data presented in this figure may be derived from external sources and Vertex does not assume any liability for inaccuracies. This figure is intended for reference use only and is not certified for legal, survey, or engineering purposes.

Note: Imagery from ESRI, 2020. Borehole locations from GPS, Vertex Professional Services, Ltd., 2021.

VERSATILITY. EXPERTISE.



- Base Sample
- ▲ Wall Sample
- ⬡ Approximate Lease Boundary
- Excavation (0-0.5' - 83 sq. ft.)
- Excavation (0-1' - 99 sq. ft.)
- Excavation (0.5' - 28 sq. ft.)



0 5 10 20 ft
Map Center:
Lat/Long: 32.724056, -104.302834

NAD 1983 UTM Zone 13N
Date: Nov 08/21



Confirmatory Schematic Rio Pecos GB Com 1

FIGURE:

2



Geospatial data presented in this figure may be derived from external sources and Vertex does not assume any liability for inaccuracies. This figure is intended for reference use only and is not certified for legal, survey, or engineering purposes.

Note: Imagery from ESRI, 2020. Borehole locations from GPS, Vertex Professional Services, Ltd., 2021.

VERSATILITY. EXPERTISE.

ATTACHMENT 3



Daily Site Visit Report

Client:	EOG Resources Inc.	Inspection Date:	9/28/2021
Site Location Name:	Dagger Draw Gas Gathering	Report Run Date:	9/28/2021 9:54 PM
Client Contact Name:	Chase Settle	API #:	
Client Contact Phone #:	575-703-6537		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	9/28/2021 12:21 PM
Departed Site	9/28/2021 12:33 PM

Field Notes

12:22 Tinhorn is on right of way. Dirt road is southeast of POR

12:27 Area has good vegetation. No staining visible or areas showing the ground pushed up from a release

12:28 Area is marked with white flags for about a 100x100 area

Next Steps & Recommendations

- 1 Submit 811 directions
- 2 Sample area

Daily Site Visit Report



Site Photos

Viewing Direction: Northwest



General area of release

Viewing Direction: East



Area of potential release

Viewing Direction: South



Right of way



Viewing Direction: West



Tin horn



Daily Site Visit Report

Viewing Direction: North	Viewing Direction: Northwest
 <p>Descriptive Photo - 6 Viewing Direction: North Object: Tin horn Created: 9/28/2021 12:03:10 PM Lat: 32.833751, Long: -104.441998</p>	 <p>Descriptive Photo - 6 Viewing Direction: Northwest Object: General Area Created: 9/28/2021 12:03:14 PM Lat: 32.833699, Long: -104.440666</p>
Tin horn	General area

Daily Site Visit Report



Daily Site Visit Signature

Inspector: Monica Peppin

Signature:

A handwritten signature in black ink, appearing to be 'M. Peppin', written over a thin horizontal line.

Signature



Daily Site Visit Report

Client:	EOG Resources Inc.	Inspection Date:	9/30/2021
Site Location Name:	Dagger Draw Gas Gathering	Report Run Date:	10/1/2021 1:48 PM
Client Contact Name:	Chase Settle	API #:	
Client Contact Phone #:	575-703-6537		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	9/30/2021 10:15 AM
Departed Site	9/30/2021 4:30 PM

Field Notes

11:11 Collection of samples to determine if any contamination is present

15:06 Samples have no odor or visuals of staining. Very loamy type soil

Next Steps & Recommendations

- 1 Send labs to ensure no contamination
- 2 Schedule either confirmation sampling or further field work

Daily Site Visit Report



Site Photos

Viewing Direction: Northwest



Descriptive Photo - 1
Viewing Direction: Northwest
Date: Sample Area
Created: 2/11/2021 1:48:14 PM
Lat: 33.434756, Long: -104.480119

Sample area

Viewing Direction: North



Descriptive Photo - 2
Viewing Direction: North
Date: Sample Area
Created: 2/11/2021 1:48:14 PM
Lat: 33.434756, Long: -104.480119

Sample area

Viewing Direction: East



Descriptive Photo - 3
Viewing Direction: East
Date: Sample Area
Created: 2/11/2021 1:48:14 PM
Lat: 33.434756, Long: -104.480119

Sample area

Viewing Direction: South

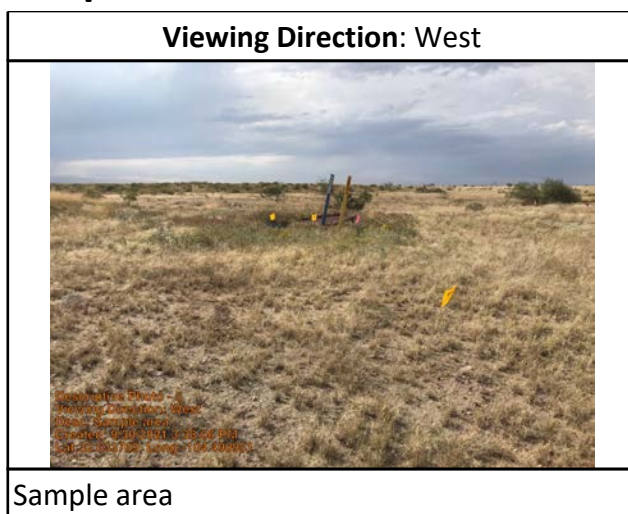


Descriptive Photo - 4
Viewing Direction: South
Date: Sample Area
Created: 2/11/2021 1:48:14 PM
Lat: 33.434756, Long: -104.480119

Sample area



Daily Site Visit Report



Daily Site Visit Report



Daily Site Visit Signature

Inspector: Monica Peppin

Signature:

A handwritten signature in black ink, appearing to be 'MP', written over a thin horizontal line. Below the line, the word 'Signature' is printed in a small font.

Signature

Daily Soil Sampling



Client: EOG Resources Inc.

Location: Dagger Draw Gas Gathering

Date: Added by Monica Peppin on 9/30/21

Sampling											
		Field Screening							Data Collection		
		Hydrocarbon		Chloride							
Sample ID	Depth (ft)	VOC (l)	TPH (ppm)	EC Reading (mS/cm)	Temp (°C)	EC Chloride (ppm)	Chloride Titration (ppm)	Lab Analysis	Photo Taken	Marked on Sketch	Refusal Depth (ft)
BH21-01	0.0			0.10	21.5	24		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)		✓	
BH21-01	1.0			0.08	21.4	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)		✓	
BH21-01	2.0			0.09	21.5	10		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)		✓	
BH21-01	3.0			0.09	21.2	23		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)		✓	
BH21-01	4.0			0.19	21.5	154		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)		✓	
BH21-02	0.0			0.09	22.2	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)		✓	
BH21-02	1.0			0.08	22.3	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)		✓	
BH21-02	2.0			0.09	22.3	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)		✓	
BH21-02	3.0			0.15	21.9	79		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)		✓	

Daily Soil Sampling



BH21-02	4.0			0.30	22.2	282		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)		✓	
BH21-03	0.0			0.09	22	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)		✓	
BH21-03	1.0			0.12	21.8	40		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)		✓	
BH21-03	2.0			0.33	22.2	326		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)		✓	
BH21-03	3.0			0.44	22	493		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)		✓	
BH21-03	4.0			0.38	22.1	402		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)		✓	
BH21-04	0.0			0.09	20.4	57		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)		✓	
BH21-04	1.0			0.10	20.2	80		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)		✓	
BH21-04	2.0		30	0.44	20.3	567		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)		✓	
BH21-04	3.0		36	0.68	20.4	909		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)		✓	
BH21-04	4.0		22	0.67	20.3	899		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)		✓	
BH21-05	0.0			0.09	22.5	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)		✓	



Daily Soil Sampling

BH21-05	1.0			0.10	22.6	0		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)		✓	
BH21-05	2.0			0.25	22.6	193		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)		✓	
BH21-05	3.0			0.31	22.5	284		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)		✓	
BH21-05	4.0			0.34	22.3	336		BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)		✓	



Daily Site Visit Report

Client:	EOG Resources Inc.	Inspection Date:	10/21/2021
Site Location Name:	Dagger Draw Gas Gathering	Report Run Date:	10/21/2021 7:13 PM
Client Contact Name:	Chase Settle	API #:	
Client Contact Phone #:	575-703-6537		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	10/21/2021 7:45 AM
Departed Site	10/21/2021 12:00 PM

Field Notes

- 11:34** Complete confirmation sampling of area around tin horn
- 11:35** All samples collected 0-4 foot. Considering wall samples as the outer extents of the area and two base samples 0-4 foot within the middle area
- 11:38** Five point composite samples taken for each sample. Wall samples collected for each cardinal direction and base samples taken to distinguish within area sampled

Next Steps & Recommendations

- 1 Lab analysis
- 2 Closure report

Daily Site Visit Report



Site Photos

Viewing Direction: North



Sample area

Viewing Direction: East



Sample area

Viewing Direction: South



Sample area

Viewing Direction: West



Sample area



Daily Site Visit Report

Viewing Direction: North



Tin horn

Daily Site Visit Report



Daily Site Visit Signature

Inspector: Monica Peppin

Signature:

A handwritten signature in black ink, appearing to be 'MP', written over a horizontal line.

Signature

Daily Soil Sampling



Client: Client: EOG Resources Inc.

Location: Site: Dagger Draw Gas Gathering

Date: (SD: 10/21/21)

Sampling											
		Field Screening							Data Collection		
		Hydrocarbon		Chloride							
Sample ID	Depth (ft)	VOC (PID)	TPH (ppm)	EC Reading (mS/cm)	Temp (°C)	EC Chloride (ppm)	Chloride Titration (ppm)	Lab Analysis	Photo Taken	Marked on Sketch	Refusal Depth (ft)
BES21-01	4.0	0	23				250	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	✓	✓	
BES21-02	4.0	0	12				275	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	✓	✓	
WES21-01	4.0	0	19				225	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	✓	✓	
WES21-02	4.0	0	15				160	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	✓	✓	
WES21-03	4.0	0	26				185	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	✓	✓	
WES21-04	4.0	0	31				110	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	✓	✓	

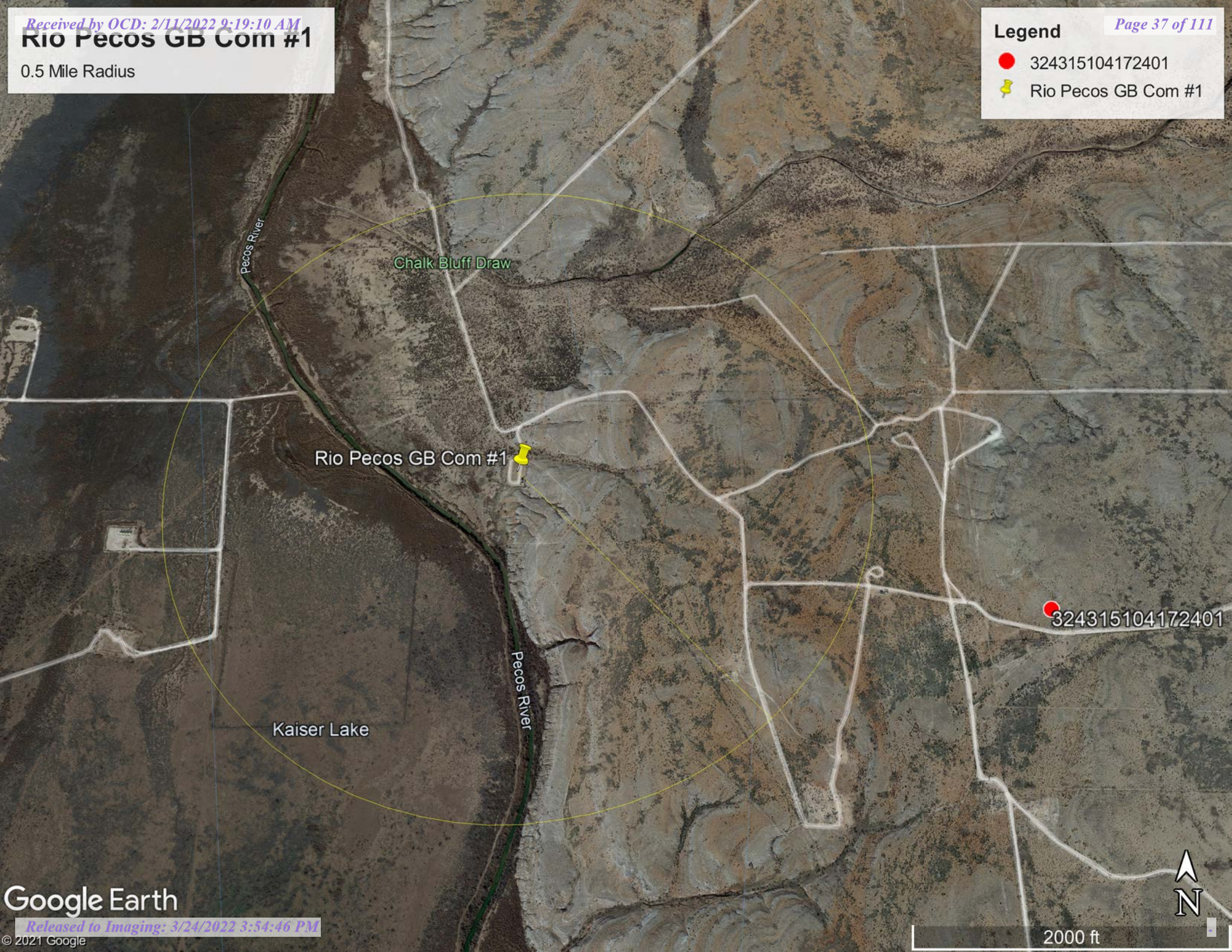
ATTACHMENT 4

Rio Pecos GB Com #1

0.5 Mile Radius

Legend

- 324315104172401
- Rio Pecos GB Com #1



Rio Pecos GB Com #1

Nearest USGS Well: 324315104172401

Distance: 0.76 miles (3,987 feet)

DTGW: 92 feet

Latest Reading: 1994

Legend

- 324315104172401
- 📌 Rio Pecos GB Com #1

Rio Pecos GB Com #1

324315104172401

Pecos River



1000 ft



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 Q Q						X	Y	Distance	Depth Well	Depth Water	Water Column
				64	16	4	Sec	Tws	Rng						
RA 06091	RA	ED		1	2	3	29	18S	27E	565211	3620222*🌐	715	90	17	73
RA 12280 POD3	RA	ED		4	4	2	30	18S	27E	564647	3620494🌐	799	29	17	12
RA 12280 POD2	RA	ED		3	4	2	30	18S	27E	564502	3620428🌐	957	25	18	7
RA 12280 POD1	RA	ED		1	4	2	30	18S	27E	564352	3620584🌐	1025	25	13	12
RA 04211	RA	CH		3	1	28	18S	27E	566512	3620562*🌐	1249	120	100	20	

Average Depth to Water: **33 feet**

Minimum Depth: **13 feet**

Maximum Depth: **100 feet**

Record Count: 5

UTM NAD83 Radius Search (in meters):

Easting (X): 565318.19

Northing (Y): 3620929.42

Radius: 1610

*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.

9/9/21 8:15 AM

Page 1 of 1

WATER COLUMN/ AVERAGE
DEPTH TO WATER



[USGS Home](#)
[Contact USGS](#)
[Search USGS](#)

National Water Information System: Web Interface

USGS Water Resources

Data Category:

Groundwater

Geographic Area:

United States

GO

Click to hide News Bulletins

- Explore the *NEW* [USGS National Water Dashboard](#) interactive map to access real-time water data from over 13,500 stations nationwide.
- [Full News](#) 

Groundwater levels for the Nation



Important: [Next Generation Monitoring Location Page](#)

Search Results -- 1 sites found

site_no list =

- 324315104172401

Minimum number of levels = 1

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

USGS 324315104172401 18S.27E.28.13323

Available data for this site

Groundwater: Field measurements



GO

Eddy County, New Mexico

Hydrologic Unit Code 13060011

Latitude 32°43'15", Longitude 104°17'24" NAD27

Land-surface elevation 3,415 feet above NAVD88

The depth of the well is 120 feet below land surface.

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

This well is completed in the Artesia Group (313ARTS) local aquifer.

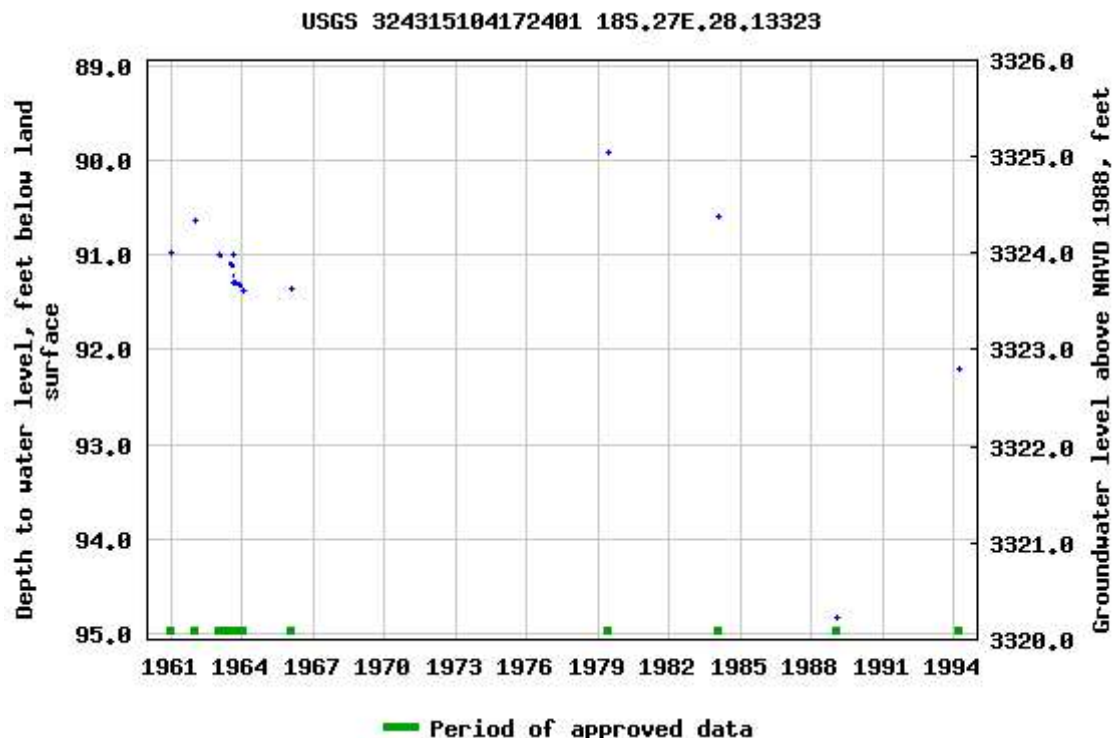
Output formats

[Table of data](#)

[Tab-separated data](#)

[Graph of data](#)

[Reselect period](#)



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

[Download a presentation-quality graph](#)

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Title: Groundwater for USA: Water Levels

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

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

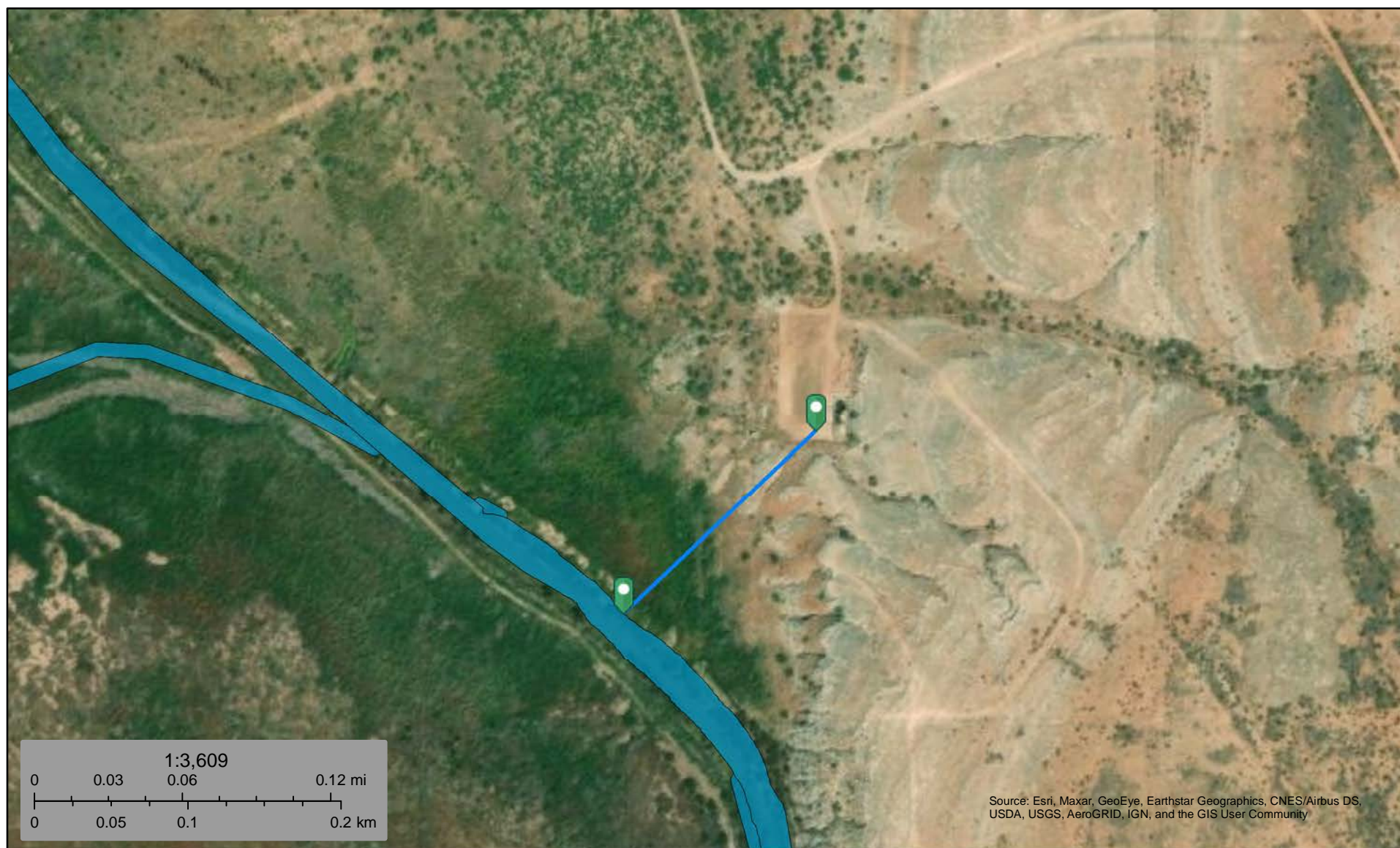
Page Last Modified: 2021-09-15 09:40:49 EDT

0.63 0.56 nadww01





Rio Pecos Watercourse 477ft



September 9, 2021

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.



Rio Pecos Lake 20,526ft



September 9, 2021

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond


- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Rio Pecos GB Com #1

Nearest Residence
13,170ft

Legend

 Feature 1



Google Earth







1 km



New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(acre ft per annum)										(R=POD has been replaced and no longer serves this file, (quarters are 1=NW 2=NE 3=SW 4=SE) C=the file is closed) (quarters are smallest to largest) (NAD83 UTM in meters)									
WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Well Tag	Code	Grant	Source	q 64	q 16	q 4	Sec	Tws	Rng	X	Y	Distance
RA 08102	RA	STK		3 BULLDOG ENERGY COPRORATION	ED	RA 08102					4	3	20	18S	27E		565312	3621331*	 401
RA 06091	RA	PRO		0 YATES PETROLEUM CORPORATION	ED	RA 06091				Shallow	1	2	3	29	18S	27E	565211	3620222*	 715
RA 12280	RA	MON		0 SAFETY & ENVIRO SOLUTIONS	ED	RA 12280 POD3				Shallow	4	4	2	30	18S	27E	564647	3620494	 799
					ED	RA 12280 POD2				Shallow	3	4	2	30	18S	27E	564501	3620428	 957
					ED	RA 12280 POD1				Shallow	1	4	2	30	18S	27E	564352	3620584	 1025
RA 04211	RA	PRO		0 JOHN H. TRIGG	CH	RA 04211				Shallow	3	1	28	18S	27E		566512	3620562*	 1249

Record Count: 6

UTMNAD83 Radius Search (in meters):

Easting (X): 565318.19

Northing (Y): 3620929.42

Radius: 1610

Sorted by: Distance

*UTM location was derived from PLSS - see Help

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9/9/21 10:26 AM

Page 1 of 1

ACTIVE & INACTIVE POINTS OF DIVERSION



New Mexico Office of the State Engineer

Point of Diversion Summary

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

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
RA 06091		1	2	3	29	18S	27E	565211	3620222*

Driller License: 406

Driller Company: TIDWELL, CLYDE J.

Driller Name: CLYDE TIDWELL

Drill Start Date: 08/26/1976

Drill Finish Date: 08/28/1976

Plug Date:

Log File Date: 09/13/1976

PCW Rcv Date:

Source: Shallow

Pump Type:

Pipe Discharge Size:

Estimated Yield:

Casing Size: 7.00

Depth Well: 90 feet

Depth Water: 17 feet

*UTM location was derived from PLSS - see Help

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9/9/21 8:23 AM

Page 1 of 1

POD SUMMARY - RA 06091



New Mexico Office of the State Engineer

Water Right Summary

WR File Number: RA 08102 **Subbasin:** RA **Cross Reference:-**
Primary Purpose: STK 72-12-1 LIVESTOCK WATERING
Primary Status: DCL DECLARATION
Total Acres: 0 **Subfile:** - **Header:** -
Total Diversion: 3 **Cause/Case:** -
Owner: BULLDOG ENERGY COPORATION

Documents on File

Trn #	Doc	File/Act	Status		Transaction Desc.	From/ To	Acres	Diversion	Consumptive
			1	2					
247423	COWNF	1993-01-14	CHG	PRC	RA 08102	T	0	0	
247421	DCL	1992-11-04	DCL	PRC	RA 08102	T	0	3	

Current Points of Diversion

(NAD83 UTM in meters)

POD Number	Well Tag	Source	Q	Q	Q	Q	64	16	4	Sec	Tws	Rng	X	Y	Other Location Desc
RA 08102			4	3	20	18S	27E	565312	3621331*						

An () after northing value indicates UTM location was derived from PLSS - see Help

Priority Summary

Priority	Status	Acres	Diversion	Pod Number	Source
09/30/1940	DCL	0	3	RA 08102	

Place of Use

Q	Q	Q	Q	Q	256	64	16	4	Sec	Tws	Rng	Acres	Diversion	CU	Use	Priority	Status	Other Location Desc
															STK		DCL	NO PLACE OF USE GIVEN

Source


Acres	Diversion	CU	Use	Priority	Source Description
0	3		STK	09/30/1940	GW SHALLOW

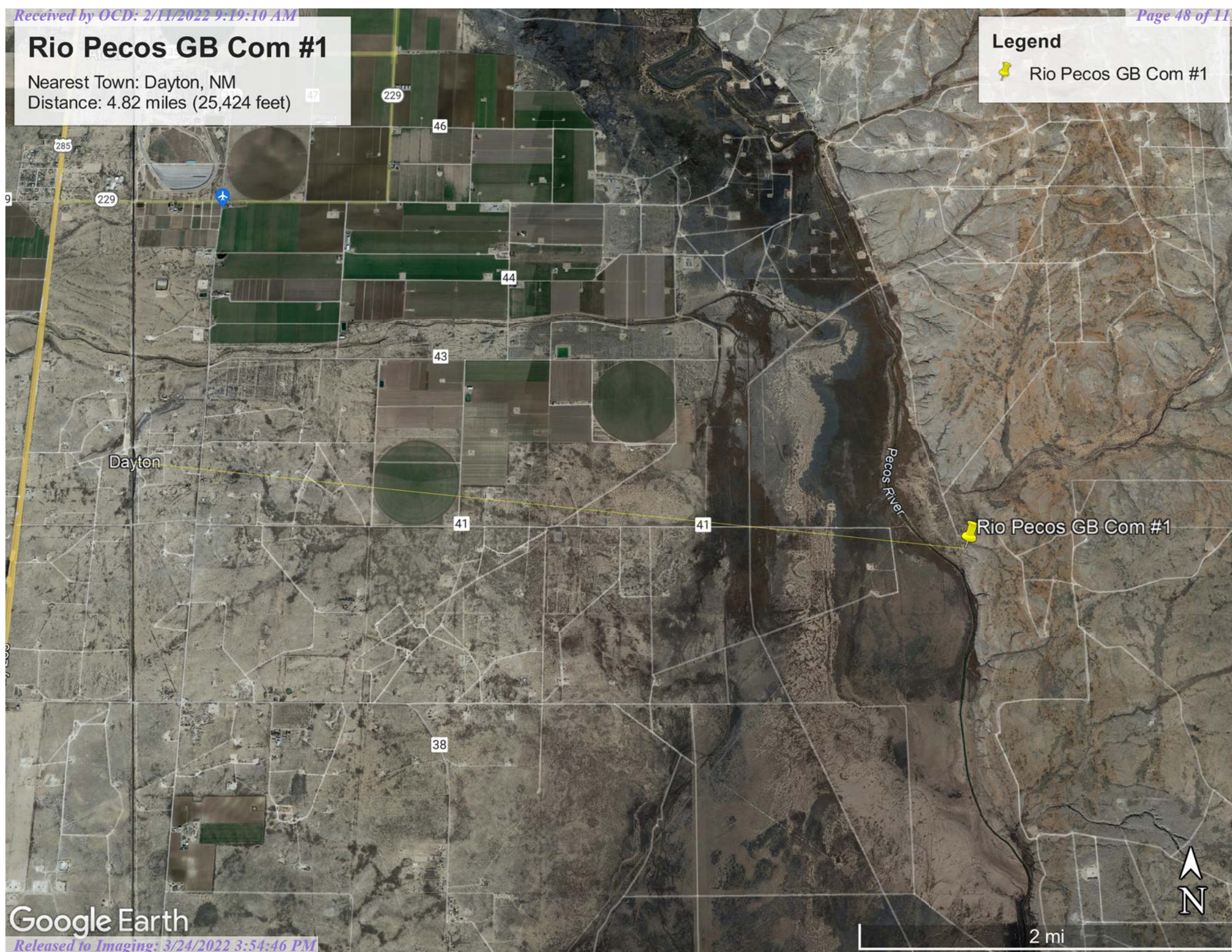
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Rio Pecos GB Com #1

Nearest Town: Dayton, NM
Distance: 4.82 miles (25,424 feet)

Legend

 Rio Pecos GB Com #1





Rio Pecos Wetland 6264ft



September 9, 2021

Wetlands

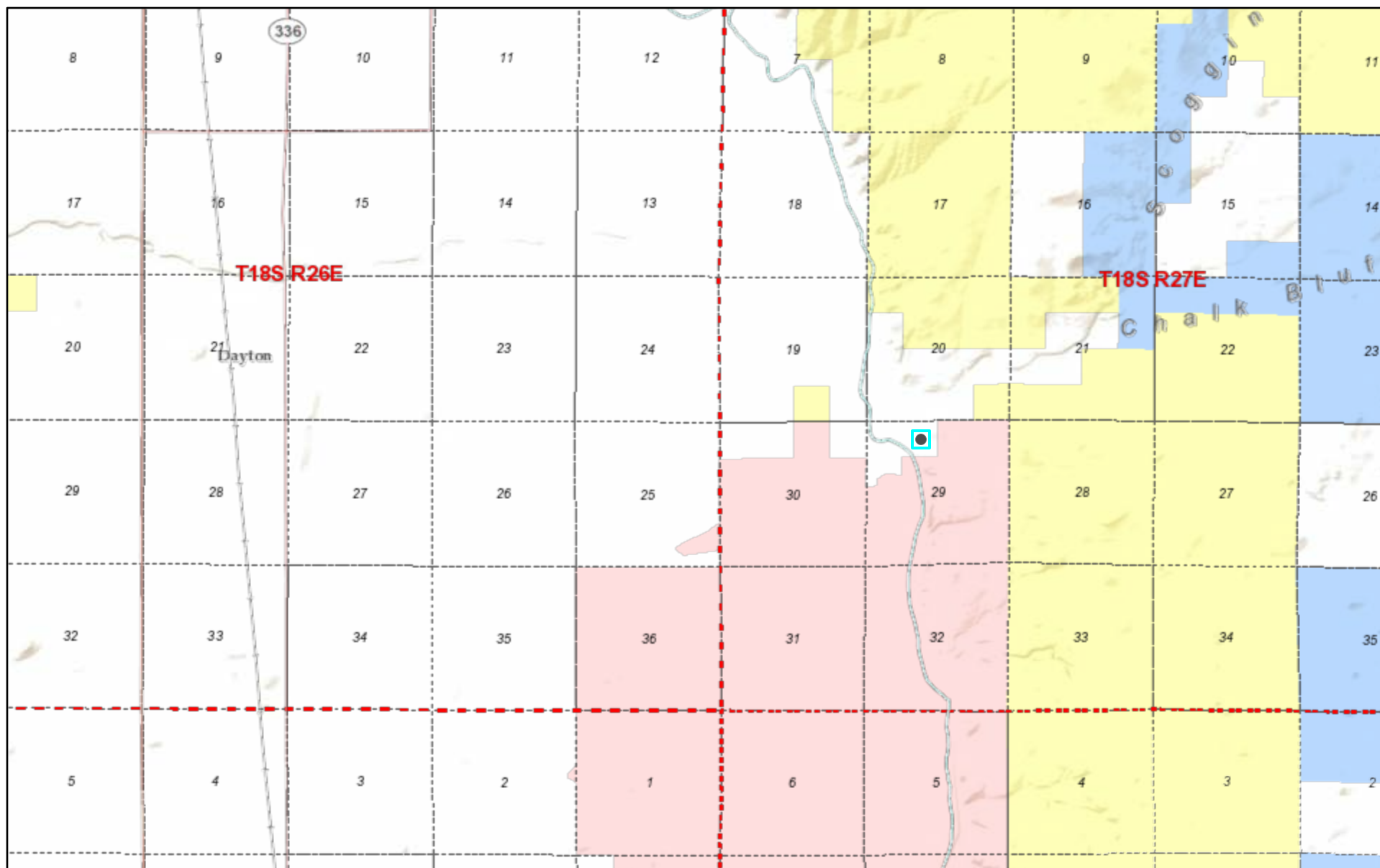
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

- Lake
- Other
- Riverine

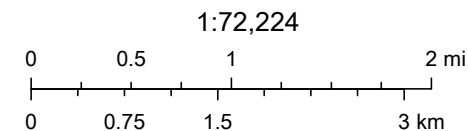
This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Active Mines in New Mexico



9/9/2021, 10:38:55 AM

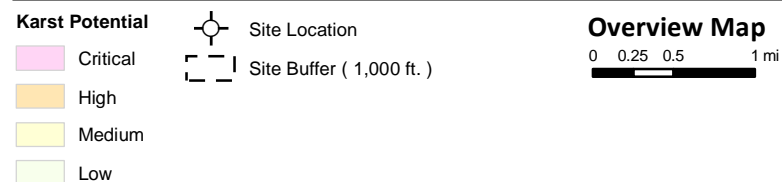
- Township / Range
 Sections
- Land Ownership
 Bureau of Land Management
 Bureau of Reclamation
 Department of Agriculture
 Department of Defense
 Department of Energy
 National Park Service
 Private Land
 State Game and Fish



U.S. Bureau of Land Management - New Mexico State Office, Sources: Esri,

EMNRD MMD GIS Coordinator

NM Energy, Minerals and Natural Resources Department (<http://nm-emnrd.maps.arcgis.com/apps/webappviewer/index.html?id=1b5e577974664d689b47790897ca2795>)



NAD 1983 UTM Zone 13N
Date: Sep 21/21



Karst Potential Map Rio Pecos GB Com #1

FIGURE:

x



Geospatial data presented in this figure may be derived from external sources and Vertex does not assume any liability for inaccuracies. This figure is intended for reference use only and is not certified for legal, survey, or engineering purposes.

Note: Inset Map, ESRI 20XX; Overview Map: ESRI World Topographic

VERSATILITY. EXPERTISE.

National Flood Hazard Layer FIRMette



104°18'29"W 32°43'42"N



Legend

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

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped

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

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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 9/9/2021 at 12:47 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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



United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for Eddy Area, New Mexico



September 9, 2021

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

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scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.


Custom Soil Resource Report Soil Map



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MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)


Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot


 Sinkhole

 Slide or Slip


 Sodic Spot

 Spoil Area

 Stony Spot


 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails


 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 16, Jun 8, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 27, 2020—Feb 28, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

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Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AH	Arno-Harkey complex, saline, 0 to 1 percent slopes	0.1	11.5%
GA	Gypsum land	1.1	88.5%
Totals for Area of Interest		1.2	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

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onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

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Eddy Area, New Mexico**AH—Arno-Harkey complex, saline, 0 to 1 percent slopes****Map Unit Setting***National map unit symbol: 1w3v**Elevation: 1,100 to 4,500 feet**Mean annual precipitation: 4 to 16 inches**Mean annual air temperature: 60 to 64 degrees F**Frost-free period: 180 to 280 days**Farmland classification: Farmland of statewide importance***Map Unit Composition***Arno and similar soils: 50 percent**Harkey and similar soils: 25 percent**Minor components: 25 percent**Estimates are based on observations, descriptions, and transects of the mapunit.***Description of Arno****Setting***Landform: Alluvial fans, flood plains**Landform position (three-dimensional): Rise, talf**Down-slope shape: Linear**Across-slope shape: Linear**Parent material: Alluvium***Typical profile***H1 - 0 to 9 inches: silty clay loam**H2 - 9 to 60 inches: silty clay***Properties and qualities***Slope: 0 to 1 percent**Depth to restrictive feature: More than 80 inches**Drainage class: Moderately well drained**Runoff class: Very high**Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)**Depth to water table: More than 80 inches**Frequency of flooding: RareNone**Frequency of ponding: None**Calcium carbonate, maximum content: 15 percent**Gypsum, maximum content: 5 percent**Maximum salinity: Moderately saline to strongly saline (8.0 to 32.0 mmhos/cm)**Sodium adsorption ratio, maximum: 1.0**Available water supply, 0 to 60 inches: Low (about 5.7 inches)***Interpretive groups***Land capability classification (irrigated): 6s**Land capability classification (nonirrigated): 7s**Hydrologic Soil Group: D**Ecological site: R042XC033NM - Salty Bottomland**Hydric soil rating: No*

Custom Soil Resource Report

Description of Harkey**Setting**

Landform: Alluvial fans, flood plains
Landform position (three-dimensional): Rise, talf
Down-slope shape: Linear, convex
Across-slope shape: Linear
Parent material: Alluvium derived from sedimentary rock

Typical profile

H1 - 0 to 9 inches: very fine sandy loam
H2 - 9 to 60 inches: very fine sandy loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
 (0.60 to 2.00 in/hr)
Depth to water table: About 48 to 72 inches
Frequency of flooding: NoneOccasional
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Gypsum, maximum content: 2 percent
Maximum salinity: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum: 13.0
Available water supply, 0 to 60 inches: Low (about 6.0 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: R042XC036NM - Salt Flats
Hydric soil rating: No

Minor Components**Anthony**

Percent of map unit: 24 percent
Ecological site: R042XC004NM - Sandy
Hydric soil rating: No

Pima variant

Percent of map unit: 1 percent
Landform: Alluvial flats, alluvial fans, flood plains
Landform position (three-dimensional): Rise, talf
Down-slope shape: Linear, convex
Across-slope shape: Convex, linear
Ecological site: R042XC017NM - Bottomland
Hydric soil rating: Yes

Custom Soil Resource Report

GA—Gypsum land**Map Unit Setting**

National map unit symbol: 1w4f

Elevation: 1,250 to 5,000 feet

Mean annual precipitation: 10 to 25 inches

Mean annual air temperature: 57 to 66 degrees F

Frost-free period: 190 to 225 days

Farmland classification: Not prime farmland

Map Unit Composition

Gypsum land: 98 percent

Minor components: 2 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gypsum Land**Setting**

Landform: Hills, plains, ridges

Landform position (two-dimensional): Backslope, footslope, shoulder, toeslope

Landform position (three-dimensional): Crest, nose slope, side slope, head slope

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Residuum weathered from gypsum

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8s

Hydric soil rating: No

Minor Components**Reeves**

Percent of map unit: 1 percent

Ecological site: R042XC033NM - Salty Bottomland

Hydric soil rating: No

Cottonwood

Percent of map unit: 1 percent

Ecological site: R042XC033NM - Salty Bottomland

Hydric soil rating: No

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Ecological Reference Worksheet

Author(s) / participant(s): John Tunberg,

Contact for lead author : 505-761-4488

Reference site used? Yes/No

No

Date: 2/17/2010 **MLRA:** 42.3 **Ecological Site:** Salty Bottomland This must be verified based on soils and climate (see Ecological Site Description). Current plant community cannot be used to identify the ecological site.

Indicators: For each indicator, describe the potential for the site. Where possible, (1) use numbers, (2) include expected range of values for above and below average years for each community within the reference state, when appropriate & (3) site data. Continue description on separate sheet.

1. Number and extent of rills	There should not be any rills on this site. After wildfires, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances rills may double in number on steeper slopes at the margins of this site after high-intensity summer thunderstorms. Any rills formed should not be long lived or interconnected and should heal rapidly.
2. Presence of water flow patterns:	Large storms can produce short, less than 1 meter flow patterns across the bare patches. Water flow patterns should only be present following intense storm events on upper slope limits at the margins of this site. Numerous obstructions alter flow paths. Flow pattern length and numbers may double after wildfires, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances.
3. Number and height of erosional pedestals or terracettes:	There should not be any pedestals and terracettes should be rare. If present plant or rock pedestals and terracettes are almost always in flow patterns. Wind caused pedestals are rare and only would be on the site following after wildfires, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances. These would show signs of healing within 1 year after event.
4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground) : Bare ground can make up to 20 to 25% of the aerial cover on this site. Bare patch size should be small at less than 8 inches.	
5. Number of gullies and erosion associated with gullies:	There should not be any gullies or erosion associated with gullies on this site. Natural drainages with little to no active cutting are common on this site. There should not be any accelerated erosion. After high-intensity summer thunderstorms or after wildfire, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances then gully formation would be accelerated for a year or two. Evidence of healing within 1 year of event and continuing after that.
6. Extent of wind scoured, blowouts and/or depositional area Wind scoured, blowouts and/or depositional areas should be rare and associated with disturbances (e.g. small mammal burrows, resting areas). Wind erosion is minimal when the site is in a well vegetated condition. Significant wind erosion would only be present following high-intensity summer thunderstorms, after wildfire, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances. After rain events, exposed soil surfaces form physical crusts that tend to reduce wind erosion. Deposition from off site sources can be common on this site and is in fact a primary soil forming process. This site is susceptible to wind erosion when vegetation is removed or significantly decreased.	
7. Amount of litter movement (describe size and distance expected to travel) : The size of the litter (grass litter) should be small and its movement should be less than 12 inches across bare patches.	
8. Soil surface (top few mm) resistance to erosion (stability) values are averages - most sites will show a range of values for both plant canopy and interspaces, if different) : Stability values are estimated to be 4 to 5 in interspaces and 5 to 6 at bases of vegetation. This would be true at the surface and subsurface.	
9. Soil surface structures and SOM content (include type and strength of structure, and A-horizon color and thickness for both plant canopy and interspaces, if different) : Apz--0 to 8 inches; brown (7.5YR 4/2) clay, dark brown (7.5YR 3/2) moist; moderate medium angular blocky structure parting to fine angular and subangular blocky; extremely hard, extremely firm, very sticky and very plastic; many fine and medium roots; few fine pores; many very fine masses of salts; cracks 0.25 to 0.5 inch wide; very slightly saline; strongly effervescent; moderately alkaline; clear smooth boundary. (6 to 14 inches thick)	
10. Effect of plant community composition (relative proportion of different functional groups) & spatial distribution on infiltration & runoff: This site is a grassland with uniformly distributed grass patches on fine textured soils, runoff should be low to nil. Most water infiltrates at the plant bases as well as in the interspaces. Site is mostly flat with some micro-topography. Further reducing runoff probability.	
11. Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction): There should not be any compaction layers on this site. There are soil profile features in the top 9 inches of the soil profile that would be mistaken for a management induced soil compaction layer. Management induced compaction layers will be more difficult to penetrate than clay lenses.	
12. Functional/Structural Groups (list in order of descending dominance by above-ground weight using symbols: indicate much greater than (>>), greater than (>), and equal to (=) :	

Dominants: Alkali Sacaton >> Giant Sacaton = warm season mid grasses > Minor Component: Shrubs (not creosotebush and mesquite) > Forbs.

13. Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence) :

Short-lived perennial component can exhibit significant mortality in drought, black grama tends to exhibit mortality only when exposed to drought in addition to other stressors. Shrubs/yucca should exhibit low mortality rates.

14. Average percent litter cover (_____ %) and depth (_____ inches).

25 to 35 % litter cover on this site. Well distributed. Depth of 3 inches in good moisture years.

15. Expected annual production (this is TOTAL above-ground production, not just forage production):

(Low Production 1500 lbs./ac.) (Average RV Production 2250 lbs./ac.) (High Production 3000 lbs./ac.) After wildfires, high herbivore impacts, extended drought, or combinations of these disturbances, can cause production to be significantly reduced (100-200 lbs per ac. the first growing season following a wildfire) and recover slowly under below average precipitation regimes.

16. Potential invasive (including noxious) species (native and non-native). List species which characterize degraded states and which, after a threshold is crossed, "can, and often do , continue to increase regardless of the management of the site and may eventually dominate

Mesquite, whitethorn and creosotebush can be invaders of this site where hydrology has been altered thru downcutting. Invasive plants should not occur in reference plant community. However, lovegrass, Russian thistle, kochia, and other nonnative annuals may initially invade following extended disturbance. Mesquite and whitethorn and creosote and lovegrass are the greatest threat to dominate this site in the long term after disturbance (primarily following wildfire exclusion but also includes high human or herbivore impacts and extended drought). Mesquite and whitethorn and creosote and lovegrass are most likely to retain dominance if allowed to alter natural fire regime (this alteration may require poor land management combined with years of wet winter-spring; dry summer-fall conditions). Any of these invaded communities represent a departure from the reference state.

17. Perennial plant reproductive capability :

all perennial grasses reproduces by seed as moisture year dictates. The dropseeds should have high reproductive potential and rapidly recover from drought in the absence of additional stresses (grazing).

Photograph (s)

MLRA : **Date** :
Ecological Site :

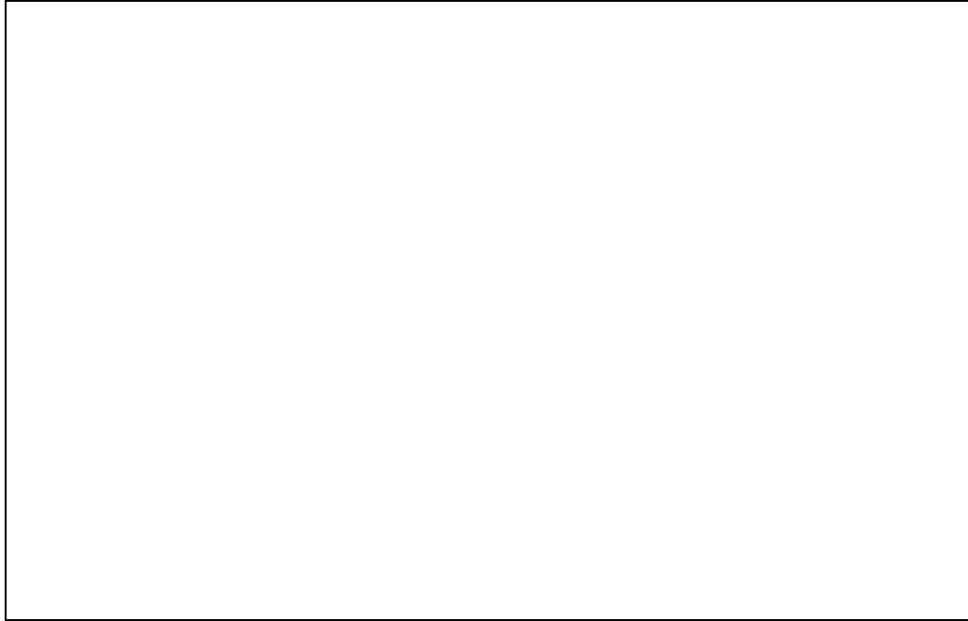


Photo # 1

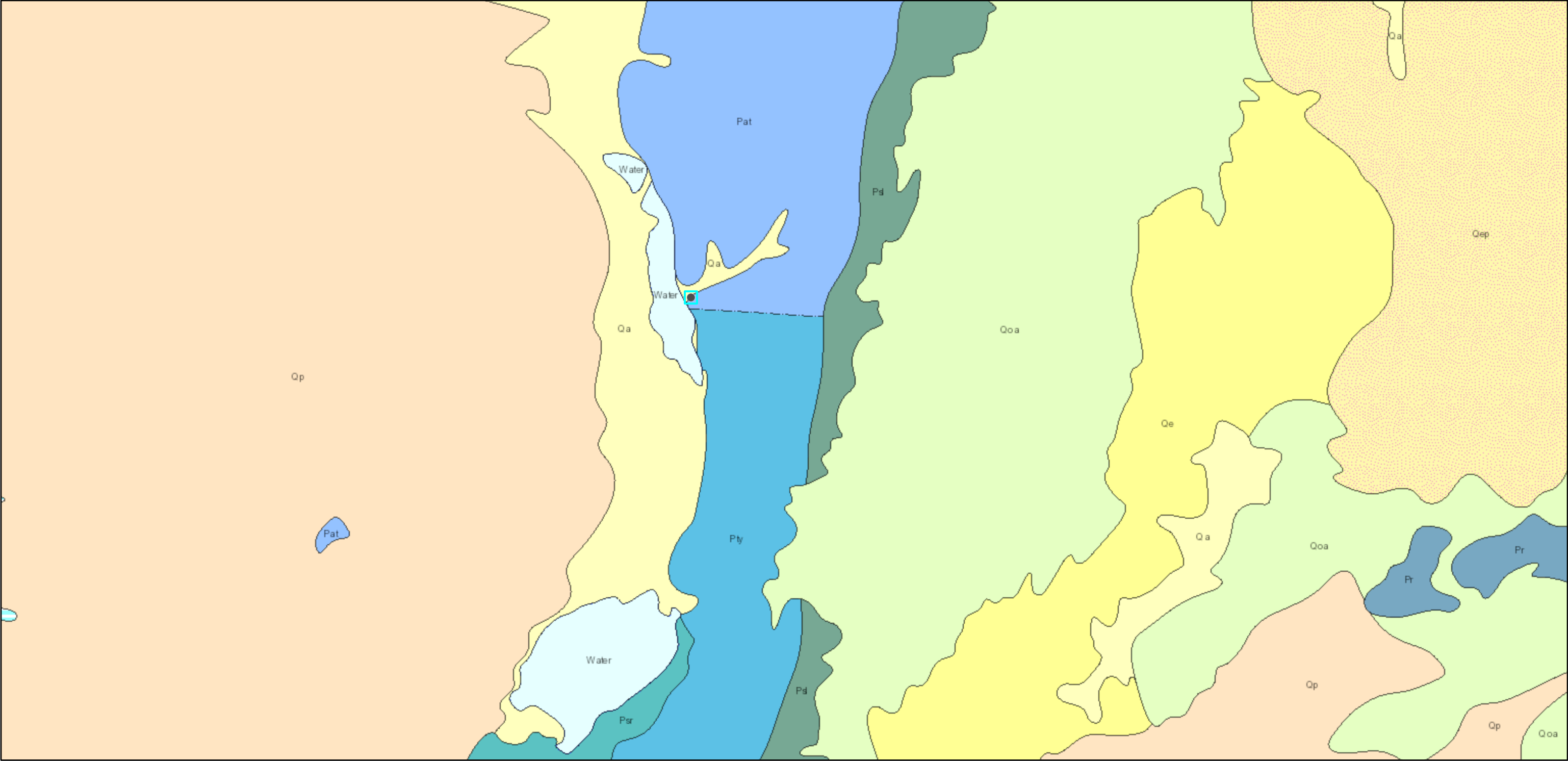
Comments :



Photo # 2

Comments :

ArcGIS Web Map



9/9/2021, 3:14:10 PM

Lithologic Contacts

— Contact, Exposed

— Contact, Gradational

--- Nomenclature change

— Map Boundary

Faults

— Fault, Exposed

--- Fault, Intermittent

----- Fault, Concealed

~~~~ Shere Zone

Dikes

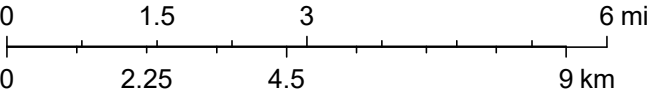
— <all other values>

— Dike

— Dike intruding fault

\* Volcanic Vents

1:144,448



Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community, NMBGMR, Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

## **ATTACHMENT 5**

Client Name: EOG Resources Inc.  
 Site Name: Rio Pecos GB Com #1  
 NM OCD Tracking #: NAB1802538319/2RP-4580  
 Project #: 21E-03278  
 Lab Report: 2109D86

| Table 2. Initial Characterization Sample Field Screen and Laboratory Results - Depth to Groundwater <50 feet bgs |            |             |                                  |                                           |                        |                        |         |              |               |             |                 |              |                               |                             |                                |           |
|------------------------------------------------------------------------------------------------------------------|------------|-------------|----------------------------------|-------------------------------------------|------------------------|------------------------|---------|--------------|---------------|-------------|-----------------|--------------|-------------------------------|-----------------------------|--------------------------------|-----------|
| Sample Description                                                                                               |            |             | Field Screening                  |                                           |                        | Petroleum Hydrocarbons |         |              |               |             |                 |              |                               |                             |                                |           |
| Sample ID                                                                                                        | Depth (ft) | Sample Date | Volatile Organic Compounds (PID) | Extractable Organic Compounds (Petroflag) | Chloride Concentration | Volatile               |         |              |               |             |                 |              | Extractable                   |                             |                                |           |
|                                                                                                                  |            |             |                                  |                                           |                        | Benzene                | Toluene | Ethylbenzene | Xylenes (o&m) | Xylenes (p) | Xylenes (Total) | BTEX (Total) | Gasoline Range Organics (GRO) | Diesel Range Organics (DRO) | Motor Oil Range Organics (MRO) | Inorganic |
|                                                                                                                  |            |             | (ppm)                            | (ppm)                                     | (ppm)                  | (mg/kg)                | (mg/kg) | (mg/kg)      | (mg/kg)       | (mg/kg)     | (mg/kg)         | (mg/kg)      | (mg/kg)                       | (mg/kg)                     | (mg/kg)                        | (mg/kg)   |
| BH21-01                                                                                                          | 0          | 9/24/2021   | -                                | -                                         | 150                    | ND                     | ND      | ND           | ND            | ND          | ND              | ND           | ND                            | ND                          | ND                             | ND        |
| BH21-01                                                                                                          | 0.5        | 9/24/2021   | -                                | 78                                        | 137                    | ND                     | ND      | ND           | ND            | ND          | ND              | ND           | ND                            | ND                          | ND                             | ND        |
| BH21-01                                                                                                          | 1          | 9/24/2021   | -                                | -                                         | 142                    | -                      | -       | -            | -             | -           | -               | -            | -                             | -                           | -                              | -         |
| BH21-02                                                                                                          | 0          | 9/24/2021   | -                                | -                                         | 142                    | ND                     | ND      | ND           | ND            | ND          | ND              | ND           | ND                            | 82                          | 640                            | 722       |
| BH21-02                                                                                                          | 0.5        | 9/24/2021   | -                                | 132                                       | 157                    | ND                     | ND      | ND           | ND            | ND          | ND              | ND           | ND                            | ND                          | ND                             | ND        |
| BH21-03                                                                                                          | 0          | 9/24/2021   | -                                | -                                         | 145                    | ND                     | ND      | ND           | ND            | ND          | ND              | ND           | ND                            | 33                          | 280                            | 313       |
| BH21-03                                                                                                          | 0.5        | 9/24/2021   | -                                | 227                                       | 157                    | ND                     | ND      | ND           | ND            | ND          | ND              | ND           | ND                            | 13                          | 90                             | 103       |
| BH21-04                                                                                                          | 0          | 9/24/2021   | -                                | -                                         | 197                    | ND                     | ND      | ND           | ND            | ND          | ND              | ND           | ND                            | ND                          | 65                             | 65        |
| BH21-04                                                                                                          | 0.5        | 9/24/2021   | -                                | 223                                       | 197                    | ND                     | ND      | ND           | ND            | ND          | ND              | ND           | ND                            | ND                          | 61                             | 61        |

Client Name: EOG Y Resources, Inc.  
 Site Name: Rio Pecos GB Com #1  
 NM OCD Tracking #: NAB1802538319/2RP-4580  
 Project #: 21E-03278-09  
 Lab Report: 2111050

| Table 3. Confirmatory Sample Field Screen and Laboratory Results - Depth to Groundwater <50 feet bgs |            |             |                                  |                                           |                        |                        |              |                               |                             |                                |                                    |           |
|------------------------------------------------------------------------------------------------------|------------|-------------|----------------------------------|-------------------------------------------|------------------------|------------------------|--------------|-------------------------------|-----------------------------|--------------------------------|------------------------------------|-----------|
| Sample Description                                                                                   |            |             | Field Screening                  |                                           |                        | Petroleum Hydrocarbons |              |                               |                             |                                |                                    | Inorganic |
| Sample ID                                                                                            | Depth (ft) | Sample Date | Volatile Organic Compounds (PID) | Extractable Organic Compounds (PetroFlag) | Chloride Concentration | Volatile               |              | Extractable                   |                             |                                |                                    |           |
|                                                                                                      |            |             |                                  |                                           |                        | Benzene                | BTEX (Total) | Gasoline Range Organics (GRO) | Diesel Range Organics (DRO) | Motor Oil Range Organics (MRO) | Total Petroleum Hydrocarbons (TPH) |           |
|                                                                                                      |            |             | (ppm)                            | (ppm)                                     | (ppm)                  | (mg/kg)                | (mg/kg)      | (mg/kg)                       | (mg/kg)                     | (mg/kg)                        | (mg/kg)                            | (mg/kg)   |
| BS21-01                                                                                              | 1          | 10/29/2021  | 0                                | 52                                        | 42                     | ND                     | ND           | ND                            | 11                          | ND                             | 11                                 | ND        |
| BS21-02                                                                                              | 0.5        | 10/29/2021  | 0                                | 70                                        | 37                     | ND                     | ND           | ND                            | 13                          | ND                             | 13                                 | ND        |
| BS21-03                                                                                              | 0.5        | 10/29/2021  | 0                                | 88                                        | 40                     | ND                     | ND           | ND                            | 17                          | 58                             | 75                                 | ND        |
| WS21-01                                                                                              | 0-1        | 10/29/2021  | 0                                | 126                                       | 70                     | ND                     | ND           | ND                            | 18                          | 62                             | 80                                 | ND        |
| WS21-02                                                                                              | 0-1        | 10/29/2021  | 0                                | 55                                        | 82                     | ND                     | ND           | ND                            | 17                          | 56                             | 73                                 | ND        |
| WS21-03                                                                                              | 0-0.5      | 10/29/2021  | 0                                | 32                                        | 40                     | ND                     | ND           | ND                            | ND                          | ND                             | ND                                 | ND        |
| WS21-04                                                                                              | 0-0.5      | 10/29/2021  | 0                                | 61                                        | 52                     | ND                     | ND           | ND                            | 11                          | ND                             | 11                                 | ND        |
| WS21-05                                                                                              | 0-0.5      | 10/29/2021  | 0                                | 69                                        | 67                     | ND                     | ND           | ND                            | 15                          | 53                             | 68                                 | ND        |
| WS21-06                                                                                              | 0-0.5      | 10/29/2021  | 0                                | 43                                        | 58                     | ND                     | ND           | ND                            | ND                          | ND                             | ND                                 | ND        |



## **ATTACHMENT 6**

## Monica Peppin

---

**From:** Chase Settle <Chase\_Settle@eogresources.com>  
**Sent:** Monday, October 18, 2021 5:55 PM  
**To:** Monica Peppin  
**Subject:** FW: Dagger Draw Gas Gathering System (Hinkle Lane) Sampling Notification

---

**From:** Tina Huerta <Tina\_Huerta@eogresources.com>  
**Sent:** Monday, October 18, 2021 5:43 PM  
**To:** Robert.Hamlet@state.nm.us  
**Cc:** Artesia Regulatory <Artesia\_Regulatory@eogresources.com>; Chase Settle <Chase\_Settle@eogresources.com>; Yvette Moore <Yvette\_Moore@eogresources.com>; Ashley Bravo <Ashley\_Bravo@eogresources.com>; Katie Jamison <Katie\_Jamison@eogresources.com>  
**Subject:** Dagger Draw Gas Gathering System (Hinkle Lane) Sampling Notification

Good afternoon,

EOG Resources, Inc. respectfully submits notification of sampling activities to be conducted at the below location.

Dagger Draw Gas Gathering System (Hinkle Line)  
A-28-19S-25E  
Eddy County, NM  
2RP-823

Sampling will begin at 8:00 a.m. on Thursday, October 21, 2021.

Thank you,

*Tina Huerta*  
*Regulatory Specialist*  
*Direct: 575.748.4168*  
*Cell: 575.703.3121*  
*Email: [tina\\_huerta@eogresources.com](mailto:tina_huerta@eogresources.com)*



## **ATTACHMENT 7**



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

October 06, 2021

Chase Settle

EOG

105 South Fourth Street

Artesia, NM 88210

TEL:

FAX

RE: Rio Pecos GB Com 1

OrderNo.: 2109D86

Dear Chase Settle:

Hall Environmental Analysis Laboratory received 8 sample(s) on 9/24/2021 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 white background.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2109D86

Date Reported: 10/6/2021

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BH21-01 0'

Project: Rio Pecos GB Com 1

Collection Date: 9/22/2021 7:10:00 AM

Lab ID: 2109D86-001

Matrix: SOIL

Received Date: 9/24/2021 7:25:00 AM

| Analyses                                         | Result | RL     | Qual | Units | DF | Date Analyzed         | Batch        |
|--------------------------------------------------|--------|--------|------|-------|----|-----------------------|--------------|
| <b>EPA METHOD 300.0: ANIONS</b>                  |        |        |      |       |    |                       | Analyst: JMT |
| Chloride                                         | ND     | 59     |      | mg/Kg | 20 | 9/29/2021 3:42:20 AM  | 62886        |
| <b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b> |        |        |      |       |    |                       | Analyst: SB  |
| Diesel Range Organics (DRO)                      | ND     | 9.5    |      | mg/Kg | 1  | 9/29/2021 10:36:15 AM | 62875        |
| Motor Oil Range Organics (MRO)                   | 150    | 48     |      | mg/Kg | 1  | 9/29/2021 10:36:15 AM | 62875        |
| Surr: DNOP                                       | 64.8   | 70-130 | S    | %Rec  | 1  | 9/29/2021 10:36:15 AM | 62875        |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>          |        |        |      |       |    |                       | Analyst: RAA |
| Gasoline Range Organics (GRO)                    | ND     | 4.7    |      | mg/Kg | 1  | 9/28/2021 1:20:00 AM  | 62829        |
| Surr: BFB                                        | 89.8   | 70-130 |      | %Rec  | 1  | 9/28/2021 1:20:00 AM  | 62829        |
| <b>EPA METHOD 8021B: VOLATILES</b>               |        |        |      |       |    |                       | Analyst: RAA |
| Benzene                                          | ND     | 0.023  |      | mg/Kg | 1  | 9/28/2021 1:20:00 AM  | 62829        |
| Toluene                                          | ND     | 0.047  |      | mg/Kg | 1  | 9/28/2021 1:20:00 AM  | 62829        |
| Ethylbenzene                                     | ND     | 0.047  |      | mg/Kg | 1  | 9/28/2021 1:20:00 AM  | 62829        |
| Xylenes, Total                                   | ND     | 0.093  |      | mg/Kg | 1  | 9/28/2021 1:20:00 AM  | 62829        |
| Surr: 4-Bromofluorobenzene                       | 74.4   | 70-130 |      | %Rec  | 1  | 9/28/2021 1:20:00 AM  | 62829        |

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  | Value above quantitation range                  |
|                    | 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 range due to dilution or matrix |    |                                                 |

Page 1 of 12

## Analytical Report

Lab Order 2109D86

Date Reported: 10/6/2021

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BH21-01 0.5'

Project: Rio Pecos GB Com 1

Collection Date: 9/22/2021 7:15:00 AM

Lab ID: 2109D86-002

Matrix: SOIL

Received Date: 9/24/2021 7:25:00 AM

| Analyses                                         | Result | RL     | Qual | Units | DF | Date Analyzed        | Batch        |
|--------------------------------------------------|--------|--------|------|-------|----|----------------------|--------------|
| <b>EPA METHOD 300.0: ANIONS</b>                  |        |        |      |       |    |                      | Analyst: JMT |
| Chloride                                         | ND     | 60     |      | mg/Kg | 20 | 9/29/2021 3:54:44 AM | 62886        |
| <b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b> |        |        |      |       |    |                      | Analyst: JME |
| Diesel Range Organics (DRO)                      | ND     | 9.6    |      | mg/Kg | 1  | 10/1/2021 8:17:45 AM | 62875        |
| Motor Oil Range Organics (MRO)                   | ND     | 48     |      | mg/Kg | 1  | 10/1/2021 8:17:45 AM | 62875        |
| Surr: DNOP                                       | 67.1   | 70-130 | S    | %Rec  | 1  | 10/1/2021 8:17:45 AM | 62875        |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>          |        |        |      |       |    |                      | Analyst: RAA |
| Gasoline Range Organics (GRO)                    | ND     | 4.9    |      | mg/Kg | 1  | 9/28/2021 1:39:00 AM | 62829        |
| Surr: BFB                                        | 100    | 70-130 |      | %Rec  | 1  | 9/28/2021 1:39:00 AM | 62829        |
| <b>EPA METHOD 8021B: VOLATILES</b>               |        |        |      |       |    |                      | Analyst: RAA |
| Benzene                                          | ND     | 0.024  |      | mg/Kg | 1  | 9/28/2021 1:39:00 AM | 62829        |
| Toluene                                          | ND     | 0.049  |      | mg/Kg | 1  | 9/28/2021 1:39:00 AM | 62829        |
| Ethylbenzene                                     | ND     | 0.049  |      | mg/Kg | 1  | 9/28/2021 1:39:00 AM | 62829        |
| Xylenes, Total                                   | ND     | 0.098  |      | mg/Kg | 1  | 9/28/2021 1:39:00 AM | 62829        |
| Surr: 4-Bromofluorobenzene                       | 83.9   | 70-130 |      | %Rec  | 1  | 9/28/2021 1:39:00 AM | 62829        |

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  | Value above quantitation range                  |
|                    | 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 range due to dilution or matrix |    |                                                 |

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## Analytical Report

Lab Order 2109D86

Date Reported: 10/6/2021

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BH21-02 0'

Project: Rio Pecos GB Com 1

Collection Date: 9/22/2021 7:30:00 AM

Lab ID: 2109D86-003

Matrix: SOIL

Received Date: 9/24/2021 7:25:00 AM

| Analyses                                         | Result | RL     | Qual | Units | DF | Date Analyzed         | Batch        |
|--------------------------------------------------|--------|--------|------|-------|----|-----------------------|--------------|
| <b>EPA METHOD 300.0: ANIONS</b>                  |        |        |      |       |    |                       | Analyst: JMT |
| Chloride                                         | ND     | 60     |      | mg/Kg | 20 | 9/29/2021 4:07:08 AM  | 62886        |
| <b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b> |        |        |      |       |    |                       | Analyst: SB  |
| Diesel Range Organics (DRO)                      | 82     | 9.8    |      | mg/Kg | 1  | 9/29/2021 11:25:36 AM | 62875        |
| Motor Oil Range Organics (MRO)                   | 640    | 49     |      | mg/Kg | 1  | 9/29/2021 11:25:36 AM | 62875        |
| Surr: DNOP                                       | 84.3   | 70-130 |      | %Rec  | 1  | 9/29/2021 11:25:36 AM | 62875        |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>          |        |        |      |       |    |                       | Analyst: RAA |
| Gasoline Range Organics (GRO)                    | ND     | 4.7    |      | mg/Kg | 1  | 9/28/2021 1:59:00 AM  | 62829        |
| Surr: BFB                                        | 96.0   | 70-130 |      | %Rec  | 1  | 9/28/2021 1:59:00 AM  | 62829        |
| <b>EPA METHOD 8021B: VOLATILES</b>               |        |        |      |       |    |                       | Analyst: RAA |
| Benzene                                          | ND     | 0.023  |      | mg/Kg | 1  | 9/28/2021 1:59:00 AM  | 62829        |
| Toluene                                          | ND     | 0.047  |      | mg/Kg | 1  | 9/28/2021 1:59:00 AM  | 62829        |
| Ethylbenzene                                     | ND     | 0.047  |      | mg/Kg | 1  | 9/28/2021 1:59:00 AM  | 62829        |
| Xylenes, Total                                   | ND     | 0.093  |      | mg/Kg | 1  | 9/28/2021 1:59:00 AM  | 62829        |
| Surr: 4-Bromofluorobenzene                       | 82.7   | 70-130 |      | %Rec  | 1  | 9/28/2021 1:59:00 AM  | 62829        |

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  | Value above quantitation range                  |
|                    | 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 range due to dilution or matrix |    |                                                 |

Page 3 of 12

## Analytical Report

Lab Order 2109D86

Date Reported: 10/6/2021

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BH21-02 0.5'

Project: Rio Pecos GB Com 1

Collection Date: 9/22/2021 7:40:00 AM

Lab ID: 2109D86-004

Matrix: SOIL

Received Date: 9/24/2021 7:25:00 AM

| Analyses                                         | Result | RL     | Qual | Units | DF | Date Analyzed        | Batch        |
|--------------------------------------------------|--------|--------|------|-------|----|----------------------|--------------|
| <b>EPA METHOD 300.0: ANIONS</b>                  |        |        |      |       |    |                      | Analyst: JMT |
| Chloride                                         | ND     | 61     |      | mg/Kg | 20 | 9/29/2021 4:19:32 AM | 62886        |
| <b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b> |        |        |      |       |    |                      | Analyst: JME |
| Diesel Range Organics (DRO)                      | ND     | 8.9    |      | mg/Kg | 1  | 10/1/2021 8:40:49 AM | 62875        |
| Motor Oil Range Organics (MRO)                   | ND     | 45     |      | mg/Kg | 1  | 10/1/2021 8:40:49 AM | 62875        |
| Surr: DNOP                                       | 65.4   | 70-130 | S    | %Rec  | 1  | 10/1/2021 8:40:49 AM | 62875        |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>          |        |        |      |       |    |                      | Analyst: RAA |
| Gasoline Range Organics (GRO)                    | ND     | 4.7    |      | mg/Kg | 1  | 9/28/2021 2:19:00 AM | 62829        |
| Surr: BFB                                        | 94.1   | 70-130 |      | %Rec  | 1  | 9/28/2021 2:19:00 AM | 62829        |
| <b>EPA METHOD 8021B: VOLATILES</b>               |        |        |      |       |    |                      | Analyst: RAA |
| Benzene                                          | ND     | 0.023  |      | mg/Kg | 1  | 9/28/2021 2:19:00 AM | 62829        |
| Toluene                                          | ND     | 0.047  |      | mg/Kg | 1  | 9/28/2021 2:19:00 AM | 62829        |
| Ethylbenzene                                     | ND     | 0.047  |      | mg/Kg | 1  | 9/28/2021 2:19:00 AM | 62829        |
| Xylenes, Total                                   | ND     | 0.094  |      | mg/Kg | 1  | 9/28/2021 2:19:00 AM | 62829        |
| Surr: 4-Bromofluorobenzene                       | 79.9   | 70-130 |      | %Rec  | 1  | 9/28/2021 2:19:00 AM | 62829        |

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  | Value above quantitation range                  |
|                    | 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 range due to dilution or matrix |    |                                                 |

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## Analytical Report

Lab Order 2109D86

Date Reported: 10/6/2021

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BH21-03 0'

Project: Rio Pecos GB Com 1

Collection Date: 9/22/2021 7:50:00 AM

Lab ID: 2109D86-005

Matrix: SOIL

Received Date: 9/24/2021 7:25:00 AM

| Analyses                                         | Result | RL     | Qual | Units | DF | Date Analyzed         | Batch               |
|--------------------------------------------------|--------|--------|------|-------|----|-----------------------|---------------------|
| <b>EPA METHOD 300.0: ANIONS</b>                  |        |        |      |       |    |                       | Analyst: <b>VP</b>  |
| Chloride                                         | ND     | 60     |      | mg/Kg | 20 | 9/29/2021 9:01:50 PM  | 62900               |
| <b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b> |        |        |      |       |    |                       | Analyst: <b>SB</b>  |
| Diesel Range Organics (DRO)                      | 33     | 9.7    |      | mg/Kg | 1  | 9/29/2021 11:50:28 AM | 62875               |
| Motor Oil Range Organics (MRO)                   | 280    | 49     |      | mg/Kg | 1  | 9/29/2021 11:50:28 AM | 62875               |
| Surr: DNOP                                       | 80.2   | 70-130 |      | %Rec  | 1  | 9/29/2021 11:50:28 AM | 62875               |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>          |        |        |      |       |    |                       | Analyst: <b>RAA</b> |
| Gasoline Range Organics (GRO)                    | ND     | 4.7    |      | mg/Kg | 1  | 9/28/2021 2:39:00 AM  | 62829               |
| Surr: BFB                                        | 89.7   | 70-130 |      | %Rec  | 1  | 9/28/2021 2:39:00 AM  | 62829               |
| <b>EPA METHOD 8021B: VOLATILES</b>               |        |        |      |       |    |                       | Analyst: <b>RAA</b> |
| Benzene                                          | ND     | 0.023  |      | mg/Kg | 1  | 9/28/2021 2:39:00 AM  | 62829               |
| Toluene                                          | ND     | 0.047  |      | mg/Kg | 1  | 9/28/2021 2:39:00 AM  | 62829               |
| Ethylbenzene                                     | ND     | 0.047  |      | mg/Kg | 1  | 9/28/2021 2:39:00 AM  | 62829               |
| Xylenes, Total                                   | ND     | 0.093  |      | mg/Kg | 1  | 9/28/2021 2:39:00 AM  | 62829               |
| Surr: 4-Bromofluorobenzene                       | 78.8   | 70-130 |      | %Rec  | 1  | 9/28/2021 2:39:00 AM  | 62829               |

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  | Value above quantitation range                  |
|                    | 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 range due to dilution or matrix |    |                                                 |

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## Analytical Report

Lab Order 2109D86

Date Reported: 10/6/2021

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BH21-03 0.5'

Project: Rio Pecos GB Com 1

Collection Date: 9/22/2021 8:00:00 AM

Lab ID: 2109D86-006

Matrix: SOIL

Received Date: 9/24/2021 7:25:00 AM

| Analyses                                         | Result | RL     | Qual | Units | DF | Date Analyzed        | Batch        |
|--------------------------------------------------|--------|--------|------|-------|----|----------------------|--------------|
| <b>EPA METHOD 300.0: ANIONS</b>                  |        |        |      |       |    |                      | Analyst: VP  |
| Chloride                                         | ND     | 60     |      | mg/Kg | 20 | 9/29/2021 9:39:04 PM | 62900        |
| <b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b> |        |        |      |       |    |                      | Analyst: JME |
| Diesel Range Organics (DRO)                      | 13     | 9.9    |      | mg/Kg | 1  | 10/1/2021 9:03:28 AM | 62875        |
| Motor Oil Range Organics (MRO)                   | 90     | 50     |      | mg/Kg | 1  | 10/1/2021 9:03:28 AM | 62875        |
| Surr: DNOP                                       | 71.7   | 70-130 |      | %Rec  | 1  | 10/1/2021 9:03:28 AM | 62875        |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>          |        |        |      |       |    |                      | Analyst: RAA |
| Gasoline Range Organics (GRO)                    | ND     | 4.6    |      | mg/Kg | 1  | 9/28/2021 2:58:00 AM | 62829        |
| Surr: BFB                                        | 94.5   | 70-130 |      | %Rec  | 1  | 9/28/2021 2:58:00 AM | 62829        |
| <b>EPA METHOD 8021B: VOLATILES</b>               |        |        |      |       |    |                      | Analyst: RAA |
| Benzene                                          | ND     | 0.023  |      | mg/Kg | 1  | 9/28/2021 2:58:00 AM | 62829        |
| Toluene                                          | ND     | 0.046  |      | mg/Kg | 1  | 9/28/2021 2:58:00 AM | 62829        |
| Ethylbenzene                                     | ND     | 0.046  |      | mg/Kg | 1  | 9/28/2021 2:58:00 AM | 62829        |
| Xylenes, Total                                   | ND     | 0.092  |      | mg/Kg | 1  | 9/28/2021 2:58:00 AM | 62829        |
| Surr: 4-Bromofluorobenzene                       | 78.6   | 70-130 |      | %Rec  | 1  | 9/28/2021 2:58:00 AM | 62829        |

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  | Value above quantitation range                  |
|                    | 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 range due to dilution or matrix |    |                                                 |

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## Analytical Report

Lab Order 2109D86

Date Reported: 10/6/2021

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BH21-04 0'

Project: Rio Pecos GB Com 1

Collection Date: 9/22/2021 8:10:00 AM

Lab ID: 2109D86-007

Matrix: SOIL

Received Date: 9/24/2021 7:25:00 AM

| Analyses                                         | Result | RL     | Qual | Units | DF | Date Analyzed         | Batch               |
|--------------------------------------------------|--------|--------|------|-------|----|-----------------------|---------------------|
| <b>EPA METHOD 300.0: ANIONS</b>                  |        |        |      |       |    |                       | Analyst: <b>VP</b>  |
| Chloride                                         | ND     | 60     |      | mg/Kg | 20 | 9/29/2021 10:16:18 PM | 62900               |
| <b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b> |        |        |      |       |    |                       | Analyst: <b>SB</b>  |
| Diesel Range Organics (DRO)                      | ND     | 9.7    |      | mg/Kg | 1  | 9/29/2021 12:15:12 PM | 62875               |
| Motor Oil Range Organics (MRO)                   | 65     | 49     |      | mg/Kg | 1  | 9/29/2021 12:15:12 PM | 62875               |
| Surr: DNOP                                       | 77.6   | 70-130 |      | %Rec  | 1  | 9/29/2021 12:15:12 PM | 62875               |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>          |        |        |      |       |    |                       | Analyst: <b>RAA</b> |
| Gasoline Range Organics (GRO)                    | ND     | 4.7    |      | mg/Kg | 1  | 9/28/2021 3:18:00 AM  | 62829               |
| Surr: BFB                                        | 96.5   | 70-130 |      | %Rec  | 1  | 9/28/2021 3:18:00 AM  | 62829               |
| <b>EPA METHOD 8021B: VOLATILES</b>               |        |        |      |       |    |                       | Analyst: <b>RAA</b> |
| Benzene                                          | ND     | 0.024  |      | mg/Kg | 1  | 9/28/2021 3:18:00 AM  | 62829               |
| Toluene                                          | ND     | 0.047  |      | mg/Kg | 1  | 9/28/2021 3:18:00 AM  | 62829               |
| Ethylbenzene                                     | ND     | 0.047  |      | mg/Kg | 1  | 9/28/2021 3:18:00 AM  | 62829               |
| Xylenes, Total                                   | ND     | 0.094  |      | mg/Kg | 1  | 9/28/2021 3:18:00 AM  | 62829               |
| Surr: 4-Bromofluorobenzene                       | 81.9   | 70-130 |      | %Rec  | 1  | 9/28/2021 3:18:00 AM  | 62829               |

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  | Value above quantitation range                  |
|                    | 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 range due to dilution or matrix |    |                                                 |

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## Analytical Report

Lab Order 2109D86

Date Reported: 10/6/2021

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BH21-04 0.5'

Project: Rio Pecos GB Com 1

Collection Date: 9/22/2021 8:20:00 AM

Lab ID: 2109D86-008

Matrix: SOIL

Received Date: 9/24/2021 7:25:00 AM

| Analyses                                         | Result | RL     | Qual | Units | DF | Date Analyzed         | Batch        |
|--------------------------------------------------|--------|--------|------|-------|----|-----------------------|--------------|
| <b>EPA METHOD 300.0: ANIONS</b>                  |        |        |      |       |    |                       | Analyst: VP  |
| Chloride                                         | ND     | 60     |      | mg/Kg | 20 | 9/29/2021 10:28:42 PM | 62900        |
| <b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b> |        |        |      |       |    |                       | Analyst: JME |
| Diesel Range Organics (DRO)                      | ND     | 9.9    |      | mg/Kg | 1  | 10/1/2021 9:26:20 AM  | 62875        |
| Motor Oil Range Organics (MRO)                   | 61     | 49     |      | mg/Kg | 1  | 10/1/2021 9:26:20 AM  | 62875        |
| Surr: DNOP                                       | 57.7   | 70-130 | S    | %Rec  | 1  | 10/1/2021 9:26:20 AM  | 62875        |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>          |        |        |      |       |    |                       | Analyst: RAA |
| Gasoline Range Organics (GRO)                    | ND     | 4.8    |      | mg/Kg | 1  | 9/28/2021 3:38:00 AM  | 62829        |
| Surr: BFB                                        | 95.6   | 70-130 |      | %Rec  | 1  | 9/28/2021 3:38:00 AM  | 62829        |
| <b>EPA METHOD 8021B: VOLATILES</b>               |        |        |      |       |    |                       | Analyst: RAA |
| Benzene                                          | ND     | 0.024  |      | mg/Kg | 1  | 9/28/2021 3:38:00 AM  | 62829        |
| Toluene                                          | ND     | 0.048  |      | mg/Kg | 1  | 9/28/2021 3:38:00 AM  | 62829        |
| Ethylbenzene                                     | ND     | 0.048  |      | mg/Kg | 1  | 9/28/2021 3:38:00 AM  | 62829        |
| Xylenes, Total                                   | ND     | 0.096  |      | mg/Kg | 1  | 9/28/2021 3:38:00 AM  | 62829        |
| Surr: 4-Bromofluorobenzene                       | 78.4   | 70-130 |      | %Rec  | 1  | 9/28/2021 3:38:00 AM  | 62829        |

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  | Value above quantitation range                  |
|                    | 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 range due to dilution or matrix |    |                                                 |

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

WO#: 2109D86

06-Oct-21

**Client:** EOG  
**Project:** Rio Pecos GB Com 1

| Sample ID: <b>MB-62886</b>  | SampType: <b>mblk</b>           | TestCode: <b>EPA Method 300.0: Anions</b> |                     |             |      |          |           |      |          |      |
|-----------------------------|---------------------------------|-------------------------------------------|---------------------|-------------|------|----------|-----------|------|----------|------|
| Client ID: <b>PBS</b>       | Batch ID: <b>62886</b>          | RunNo: <b>81636</b>                       |                     |             |      |          |           |      |          |      |
| Prep Date: <b>9/28/2021</b> | Analysis Date: <b>9/28/2021</b> | SeqNo: <b>2885287</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-62886</b> | SampType: <b>lcs</b>            | TestCode: <b>EPA Method 300.0: Anions</b> |                     |             |      |          |           |      |          |      |
|-----------------------------|---------------------------------|-------------------------------------------|---------------------|-------------|------|----------|-----------|------|----------|------|
| Client ID: <b>LCSS</b>      | Batch ID: <b>62886</b>          | RunNo: <b>81636</b>                       |                     |             |      |          |           |      |          |      |
| Prep Date: <b>9/28/2021</b> | Analysis Date: <b>9/28/2021</b> | SeqNo: <b>2885288</b>                     | Units: <b>mg/Kg</b> |             |      |          |           |      |          |      |
| Analyte                     | Result                          | PQL                                       | SPK value           | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Chloride                    | 14                              | 1.5                                       | 15.00               | 0           | 95.8 | 90       | 110       |      |          |      |

| Sample ID: <b>MB-62900</b>  | SampType: <b>MBLK</b>           | TestCode: <b>EPA Method 300.0: Anions</b> |                     |             |      |          |           |      |          |      |
|-----------------------------|---------------------------------|-------------------------------------------|---------------------|-------------|------|----------|-----------|------|----------|------|
| Client ID: <b>PBS</b>       | Batch ID: <b>62900</b>          | RunNo: <b>81677</b>                       |                     |             |      |          |           |      |          |      |
| Prep Date: <b>9/29/2021</b> | Analysis Date: <b>9/29/2021</b> | SeqNo: <b>2886779</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-62900</b> | SampType: <b>LCS</b>            | TestCode: <b>EPA Method 300.0: Anions</b> |                     |             |      |          |           |      |          |      |
|-----------------------------|---------------------------------|-------------------------------------------|---------------------|-------------|------|----------|-----------|------|----------|------|
| Client ID: <b>LCSS</b>      | Batch ID: <b>62900</b>          | RunNo: <b>81677</b>                       |                     |             |      |          |           |      |          |      |
| Prep Date: <b>9/29/2021</b> | Analysis Date: <b>9/29/2021</b> | SeqNo: <b>2886780</b>                     | Units: <b>mg/Kg</b> |             |      |          |           |      |          |      |
| Analyte                     | Result                          | PQL                                       | SPK value           | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Chloride                    | 14                              | 1.5                                       | 15.00               | 0           | 96.4 | 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 range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

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

WO#: 2109D86

06-Oct-21

**Client:** EOG  
**Project:** Rio Pecos GB Com 1

| Sample ID: <b>MB-62875</b>     | SampType: <b>MBLK</b>           | TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b> |                     |             |      |          |           |      |          |      |
|--------------------------------|---------------------------------|------------------------------------------------------------|---------------------|-------------|------|----------|-----------|------|----------|------|
| Client ID: <b>PBS</b>          | Batch ID: <b>62875</b>          | RunNo: <b>81663</b>                                        |                     |             |      |          |           |      |          |      |
| Prep Date: <b>9/28/2021</b>    | Analysis Date: <b>9/29/2021</b> | SeqNo: <b>2888175</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                              | 10                                                         |                     |             |      |          |           |      |          |      |
| Motor Oil Range Organics (MRO) | ND                              | 50                                                         |                     |             |      |          |           |      |          |      |
| Surr: DNOP                     | 11                              |                                                            | 10.00               |             | 112  | 70       | 130       |      |          |      |

| Sample ID: <b>LCS-62875</b> | SampType: <b>LCS</b>            | TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b> |                     |             |      |          |           |      |          |      |
|-----------------------------|---------------------------------|------------------------------------------------------------|---------------------|-------------|------|----------|-----------|------|----------|------|
| Client ID: <b>LCSS</b>      | Batch ID: <b>62875</b>          | RunNo: <b>81663</b>                                        |                     |             |      |          |           |      |          |      |
| Prep Date: <b>9/28/2021</b> | Analysis Date: <b>9/29/2021</b> | SeqNo: <b>2888176</b>                                      | Units: <b>mg/Kg</b> |             |      |          |           |      |          |      |
| Analyte                     | Result                          | PQL                                                        | SPK value           | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 61                              | 10                                                         | 50.00               | 0           | 122  | 68.9     | 135       |      |          |      |
| Surr: DNOP                  | 5.4                             |                                                            | 5.000               |             | 108  | 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 range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

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

WO#: 2109D86

06-Oct-21

**Client:** EOG  
**Project:** Rio Pecos GB Com 1

| Sample ID: <b>lcs-62829</b>   | SampType: <b>LCS</b>            |     | TestCode: <b>EPA Method 8015D: Gasoline Range</b> |             |                     |          |           |      |          |      |
|-------------------------------|---------------------------------|-----|---------------------------------------------------|-------------|---------------------|----------|-----------|------|----------|------|
| Client ID: <b>LCSS</b>        | Batch ID: <b>62829</b>          |     | RunNo: <b>81607</b>                               |             |                     |          |           |      |          |      |
| Prep Date: <b>9/24/2021</b>   | Analysis Date: <b>9/27/2021</b> |     | SeqNo: <b>2884005</b>                             |             | Units: <b>mg/Kg</b> |          |           |      |          |      |
| Analyte                       | Result                          | PQL | SPK value                                         | SPK Ref Val | %REC                | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 29                              | 5.0 | 25.00                                             | 0           | 116                 | 78.6     | 131       |      |          |      |
| Surr: BFB                     | 1100                            |     | 1000                                              |             | 111                 | 70       | 130       |      |          |      |

| Sample ID: <b>mb-62829</b>    | SampType: <b>MBLK</b>           |     | TestCode: <b>EPA Method 8015D: Gasoline Range</b> |             |                     |          |           |      |          |      |
|-------------------------------|---------------------------------|-----|---------------------------------------------------|-------------|---------------------|----------|-----------|------|----------|------|
| Client ID: <b>PBS</b>         | Batch ID: <b>62829</b>          |     | RunNo: <b>81607</b>                               |             |                     |          |           |      |          |      |
| Prep Date: <b>9/24/2021</b>   | Analysis Date: <b>9/27/2021</b> |     | SeqNo: <b>2884006</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                     | 950                             |     | 1000                                              |             | 95.2                | 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 range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

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

WO#: 2109D86

06-Oct-21

**Client:** EOG  
**Project:** Rio Pecos GB Com 1

| Sample ID: <b>lcs-62829</b> | SampType: <b>LCS</b>            | TestCode: <b>EPA Method 8021B: Volatiles</b> |                     |             |      |          |           |      |          |      |
|-----------------------------|---------------------------------|----------------------------------------------|---------------------|-------------|------|----------|-----------|------|----------|------|
| Client ID: <b>LCSS</b>      | Batch ID: <b>62829</b>          | RunNo: <b>81607</b>                          |                     |             |      |          |           |      |          |      |
| Prep Date: <b>9/24/2021</b> | Analysis Date: <b>9/27/2021</b> | SeqNo: <b>2884094</b>                        | Units: <b>mg/Kg</b> |             |      |          |           |      |          |      |
| Analyte                     | Result                          | PQL                                          | SPK value           | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                     | 0.94                            | 0.025                                        | 1.000               | 0           | 94.3 | 80       | 120       |      |          |      |
| Toluene                     | 0.93                            | 0.050                                        | 1.000               | 0           | 93.1 | 80       | 120       |      |          |      |
| Ethylbenzene                | 0.94                            | 0.050                                        | 1.000               | 0           | 93.8 | 80       | 120       |      |          |      |
| Xylenes, Total              | 2.8                             | 0.10                                         | 3.000               | 0           | 94.2 | 80       | 120       |      |          |      |
| Surr: 4-Bromofluorobenzene  | 0.81                            |                                              | 1.000               |             | 80.6 | 70       | 130       |      |          |      |

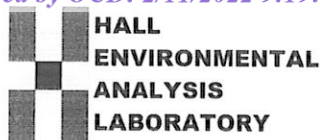
| Sample ID: <b>mb-62829</b>  | SampType: <b>MBLK</b>           | TestCode: <b>EPA Method 8021B: Volatiles</b> |                     |             |      |          |           |      |          |      |
|-----------------------------|---------------------------------|----------------------------------------------|---------------------|-------------|------|----------|-----------|------|----------|------|
| Client ID: <b>PBS</b>       | Batch ID: <b>62829</b>          | RunNo: <b>81607</b>                          |                     |             |      |          |           |      |          |      |
| Prep Date: <b>9/24/2021</b> | Analysis Date: <b>9/27/2021</b> | SeqNo: <b>2884095</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  | 0.79                            |                                              | 1.000               |             | 79.1 | 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 range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

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

## Sample Log-In Check List

Client Name: EOG

Work Order Number: 2109D86

RcptNo: 1

Received By: Cheyenne Cason

9/24/2021 7:25:00 AM

Completed By: Isaiah Ortiz

9/24/2021 7:45:38 AM

Reviewed By: *KAC*

9/24/21

*Chad*  
*IOX*

### Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? Courier

### Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
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?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH:

( $<2$  or  $>12$  unless noted)

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

Checked by: *TMC 9.24.21*

### 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 $^{\circ}\text{C}$ | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|-------------------------|-----------|-------------|---------|-----------|-----------|
| 1         | 0.9                     | Good      | Not Present |         |           |           |







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

November 08, 2021

Monica Peppin

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX

RE: Rio Pecos GB Com 1

OrderNo.: 2111050

Dear Monica Peppin:

Hall Environmental Analysis Laboratory received 9 sample(s) on 11/2/2021 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 2111050

Date Reported: 11/8/2021

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS21-01 1'

Project: Rio Pecos GB Com 1

Collection Date: 10/29/2021 10:45:00 AM

Lab ID: 2111050-001

Matrix: SOIL

Received Date: 11/2/2021 7:25:00 AM

| Analyses                                         | Result | RL     | Qual | Units | DF | Date Analyzed         |
|--------------------------------------------------|--------|--------|------|-------|----|-----------------------|
| <b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b> |        |        |      |       |    | Analyst: <b>SB</b>    |
| Diesel Range Organics (DRO)                      | 11     | 10     |      | mg/Kg | 1  | 11/4/2021 11:45:34 AM |
| Motor Oil Range Organics (MRO)                   | ND     | 50     |      | mg/Kg | 1  | 11/4/2021 11:45:34 AM |
| Surr: DNOP                                       | 79.1   | 70-130 |      | %Rec  | 1  | 11/4/2021 11:45:34 AM |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>          |        |        |      |       |    | Analyst: <b>mb</b>    |
| Gasoline Range Organics (GRO)                    | ND     | 4.8    |      | mg/Kg | 1  | 11/4/2021 8:40:00 AM  |
| Surr: BFB                                        | 100    | 70-130 |      | %Rec  | 1  | 11/4/2021 8:40:00 AM  |
| <b>EPA METHOD 8021B: VOLATILES</b>               |        |        |      |       |    | Analyst: <b>mb</b>    |
| Benzene                                          | ND     | 0.024  |      | mg/Kg | 1  | 11/4/2021 8:40:00 AM  |
| Toluene                                          | ND     | 0.048  |      | mg/Kg | 1  | 11/4/2021 8:40:00 AM  |
| Ethylbenzene                                     | ND     | 0.048  |      | mg/Kg | 1  | 11/4/2021 8:40:00 AM  |
| Xylenes, Total                                   | ND     | 0.096  |      | mg/Kg | 1  | 11/4/2021 8:40:00 AM  |
| Surr: 4-Bromofluorobenzene                       | 98.6   | 70-130 |      | %Rec  | 1  | 11/4/2021 8:40:00 AM  |
| <b>EPA METHOD 300.0: ANIONS</b>                  |        |        |      |       |    | Analyst: <b>JMT</b>   |
| Chloride                                         | ND     | 60     |      | mg/Kg | 20 | 11/3/2021 8:18:30 PM  |

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  | Value above quantitation range                  |
|                    | 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 range due to dilution or matrix interference |    |                                                 |
|                    |     |                                                                    |    |                                                 |

## Analytical Report

Lab Order 2111050

Date Reported: 11/8/2021

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS21-02 0.5'

Project: Rio Pecos GB Com 1

Collection Date: 10/29/2021 10:55:00 AM

Lab ID: 2111050-002

Matrix: SOIL

Received Date: 11/2/2021 7:25:00 AM

| Analyses                                         | Result | RL     | Qual | Units | DF | Date Analyzed         |
|--------------------------------------------------|--------|--------|------|-------|----|-----------------------|
| <b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b> |        |        |      |       |    | Analyst: <b>SB</b>    |
| Diesel Range Organics (DRO)                      | 13     | 9.9    |      | mg/Kg | 1  | 11/4/2021 12:21:24 PM |
| Motor Oil Range Organics (MRO)                   | ND     | 50     |      | mg/Kg | 1  | 11/4/2021 12:21:24 PM |
| Surr: DNOP                                       | 81.8   | 70-130 |      | %Rec  | 1  | 11/4/2021 12:21:24 PM |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>          |        |        |      |       |    | Analyst: <b>mb</b>    |
| Gasoline Range Organics (GRO)                    | ND     | 4.9    |      | mg/Kg | 1  | 11/4/2021 9:39:00 AM  |
| Surr: BFB                                        | 98.8   | 70-130 |      | %Rec  | 1  | 11/4/2021 9:39:00 AM  |
| <b>EPA METHOD 8021B: VOLATILES</b>               |        |        |      |       |    | Analyst: <b>mb</b>    |
| Benzene                                          | ND     | 0.025  |      | mg/Kg | 1  | 11/4/2021 9:39:00 AM  |
| Toluene                                          | ND     | 0.049  |      | mg/Kg | 1  | 11/4/2021 9:39:00 AM  |
| Ethylbenzene                                     | ND     | 0.049  |      | mg/Kg | 1  | 11/4/2021 9:39:00 AM  |
| Xylenes, Total                                   | ND     | 0.099  |      | mg/Kg | 1  | 11/4/2021 9:39:00 AM  |
| Surr: 4-Bromofluorobenzene                       | 104    | 70-130 |      | %Rec  | 1  | 11/4/2021 9:39:00 AM  |
| <b>EPA METHOD 300.0: ANIONS</b>                  |        |        |      |       |    | Analyst: <b>JMT</b>   |
| Chloride                                         | ND     | 60     |      | mg/Kg | 20 | 11/3/2021 8:30:54 PM  |

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  | Value above quantitation range                  |
|                    | 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 range due to dilution or matrix interference |    |                                                 |
|                    |     |                                                                    |    |                                                 |

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## Analytical Report

Lab Order 2111050

Date Reported: 11/8/2021

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS21-03 0.5'

Project: Rio Pecos GB Com 1

Collection Date: 10/29/2021 11:05:00 AM

Lab ID: 2111050-003

Matrix: SOIL

Received Date: 11/2/2021 7:25:00 AM

| Analyses                                         | Result | RL     | Qual | Units | DF | Date Analyzed         |
|--------------------------------------------------|--------|--------|------|-------|----|-----------------------|
| <b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b> |        |        |      |       |    | Analyst: <b>SB</b>    |
| Diesel Range Organics (DRO)                      | 17     | 9.9    |      | mg/Kg | 1  | 11/4/2021 12:33:36 PM |
| Motor Oil Range Organics (MRO)                   | 58     | 50     |      | mg/Kg | 1  | 11/4/2021 12:33:36 PM |
| Surr: DNOP                                       | 85.8   | 70-130 |      | %Rec  | 1  | 11/4/2021 12:33:36 PM |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>          |        |        |      |       |    | Analyst: <b>mb</b>    |
| Gasoline Range Organics (GRO)                    | ND     | 4.6    |      | mg/Kg | 1  | 11/4/2021 10:37:00 AM |
| Surr: BFB                                        | 94.9   | 70-130 |      | %Rec  | 1  | 11/4/2021 10:37:00 AM |
| <b>EPA METHOD 8021B: VOLATILES</b>               |        |        |      |       |    | Analyst: <b>mb</b>    |
| Benzene                                          | ND     | 0.023  |      | mg/Kg | 1  | 11/4/2021 10:37:00 AM |
| Toluene                                          | ND     | 0.046  |      | mg/Kg | 1  | 11/4/2021 10:37:00 AM |
| Ethylbenzene                                     | ND     | 0.046  |      | mg/Kg | 1  | 11/4/2021 10:37:00 AM |
| Xylenes, Total                                   | ND     | 0.093  |      | mg/Kg | 1  | 11/4/2021 10:37:00 AM |
| Surr: 4-Bromofluorobenzene                       | 101    | 70-130 |      | %Rec  | 1  | 11/4/2021 10:37:00 AM |
| <b>EPA METHOD 300.0: ANIONS</b>                  |        |        |      |       |    | Analyst: <b>JMT</b>   |
| Chloride                                         | ND     | 60     |      | mg/Kg | 20 | 11/3/2021 8:43:18 PM  |

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  | Value above quantitation range                  |
|                    | 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 range due to dilution or matrix interference |    |                                                 |
|                    |     |                                                                    |    |                                                 |

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## Analytical Report

Lab Order 2111050

Date Reported: 11/8/2021

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS21-01 0-1'

Project: Rio Pecos GB Com 1

Collection Date: 10/29/2021 11:15:00 AM

Lab ID: 2111050-004

Matrix: SOIL

Received Date: 11/2/2021 7:25:00 AM

| Analyses                                         | Result | RL     | Qual | Units | DF | Date Analyzed         |
|--------------------------------------------------|--------|--------|------|-------|----|-----------------------|
| <b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b> |        |        |      |       |    | Analyst: <b>SB</b>    |
| Diesel Range Organics (DRO)                      | 18     | 9.9    |      | mg/Kg | 1  | 11/4/2021 12:46:04 PM |
| Motor Oil Range Organics (MRO)                   | 62     | 50     |      | mg/Kg | 1  | 11/4/2021 12:46:04 PM |
| Surr: DNOP                                       | 82.4   | 70-130 |      | %Rec  | 1  | 11/4/2021 12:46:04 PM |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>          |        |        |      |       |    | Analyst: <b>mb</b>    |
| Gasoline Range Organics (GRO)                    | ND     | 4.8    |      | mg/Kg | 1  | 11/4/2021 10:56:00 AM |
| Surr: BFB                                        | 98.6   | 70-130 |      | %Rec  | 1  | 11/4/2021 10:56:00 AM |
| <b>EPA METHOD 8021B: VOLATILES</b>               |        |        |      |       |    | Analyst: <b>mb</b>    |
| Benzene                                          | ND     | 0.024  |      | mg/Kg | 1  | 11/4/2021 10:56:00 AM |
| Toluene                                          | ND     | 0.048  |      | mg/Kg | 1  | 11/4/2021 10:56:00 AM |
| Ethylbenzene                                     | ND     | 0.048  |      | mg/Kg | 1  | 11/4/2021 10:56:00 AM |
| Xylenes, Total                                   | ND     | 0.096  |      | mg/Kg | 1  | 11/4/2021 10:56:00 AM |
| Surr: 4-Bromofluorobenzene                       | 102    | 70-130 |      | %Rec  | 1  | 11/4/2021 10:56:00 AM |
| <b>EPA METHOD 300.0: ANIONS</b>                  |        |        |      |       |    | Analyst: <b>JMT</b>   |
| Chloride                                         | ND     | 3.0    |      | mg/Kg | 1  | 11/3/2021 8:55:43 PM  |

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  | Value above quantitation range                  |
|                    | 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 range due to dilution or matrix interference |    |                                                 |
|                    |     |                                                                    |    |                                                 |



## Analytical Report

Lab Order 2111050

Date Reported: 11/8/2021

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS21-02 0-1'

Project: Rio Pecos GB Com 1

Collection Date: 10/29/2021 11:25:00 AM

Lab ID: 2111050-005

Matrix: SOIL

Received Date: 11/2/2021 7:25:00 AM

| Analyses                                         | Result | RL     | Qual | Units | DF | Date Analyzed         |
|--------------------------------------------------|--------|--------|------|-------|----|-----------------------|
| <b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b> |        |        |      |       |    | Analyst: <b>SB</b>    |
| Diesel Range Organics (DRO)                      | 17     | 9.6    |      | mg/Kg | 1  | 11/4/2021 12:58:49 PM |
| Motor Oil Range Organics (MRO)                   | 56     | 48     |      | mg/Kg | 1  | 11/4/2021 12:58:49 PM |
| Surr: DNOP                                       | 85.9   | 70-130 |      | %Rec  | 1  | 11/4/2021 12:58:49 PM |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>          |        |        |      |       |    | Analyst: <b>mb</b>    |
| Gasoline Range Organics (GRO)                    | ND     | 4.9    |      | mg/Kg | 1  | 11/4/2021 11:16:00 AM |
| Surr: BFB                                        | 94.8   | 70-130 |      | %Rec  | 1  | 11/4/2021 11:16:00 AM |
| <b>EPA METHOD 8021B: VOLATILES</b>               |        |        |      |       |    | Analyst: <b>mb</b>    |
| Benzene                                          | ND     | 0.024  |      | mg/Kg | 1  | 11/4/2021 11:16:00 AM |
| Toluene                                          | ND     | 0.049  |      | mg/Kg | 1  | 11/4/2021 11:16:00 AM |
| Ethylbenzene                                     | ND     | 0.049  |      | mg/Kg | 1  | 11/4/2021 11:16:00 AM |
| Xylenes, Total                                   | ND     | 0.098  |      | mg/Kg | 1  | 11/4/2021 11:16:00 AM |
| Surr: 4-Bromofluorobenzene                       | 101    | 70-130 |      | %Rec  | 1  | 11/4/2021 11:16:00 AM |
| <b>EPA METHOD 300.0: ANIONS</b>                  |        |        |      |       |    | Analyst: <b>JMT</b>   |
| Chloride                                         | ND     | 60     |      | mg/Kg | 20 | 11/3/2021 9:32:58 PM  |

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  | Value above quantitation range                  |
|                    | 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 range due to dilution or matrix interference |    |                                                 |
|                    |     |                                                                    |    |                                                 |

## Analytical Report

Lab Order 2111050

Date Reported: 11/8/2021

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS21-03 0-0.5'

Project: Rio Pecos GB Com 1

Collection Date: 10/29/2021 11:35:00 AM

Lab ID: 2111050-006

Matrix: SOIL

Received Date: 11/2/2021 7:25:00 AM

| Analyses                                         | Result | RL     | Qual | Units | DF | Date Analyzed         |
|--------------------------------------------------|--------|--------|------|-------|----|-----------------------|
| <b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b> |        |        |      |       |    | Analyst: <b>SB</b>    |
| Diesel Range Organics (DRO)                      | ND     | 9.7    |      | mg/Kg | 1  | 11/4/2021 1:11:32 PM  |
| Motor Oil Range Organics (MRO)                   | ND     | 49     |      | mg/Kg | 1  | 11/4/2021 1:11:32 PM  |
| Surr: DNOP                                       | 78.9   | 70-130 |      | %Rec  | 1  | 11/4/2021 1:11:32 PM  |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>          |        |        |      |       |    | Analyst: <b>mb</b>    |
| Gasoline Range Organics (GRO)                    | ND     | 4.8    |      | mg/Kg | 1  | 11/4/2021 11:35:00 AM |
| Surr: BFB                                        | 98.5   | 70-130 |      | %Rec  | 1  | 11/4/2021 11:35:00 AM |
| <b>EPA METHOD 8021B: VOLATILES</b>               |        |        |      |       |    | Analyst: <b>mb</b>    |
| Benzene                                          | ND     | 0.024  |      | mg/Kg | 1  | 11/4/2021 11:35:00 AM |
| Toluene                                          | ND     | 0.048  |      | mg/Kg | 1  | 11/4/2021 11:35:00 AM |
| Ethylbenzene                                     | ND     | 0.048  |      | mg/Kg | 1  | 11/4/2021 11:35:00 AM |
| Xylenes, Total                                   | ND     | 0.096  |      | mg/Kg | 1  | 11/4/2021 11:35:00 AM |
| Surr: 4-Bromofluorobenzene                       | 105    | 70-130 |      | %Rec  | 1  | 11/4/2021 11:35:00 AM |
| <b>EPA METHOD 300.0: ANIONS</b>                  |        |        |      |       |    | Analyst: <b>JMT</b>   |
| Chloride                                         | ND     | 59     |      | mg/Kg | 20 | 11/3/2021 9:45:22 PM  |

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  | Value above quantitation range                  |
|                    | 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 range due to dilution or matrix interference |    |                                                 |
|                    |     |                                                                    |    |                                                 |

## Analytical Report

Lab Order 2111050

Date Reported: 11/8/2021

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS21-04 0-0.5'

Project: Rio Pecos GB Com 1

Collection Date: 10/29/2021 11:45:00 AM

Lab ID: 2111050-007

Matrix: SOIL

Received Date: 11/2/2021 7:25:00 AM

| Analyses                                         | Result | RL     | Qual | Units | DF | Date Analyzed         |
|--------------------------------------------------|--------|--------|------|-------|----|-----------------------|
| <b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b> |        |        |      |       |    | Analyst: <b>SB</b>    |
| Diesel Range Organics (DRO)                      | 11     | 10     |      | mg/Kg | 1  | 11/4/2021 1:24:20 PM  |
| Motor Oil Range Organics (MRO)                   | ND     | 50     |      | mg/Kg | 1  | 11/4/2021 1:24:20 PM  |
| Surr: DNOP                                       | 82.1   | 70-130 |      | %Rec  | 1  | 11/4/2021 1:24:20 PM  |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>          |        |        |      |       |    | Analyst: <b>mb</b>    |
| Gasoline Range Organics (GRO)                    | ND     | 4.7    |      | mg/Kg | 1  | 11/4/2021 11:55:00 AM |
| Surr: BFB                                        | 98.4   | 70-130 |      | %Rec  | 1  | 11/4/2021 11:55:00 AM |
| <b>EPA METHOD 8021B: VOLATILES</b>               |        |        |      |       |    | Analyst: <b>mb</b>    |
| Benzene                                          | ND     | 0.024  |      | mg/Kg | 1  | 11/4/2021 11:55:00 AM |
| Toluene                                          | ND     | 0.047  |      | mg/Kg | 1  | 11/4/2021 11:55:00 AM |
| Ethylbenzene                                     | ND     | 0.047  |      | mg/Kg | 1  | 11/4/2021 11:55:00 AM |
| Xylenes, Total                                   | ND     | 0.094  |      | mg/Kg | 1  | 11/4/2021 11:55:00 AM |
| Surr: 4-Bromofluorobenzene                       | 104    | 70-130 |      | %Rec  | 1  | 11/4/2021 11:55:00 AM |
| <b>EPA METHOD 300.0: ANIONS</b>                  |        |        |      |       |    | Analyst: <b>JMT</b>   |
| Chloride                                         | ND     | 60     |      | mg/Kg | 20 | 11/3/2021 9:57:47 PM  |

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  | Value above quantitation range                  |
|                    | 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 range due to dilution or matrix interference |    |                                                 |
|                    |     |                                                                    |    |                                                 |

## Analytical Report

Lab Order 2111050

Date Reported: 11/8/2021

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS21-05 0-0.5'

Project: Rio Pecos GB Com 1

Collection Date: 10/29/2021 11:55:00 AM

Lab ID: 2111050-008

Matrix: SOIL

Received Date: 11/2/2021 7:25:00 AM

| Analyses                                         | Result | RL     | Qual | Units | DF | Date Analyzed         |
|--------------------------------------------------|--------|--------|------|-------|----|-----------------------|
| <b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b> |        |        |      |       |    | Analyst: <b>SB</b>    |
| Diesel Range Organics (DRO)                      | 15     | 9.7    |      | mg/Kg | 1  | 11/4/2021 1:37:16 PM  |
| Motor Oil Range Organics (MRO)                   | 53     | 49     |      | mg/Kg | 1  | 11/4/2021 1:37:16 PM  |
| Surr: DNOP                                       | 86.1   | 70-130 |      | %Rec  | 1  | 11/4/2021 1:37:16 PM  |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>          |        |        |      |       |    | Analyst: <b>mb</b>    |
| Gasoline Range Organics (GRO)                    | ND     | 4.9    |      | mg/Kg | 1  | 11/4/2021 12:14:00 PM |
| Surr: BFB                                        | 106    | 70-130 |      | %Rec  | 1  | 11/4/2021 12:14:00 PM |
| <b>EPA METHOD 8021B: VOLATILES</b>               |        |        |      |       |    | Analyst: <b>mb</b>    |
| Benzene                                          | ND     | 0.024  |      | mg/Kg | 1  | 11/4/2021 12:14:00 PM |
| Toluene                                          | ND     | 0.049  |      | mg/Kg | 1  | 11/4/2021 12:14:00 PM |
| Ethylbenzene                                     | ND     | 0.049  |      | mg/Kg | 1  | 11/4/2021 12:14:00 PM |
| Xylenes, Total                                   | ND     | 0.098  |      | mg/Kg | 1  | 11/4/2021 12:14:00 PM |
| Surr: 4-Bromofluorobenzene                       | 108    | 70-130 |      | %Rec  | 1  | 11/4/2021 12:14:00 PM |
| <b>EPA METHOD 300.0: ANIONS</b>                  |        |        |      |       |    | Analyst: <b>JMT</b>   |
| Chloride                                         | ND     | 60     |      | mg/Kg | 20 | 11/3/2021 10:10:12 PM |

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  | Value above quantitation range                  |
|                    | 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 range due to dilution or matrix interference |    |                                                 |
|                    |     |                                                                    |    |                                                 |

## Analytical Report

Lab Order 2111050

Date Reported: 11/8/2021

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS21-06 0-0.5'

Project: Rio Pecos GB Com 1

Collection Date: 10/29/2021 12:05:00 PM

Lab ID: 2111050-009

Matrix: SOIL

Received Date: 11/2/2021 7:25:00 AM

| Analyses                                         | Result | RL     | Qual | Units | DF | Date Analyzed         |
|--------------------------------------------------|--------|--------|------|-------|----|-----------------------|
| <b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b> |        |        |      |       |    | Analyst: <b>SB</b>    |
| Diesel Range Organics (DRO)                      | ND     | 9.6    |      | mg/Kg | 1  | 11/4/2021 1:50:16 PM  |
| Motor Oil Range Organics (MRO)                   | ND     | 48     |      | mg/Kg | 1  | 11/4/2021 1:50:16 PM  |
| Surr: DNOP                                       | 82.4   | 70-130 |      | %Rec  | 1  | 11/4/2021 1:50:16 PM  |
| <b>EPA METHOD 8015D: GASOLINE RANGE</b>          |        |        |      |       |    | Analyst: <b>mb</b>    |
| Gasoline Range Organics (GRO)                    | ND     | 4.9    |      | mg/Kg | 1  | 11/4/2021 12:34:00 PM |
| Surr: BFB                                        | 103    | 70-130 |      | %Rec  | 1  | 11/4/2021 12:34:00 PM |
| <b>EPA METHOD 8021B: VOLATILES</b>               |        |        |      |       |    | Analyst: <b>mb</b>    |
| Benzene                                          | ND     | 0.024  |      | mg/Kg | 1  | 11/4/2021 12:34:00 PM |
| Toluene                                          | ND     | 0.049  |      | mg/Kg | 1  | 11/4/2021 12:34:00 PM |
| Ethylbenzene                                     | ND     | 0.049  |      | mg/Kg | 1  | 11/4/2021 12:34:00 PM |
| Xylenes, Total                                   | ND     | 0.097  |      | mg/Kg | 1  | 11/4/2021 12:34:00 PM |
| Surr: 4-Bromofluorobenzene                       | 110    | 70-130 |      | %Rec  | 1  | 11/4/2021 12:34:00 PM |
| <b>EPA METHOD 300.0: ANIONS</b>                  |        |        |      |       |    | Analyst: <b>JMT</b>   |
| Chloride                                         | ND     | 60     |      | mg/Kg | 20 | 11/3/2021 10:22:37 PM |

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  | Value above quantitation range                  |
|                    | 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 range due to dilution or matrix interference |    |                                                 |
|                    |     |                                                                    |    |                                                 |

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# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2111050

08-Nov-21

**Client:** Vertex Resources Services, Inc.**Project:** Rio Pecos GB Com 1

|                             |                                 |                                           |                     |             |      |          |           |      |          |      |
|-----------------------------|---------------------------------|-------------------------------------------|---------------------|-------------|------|----------|-----------|------|----------|------|
| Sample ID: <b>MB-63750</b>  | SampType: <b>mblk</b>           | TestCode: <b>EPA Method 300.0: Anions</b> |                     |             |      |          |           |      |          |      |
| Client ID: <b>PBS</b>       | Batch ID: <b>63750</b>          | RunNo: <b>82554</b>                       |                     |             |      |          |           |      |          |      |
| Prep Date: <b>11/3/2021</b> | Analysis Date: <b>11/3/2021</b> | SeqNo: <b>2930779</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-63750</b> | SampType: <b>lcs</b>            | TestCode: <b>EPA Method 300.0: Anions</b> |                     |             |      |          |           |      |          |      |
| Client ID: <b>LCSS</b>      | Batch ID: <b>63750</b>          | RunNo: <b>82554</b>                       |                     |             |      |          |           |      |          |      |
| Prep Date: <b>11/3/2021</b> | Analysis Date: <b>11/3/2021</b> | SeqNo: <b>2930780</b>                     | Units: <b>mg/Kg</b> |             |      |          |           |      |          |      |
| Analyte                     | Result                          | PQL                                       | SPK value           | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Chloride                    | 14                              | 1.5                                       | 15.00               | 0           | 91.6 | 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 range due to dilution or matrix interference

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

Page 10 of 13

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

WO#: 2111050

08-Nov-21

**Client:** Vertex Resources Services, Inc.**Project:** Rio Pecos GB Com 1

| Sample ID: <b>MB-63737</b>     | SampType: <b>MBLK</b>           | TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b> |           |             |      |          |           |      |          |      |
|--------------------------------|---------------------------------|------------------------------------------------------------|-----------|-------------|------|----------|-----------|------|----------|------|
| Client ID: <b>PBS</b>          | Batch ID: <b>63737</b>          | RunNo: <b>82576</b>                                        |           |             |      |          |           |      |          |      |
| Prep Date: <b>11/3/2021</b>    | Analysis Date: <b>11/4/2021</b> | SeqNo: <b>2931252</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                              | 10                                                         |           |             |      |          |           |      |          |      |
| Motor Oil Range Organics (MRO) | ND                              | 50                                                         |           |             |      |          |           |      |          |      |
| Surr: DNOP                     | 8.9                             |                                                            | 10.00     |             | 89.0 | 70       | 130       |      |          |      |

| Sample ID: <b>LCS-63737</b> | SampType: <b>LCS</b>            | TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b> |           |             |      |          |           |      |          |      |
|-----------------------------|---------------------------------|------------------------------------------------------------|-----------|-------------|------|----------|-----------|------|----------|------|
| Client ID: <b>LCSS</b>      | Batch ID: <b>63737</b>          | RunNo: <b>82576</b>                                        |           |             |      |          |           |      |          |      |
| Prep Date: <b>11/3/2021</b> | Analysis Date: <b>11/4/2021</b> | SeqNo: <b>2931253</b> Units: <b>mg/Kg</b>                  |           |             |      |          |           |      |          |      |
| Analyte                     | Result                          | PQL                                                        | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 49                              | 10                                                         | 50.00     | 0           | 98.4 | 68.9     | 135       |      |          |      |
| Surr: DNOP                  | 4.3                             |                                                            | 5.000     |             | 86.0 | 70       | 130       |      |          |      |

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

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

WO#: 2111050

08-Nov-21

**Client:** Vertex Resources Services, Inc.**Project:** Rio Pecos GB Com 1

| Sample ID: <b>mb-63721</b>    | SampType: <b>MBLK</b>           | TestCode: <b>EPA Method 8015D: Gasoline Range</b> |           |             |      |          |           |      |          |      |
|-------------------------------|---------------------------------|---------------------------------------------------|-----------|-------------|------|----------|-----------|------|----------|------|
| Client ID: <b>PBS</b>         | Batch ID: <b>63721</b>          | RunNo: <b>82606</b>                               |           |             |      |          |           |      |          |      |
| Prep Date: <b>11/3/2021</b>   | Analysis Date: <b>11/4/2021</b> | SeqNo: <b>2931910</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                     | 1000                            |                                                   | 1000      |             | 103  | 70       | 130       |      |          |      |

| Sample ID: <b>lcs-63721</b>   | SampType: <b>LCS</b>            | TestCode: <b>EPA Method 8015D: Gasoline Range</b> |           |             |      |          |           |      |          |      |
|-------------------------------|---------------------------------|---------------------------------------------------|-----------|-------------|------|----------|-----------|------|----------|------|
| Client ID: <b>LCSS</b>        | Batch ID: <b>63721</b>          | RunNo: <b>82606</b>                               |           |             |      |          |           |      |          |      |
| Prep Date: <b>11/3/2021</b>   | Analysis Date: <b>11/4/2021</b> | SeqNo: <b>2931912</b> Units: <b>mg/Kg</b>         |           |             |      |          |           |      |          |      |
| Analyte                       | Result                          | PQL                                               | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 28                              | 5.0                                               | 25.00     | 0           | 113  | 78.6     | 131       |      |          |      |
| Surr: BFB                     | 1200                            |                                                   | 1000      |             | 123  | 70       | 130       |      |          |      |

| Sample ID: <b>2111050-001ams</b> | SampType: <b>MS</b>             | TestCode: <b>EPA Method 8015D: Gasoline Range</b> |           |             |      |          |           |      |          |      |
|----------------------------------|---------------------------------|---------------------------------------------------|-----------|-------------|------|----------|-----------|------|----------|------|
| Client ID: <b>BS21-01 1'</b>     | Batch ID: <b>63721</b>          | RunNo: <b>82606</b>                               |           |             |      |          |           |      |          |      |
| Prep Date: <b>11/3/2021</b>      | Analysis Date: <b>11/4/2021</b> | SeqNo: <b>2931914</b> Units: <b>mg/Kg</b>         |           |             |      |          |           |      |          |      |
| Analyte                          | Result                          | PQL                                               | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO)    | 27                              | 4.9                                               | 24.46     | 0           | 109  | 61.3     | 114       |      |          |      |
| Surr: BFB                        | 1100                            |                                                   | 978.5     |             | 116  | 70       | 130       |      |          |      |

| Sample ID: <b>2111050-001amsd</b> | SampType: <b>MSD</b>            | TestCode: <b>EPA Method 8015D: Gasoline Range</b> |           |             |      |          |           |      |          |      |
|-----------------------------------|---------------------------------|---------------------------------------------------|-----------|-------------|------|----------|-----------|------|----------|------|
| Client ID: <b>BS21-01 1'</b>      | Batch ID: <b>63721</b>          | RunNo: <b>82606</b>                               |           |             |      |          |           |      |          |      |
| Prep Date: <b>11/3/2021</b>       | Analysis Date: <b>11/4/2021</b> | SeqNo: <b>2931916</b> Units: <b>mg/Kg</b>         |           |             |      |          |           |      |          |      |
| Analyte                           | Result                          | PQL                                               | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO)     | 26                              | 4.9                                               | 24.68     | 0           | 106  | 61.3     | 114       | 2.42 | 20       |      |
| Surr: BFB                         | 1100                            |                                                   | 987.2     |             | 114  | 70       | 130       | 0    | 0        |      |

**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 range due to dilution or matrix interference

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

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

WO#: 2111050

08-Nov-21

**Client:** Vertex Resources Services, Inc.**Project:** Rio Pecos GB Com 1

| Sample ID: <b>mb-63721</b>  | SampType: <b>MBLK</b>           | TestCode: <b>EPA Method 8021B: Volatiles</b> |           |             |      |          |           |      |          |      |
|-----------------------------|---------------------------------|----------------------------------------------|-----------|-------------|------|----------|-----------|------|----------|------|
| Client ID: <b>PBS</b>       | Batch ID: <b>63721</b>          | RunNo: <b>82606</b>                          |           |             |      |          |           |      |          |      |
| Prep Date: <b>11/3/2021</b> | Analysis Date: <b>11/4/2021</b> | SeqNo: <b>2931958</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  | 1.1                             |                                              | 1.000     |             | 108  | 70       | 130       |      |          |      |

| Sample ID: <b>lcs-63721</b> | SampType: <b>LCS</b>            | TestCode: <b>EPA Method 8021B: Volatiles</b> |           |             |      |          |           |      |          |      |
|-----------------------------|---------------------------------|----------------------------------------------|-----------|-------------|------|----------|-----------|------|----------|------|
| Client ID: <b>LCSS</b>      | Batch ID: <b>63721</b>          | RunNo: <b>82606</b>                          |           |             |      |          |           |      |          |      |
| Prep Date: <b>11/3/2021</b> | Analysis Date: <b>11/4/2021</b> | SeqNo: <b>2931960</b> Units: <b>mg/Kg</b>    |           |             |      |          |           |      |          |      |
| Analyte                     | Result                          | PQL                                          | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                     | 0.92                            | 0.025                                        | 1.000     | 0           | 92.4 | 80       | 120       |      |          |      |
| Toluene                     | 0.94                            | 0.050                                        | 1.000     | 0           | 93.6 | 80       | 120       |      |          |      |
| Ethylbenzene                | 0.96                            | 0.050                                        | 1.000     | 0           | 96.1 | 80       | 120       |      |          |      |
| Xylenes, Total              | 2.9                             | 0.10                                         | 3.000     | 0           | 97.2 | 80       | 120       |      |          |      |
| Surr: 4-Bromofluorobenzene  | 1.1                             |                                              | 1.000     |             | 110  | 70       | 130       |      |          |      |

| Sample ID: <b>2111050-002ams</b> | SampType: <b>MS</b>             | TestCode: <b>EPA Method 8021B: Volatiles</b> |           |             |      |          |           |      |          |      |
|----------------------------------|---------------------------------|----------------------------------------------|-----------|-------------|------|----------|-----------|------|----------|------|
| Client ID: <b>BS21-02 0.5'</b>   | Batch ID: <b>63721</b>          | RunNo: <b>82606</b>                          |           |             |      |          |           |      |          |      |
| Prep Date: <b>11/3/2021</b>      | Analysis Date: <b>11/4/2021</b> | SeqNo: <b>2931962</b> Units: <b>mg/Kg</b>    |           |             |      |          |           |      |          |      |
| Analyte                          | Result                          | PQL                                          | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                          | 0.94                            | 0.025                                        | 0.9960    | 0           | 94.5 | 80       | 120       |      |          |      |
| Toluene                          | 0.97                            | 0.050                                        | 0.9960    | 0           | 97.7 | 80       | 120       |      |          |      |
| Ethylbenzene                     | 1.0                             | 0.050                                        | 0.9960    | 0           | 101  | 80       | 120       |      |          |      |
| Xylenes, Total                   | 3.0                             | 0.10                                         | 2.988     | 0           | 102  | 80       | 120       |      |          |      |
| Surr: 4-Bromofluorobenzene       | 1.0                             |                                              | 0.9960    |             | 102  | 70       | 130       |      |          |      |

| Sample ID: <b>2111050-002amsd</b> | SampType: <b>MSD</b>            | TestCode: <b>EPA Method 8021B: Volatiles</b> |           |             |      |          |           |      |          |      |
|-----------------------------------|---------------------------------|----------------------------------------------|-----------|-------------|------|----------|-----------|------|----------|------|
| Client ID: <b>BS21-02 0.5'</b>    | Batch ID: <b>63721</b>          | RunNo: <b>82606</b>                          |           |             |      |          |           |      |          |      |
| Prep Date: <b>11/3/2021</b>       | Analysis Date: <b>11/4/2021</b> | SeqNo: <b>2931964</b> Units: <b>mg/Kg</b>    |           |             |      |          |           |      |          |      |
| Analyte                           | Result                          | PQL                                          | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                           | 0.96                            | 0.025                                        | 0.9940    | 0           | 97.0 | 80       | 120       | 2.39 | 20       |      |
| Toluene                           | 0.99                            | 0.050                                        | 0.9940    | 0           | 99.6 | 80       | 120       | 1.73 | 20       |      |
| Ethylbenzene                      | 0.98                            | 0.050                                        | 0.9940    | 0           | 98.6 | 80       | 120       | 3.05 | 20       |      |
| Xylenes, Total                    | 2.9                             | 0.099                                        | 2.982     | 0           | 98.1 | 80       | 120       | 4.06 | 20       |      |
| Surr: 4-Bromofluorobenzene        | 0.96                            |                                              | 0.9940    |             | 96.7 | 70       | 130       | 0    | 0        |      |

**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 range due to dilution or matrix interference

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit



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

## Sample Log-In Check List

Client Name: Vertex Resources  
Services, Inc.

Work Order Number: 2111050

RcptNo: 1

Received By: Cheyenne Cason

11/2/2021 7:25:00 AM

Completed By: Isaiah Ortiz

11/2/2021 8:51:11 AM

Reviewed By: *CH*

11/2/21

*CH*  
*I-0x*

### Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? Courier

### Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
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?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH:

( $<2$  or  $>12$  unless noted)

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

Checked by: *JR 11/2/21*

### 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 $^{\circ}\text{C}$ | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|-------------------------|-----------|-------------|---------|-----------|-----------|
| 1         | 2.0                     | Good      | Not Present |         |           |           |





**District I**  
1625 N. French Dr., Hobbs, NM 88240  
Phone:(575) 393-6161 Fax:(575) 393-0720  
**District II**  
811 S. First St., Artesia, NM 88210  
Phone:(575) 748-1283 Fax:(575) 748-9720  
**District III**  
1000 Rio Brazos Rd., Aztec, NM 87410  
Phone:(505) 334-6178 Fax:(505) 334-6170  
**District IV**  
1220 S. St Francis Dr., Santa Fe, NM 87505  
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS  
  
Action 80901

CONDITIONS

|                                                                      |                                                           |
|----------------------------------------------------------------------|-----------------------------------------------------------|
| Operator:<br>EOG RESOURCES INC<br>P.O. Box 2267<br>Midland, TX 79702 | OGRID:<br>7377                                            |
|                                                                      | Action Number:<br>80901                                   |
|                                                                      | Action Type:<br>[C-141] Release Corrective Action (C-141) |

CONDITIONS

|            |                          |                |
|------------|--------------------------|----------------|
| Created By | Condition                | Condition Date |
| jnobui     | Closure Report Approved. | 3/24/2022      |