Incident Number: nAPP2204056995

Release Assessment and Closure

Pecos Irrigation 1-10 Tank Battery

Unit G, Section 10, Township 23 South, Range 28 East

Facility ID: fAPP2201743006

County: Eddy

Vertex File Number: 22E-00933

Prepared for:

BTA Oil Producers LLC

Prepared by:

Vertex Resource Services Inc.

Date:

July 2023

Release Assessment and Closure
Pecos Irrigation 1-10 Tank Battery
Unit G, Section 10, Township 23 South, Range 28 East
Facility ID: fAPP2201743006
County: Eddy

Prepared for:
BTA Oil Producers LLC
104 S. Pecos Street
Midland, Texas 79701

New Mexico Oil Conservation Division – District 2 – Artesia
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_____ _____

Fernando Rodriguez, B.Sc. Date
INTERMEDIATE BIOLOGIST, REPORTING

_____ _____

Chance Dixon, B.Sc. Date
PROJECT MANAGER, REPORT REVIEW

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1.0 Introduction

BTA Oil Producers LLC (BTA) retained Vertex Resource Services Inc. (Vertex) to conduct a Release Assessment and Closure for a crude oil release that occurred on February 8, 2022, at Pecos Irrigation 1-10 Tank Battery, Facility ID: fAPP2201743006 (hereafter referred to as the "site"). BTA submitted an initial C-141 Release Notification (Appendix A) to New Mexico Oil Conservation Division (NMOCD) District 2 on February 9, 2022. Incident ID number nAPP2204056995 was assigned to this incident.

This report provides a description of the release assessment and remediation activities associated with the site. The information presented demonstrates that closure criteria established in Table I of 19.15.29.12 of the *New Mexico Administrative Code* (NMAC; New Mexico Oil Conservation Division, 2018) related to NMOCD has been met and all applicable regulations are being followed. This document is intended to serve as a final report to obtain approval from NMOCD for the closure of this release, with the understanding that restoration of the release site will be deferred until such time as all oil and gas activities are terminated and the site is reclaimed as per NMAC 19.15.29.13.

2.0 Incident Description

The release occurred on February 8, 2022, due to a load line that detached at the coupling of the oil tank allowing the tank to release fluids onto the pad. The incident was reported on February 9, 2022, and involved the release of approximately 26 barrels (bbl.) of produced oil on the pad site. Approximately 0 bbl. of free fluid was removed during the initial clean-up. Additional details relevant to the release are presented in the C-141 Report.

3.0 Site Characteristics

The site is located approximately 11 miles southeast of Carlsbad, New Mexico (Google Inc., 2023). The legal location for the site is Unit G, Section 10, Township 23 South and Range 28 East in Eddy County, New Mexico. The release area is located on private property (Rustler Hills II). An aerial photograph and site schematic are presented on Figure 1.

The location is typical of oil and gas exploration and production sites in the Permian Basin and is currently used for oil and gas production and storage. The following sections specifically describe the release area on the constructed pad, outside of the earthen berm containment (Figure 1).

The surface geology at the site primarily comprises Qa – Alluvium from the Holocene to upper Pleistocene ages (New Mexico Bureau of Geology and Mineral Resources, 2023), and the soil at the site is characterized as cobbly and gravelly loam (United States Department of Agriculture, Natural Resources Conservation Service, 2023). Additional soil characteristics include a well-drained drainage class with a high runoff class. The karst geology potential for the site is medium (United States Department of the Interior, Bureau of Land Management, 2018).

The surrounding landscape is associated with ridges and fans with elevations ranging between 1,100 and 4,400 feet. The climate is semiarid with average annual precipitation ranging between 8 and 13 inches. Using information from the United States Department of Agriculture, the dominant vegetation was determined to be a grassland/shrub mix, dominated by grasses, but with shrubs common throughout the site. Black Grama with Mesquite and Creosotebush dominate the historic plant community (United States Department of Agriculture, Natural Resources Conservation

Service, 2023). Limited to no vegetation is allowed to grow on the compacted production pad, right-of-way, and access road.

4.0 Closure Criteria Determination

The nearest active well to the site is a United States Geological Survey (USGS) monitoring well located approximately 0.66 miles southwest of the site (United States Geological Survey, 2023). Data from 2023 shows the USGS borehole recorded a depth to groundwater of 23 feet below ground surface (bgs). Information pertaining to the depth to groundwater determination is included in Appendix B.

There is no surface water present at the site. The nearest significant watercourse, as defined in Subsection P of 19.15.17.7 NMAC, is the Pecos River located approximately 0.69 miles north of the site (United States Fish and Wildlife Service, 2023).

At the site, there are no continuously flowing watercourses or significant watercourses, lakebeds, sinkholes, playa lakes or other critical water or community features as outlined in Paragraph (4) of Subsection C of 19.15.29.12 NMAC.

Table 1. Closure Criteria Determination			
Site Specific Conditions		**Value**	**Unit**
1	Depth to Groundwater	**23**	feet
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	3,650	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	13,360	feet
4	Within 300 feet from an occupied residence, school, hospital, institution or church	2,222	feet
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**	2,605	feet
	ii) Within 1000 feet of any fresh water well or spring		feet
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)
7	Within 300 feet of a wetland	3,568	feet
8	Within the area overlying a subsurface mine	No	(Y/N)
9	Within an unstable area (Karst Map)	Medium	Critical High Medium Low
10	Within a 100-year Floodplain	500	year
11	Soil Type	Gravelly loam, cemented, very gravelly loam	
12	Ecological Classification	Shallow	
13	Geology	Alluvium	
	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 2.

Table 2. 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

5.0 Remedial Actions Taken

An initial site inspection of the release area was completed on March 24, 2022, which identified the area of the release specified in the initial C-141 Report. The impacted area was determined to be approximately 68 feet long and 68 feet wide; the total affected area was 7,308 square feet. Site characterization activities at the site were conducted by Vertex between March 24 and April 19, 2022. Initial characterization sample locations are presented on Figure 1 and laboratory results are presented in Table 3.

Remediation efforts began on July 17, 2023, and were finalized on July 21, 2023. Vertex personnel supervised the excavation of impacted soils. Field screening was completed during excavation and consisted of analysis using a Photo Ionization Detector (volatile hydrocarbons), Dexsil Petroflag using EPA SW-846 Method 9074 (extractable hydrocarbons) and Silver Nitrate titrations (chlorides). Field screening results were used to identify areas requiring further remediation. Soils were removed to a depth of 4 feet bgs. Impacted soil was transported by a licensed waste hauler and disposed of at an approved waste management facility. On July 21, 2023, excavation was completed with approximately 880 total yards excavated. The final Daily Field Report, completed on the last day of remedial activities and depicting the final excavation before backfill, is included in Appendix C.

On July 29, 2023, backfill was completed for the excavation. Approximately 880 yards of clean, uncontaminated soil were obtained from R360 disposal in Orla, Texas for this purpose.

Notification that confirmatory samples were being collected was provided to the NMOCD on July 11, 2023, and is included in Appendix D. Confirmatory composite samples were collected from the base and walls of the excavation in 200 square foot increments. A total of 36 samples were collected for laboratory analysis following NMOCD soil sampling procedures (Figure 2). Samples were submitted to Cardinal Laboratories 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 presented in Table 4, and the laboratory data reports are included in Appendix E. All confirmatory samples collected and analyzed were below the closure criteria for the site.

6.0 Closure Request

Vertex recommends no additional remedial action at the site. Laboratory analyses of confirmation samples collected at the site show final confirmatory values below NMOCD closure criteria for areas where depth to groundwater is less than 50 feet bgs as presented in Table 2. There are no anticipated risks to human, ecological, or hydrological receptors at this site.

The excavation was backfilled with non-waste-containing, uncontaminated, earthen material, sourced locally, and placed to meet the site's existing grade to prevent water ponding and erosion.

Vertex requests that this incident (nAPP2204056995) be closed as all closure requirements set forth in Subsection E of 19.15.29.12 NMAC have been met. BTA certifies that all information in this report and the appendices are 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 site.

Should you have any questions or concerns, please do not hesitate to contact Chance Dixon at 575.988.1472 or cdixon@vertex.ca.

7.0 References

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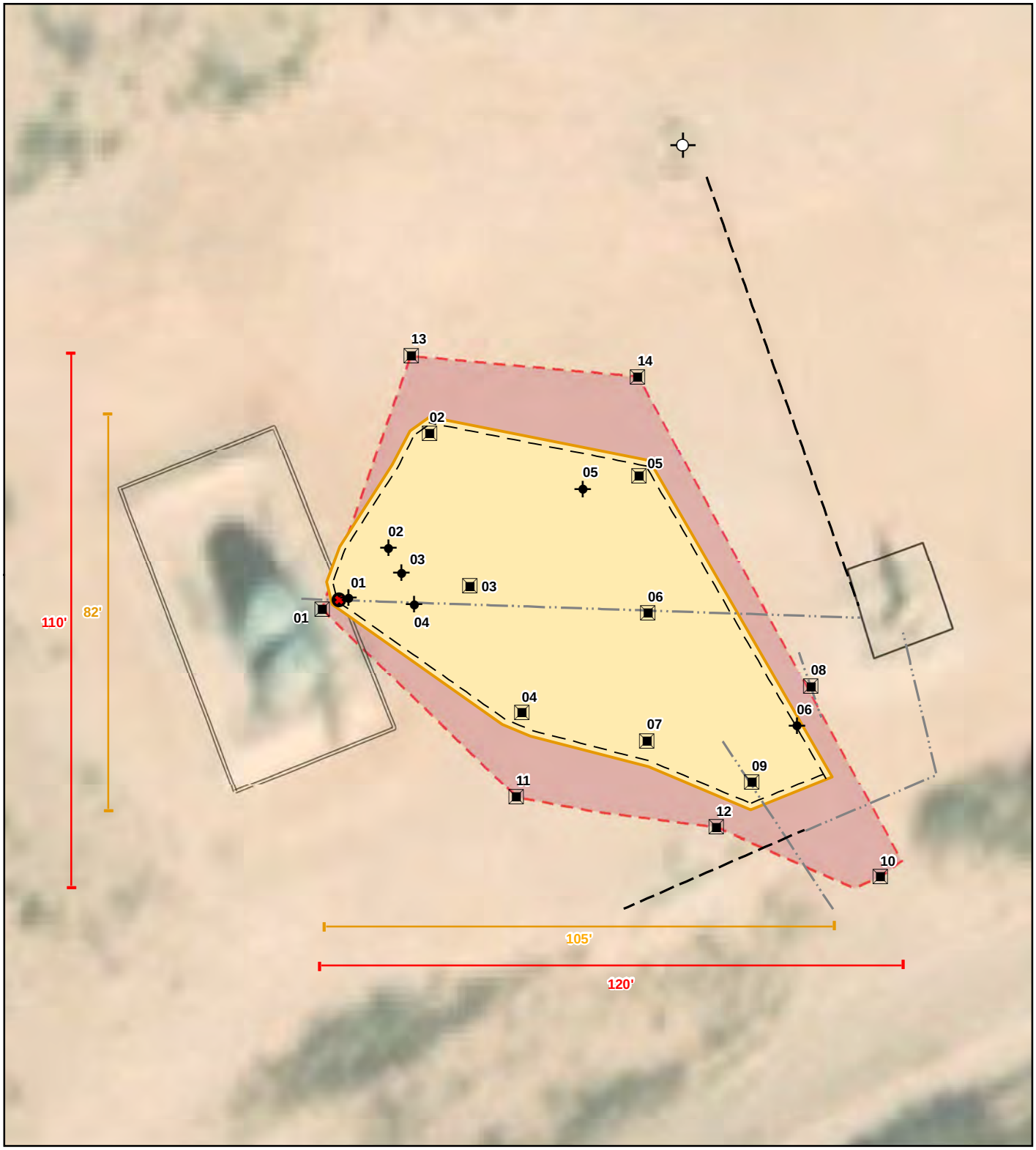
United States Geological Survey. (2023). *National Water Information System: Web Interface*. Retrieved from https://waterdata.usgs.gov/nwis

8.0 Limitations

This report has been prepared for the sole benefit of BTA Oil Producers LLC. 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 BTA Oil Producers LLC. 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.

FIGURES



Borehole (Prefixed by "BH22-")
Testpit (Prefixed by "TP22-")
Point of Release
Wellhead
Pipeline (Aboveground)
Pipeline (Underground)
Approximate Release Boundary (7,308 sq. ft.)
Heater Treater
Tank Battery
Proposed Excavation (4,780 sq. ft.)

VERTEX

0 5 10 20 ft.

NAD 1983 UTM Zone 13N
Date: Jul 05/23

Map Center:
Lat: 32.321476,
Long:-104.073680

N

Characterization Schematic
Pecos Irrigation 1-10 Tank Battery

FIGURE: 1

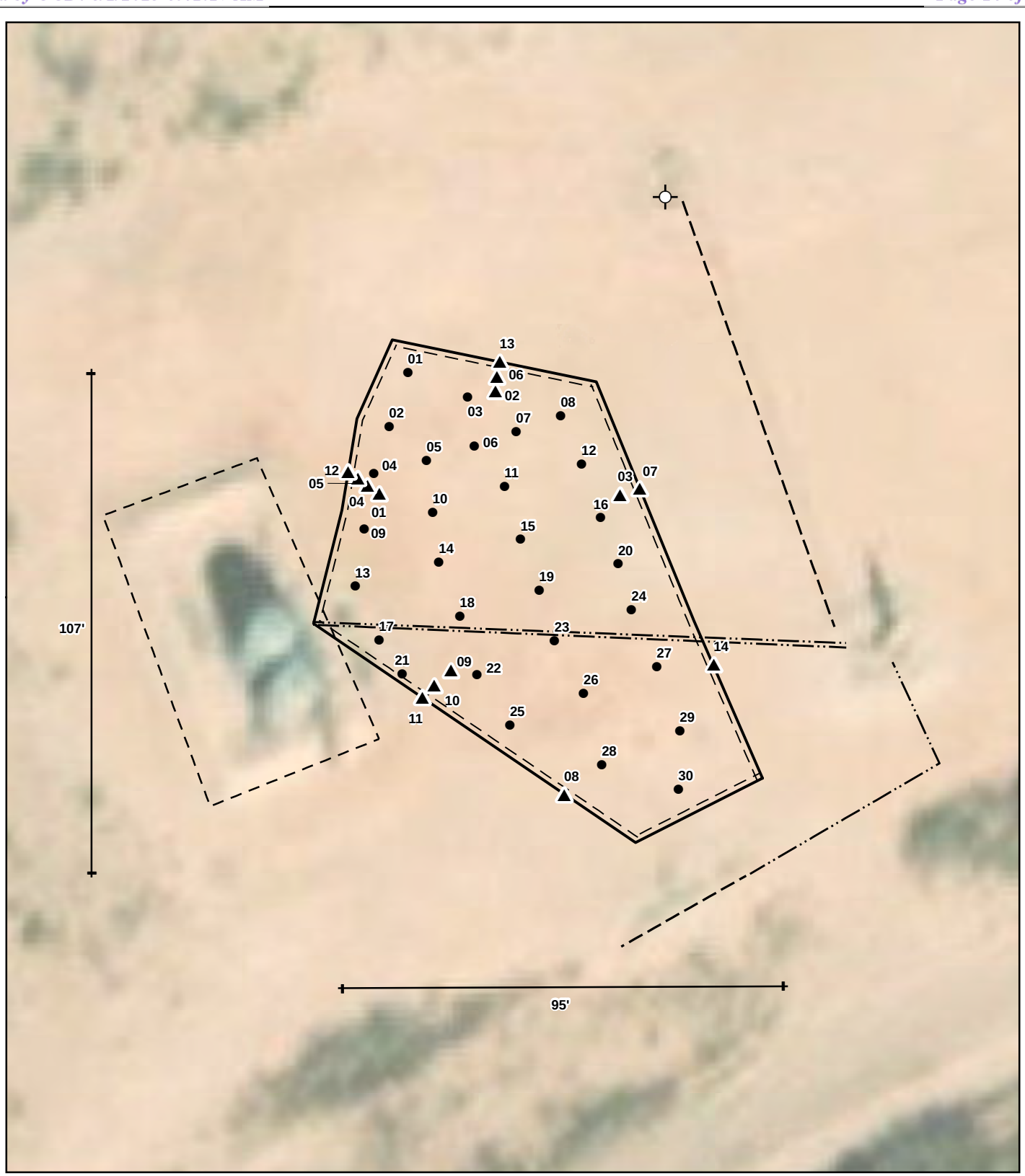
BTA

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: Georeferenced image from ESRI, 2020. Site features from GPS, Vertex Professional Services Ltd., 2022 and 2023.

VERSATILITY. EXPERTISE.

Document Path: \\vtx-s-fs01.corp.internal\shared\vps\04 - Geomatics\1-Projects_US PROJECT S\BTA Oil Producers LLC\22E-00933\Figure 1 Characterization Schematic Pecos Irrigation 1-10 Tank Battery.mxd



● Base Sample (Prefixed by "BES-"))
▲ Wall Sample (Prefixed by "WES23-"))
Wellhead
Pipeline (Aboveground)
Pipeline (Underground)
Berm Containment
Excavation to 4' (~5,854 sq.ft.)

VERTEX

0 5 10 20 ft.

NAD 1983 UTM Zone 13N
Date: Jul 25/23

Map Center:
Lat: 32.321476,
Long:-104.073680

N

Confirmatory Schematic
Pecos Irrigation 1-10 Tank Battery

FIGURE:
2

BTA

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: Georeferenced image from ESRI, 2020. Site features from GPS, Vertex Professional Services Ltd., 2022 and 2023.

VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects_US PROJECTS\BTA Oil Producers LLC\22E-00933\Figure 2 Confirmatory Schematic Pecos Irrigation 1-10 Tank Battry.mxd

TABLES

Client Name: BTA Oil Producers, LLC
Site Name: Pecos Irrigation 1-10 Tank Battery
NM OCD Tracking #: nAPP2204056995
Project #: 22E-00933
Lab Reports: 2203E18, 2204560, 2204627

Table 3. Initial Characterization Sample Field Screen and Laboratory Results - Depth to Groundwater <50 feet bgs

Sample Description			Field Screening			Petroleum Hydrocarbons							Inorganic
						Volatile		Extractable					
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroFlag)	Chloride Concentration	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	Chloride Concentration
			(ppm)	(ppm)	(ppm)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BG22-01	0	3/24/2022	-	-	300	ND	ND	ND	ND	ND	ND	ND	ND
BG22-01	0.5	3/24/2022	-	-	380	ND	ND	ND	ND	ND	ND	ND	ND
BH22-01	0	3/24/2022	0	**265**	**1,835**	ND	ND	ND	80	ND	80	80	**850**
BH22-01	0.5	3/24/2022	0	**890**	377	-	-	-	-	-	-	-	-
BH22-02	0	3/24/2022	0	**726**	**3,910**	ND	ND	ND	**890**	ND	**890**	**890**	**2400**
BH22-02	0.5	3/24/2022	0	**1,294**	**3,145**	-	-	-	-	-	-	-	-
BH22-03	0	3/24/2022	0	**962**	**3,410**	ND	ND	28	**2300**	ND	**2328**	**2328**	**7800**
BH22-03	0.4	3/24/2022	0	**639**	**2,994**	-	-	-	-	-	-	-	-
BH22-04	0	3/24/2022	0	**485**	**3,240**	ND	ND	ND	38	66	38	**104**	**5200**
BH22-04	0.5	3/24/2022	0	**429**	**3,960**	-	-	-	-	-	-	-	-
BH22-05	0	3/24/2022	0	**520**	**4,195**	ND	ND	ND	ND	ND	ND	ND	**8600**
BH22-05	0.5	3/24/2022	0	**568**	**3,500**	-	-	-	-	-	-	-	-
BH22-06	0	3/24/2022	0	**926**	**2,962**	0.38	**51.88**	**890**	**36000**	ND	**36890**	**36890**	**3700**
BH22-06	0.5	3/24/2022	0	**893**	**2,641**	-	-	-	-	-	-	-	-
TP22-01	0	4/11/2022	0	48	257	ND	ND	ND	ND	ND	ND	ND	ND
TP22-01	2	4/11/2022	0	88	320	ND	ND	ND	ND	ND	ND	ND	ND
TP22-02	0	4/11/2022	0	**1,046**	**2,860**	-	-	-	-	-	-	-	-
TP22-02	2	4/11/2022	0	**296**	**2,641**	-	-	-	-	-	-	-	-
TP22-02	4	4/11/2022	0	**289**	**1,248**	-	-	-	-	-	-	-	-
TP22-02	6	4/12/2022	0	23	225	ND	ND	ND	ND	ND	ND	ND	ND
TP22-03	0	4/11/2022	0	**140**	**3,640**	-	-	-	-	-	-	-	-
TP22-03	2	4/11/2022	0	36	**2,848**	-	-	-	-	-	-	-	-
TP22-03	4	4/11/2022	0	29	**2,967**	-	-	-	-	-	-	-	-
TP22-03	6	4/11/2022	0	**311**	**1,571**	-	-	-	-	-	-	-	-
TP22-03	8	4/12/2022	0	74	550	ND	ND	ND	ND	ND	ND	ND	ND
TP22-04	0	4/11/2022	0	**982**	**1,982**	-	-	-	-	-	-	-	-
TP22-04	2	4/11/2022	0	**778**	**1,810**	-	-	-	-	-	-	-	-
TP22-04	4	4/11/2022	0	59	**1,289**	-	-	-	-	-	-	-	-
TP22-04	6	4/12/2022	0	25	197	ND	ND	ND	14	ND	14	14	150
TP22-05	0	4/11/2022	0	**1,060**	375	-	-	-	-	-	-	-	-
TP22-05	2	4/11/2022	0	**1,149**	**440**	-	-	-	-	-	-	-	-
TP22-05	6	4/12/2022	0	**53**	**1,022**	-	-	-	-	-	-	-	-
TP22-05	8	4/12/2022	0	77	**867**	ND	ND	ND	ND	ND	ND	ND	410
TP22-05	10	4/18/2022	0	64	300	ND	ND	ND	ND	ND	ND	ND	160
TP22-06	0	4/11/2022	0	**749**	**2,965**	-	-	-	-	-	-	-	-
TP22-06	2	4/11/2022	0	**626**	**2,902**	-	-	-	-	-	-	-	-
TP22-06	4	4/11/2022	0	**281**	**2,675**	-	-	-	-	-	-	-	-
TP22-06	8	4/12/2022	0	**129**	**1,022**	-	-	-	-	-	-	-	-
TP22-06	10	4/12/2022	0	29	372	ND	ND	ND	ND	ND	ND	ND	480
TP22-07	0	4/11/2022	0	**640**	**2,297**	ND	ND	ND	ND	ND	ND	ND	350
TP22-07	2	4/11/2022	0	**529**	**1,162**	-	-	-	-	-	-	-	-
TP22-07	6	4/12/2022	0	40	**722**	-	-	-	-	-	-	-	-
TP22-07	8	4/12/2022	0	55	562	ND	ND	ND	ND	ND	ND	ND	200
TP22-08	0	4/18/2022	0	96	492	ND	ND	ND	ND	ND	ND	ND	270
TP22-08	3	4/18/2022	0	95	388	ND	ND	ND	ND	ND	ND	ND	240
TP22-08	6	4/18/2022	0	34	372	-	-	-	-	-	-	-	-
TP22-09	0	4/18/2022	0	**324**	**1,040**	ND	3.9	**440**	**21000**	ND	**21440**	**21440**	**900**
TP22-09	6	4/19/2022	0	**840**	**1,139**	ND	ND	ND	ND	ND	ND	ND	110
TP22-09	9	4/19/2022	0	96	**600**	ND	ND	ND	ND	ND	ND	ND	ND
TP22-09	12	4/19/2022	0	85	570	-	-	-	-	-	-	-	-

Table 3. Initial Characterization Sample Field Screen and Laboratory Results - Depth to Groundwater <50 feet bgs														
Sample Description			Field Screening			Petroleum Hydrocarbons								Inorganic
						Volatile		Extractable						
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroFlag)	Chloride Concentration	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	Chloride Concentration
			(ppm)	(ppm)	(ppm)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
TP22-10	0	4/18/2022	0	5	360	ND	ND	ND	ND	ND	ND	ND	150
TP22-10	2	4/18/2022	0	9	374	ND	ND	ND	ND	ND	ND	ND	150
TP22-11	0	4/19/2022	0	68	428	ND	ND	ND	ND	ND	ND	ND	ND
TP22-11	3	4/19/2022	0	88	567	ND	ND	ND	ND	ND	ND	ND	ND
TP22-11	6	4/19/2022	0	92	507	-	-	-	-	-	-	-	-
TP22-12	0	4/19/2022	0	94	477	ND	ND	ND	ND	ND	ND	ND	ND
TP22-12	3	4/19/2022	0	67	167	ND	ND	ND	ND	ND	ND	ND	ND
TP22-12	6	4/19/2022	0	42	**600**	-	-	-	-	-	-	-	-
TP22-13	0	4/19/2022	0	47	552	ND	ND	ND	ND	ND	ND	ND	ND
TP22-13	3	4/19/2022	0	18	532	ND	ND	ND	ND	ND	ND	ND	ND
TP22-13	6	4/19/2022	0	22	580	-	-	-	-	-	-	-	-
TP22-14	0	4/19/2022	0	21	535	ND	ND	ND	ND	ND	ND	ND	ND
TP22-14	3	4/19/2022	0	34	570	ND	ND	ND	ND	ND	ND	ND	ND
TP22-14	6	4/19/2022	0	71	585	-	-	-	-	-	-	-	-

"ND" Not Detected at the Reporting Limit
"-" indicates not analyzed/assessed
Bold and grey shaded indicates exceedance outside of NM OCD Closure Criteria (on-pad)

Table 4. Initial Characterization/Confirmatory Laboratory Results - Depth to Groundwater <50 feet bgs
BTA Oil Producers LLC
Pecos Irrigation 1-10 Tank Battery
NMOCD Tracking #: nAPP2204056995
Project #: 22E-00933
Lab Report: H233754, H233800 and H233799

Sample Description			Petroleum Hydrocarbons										Inorganic
Sample ID	Depth (ft)	Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	Chloride Concentration
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Criteria	NMOCD - NMAC <50 ft 19.15.29 (2018)		10	-	-	-	50	-	-	-	-	100	600
	NMOCD - NMAC 51-100 ft 19.15.29 (2018)		10	-	-	-	50	-	-	-	1000	2500	10000
	NMOCD - NMAC >100 ft 19.15.29 (2018)		10	-	-	-	50	-	-	-	1000	2500	20000
2023 Base Samples													
BS23-01	4	July 18, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	208
BS23-02	4	July 18, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	496
BS23-03	4	July 19, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	240
BS23-04	4	July 19, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	96
BS23-05	4	July 18, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	80
BS23-06	4	July 18, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	448
BS23-07	4	July 18, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	432
BS23-08	4	July 18, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	448
BS23-09	4	July 18, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	448
BS23-10	4	July 18, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	512
BS23-11	4	July 18, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	480
BS23-12	4	July 18, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	496
BS23-13	4	July 18, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	464
BS23-14	4	July 18, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	464
BS23-15	4	July 20, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	160
BS23-16	4	July 20, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	144
BS23-17	4	July 20, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	80
BS23-18	4	July 20, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	144
BS23-19	4	July 20, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	80
BS23-20	4	July 20, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	96
BS23-21	4	July 20, 2023	ND	ND	ND	ND	ND	ND	71	ND	ND	ND	112
BS23-22	4	July 20, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	144
BS23-23	4	July 20, 2023	ND	ND	ND	ND	ND	ND	11.8	ND	ND	ND	192
BS23-24	4	July 20, 2023	ND	ND	ND	ND	ND	ND	23.8	ND	ND	ND	128
BS23-25	4	July 20, 2023	ND	ND	ND	ND	ND	ND	28.3	ND	ND	ND	144
BS23-26	4	July 20, 2023	ND	ND	ND	ND	ND	ND	41.8	ND	ND	ND	128
BS23-27	4	July 20, 2023	ND	ND	ND	ND	ND	ND	40.4	ND	ND	ND	64
BS23-28	4	July 20, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	80
BS23-29	4	July 20, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	96
BS23-30	4	July 20, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	224
2023 Wall Samples													
WS23-07	4	July 19, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	352
WS23-08	4	July 19, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	128
WS23-11	4	July 19, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	240
WS23-12	4	July 19, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	11.3
WS23-13	4	July 19, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	320
WS23-14	4	July 19, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	160

NMAC - New Mexico Administrative Code (Title 19, Chapter 15, Part 29; 2022)
ND - Not Detected at the Reporting Limit
- Denotes no standard/not analyzed

VERTEX

APPENDIX A - NMOCD C-141 Report

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

State of New Mexico
Energy Minerals and Natural Resources Department

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

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

Incident ID	nAPP2204056995
District RP	
Facility ID	fAPP2201743006
Application ID	

Release Notification

Responsible Party

Responsible Party: BTA Oil Producers, LLC	OGRID: 260297
Contact Name: Bob Hall	Contact Telephone: 432-682-3753
Contact email: bhall@btaoil.com	Incident # *(assigned by OCD)* nAPP2204056995
Contact mailing address: 104 S. Pecos St., Midland, TX 79701	

Location of Release Source

Latitude: 32.32146 Longitude: -104.07383
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Pecos Irrigation #1-10 Tank Battery	Site Type: Tank Battery
Date Release Discovered: 2/8/2022	API# *(if applicable)* Nearest well:

Unit Letter	Section	Township	Range	County
G	10	23S	28E	Eddy

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (*Name: Rustler Hills II, PO Box 72, Orla, TX 79770*)

Nature and Volume of Release

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

☒ Crude Oil	Volume Released (bbls) 26 BBL	Volume Recovered (bbls) 0 BBL
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release
Piping Failure.
Load Line detached at coupling for oil tank allowing the tank to empty onto the tank battery pad. Volume was determined from tank gauge prior to the load line detachment.

(Spill calculation spreadsheet attached.)

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2204056995
District RP	
Facility ID	fAPP2201743006
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? The release was larger than 25 BBL fluid.

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
Via filing NOR document on NMOCD Permitting Portal that was assigned Incident ID # nAPP2204056995 on 2/9/2022.

Initial Response

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

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

If all the actions described above have not been undertaken, explain why:

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

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

Printed Name: Bob Hall Title: Environmental Manager

Signature: Bob Hall Date: 2/21/2022

email: bhall@btaoil.com Telephone: 432-682-3753

OCD Only

Received by: _____ Date: _____

Location Pecos Irrigation Load Line
API #
Spill Date 2/8/2022

Spill Dimensions

ENTER - Length of Spill	68	**feet**
ENTER - Width of Spill	68	**feet**
ENTER - Saturation Depth of Spill	2.5	**inches**
ENTER - Porosity Factor	0.15	**decimal**

Oil Cut - Well Test / Vessel Throughput or Contents

Oil	99.999
Water	0.001
Calculated Oil Cut	0.99999

Volume Recovered in Truck / Containment

ENTER - Recovered Oil	0	**BBL**
ENTER - Recovered Water	0	**BBL**

Calculated Values	*calculated*	
Release of Oil in Soil - Unrecovered	26	***BBL***
Release of Water in Soil - Unrecovered	0	***BBL***
Unrecovered Total Release	26	***BBL***

Calculated Values	*calculated*	
Total Release of Oil	26	***BBL***
Total Release of Water	0	***BBL***
Total Release	26	***BBL***

Types of Soil	Porosity Factor
Gravel	0.25
Sand	0.20
Clay/silt/sand Mix	0.15
Clay	0.05
Caliche	0.03
Unknown	0.25

$$\frac{\text{(Length X Width X Depth X 1 ft/12 in) X Porosity}}{5.615\ ft^3 / BBL} \times \text{Oil Cut (or Water Cut)}$$

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2204056995
District RP	
Facility ID	fAPP2201743006
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: Kelton Beaird Title: Environmental Manager

Signature: _____ Date: 8-1-2023

email: KBeaird@btaoil.com Telephone: (432) 312-2203

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: _____ Date: _____

Printed Name: _____ Title: _____

APPENDIX B – Closure Criteria Research Documentation

National Water Information System: Web Interface

USGS Water Resources

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

Click to hideNews 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

Agency code = usgs
site_no list =
- 321847104044501

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

USGS 321847104044501 23S.28E.10.333423

Eddy County, New Mexico
Latitude 32°18'47", Longitude 104°04'45" NAD27
Land-surface elevation 2,999 feet above NAVD88
The depth of the well is 196 feet below land surface.
This well is completed in the Other aquifers (N9999OTHER) national aquifer.
This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

Output formats

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

Date	Time	? Water-level date-time accuracy	? Parameter code	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Status	? Method of measurement	? Measuring agency	? Source of measurement	? Water-level approval status
1983-01-26		D	62610		2974.54	NGVD29	1	Z			A
1983-01-26		D	62611		2976.11	NAVD88	1	Z			A
1983-01-26		D	72019	22.89			1	Z			A
1988-02-12		D	62610		2977.93	NGVD29	1	Z			A
1988-02-12		D	62611		2979.50	NAVD88	1	Z			A
1988-02-12		D	72019	19.50			1	Z			A
1993-02-03		D	62610		2978.11	NGVD29	1	S			A
1993-02-03		D	62611		2979.68	NAVD88	1	S			A
1993-02-03		D	72019	19.32			1	S			A
1995-07-19		D	62610		2977.79	NGVD29	1	S			A
1995-07-19		D	62611		2979.36	NAVD88	1	S			A
1995-07-19		D	72019	19.64			1	S			A
1996-01-25		D	62610		2977.57	NGVD29	1	S			A
1996-01-25		D	62611		2979.14	NAVD88	1	S			A
1996-01-25		D	72019	19.86			1	S			A
2003-01-27		D	62610		2974.28	NGVD29	1	S	USGS	S	A
2003-01-27		D	62611		2975.85	NAVD88	1	S	USGS	S	A
2003-01-27		D	72019	23.15			1	S	USGS	S	A

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Parameter code	62610	Groundwater level above NGVD 1929, feet
Parameter code	62611	Groundwater level above NAVD 1988, feet
Parameter code	72019	Depth to water level, feet below land surface
Referenced vertical datum	NAVD88	North American Vertical Datum of 1988
Referenced vertical datum	NGVD29	National Geodetic Vertical Datum of 1929
Status	1	Static
Method of measurement	S	Steel-tape measurement.

Section	Code	Description
Method of measurement	Z	Other.
Measuring agency		Not determined
Measuring agency	USGS	U.S. Geological Survey
Source of measurement		Not determined
Source of measurement	S	Measured by personnel of reporting agency.
Water-level approval status	A	Approved for publication -- Processing and review completed.

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

Accessibility FOIA Privacy Policies and Notices

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

Title: Groundwater for USA: Water Levels
URL: https://nwis.waterdata.usgs.gov/nwis/gwlevels?

Page Contact Information: USGS Water Data Support Team
Page Last Modified: 2022-03-17 09:30:29 EDT
0.28 0.24 nadww02

National Water Information System: Web Interface

USGS Water Resources

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

Click to hideNews 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

Agency code = usgs
site_no list =
- 321927104033701

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

USGS 321927104033701 23S.28E.11.114421

Eddy County, New Mexico
Latitude 32°19'27", Longitude 104°03'37" NAD27
Land-surface elevation 2,991 feet above NAVD88
The depth of the well is 100 feet below land surface.
This well is completed in the Other aquifers (N9999OTHER) national aquifer.
This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

Output formats

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

Date	Time	? Water-level date-time accuracy	? Parameter code	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Status	? Method of measurement	? Measuring agency	? Source of measurement	? Water-level approval status
1947-02-07		D	62610		2973.73	NGVD29	1	Z			A
1947-02-07		D	62611		2975.30	NAVD88	1	Z			A
1947-02-07		D	72019	15.70			1	Z			A
1947-09-24		D	62610		2960.82	NGVD29	P	Z			A
1947-09-24		D	62611		2962.39	NAVD88	P	Z			A
1947-09-24		D	72019	28.61			P	Z			A
1948-01-13		D	62610		2960.13	NGVD29	P	Z			A
1948-01-13		D	62611		2961.70	NAVD88	P	Z			A
1948-01-13		D	72019	29.30			P	Z			A
1949-01-29		D	62610		2973.38	NGVD29	1	Z			A
1949-01-29		D	62611		2974.95	NAVD88	1	Z			A
1949-01-29		D	72019	16.05			1	Z			A
1950-01-19		D	62610		2977.81	NGVD29	1	Z			A
1950-01-19		D	62611		2979.38	NAVD88	1	Z			A
1950-01-19		D	72019	11.62			1	Z			A
1951-01-17		D	62610		2976.41	NGVD29	1	Z			A
1951-01-17		D	62611		2977.98	NAVD88	1	Z			A
1951-01-17		D	72019	13.02			1	Z			A
1952-01-14		D	62610		2973.38	NGVD29	1	Z			A
1952-01-14		D	62611		2974.95	NAVD88	1	Z			A
1952-01-14		D	72019	16.05			1	Z			A
1953-01-24		D	62610		2972.31	NGVD29	1	Z			A
1953-01-24		D	62611		2973.88	NAVD88	1	Z			A
1953-01-24		D	72019	17.12			1	Z			A
1954-01-14		D	62610		2970.07	NGVD29	1	Z			A
1954-01-14		D	62611		2971.64	NAVD88	1	Z			A
1954-01-14		D	72019	19.36			1	Z			A
1955-01-18		D	62610		2974.09	NGVD29	1	Z			A
1955-01-18		D	62611		2975.66	NAVD88	1	Z			A
1955-01-18		D	72019	15.34			1	Z			A

1956-01-11	D	62610		2978.53	NGVD29	1	Z	A
1956-01-11	D	62611		2980.10	NAVD88	1	Z	A
1956-01-11	D	72019	10.90			1	Z	A
1957-01-09	D	62610		2974.15	NGVD29	1	Z	A
1957-01-09	D	62611		2975.72	NAVD88	1	Z	A
1957-01-09	D	72019	15.28			1	Z	A
1958-01-15	D	62610		2974.29	NGVD29	1	Z	A
1958-01-15	D	62611		2975.86	NAVD88	1	Z	A
1958-01-15	D	72019	15.14			1	Z	A
1959-01-08	D	62610		2975.77	NGVD29	1	Z	A
1959-01-08	D	62611		2977.34	NAVD88	1	Z	A
1959-01-08	D	72019	13.66			1	Z	A
1960-01-14	D	62610		2974.73	NGVD29	1	Z	A
1960-01-14	D	62611		2976.30	NAVD88	1	Z	A
1960-01-14	D	72019	14.70			1	Z	A
1961-01-12	D	62610		2976.15	NGVD29	1	Z	A
1961-01-12	D	62611		2977.72	NAVD88	1	Z	A
1961-01-12	D	72019	13.28			1	Z	A
1962-01-16	D	62610		2974.63	NGVD29	1	Z	A
1962-01-16	D	62611		2976.20	NAVD88	1	Z	A
1962-01-16	D	72019	14.80			1	Z	A
1963-01-17	D	62610		2975.43	NGVD29	1	Z	A
1963-01-17	D	62611		2977.00	NAVD88	1	Z	A
1963-01-17	D	72019	14.00			1	Z	A
1964-01-20	D	62610		2973.48	NGVD29	1	Z	A
1964-01-20	D	62611		2975.05	NAVD88	1	Z	A
1964-01-20	D	72019	15.95			1	Z	A
1965-01-19	D	62610		2967.68	NGVD29	1	Z	A
1965-01-19	D	62611		2969.25	NAVD88	1	Z	A
1965-01-19	D	72019	21.75			1	Z	A

1966-01-04	D	62610		2970.19	NGVD29	1	Z	A
1966-01-04	D	62611		2971.76	NAVD88	1	Z	A
1966-01-04	D	72019	19.24			1	Z	A
1967-01-26	D	62610		2973.92	NGVD29	1	Z	A
1967-01-26	D	62611		2975.49	NAVD88	1	Z	A
1967-01-26	D	72019	15.51			1	Z	A
1968-01-26	D	62610		2972.76	NGVD29	1	Z	A
1968-01-26	D	62611		2974.33	NAVD88	1	Z	A
1968-01-26	D	72019	16.67			1	Z	A
1969-01-28	D	62610		2971.66	NGVD29	1	Z	A
1969-01-28	D	62611		2973.23	NAVD88	1	Z	A
1969-01-28	D	72019	17.77			1	Z	A
1970-01-22	D	62610		2975.14	NGVD29	1	Z	A
1970-01-22	D	62611		2976.71	NAVD88	1	Z	A
1970-01-22	D	72019	14.29			1	Z	A
1971-01-13	D	62610		2973.33	NGVD29	1	Z	A
1971-01-13	D	62611		2974.90	NAVD88	1	Z	A
1971-01-13	D	72019	16.10			1	Z	A
1972-01-12	D	62610		2968.52	NGVD29	1	Z	A
1972-01-12	D	62611		2970.09	NAVD88	1	Z	A
1972-01-12	D	72019	20.91			1	Z	A
1973-01-12	D	62610		2972.66	NGVD29	1	Z	A
1973-01-12	D	62611		2974.23	NAVD88	1	Z	A
1973-01-12	D	72019	16.77			1	Z	A
1974-01-18	D	62610		2975.74	NGVD29	1	Z	A
1974-01-18	D	62611		2977.31	NAVD88	1	Z	A
1974-01-18	D	72019	13.69			1	Z	A
1975-01-10	D	62610		2976.65	NGVD29	1	Z	A
1975-01-10	D	62611		2978.22	NAVD88	1	Z	A
1975-01-10	D	72019	12.78			1	Z	A

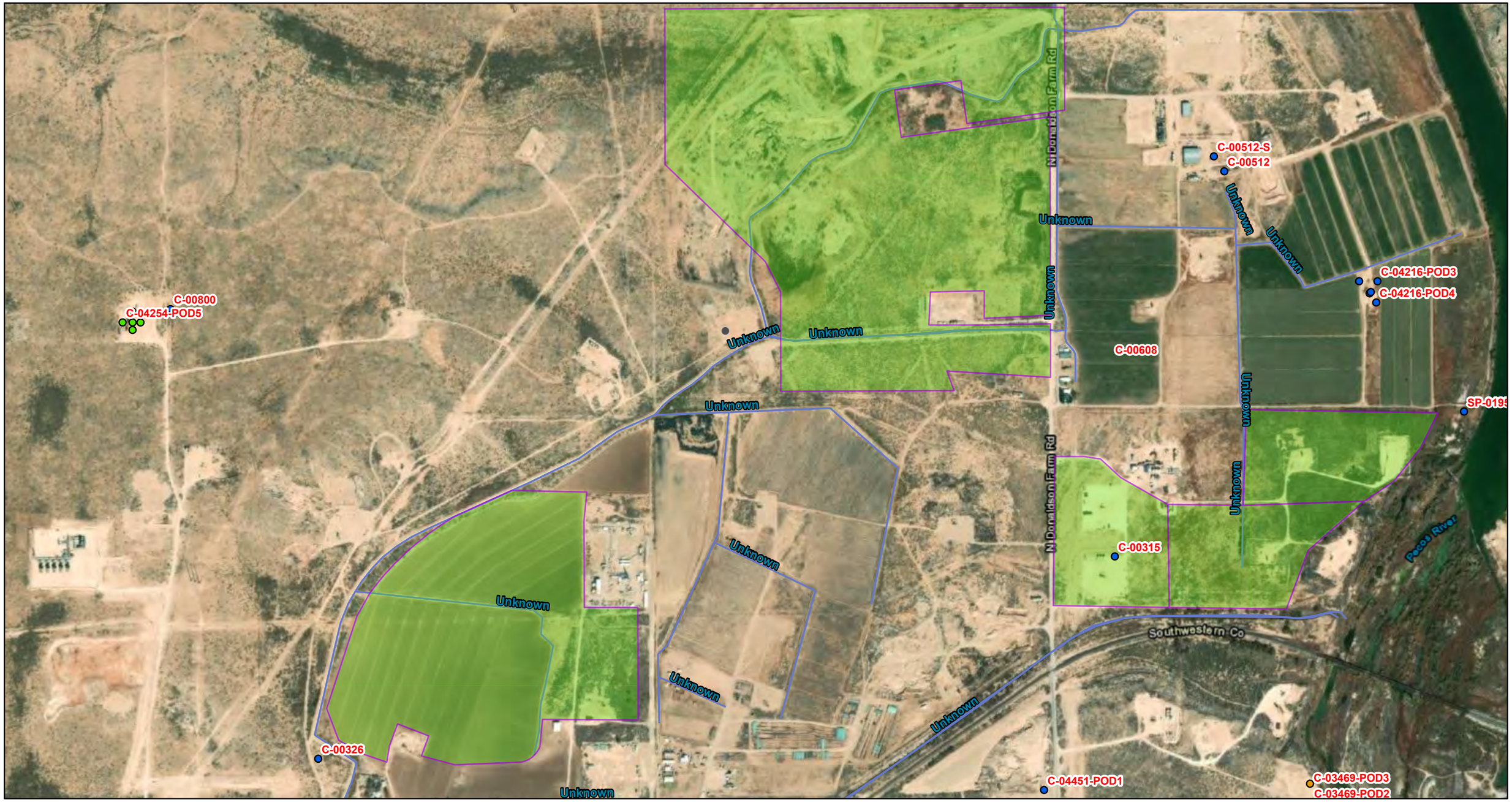
1976-01-14	D	62610		2975.20	NGVD29	1	Z	A
1976-01-14	D	62611		2976.77	NAVD88	1	Z	A
1976-01-14	D	72019	14.23			1	Z	A
1977-01-14	D	62610		2972.40	NGVD29	1	Z	A
1977-01-14	D	62611		2973.97	NAVD88	1	Z	A
1977-01-14	D	72019	17.03			1	Z	A
1978-01-23	D	62610		2970.28	NGVD29	1	Z	A
1978-01-23	D	62611		2971.85	NAVD88	1	Z	A
1978-01-23	D	72019	19.15			1	Z	A
1979-01-18	D	62610		2975.09	NGVD29	1	Z	A
1979-01-18	D	62611		2976.66	NAVD88	1	Z	A
1979-01-18	D	72019	14.34			1	Z	A
1983-01-26	D	62610		2976.40	NGVD29	1	Z	A
1983-01-26	D	62611		2977.97	NAVD88	1	Z	A
1983-01-26	D	72019	13.03			1	Z	A
1988-02-12	D	62610		2973.85	NGVD29	1	Z	A
1988-02-12	D	62611		2975.42	NAVD88	1	Z	A
1988-02-12	D	72019	15.58			1	Z	A
1988-03-17	D	62610		2973.45	NGVD29	1	Z	A
1988-03-17	D	62611		2975.02	NAVD88	1	Z	A
1988-03-17	D	72019	15.98			1	Z	A
1993-02-03	D	62610		2972.12	NGVD29	1	S	A
1993-02-03	D	62611		2973.69	NAVD88	1	S	A
1993-02-03	D	72019	17.31			1	S	A
1995-07-19	D	62610		2971.03	NGVD29	1	S	A
1995-07-19	D	62611		2972.60	NAVD88	1	S	A
1995-07-19	D	72019	18.40			1	S	A
1996-01-25	D	62610		2971.67	NGVD29	1	S	A
1996-01-25	D	62611		2973.24	NAVD88	1	S	A
1996-01-25	D	72019	17.76			1	S	A

2003-01-27	D	62610		2969.99	NGVD29	1	S	USGS	S	A
2003-01-27	D	62611		2971.56	NAVD88	1	S	USGS	S	A
2003-01-27	D	72019	19.44			1	S	USGS	S	A

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Parameter code	62610	Groundwater level above NGVD 1929, feet
Parameter code	62611	Groundwater level above NAVD 1988, feet
Parameter code	72019	Depth to water level, feet below land surface
Referenced vertical datum	NAVD88	North American Vertical Datum of 1988
Referenced vertical datum	NGVD29	National Geodetic Vertical Datum of 1929
Status	1	Static
Status	P	Pumping
Method of measurement	S	Steel-tape measurement.
Method of measurement	Z	Other.
Measuring agency		Not determined
Measuring agency	USGS	U.S. Geological Survey
Source of measurement		Not determined
Source of measurement	S	Measured by personnel of reporting agency.
Water-level approval status	A	Approved for publication -- Processing and review completed.

OSE POD Locations Map



3/17/2022, 10:25:17 AM

GIS WATERS PODs
- Active
- Pending
- Capped

OSE District Boundary

Water Right Regulations
- Negative Easement Area

Conveyances
- Ditch
- SiteBoundaries

1:9,028

0 0.07 0.15 0.3 mi

0 0.15 0.3 0.6 km

Esri, HERE, GeoTechnologies, Inc., Esri, HERE, Garmin, GeoTechnologies, Inc., U.S. Department of Energy Office of Legacy Management, Maxar

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
	C 00608	3	3	1	11	23S	28E	587970	3576401*

Driller License: **Driller Company:**

Driller Name: NOT CONTRACTED

Drill Start Date:	**Drill Finish Date:**	**Plug Date:**
Log File Date:	**PCW Rcv Date:**	**Source:**
Pump Type:	**Pipe Discharge Size:**	**Estimated Yield:**
Casing Size: 7.00	**Depth Well:** 200 feet	**Depth Water:**

***UTM location was derived from PLSS - see Help**

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	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 00608		C	ED	3	3	1	11	23S	28E	587970	3576401*	794	200		
C 00315		CUB	ED	3	1	3	11	23S	28E	587973	3575995*	914	100	45	55
C 00512 CLW198323	O	CUB	ED	4	1	1	11	23S	28E	588167	3576806*	1053	100		
C 00512 S		CUB	ED	4	1	1	11	23S	28E	588167	3576806*	1053	100		
C 00512		CUB	ED	4	1	1	11	23S	28E	588188	3576775	1063	175	15	160
C 00512 EXPL	O	CUB	ED			1	11	23S	28E	588272	3576703*	1124	200	16	184
C 00800		C	ED		4	2	09	23S	28E	586050	3576479*	1127	200	30	170
C 04451 POD1		C	ED	4	4	4	10	23S	28E	587833	3575521	1132	120	57	63
C 00326		CUB	ED	3	3	3	10	23S	28E	586358	3575572*	1197	130	19	111
C 00326 CLW196238	O	CUB	ED	3	3	3	10	23S	28E	586358	3575572*	1197	196	25	171
C 00235		C	ED		2	2	15	23S	28E	587676	3575280*	1267	160		
C 04216 POD2		CUB	ED	1	4	1	11	23S	28E	588465	3576555	1292	20	10	10
C 00109		CUB	ED	1	3	3	04	23S	27E	588486	3576531	1311	168	120	48
C 04216 POD1		CUB	ED	2	4	1	11	23S	28E	588488	3576534	1314	20	10	10
C 04216 POD4		CUB	ED	2	4	1	11	23S	28E	588499	3576513	1323	20	10	10
C 04216 POD3		CUB	ED	1	4	1	11	23S	28E	588501	3576556	1328	23	13	10
C 03469 POD1		CUB	ED	3	4	3	11	23S	28E	588374	3575538	1501	68	38	30
C 03469 POD3		CUB	ED	3	4	3	11	23S	28E	588381	3575538	1506	47		
C 03469 POD2		CUB	ED	3	4	3	11	23S	28E	588382	3575506	1527	48		
C 00321		C	ED		4	2	15	23S	28E	587679	3574874*	1649	120		

C 02365		C	ED		4	2	15	23S	28E	587679	3574874*	1649	70	12	58
C 00616		CUB	ED	1	3	1	14	23S	28E	587982	3574978*	1673	120	30	90
C 00269		C	ED	4	4	2	15	23S	28E	587778	3574773*	1776	240	35	205
C 00269 CLW199753	O	C	ED	4	4	2	15	23S	28E	587778	3574773*	1776	240	35	205
C 00072		CUB	ED	3	3	1	15	23S	28E	586364	3574760*	1870	120	54	66
C 04415 POD7		CUB	ED	3	1	4	04	23S	28E	585628	3577518	1884	55	38	17
C 04415 POD3		CUB	ED	4	1	4	04	23S	28E	585645	3577552	1890	11		
C 04415 POD2		CUB	ED	4	1	4	04	23S	28E	585653	3577570	1894	12		
C 04415 POD8		CUB	ED	4	1	4	04	23S	28E	585656	3577583	1899	27	23	4
C 04415 POD1		CUB	ED	4	1	4	04	23S	28E	585657	3577591	1903	25	20	5
C 04415 POD5		CUB	ED	4	1	4	04	23S	28E	585652	3577605	1916	10		
C 04415 POD6		CUB	ED	4	1	4	04	23S	28E	585652	3577605	1916	10		
C 04415 POD4		CUB	ED	3	1	4	04	23S	28E	585628	3577575	1917	11		
C 02189		C	ED	1	1	3	14	23S	28E	587985	3574572*	2039	48	29	19
C 03762 POD3		CUB	ED	4	2	2	16	23S	28E	586203	3574642	2048	40	30	10
C 03460 POD1		CUB	ED	3	1	2	14	23S	28E	588857	3575004	2213	100	38	62
C 00311		C	ED	4	2	1	16	23S	28E	585353	3575152*	2235	163	55	108
C 00128		C	ED	2	4	4	15	23S	28E	587783	3574162*	2362	149		
C 03762 POD2		CUB	ED	4	4	2	17	23S	28E	584893	3575598	2435	40	30	10
C 03056		C	ED	3	3	3	04	23S	28E	584772	3577226	2528	60	31	29
C 04588 POD1		CUB	ED	2	2	2	04	23S	28E	586043	3578720	2542	50		
C 00211		C	ED	4	3	3	15	23S	28E	586570	3573949*	2568	89	48	41
C 01336		C	ED	2	1	1	22	23S	28E	586572	3573744*	2767	190	30	160
C 01872		C	ED		2	1	22	23S	28E	586878	3573649*	2811	68	48	20
C 01216		CUB	ED	4	1	1	13	23S	28E	589801	3575205*	2902	60	45	15
C 04418 POD1		CUB	ED	4	2	1	12	23S	28E	590104	3576851	2954	55		
C 01885		C	ED		2	2	21	23S	28E	586070	3573640*	3015	104	35	69
C 03762 POD1		CUB	ED	4	4	2	17	23S	28E	585314	3574066	3021	40	31	9
C 00520		C	ED	1	1	3	16	23S	28E	584754	3574538*	3083	115	33	82

C_00521		C	ED	1	1	3	16	23S	28E	584754	3574538*		3083	218	33	185
C_00094 AS	C	CUB	ED	1	3	2	22	23S	28E	587183	3573346*		3099	165	40	125
C_00154 CLW194067	O	CUB	ED	3	2	1	23	23S	28E	588395	3573566*		3126	150	65	85
C_01108		C	ED	3	2	1	23	23S	28E	588395	3573566*		3126	60	35	25
C_01816		C	ED	1	3	1	23	23S	28E	587992	3573355*		3195	200	40	160
C_01487 CLW201796	O	CUB	ED		3	2	22	23S	28E	587284	3573247*		3199	90	30	60
C_01253		CUB	ED	1	3	1	22	23S	28E	586375	3573338*		3208	179	50	129
C_00154		CUB	ED	4	2	1	23	23S	28E	588595	3573566*		3209	196	38	158
C_01102		C	ED		1	2	23	23S	28E	588901	3573672*		3265	100	12	88
C_00504		CUB	ED	3	1	4	08	23S	28E	583939	3575949*		3275	230	40	190
C_00094		CUB	ED	3	4	2	22	23S	28E	587588	3573151*		3319	100	60	40
C_00094	C	CUB	ED	3	4	2	22	23S	28E	587588	3573151*		3319	100	60	40
C_00094 A	C	CUB	ED	3	4	2	22	23S	28E	587588	3573151*		3319	166	40	126
C_01487		CUB	ED	3	4	1	22	23S	28E	586779	3573142*		3326	150	38	112
C_01217		CUB	ED	4	1	3	13	23S	28E	589789	3574371		3334	87	50	37
C_04560 POD2		CUB	ED	1	3	3	16	23S	28E	584857	3574036		3344	36	25	11
C_01214		CUB	ED	1	2	3	13	23S	28E	590010	3574597*		3382	70	20	50
C_00048		CUB	ED	3	3	1	23	23S	28E	587997	3573160		3385	182	75	107
C_00048	C	CUB	ED	3	3	1	23	23S	28E	587997	3573160		3385	182	75	107
C_04490 POD2		CUB	ED	2	3	3	13	23S	28E	589899	3574259		3490	23	19	4
C_02847		CUB	ED	2	1	4	22	23S	28E	587386	3572941*		3510	80		
C_02849		CUB	ED	2	1	4	22	23S	28E	587386	3572941*		3510	60		
C_01967		C	ED		2	3	13	23S	28E	590111	3574498*		3521	264	200	64
C_04417 POD1		CUB	ED	4	3	3	36	22S	28E	589736	3578874		3528	55		
C_00453		C	ED	2	2	4	22	23S	28E	587790	3572945*		3553	65		
C_03800 POD1		C	ED	3	3	2	05	23S	28E	583927	3577958		3585	97	36	61
C_02796		CUB	ED		2	3	22	23S	28E	586882	3572838*		3619	200		
C_01215		CUB	ED	4	2	3	13	23S	28E	590210	3574397*		3659	104	15	89
C_00443		C	ED	4	2	4	22	23S	28E	587790	3572745*		3750	171	160	11

C_02702		C	ED			2	13	23S	28E	590715	3575108*	3782	38	20	18
C_00716		C	ED				21	23S	28E	585471	3573012*	3833	140	69	71
C_00024	O	CUB	ED			3	22	23S	28E	586682	3572629*	3847	242	48	194
C_00327		CUB	ED	3	2	4	21	23S	28E	585974	3572728*	3906	212		
C_04524 POD1		CUB	ED	1	1	2	01	23S	28E	590452	3578629	3936	55		
C_03965 POD5		CUB	ED	4	1	1	24	23S	28E	589864	3573534	3961	35	31	4
C_01870		C	ED		4	3	22	23S	28E	586885	3572432*	4023	105	48	57
C_00309		CUB	ED	1	3	1	08	23S	28E	583129	3576544*	4049	165	16	149
C_01779		C	ED	3	1	1	08	23S	28E	583128	3576749*	4060	178	50	128
C_04556 POD1		CUB	ED	4	3	1	24	23S	28E	589720	3573237	4092	40	36	4
C_00869 S-2	O	CUB	ED		3	3	23	23S	28E	588097	3572444*	4105	150	58	92
C_00544		C	ED	3	3	1	21	23S	28E	584762	3573120*	4109	27		
C_02848		CUB	ED	3	3	1	21	23S	28E	584762	3573120*	4109	130		
C_00869		CUB	ED	3	3	4	22	23S	28E	587188	3572335*	4110	360		
C_03965 POD4		CUB	ED		1	4	24	23S	28E	589918	3573381	4110	40	31	9
C_04470 POD1		CUB	ED	3	1	3	07	23S	29E	591280	3576086	4118			
C_00500		CUB	ED	4	3	1	24	23S	28E	589811	3573176*	4198	130		
C_00868		CUB	ED	4	3	1	24	23S	28E	589811	3573176*	4198	190		
C_04556 POD2		CUB	ED	4	3	1	24	23S	28E	589891	3573239	4199	40	36	4
C_03974 POD1		C	ED	2	2	1	27	23S	28E	587087	3572220	4225	75	43	32
C_03146		C	ED	1	1	3	24	23S	28E	589613	3572970*	4243	82	36	46
C_04539 POD1		CUB	ED	2	4	2	01	23S	28E	591034	3578223	4247	55		
C_03216 POD1		C	ED	3	3	1	05	23S	28E	583156	3577913	4280	250		
C_03432 POD1		C	ED	1	2	2	27	23S	28E	587527	3572162	4296	115	75	40
C_02243		C	ED	4	4	4	06	23S	28E	582925	3577148*	4309	60	40	20
C_00641		C	ED	2	2	1	27	23S	28E	586986	3572126*	4323	115	40	75
C_02141 CLW468812	O	C	ED	2	4	4	06	23S	28E	582925	3577348*	4346	65	36	29
C_02846 S		CUB	ED	4	4	4	07	23S	28E	582926	3575527*	4348	150	40	110

C_00851		C	ED			3	17	23S	28E	583438	3574217*		4352	200	50	150
C_01122		CUB	ED	1	1	1	26	23S	28E	587999	3572138*		4384	175	30	145
C_03455 POD1		C	ED	3	3	1	05	23S	28E	583040	3577899		4385	57	22	35
C_03472 POD1		CUB	ED	4	4	4	07	23S	28E	582894	3575479		4390	140	40	100
C_02141		C	ED		4	4	06	23S	28E	582826	3577249*		4424	65	36	29
C_02243 CLW469222	O	C	ED		4	4	06	23S	28E	582826	3577249*		4424	60	40	20
C_00577		C	ED	3	1	3	21	23S	28E	584764	3572714*		4443	35	10	25
C_00578		C	ED	3	1	3	21	23S	28E	584764	3572714*		4443	28	18	10
C_00643		C	ED	3	1	3	21	23S	28E	584764	3572714*		4443	76	10	66
C_00340		C	ED		1	1	27	23S	28E	586483	3572022*		4477	117	18	99
C_04490 POD3		CUB	ED	4	1	2	24	23S	28E	590596	3573502		4511	37	33	4
C_01634		C	ED		2	4	06	23S	28E	582825	3577653*		4516	185	85	100
C_01699		C	ED		2	4	06	23S	28E	582825	3577653*		4516	90	65	25
C_00911 POD2		C	ED	1	2	4	20	23S	28E	584359	3572911*		4519	69	34	35
C_00911 POD3		C	ED	1	2	4	20	23S	28E	584359	3572911*		4519	218	60	158
C_00036		CUB	ED	3	3	2	32	22S	28E	583916	3579583*		4525	106		
C_00236		C	ED	2	2	3	32	22S	28E	583723	3579372*		4527	80	39	41
C_00289		CUB	ED	1	1	1	05	23S	28E	583128	3578563*		4569		33	
C_04415 POD9		CUB	ED	4	1	4	04	23S	28E	585714	3572094		4589	40	36	4
C_00214		CUB	ED	2	3	3	32	22S	28E	583327	3578962*		4599	200		
C_03184		C	ED	2	3	3	32	22S	28E	583327	3578962*		4599	157	30	127
C_00650		C	ED	1	3	3	21	23S	28E	584767	3572508*		4616	32	12	20
C_04556 POD3		CUB	ED	4	3	1	24	23S	28E	590567	3573265		4648	40	36	4
C_00035		CUB	ED	3	3	3	32	22S	28E	583127	3578762*		4665	146		
C_00212		CUB	ED	3	3	3	32	22S	28E	583127	3578762*		4665	146	30	116
C_00212 CLW193874	O	CUB	ED	3	3	3	32	22S	28E	583127	3578762*		4665			
C_03542 POD1		CUB	ED	2	4	4	20	23S	28E	584615	3572530		4678	22	16	6
C_03542 POD2		CUB	ED	2	4	4	20	23S	28E	584620	3572497		4703	30		
C_00313		CUB	ED	3	3	3	17	23S	28E	583136	3573915*		4767	250	75	175

C 00539	C	ED	3	3	3	21	23S	28E	584767	3572308*	4787	28	6	22
C 00519	C	ED	2	1	1	28	23S	28E	584970	3572100*	4873	250		
C 00213	CUB	ED	1	4	1	32	22S	28E	583517	3579775*	4948	200	35	165
C 03094	C	ED	4	3	1	32	22S	28E	583317	3579567*	4964	138	53	85

Average Depth to Water: **39 feet**

Minimum Depth: **6 feet**

Maximum Depth: **200 feet**

Record Count: 139

UTMNAD83 Radius Search (in meters):

Easting (X): 587177 **Northing (Y):** 3576445 **Radius:** 5000

***UTM location was derived from PLSS - see Help**

3/17/22 7:24 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER

Pecos Irrigation 1-10 Tank Battery Proximity Map

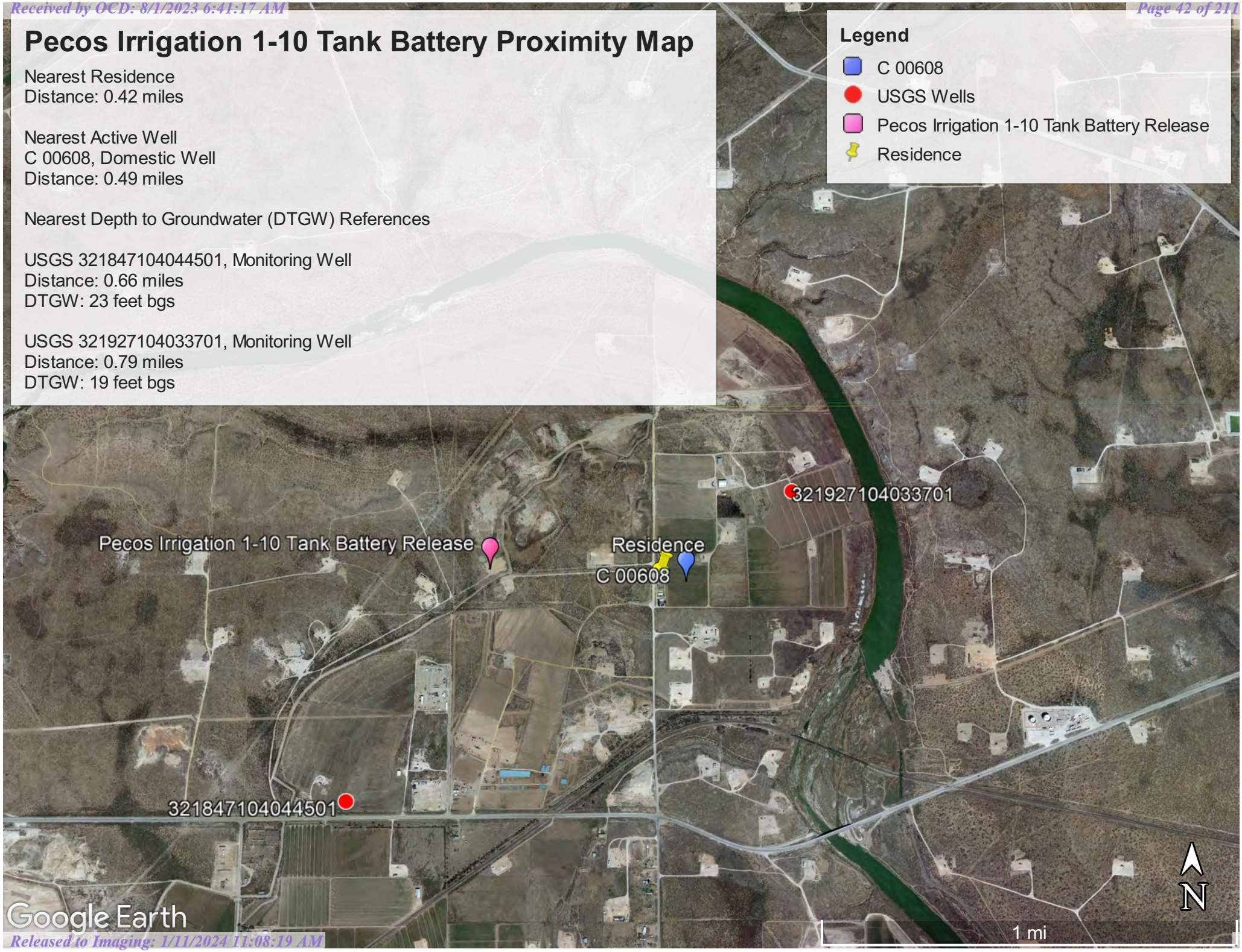
Nearest Residence
Distance: 0.42 miles

Nearest Active Well
C 00608, Domestic Well
Distance: 0.49 miles

Nearest Depth to Groundwater (DTGW) References

USGS 321847104044501, Monitoring Well
Distance: 0.66 miles
DTGW: 23 feet bgs

USGS 321927104033701, Monitoring Well
Distance: 0.79 miles
DTGW: 19 feet bgs



U.S. Fish and Wildlife Service

National Wetlands Inventory

Pecos River, 3650 feet

March 17, 2022

Wetlands

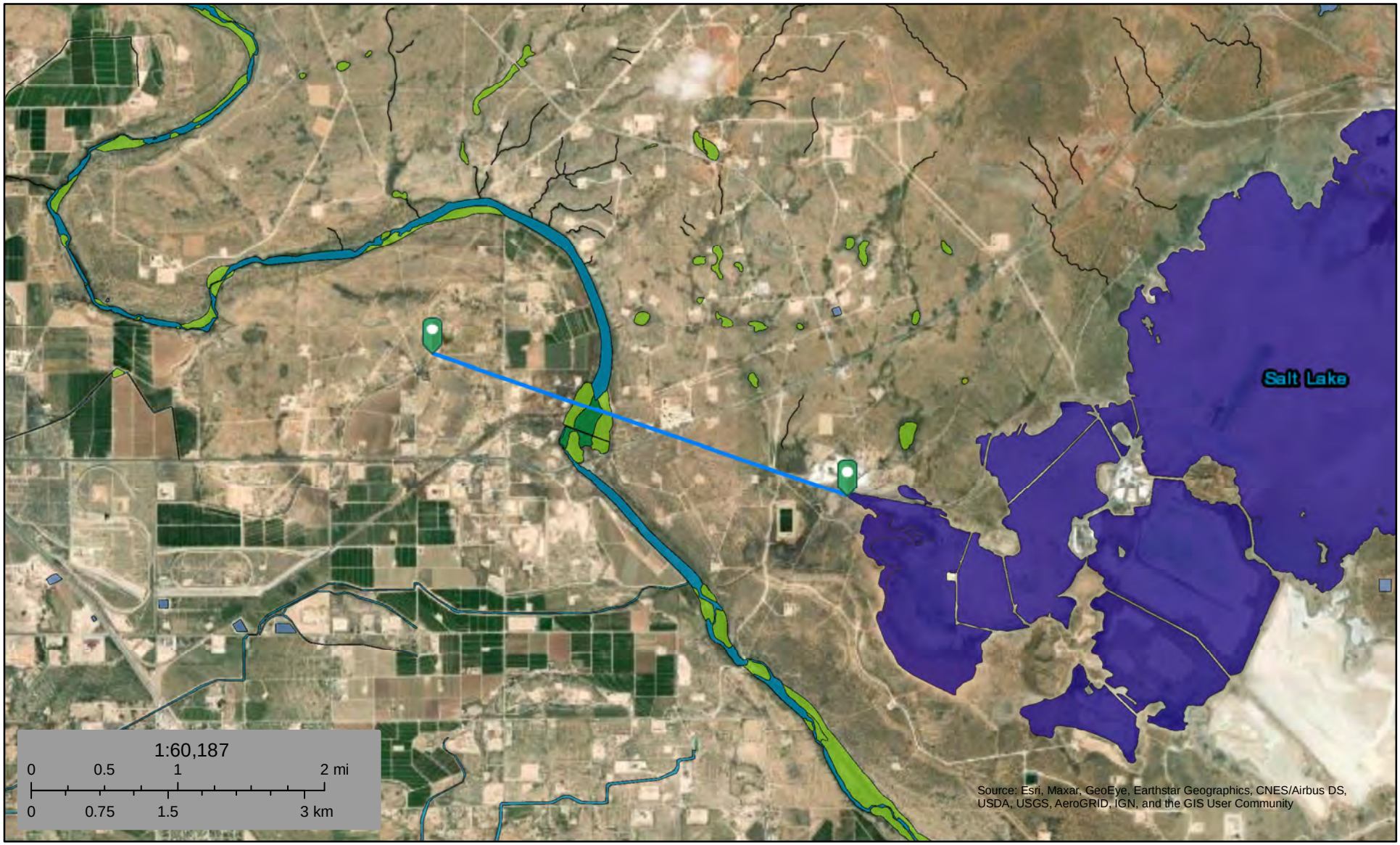
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

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.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

U.S. Fish and Wildlife Service
National Wetlands Inventory

Salt Lake, 13360 feet



March 17, 2022

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.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

New Mexico Office of the State Engineer

Water Right Summary

get image list

WR File Number: C 00608 **Subbasin:** C **Cross Reference:** -

Primary Purpose: DOM 72-12-1 DOMESTIC ONE HOUSEHOLD

Primary Status: CAN CANCELLED

Total Acres: **Subfile:** - **Header:** -

Total Diversion: 0 **Cause/Case:** -

Owner: JOSE AREVALO

x

Documents on File

	Trn #	Doc	File/Act	Status 1	Status 2	Transaction Desc.	From/ To	Acres	Diversion	Consumptive
get images	196134	72121	1954-11-24	CAN	FIN	C 00608	T		3	

x

Current Points of Diversion

(NAD83 UTM in meters)

POD Number	Well Tag	Source	Q 64	Q16	Q4	Sec	Tws	Rng	X	Y	Other Location Desc
C 00608			3	3	1	11	23S	28E	587970	3576401*	

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

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, C=the file is closed)

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

(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
C 00608	C	DOM	0	JOSE AREVALO	ED	C 00608					3	3	1	11	23S	28E	587970	3576401*	794
C 00315	CUB	IRR	0	JOSE AREVALO	ED	C 00315				Shallow	3	1	3	11	23S	28E	587973	3575995*	914
C 00512	CUB	IRR	322.8	ANTONIO C. & GLORIA G. ONSUREZ	ED	C 00512 S				Shallow	4	1	1	11	23S	28E	588167	3576806*	1053
					ED	C 00512				Shallow	4	1	1	11	23S	28E	588188	3576775	1063
C 03536	C	PRO	0	GLENN'S WATER WELL SERVICE	ED	C 00512				Shallow	4	1	1	11	23S	28E	588188	3576775	1063
C 00485	CUB	IRR	0	G.W. CRISP	ED	C 00485					1	1	2	15	23S	28E	587170	3575375*	1070
C 00800	C	DOL	0	E.F. ROSSON	ED	C 00800				Shallow		4	2	09	23S	28E	586050	3576479*	1127
C 04451	C	DOL	3	ALFRED CARRASCO	ED	C 04451 POD1	20C1F			Shallow	4	4	4	10	23S	28E	587833	3575521	1132
C 04254	CUB	MON	0	OXY USA INC	ED	C 04254 POD3	NA					4	2	09	23S	28E	585989	3576451	1187
C 00326	CUB	IRR	221.45	JACKIE D MCDONALD	ED	C 00326				Shallow	3	3	3	10	23S	28E	586358	3575572*	1197
C 04254	CUB	MON	0	BUREAU OF LAND MANAGEMENT	ED	C 04254 POD2	NA					4	2	09	23S	28E	585973	3576435	1203
					ED	C 04254 POD1						4	2	09	23S	28E	585973	3576451	1203
					ED	C 04254 POD4						4	2	09	23S	28E	585973	3576472	1204
					ED	C 04254 POD5						4	2	09	23S	28E	585952	3576451	1224
C 00235	C	STK	3	LEE S. WILLIAMS	ED	C 00235				Shallow		2	2	15	23S	28E	587676	3575280*	1267
C 04216	CUB	MON	0	ROCKCLIFF OPERATING NM LLC	ED	C 04216 POD2	NA			Shallow	1	4	1	11	23S	28E	588464	3576555	1292
C 00098	CUB	IRR	405.39	JAMES B KENNEY	ED	C 00109	NA			Shallow	1	3	3	04	23S	27E	588485	3576531	1311
C 00109	CUB	IRR	405.39	MONTIE BUNCH	ED	C 00109	NA			Shallow	1	3	3	04	23S	27E	588485	3576531	1311
C 04219	CUB	PRO	0	ATKINS ENGR ASSOC INC	ED	C 00109	NA			Shallow	1	3	3	04	23S	27E	588485	3576531	1311
C 04216	CUB	MON	0	ROCKCLIFF OPERATING NM LLC	ED	C 04216 POD1	NA			Shallow	2	4	1	11	23S	28E	588488	3576534	1314
					ED	C 04216 POD4				Shallow	2	4	1	11	23S	28E	588499	3576513	1323
					ED	C 04216 POD3				Shallow	1	4	1	11	23S	28E	588501	3576556	1328
C 03469	CUB	POL	0	BTA OIL PRODUCERS, LLC	ED	C 03469 POD1				Shallow	3	4	3	11	23S	28E	588373	3575538	1501
					ED	C 03469 POD3					3	4	3	11	23S	28E	588381	3575538	1506
SP 01955	CUB	IRR	150.8	U.S. BANK NATIONAL ASSO. INTREPID MINING NM LLC	ED	SP 01955								11	23S	28E	588680	3576294*	1510
C 03469	CUB	POL	0	BTA OIL PRODUCERS, LLC	ED	C 03469 POD2					3	4	3	11	23S	28E	588382	3575506	1527

C 04268	C	DOM	1	JOSE V VALENCIA	ED	C 04268	20772			1	3	1	14	23S	28E	587894	3575069*		1654
C 00321	C	DOM	0	W.J. BAILEY	ED	C 00321				4	2	15	23S	28E	587679	3574874*		1649
C 02503	C	DOM	3	JIMMY G TARVIN SR	ED	C 02503		Shallow		4	2	15	23S	28E	587679	3574874*		1649
C 00616	CUB	IRR	0	LEE & WELMA VOIGT	ED	C 00616		Shallow		1	3	1	14	23S	28E	587982	3574978*		1673
C 01328	CUB	IRR	0	URQUIDEZ VICENTE L	ED	C 01328				3	3	2	15	23S	28E	587173	3574769*		1676
C 02810	C	DOM	3	JOHN REID	ED	C 02810				4	3	2	15	23S	28E	587373	3574769*		1687
C 02926	C	STK	3	JOHNNY L REID	ED	C 02926				4	3	2	15	23S	28E	587373	3574769*		1687
C 00001	CUB	IRR	0	W H SWEARINGEN	ED	C 00001		Shallow		2	4	04	23S	28E	586037	3577693*		1690
SP 00302	CUB	IND	4639.5	INTREPID MINING NM LLC US BANK NATIONAL ASSOCIATION	ED	SP 00302				1	4	11	23S	28E	588886	3576107*		1742
SP 01942	CUB	IND	10868	INTREPID MINING NM LLC US BANK NATIONAL ASSOCIATION	ED	SP 01942				1	4	11	23S	28E	588886	3576107*		1742
SP 02045	CUB	IND	18100	INTREPID MINING NM LLC US BANK NATIONAL ASSOCIATION	ED	SP 02045				1	4	11	23S	28E	588886	3576107*		1742
C 02928	C	PUB	0	NEW MEXICO STATE HIGHWAY & T.D	ED	C 02928				2	1	14	23S	28E	588486	3575290*		1745
C 01450	C	PUB	0	GARDNER BRIDGE CO.	ED	C 01450				2	2	1	14	23S	28E	588585	3575389*		1760
C 00269	C	IRR	3	JOHNNY GIOVENGO JR.	ED	C 00269		Shallow		4	4	2	15	23S	28E	587778	3574773*		1776
C 01352	C	DOM	3	D H MAGBY	ED	C 00269		Shallow		4	4	2	15	23S	28E	587778	3574773*		1776
					ED	C 01352				4	4	2	15	23S	28E	587778	3574773*		1776
C 01364	C	DOM	3	DANIEL H MAGBY	ED	C 00269		Shallow		4	4	2	15	23S	28E	587778	3574773*		1776
C 00072	CUB	IRR	552	J L NYMEYER	ED	C 00072		Shallow		3	3	1	15	23S	28E	586364	3574760*		1870
C 04415	CUB	MON	0	DEVON ENERGY CORP	ED	C 04415 POD13	NA			4	1	4	04	23S	28E	585677	3577582		1882
					ED	C 04415 POD7		Shallow		3	1	4	04	23S	28E	585627	3577518		1884
					ED	C 04415 POD3				4	1	4	04	23S	28E	585644	3577552		1890
					ED	C 04415 POD2				4	1	4	04	23S	28E	585653	3577570		1894
					ED	C 04415 POD11				4	1	4	04	23S	28E	585652	3577570		1895
					ED	C 04415 POD8		Shallow		4	1	4	04	23S	28E	585656	3577583		1899
					ED	C 04415 POD17				4	1	4	04	23S	28E	585677	3577614		1901
					ED	C 04415 POD1		Shallow		4	1	4	04	23S	28E	585657	3577591		1903
					ED	C 04415 POD21				4	1	4	04	23S	28E	585648	3577585		1907
					ED	C 04415 POD10				4	1	4	04	23S	28E	585656	3577597		1907
					ED	C 04415 POD20				3	1	4	04	23S	28E	585624	3577562		1912
					ED	C 04415 POD5				4	1	4	04	23S	28E	585651	3577605		1916
					ED	C 04415 POD6				4	1	4	04	23S	28E	585651	3577605		1916
					ED	C 04415 POD4				3	1	4	04	23S	28E	585628	3577575		1917
					ED	C 04415 POD12				3	1	4	04	23S	28E	585627	3577585		1923

					ED	C 04415 POD16				3	1	4	04	23S	28E	585636	3577605*	1928
C 00501	CUB	IRR	93.51	EQUITABLE LIFE ASSURANCE SOCIETY	ED	C 00501				1	2	3	15	23S	28E	586772	3574559*	1928
C 00501 C	CUB	IRR	2.67	CARRASCO CANDELARIO JR	ED	C 00501				1	2	3	15	23S	28E	586772	3574559*	1928
C 00501 CA	CUB	IRR	111	NORWEST BANK NEW MEXICO AS MORTGAGEE	ED	C 00501				1	2	3	15	23S	28E	586772	3574559*	1928
C 04415	CUB	MON	0	WSP USA	ED	C 04415 POD22	NA			3	1	4	04	23S	28E	585578	3577532	1933
					ED	C 04415 POD15				3	1	4	04	23S	28E	585587	3577580	1953
					ED	C 04415 POD14				3	1	4	01	23S	28E	585555	3577636	2012
C 02189	C	PRO	0	RB OPERATING COMPANY	ED	C 02189		Shallow		1	1	3	14	23S	28E	587985	3574572*	2039
C 03762	CUB	MON	0	SOUTHWEST ENGINEERING INC	ED	C 03762 POD3		Shallow		4	2	2	16	23S	28E	586203	3574642	2048
SD 01094	CUB	IND	381.6	UNITED STATES POTASH COMPANY (NSL) A CORP.	ED	SD 01094							02	23S	28E	588668	3577916*	2094
C 00501	CUB	IRR	93.51	EQUITABLE LIFE ASSURANCE SOCIETY	ED	C 00501 A-S		Shallow		3	2	3	15	23S	28E	586772	3574359*	2124
					ED	C 00501 AS		Shallow		3	2	3	15	23S	28E	586766	3574353	2131
C 00501 A	CUB	IRR	443.64	HENRY E MCDONALD	ED	C 00501 AS		Shallow		3	2	3	15	23S	28E	586766	3574353	2131
C 00501 D	CUB	IRR	296.46	NELDA ONSUREZ	ED	C 00501 AS		Shallow		3	2	3	15	23S	28E	586766	3574353	2131
C 01257	CUB	EXP	0	U.S. BORAX & CHEM. CORP.	ED	C 01257				4	1	2	14	23S	28E	588990	3575194*	2202
C 03460	CUB	EXP	0	HUNGRY HORSE, LLC	ED	C 03460 POD1		Shallow		3	1	2	14	23S	28E	588857	3575004	2213
C 00311	C	DOM	3	CARTER FARMS CO.	ED	C 00311		Shallow		4	2	1	16	23S	28E	585353	3575152*	2235
C 00002	CUB	IRR	0	W H SWEARINGEN	ED	C 00002		Shallow		2	2	3	04	23S	28E	585345	3577785*	2269
C 01446	C	PUB	0	NM STATE HWY DEPT.	ED	C 01446							14	23S	28E	588692	3574670*	2333
C 00128	C	DOL	3	YLARIO URQUIDEZ	ED	C 00128		Shallow		2	4	4	15	23S	28E	587783	3574162*	2362
C 01256	CUB	EXP	0	U.S. BORAX & CHEM. CORP.	ED	C 01256				3	2	2	14	23S	28E	589196	3575199*	2372
C 04121	C	SAN	1	CENTURION PIPELINE LTD PRTNRSH	ED	C 04121 POD1	NA			1	3	3	12	23S	28E	589536	3575898	2422
C 03762	CUB	MON	0	VILLAGE OF LOVING	ED	C 03762 POD2		Shallow		4	4	2	17	23S	28E	584892	3575598	2435
C 00501 A	CUB	IRR	443.64	HENRY E MCDONALD	ED	C 00501 A		Shallow		3	3	4	15	23S	28E	587179	3573958*	2487
C 00501 B	CUB	IRR	194.49	UFFIE LAND CO	ED	C 00501 A		Shallow		3	3	4	15	23S	28E	587179	3573958*	2487
C 03056	C	DOL	3	BRANTLEY BROTHERS	ED	C 03056		Shallow		3	3	3	04	23S	28E	584772	3577226	2528
C 04588	CUB	MON	0	NOVO OIL & GAS NORTHERN DE LLC	ED	C 04588 POD1	NA	Shallow		2	2	2	04	23S	28E	586043	3578720	2542
C 00211	C	DOM	3	DAVID A. CARPENTER	ED	C 00211		Shallow		4	3	3	15	23S	28E	586570	3573949*	2568
C 00127	CUB	IRR	0	C.E. HICKS	ED	C 00127				2	2	1	22	23S	28E	586977	3573748*	2704
C 00757	CUB	EXP	0	E.F. ROSSON	ED	C 00757					2	4	08	23S	28E	584444	3576055*	2760
C 01336	C	DOM	3	JAMES NYMEYER	ED	C 01336		Shallow		2	1	1	22	23S	28E	586572	3573744*	2767
C 03801	C	STK	0	DRAPER BRANTLEY	ED	C 03801 POD1				4	4	4	05	23S	28E	584459	3577112	2798
C 01872	C	DOL	3	PEGGY JUNE DOYLE	ED	C 01872		Shallow			2	1	22	23S	28E	586878	3573649*	2811

C 04252	CUB	MON	0	CHEVRON NORTH AM EXPL & PROD	ED	C 04252 POD1	NA					4	4	3	14	23S	28E	588513	3573957				2825
C 00791	CUB	MIN	0	MISSISSIPPI CHEMICAL COMPANY	ED	C 00791						1	3	1	13	23S	28E	589603	3574999*				2824
C 01212	CUB	EXP	0	U.S. BORAX & CHEM. CORP.	ED	C 01212						1	3	1	13	23S	28E	589603	3574999*				2824
C 01293	CUB	EXP	0	U.S. BORAX & CHEM. CORP.	ED	C 01293						1	3	1	13	23S	28E	589603	3574999*				2824
C 00333	CUB	IRR	585.6	CURTIS K. AND CAROLE D. SKEEN	ED	C 00333 S-2						3	4	2	08	23S	28E	584343	3576360*				2835
C 01216	CUB	EXP	0	U.S. BORAX & CHEM. CORP.	ED	C 01216					Shallow	4	1	1	13	23S	28E	589801	3575205*				2902
C 00004	CUB	IRR	0	W H SWEARINGEN	ED	C 00004						2	2	4	05	23S	28E	584542	3577775*				2951
C 04418	CUB	MON	0	WPX ENERGY	ED	C 04418 POD1	NA					4	2	1	12	23S	28E	590103	3576851				2954
C 01885	C	DOM	3	FRANK LONDON	ED	C 01885					Shallow		2	2	21	23S	28E	586070	3573640*				3015
C 03762	CUB	MON	0	SOUTHWEST ENGINEERING INC	ED	C 03762 POD1					Shallow	4	4	2	17	23S	28E	585313	3574066				3021
C 00003	CUB	IRR	0	W H SWEARINGEN	ED	C 00003						4	4	2	05	23S	28E	584543	3577979*				3048
C 01255	CUB	EXP	0	U.S. BORAX & CHEM. CORP.	ED	C 01255						1	1	3	13	23S	28E	589606	3574593*				3054
C 00333	CUB	IRR	585.6	FARM CREDIT BANK OF NEW MEXICO	ED	C 00333 S						4	1	2	08	23S	28E	584138	3576760*				3055
C 00520	C	DOM	3	CARTER FARMS CO.	ED	C 00520					Shallow	1	1	3	16	23S	28E	584754	3574538*				3083
C 00521	C	STK	3	CARTER FARMS CO.	ED	C 00521					Shallow	1	1	3	16	23S	28E	584754	3574538*				3083
C 00094 A	CUB	CLS	0	DOROTHY W. QUEEN	ED	C 00094 AS			C		Shallow	1	3	2	22	23S	28E	587183	3573346*				3099
C 00048 A	CUB	CLS	0	WILLIAM & MARIA T STENNIS REVOCABLE TRUST	ED	C 00154 POD2			C			3	2	1	23	23S	28E	588395	3573566*				3126
C 00154	CUB	CLS	0	JOHNNY L. REID	ED	C 00154 POD2						3	2	1	23	23S	28E	588395	3573566*				3126
C 01108	C	STK	3	CLARENCE REID	ED	C 01108					Shallow	3	2	1	23	23S	28E	588395	3573566*				3126
C 04463	C	DOL	3	HENRY MCDONALD	ED	C 04463 POD1	20C6E					1	3	1	22	23S	28E	586276	3573423				3152
C 01258	CUB	EXP	0	US BORAX & CHEM. CORP.	ED	C 01258						3	1	3	13	23S	28E	589606	3574393*				3179
C 01816	C	DOL	3	A R DONALDSON	ED	C 01816					Shallow	1	3	1	23	23S	28E	587992	3573355*				3195
C 01253	CUB	IRR	277.644	NEW MEXICO INTERSTATE STREAM	ED	C 01253					Shallow	1	3	1	22	23S	28E	586375	3573338*				3208
C 00154	CUB	CLS	0	JOHNNY L. REID	ED	C 00154					Shallow	4	2	1	23	23S	28E	588595	3573566*				3209
C 04584	CUB	MON	0	MOSAIC POTASH CARLSBAD INC	ED	C 04584 POD1	NA					3	1	4	12	23S	28E	590391	3576064				3237
C 01236	C	DOM	3	MARY G. POLK	ED	C 01236								2	17	23S	28E	584245	3575035*				3253
C 01102	C	STK	3	C. L. REID	ED	C 01102					Shallow		1	2	23	23S	28E	588901	3573672*				3265
C 00504	CUB	IRR	214.5	GUMESINDA ONSUREZ TRUST	ED	C 00504					Shallow	3	1	4	08	23S	28E	583939	3575949*				3275
C 00048	CUB	CLS	0	JACKIE REID	ED	C 00094			C		Shallow	3	4	2	22	23S	28E	587588	3573151*				3319
C 00094 A	CUB	CLS	0	DOROTHY W. QUEEN	ED	C 00094			C		Shallow	3	4	2	22	23S	28E	587588	3573151*				3319
					ED	C 00094 A			C		Shallow	3	4	2	22	23S	28E	587588	3573151*				3319
C 00154	CUB	CLS	0	JOHNNY L. REID	ED	C 00094					Shallow	3	4	2	22	23S	28E	587588	3573151*				3319
C 00585	CUB	IRR	0	FRANK L. LONDON	ED	C 00585						3	1	2	21	23S	28E	585566	3573535*				3326

C 01487	CUB	IRR	226.8	JAVIER S.& BRETHA A. JASSO	ED	C 01487			Shallow	3	4	1	22	23S	28E	586779	3573142*		3526
C 02913	C	DOL	3	JAVIER S JASSO	ED	C 02913				3	4	1	22	23S	28E	586779	3573142*		3326
C 01217	CUB	COM	150	INTREPID MINING NM LLC US BANK NATIONAL ASSOCIATION	ED	C 01217			Shallow	4	1	3	13	23S	28E	589788	3574371		3334
SP 00302	CUB	IND	4639.5	INTREPID MINING NM LLC US BANK NATIONAL ASSOCIATION	ED	C 01217			Shallow	4	1	3	13	23S	28E	589788	3574371		3334
C 01213	CUB	EXP	0	U.S. BORAX & CHEM. CORP.	ED	C 01213				4	1	3	13	23S	28E	589806	3574393*		3335
C 04560	CUB	MON	0	VILLAGE OF LOVING	ED	C 04560 POD2	NA		Shallow	1	3	3	16	23S	28E	584856	3574036		3344
C 04584	CUB	MON	0	MOSAIC POTASH CARLSBAD INC	ED	C 04584 POD2	NA			4	2	1	13	23S	28E	590250	3575123		3345
C 00793	CUB	EXP	0	E.F. ROSSON	ED	C 00793							08	23S	28E	583834	3576237*		3349
C 01214	CUB	EXP	0	U.S. BORAX & CHEM. CORP.	ED	C 01214			Shallow	1	2	3	13	23S	28E	590010	3574597*		3382
C 00048	CUB	CLS	0	JOHHNY L. REID	ED	C 00048		C	Shallow	3	3	1	23	23S	28E	587997	3573160		3385
C 00048 1	CUB	IRR	124.589	JOHNNY L REID	ED	C 00048			Shallow	3	3	1	23	23S	28E	587997	3573160		3385
C 00048 2	CUB	STO	0.739	JACKIE REID	ED	C 00048			Shallow	3	3	1	23	23S	28E	587997	3573160		3385
C 00048 A	CUB	CLS	0	WILLIAM & MARIA T STENNIS REVOCABLE TRUST	ED	C 00048		C	Shallow	3	3	1	23	23S	28E	587997	3573160		3385
C 00154	CUB	CLS	0	JOHNNY L. REID	ED	C 00048			Shallow	3	3	1	23	23S	28E	587997	3573160		3385
C 04490	CUB	MON	0	MOSAIC POTASH CARLSBAD INC	ED	C 04490 POD2	NA		Shallow	2	3	3	13	23S	28E	589898	3574259		3490
C 02847	CUB	COM	40	DRAPER BRANTLEY JR.	ED	C 02847				2	1	4	22	23S	28E	587386	3572941*		3510
C 02849	CUB	COM	40	HENRY MCDONALD	ED	C 02849				2	1	4	22	23S	28E	587386	3572941*		3510
C 01967	C	DOM	3	RAE COLEMAN	ED	C 01967			Shallow		2	3	13	23S	28E	590111	3574498*		3521
C 04417	CUB	MON	0	WPX ENERGY	ED	C 04417 POD1	NA			4	3	3	36	22S	28E	589735	3578874		3528
C 00453	C	DOM	3	MAXIMIANO JASSO	ED	C 00453				2	2	4	22	23S	28E	587790	3572945*		3553
C 03800	C	STK	3	DRAPER BRANTLEY	ED	C 03800 POD1	2231C		Shallow	3	3	2	05	23S	28E	583926	3577958		3585
C 01961	C	DOL	0	DRAPER BRANTLEY JR	ED	C 01961					1	4	22	23S	28E	587287	3572842*		3604
C 02796	CUB	MON	0	IMC	ED	C 02796					2	3	22	23S	28E	586882	3572838*		3619
C 02322	C	DOM	3	EULINE KELLY	ED	C 02322							05	23S	28E	583832	3577858*		3631
C 01215	CUB	EXP	0	U.S. BORAX & CHEM.	ED	C 01215			Shallow	4	2	3	13	23S	28E	590210	3574397*		3659
C 00024	CUB	IRR	246.959	JACKIE D MCDONALD	ED	C 00024 S					1	3	22	23S	28E	586478	3572834*		3678
C 00306	CUB	IRR	210	HAYDEN EDWARD & DEBRA ANN KIMBLEY	ED	C 00306 S			Shallow	3	3	2	21	23S	28E	585568	3573129*		3685
C 00306 A	CUB	IRR	170.062	HENRY E MCDONALD	ED	C 00306 S			Shallow	3	3	2	21	23S	28E	585568	3573129*		3685
C 00306 B	CUB	IRR	225.6	DEBRA ANN KIMBLEY	ED	C 00306 S			Shallow	3	3	2	21	23S	28E	585568	3573129*		3685
C 01773	CUB	IRR	0	A. C. BURKHAM	ED	C 01773 S				3	3	2	21	23S	28E	585568	3573129*		3685
C 01218	CUB	EXP	0	U.S. BORAX & CHEM. CORP.	ED	C 01218				3	4	3	13	23S	28E	590012	3573991*		3749
C 00443	C	DOM	3	NIEVES B. JASSO	ED	C 00443			Shallow	4	2	4	22	23S	28E	587790	3572745*		3750
C 03965	CUB	MON	0	ARCADIS US INC-CHEVRON	ED	C 03965 POD11	NA			2	4	2	23	23S	28E	589503	3573464		3781

C 02702	C		0	IMC KALIUM	ED	C 02702			Shallow		2	13	23S	28E	590715	3575108*	3782
C 02703	C		0	IMC KALIUM	ED	C 02703					2	13	23S	28E	590715	3575108*	3782
C 03965	CUB	MON	0	ARCADIS US INC-CHEVRON	ED	C 03965 POD8	NA			4	1	1	24	23S	28E	589722	3573587	3827
C 00605	C	IRR	0	LOVING MUNICIPAL SCHOOLS	ED	C 00605						21	23S	28E	585471	3573012*	3833
C 00716	C	DOM	3	MRS. LEONARD JONES	ED	C 00716			Shallow			21	23S	28E	585471	3573012*	3833
C 00024	CUB	IRR	246.959	HENRY E MCDONALD	ED	C 00327			Shallow	3	2	4	21	23S	28E	585974	3572728*	3906
C 00327	CUB	IRR	269.881	HENRY E MCDONALD	ED	C 00327			Shallow	3	2	4	21	23S	28E	585974	3572728*	3906
C 03965	CUB	MON	0	ARCADIS US INC-CHEVRON	ED	C 03965 POD9	NA			1	3	1	24	23S	28E	589707	3573460	3912
					ED	C 03965 POD7				4	1	1	24	23S	28E	589883	3573599	3927
C 04524	CUB	MON	0	NOVO OIL & GAS NORTHERN	ED	C 04524 POD1	NA			1	1	2	01	23S	28E	590451	3578629	3936
C 01819	CUB	EXP	0	CITY OF CARLSBAD	ED	C 01819 M-7				1	4	1	33	22S	28E	585119	3579801*	3936
C 04584	CUB	MON	0	MOSAIC POTASH CARLSBAD INC	ED	C 04584 POD3	NA			3	2	2	13	23S	28E	590887	3575127	3936
C 03965	CUB	MON	0	ARCADIS US INC-CHEVRON	ED	C 03965 POD5			Shallow	4	1	1	24	23S	28E	589864	3573534	3961
					ED	C 03965 POD1				2	3	1	24	23S	28E	589799	3573463	3970
C 02912	C	DOL	0	BILL H KIRKES	ED	C 02912 POD2				3	3	1	08	23S	28E	583157	3576430	4019
C 01870	C	DOL	3	JAMES L MCCLARY	ED	C 01870			Shallow		4	3	22	23S	28E	586885	3572432*	4023
C 03965	CUB	MON	0	ARCADIS US INC-CHEVRON	ED	C 03965 POD2				2	3	1	24	23S	28E	589891	3573473	4024
C 00309	C	IRR	42.903	BILL H. KIRKES	ED	C 00309			Shallow	1	3	1	08	23S	28E	583129	3576544*	4049
C 00309 A	CUB	IRR	292.497	JOSE H. & MIQUELA C. VILLA	ED	C 00309			Shallow	1	3	1	08	23S	28E	583129	3576544*	4049
C 02912	C	DOL	0	BILL H KIRKES	ED	C 02912		R		3	3	1	08	23S	28E	583129	3576344	4049
C 04564	CUB	MON	0	ARCADIS US INC-CHEVRON ENVIRO	ED	C 04564 POD1	NA			3	3	1	24	23S	28E	589705	3573277	4053
C 03965	CUB	MON	0	ARCADIS US INC-CHEVRON	ED	C 03965 POD10	NA			2	3	1	24	23S	28E	589813	3573358	4059
C 01779	C	DOM	3	JOSE VILLA	ED	C 01779			Shallow	3	1	1	08	23S	28E	583128	3576749*	4060
C 03173	C	PRO	0	OXY PARTNERS	ED	C 01779			Shallow	3	1	1	08	23S	28E	583128	3576749*	4060
C 03965	CUB	MON	0	ARCADIS US INC-CHEVRON	ED	C 03965 POD3				3	2	1	24	23S	28E	590013	3573527	4069
					ED	C 03965 POD6				3	2	1	24	23S	28E	590020	3573526	4074
C 04556	CUB	MON	0	ARCADIS US INC/CHEVRON ENVIRO	ED	C 04556 POD1	NA		Shallow	4	3	1	24	23S	28E	589719	3573237	4092
C 04564	CUB	MON	0	ARCADIS US INC-CHEVRON ENVIRO	ED	C 04564 POD2	NA			4	3	1	24	23S	28E	589719	3573237	4092
C 04490	CUB	MON	0	MOSAIC POTASH CARLSBAD INC	ED	C 04490 POD4	NA			4	2	1	24	23S	28E	590205	3573676	4103
C 00306	CUB	IRR	210	HAYDEN EDWARD & DEBRA ANN KIMBLEY	ED	C 00306				3	3	1	21	23S	28E	584762	3573120*	4109
C 00306 A	CUB	IRR	170.062	JACKIE D MCDONALD	ED	C 00306				3	3	1	21	23S	28E	584762	3573120*	4109
C 00306 B	CUB	IRR	225.6	DEBRA ANN KIMBLEY	ED	C 00306				3	3	1	21	23S	28E	584762	3573120*	4109
C 00544	C	DOM	3	W. J. DAVIS	ED	C 00544			Shallow	3	3	1	21	23S	28E	584762	3573120*	4109

C 01341	CUB	EXP	0	T.J. KIMBLEY	ED	C 01341				3	3	1	21	23S	28E	584762	3573120*		4109
C 01773	CUB	IRR	0	A. C. BURKHAM	ED	C 01773				3	3	1	21	23S	28E	584762	3573120*		4109
C 02848	CUB	COM	120	HENRY MCDONALD	ED	C 02848			Shallow	3	3	1	21	23S	28E	584762	3573120*		4109
C 00868	CUB	IRR	936.42	DRAPER BRANTLEY, JR.	ED	C 00869			Shallow	3	3	4	22	23S	28E	587188	3572335*		4110
C 00868 A	CUB	IRR	528.671	JACKIE D MC DONALD	ED	C 00869			Shallow	3	3	4	22	23S	28E	587188	3572335*		4110
C 00868 B	CUB	IRR	300	HENRY E. OR JACKIE DALE MCDONALD	ED	C 00869			Shallow	3	3	4	22	23S	28E	587188	3572335*		4110
C 03965	CUB	MON	0	ARCADIS US INC-CHEVRON	ED	C 03965 POD4			Shallow		1	4	24	23S	28E	589918	3573381		4110
C 00868	CUB	IRR	936.42	DRAPER BRANTLEY, JR.	ED	C 00869 S			Shallow	4	3	4	22	23S	28E	587388	3572335*		4115
C 00868 A	CUB	IRR	528.671	JACKIE D MC DONALD	ED	C 00869 S			Shallow	4	3	4	22	23S	28E	587388	3572335*		4115
C 04470	CUB	MON	0	MARATHON OIL	ED	C 04470 POD1		NA		3	1	3	07	23S	29E	591280	3576086		4118
C 00868	CUB	IRR	936.42	DRAPER BRANTLEY, JR.	ED	C 00869 S2			Shallow	3	3	3	23	23S	28E	587996	3572343*		4182
C 00868 A	CUB	IRR	528.671	HENRY E MC DONALD	ED	C 00869 S2			Shallow	3	3	3	23	23S	28E	587996	3572343*		4182
C 00868 B	CUB	IRR	300	HENRY E. OR JACKIE DALE MCDONALD	ED	C 00869 S2			Shallow	3	3	3	23	23S	28E	587996	3572343*		4182
C 00500	CUB	IRR	200.13	C.A. CARRASCO, JR.	ED	C 00500				4	3	1	24	23S	28E	589811	3573176*		4198
C 00868	CUB	IRR	936.42	DRAPER BRANTLEY, JR.	ED	C 00868			Shallow	4	3	1	24	23S	28E	589811	3573176*		4198
C 00868 A	CUB	IRR	528.671	HENRY E MC DONALD	ED	C 00868			Shallow	4	3	1	24	23S	28E	589811	3573176*		4198
C 00868 B	CUB	IRR	300	HENRY E. OR JACKIE DALE MCDONALD	ED	C 00868			Shallow	4	3	1	24	23S	28E	589811	3573176*		4198
C 04556	CUB	MON	0	ARCADIS US INC/CHEVRON ENVIRO	ED	C 04556 POD2		NA	Shallow	4	3	1	24	23S	28E	589890	3573239		4199
C 03974	C	DOM	1	JAVIER SIERRA	ED	C 03974 POD1			Shallow	2	2	1	27	23S	28E	587087	3572220		4225
C 03146	C	DOL	3	DRAPER BRANTLEY JR	ED	C 03146			Shallow	1	1	3	24	23S	28E	589613	3572970*		4243
C 04539	CUB	MON	0	DEVON ENERGY CORPORATION	ED	C 04539 POD1		NA		2	4	2	01	23S	28E	591034	3578223		4247
C 03216	C	DOL	0	JUDY PARKER	ED	C 03216 POD1				3	3	1	05	23S	28E	583156	3577913		4280
C 03432	C	DOM	1	RAYMOND LUNSFORD	ED	C 03432 POD1			Shallow	1	2	2	27	23S	28E	587527	3572162		4296
C 03436	C	DOM	1	JOE L. HERNANDEZ	ED	C 03436 POD1				2	1	2	27	23S	28E	587348	3572143		4304
C 02243	C	DOL	3	EDGAR MAGBY	ED	C 02243			Shallow	4	4	4	06	23S	28E	582925	3577148*		4309
C 00641	C	DOM	3	SANTOS PARRAZ	ED	C 00641			Shallow	2	2	1	27	23S	28E	586986	3572126*		4323
C 02599	C	DOM	0	D S DUNN	ED	C 02599				2	2	1	27	23S	28E	586986	3572126*		4323
C 03175	C	DOM	0	RAYMOND LUNSFORD	ED	C 03175				1	2	2	27	23S	28E	587595	3572134*		4331
C 00868	CUB	IRR	936.42	DRAPER BRANTLEY, JR.	ED	C 02846 S			Shallow	4	4	4	07	23S	28E	582926	3575527*		4348
C 02846	CUB	COM	66.03	BRANTLEY BROTHERS	ED	C 02846 ENL-S			Shallow	4	4	4	07	23S	28E	582926	3575527*		4348
					ED	C 02846 ENLGD S				4	4	4	07	23S	28E	582926	3575527*		4348
					ED	C 02846 S			Shallow	4	4	4	07	23S	28E	582926	3575527*		4348
C 00851	C	DOL	3	CARTER FARMS COMPANY	ED	C 00851			Shallow		3	17		23S	28E	583438	3574217*		4352

C 01891	CUB	IRR	2233.727	NEW MEXICO INTERSTATE STREAM	ED	C 01892			Shallow	2	3	2	20	23S	28E	584151	3573313*		4355
C 01891 A	CUB	IRR	1183.779	RUSTLER HILLS II LIMITED PARTNERSHIP	ED	C 01892			Shallow	2	3	2	20	23S	28E	584151	3573313*		4355
C 01892	CUB	IRR	89.097	RUSTLER HILLS II LIMITED PARTNERSHIP	ED	C 01892			Shallow	2	3	2	20	23S	28E	584151	3573313*		4355
C 01122	CUB	IRR	0	VICTOR QUEEN	ED	C 01122			Shallow	1	1	1	26	23S	28E	587999	3572138*		4384
C 03455	C	DOL	3	GAYNEL CHASE	ED	C 03455 POD1			Shallow	3	3	1	05	23S	28E	583039	3577899		4385
C 03472	CUB	EXP	0	BRANTLEY BROTHERS	ED	C 03472 POD1			Shallow	4	4	4	07	23S	28E	582893	3575479		4390
C 01766	CUB	IRR	375	ROXIE L. WILLIAMS TRUST	ED	C 01766				3	3	4	23	23S	28E	588806	3572354*		4403
C 01766 A	CUB	IRR	15	WOODROW AND RUBY BURKHAM	ED	C 01766				3	3	4	23	23S	28E	588806	3572354*		4403
C 00664	C	DOM	3	L.C. BURKHAM	ED	C 00664				1	4	3	21	23S	28E	585170	3572513*		4414
C 01448	CUB	IRR	0	GOMEZ RAMON	ED	C 01448					4	4	06	23S	28E	582826	3577249*		4424
C 02141	C	DOL	3	EDGAR MAGBY	ED	C 02141			Shallow		4	4	06	23S	28E	582826	3577249*		4424
C 00577	C	DOM	0	M. L. COPE	ED	C 00577			Shallow	3	1	3	21	23S	28E	584764	3572714*		4443
C 00578	C	DOM	3	CARL H. NICHOLS	ED	C 00578			Shallow	3	1	3	21	23S	28E	584764	3572714*		4443
C 00643	C	DOM	3	J. H. HINTON	ED	C 00643			Shallow	3	1	3	21	23S	28E	584764	3572714*		4443
C 00706	C	DOM	3	M.L. COPE	ED	C 00577			Shallow	3	1	3	21	23S	28E	584764	3572714*		4443
C 00340	C	DOM	3	SERAPIO PARROZ	ED	C 00340			Shallow		1	1	27	23S	28E	586483	3572022*		4477
C 04490	CUB	MON	0	GOLDER ASSOCIATES INC	ED	C 04490 POD3		NA	Shallow	4	1	2	24	23S	28E	590596	3573502		4511
C 01634	C	DOL	3	GRADY O. DODSON	ED	C 01634			Shallow		2	4	06	23S	28E	582825	3577653*		4516
C 01699	C	DOL	3	TOM MCILVAIN	ED	C 01699			Shallow		2	4	06	23S	28E	582825	3577653*		4516
C 00911	C	DOL	3	TOM BRANTLEY	ED	C 00911				1	2	4	20	23S	28E	584359	3572911*		4519
					ED	C 00911 POD2			Shallow	1	2	4	20	23S	28E	584359	3572911*		4519
					ED	C 00911 POD3			Shallow	1	2	4	20	23S	28E	584359	3572911*		4519
C 03737	C	DOL	0	JOHNNY REID	ED	C 03737 POD1				2	2	1	26	23S	28E	588519	3572124		4523
C 00036	CUB	IRR	0	R T SPENCE	ED	C 00036			Shallow	3	3	2	32	22S	28E	583916	3579583*		4525
C 00236	C	DOM	3	DAVID A. FAULK	ED	C 00236			Shallow	2	2	3	32	22S	28E	583723	3579372*		4527
C 00289	CUB	IRR	291	KELLY MRS P O	ED	C 00289			Shallow	1	1	1	05	23S	28E	583128	3578563*		4569
C 01891	CUB	IRR	2233.727	NEW MEXICO INTERSTATE STREAM	ED	C 01891			Shallow	1	2	2	18	23S	28E	582728	3575323*		4588
C 01891 A	CUB	IRR	1183.779	RUSTLER HILLS II LIMITED PARTNERSHIP	ED	C 01891			Shallow	1	2	2	18	23S	28E	582728	3575323*		4588
C 04415	CUB	MON	0	DEVON ENERGY CORP	ED	C 04415 POD9		NA	Shallow	4	1	4	04	23S	28E	585713	3572094		4589
C 00214	CUB	IRR	0	HAROLD FAULK	ED	C 00214				2	3	3	32	22S	28E	583327	3578962*		4599
C 03184	C	DOL	3	DAVID FAULK	ED	C 03184			Shallow	2	3	3	32	22S	28E	583327	3578962*		4599
C 01819	CUB	EXP	0	CITY OF CARLSBAD	ED	C 01819 M-6				2	2	2	32	22S	28E	584510	3580194*		4600
C 00650	C	DOM	3	TROY CAVINESS	ED	C 00650			Shallow	1	3	3	21	23S	28E	584767	3572508*		4616

C 04556	CUB	MON	0	ARCADIS US INC/CHEVRON ENVIRO	ED	C 04556 POD3	NA		Shallow	4	3	1	24	23S	28E	590567	3573265		4648
C 00035	CUB	IRR	0	R T SPENCE	ED	C 00035			Shallow	3	3	3	32	22S	28E	583127	3578762*		4665
C 00035 A	CUB	IRR	0	P O KELLEY	ED	C 00035			Shallow	3	3	3	32	22S	28E	583127	3578762*		4665
C 00212	CUB	IRR	794.46	HAROLD FAULK	ED	C 00212			Shallow	3	3	3	32	22S	28E	583127	3578762*		4665
C 00213	CUB	IRR	0	HAROLD FAULK	ED	C 00212			Shallow	3	3	3	32	22S	28E	583127	3578762*		4665
C 03131	C	PRO	0	NADEL & GUSSMAN OIL	ED	C 00212			Shallow	3	3	3	32	22S	28E	583127	3578762*		4665
C 03191	C	PRO	0	NADEL & GUSSMAN	ED	C 00212			Shallow	3	3	3	32	22S	28E	583127	3578762*		4665
C 03542	CUB	MON	0	ALLSUPS CONVENIENCE STORE #220	ED	C 03542 POD1			Shallow	2	4	4	20	23S	28E	584615	3572530		4678
					ED	C 03542 POD2			Shallow	2	4	4	20	23S	28E	584619	3572497		4703
C 00313	CUB	IRR	1239	CARTER FARMS COMPANY	ED	C 00313			Shallow	3	3	3	17	23S	28E	583136	3573915*		4767
C 00333 A	CUB	IRR	480	HENRY E MCDONALD	ED	C 00312 S			Shallow	3	3	3	17	23S	28E	583136	3573915*		4767
C 04408	C	DOL	3	BERNICE MOORE	ED	C 04408 POD1	22381			1	1	4	24	23S	28E	590445	3572955		4781
C 01891	CUB	IRR	2233.727	NEW MEXICO INTERSTATE STREAM	ED	C 01892 S			Shallow	4	4	1	20	23S	28E	583746	3573110*		4784
C 01891 A	CUB	IRR	1183.779	RUSTLER HILLS II LIMITED PARTNERSHIP	ED	C 01892 S			Shallow	4	4	1	20	23S	28E	583746	3573110*		4784
C 01892	CUB	IRR	89.097	RUSTLER HILLS II LIMITED PARTNERSHIP	ED	C 01892 S			Shallow	4	4	1	20	23S	28E	583746	3573110*		4784
C 00539	C	DOM	3	JOHNNIE S. HILL	ED	C 00539			Shallow	3	3	3	21	23S	28E	584767	3572308*		4787
C 00348	C	DOM	3	CID	ED	C 00348							20	23S	28E	583849	3573002*		4788
C 01852	C	DOM	0	DORINDA URQUIDEZ	ED	C 01852						4	20	23S	28E	584258	3572605*		4823
C 01819	CUB	EXP	0	CITY OF CARLSBAD	ED	C 01819 M-5				1	3	3	28	22S	28E	584698	3580604*		4841
C 04546	CUB	EXP	0	HENRY MCDONALD	ED	C 04546 POD1	NA			3	3	3	17	23S	28E	583065	3573857		4858
C 00519	C	DOM	0	ELI CANADY	ED	C 00519				2	1	1	28	23S	28E	584970	3572100*		4873
C 00212	CUB	IRR	794.46	HAROLD FAULK	ED	C 00213			Shallow	1	4	1	32	22S	28E	583517	3579775*		4948
C 00213	CUB	IRR	0	HAROLD FAULK	ED	C 00213			Shallow	1	4	1	32	22S	28E	583517	3579775*		4948
C 03094	C	DOL	3	VICKYE FAULK	ED	C 03094			Shallow	4	3	1	32	22S	28E	583317	3579567*		4964

Record Count: 281

UTMNAD83 Radius Search (in meters):

Easting (X): 587177 **Northing (Y):** 3576445 **Radius:** 5000

Sorted by: Distance

***UTM location was derived from PLSS - see Help**

U.S. Fish and Wildlife Service
National Wetlands Inventory

Wetland, 3568 feet

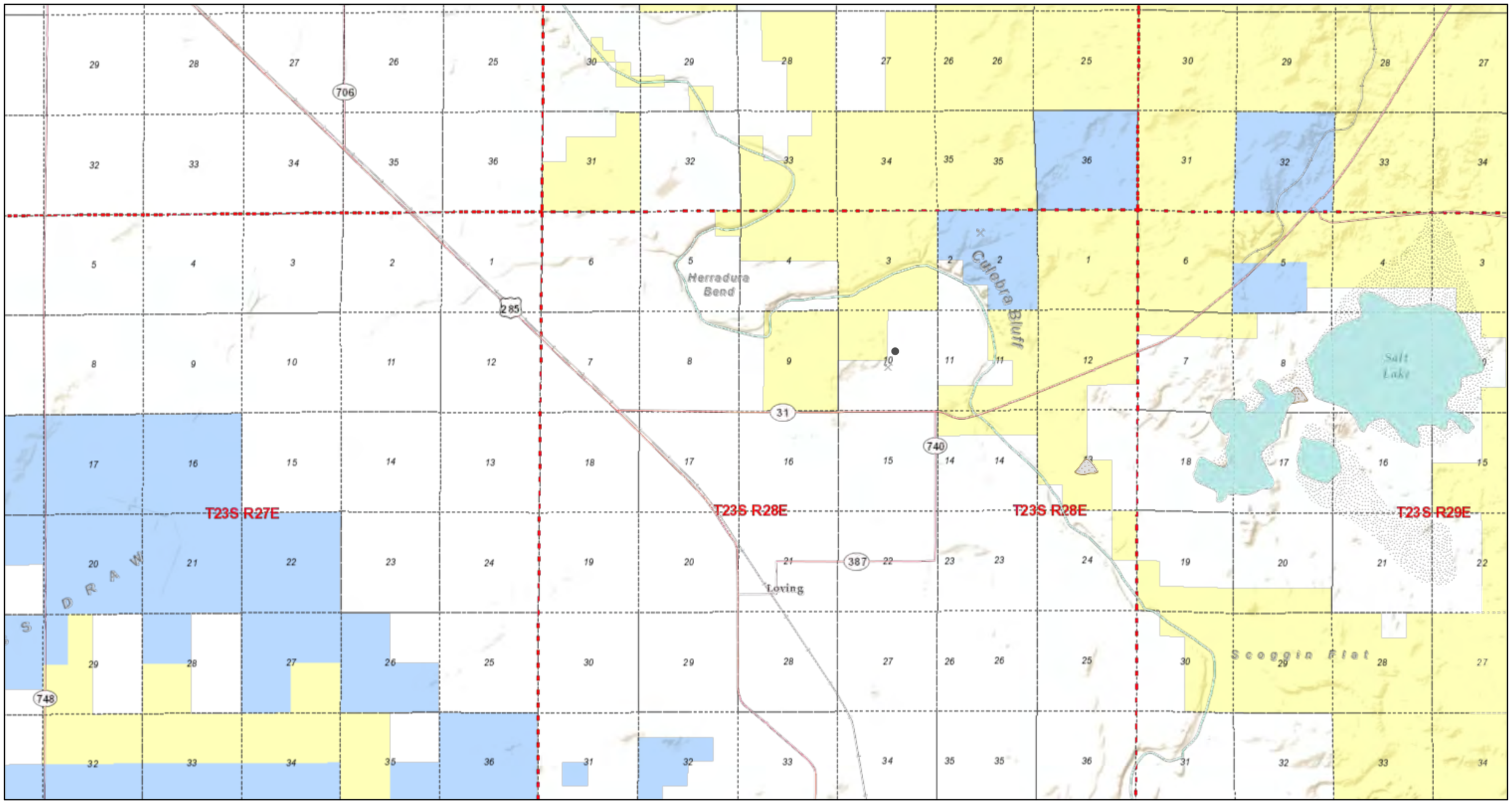
March 17, 2022

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



3/17/2022, 2:30:00 PM

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

State Land

State Parks

Tribal

US Fish and Wildlife Service

US Forest Service

Registered Mines

Aggregate, Stone etc.

Aggregate, Stone etc.

Salt

1:72,224

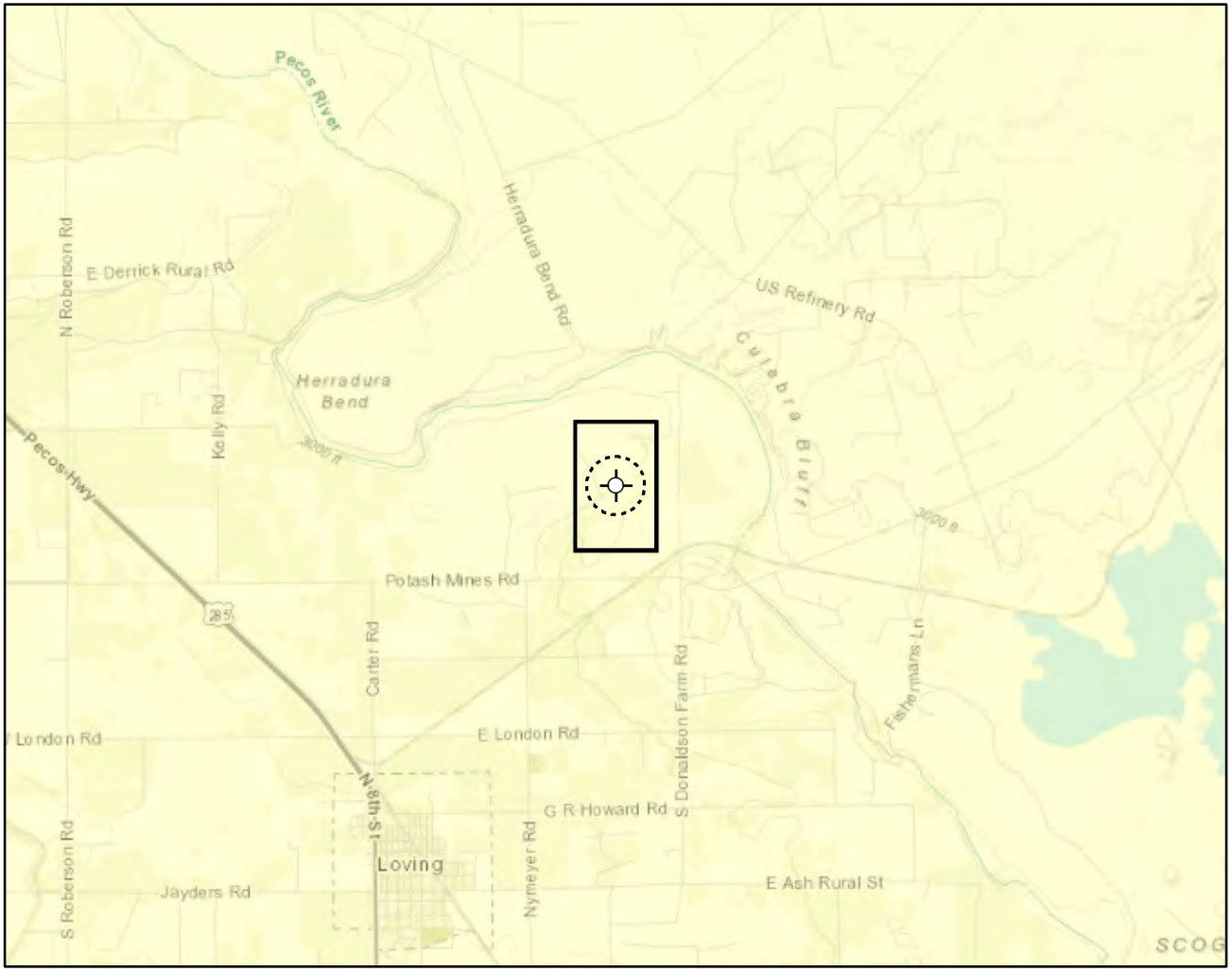
0 0.75 1.5 3 mi

0 1.25 2.5 5 km

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

EMNRD MMD GIS Coordinator

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



Karst Potential

- Critical
- High
- Medium
- Low

- Site Location
- Site Buffer (1,000 ft.)

Overview Map

0 0.25 0.5 1 mi

Detail Map

0 150 300 600 ft.

VERTEX

Map Center:
Lat/Long: 32.321470, -104.073810

NAD 1983 UTM Zone 13N
Date: Mar 29/22

N

Karst Potential Map
Pecos Irrigation 1-10 Tank Battery

FIGURE:
X

BTA

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 2020; Overview Map: ESRI World Topographic. Karst potential data sourced from Rosswell Field Office, Bureau of Land Management, 2020 or United States Department of the Interior, Bureau of Land Management. (2018). Karst Potential.

VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects_US PROJECT S\BTA Oil Producers LLC\22E-00933\Figure X Karst Potential Map Pecos Irrigation 1-10 Tank Battery.mxd

National Flood Hazard Layer FIRMette

FEMA

104°4'45"W 32°19'32"N

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

1:6,000

104°4'7"W 32°19'2"N

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

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 / 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
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

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 3/17/2022 at 3:33 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

March 17, 2022

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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Contents

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

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

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

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 17, Sep 12, 2021

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.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Uo	Upton gravelly loam, 0 to 9 percent slopes	1.6	100.0%
Totals for Area of Interest		**1.6**	**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, 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.

Eddy Area, New Mexico

Uo—Upton gravelly loam, 0 to 9 percent slopes

Map Unit Setting

National map unit symbol: 1w67
Elevation: 1,100 to 4,400 feet
Mean annual precipitation: 7 to 15 inches
Mean annual air temperature: 60 to 70 degrees F
Frost-free period: 200 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Upton and similar soils: 96 percent
Minor components: 4 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Upton

Setting

Landform: Ridges, fans
Landform position (three-dimensional): Side slope, rise
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from limestone

Typical profile

H1 - 0 to 9 inches: gravelly loam
H2 - 9 to 13 inches: gravelly loam
H3 - 13 to 21 inches: cemented
H4 - 21 to 60 inches: very gravelly loam

Properties and qualities

Slope: 0 to 9 percent
Depth to restrictive feature: 7 to 20 inches to petrocalcic
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 75 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: R042XC025NM - Shallow
Hydric soil rating: No

Minor Components

Atoka

Percent of map unit: 1 percent
Ecological site: R042XC007NM - Loamy
Hydric soil rating: No

Upton

Percent of map unit: 1 percent
Ecological site: R042XC025NM - Shallow
Hydric soil rating: No

Atoka

Percent of map unit: 1 percent
Ecological site: R042XC007NM - Loamy
Hydric soil rating: No

Reagan

Percent of map unit: 1 percent
Ecological site: R042XC007NM - Loamy
Hydric soil rating: No

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USDA Natural Resources Conservation Service

Ecological site R042XC025NM
Shallow

Accessed: 03/17/2022

General information

Figure 1. Mapped extent

Areas shown in blue indicate the maximum mapped extent of this ecological site. Other ecological sites likely occur within the highlighted areas. It is also possible for this ecological site to occur outside of highlighted areas if detailed soil survey has not been completed or recently updated.

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site occurs on knolls, ridges, hillslopes alluvial fans and escarpments. Slopes range fro 0 to 25 percent and average about 7 percent. Direction of slope varies and is usually not significant. Elevations range from 2,842 to 4,500 feet.

Table 2. Representative physiographic features

Landforms	(1) Hill (2) Ridge (3) Fan piedmont
Flooding frequency	None
Ponding frequency	None
Elevation	2,842–4,500 ft
Slope	0–25%
Aspect	Aspect is not a significant factor

Climatic features

The average annual precipitation ranges from 8 to 13 inches. Variations of 5 inches, more or less, are common. Over 80 percent of the precipitation falls from April through October. Most of the summer precipitation comes in the form of high intensity – short duration thunderstorms.

Temperatures are characterized by distinct seasonal changes and large annual and diurnal temperature changes. The average annual temperature is 61 degrees with extremes of 25 degrees below zero in the winter to 112 degrees in the summer.

The average frost-free season is 180 to 220 days. The last killing frost is late March or early April, and the first killing frost is in late October or early November.

Temperature and rainfall both favor warm season perennial plant growth. In years of abundant spring moisture, annual forbs and cool season grasses can make up an important component of this site. Because of the shallow soil depth, the vegetation on this site can take advantage of moisture almost anytime it falls. Strong winds that blow from the west and southwest blow from January through June, which accelerates soil drying at a critical time for cool season plant growth.

Climate data was obtained from http://www.wrcc.sage.dri.edu/summary/climsmnm.html web site using 50% probability for freeze-free and frost-free seasons using 28.5 degrees F and 32.5 degrees F respectively.

Table 3. Representative climatic features

Frost-free period (average)	220 days
Freeze-free period (average)	240 days
Precipitation total (average)	13 in

Influencing water features

This site is not influenced from water from wetlands or streams.

Soil features

The soils of this site are shallow to very shallow. Soils are derived from mixed calcareous eolian deposits derived from sedimentary rock. Surface layers are very cobbly loam, very gravelly loam, gravelly loam, cobbly loam, gravelly fine sandy loam or gravelly sandy loam.

There is an indurated caliche layer or limestone bedrock that occurs within 20 inches and averages less than 10 inches. Limestone or caliche layer may be the restrictive layer.

Minimum and maximum values listed below represent the characteristic soils for this site.

Characteristic soils:

Lozier
Potter
Tencee
Upton
Ector
Kimbrough

Table 4. Representative soil features

Surface texture	(1) Gravelly loam (2) Extremely gravelly loam (3) Extremely cobbly loam
Family particle size	(1) Loamy
Drainage class	Well drained
Permeability class	Very slow to moderately slow
Soil depth	4–20 in
Surface fragment cover <=3"	15–40%
Available water capacity (0-40in)	1 in
Calcium carbonate equivalent (0-40in)	15–60%
Electrical conductivity (0-40in)	0–2 mmhos/cm
Sodium adsorption ratio (0-40in)	0–1
Soil reaction (1:1 water) (0-40in)	7.4–8.4
Subsurface fragment volume <=3" (Depth not specified)	13–42%
Subsurface fragment volume >3" (Depth not specified)	0–1%

Ecological dynamics

Overview:
The Shallow site is associated with and Limestone Hills, Loamy, and Shallow Sandy sites. When associated with Limestone Hills, the Shallow site occurs on the summits, foot slopes and toeslopes of hills. Loamy sites often occur as areas between low elongated hills with rounded crests (Shallow site). When the Shallow Sandy site and Shallow site occur in association, the Shallow Sandy soils occupy the tops of low ridges and the Shallow site soils occur on the steeper sideslopes of the ridge. The historic plant community of the Shallow site has the aspect of a grassland/shrub mix, dominated by grasses, but with shrubs common throughout the site. Black grama is the dominant grass species; creosotebush, mesquite, and catclaw mimosa are common shrubs. Overgrazing and or extended drought can reduce grass cover, effect a change in grass species dominance, and may result in a shrub-dominated state. 1

State and transition model

Plant Communities and Transitional Pathways (diagram)

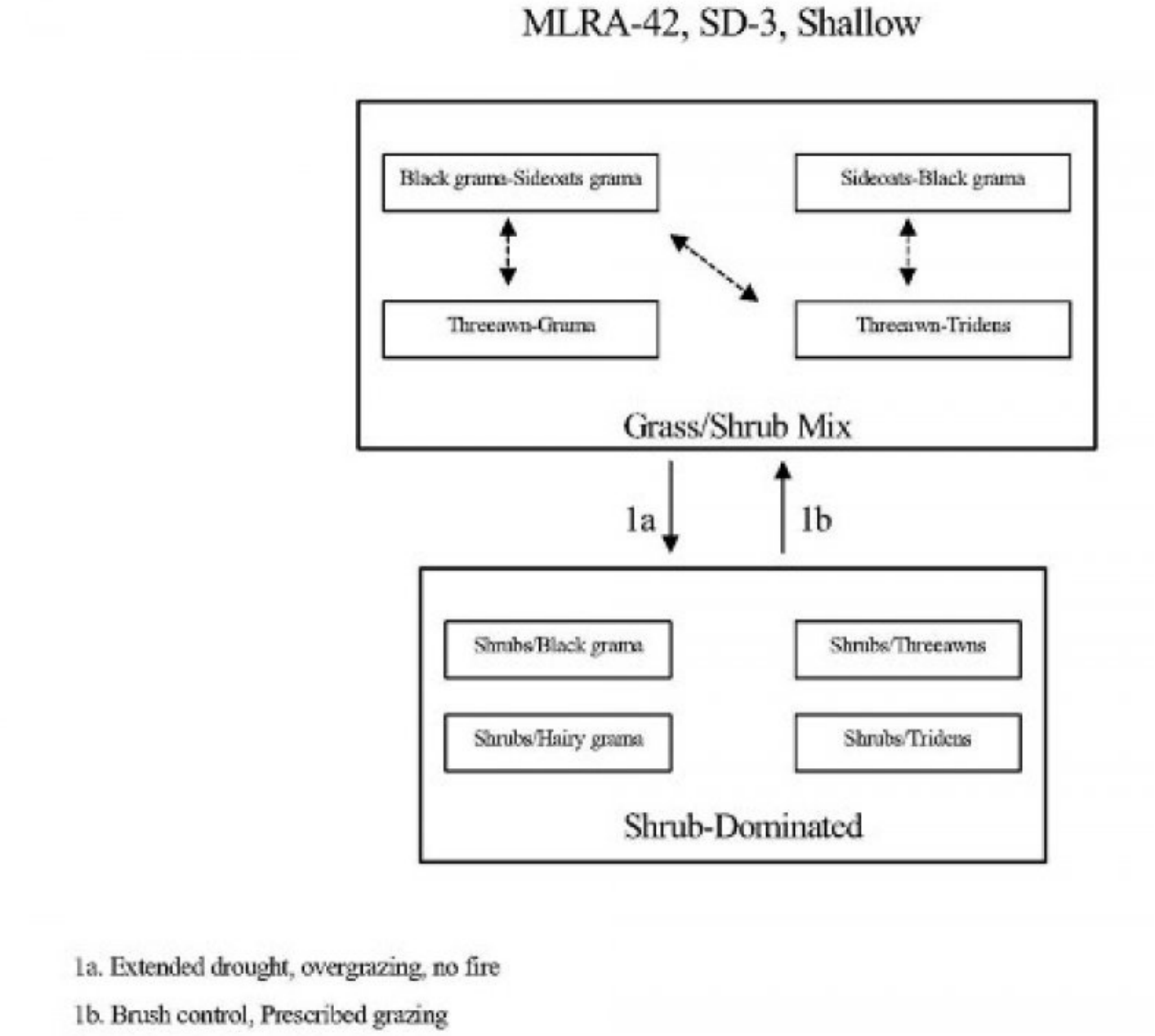


Figure 4.

State 1
Grass/Shrub Mix

Community 1.1
Grass/Shrub Mix

Grassland/Shrub Mix: The historic plant community is dominated by black grama with sideoats grama as the sub-dominant. Blue grama, hairy grama, bush muhly, and sand dropseed also occur in significant amounts. Sideoats grama can occur as the dominant grass with black grama as sub-dominant on the western side of the Land Resource Unit SD-3. This may be due to higher average elevation on the west side. Retrogression within this state due to extended drought or overgrazing will cause a decrease in species such as black grama, sideoats grama, blue grama, and bush muhly. Threeawns may become the dominant grass species due to a decline in more palatable grasses or because of its ability to quickly recover following drought. Continued loss of grass cover and associated increase in amount of bare ground may result in a shrub-dominated state. Decreased fire frequencies may also be

an important component in the cause of this transition.

Diagnosis: Grass cover is fairly uniform, however, surface gravel, cobble, and bare ground make up a large percent of total ground cover, and grass production during unfavorable years may only average 150-175 pounds per acre. Shrubs are common with canopy cover averaging five to ten percent. Evidence of erosion such as rills and gullies are rare, but may occur on slopes greater than eight percent.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	168	352	536
Shrub/Vine	63	131	200
Forb	20	42	64
Total	**251**	**525**	**800**

Table 6. Ground cover

Tree foliar cover	0%
Shrub/vine/liana foliar cover	5-10%
Grass/grasslike foliar cover	10-15%
Forb foliar cover	0%
Non-vascular plants	0%
Biological crusts	0%
Litter	5-8%
Surface fragments >0.25" and <=3"	0%
Surface fragments >3"	0%
Bedrock	0%
Water	0%
Bare ground	40-60%

Figure 6. Plant community growth curve (percent production by month). NM2825, R042XC025NM Shallow HCPC. R042XC025NM Shallow HCPC Warm Season Plant Community.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	3	5	10	10	25	30	12	5	0	0

State 2
Shrub-Dominated

Community 2.1
Shrub-Dominated

Shrub-Dominated: This state is characterized by an increase in shrubs and a decrease in grass cover relative to grassland/shrub mix. As grass cover decreases shrubs increase, especially creosotebush, catclaw mimosa, whitethorn acacia, and mesquite. Each of these shrub species may become dominant in localized areas or across the site, depending on the spatial variability in soil characteristics and landscape position. Black grama, threeawns, hairy grama, or hairy tridens may be the dominant grass species. Fluffgrass, burrograss and broom snakeweed increase in representation. The Shallow site is resistant to state change, due to the natural rock armor of the soil and a shallow impermeable layer. The amount of rock fragments on the soil surface assist in retarding erosion. On Shallow sites with low slope, the shallow depth to either a petrocalcic layer or limestone bedrock helps to keep water perched and available to shallow rooted grasses for extended periods. 2

Diagnosis: Shrubs are the dominant species, especially creosotebush, catclaw mimosa, whitethorn acacia, or mesquite. Grass cover is variable ranging from patchy with large connected bare areas present to sparse with only a limited amount in shrub inter-spaces.

Transition to Shrub-Dominated (1a) Overgrazing and or extended periods of drought, and suppression of natural fire regimes are thought to cause this transition. As grass cover is lost, soil fertility and available soil moisture decline, due to the reduction of organic matter and decreased infiltration.3 Shrubs have the ability to extract nutrients and water from a greater area of soil than grasses and are better able to utilize limited water. Competition by shrubs for water and nutrients limits grass recruitment and establishment. Fire historically may have played a part in suppressing shrub expansion; fire suppression may therefore facilitate shrub expansion.

Key indicators of approach to transition:
*Decrease or change in composition or distribution of grass cover.
*Increase in size and frequency of bare patches.
*Increase in amount of shrub seedlings.

Transition back to Grassland/Shrub Mix (1b) Brush control is necessary to re-establish grasses. Prescribed grazing will help to ensure proper forage utilization and sustain grass cover. Once the transition is reversed and grass cover is re-established, periodic use of prescribed fire may assist in maintaining the Grassland/Shrub state.

Additional community tables

Table 7. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
Grass/Grasslike					
1				105–158	
	black grama	BOER4	*Bouteloua eriopoda*	105–158	–
2				79–105	
	sideoats grama	BOCU	*Bouteloua curtipendula*	79–105	–
3				79–105	
	blue grama	BOGR2	*Bouteloua gracilis*	79–105	–
	hairy grama	BOHI2	*Bouteloua hirsuta*	79–105	–
4				26–53	
	bush muhly	MUPO2	*Muhlenbergia porteri*	26–53	–
5				16–26	
	cane bluestem	BOBA3	*Bothriochloa barbinodis*	16–26	–
6				26–53	
	sand dropseed	SPCR	*Sporobolus cryptandrus*	26–53	–
7				16–26	
	hairy woollygrass	ERPI5	*Erioneuron pilosum*	16–26	–
8				5–16	
	ear muhly	MUAR	*Muhlenbergia arenacea*	5–16	–
9				5–16	
	New Mexico feathergrass	HENE5	*Hesperostipa neomexicana*	5–16	–
10				5–16	
	low woollygrass	DAPU7	*Dasyochloa pulchella*	5–16	–
11				16–26	
	Grass, perennial	2GP	*Grass, perennial*	16–26	–

Forb					
12				11–26	
	stemless four-nerve daisy	TEACE	*Tetraneuris acaulis var. epunctata*	11–26	–
13				5–16	
	woolly groundsel	PACA15	*Packera cana*	5–16	–
14				5–16	
	globemallow	SPHAE	*Sphaeralcea*	5–16	–
15				5–16	
	bladderpod	LESQU	*Lesquerella*	5–16	–
16				5–16	
	cassia	CASSI	*Cassia*	5–16	–
17				11–26	
	Forb (herbaceous, not grass nor grass-like)	2FORB	*Forb (herbaceous, not grass nor grass-like)*	11–26	–
Shrub/Vine					
18				5–16	
	littleleaf sumac	RHMI3	*Rhus microphylla*	5–16	–
19				5–16	
	creosote bush	LATR2	*Larrea tridentata*	5–16	–
20				5–16	
	littleleaf ratany	KRER	*Krameria erecta*	5–16	–
21				5–16	
	javelina bush	COER5	*Condalia ericoides*	5–16	–
22				5–16	
	American tarwort	FLCE	*Flourensia cernua*	5–16	–
23				5–16	
	crown of thorns	KOSP	*Koeberlinia spinosa*	5–16	–
24				11–26	
	honey mesquite	PRGL2	*Prosopis glandulosa*	11–26	–
	honey mesquite	PRGL2	*Prosopis glandulosa*	11–26	–
25				5–16	
	catclaw mimosa	MIACB	*Mimosa aculeaticarpa var. biuncifera*	5–16	–
26				5–16	
	pricklypear	OPUNT	*Opuntia*	5–16	–
27				11–26	
	mariola	PAIN2	*Parthenium incanum*	11–26	–
	mariola	PAIN2	*Parthenium incanum*	11–26	–
28				5–16	
	broom snakeweed	GUSA2	*Gutierrezia sarothrae*	5–16	–
29				16–26	
	Shrub (>.5m)	2SHRUB	*Shrub (>.5m)*	16–26	–

Animal community

This site provides habitats which support a resident animal community that is characterized by desert cottontail, spotted ground squirrel, Merriam's kangaroo rat, cactus mouse, white-throated woodrat, gray fox, spotted skunk, roadrunner, Swainson's hawk, white-necked raven, cactus wren, pyrrhuloxia, lark sparrow, mourning dove, scaled quail, leopard lizard, round-tailed horned lizard, prairie rattlesnake, marbled whiptail, and greater earless lizard. Where associated with limestone hills, mule deer utilize this site.

Where large woody shrubs occur, most resident birds and scissor-tailed flycatcher, morning dove, lark sparrow and Swainson's hawk nest.

Hydrological functions

The runoff curve numbers are determined by field investigations using hydraulic cover conditions and hydrologic soil groups.

Hydrologic Interpretations
Soil Series-------- Hydrologic Group
Lozier---------- D
Potter---------- C
Tencee---------- D
Upton---------- C
Kimbrough---------- D
Upton---------- D
Ector---------- D

Recreational uses

This site offers recreation potential for hiking, horseback riding, rock hunting, nature photography and bird hunting and birding. During years of abundant spring moisture, a colorful array of wild flowers is displayed during May and June. A few summer and fall flowers also occur.

Wood products

This site has no potential for wood production.

Other products

This site is suited for grazing by all kinds and classes of livestock during all seasons of the year. Missmanagement will cause a decrease in black grama, sideoats grama, and blue grama, bush muhly and New Mexico feathergrass. A corresponding increase in bare ground will occur. There will also be an increase in muhlys, fluffgrass, creosotebush, javalinabush, catclaw, and mesquite. This site will respond best to a system of management that rotates the season of use.

Other information

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month
Similarity Index-------- Ac/AUM
100 - 76---------- 3.7 – 4.5
75 – 51---------- 4.3 – 5.5
50 – 26---------- 5.3 – 10.0
25 – 0---------- 10.1 +

Inventory data references

Data collection for this site was done in conjunction with the progressive soil surveys within the Southern Desertic Basins, Plains and Mountains, Major Land Resource Areas of New Mexico (SD-3). This site has been mapped and

correlated with soils in the following soil surveys. Eddy County, Lea County, and Chaves County.

Other references

Literature Cited:

1. Humphrey, R.R. 1974. Fire in the deserts and desert grassland of North America. In: Kozlowski, T. T.; Ahlgren, C. E., eds. Fire and ecosystems. New York: Academic Press: 365-400.

2. Hennessy, J.T., R.P. Gibbens, J.M. Tromble, and M. Cardenas. 1983. Water properties of caliche. J. Range Manage. 36: 723-726.

3. U.S. Department of Agriculture, Natural Resources Conservation Service. 2001. Soil Quality Information Sheets. Rangeland Soil Quality—Infiltration, Organic Matter, Rangeland Sheets 5,6. [Online]. Available: http://www.statlab.iastate.edu/survey/SQI/range.html

Contributors

David Trujillo
Don Sylvester

Rangeland health reference sheet

Interpreting Indicators of Rangeland Health is a qualitative assessment protocol used to determine ecosystem condition based on benchmark characteristics described in the Reference Sheet. A suite of 17 (or more) indicators are typically considered in an assessment. The ecological site(s) representative of an assessment location must be known prior to applying the protocol and must be verified based on soils and climate. Current plant community cannot be used to identify the ecological site.

Author(s)/participant(s)	
Contact for lead author	
Date	
Approved by	
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:**

---

2. **Presence of water flow patterns:**

---

3. **Number and height of erosional pedestals or terracettes:**

---

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):**

---

5. **Number of gullies and erosion associated with gullies:**

---

6. **Extent of wind scoured, blowouts and/or depositional areas:**

---

7. **Amount of litter movement (describe size and distance expected to travel):**

---

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):**

---

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):**

---

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:**

---

11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):**

---

12. **Functional/Structural Groups (list in order of descending dominance by above-ground annual-production or live foliar cover using symbols: >>, >, = to indicate much greater than, greater than, and equal to):**

    Dominant:

    Sub-dominant:

    Other:

    Additional:

---

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

---

14. **Average percent litter cover (%) and depth (in):**

---

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

---

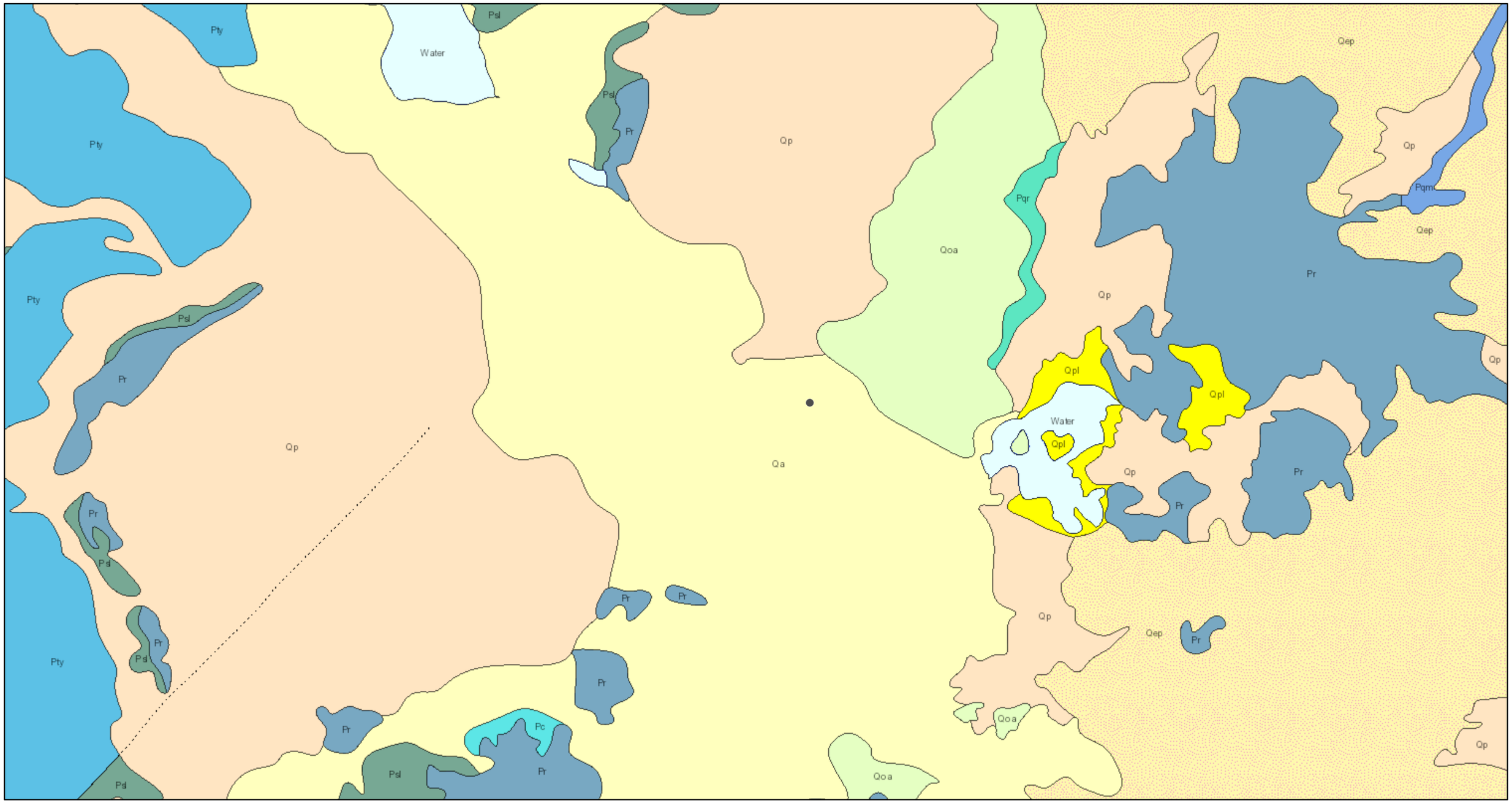
16. **Potential invasive (including noxious) species (native and non-native). List species which BOTH characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if**

their future establishment and growth is not actively controlled by management interventions. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasive plants. Note that unlike other indicators, we are describing what is NOT expected in the reference state for the ecological site:

---

17. **Perennial plant reproductive capability:**

ArcGIS Web Map



3/17/2022, 2:25:00 PM

1:144,448

Lithologic Units

- Playa—Alluvium and evaporite deposits (Holocene)
- Water—Perenial standing water
- Qa—Alluvium (Holocene to upper Pleistocene)
- Ql—Landslide deposits and colluvium (Holocene to Pleistocene) — Landslide deposits on western flanks of Socorro Mountains not shown for clarity
- Qpl—Lacustrine and playa deposits (Holocene) — Includes associated alluvial and eolian deposits of major lake basins
- Qp—Piedmont alluvial deposits (Holocene to lower Pleistocene)
- Qe—Eolian deposits (Holocene to middle Pleistocene)
- Qeg—Gypsiferous eolian deposits (Holocene to middle Pleistocene)

0 1.5 3 6 mi

0 2.5 5 10 km

USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS

ArcGIS Web AppBuilder

USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line

APPENDIX C – Final Daily Field Report

Daily Site Visit Report

Client:	BTA Oil Producers LLC	Inspection Date:	7/20/2023
Site Location Name:	Pecos Irrigation 1-10 Tank Battery	Report Run Date:	7/20/2023 7:50 PM
Client Contact Name:	Bob Hall	API #:	
Client Contact Phone #:	432-312-2203		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	7/20/2023 6:30 AM
Departed Site	7/20/2023 2:00 PM

Field Notes

11:58 Arrived at location and filled out safety paperwork. Will continue to collect confirmatory samples from the excavated base.

12:01 Collected remaining base samples from the excavation. Labeled them as BS23- 15-30 @ 4ft. Field screen samples for chlorides and TPH and placed clean samples into glass jars. Updated sample points on Field Maps and DSS.

Next Steps & Recommendations

1

Daily Site Visit Report

Site Photos

Viewing Direction: South	**Viewing Direction**: Northwest
	
Overview of excavation	Overview of excavation
Viewing Direction: Southwest	**Viewing Direction**: Northwest
	
Overview of excavation	Overview of excavation

Daily Site Visit Report

Viewing Direction: Northeast	**Viewing Direction**: Southeast
	
Overview of excavation	Overview of excavation

Viewing Direction: Southeast	**Viewing Direction**: West
	
Overview of excavation	Overview of excavation

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Fernando Rodriguez

Signature: 

APPENDIX D – Notification

Gmail

Dhugal Hanton <vertexresourcegroupusa@gmail.com>

48-Hour Notification - Pecos Irrigation 1-10

2 messages

Dhugal Hanton <vertexresourcegroupusa@gmail.com> Tue, Jul 11, 2023 at 9:06 AM
To: "Enviro, OCD, EMNRD" <OCD.Enviro@emnrd.nm.gov>
Cc: KBeaird@btaoil.com

All,

Please accept this email as notification that Vertex Resource Services has scheduled a sampling event to be conducted at the following release.

nAPP2204056995

On Tuesday, July 18, 2023, at approximately 8:00 a.m., Vertex will be on site to conduct confirmation sampling. The sampling will continue through Friday, July 21, 2023. If you have any questions regarding this notification, please call me at 575-988-1472.

Thank you,

Chance Dixon B.Sc.
Project Manager

Vertex Resource Services Inc.
3101 Boyd Drive,
Carlsbad, NM 88220

C 575.988.1472

Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov> Tue, Jul 11, 2023 at 3:13 PM
To: Dhugal Hanton <vertexresourcegroupusa@gmail.com>
Cc: "Bratcher, Michael, EMNRD" <mike.bratcher@emnrd.nm.gov>, "Hamlet, Robert, EMNRD" <Robert.Hamlet@emnrd.nm.gov>

Chance,

The OCD has received your notification. Include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

JH

Jocelyn Harimon ● Environmental Specialist

Environmental Bureau

EMNRD - Oil Conservation Division

1220 South St. Francis Drive | Santa Fe, NM 87505

(505)469-2821 | Jocelyn.Harimon@emnrd.nm.gov

http:// **www.emnrd.nm.gov**

From: Dhugal Hanton <vertexresourcegroupusa@gmail.com>
Sent: Tuesday, July 11, 2023 9:07 AM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Cc: KBeaird@btaoil.com
Subject: [EXTERNAL] 48-Hour Notification - Pecos Irrigation 1-10

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

[Quoted text hidden]

APPENDIX E – Laboratory Data Reports and Chain of Custody Forms

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

April 07, 2022

Dennis Williams

Vertex Resources Services, Inc.
3101 Boyd Drive
Carlsbad, NM 88220
TEL: (505) 506-0040
FAX:

RE: Pecos Irrigation 1 10 OrderNo.: 2203E18

Dear Dennis Williams:

Hall Environmental Analysis Laboratory received 8 sample(s) on 3/26/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com 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,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2203E18**
Date Reported: **4/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH22-01 0'
Project: Pecos Irrigation 1 10
Collection Date: 3/24/2022 10:00:00 AM
Lab ID: 2203E18-001 **Matrix:** SOIL **Received Date:** 3/26/2022 1:50:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**LRN**
Chloride	850	60		mg/Kg	20	4/1/2022 2:32:58 PM	66575
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**SB**
Diesel Range Organics (DRO)	80	9.7		mg/Kg	1	3/30/2022 4:57:06 PM	66475
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/30/2022 4:57:06 PM	66475
Surr: DNOP	107	51.1-141		%Rec	1	3/30/2022 4:57:06 PM	66475
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**BRM**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	3/30/2022 10:43:00 PM	66457
Surr: BFB	107	37.7-212		%Rec	1	3/30/2022 10:43:00 PM	66457
EPA METHOD 8021B: VOLATILES						Analyst:	**BRM**
Benzene	ND	0.023		mg/Kg	1	3/30/2022 10:43:00 PM	66457
Toluene	ND	0.046		mg/Kg	1	3/30/2022 10:43:00 PM	66457
Ethylbenzene	ND	0.046		mg/Kg	1	3/30/2022 10:43:00 PM	66457
Xylenes, Total	ND	0.091		mg/Kg	1	3/30/2022 10:43:00 PM	66457
Surr: 4-Bromofluorobenzene	81.5	70-130		%Rec	1	3/30/2022 10:43:00 PM	66457

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

Qualifiers:

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

Analytical Report
Lab Order **2203E18**
Date Reported: **4/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH22-02 0'
Project: Pecos Irrigation 1 10
Collection Date: 3/24/2022 10:10:00 AM
Lab ID: 2203E18-002 **Matrix:** SOIL
Received Date: 3/26/2022 1:50:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**LRN**
Chloride	2400	150		mg/Kg	50	4/4/2022 4:32:32 PM	66575
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**SB**
Diesel Range Organics (DRO)	890	9.5		mg/Kg	1	3/30/2022 5:07:56 PM	66475
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/30/2022 5:07:56 PM	66475
Surr: DNOP	93.2	51.1-141		%Rec	1	3/30/2022 5:07:56 PM	66475
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**BRM**
Gasoline Range Organics (GRO)	ND	24		mg/Kg	5	3/30/2022 11:03:00 PM	66457
Surr: BFB	105	37.7-212		%Rec	5	3/30/2022 11:03:00 PM	66457
EPA METHOD 8021B: VOLATILES						Analyst:	**BRM**
Benzene	ND	0.12		mg/Kg	5	3/30/2022 11:03:00 PM	66457
Toluene	ND	0.24		mg/Kg	5	3/30/2022 11:03:00 PM	66457
Ethylbenzene	ND	0.24		mg/Kg	5	3/30/2022 11:03:00 PM	66457
Xylenes, Total	ND	0.47		mg/Kg	5	3/30/2022 11:03:00 PM	66457
Surr: 4-Bromofluorobenzene	83.0	70-130		%Rec	5	3/30/2022 11:03:00 PM	66457

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

Qualifiers:

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

Analytical Report
Lab Order **2203E18**
Date Reported: **4/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH22-03 0'
Project: Pecos Irrigation 1 10
Collection Date: 3/24/2022 10:20:00 AM
Lab ID: 2203E18-003 **Matrix:** SOIL **Received Date:** 3/26/2022 1:50:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**LRN**
Chloride	7800	300		mg/Kg	100	4/4/2022 4:44:56 PM	66575
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**JME**
Diesel Range Organics (DRO)	2300	96		mg/Kg	10	4/4/2022 4:06:58 PM	66475
Motor Oil Range Organics (MRO)	ND	480	D	mg/Kg	10	4/4/2022 4:06:58 PM	66475
Surr: DNOP	0	51.1-141	S	%Rec	10	4/4/2022 4:06:58 PM	66475
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**BRM**
Gasoline Range Organics (GRO)	28	23		mg/Kg	5	3/30/2022 11:23:00 PM	66457
Surr: BFB	133	37.7-212		%Rec	5	3/30/2022 11:23:00 PM	66457
EPA METHOD 8021B: VOLATILES						Analyst:	**BRM**
Benzene	ND	0.11		mg/Kg	5	3/30/2022 11:23:00 PM	66457
Toluene	ND	0.23		mg/Kg	5	3/30/2022 11:23:00 PM	66457
Ethylbenzene	ND	0.23		mg/Kg	5	3/30/2022 11:23:00 PM	66457
Xylenes, Total	ND	0.46		mg/Kg	5	3/30/2022 11:23:00 PM	66457
Surr: 4-Bromofluorobenzene	87.7	70-130		%Rec	5	3/30/2022 11:23:00 PM	66457

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

Qualifiers:

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

Analytical Report
Lab Order **2203E18**
Date Reported: **4/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH22-04 0'
Project: Pecos Irrigation 1 10
Collection Date: 3/24/2022 10:30:00 AM
Lab ID: 2203E18-004 **Matrix:** SOIL
Received Date: 3/26/2022 1:50:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LRN**	
Chloride	5200	300		mg/Kg	100	4/4/2022 5:22:09 PM	66575
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**	
Diesel Range Organics (DRO)	38	9.7		mg/Kg	1	3/31/2022 11:51:08 AM	66502
Motor Oil Range Organics (MRO)	66	48		mg/Kg	1	3/31/2022 11:51:08 AM	66502
Surr: DNOP	95.1	51.1-141		%Rec	1	3/31/2022 11:51:08 AM	66502
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/30/2022 11:43:00 PM	66461
Surr: BFB	97.5	37.7-212		%Rec	1	3/30/2022 11:43:00 PM	66461
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**	
Benzene	ND	0.024		mg/Kg	1	3/30/2022 11:43:00 PM	66461
Toluene	ND	0.048		mg/Kg	1	3/30/2022 11:43:00 PM	66461
Ethylbenzene	ND	0.048		mg/Kg	1	3/30/2022 11:43:00 PM	66461
Xylenes, Total	ND	0.096		mg/Kg	1	3/30/2022 11:43:00 PM	66461
Surr: 4-Bromofluorobenzene	78.7	70-130		%Rec	1	3/30/2022 11:43:00 PM	66461

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

Qualifiers:

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

Analytical Report
Lab Order **2203E18**
Date Reported: **4/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH22-05 0'
Project: Pecos Irrigation 1 10
Collection Date: 3/24/2022 10:40:00 AM
Lab ID: 2203E18-005 **Matrix:** SOIL **Received Date:** 3/26/2022 1:50:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LRN**	
Chloride	8600	300		mg/Kg	100	4/4/2022 5:34:34 PM	66575
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	3/31/2022 1:04:10 PM	66502
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/31/2022 1:04:10 PM	66502
Surr: DNOP	96.4	51.1-141		%Rec	1	3/31/2022 1:04:10 PM	66502
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/31/2022 12:43:00 AM	66461
Surr: BFB	99.3	37.7-212		%Rec	1	3/31/2022 12:43:00 AM	66461
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**	
Benzene	ND	0.024		mg/Kg	1	3/31/2022 12:43:00 AM	66461
Toluene	ND	0.048		mg/Kg	1	3/31/2022 12:43:00 AM	66461
Ethylbenzene	ND	0.048		mg/Kg	1	3/31/2022 12:43:00 AM	66461
Xylenes, Total	ND	0.096		mg/Kg	1	3/31/2022 12:43:00 AM	66461
Surr: 4-Bromofluorobenzene	78.9	70-130		%Rec	1	3/31/2022 12:43:00 AM	66461

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

Qualifiers:

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

Analytical Report
Lab Order **2203E18**
Date Reported: **4/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BG22-01 0'
Project: Pecos Irrigation 1 10
Collection Date: 3/24/2022 11:00:00 AM
Lab ID: 2203E18-006 **Matrix:** SOIL **Received Date:** 3/26/2022 1:50:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**LRN**
Chloride	ND	60		mg/Kg	20	4/1/2022 3:34:41 PM	66575
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**ED**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	3/31/2022 1:28:28 PM	66502
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/31/2022 1:28:28 PM	66502
Surr: DNOP	94.4	51.1-141		%Rec	1	3/31/2022 1:28:28 PM	66502
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**BRM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/31/2022 2:02:00 AM	66461
Surr: BFB	94.0	37.7-212		%Rec	1	3/31/2022 2:02:00 AM	66461
EPA METHOD 8021B: VOLATILES						Analyst:	**BRM**
Benzene	ND	0.024		mg/Kg	1	3/31/2022 2:02:00 AM	66461
Toluene	ND	0.048		mg/Kg	1	3/31/2022 2:02:00 AM	66461
Ethylbenzene	ND	0.048		mg/Kg	1	3/31/2022 2:02:00 AM	66461
Xylenes, Total	ND	0.096		mg/Kg	1	3/31/2022 2:02:00 AM	66461
Surr: 4-Bromofluorobenzene	76.3	70-130		%Rec	1	3/31/2022 2:02:00 AM	66461

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

Qualifiers:

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

Analytical Report
Lab Order **2203E18**
Date Reported: **4/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BG22-01 0.5'
Project: Pecos Irrigation 1 10
Collection Date: 3/24/2022 11:05:00 AM
Lab ID: 2203E18-007 **Matrix:** SOIL **Received Date:** 3/26/2022 1:50:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**LRN**
Chloride	ND	60		mg/Kg	20	4/1/2022 3:47:01 PM	66575
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**ED**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	3/31/2022 1:52:48 PM	66502
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/31/2022 1:52:48 PM	66502
Surr: DNOP	86.9	51.1-141		%Rec	1	3/31/2022 1:52:48 PM	66502
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**BRM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/31/2022 2:22:00 AM	66461
Surr: BFB	97.0	37.7-212		%Rec	1	3/31/2022 2:22:00 AM	66461
EPA METHOD 8021B: VOLATILES						Analyst:	**BRM**
Benzene	ND	0.024		mg/Kg	1	3/31/2022 2:22:00 AM	66461
Toluene	ND	0.048		mg/Kg	1	3/31/2022 2:22:00 AM	66461
Ethylbenzene	ND	0.048		mg/Kg	1	3/31/2022 2:22:00 AM	66461
Xylenes, Total	ND	0.096		mg/Kg	1	3/31/2022 2:22:00 AM	66461
Surr: 4-Bromofluorobenzene	81.4	70-130		%Rec	1	3/31/2022 2:22:00 AM	66461

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

Qualifiers:

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

Analytical Report
Lab Order **2203E18**
Date Reported: **4/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH22-06 0'
Project: Pecos Irrigation 1 10
Collection Date: 3/24/2022 1:15:00 PM
Lab ID: 2203E18-008 **Matrix:** SOIL **Received Date:** 3/26/2022 1:50:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**LRN**
Chloride	3700	150		mg/Kg	50	4/4/2022 5:46:58 PM	66575
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**ED**
Diesel Range Organics (DRO)	36000	980		mg/Kg	100	4/2/2022 8:03:00 AM	66502
Motor Oil Range Organics (MRO)	ND	4900	D	mg/Kg	100	4/2/2022 8:03:00 AM	66502
Surr: DNOP	0	51.1-141	S	%Rec	100	4/2/2022 8:03:00 AM	66502
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**BRM**
Gasoline Range Organics (GRO)	890	24		mg/Kg	5	3/31/2022 2:42:00 AM	66461
Surr: BFB	228	37.7-212	S	%Rec	5	3/31/2022 2:42:00 AM	66461
EPA METHOD 8021B: VOLATILES						Analyst:	**BRM**
Benzene	0.38	0.12		mg/Kg	5	3/31/2022 2:42:00 AM	66461
Toluene	8.2	0.24		mg/Kg	5	3/31/2022 2:42:00 AM	66461
Ethylbenzene	3.3	0.24		mg/Kg	5	3/31/2022 2:42:00 AM	66461
Xylenes, Total	40	0.48		mg/Kg	5	3/31/2022 2:42:00 AM	66461
Surr: 4-Bromofluorobenzene	120	70-130		%Rec	5	3/31/2022 2:42:00 AM	66461

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203E18**

07-Apr-22

Client: Vertex Resources Services, Inc.

Project: Pecos Irrigation 1 10

Sample ID: **MB-66575** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**

Client ID: **PBS** Batch ID: **66575** RunNo: **86918**

Prep Date: **4/1/2022** Analysis Date: **4/1/2022** SeqNo: **3072574** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-66575** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**

Client ID: **LCSS** Batch ID: **66575** RunNo: **86918**

Prep Date: **4/1/2022** Analysis Date: **4/1/2022** SeqNo: **3072575** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.2	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203E18**

07-Apr-22

Client: Vertex Resources Services, Inc.

Project: Pecos Irrigation 1 10

Sample ID: **LCS-66475** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **66475** RunNo: **86840**
Prep Date: **3/29/2022** Analysis Date: **3/30/2022** SeqNo: **3067455** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	10	50.00	0	107	68.9	135			
Surr: DNOP	4.5		5.000		89.8	51.1	141			

Sample ID: **MB-66475** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **66475** RunNo: **86840**
Prep Date: **3/29/2022** Analysis Date: **3/30/2022** SeqNo: **3067457** Units: **mg/Kg**

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	9.4		10.00		94.4	51.1	141			

Sample ID: **2203E12-001AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BatchQC** Batch ID: **66475** RunNo: **86840**
Prep Date: **3/29/2022** Analysis Date: **3/30/2022** SeqNo: **3068618** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	9.7	48.54	8.541	75.5	36.1	154			
Surr: DNOP	3.4		4.854		69.6	51.1	141			

Sample ID: **2203E12-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BatchQC** Batch ID: **66475** RunNo: **86840**
Prep Date: **3/29/2022** Analysis Date: **3/30/2022** SeqNo: **3068619** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	9.5	47.57	8.541	76.7	36.1	154	0.405	33.9	
Surr: DNOP	3.4		4.757		71.7	51.1	141	0	0	

Sample ID: **LCS-66507** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **66507** RunNo: **86887**
Prep Date: **3/30/2022** Analysis Date: **3/31/2022** SeqNo: **3069715** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	3.8		5.000		75.1	51.1	141			

Sample ID: **MB-66507** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **66507** RunNo: **86887**
Prep Date: **3/30/2022** Analysis Date: **3/31/2022** SeqNo: **3069718** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203E18**

07-Apr-22

Client: Vertex Resources Services, Inc.

Project: Pecos Irrigation 1 10

Sample ID: **MB-66507** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **66507** RunNo: **86887**
Prep Date: **3/30/2022** Analysis Date: **3/31/2022** SeqNo: **3069718** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.9		10.00		88.8	51.1	141			

Sample ID: **2203F63-001AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BatchQC** Batch ID: **66507** RunNo: **86887**
Prep Date: **3/30/2022** Analysis Date: **4/1/2022** SeqNo: **3070122** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.1		4.946		82.3	51.1	141			

Sample ID: **2203F63-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BatchQC** Batch ID: **66507** RunNo: **86887**
Prep Date: **3/30/2022** Analysis Date: **4/1/2022** SeqNo: **3070123** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.5		5.030		89.1	51.1	141	0	0	

Sample ID: **2203E18-004AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH22-04 0'** Batch ID: **66502** RunNo: **86904**
Prep Date: **3/30/2022** Analysis Date: **3/31/2022** SeqNo: **3070218** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	85	9.8	49.02	38.15	95.7	36.1	154			
Surr: DNOP	4.5		4.902		91.2	51.1	141			

Sample ID: **2203E18-004AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH22-04 0'** Batch ID: **66502** RunNo: **86904**
Prep Date: **3/30/2022** Analysis Date: **3/31/2022** SeqNo: **3070219** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	83	9.7	48.73	38.15	92.7	36.1	154	2.07	33.9	
Surr: DNOP	4.3		4.873		87.2	51.1	141	0	0	

Sample ID: **LCS-66502** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **66502** RunNo: **86904**
Prep Date: **3/30/2022** Analysis Date: **3/31/2022** SeqNo: **3070239** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	10	50.00	0	86.9	68.9	135			
Surr: DNOP	4.3		5.000		86.3	51.1	141			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203E18**

07-Apr-22

Client: Vertex Resources Services, Inc.

Project: Pecos Irrigation 1 10

Sample ID: **MB-66502**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **66502**	RunNo: **86904**
Prep Date: **3/30/2022**	Analysis Date: **3/31/2022**	SeqNo: **3070240** Units: **mg/Kg**

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	9.8		10.00		97.8	51.1	141			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203E18**

07-Apr-22

Client: Vertex Resources Services, Inc.

Project: Pecos Irrigation 1 10

Sample ID: **lcs-66457**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **66457**	RunNo: **86864**							
Prep Date: **3/29/2022**	Analysis Date: **3/30/2022**	SeqNo: **3068287**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	29	5.0	25.00	0	114	72.3	137			
Surr: BFB	2300		1000		231	37.7	212			S

Sample ID: **mb-66457**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBS**	Batch ID: **66457**	RunNo: **86864**							
Prep Date: **3/29/2022**	Analysis Date: **3/30/2022**	SeqNo: **3068289**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1100		1000		106	37.7	212			

Sample ID: **lcs-66461**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **66461**	RunNo: **86864**							
Prep Date: **3/29/2022**	Analysis Date: **3/30/2022**	SeqNo: **3068290**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	29	5.0	25.00	0	115	72.3	137			
Surr: BFB	2300		1000		229	37.7	212			S

Sample ID: **mb-66461**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBS**	Batch ID: **66461**	RunNo: **86864**							
Prep Date: **3/29/2022**	Analysis Date: **3/30/2022**	SeqNo: **3068291**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1100		1000		105	37.7	212			

Sample ID: **2203e12-001ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **BatchQC**	Batch ID: **66457**	RunNo: **86864**							
Prep Date: **3/29/2022**	Analysis Date: **3/30/2022**	SeqNo: **3068298**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	29	4.8	23.95	0	122	70	130			
Surr: BFB	2300		957.9		241	37.7	212			S

Sample ID: **2203e12-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **BatchQC**	Batch ID: **66457**	RunNo: **86864**							
Prep Date: **3/29/2022**	Analysis Date: **3/30/2022**	SeqNo: **3068299**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203E18**

07-Apr-22

Client: Vertex Resources Services, Inc.

Project: Pecos Irrigation 1 10

Sample ID: **2203e12-001amsd** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BatchQC** Batch ID: **66457** RunNo: **86864**
Prep Date: **3/29/2022** Analysis Date: **3/30/2022** SeqNo: **3068299** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	30	4.8	23.83	0	125	70	130	2.21	20	
Surr: BFB	2400		953.3		250	37.7	212	0	0	S

Sample ID: **2203e18-004ams** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH22-04 0'** Batch ID: **66461** RunNo: **86864**
Prep Date: **3/29/2022** Analysis Date: **3/31/2022** SeqNo: **3068327** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	29	4.8	24.04	0	119	70	130			
Surr: BFB	2200		961.5		229	37.7	212			S

Sample ID: **2203e18-004amsd** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH22-04 0'** Batch ID: **66461** RunNo: **86864**
Prep Date: **3/29/2022** Analysis Date: **3/31/2022** SeqNo: **3068328** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	32	4.8	24.22	0	133	70	130	12.2	20	S
Surr: BFB	2300		969.0		241	37.7	212	0	0	S

Sample ID: **lcs-66482** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS** Batch ID: **66482** RunNo: **86896**
Prep Date: **3/29/2022** Analysis Date: **3/31/2022** SeqNo: **3069888** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	2100		1000		211	37.7	212			

Sample ID: **mb-66482** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS** Batch ID: **66482** RunNo: **86896**
Prep Date: **3/29/2022** Analysis Date: **4/1/2022** SeqNo: **3069889** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		101	37.7	212			

Sample ID: **2203e30-019ams** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BatchQC** Batch ID: **66482** RunNo: **86896**
Prep Date: **3/29/2022** Analysis Date: **4/1/2022** SeqNo: **3069894** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	2200		977.5		222	37.7	212			S

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203E18**

07-Apr-22

Client: Vertex Resources Services, Inc.

Project: Pecos Irrigation 1 10

Sample ID: **2203e30-019amsd**	SampType: **MSD**			TestCode: **EPA Method 8015D: Gasoline Range**						
Client ID: **BatchQC**	Batch ID: **66482**			RunNo: **86896**						
Prep Date: **3/29/2022**	Analysis Date: **4/1/2022**			SeqNo: **3069895**		Units: **%Rec**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	2600		990.1		265	37.7	212	0	0	S

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203E18**

07-Apr-22

Client: Vertex Resources Services, Inc.

Project: Pecos Irrigation 1 10

Sample ID: **lcs-66457**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **66457**	RunNo: **86864**
Prep Date: **3/29/2022**	Analysis Date: **3/30/2022**	SeqNo: **3068372** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.025	1.000	0	90.6	80	120			
Toluene	0.93	0.050	1.000	0	92.5	80	120			
Ethylbenzene	0.93	0.050	1.000	0	93.0	80	120			
Xylenes, Total	2.8	0.10	3.000	0	92.9	80	120			
Surr: 4-Bromofluorobenzene	0.87		1.000		87.1	70	130			

Sample ID: **mb-66457**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **66457**	RunNo: **86864**
Prep Date: **3/29/2022**	Analysis Date: **3/30/2022**	SeqNo: **3068373** Units: **mg/Kg**

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	0.85		1.000		84.7	70	130			

Sample ID: **lcs-66461**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **66461**	RunNo: **86864**
Prep Date: **3/29/2022**	Analysis Date: **3/30/2022**	SeqNo: **3068375** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.025	1.000	0	89.6	80	120			
Toluene	0.91	0.050	1.000	0	91.4	80	120			
Ethylbenzene	0.92	0.050	1.000	0	92.0	80	120			
Xylenes, Total	2.8	0.10	3.000	0	91.8	80	120			
Surr: 4-Bromofluorobenzene	0.89		1.000		88.6	70	130			

Sample ID: **mb-66461**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **66461**	RunNo: **86864**
Prep Date: **3/29/2022**	Analysis Date: **3/30/2022**	SeqNo: **3068376** Units: **mg/Kg**

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	0.87		1.000		87.3	70	130			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203E18**
07-Apr-22

Client: Vertex Resources Services, Inc.
Project: Pecos Irrigation 1 10

Sample ID: **2203e12-002ams** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BatchQC** Batch ID: **66457** RunNo: **86864**
Prep Date: **3/29/2022** Analysis Date: **3/30/2022** SeqNo: **3068384** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.024	0.9756	0	96.2	68.8	120			
Toluene	0.96	0.049	0.9756	0	98.5	73.6	124			
Ethylbenzene	0.97	0.049	0.9756	0	99.8	72.7	129			
Xylenes, Total	2.9	0.098	2.927	0	99.6	75.7	126			
Surr: 4-Bromofluorobenzene	0.84		0.9756		85.9	70	130			

Sample ID: **2203e12-002amsd** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BatchQC** Batch ID: **66457** RunNo: **86864**
Prep Date: **3/29/2022** Analysis Date: **3/30/2022** SeqNo: **3068386** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.97	0.024	0.9718	0	99.6	68.8	120	3.13	20	
Toluene	1.0	0.049	0.9718	0	103	73.6	124	3.75	20	
Ethylbenzene	1.0	0.049	0.9718	0	105	72.7	129	4.35	20	
Xylenes, Total	3.0	0.097	2.915	0	104	75.7	126	4.15	20	
Surr: 4-Bromofluorobenzene	0.83		0.9718		85.2	70	130	0	0	

Sample ID: **2203e18-005ams** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH22-05 0'** Batch ID: **66461** RunNo: **86864**
Prep Date: **3/29/2022** Analysis Date: **3/31/2022** SeqNo: **3068414** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.025	0.9891	0	89.8	68.8	120			
Toluene	0.91	0.049	0.9891	0	91.7	73.6	124			
Ethylbenzene	0.91	0.049	0.9891	0	92.0	72.7	129			
Xylenes, Total	2.7	0.099	2.967	0	90.7	75.7	126			
Surr: 4-Bromofluorobenzene	0.75		0.9891		75.4	70	130			

Sample ID: **2203e18-005amsd** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH22-05 0'** Batch ID: **66461** RunNo: **86864**
Prep Date: **3/29/2022** Analysis Date: **3/31/2022** SeqNo: **3068416** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.87	0.024	0.9737	0	89.5	68.8	120	1.96	20	
Toluene	0.90	0.049	0.9737	0	92.1	73.6	124	1.16	20	
Ethylbenzene	0.90	0.049	0.9737	0	92.4	72.7	129	1.08	20	
Xylenes, Total	2.7	0.097	2.921	0	91.4	75.7	126	0.725	20	
Surr: 4-Bromofluorobenzene	0.73		0.9737		75.1	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 Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203E18**

07-Apr-22

Client: Vertex Resources Services, Inc.

Project: Pecos Irrigation 1 10

Sample ID: **lcs-66482** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **LCSS** Batch ID: **66482** RunNo: **86896**

Prep Date: **3/29/2022** Analysis Date: **3/31/2022** SeqNo: **3069936** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.80		1.000		80.3	70	130			

Sample ID: **mb-66482** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBS** Batch ID: **66482** RunNo: **86896**

Prep Date: **3/29/2022** Analysis Date: **4/1/2022** SeqNo: **3069937** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.81		1.000		81.4	70	130			

Sample ID: **2203e30-020ams** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **BatchQC** Batch ID: **66482** RunNo: **86896**

Prep Date: **3/29/2022** Analysis Date: **4/1/2022** SeqNo: **3069943** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.81		0.9862		81.8	70	130			

Sample ID: **2203e30-020amsd** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **BatchQC** Batch ID: **66482** RunNo: **86896**

Prep Date: **3/29/2022** Analysis Date: **4/1/2022** SeqNo: **3069944** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.78		0.9990		77.9	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 Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

ENVIRONMENTAL ANALYSIS LABORATORY

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: 2203E18

RcptNo: 1

Received By: Tracy Casarrubias 3/26/2022 10:00:00 AM

Completed By: Tracy Casarrubias 3/26/2022 1:53:53 PM

Reviewed By: KPG 3/28/22

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° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☐ No ☐ NA ☑
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (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: JM 3/28/22

Special Handling (if applicable)

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

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.1	Good	Yes			
2	5.8	Good	Yes			

Chain-of-Custody Record

Client: vertex

Mailing Address: on File

Phone #:

email or Fax#:

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: 5-Day
☑ Standard ☐ Rush

Project Name: Pecos Irrigation 1-10

Project #: 22E-00933

Project Manager: Dennis Williams

Sampler: CD

On Ice: ☑ Yes ☐ No

# of Coolers: 2

Cooler Temp(including CF): 5.1 - 0 = 5.1 (°C)
5.8 - 0 = 5.8

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2203E18	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
3/24	10:00	Soil	BHzz-01 0'	4oz	Ice	001	✓	✓					✓			
	10:10		BHzz-02 0'			002										
	10:20		BHzz-03 0'			003										
	10:30		BHzz-04 0'			004										
	10:40		BHzz-05 0'			005										
	11:00		BGzz-01 0'			006										
	11:05		BGzz-01 0.5'			007										
	~~13:15~~		BHzz-06 0'			008										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
					3/25/22	1135
3/25/22	1900				3/26/22	13:50

Remarks: CC: Chance Dixon

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Analytical Report
Lab Order **2204560**
Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** TP22-01 0'
Project: Pecos Irrigation 1-10 **Collection Date:** 4/11/2022 10:30:00 AM
Lab ID: 2204560-001 **Matrix:** SOIL **Received Date:** 4/13/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	4/14/2022 10:52:28 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/14/2022 10:52:28 PM
Surr: DNOP	53.5	51.1-141		%Rec	1	4/14/2022 10:52:28 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/15/2022 4:37:13 AM
Surr: BFB	99.4	37.7-212		%Rec	1	4/15/2022 4:37:13 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	4/15/2022 4:37:13 AM
Toluene	ND	0.048		mg/Kg	1	4/15/2022 4:37:13 AM
Ethylbenzene	ND	0.048		mg/Kg	1	4/15/2022 4:37:13 AM
Xylenes, Total	ND	0.097		mg/Kg	1	4/15/2022 4:37:13 AM
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	4/15/2022 4:37:13 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	59		mg/Kg	20	4/19/2022 7:32:50 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2204560**
Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** TP22-01 2"
Project: Pecos Irrigation 1-10 **Collection Date:** 4/11/2022 10:35:00 AM
Lab ID: 2204560-002 **Matrix:** SOIL **Received Date:** 4/13/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	4/14/2022 11:16:51 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	4/14/2022 11:16:51 PM
Surr: DNOP	56.2	51.1-141		%Rec	1	4/14/2022 11:16:51 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/14/2022 10:13:00 PM
Surr: BFB	99.7	37.7-212		%Rec	1	4/14/2022 10:13:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.024		mg/Kg	1	4/14/2022 10:13:00 PM
Toluene	ND	0.049		mg/Kg	1	4/14/2022 10:13:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	4/14/2022 10:13:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	4/14/2022 10:13:00 PM
Surr: 4-Bromofluorobenzene	81.3	70-130		%Rec	1	4/14/2022 10:13:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	4/19/2022 8:10:05 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2204560**
Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** TP22-07 0'
Project: Pecos Irrigation 1-10 **Collection Date:** 4/11/2022 11:00:00 AM
Lab ID: 2204560-003 **Matrix:** SOIL **Received Date:** 4/13/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	4/14/2022 11:41:04 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/14/2022 11:41:04 PM
Surr: DNOP	64.4	51.1-141		%Rec	1	4/14/2022 11:41:04 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/14/2022 10:33:00 PM
Surr: BFB	98.9	37.7-212		%Rec	1	4/14/2022 10:33:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.024		mg/Kg	1	4/14/2022 10:33:00 PM
Toluene	ND	0.048		mg/Kg	1	4/14/2022 10:33:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	4/14/2022 10:33:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	4/14/2022 10:33:00 PM
Surr: 4-Bromofluorobenzene	80.5	70-130		%Rec	1	4/14/2022 10:33:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	350	60		mg/Kg	20	4/19/2022 8:22:29 PM

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

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

April 25, 2022

Dennis Williams

Vertex Resources Services, Inc.
3101 Boyd Drive
Carlsbad, NM 88220
TEL: (505) 506-0040
FAX:

RE: Pecos Irrigation 1 10 OrderNo.: 2204627

Dear Dennis Williams:

Hall Environmental Analysis Laboratory received 6 sample(s) on 4/14/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com 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,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2204627**
Date Reported: **4/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** TP22-02 6'
Project: Pecos Irrigation 1 10 **Collection Date:** 4/12/2022 8:00:00 AM
Lab ID: 2204627-001 **Matrix:** SOIL **Received Date:** 4/14/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	4/18/2022 8:44:53 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/18/2022 8:44:53 PM
Surr: DNOP	84.9	51.1-141		%Rec	1	4/18/2022 8:44:53 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/15/2022 6:14:00 PM
Surr: BFB	92.9	37.7-212		%Rec	1	4/15/2022 6:14:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	4/15/2022 6:14:00 PM
Toluene	ND	0.048		mg/Kg	1	4/15/2022 6:14:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	4/15/2022 6:14:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	4/15/2022 6:14:00 PM
Surr: 4-Bromofluorobenzene	78.9	70-130		%Rec	1	4/15/2022 6:14:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	4/21/2022 2:30:35 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2204627**
Date Reported: **4/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: TP22-03 8'
Project: Pecos Irrigation 1 10
Collection Date: 4/12/2022 8:05:00 AM
Lab ID: 2204627-002 **Matrix:** SOIL **Received Date:** 4/14/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	4/18/2022 9:08:48 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/18/2022 9:08:48 PM
Surr: DNOP	84.7	51.1-141		%Rec	1	4/18/2022 9:08:48 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/15/2022 6:34:00 PM
Surr: BFB	93.9	37.7-212		%Rec	1	4/15/2022 6:34:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	4/15/2022 6:34:00 PM
Toluene	ND	0.048		mg/Kg	1	4/15/2022 6:34:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	4/15/2022 6:34:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	4/15/2022 6:34:00 PM
Surr: 4-Bromofluorobenzene	78.5	70-130		%Rec	1	4/15/2022 6:34:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	59		mg/Kg	20	4/21/2022 2:43:00 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2204627**
Date Reported: **4/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** TP22-04 6'
Project: Pecos Irrigation 1 10 **Collection Date:** 4/12/2022 8:10:00 AM
Lab ID: 2204627-003 **Matrix:** SOIL **Received Date:** 4/14/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**
Diesel Range Organics (DRO)	14	9.3		mg/Kg	1	4/18/2022 9:32:27 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/18/2022 9:32:27 PM
Surr: DNOP	86.1	51.1-141		%Rec	1	4/18/2022 9:32:27 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/15/2022 6:54:00 PM
Surr: BFB	102	37.7-212		%Rec	1	4/15/2022 6:54:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.023		mg/Kg	1	4/15/2022 6:54:00 PM
Toluene	ND	0.047		mg/Kg	1	4/15/2022 6:54:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	4/15/2022 6:54:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	4/15/2022 6:54:00 PM
Surr: 4-Bromofluorobenzene	81.4	70-130		%Rec	1	4/15/2022 6:54:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	150	60		mg/Kg	20	4/21/2022 2:55:24 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2204627**
Date Reported: **4/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: TP22-05 8'
Project: Pecos Irrigation 1 10
Collection Date: 4/12/2022 1:00:00 PM
Lab ID: 2204627-004 **Matrix:** SOIL **Received Date:** 4/14/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/18/2022 9:56:05 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/18/2022 9:56:05 PM
Surr: DNOP	85.9	51.1-141		%Rec	1	4/18/2022 9:56:05 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	4/15/2022 7:13:00 PM
Surr: BFB	95.8	37.7-212		%Rec	1	4/15/2022 7:13:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.023		mg/Kg	1	4/15/2022 7:13:00 PM
Toluene	ND	0.046		mg/Kg	1	4/15/2022 7:13:00 PM
Ethylbenzene	ND	0.046		mg/Kg	1	4/15/2022 7:13:00 PM
Xylenes, Total	ND	0.093		mg/Kg	1	4/15/2022 7:13:00 PM
Surr: 4-Bromofluorobenzene	79.8	70-130		%Rec	1	4/15/2022 7:13:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	410	60		mg/Kg	20	4/21/2022 2:08:06 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2204627**
Date Reported: **4/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** TP22-06 10'
Project: Pecos Irrigation 1 10 **Collection Date:** 4/12/2022 1:05:00 PM
Lab ID: 2204627-005 **Matrix:** SOIL **Received Date:** 4/14/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	4/18/2022 10:19:47 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/18/2022 10:19:47 PM
Surr: DNOP	87.4	51.1-141		%Rec	1	4/18/2022 10:19:47 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/15/2022 7:33:00 PM
Surr: BFB	97.4	37.7-212		%Rec	1	4/15/2022 7:33:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	4/15/2022 7:33:00 PM
Toluene	ND	0.049		mg/Kg	1	4/15/2022 7:33:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	4/15/2022 7:33:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	4/15/2022 7:33:00 PM
Surr: 4-Bromofluorobenzene	80.3	70-130		%Rec	1	4/15/2022 7:33:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	480	60		mg/Kg	20	4/21/2022 2:20:30 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2204627**
Date Reported: **4/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: TP22-07 8'
Project: Pecos Irrigation 1 10
Collection Date: 4/12/2022 1:15:00 PM
Lab ID: 2204627-006 **Matrix:** SOIL **Received Date:** 4/14/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	4/18/2022 10:43:25 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/18/2022 10:43:25 PM
Surr: DNOP	83.1	51.1-141		%Rec	1	4/18/2022 10:43:25 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/15/2022 7:52:00 PM
Surr: BFB	96.8	37.7-212		%Rec	1	4/15/2022 7:52:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	4/15/2022 7:52:00 PM
Toluene	ND	0.047		mg/Kg	1	4/15/2022 7:52:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	4/15/2022 7:52:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	4/15/2022 7:52:00 PM
Surr: 4-Bromofluorobenzene	78.4	70-130		%Rec	1	4/15/2022 7:52:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	200	60		mg/Kg	20	4/21/2022 2:32:55 AM

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2204627**

25-Apr-22

Client: Vertex Resources Services, Inc.

Project: Pecos Irrigation 1 10

Sample ID: **MB-66958**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **66958**	RunNo: **87394**
Prep Date: **4/20/2022**	Analysis Date: **4/21/2022**	SeqNo: **3091542** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-66958**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **66958**	RunNo: **87394**
Prep Date: **4/20/2022**	Analysis Date: **4/21/2022**	SeqNo: **3091543** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.7	90	110			

Sample ID: **MB-66956**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **66956**	RunNo: **87381**
Prep Date: **4/20/2022**	Analysis Date: **4/20/2022**	SeqNo: **3091708** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-66956**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **66956**	RunNo: **87381**
Prep Date: **4/20/2022**	Analysis Date: **4/20/2022**	SeqNo: **3091709** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	97.6	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 Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2204627**

25-Apr-22

Client: Vertex Resources Services, Inc.

Project: Pecos Irrigation 1 10

Sample ID: **LCS-66872**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **66872**	RunNo: **87307**
Prep Date: **4/15/2022**	Analysis Date: **4/18/2022**	SeqNo: **3089092** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	102	68.9	135			
Surr: DNOP	3.8		5.000		76.7	51.1	141			

Sample ID: **MB-66872**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **66872**	RunNo: **87307**
Prep Date: **4/15/2022**	Analysis Date: **4/18/2022**	SeqNo: **3089182** Units: **mg/Kg**

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	7.9		10.00		79.1	51.1	141			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2204627**

25-Apr-22

Client: Vertex Resources Services, Inc.

Project: Pecos Irrigation 1 10

Sample ID: **lcs-66858**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **66858**	RunNo: **87288**
Prep Date: **4/14/2022**	Analysis Date: **4/15/2022**	SeqNo: **3086732** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	106	72.3	137			
Surr: BFB	2100		1000		212	37.7	212			S

Sample ID: **mb-66858**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **66858**	RunNo: **87288**
Prep Date: **4/14/2022**	Analysis Date: **4/15/2022**	SeqNo: **3086733** Units: **mg/Kg**

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	37.7	212			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2204627**

25-Apr-22

Client: Vertex Resources Services, Inc.

Project: Pecos Irrigation 1 10

Sample ID: **lcs-66858**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **66858**	RunNo: **87288**
Prep Date: **4/14/2022**	Analysis Date: **4/15/2022**	SeqNo: **3086759** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.84	0.025	1.000	0	84.1	80	120			
Toluene	0.85	0.050	1.000	0	85.2	80	120			
Ethylbenzene	0.85	0.050	1.000	0	84.5	80	120			
Xylenes, Total	2.5	0.10	3.000	0	83.6	80	120			
Surr: 4-Bromofluorobenzene	0.81		1.000		80.9	70	130			

Sample ID: **mb-66858**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **66858**	RunNo: **87288**
Prep Date: **4/14/2022**	Analysis Date: **4/15/2022**	SeqNo: **3086760** Units: **mg/Kg**

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	0.80		1.000		79.9	70	130			

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: Vertex Resources Services, Inc.

Work Order Number: 2204627

RcptNo: 1

Received By: Sean Livingston 4/14/2022 8:00:00 AM

Completed By: Sean Livingston 4/14/2022 8:46:37 AM

Reviewed By: KPG 4/14/22

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° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (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: JN 4/14/22

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.8	Good				
2	1.0	Good				

Chain-of-Custody Record

Client: Vertex

Mailing Address: On File

Phone #:

email or Fax#:

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: 5-Day
☑ Standard ☐ Rush

Project Name: Pecos Irrigation 1-10

Project #: 22E-00933

Project Manager: Dennis Williams

Sampler: CD

On Ice: ☑ Yes ☐ No

# of Coolers: 2

Cooler Temp(including CF): 0.8 +0 = 0.8°C (°C)

1.0 +0 = 1.0°C

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2204627
4/12	8:00	soil	TP22-02 6'	4oz	Ice	001
4/12	8:05		TP22-03 8'			002
4/12	8:10		TP22-04 6'			003
4/12	1:00		TP22-05 8'			004
4/12	1:05		TP22-06 10'			005
4/12	1:15		TP22-07 8'			006

Analysis Request

BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
✓	✓					✓			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
			[illegible]		4/13/22	1230
4/12/22	1900	[signature]	Sea Courier		4/13/22 4/14/22	9:00

Remarks: CC: Chance Dixon

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

April 28, 2022

Chance Dixon

Vertex Resources Services, Inc.
3101 Boyd Drive
Carlsbad, NM 88220
TEL: (505) 506-0040
FAX:

RE: Pecos Irrigation 1 10 OrderNo.: 2204841

Dear Chance Dixon:

Hall Environmental Analysis Laboratory received 6 sample(s) on 4/20/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com 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,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2204841**
Date Reported: **4/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: TP22-05 10'
Project: Pecos Irrigation 1 10
Collection Date: 4/18/2022 9:00:00 AM
Lab ID: 2204841-001 **Matrix:** SOIL **Received Date:** 4/20/2022 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	4/25/2022 8:31:18 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	4/25/2022 8:31:18 AM
Surr: DNOP	93.7	51.1-141		%Rec	1	4/25/2022 8:31:18 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/21/2022 10:25:00 PM
Surr: BFB	102	37.7-212		%Rec	1	4/21/2022 10:25:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.024		mg/Kg	1	4/21/2022 10:25:00 PM
Toluene	ND	0.048		mg/Kg	1	4/21/2022 10:25:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	4/21/2022 10:25:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	4/21/2022 10:25:00 PM
Surr: 4-Bromofluorobenzene	85.4	70-130		%Rec	1	4/21/2022 10:25:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	160	60		mg/Kg	20	4/22/2022 1:06:27 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2204841**
Date Reported: **4/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** TP22-08 0'
Project: Pecos Irrigation 1 10 **Collection Date:** 4/18/2022 9:05:00 AM
Lab ID: 2204841-002 **Matrix:** SOIL **Received Date:** 4/20/2022 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	4/25/2022 8:55:12 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	4/25/2022 8:55:12 AM
Surr: DNOP	91.6	51.1-141		%Rec	1	4/25/2022 8:55:12 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	4/22/2022 12:04:00 AM
Surr: BFB	103	37.7-212		%Rec	1	4/22/2022 12:04:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.023		mg/Kg	1	4/22/2022 12:04:00 AM
Toluene	ND	0.046		mg/Kg	1	4/22/2022 12:04:00 AM
Ethylbenzene	ND	0.046		mg/Kg	1	4/22/2022 12:04:00 AM
Xylenes, Total	ND	0.092		mg/Kg	1	4/22/2022 12:04:00 AM
Surr: 4-Bromofluorobenzene	85.5	70-130		%Rec	1	4/22/2022 12:04:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	270	60		mg/Kg	20	4/22/2022 1:18:48 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2204841**
Date Reported: **4/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: TP22-08 3'
Project: Pecos Irrigation 1 10
Collection Date: 4/18/2022 9:10:00 AM
Lab ID: 2204841-003 **Matrix:** SOIL
Received Date: 4/20/2022 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	8.7		mg/Kg	1	4/25/2022 9:18:50 AM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	4/25/2022 9:18:50 AM
Surr: DNOP	92.1	51.1-141		%Rec	1	4/25/2022 9:18:50 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/22/2022 12:24:00 AM
Surr: BFB	105	37.7-212		%Rec	1	4/22/2022 12:24:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.024		mg/Kg	1	4/22/2022 12:24:00 AM
Toluene	ND	0.048		mg/Kg	1	4/22/2022 12:24:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	4/22/2022 12:24:00 AM
Xylenes, Total	ND	0.095		mg/Kg	1	4/22/2022 12:24:00 AM
Surr: 4-Bromofluorobenzene	85.4	70-130		%Rec	1	4/22/2022 12:24:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **MRA**
Chloride	240	60		mg/Kg	20	4/23/2022 1:40:46 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2204841**
Date Reported: **4/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** TP22-09 0'
Project: Pecos Irrigation 1 10 **Collection Date:** 4/18/2022 9:15:00 AM
Lab ID: 2204841-004 **Matrix:** SOIL **Received Date:** 4/20/2022 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	21000	480		mg/Kg	50	4/25/2022 9:42:39 AM
Motor Oil Range Organics (MRO)	ND	2400	D	mg/Kg	50	4/25/2022 9:42:39 AM
Surr: DNOP	0	51.1-141	S	%Rec	50	4/25/2022 9:42:39 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	440	96		mg/Kg	20	4/22/2022 12:43:00 AM
Surr: BFB	126	37.7-212		%Rec	20	4/22/2022 12:43:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.48	D	mg/Kg	20	4/22/2022 12:43:00 AM
Toluene	ND	0.96	D	mg/Kg	20	4/22/2022 12:43:00 AM
Ethylbenzene	ND	0.96	D	mg/Kg	20	4/22/2022 12:43:00 AM
Xylenes, Total	3.9	1.9	D	mg/Kg	20	4/22/2022 12:43:00 AM
Surr: 4-Bromofluorobenzene	106	70-130	D	%Rec	20	4/22/2022 12:43:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **MRA**
Chloride	900	60		mg/Kg	20	4/23/2022 2:18:01 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2204841**
Date Reported: **4/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** TP22-10 0'
Project: Pecos Irrigation 1 10 **Collection Date:** 4/18/2022 2:00:00 PM
Lab ID: 2204841-005 **Matrix:** SOIL **Received Date:** 4/20/2022 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	4/25/2022 11:17:13 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	4/25/2022 11:17:13 AM
Surr: DNOP	70.8	51.1-141		%Rec	1	4/25/2022 11:17:13 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/22/2022 1:03:00 AM
Surr: BFB	110	37.7-212		%Rec	1	4/22/2022 1:03:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.024		mg/Kg	1	4/22/2022 1:03:00 AM
Toluene	ND	0.047		mg/Kg	1	4/22/2022 1:03:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	4/22/2022 1:03:00 AM
Xylenes, Total	ND	0.095		mg/Kg	1	4/22/2022 1:03:00 AM
Surr: 4-Bromofluorobenzene	87.4	70-130		%Rec	1	4/22/2022 1:03:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **MRA**
Chloride	150	61		mg/Kg	20	4/23/2022 2:30:27 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2204841**
Date Reported: **4/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** TP22-10 2'
Project: Pecos Irrigation 1 10 **Collection Date:** 4/18/2022 2:05:00 PM
Lab ID: 2204841-006 **Matrix:** SOIL **Received Date:** 4/20/2022 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	4/25/2022 11:40:49 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/25/2022 11:40:49 AM
Surr: DNOP	72.3	51.1-141		%Rec	1	4/25/2022 11:40:49 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/22/2022 1:23:00 AM
Surr: BFB	107	37.7-212		%Rec	1	4/22/2022 1:23:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.024		mg/Kg	1	4/22/2022 1:23:00 AM
Toluene	ND	0.048		mg/Kg	1	4/22/2022 1:23:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	4/22/2022 1:23:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	4/22/2022 1:23:00 AM
Surr: 4-Bromofluorobenzene	87.6	70-130		%Rec	1	4/22/2022 1:23:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **MRA**
Chloride	150	60		mg/Kg	20	4/23/2022 2:42:52 AM

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2204841**

28-Apr-22

Client: Vertex Resources Services, Inc.

Project: Pecos Irrigation 1 10

Sample ID: **MB-67001**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **67001**	RunNo: **87438**
Prep Date: **4/21/2022**	Analysis Date: **4/21/2022**	SeqNo: **3093533** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-67001**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **67001**	RunNo: **87438**
Prep Date: **4/21/2022**	Analysis Date: **4/21/2022**	SeqNo: **3093534** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.3	90	110			

Sample ID: **MB-67027**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **67027**	RunNo: **87446**
Prep Date: **4/22/2022**	Analysis Date: **4/22/2022**	SeqNo: **3094513** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-67027**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **67027**	RunNo: **87446**
Prep Date: **4/22/2022**	Analysis Date: **4/23/2022**	SeqNo: **3094514** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.5	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 Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2204841**

28-Apr-22

Client: Vertex Resources Services, Inc.

Project: Pecos Irrigation 1 10

Sample ID: **lcs-66961**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **66961**	RunNo: **87430**
Prep Date: **4/20/2022**	Analysis Date: **4/21/2022**	SeqNo: **3093143** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	25.00	0	109	72.3	137			
Surr: BFB	2200		1000		222	37.7	212			S

Sample ID: **mb-66961**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **66961**	RunNo: **87430**
Prep Date: **4/20/2022**	Analysis Date: **4/21/2022**	SeqNo: **3093144** Units: **mg/Kg**

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		102	37.7	212			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2204841**

28-Apr-22

Client: Vertex Resources Services, Inc.

Project: Pecos Irrigation 1 10

Sample ID: **lcs-66961**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **66961**	RunNo: **87430**
Prep Date: **4/20/2022**	Analysis Date: **4/21/2022**	SeqNo: **3093183** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.83	0.025	1.000	0	82.7	80	120			
Toluene	0.85	0.050	1.000	0	84.6	80	120			
Ethylbenzene	0.86	0.050	1.000	0	85.9	80	120			
Xylenes, Total	2.6	0.10	3.000	0	86.4	80	120			
Surr: 4-Bromofluorobenzene	0.88		1.000		88.0	70	130			

Sample ID: **mb-66961**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **66961**	RunNo: **87430**
Prep Date: **4/20/2022**	Analysis Date: **4/21/2022**	SeqNo: **3093184** Units: **mg/Kg**

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	0.83		1.000		83.4	70	130			

Sample ID: **2204841-001ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **TP22-05 10'**	Batch ID: **66961**	RunNo: **87430**
Prep Date: **4/20/2022**	Analysis Date: **4/21/2022**	SeqNo: **3093195** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.84	0.024	0.9709	0	87.0	68.8	120			
Toluene	0.87	0.049	0.9709	0	89.7	73.6	124			
Ethylbenzene	0.88	0.049	0.9709	0	90.7	72.7	129			
Xylenes, Total	2.7	0.097	2.913	0	91.0	75.7	126			
Surr: 4-Bromofluorobenzene	0.84		0.9709		87.0	70	130			

Sample ID: **2204841-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **TP22-05 10'**	Batch ID: **66961**	RunNo: **87430**
Prep Date: **4/20/2022**	Analysis Date: **4/21/2022**	SeqNo: **3093196** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.75	0.024	0.9690	0	77.3	68.8	120	12.0	20	
Toluene	0.77	0.048	0.9690	0	79.5	73.6	124	12.2	20	
Ethylbenzene	0.78	0.048	0.9690	0	80.5	72.7	129	12.1	20	
Xylenes, Total	2.3	0.097	2.907	0	80.4	75.7	126	12.6	20	
Surr: 4-Bromofluorobenzene	0.83		0.9690		85.9	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 Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: Vertex Resources Services, Inc.

Work Order Number: 2204841

RcptNo: 1

Received By: Tracy Casarrubias 4/20/2022 7:40:00 AM

Completed By: Tracy Casarrubias 4/20/2022 8:10:37 AM

Reviewed By: DAD 4/20/22

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° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
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 ☐	Checked by CM 4/20/22

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.3	Good	Yes			
2	3.4	Good	Yes			

Chain-of-Custody Record

Client: Vertex

Mailing Address: On File

Phone #:

email or Fax#:

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: 5-Day
☑ Standard ☒ Rush

Project Name: Pecos Irrigation 1-10

Project #: 22E-00933

Project Manager: Chance Dixon

Sampler: CD

On Ice: ☒ Yes ☐ No

# of Coolers: 2

Cooler Temp(including CF): 5.2 +0.1 = 5.3 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	3.3 +0.1 = 3.4 HEAL No. 2204841	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
4/18	9:00	Soil	TP22-05 10'	4 oz	ICE	001	✓	✓					✓			
	9:05		TP22-08 0'			002										
	9:10		TP22-08 3'			003										
	9:15		TP22-09 0'			004										
	2:00		TP22-10 0'			005										
	2:05		TP22-10 2'			006										

Analysis Request

Remarks:

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
			Chance Dixon		4/19/22	800
4/19/22	1900	Chance Dixon		Courier	4/20/22	7:46

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

May 02, 2022

Chad Dixon

Vertex Resources Services, Inc.
3101 Boyd Drive
Carlsbad, NM 88220
TEL: (505) 506-0040
FAX

RE: Pecos Irrigation 1 10 OrderNo.: 2204931

Dear Chad Dixon:

Hall Environmental Analysis Laboratory received 10 sample(s) on 4/21/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com 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,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2204931**
Date Reported: **5/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: TP22-11 0'
Project: Pecos Irrigation 1 10
Collection Date: 4/19/2022 8:00:00 AM
Lab ID: 2204931-001 **Matrix:** SOIL
Received Date: 4/21/2022 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.0		mg/Kg	1	4/26/2022 10:05:55 AM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	4/26/2022 10:05:55 AM
Surr: DNOP	87.8	51.1-141		%Rec	1	4/26/2022 10:05:55 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/23/2022 1:51:00 PM
Surr: BFB	108	37.7-212		%Rec	1	4/23/2022 1:51:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.023		mg/Kg	1	4/23/2022 1:51:00 PM
Toluene	ND	0.047		mg/Kg	1	4/23/2022 1:51:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	4/23/2022 1:51:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	4/23/2022 1:51:00 PM
Surr: 4-Bromofluorobenzene	87.7	70-130		%Rec	1	4/23/2022 1:51:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	4/27/2022 3:07:27 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2204931**
Date Reported: **5/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** TP22-11 3'
Project: Pecos Irrigation 1 10 **Collection Date:** 4/19/2022 8:05:00 AM
Lab ID: 2204931-002 **Matrix:** SOIL **Received Date:** 4/21/2022 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	4/26/2022 3:01:09 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/26/2022 3:01:09 AM
Surr: DNOP	53.8	51.1-141		%Rec	1	4/26/2022 3:01:09 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/23/2022 2:51:00 PM
Surr: BFB	109	37.7-212		%Rec	1	4/23/2022 2:51:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.024		mg/Kg	1	4/23/2022 2:51:00 PM
Toluene	ND	0.047		mg/Kg	1	4/23/2022 2:51:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	4/23/2022 2:51:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	4/23/2022 2:51:00 PM
Surr: 4-Bromofluorobenzene	89.9	70-130		%Rec	1	4/23/2022 2:51:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	4/27/2022 3:19:47 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2204931**
Date Reported: **5/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: TP22-12 0'
Project: Pecos Irrigation 1 10
Collection Date: 4/19/2022 8:10:00 AM
Lab ID: 2204931-003 **Matrix:** SOIL
Received Date: 4/21/2022 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/26/2022 3:24:43 AM
Motor Oil Range Organics (MRO)	ND	51		mg/Kg	1	4/26/2022 3:24:43 AM
Surr: DNOP	64.5	51.1-141		%Rec	1	4/26/2022 3:24:43 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/23/2022 3:11:00 PM
Surr: BFB	114	37.7-212		%Rec	1	4/23/2022 3:11:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.024		mg/Kg	1	4/23/2022 3:11:00 PM
Toluene	ND	0.049		mg/Kg	1	4/23/2022 3:11:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	4/23/2022 3:11:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	4/23/2022 3:11:00 PM
Surr: 4-Bromofluorobenzene	92.5	70-130		%Rec	1	4/23/2022 3:11:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	4/27/2022 3:56:49 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2204931**
Date Reported: **5/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** TP22-12 3'
Project: Pecos Irrigation 1 10 **Collection Date:** 4/19/2022 8:15:00 AM
Lab ID: 2204931-004 **Matrix:** SOIL **Received Date:** 4/21/2022 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	4/26/2022 3:48:28 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/26/2022 3:48:28 AM
Surr: DNOP	61.1	51.1-141		%Rec	1	4/26/2022 3:48:28 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/23/2022 3:31:00 PM
Surr: BFB	107	37.7-212		%Rec	1	4/23/2022 3:31:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**
Benzene	ND	0.025		mg/Kg	1	4/23/2022 3:31:00 PM
Toluene	ND	0.050		mg/Kg	1	4/23/2022 3:31:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	4/23/2022 3:31:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	4/23/2022 3:31:00 PM
Surr: 4-Bromofluorobenzene	89.2	70-130		%Rec	1	4/23/2022 3:31:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	61		mg/Kg	20	4/27/2022 4:33:52 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2204931**
Date Reported: **5/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** TP22-13 0'
Project: Pecos Irrigation 1 10 **Collection Date:** 4/19/2022 8:20:00 AM
Lab ID: 2204931-005 **Matrix:** SOIL **Received Date:** 4/21/2022 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	4/26/2022 4:12:04 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/26/2022 4:12:04 AM
Surr: DNOP	80.0	51.1-141		%Rec	1	4/26/2022 4:12:04 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/23/2022 10:13:10 AM
Surr: BFB	94.9	37.7-212		%Rec	1	4/23/2022 10:13:10 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	4/23/2022 10:13:10 AM
Toluene	ND	0.047		mg/Kg	1	4/23/2022 10:13:10 AM
Ethylbenzene	ND	0.047		mg/Kg	1	4/23/2022 10:13:10 AM
Xylenes, Total	ND	0.095		mg/Kg	1	4/23/2022 10:13:10 AM
Surr: 4-Bromofluorobenzene	95.2	70-130		%Rec	1	4/23/2022 10:13:10 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	4/27/2022 4:46:12 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2204931**
Date Reported: **5/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** TP22-13 3'
Project: Pecos Irrigation 1 10 **Collection Date:** 4/19/2022 8:25:00 AM
Lab ID: 2204931-006 **Matrix:** SOIL **Received Date:** 4/21/2022 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.0		mg/Kg	1	4/26/2022 4:35:39 AM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	4/26/2022 4:35:39 AM
Surr: DNOP	65.2	51.1-141		%Rec	1	4/26/2022 4:35:39 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/23/2022 11:24:04 AM
Surr: BFB	93.1	37.7-212		%Rec	1	4/23/2022 11:24:04 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	4/23/2022 11:24:04 AM
Toluene	ND	0.048		mg/Kg	1	4/23/2022 11:24:04 AM
Ethylbenzene	ND	0.048		mg/Kg	1	4/23/2022 11:24:04 AM
Xylenes, Total	ND	0.096		mg/Kg	1	4/23/2022 11:24:04 AM
Surr: 4-Bromofluorobenzene	95.5	70-130		%Rec	1	4/23/2022 11:24:04 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	4/27/2022 4:58:33 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2204931**
Date Reported: **5/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: TP22-14 0'
Project: Pecos Irrigation 1 10
Collection Date: 4/19/2022 8:30:00 AM
Lab ID: 2204931-007 **Matrix:** SOIL
Received Date: 4/21/2022 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	4/26/2022 4:59:30 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/26/2022 4:59:30 AM
Surr: DNOP	69.6	51.1-141		%Rec	1	4/26/2022 4:59:30 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/23/2022 11:47:46 AM
Surr: BFB	94.9	37.7-212		%Rec	1	4/23/2022 11:47:46 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.025		mg/Kg	1	4/23/2022 11:47:46 AM
Toluene	ND	0.050		mg/Kg	1	4/23/2022 11:47:46 AM
Ethylbenzene	ND	0.050		mg/Kg	1	4/23/2022 11:47:46 AM
Xylenes, Total	ND	0.099		mg/Kg	1	4/23/2022 11:47:46 AM
Surr: 4-Bromofluorobenzene	96.4	70-130		%Rec	1	4/23/2022 11:47:46 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	4/27/2022 5:10:54 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2204931**
Date Reported: **5/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** TP22-14 3'
Project: Pecos Irrigation 1 10 **Collection Date:** 4/19/2022 8:35:00 AM
Lab ID: 2204931-008 **Matrix:** SOIL **Received Date:** 4/21/2022 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	4/26/2022 5:23:19 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/26/2022 5:23:19 AM
Surr: DNOP	69.4	51.1-141		%Rec	1	4/26/2022 5:23:19 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/23/2022 12:11:33 PM
Surr: BFB	94.2	37.7-212		%Rec	1	4/23/2022 12:11:33 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	4/23/2022 12:11:33 PM
Toluene	ND	0.047		mg/Kg	1	4/23/2022 12:11:33 PM
Ethylbenzene	ND	0.047		mg/Kg	1	4/23/2022 12:11:33 PM
Xylenes, Total	ND	0.095		mg/Kg	1	4/23/2022 12:11:33 PM
Surr: 4-Bromofluorobenzene	95.8	70-130		%Rec	1	4/23/2022 12:11:33 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	4/27/2022 5:23:15 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2204931**
Date Reported: **5/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: TP22-09 6'
Project: Pecos Irrigation 1 10
Collection Date: 4/19/2022 11:00:00 AM
Lab ID: 2204931-009 **Matrix:** SOIL **Received Date:** 4/21/2022 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	8.9		mg/Kg	1	4/26/2022 5:47:00 AM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	4/26/2022 5:47:00 AM
Surr: DNOP	79.8	51.1-141		%Rec	1	4/26/2022 5:47:00 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/23/2022 12:35:15 PM
Surr: BFB	97.6	37.7-212		%Rec	1	4/23/2022 12:35:15 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.025		mg/Kg	1	4/23/2022 12:35:15 PM
Toluene	ND	0.049		mg/Kg	1	4/23/2022 12:35:15 PM
Ethylbenzene	ND	0.049		mg/Kg	1	4/23/2022 12:35:15 PM
Xylenes, Total	ND	0.099		mg/Kg	1	4/23/2022 12:35:15 PM
Surr: 4-Bromofluorobenzene	99.0	70-130		%Rec	1	4/23/2022 12:35:15 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	110	59		mg/Kg	20	4/27/2022 5:35:35 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2204931**
Date Reported: **5/2/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: TP22-09 9'
Project: Pecos Irrigation 1 10
Collection Date: 4/19/2022 11:05:00 AM
Lab ID: 2204931-010 **Matrix:** SOIL **Received Date:** 4/21/2022 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	4/26/2022 6:10:30 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/26/2022 6:10:30 AM
Surr: DNOP	71.9	51.1-141		%Rec	1	4/26/2022 6:10:30 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/23/2022 12:58:59 PM
Surr: BFB	94.9	37.7-212		%Rec	1	4/23/2022 12:58:59 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.023		mg/Kg	1	4/23/2022 12:58:59 PM
Toluene	ND	0.047		mg/Kg	1	4/23/2022 12:58:59 PM
Ethylbenzene	ND	0.047		mg/Kg	1	4/23/2022 12:58:59 PM
Xylenes, Total	ND	0.094		mg/Kg	1	4/23/2022 12:58:59 PM
Surr: 4-Bromofluorobenzene	96.9	70-130		%Rec	1	4/23/2022 12:58:59 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	4/27/2022 5:47:57 PM

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

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2204931**
02-May-22

Client: Vertex Resources Services, Inc.
Project: Pecos Irrigation 1 10

Sample ID: **MB-67120**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **67120**	RunNo: **87579**							
Prep Date: **4/27/2022**	Analysis Date: **4/27/2022**	SeqNo: **3099472**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-67120**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **67120**	RunNo: **87579**							
Prep Date: **4/27/2022**	Analysis Date: **4/27/2022**	SeqNo: **3099473**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.8	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 Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2204931**
02-May-22

Client: Vertex Resources Services, Inc.
Project: Pecos Irrigation 1 10

Sample ID: **MB-67014**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **PBS**	Batch ID: **67014**	RunNo: **87468**							
Prep Date: **4/22/2022**	Analysis Date: **4/24/2022**	SeqNo: **3095123**	Units: **mg/Kg**						
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	9.6		10.00		96.0	51.1	141			

Sample ID: **LCS-67014**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **LCSS**	Batch ID: **67014**	RunNo: **87468**							
Prep Date: **4/22/2022**	Analysis Date: **4/24/2022**	SeqNo: **3095124**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	10	50.00	0	97.1	68.9	135			
Surr: DNOP	4.2		5.000		84.3	51.1	141			

Sample ID: **MB-67016**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **PBS**	Batch ID: **67016**	RunNo: **87468**							
Prep Date: **4/22/2022**	Analysis Date: **4/24/2022**	SeqNo: **3095125**	Units: **mg/Kg**						
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	9.5		10.00		95.3	51.1	141			

Sample ID: **LCS-67016**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **LCSS**	Batch ID: **67016**	RunNo: **87468**							
Prep Date: **4/22/2022**	Analysis Date: **4/24/2022**	SeqNo: **3095126**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	10	50.00	0	99.9	68.9	135			
Surr: DNOP	4.4		5.000		87.2	51.1	141			

Sample ID: **2204931-002AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **TP22-11 3'**	Batch ID: **67016**	RunNo: **87468**							
Prep Date: **4/22/2022**	Analysis Date: **4/26/2022**	SeqNo: **3098011**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	9.5	47.44	0	92.5	36.1	154			
Surr: DNOP	2.6		4.744		55.6	51.1	141			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2204931**
02-May-22

Client: Vertex Resources Services, Inc.
Project: Pecos Irrigation 1 10

Sample ID: **2204931-002AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **TP22-11 3'** Batch ID: **67016** RunNo: **87468**
Prep Date: **4/22/2022** Analysis Date: **4/26/2022** SeqNo: **3098013** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	10	50.45	0	105	36.1	154	18.8	33.9	
Surr: DNOP	3.2		5.045		63.7	51.1	141	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 Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2204931**

02-May-22

Client: Vertex Resources Services, Inc.

Project: Pecos Irrigation 1 10

Sample ID: **mb-66998** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **PBS** Batch ID: **66998** RunNo: **87443**

Prep Date: **4/21/2022** Analysis Date: **4/23/2022** SeqNo: **3094780** Units: **mg/Kg**

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		100	37.7	212			

Sample ID: **lcs-66998** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **LCSS** Batch ID: **66998** RunNo: **87443**

Prep Date: **4/21/2022** Analysis Date: **4/23/2022** SeqNo: **3094781** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	98.1	72.3	137			
Surr: BFB	2100		1000		206	37.7	212			

Sample ID: **lcs-66994** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **LCSS** Batch ID: **66994** RunNo: **87447**

Prep Date: **4/21/2022** Analysis Date: **4/23/2022** SeqNo: **3094916** Units: **mg/Kg**

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	72.3	137			
Surr: BFB	2300		1000		234	37.7	212			S

Sample ID: **mb-66994** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **PBS** Batch ID: **66994** RunNo: **87447**

Prep Date: **4/21/2022** Analysis Date: **4/23/2022** SeqNo: **3094917** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1100		1000		108	37.7	212			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2204931**
02-May-22

Client: Vertex Resources Services, Inc.
Project: Pecos Irrigation 1 10

Sample ID: **mb-66998**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **66998**	RunNo: **87443**
Prep Date: **4/21/2022**	Analysis Date: **4/23/2022**	SeqNo: **3094846** Units: **mg/Kg**

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	0.99		1.000		99.3	70	130			

Sample ID: **2204931-005ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **TP22-13 0'**	Batch ID: **66998**	RunNo: **87443**
Prep Date: **4/21/2022**	Analysis Date: **4/23/2022**	SeqNo: **3094850** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.024	0.9524	0	92.0	68.8	120			
Toluene	0.93	0.048	0.9524	0	97.9	73.6	124			
Ethylbenzene	0.96	0.048	0.9524	0	101	72.7	129			
Xylenes, Total	2.9	0.095	2.857	0	101	75.7	126			
Surr: 4-Bromofluorobenzene	0.95		0.9524		99.6	70	130			

Sample ID: **2204931-005amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **TP22-13 0'**	Batch ID: **66998**	RunNo: **87443**
Prep Date: **4/21/2022**	Analysis Date: **4/23/2022**	SeqNo: **3094851** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.83	0.024	0.9506	0	86.8	68.8	120	5.94	20	
Toluene	0.88	0.048	0.9506	0	93.0	73.6	124	5.34	20	
Ethylbenzene	0.91	0.048	0.9506	0	95.4	72.7	129	5.84	20	
Xylenes, Total	2.7	0.095	2.852	0	95.9	75.7	126	5.18	20	
Surr: 4-Bromofluorobenzene	0.94		0.9506		99.4	70	130	0	0	

Sample ID: **lcs-66994**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **66994**	RunNo: **87447**
Prep Date: **4/21/2022**	Analysis Date: **4/23/2022**	SeqNo: **3094981** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.84	0.025	1.000	0	83.8	80	120			
Toluene	0.86	0.050	1.000	0	86.5	80	120			
Ethylbenzene	0.88	0.050	1.000	0	87.8	80	120			
Xylenes, Total	2.6	0.10	3.000	0	88.1	80	120			
Surr: 4-Bromofluorobenzene	0.88		1.000		88.3	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2204931**

02-May-22

Client: Vertex Resources Services, Inc.

Project: Pecos Irrigation 1 10

Sample ID: **mb-66994**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **66994**	RunNo: **87447**
Prep Date: **4/21/2022**	Analysis Date: **4/23/2022**	SeqNo: **3094982** Units: **mg/Kg**

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	0.89		1.000		89.0	70	130			

Sample ID: **lcs-66998**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **66998**	RunNo: **87480**
Prep Date: **4/21/2022**	Analysis Date: **4/25/2022**	SeqNo: **3095535** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.86	0.025	1.000	0	85.9	80	120			
Toluene	0.91	0.050	1.000	0	91.0	80	120			
Ethylbenzene	0.93	0.050	1.000	0	93.3	80	120			
Xylenes, Total	2.8	0.10	3.000	0	94.5	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		104	70	130			

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: Vertex Resources Services, Inc.

Work Order Number: 2204931

RcptNo: 1

Received By: Tracy Casarrubias 4/21/2022 7:40:00 AM

Completed By: Tracy Casarrubias 4/21/2022 9:03:13 AM

Reviewed By: JO 4/21/22

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° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
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 ☐	Checked by: JN 4/21/22

Special Handling (if applicable)

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

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.6	Good	Yes			

Chain-of-Custody Record

Client: Vertex

Mailing Address: On File

Phone #:

email or Fax#:

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other
☐ EDD (Type)

Turn-Around Time: 5-Day
☑ Standard ☐ Rush

Project Name: Pecos Irrigation 1-10

Project #: 22E-00933

Project Manager: Chance Dixon

Sampler: CD
On Ice: ☑ Yes ☐ No
# of Coolers: 1
Cooler Temp(including CF): 4.6 - 0 = 4.6 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2204931	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
4/19	8:00	Soil	TPZZ-11 0'	4oz	Ice	001	✓	✓					✓			
	8:05		TPZZ-11 3'			002										
	8:10		TPZZ-12 0'			003										
	8:15		TPZZ-12 3'			004										
	8:20		TPZZ-13 0'			005										
	8:25		TPZZ-13 3'			006										
	8:30		TPZZ-14 0'			007										
	8:35		TPZZ-14 3'			008										
	11:00		TPZZ-09 6'			009										
	11:05		TPZZ-09 9'			010										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
			[signature]		4/20/22	745
Date: 4/20/22	Time: 1900	Relinquished by: [signature]	Received by: [signature]	Via: Courier	Date 4/21/22	Time 7:20

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

CARDINAL Laboratories

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

July 21, 2023

CHANCE DIXON

VERTEX RESOURCE GROUP

420 SOUTH MAIN, SUITE 202

TULSA, OK 74103

RE: PECOS IRRIGATION 1-10 TANK BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 07/19/23 14:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE GROUP
CHANCE DIXON
420 SOUTH MAIN, SUITE 202
TULSA OK, 74103
Fax To: NA

Received:	07/19/2023	Sampling Date:	07/18/2023
Reported:	07/21/2023	Sampling Type:	Soil
Project Name:	PECOS IRRIGATION 1-10 TANK BATTERY	Sampling Condition:	Cool & Intact
Project Number:	225-00933	Sample Received By:	Tamara Oldaker
Project Location:	BTA -EDDY CO NM		

Sample ID: BS23 - 01 4FT (H233754-01)

BTEX 8021B mg/kg Analyzed By: JH/

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/19/2023	ND	2.20	110	2.00	2.34	
Toluene*	<0.050	0.050	07/19/2023	ND	2.18	109	2.00	1.67	
Ethylbenzene*	<0.050	0.050	07/19/2023	ND	2.31	115	2.00	1.63	
Total Xylenes*	<0.150	0.150	07/19/2023	ND	6.92	115	6.00	2.00	
Total BTEX	<0.300	0.300	07/19/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *116 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**208**	16.0	07/20/2023	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/20/2023	ND	185	92.4	200	14.8	
DRO >C10-C28*	<10.0	10.0	07/20/2023	ND	192	96.1	200	16.4	
EXT DRO >C28-C36	<10.0	10.0	07/20/2023	ND					

Surrogate: 1-Chlorooctane *61.0 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *72.2 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE GROUP
CHANCE DIXON
420 SOUTH MAIN, SUITE 202
TULSA OK, 74103
Fax To: NA

Received:	07/19/2023	Sampling Date:	07/18/2023
Reported:	07/21/2023	Sampling Type:	Soil
Project Name:	PECOS IRRIGATION 1-10 TANK BATTER\	Sampling Condition:	Cool & Intact
Project Number:	225-00933	Sample Received By:	Tamara Oldaker
Project Location:	BTA -EDDY CO NM		

Sample ID: BS23 - 03 4FT (H233754-02)

BTEX 8021B mg/kg Analyzed By: JH/

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/19/2023	ND	2.20	110	2.00	2.34	
Toluene*	<0.050	0.050	07/19/2023	ND	2.18	109	2.00	1.67	
Ethylbenzene*	<0.050	0.050	07/19/2023	ND	2.31	115	2.00	1.63	
Total Xylenes*	<0.150	0.150	07/19/2023	ND	6.92	115	6.00	2.00	
Total BTEX	<0.300	0.300	07/19/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *117 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**496**	16.0	07/20/2023	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/20/2023	ND	185	92.4	200	14.8	
DRO >C10-C28*	<10.0	10.0	07/20/2023	ND	192	96.1	200	16.4	
EXT DRO >C28-C36	<10.0	10.0	07/20/2023	ND					

Surrogate: 1-Chlorooctane *65.0 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *75.6 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE GROUP
CHANCE DIXON
420 SOUTH MAIN, SUITE 202
TULSA OK, 74103
Fax To: NA

Received:	07/19/2023	Sampling Date:	07/18/2023
Reported:	07/21/2023	Sampling Type:	Soil
Project Name:	PECOS IRRIGATION 1-10 TANK BATTER\	Sampling Condition:	Cool & Intact
Project Number:	225-00933	Sample Received By:	Tamara Oldaker
Project Location:	BTA -EDDY CO NM		

Sample ID: BS23 - 05 4FT (H233754-03)

BTEX 8021B mg/kg Analyzed By: JH/

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/19/2023	ND	2.20	110	2.00	2.34	
Toluene*	<0.050	0.050	07/19/2023	ND	2.18	109	2.00	1.67	
Ethylbenzene*	<0.050	0.050	07/19/2023	ND	2.31	115	2.00	1.63	
Total Xylenes*	<0.150	0.150	07/19/2023	ND	6.92	115	6.00	2.00	
Total BTEX	<0.300	0.300	07/19/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *115 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**80.0**	16.0	07/20/2023	ND	416	104	400	7.41	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/20/2023	ND	185	92.4	200	14.8	
DRO >C10-C28*	<10.0	10.0	07/20/2023	ND	192	96.1	200	16.4	
EXT DRO >C28-C36	<10.0	10.0	07/20/2023	ND					

Surrogate: 1-Chlorooctane *54.8 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *62.7 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE GROUP
CHANCE DIXON
420 SOUTH MAIN, SUITE 202
TULSA OK, 74103
Fax To: NA

Received:	07/19/2023	Sampling Date:	07/18/2023
Reported:	07/21/2023	Sampling Type:	Soil
Project Name:	PECOS IRRIGATION 1-10 TANK BATTER\	Sampling Condition:	Cool & Intact
Project Number:	225-00933	Sample Received By:	Tamara Oldaker
Project Location:	BTA -EDDY CO NM		

Sample ID: BS23 - 06 4FT (H233754-04)

BTEX 8021B mg/kg Analyzed By: JH/

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/19/2023	ND	2.20	110	2.00	2.34	
Toluene*	<0.050	0.050	07/19/2023	ND	2.18	109	2.00	1.67	
Ethylbenzene*	<0.050	0.050	07/19/2023	ND	2.31	115	2.00	1.63	
Total Xylenes*	<0.150	0.150	07/19/2023	ND	6.92	115	6.00	2.00	
Total BTEX	<0.300	0.300	07/19/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *116 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**448**	16.0	07/20/2023	ND	416	104	400	7.41	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/20/2023	ND	185	92.4	200	14.8	
DRO >C10-C28*	<10.0	10.0	07/20/2023	ND	192	96.1	200	16.4	
EXT DRO >C28-C36	<10.0	10.0	07/20/2023	ND					

Surrogate: 1-Chlorooctane *58.0 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *66.6 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE GROUP
CHANCE DIXON
420 SOUTH MAIN, SUITE 202
TULSA OK, 74103
Fax To: NA

Received:	07/19/2023	Sampling Date:	07/18/2023
Reported:	07/21/2023	Sampling Type:	Soil
Project Name:	PECOS IRRIGATION 1-10 TANK BATTER\	Sampling Condition:	Cool & Intact
Project Number:	225-00933	Sample Received By:	Tamara Oldaker
Project Location:	BTA -EDDY CO NM		

Sample ID: BS23 - 07 4FT (H233754-05)

BTEX 8021B mg/kg Analyzed By: JH/

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/19/2023	ND	2.20	110	2.00	2.34	
Toluene*	<0.050	0.050	07/19/2023	ND	2.18	109	2.00	1.67	
Ethylbenzene*	<0.050	0.050	07/19/2023	ND	2.31	115	2.00	1.63	
Total Xylenes*	<0.150	0.150	07/19/2023	ND	6.92	115	6.00	2.00	
Total BTEX	<0.300	0.300	07/19/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *117 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**432**	16.0	07/20/2023	ND	416	104	400	7.41	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/20/2023	ND	185	92.4	200	14.8	
DRO >C10-C28*	<10.0	10.0	07/20/2023	ND	192	96.1	200	16.4	
EXT DRO >C28-C36	<10.0	10.0	07/20/2023	ND					

Surrogate: 1-Chlorooctane *57.1 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *65.6 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE GROUP
CHANCE DIXON
420 SOUTH MAIN, SUITE 202
TULSA OK, 74103
Fax To: NA

Received:	07/19/2023	Sampling Date:	07/18/2023
Reported:	07/21/2023	Sampling Type:	Soil
Project Name:	PECOS IRRIGATION 1-10 TANK BATTER\	Sampling Condition:	Cool & Intact
Project Number:	225-00933	Sample Received By:	Tamara Oldaker
Project Location:	BTA -EDDY CO NM		

Sample ID: BS23 - 08 4FT (H233754-06)

BTEX 8021B mg/kg Analyzed By: JH/

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/19/2023	ND	2.20	110	2.00	2.34	
Toluene*	<0.050	0.050	07/19/2023	ND	2.18	109	2.00	1.67	
Ethylbenzene*	<0.050	0.050	07/19/2023	ND	2.31	115	2.00	1.63	
Total Xylenes*	<0.150	0.150	07/19/2023	ND	6.92	115	6.00	2.00	
Total BTEX	<0.300	0.300	07/19/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *115 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**448**	16.0	07/20/2023	ND	416	104	400	7.41	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/20/2023	ND	185	92.4	200	14.8	
DRO >C10-C28*	<10.0	10.0	07/20/2023	ND	192	96.1	200	16.4	
EXT DRO >C28-C36	<10.0	10.0	07/20/2023	ND					

Surrogate: 1-Chlorooctane *65.6 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *77.0 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE GROUP
CHANCE DIXON
420 SOUTH MAIN, SUITE 202
TULSA OK, 74103
Fax To: NA

Received:	07/19/2023	Sampling Date:	07/18/2023
Reported:	07/21/2023	Sampling Type:	Soil
Project Name:	PECOS IRRIGATION 1-10 TANK BATTER\	Sampling Condition:	Cool & Intact
Project Number:	225-00933	Sample Received By:	Tamara Oldaker
Project Location:	BTA -EDDY CO NM		

Sample ID: BS23 - 09 4FT (H233754-07)

BTEX 8021B mg/kg Analyzed By: JH/

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/19/2023	ND	2.20	110	2.00	2.34	
Toluene*	<0.050	0.050	07/19/2023	ND	2.18	109	2.00	1.67	
Ethylbenzene*	<0.050	0.050	07/19/2023	ND	2.31	115	2.00	1.63	
Total Xylenes*	<0.150	0.150	07/19/2023	ND	6.92	115	6.00	2.00	
Total BTEX	<0.300	0.300	07/19/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *115 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**448**	16.0	07/20/2023	ND	416	104	400	7.41	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/20/2023	ND	185	92.4	200	14.8	
DRO >C10-C28*	<10.0	10.0	07/20/2023	ND	192	96.1	200	16.4	
EXT DRO >C28-C36	<10.0	10.0	07/20/2023	ND					

Surrogate: 1-Chlorooctane *73.9 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *87.5 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE GROUP
CHANCE DIXON
420 SOUTH MAIN, SUITE 202
TULSA OK, 74103
Fax To: NA

Received:	07/19/2023	Sampling Date:	07/18/2023
Reported:	07/21/2023	Sampling Type:	Soil
Project Name:	PECOS IRRIGATION 1-10 TANK BATTER\	Sampling Condition:	Cool & Intact
Project Number:	225-00933	Sample Received By:	Tamara Oldaker
Project Location:	BTA -EDDY CO NM		

Sample ID: BS23 - 10 4FT (H233754-08)

BTEX 8021B mg/kg Analyzed By: JH/

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/19/2023	ND	2.20	110	2.00	2.34	
Toluene*	<0.050	0.050	07/19/2023	ND	2.18	109	2.00	1.67	
Ethylbenzene*	<0.050	0.050	07/19/2023	ND	2.31	115	2.00	1.63	
Total Xylenes*	<0.150	0.150	07/19/2023	ND	6.92	115	6.00	2.00	
Total BTEX	<0.300	0.300	07/19/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *116 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**512**	16.0	07/20/2023	ND	416	104	400	7.41	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/20/2023	ND	185	92.4	200	14.8	
DRO >C10-C28*	<10.0	10.0	07/20/2023	ND	192	96.1	200	16.4	
EXT DRO >C28-C36	<10.0	10.0	07/20/2023	ND					

Surrogate: 1-Chlorooctane *71.6 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *83.1 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE GROUP
CHANCE DIXON
420 SOUTH MAIN, SUITE 202
TULSA OK, 74103
Fax To: NA

Received:	07/19/2023	Sampling Date:	07/18/2023
Reported:	07/21/2023	Sampling Type:	Soil
Project Name:	PECOS IRRIGATION 1-10 TANK BATTER\	Sampling Condition:	Cool & Intact
Project Number:	225-00933	Sample Received By:	Tamara Oldaker
Project Location:	BTA -EDDY CO NM		

Sample ID: BS23 - 11 4FT (H233754-09)

BTEX 8021B mg/kg Analyzed By: JH/

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/19/2023	ND	2.20	110	2.00	2.34	
Toluene*	<0.050	0.050	07/19/2023	ND	2.18	109	2.00	1.67	
Ethylbenzene*	<0.050	0.050	07/19/2023	ND	2.31	115	2.00	1.63	
Total Xylenes*	<0.150	0.150	07/19/2023	ND	6.92	115	6.00	2.00	
Total BTEX	<0.300	0.300	07/19/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *116 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**480**	16.0	07/20/2023	ND	416	104	400	7.41	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/20/2023	ND	185	92.4	200	14.8	
DRO >C10-C28*	<10.0	10.0	07/20/2023	ND	192	96.1	200	16.4	
EXT DRO >C28-C36	<10.0	10.0	07/20/2023	ND					

Surrogate: 1-Chlorooctane *72.2 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *83.4 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE GROUP
CHANCE DIXON
420 SOUTH MAIN, SUITE 202
TULSA OK, 74103
Fax To: NA

Received:	07/19/2023	Sampling Date:	07/18/2023
Reported:	07/21/2023	Sampling Type:	Soil
Project Name:	PECOS IRRIGATION 1-10 TANK BATTER\	Sampling Condition:	Cool & Intact
Project Number:	225-00933	Sample Received By:	Tamara Oldaker
Project Location:	BTA -EDDY CO NM		

Sample ID: BS23 - 12 4FT (H233754-10)

BTEX 8021B mg/kg Analyzed By: JH/

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/19/2023	ND	2.20	110	2.00	2.34	
Toluene*	<0.050	0.050	07/19/2023	ND	2.18	109	2.00	1.67	
Ethylbenzene*	<0.050	0.050	07/19/2023	ND	2.31	115	2.00	1.63	
Total Xylenes*	<0.150	0.150	07/19/2023	ND	6.92	115	6.00	2.00	
Total BTEX	<0.300	0.300	07/19/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *116 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**496**	16.0	07/20/2023	ND	416	104	400	7.41	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/20/2023	ND	185	92.4	200	14.8	
DRO >C10-C28*	<10.0	10.0	07/20/2023	ND	192	96.1	200	16.4	
EXT DRO >C28-C36	<10.0	10.0	07/20/2023	ND					

Surrogate: 1-Chlorooctane *73.6 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *85.1 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE GROUP
CHANCE DIXON
420 SOUTH MAIN, SUITE 202
TULSA OK, 74103
Fax To: NA

Received:	07/19/2023	Sampling Date:	07/18/2023
Reported:	07/21/2023	Sampling Type:	Soil
Project Name:	PECOS IRRIGATION 1-10 TANK BATTER\	Sampling Condition:	Cool & Intact
Project Number:	225-00933	Sample Received By:	Tamara Oldaker
Project Location:	BTA -EDDY CO NM		

Sample ID: BS23 - 13 4FT (H233754-11)

BTEX 8021B mg/kg Analyzed By: JH/

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/19/2023	ND	2.20	110	2.00	2.34	
Toluene*	<0.050	0.050	07/19/2023	ND	2.18	109	2.00	1.67	
Ethylbenzene*	<0.050	0.050	07/19/2023	ND	2.31	115	2.00	1.63	
Total Xylenes*	<0.150	0.150	07/19/2023	ND	6.92	115	6.00	2.00	
Total BTEX	<0.300	0.300	07/19/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *116 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**464**	16.0	07/20/2023	ND	416	104	400	7.41	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/20/2023	ND	185	92.4	200	14.8	
DRO >C10-C28*	<10.0	10.0	07/20/2023	ND	192	96.1	200	16.4	
EXT DRO >C28-C36	<10.0	10.0	07/20/2023	ND					

Surrogate: 1-Chlorooctane *70.0 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *81.7 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE GROUP
CHANCE DIXON
420 SOUTH MAIN, SUITE 202
TULSA OK, 74103
Fax To: NA

Received:	07/19/2023	Sampling Date:	07/18/2023
Reported:	07/21/2023	Sampling Type:	Soil
Project Name:	PECOS IRRIGATION 1-10 TANK BATTER\	Sampling Condition:	Cool & Intact
Project Number:	225-00933	Sample Received By:	Tamara Oldaker
Project Location:	BTA -EDDY CO NM		

Sample ID: BS23 - 14 4FT (H233754-12)

BTEX 8021B mg/kg Analyzed By: JH/

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/19/2023	ND	2.20	110	2.00	2.34	
Toluene*	<0.050	0.050	07/19/2023	ND	2.18	109	2.00	1.67	
Ethylbenzene*	<0.050	0.050	07/19/2023	ND	2.31	115	2.00	1.63	
Total Xylenes*	<0.150	0.150	07/19/2023	ND	6.92	115	6.00	2.00	
Total BTEX	<0.300	0.300	07/19/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *116 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**464**	16.0	07/20/2023	ND	416	104	400	7.41	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/20/2023	ND	185	92.4	200	14.8	
DRO >C10-C28*	<10.0	10.0	07/20/2023	ND	192	96.1	200	16.4	
EXT DRO >C28-C36	<10.0	10.0	07/20/2023	ND					

Surrogate: 1-Chlorooctane *76.3 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *89.2 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

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

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Vertex
Project Manager: Chance Dixon
Address: 3101 Boyd Dr
City: Carlsbad State: NM Zip: 88220
Phone #: 5759881472 Fax #:
Project #: 225-00933 Project Owner:
Project Name: Pecos Irrigation 1-10 Tank Battery
Project Location: Carlsbad, NM
Sampler Name: Fernando Rodriguez

BILL TO
P.O. #:
Company: BTA Oil Producers
Attn: Kelton Beaird
Address: 104 S. Pecos St.
City: Midland
State: TX Zip: 79701
Phone #: 4326823753
Fax #:

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	BTEX	TPH: 8015D	Cl-
H233754																	
1	BS23-01 4ft	G	1			✓					✓		7/18	12:00	✓	✓	✓
2	BS23-03 4ft					✓					✓			12:05	✓	✓	✓
3	BS23-05 4ft					✓					✓			12:10	✓	✓	✓
4	BS23-06 4ft					✓					✓			12:15	✓	✓	✓
5	BS23-07 4ft					✓					✓			12:20	✓	✓	✓
6	BS23-08 4ft					✓					✓			12:25	✓	✓	✓
7	BS23-09 4ft					✓					✓			12:30	✓	✓	✓
8	BS23-10 4ft					✓					✓			12:35	✓	✓	✓
9	BS23-11 4ft					✓					✓			12:40	✓	✓	✓
10	BS23-12 4ft					✓					✓			12:45	✓	✓	✓

Relinquished By: Date: 7/18 Time: 18:30 Received By:
Relinquished By: Date: 7-19-23 Time: 1415 Received By:

Verbal Result: ☐ Yes ☐ No Add'l Phone #: 575 361 4509
All Results are emailed. Please provide Email address: CDixon@vertex.ca / analytical@vertex.ca / Permian@vertex.ca
REMARKS:

Delivered By: (Circle One) Sampler - UPS - Bus - Other:
Observed Temp. °C 0.1 Corrected Temp. °C
Sample Condition Cool ☑ Yes Intact ☑ Yes ☐ No ☐ No
CHECKED BY: (Initials) TO

Turnaround Time: 48-HOUR Standard ☐ Rush ☑
Thermometer ID #113 #140 Correction Factor -0.5°C TO 7/19/23
Bacteria (only) Sample Condition Cool ☐ Yes ☐ No Intact ☐ Yes ☐ No Observed Temp. °C Corrected Temp. °C

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

FORM-006 R 3.2 10/07/21

CARDINAL Laboratories

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Vertex
Project Manager: Chance Dixon
Address: 3101 Boyd Dr
City: Carlsbad State: NM Zip: 88220
Phone #: 575 988 1472 Fax #:
Project #: 22E-00933 Project Owner:
Project Name: Pecos Irrigation 1-10 Tank Battery
Project Location: Carlsbad, NM
Sampler Name: Fernando Rodriguez

BILL TO

P.O. #:
Company: BTA Oil Producers
Attn: [redacted] Fetterolf/Beaird
Address: 104 S. Pecos St.
City: Midland
State: TX Zip: 79701
Phone #: 432 682 3753
Fax #:

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	BTEX	TPH: 8015D	Cl-
H233754																	
11	BS23-13 4Ft	S	1			✓					✓		7/18	12:50	✓	✓	✓
12	BS23-14 4Ft	S	1			✓					✓		7/18	12:55	✓	✓	✓

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

Relinquished By: Date: 7/18 Time: 18:30 Received By:
Relinquished By: Date: 7-19-23 Time: 7:15 Received By:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:
Observed Temp. °C 0.1 Corrected Temp. °C
Sample Condition: Cool ☑ Yes ☐ No Intact ☑ Yes ☐ No
CHECKED BY: (Initials) TO

Verbal Result: ☐ Yes ☐ No Add'l Phone #: 575 361 4509
All Results are emailed. Please provide Email address:
CDixon@vertex.ca / Analytical@vertex.ca
Permian@vertex.ca
REMARKS:

Turnaround Time: Standard ☐ Rush ☑
48-HOUR
Thermometer ID #113 #140
Correction Factor -0.5°C TO 7/19/23
Bacteria (only) Sample Condition: Cool ☐ Yes ☐ No Intact ☐ Yes ☐ No
Observed Temp. °C
Corrected Temp. °C

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

FORM-006 R 3.2 10/07/21

CARDINAL Laboratories

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

July 24, 2023

CHANCE DIXON

VERTEX RESOURCE GROUP

420 SOUTH MAIN, SUITE 202

TULSA, OK 74103

RE: PECOS IRRIGATION 1-10 TANK BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 07/20/23 16:09.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE GROUP
CHANCE DIXON
420 SOUTH MAIN, SUITE 202
TULSA OK, 74103
Fax To: NA

Received:	07/20/2023	Sampling Date:	07/19/2023
Reported:	07/24/2023	Sampling Type:	Soil
Project Name:	PECOS IRRIGATION 1-10 TANK BATTERY	Sampling Condition:	** (See Notes)
Project Number:	22E-00933	Sample Received By:	Tamara Oldaker
Project Location:	BTA -EDDY CO NM		

Sample ID: BS 23 - 02 4FT (H233800-01)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/21/2023	ND	2.05	102	2.00	5.10	
Toluene*	<0.050	0.050	07/21/2023	ND	1.96	98.2	2.00	4.39	
Ethylbenzene*	<0.050	0.050	07/21/2023	ND	2.04	102	2.00	4.82	
Total Xylenes*	<0.150	0.150	07/21/2023	ND	6.07	101	6.00	3.00	
Total BTEX	<0.300	0.300	07/21/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *108 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**240**	16.0	07/21/2023	ND	432	108	400	0.00	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/21/2023	ND	173	86.3	200	5.90	
DRO >C10-C28*	<10.0	10.0	07/21/2023	ND	180	89.8	200	5.63	
EXT DRO >C28-C36	<10.0	10.0	07/21/2023	ND					

Surrogate: 1-Chlorooctane *86.6 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *98.9 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE GROUP
CHANCE DIXON
420 SOUTH MAIN, SUITE 202
TULSA OK, 74103
Fax To: NA

Received:	07/20/2023	Sampling Date:	07/19/2023
Reported:	07/24/2023	Sampling Type:	Soil
Project Name:	PECOS IRRIGATION 1-10 TANK BATTER\	Sampling Condition:	** (See Notes)
Project Number:	22E-00933	Sample Received By:	Tamara Oldaker
Project Location:	BTA -EDDY CO NM		

Sample ID: BS 23 - 04 4FT (H233800-02)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/21/2023	ND	2.05	102	2.00	5.10	
Toluene*	<0.050	0.050	07/21/2023	ND	1.96	98.2	2.00	4.39	
Ethylbenzene*	<0.050	0.050	07/21/2023	ND	2.04	102	2.00	4.82	
Total Xylenes*	<0.150	0.150	07/21/2023	ND	6.07	101	6.00	3.00	
Total BTEX	<0.300	0.300	07/21/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *107 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**96.0**	16.0	07/21/2023	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/21/2023	ND	173	86.3	200	5.90	
DRO >C10-C28*	<10.0	10.0	07/21/2023	ND	180	89.8	200	5.63	
EXT DRO >C28-C36	<10.0	10.0	07/21/2023	ND					

Surrogate: 1-Chlorooctane *57.8 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *67.0 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE GROUP
CHANCE DIXON
420 SOUTH MAIN, SUITE 202
TULSA OK, 74103
Fax To: NA

Received:	07/20/2023	Sampling Date:	07/19/2023
Reported:	07/24/2023	Sampling Type:	Soil
Project Name:	PECOS IRRIGATION 1-10 TANK BATTER\	Sampling Condition:	** (See Notes)
Project Number:	22E-00933	Sample Received By:	Tamara Oldaker
Project Location:	BTA -EDDY CO NM		

Sample ID: WS 23 - 07 4FT (H233800-03)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/21/2023	ND	2.05	102	2.00	5.10	
Toluene*	<0.050	0.050	07/21/2023	ND	1.96	98.2	2.00	4.39	
Ethylbenzene*	<0.050	0.050	07/21/2023	ND	2.04	102	2.00	4.82	
Total Xylenes*	<0.150	0.150	07/21/2023	ND	6.07	101	6.00	3.00	
Total BTEX	<0.300	0.300	07/21/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *104 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**352**	16.0	07/21/2023	ND	432	108	400	0.00	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/21/2023	ND	173	86.3	200	5.90	
DRO >C10-C28*	<10.0	10.0	07/21/2023	ND	180	89.8	200	5.63	
EXT DRO >C28-C36	<10.0	10.0	07/21/2023	ND					

Surrogate: 1-Chlorooctane *105 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *119 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE GROUP
CHANCE DIXON
420 SOUTH MAIN, SUITE 202
TULSA OK, 74103
Fax To: NA

Received:	07/20/2023	Sampling Date:	07/19/2023
Reported:	07/24/2023	Sampling Type:	Soil
Project Name:	PECOS IRRIGATION 1-10 TANK BATTER\	Sampling Condition:	** (See Notes)
Project Number:	22E-00933	Sample Received By:	Tamara Oldaker
Project Location:	BTA -EDDY CO NM		

Sample ID: WS 23 - 08 4FT (H233800-04)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/21/2023	ND	2.05	102	2.00	5.10	
Toluene*	<0.050	0.050	07/21/2023	ND	1.96	98.2	2.00	4.39	
Ethylbenzene*	<0.050	0.050	07/21/2023	ND	2.04	102	2.00	4.82	
Total Xylenes*	<0.150	0.150	07/21/2023	ND	6.07	101	6.00	3.00	
Total BTEX	<0.300	0.300	07/21/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *106 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**128**	16.0	07/21/2023	ND	432	108	400	3.77	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/21/2023	ND	173	86.3	200	5.90	
DRO >C10-C28*	<10.0	10.0	07/21/2023	ND	180	89.8	200	5.63	
EXT DRO >C28-C36	<10.0	10.0	07/21/2023	ND					

Surrogate: 1-Chlorooctane *94.5 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *107 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE GROUP
CHANCE DIXON
420 SOUTH MAIN, SUITE 202
TULSA OK, 74103
Fax To: NA

Received:	07/20/2023	Sampling Date:	07/19/2023
Reported:	07/24/2023	Sampling Type:	Soil
Project Name:	PECOS IRRIGATION 1-10 TANK BATTER\	Sampling Condition:	** (See Notes)
Project Number:	22E-00933	Sample Received By:	Tamara Oldaker
Project Location:	BTA -EDDY CO NM		

Sample ID: WS 23 - 11 4FT (H233800-05)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/21/2023	ND	2.05	102	2.00	5.10	
Toluene*	<0.050	0.050	07/21/2023	ND	1.96	98.2	2.00	4.39	
Ethylbenzene*	<0.050	0.050	07/21/2023	ND	2.04	102	2.00	4.82	
Total Xylenes*	<0.150	0.150	07/21/2023	ND	6.07	101	6.00	3.00	
Total BTEX	<0.300	0.300	07/21/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *104 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**240**	16.0	07/21/2023	ND	432	108	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/21/2023	ND	173	86.3	200	5.90	
DRO >C10-C28*	<10.0	10.0	07/21/2023	ND	180	89.8	200	5.63	
EXT DRO >C28-C36	<10.0	10.0	07/21/2023	ND					

Surrogate: 1-Chlorooctane *93.7 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *106 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE GROUP
CHANCE DIXON
420 SOUTH MAIN, SUITE 202
TULSA OK, 74103
Fax To: NA

Received:	07/20/2023	Sampling Date:	07/19/2023
Reported:	07/24/2023	Sampling Type:	Soil
Project Name:	PECOS IRRIGATION 1-10 TANK BATTER\	Sampling Condition:	** (See Notes)
Project Number:	22E-00933	Sample Received By:	Tamara Oldaker
Project Location:	BTA -EDDY CO NM		

Sample ID: WS 23 - 12 4FT (H233800-06)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/21/2023	ND	2.05	102	2.00	5.10	
Toluene*	<0.050	0.050	07/21/2023	ND	1.96	98.2	2.00	4.39	
Ethylbenzene*	<0.050	0.050	07/21/2023	ND	2.04	102	2.00	4.82	
Total Xylenes*	<0.150	0.150	07/21/2023	ND	6.07	101	6.00	3.00	
Total BTEX	<0.300	0.300	07/21/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *104 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**160**	16.0	07/21/2023	ND	432	108	400	3.77	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/21/2023	ND	173	86.3	200	5.90	
DRO >C10-C28*	**11.3**	10.0	07/21/2023	ND	180	89.8	200	5.63	
EXT DRO >C28-C36	<10.0	10.0	07/21/2023	ND					

Surrogate: 1-Chlorooctane *117 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *133 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE GROUP
CHANCE DIXON
420 SOUTH MAIN, SUITE 202
TULSA OK, 74103
Fax To: NA

Received:	07/20/2023	Sampling Date:	07/19/2023
Reported:	07/24/2023	Sampling Type:	Soil
Project Name:	PECOS IRRIGATION 1-10 TANK BATTER\	Sampling Condition:	** (See Notes)
Project Number:	22E-00933	Sample Received By:	Tamara Oldaker
Project Location:	BTA -EDDY CO NM		

Sample ID: WS 23 - 13 4FT (H233800-07)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/21/2023	ND	2.05	102	2.00	5.10	
Toluene*	<0.050	0.050	07/21/2023	ND	1.96	98.2	2.00	4.39	
Ethylbenzene*	<0.050	0.050	07/21/2023	ND	2.04	102	2.00	4.82	
Total Xylenes*	<0.150	0.150	07/21/2023	ND	6.07	101	6.00	3.00	
Total BTEX	<0.300	0.300	07/21/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *107 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**320**	16.0	07/21/2023	ND	416	104	400	3.92	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/21/2023	ND	173	86.3	200	5.90	
DRO >C10-C28*	<10.0	10.0	07/21/2023	ND	180	89.8	200	5.63	
EXT DRO >C28-C36	<10.0	10.0	07/21/2023	ND					

Surrogate: 1-Chlorooctane *97.3 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *112 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE GROUP
CHANCE DIXON
420 SOUTH MAIN, SUITE 202
TULSA OK, 74103
Fax To: NA

Received:	07/20/2023	Sampling Date:	07/19/2023
Reported:	07/24/2023	Sampling Type:	Soil
Project Name:	PECOS IRRIGATION 1-10 TANK BATTER\	Sampling Condition:	** (See Notes)
Project Number:	22E-00933	Sample Received By:	Tamara Oldaker
Project Location:	BTA -EDDY CO NM		

Sample ID: WS 23 - 14 4FT (H233800-08)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/21/2023	ND	2.05	102	2.00	5.10	
Toluene*	<0.050	0.050	07/21/2023	ND	1.96	98.2	2.00	4.39	
Ethylbenzene*	<0.050	0.050	07/21/2023	ND	2.04	102	2.00	4.82	
Total Xylenes*	<0.150	0.150	07/21/2023	ND	6.07	101	6.00	3.00	
Total BTEX	<0.300	0.300	07/21/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *104 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**160**	16.0	07/21/2023	ND	416	104	400	3.92	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/21/2023	ND	173	86.3	200	5.90	
DRO >C10-C28*	<10.0	10.0	07/21/2023	ND	180	89.8	200	5.63	
EXT DRO >C28-C36	<10.0	10.0	07/21/2023	ND					

Surrogate: 1-Chlorooctane *100 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *115 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

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

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:	Vertex
Project Manager:	Chance Dixon
Address:	3101 Boyd Dr
City:	Carlsbad State: NM Zip: 88220
Phone #:	5759881472 Fax #:
Project #:	225-00933 Project Owner:
Project Name:	Pecos Irrigation 1-10 Tank Battery
Project Location:	Carlsbad, NM
Sampler Name:	Fernando Rodriguez

BILL TO

P.O. #:	
Company:	BTA Oil Prod.
Attn:	Kelton Beaird
Address:	104 S. Pecos St.
City:	Midland
State:	TX Zip: 79701
Phone #:	
Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY

Lab I.D. H233800

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	BTEX	TPH: 8015D	Cl
1	BS23-02 4ft	5	1			✓					✓		7/9	11:00	✓	✓	✓
2	BS23-04 4ft					✓					✓			11:05	✓	✓	✓
3	WS23-07 4ft					✓					✓			11:10	✓	✓	✓
4	WS23-08 4ft					✓					✓			11:15	✓	✓	✓
5	WS23-11 4ft					✓					✓			11:20	✓	✓	✓
6	WS23-12 4ft					✓					✓			11:25	✓	✓	✓
7	WS23-13 4ft					✓					✓			11:30	✓	✓	✓
8	WS23-14 4ft					✓					✓			11:35	✓	✓	✓

Relinquished By:	Date: 7-20-23	Received By:	Verbal Result: ☐ Yes ☐ No Add'l Phone #:
	Time: 1609		All Results are emailed. Please provide Email address: CDixon@vertex.ca / Analytics@vertex.ca / Permian@vertex.ca
Relinquished By:	Date:	Received By:	REMARKS: Temp Blank -1.9°C
	Time:		

Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Observed Temp. °C 16.9	Sample Condition Cool ☐ Yes ☑ No Intact ☑ Yes ☐ No	CHECKED BY: (Initials)	Turnaround Time: Standard ☐ Rush ☑ Bacteria (only) Sample Condition Cool ☐ Yes ☐ No Intact ☐ Yes ☐ No Observed Temp. °C
	Corrected Temp. °C			Thermometer ID #113 #140 Correction Factor 0.5°C 48 hrs Corrected Temp. °C

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

FORM-006 R 3.2 10/07/21

CARDINAL Laboratories

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

July 24, 2023

CHANCE DIXON

VERTEX RESOURCE GROUP

420 SOUTH MAIN, SUITE 202

TULSA, OK 74103

RE: PECOS IRRIGATION 1-10 TANK BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 07/20/23 16:09.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE GROUP
CHANCE DIXON
420 SOUTH MAIN, SUITE 202
TULSA OK, 74103
Fax To: NA

Received:	07/20/2023	Sampling Date:	07/20/2023
Reported:	07/24/2023	Sampling Type:	Soil
Project Name:	PECOS IRRIGATION 1-10 TANK BATTERY	Sampling Condition:	** (See Notes)
Project Number:	22E-00933	Sample Received By:	Tamara Oldaker
Project Location:	BTA -EDDY CO NM		

Sample ID: BS 23 - 15 4FT (H233799-01)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/21/2023	ND	2.09	104	2.00	1.43	
Toluene*	<0.050	0.050	07/21/2023	ND	2.04	102	2.00	2.00	
Ethylbenzene*	<0.050	0.050	07/21/2023	ND	1.98	99.0	2.00	1.69	
Total Xylenes*	<0.150	0.150	07/21/2023	ND	6.00	99.9	6.00	1.61	
Total BTEX	<0.300	0.300	07/21/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *104 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**160**	16.0	07/21/2023	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/21/2023	ND	173	86.3	200	5.90	
DRO >C10-C28*	<10.0	10.0	07/21/2023	ND	180	89.8	200	5.63	
EXT DRO >C28-C36	<10.0	10.0	07/21/2023	ND					

Surrogate: 1-Chlorooctane *104 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *119 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE GROUP
CHANCE DIXON
420 SOUTH MAIN, SUITE 202
TULSA OK, 74103
Fax To: NA

Received:	07/20/2023	Sampling Date:	07/20/2023
Reported:	07/24/2023	Sampling Type:	Soil
Project Name:	PECOS IRRIGATION 1-10 TANK BATTER\	Sampling Condition:	** (See Notes)
Project Number:	22E-00933	Sample Received By:	Tamara Oldaker
Project Location:	BTA -EDDY CO NM		

Sample ID: BS 23 - 16 4FT (H233799-02)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/21/2023	ND	2.09	104	2.00	1.43	
Toluene*	<0.050	0.050	07/21/2023	ND	2.04	102	2.00	2.00	
Ethylbenzene*	<0.050	0.050	07/21/2023	ND	1.98	99.0	2.00	1.69	
Total Xylenes*	<0.150	0.150	07/21/2023	ND	6.00	99.9	6.00	1.61	
Total BTEX	<0.300	0.300	07/21/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *104 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**144**	16.0	07/21/2023	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/20/2023	ND	163	81.7	200	5.20	
DRO >C10-C28*	<10.0	10.0	07/20/2023	ND	169	84.7	200	4.26	
EXT DRO >C28-C36	<10.0	10.0	07/20/2023	ND					

Surrogate: 1-Chlorooctane *97.4 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *110 %* *49.1-148*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE GROUP
CHANCE DIXON
420 SOUTH MAIN, SUITE 202
TULSA OK, 74103
Fax To: NA

Received:	07/20/2023	Sampling Date:	07/20/2023
Reported:	07/24/2023	Sampling Type:	Soil
Project Name:	PECOS IRRIGATION 1-10 TANK BATTER\	Sampling Condition:	** (See Notes)
Project Number:	22E-00933	Sample Received By:	Tamara Oldaker
Project Location:	BTA -EDDY CO NM		

Sample ID: BS 23 - 17 4FT (H233799-03)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/21/2023	ND	2.09	104	2.00	1.43	
Toluene*	<0.050	0.050	07/21/2023	ND	2.04	102	2.00	2.00	
Ethylbenzene*	<0.050	0.050	07/21/2023	ND	1.98	99.0	2.00	1.69	
Total Xylenes*	<0.150	0.150	07/21/2023	ND	6.00	99.9	6.00	1.61	
Total BTEX	<0.300	0.300	07/21/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *105 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**80.0**	16.0	07/21/2023	ND	432	108	400	0.00	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/20/2023	ND	163	81.7	200	5.20	
DRO >C10-C28*	<10.0	10.0	07/20/2023	ND	169	84.7	200	4.26	
EXT DRO >C28-C36	<10.0	10.0	07/20/2023	ND					

Surrogate: 1-Chlorooctane *101 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *117 %* *49.1-148*

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CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE GROUP
CHANCE DIXON
420 SOUTH MAIN, SUITE 202
TULSA OK, 74103
Fax To: NA

Received:	07/20/2023	Sampling Date:	07/20/2023
Reported:	07/24/2023	Sampling Type:	Soil
Project Name:	PECOS IRRIGATION 1-10 TANK BATTER\	Sampling Condition:	** (See Notes)
Project Number:	22E-00933	Sample Received By:	Tamara Oldaker
Project Location:	BTA -EDDY CO NM		

Sample ID: BS 23 - 18 4FT (H233799-04)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/21/2023	ND	2.09	104	2.00	1.43	
Toluene*	<0.050	0.050	07/21/2023	ND	2.04	102	2.00	2.00	
Ethylbenzene*	<0.050	0.050	07/21/2023	ND	1.98	99.0	2.00	1.69	
Total Xylenes*	<0.150	0.150	07/21/2023	ND	6.00	99.9	6.00	1.61	
Total BTEX	<0.300	0.300	07/21/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *104 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**144**	16.0	07/21/2023	ND	432	108	400	0.00	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/20/2023	ND	163	81.7	200	5.20	
DRO >C10-C28*	<10.0	10.0	07/20/2023	ND	169	84.7	200	4.26	
EXT DRO >C28-C36	<10.0	10.0	07/20/2023	ND					

Surrogate: 1-Chlorooctane *98.5 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *113 %* *49.1-148*

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Analytical Results For:

VERTEX RESOURCE GROUP
CHANCE DIXON
420 SOUTH MAIN, SUITE 202
TULSA OK, 74103
Fax To: NA

Received:	07/20/2023	Sampling Date:	07/20/2023
Reported:	07/24/2023	Sampling Type:	Soil
Project Name:	PECOS IRRIGATION 1-10 TANK BATTER\	Sampling Condition:	** (See Notes)
Project Number:	22E-00933	Sample Received By:	Tamara Oldaker
Project Location:	BTA -EDDY CO NM		

Sample ID: BS 23 - 19 4FT (H233799-05)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/21/2023	ND	2.09	104	2.00	1.43	
Toluene*	<0.050	0.050	07/21/2023	ND	2.04	102	2.00	2.00	
Ethylbenzene*	<0.050	0.050	07/21/2023	ND	1.98	99.0	2.00	1.69	
Total Xylenes*	<0.150	0.150	07/21/2023	ND	6.00	99.9	6.00	1.61	
Total BTEX	<0.300	0.300	07/21/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *105 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**80.0**	16.0	07/21/2023	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/20/2023	ND	163	81.7	200	5.20	
DRO >C10-C28*	<10.0	10.0	07/20/2023	ND	169	84.7	200	4.26	
EXT DRO >C28-C36	<10.0	10.0	07/20/2023	ND					

Surrogate: 1-Chlorooctane *89.6 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *103 %* *49.1-148*

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Analytical Results For:

VERTEX RESOURCE GROUP
CHANCE DIXON
420 SOUTH MAIN, SUITE 202
TULSA OK, 74103
Fax To: NA

Received:	07/20/2023	Sampling Date:	07/20/2023
Reported:	07/24/2023	Sampling Type:	Soil
Project Name:	PECOS IRRIGATION 1-10 TANK BATTER\	Sampling Condition:	** (See Notes)
Project Number:	22E-00933	Sample Received By:	Tamara Oldaker
Project Location:	BTA -EDDY CO NM		

Sample ID: BS 23 - 20 4FT (H233799-06)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/21/2023	ND	2.05	102	2.00	5.10	
Toluene*	<0.050	0.050	07/21/2023	ND	1.96	98.2	2.00	4.39	
Ethylbenzene*	<0.050	0.050	07/21/2023	ND	2.04	102	2.00	4.82	
Total Xylenes*	<0.150	0.150	07/21/2023	ND	6.07	101	6.00	3.00	
Total BTEX	<0.300	0.300	07/21/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *105 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**96.0**	16.0	07/21/2023	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/20/2023	ND	163	81.7	200	5.20	
DRO >C10-C28*	<10.0	10.0	07/20/2023	ND	169	84.7	200	4.26	
EXT DRO >C28-C36	<10.0	10.0	07/20/2023	ND					

Surrogate: 1-Chlorooctane *116 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *134 %* *49.1-148*

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Analytical Results For:

VERTEX RESOURCE GROUP
CHANCE DIXON
420 SOUTH MAIN, SUITE 202
TULSA OK, 74103
Fax To: NA

Received:	07/20/2023	Sampling Date:	07/20/2023
Reported:	07/24/2023	Sampling Type:	Soil
Project Name:	PECOS IRRIGATION 1-10 TANK BATTER\	Sampling Condition:	** (See Notes)
Project Number:	22E-00933	Sample Received By:	Tamara Oldaker
Project Location:	BTA -EDDY CO NM		

Sample ID: BS 23 - 21 4FT (H233799-07)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/21/2023	ND	2.05	102	2.00	5.10	
Toluene*	<0.050	0.050	07/21/2023	ND	1.96	98.2	2.00	4.39	
Ethylbenzene*	<0.050	0.050	07/21/2023	ND	2.04	102	2.00	4.82	
Total Xylenes*	<0.150	0.150	07/21/2023	ND	6.07	101	6.00	3.00	
Total BTEX	<0.300	0.300	07/21/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *105 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**112**	16.0	07/21/2023	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/21/2023	ND	141	70.5	200	14.7	
DRO >C10-C28*	**71.0**	10.0	07/21/2023	ND	187	93.7	200	4.22	
EXT DRO >C28-C36	<10.0	10.0	07/21/2023	ND					

Surrogate: 1-Chlorooctane *120 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *133 %* *49.1-148*

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Analytical Results For:

VERTEX RESOURCE GROUP
CHANCE DIXON
420 SOUTH MAIN, SUITE 202
TULSA OK, 74103
Fax To: NA

Received:	07/20/2023	Sampling Date:	07/20/2023
Reported:	07/24/2023	Sampling Type:	Soil
Project Name:	PECOS IRRIGATION 1-10 TANK BATTER\	Sampling Condition:	** (See Notes)
Project Number:	22E-00933	Sample Received By:	Tamara Oldaker
Project Location:	BTA -EDDY CO NM		

Sample ID: BS 23 - 22 4FT (H233799-08)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/21/2023	ND	2.05	102	2.00	5.10	
Toluene*	<0.050	0.050	07/21/2023	ND	1.96	98.2	2.00	4.39	
Ethylbenzene*	<0.050	0.050	07/21/2023	ND	2.04	102	2.00	4.82	
Total Xylenes*	<0.150	0.150	07/21/2023	ND	6.07	101	6.00	3.00	
Total BTEX	<0.300	0.300	07/21/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *104 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**144**	16.0	07/21/2023	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/21/2023	ND	141	70.5	200	14.7	
DRO >C10-C28*	<10.0	10.0	07/21/2023	ND	187	93.7	200	4.22	
EXT DRO >C28-C36	<10.0	10.0	07/21/2023	ND					

Surrogate: 1-Chlorooctane *94.6 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *106 %* *49.1-148*

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Analytical Results For:

VERTEX RESOURCE GROUP
CHANCE DIXON
420 SOUTH MAIN, SUITE 202
TULSA OK, 74103
Fax To: NA

Received:	07/20/2023	Sampling Date:	07/20/2023
Reported:	07/24/2023	Sampling Type:	Soil
Project Name:	PECOS IRRIGATION 1-10 TANK BATTER\	Sampling Condition:	** (See Notes)
Project Number:	22E-00933	Sample Received By:	Tamara Oldaker
Project Location:	BTA -EDDY CO NM		

Sample ID: BS 23 - 23 4FT (H233799-09)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/21/2023	ND	2.05	102	2.00	5.10	
Toluene*	<0.050	0.050	07/21/2023	ND	1.96	98.2	2.00	4.39	
Ethylbenzene*	<0.050	0.050	07/21/2023	ND	2.04	102	2.00	4.82	
Total Xylenes*	<0.150	0.150	07/21/2023	ND	6.07	101	6.00	3.00	
Total BTEX	<0.300	0.300	07/21/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *107 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**192**	16.0	07/21/2023	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/21/2023	ND	141	70.5	200	14.7	
DRO >C10-C28*	**11.8**	10.0	07/21/2023	ND	187	93.7	200	4.22	
EXT DRO >C28-C36	<10.0	10.0	07/21/2023	ND					

Surrogate: 1-Chlorooctane *87.2 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *102 %* *49.1-148*

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Analytical Results For:

VERTEX RESOURCE GROUP
CHANCE DIXON
420 SOUTH MAIN, SUITE 202
TULSA OK, 74103
Fax To: NA

Received:	07/20/2023	Sampling Date:	07/20/2023
Reported:	07/24/2023	Sampling Type:	Soil
Project Name:	PECOS IRRIGATION 1-10 TANK BATTER\	Sampling Condition:	** (See Notes)
Project Number:	22E-00933	Sample Received By:	Tamara Oldaker
Project Location:	BTA -EDDY CO NM		

Sample ID: BS 23 - 24 4FT (H233799-10)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/21/2023	ND	2.05	102	2.00	5.10	
Toluene*	<0.050	0.050	07/21/2023	ND	1.96	98.2	2.00	4.39	
Ethylbenzene*	<0.050	0.050	07/21/2023	ND	2.04	102	2.00	4.82	
Total Xylenes*	<0.150	0.150	07/21/2023	ND	6.07	101	6.00	3.00	
Total BTEX	<0.300	0.300	07/21/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *105 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**128**	16.0	07/21/2023	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/21/2023	ND	141	70.5	200	14.7	
DRO >C10-C28*	**23.8**	10.0	07/21/2023	ND	187	93.7	200	4.22	
EXT DRO >C28-C36	<10.0	10.0	07/21/2023	ND					

Surrogate: 1-Chlorooctane *91.9 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *103 %* *49.1-148*

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Analytical Results For:

VERTEX RESOURCE GROUP
CHANCE DIXON
420 SOUTH MAIN, SUITE 202
TULSA OK, 74103
Fax To: NA

Received:	07/20/2023	Sampling Date:	07/20/2023
Reported:	07/24/2023	Sampling Type:	Soil
Project Name:	PECOS IRRIGATION 1-10 TANK BATTER\	Sampling Condition:	** (See Notes)
Project Number:	22E-00933	Sample Received By:	Tamara Oldaker
Project Location:	BTA -EDDY CO NM		

Sample ID: BS 23 - 25 4FT (H233799-11)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/21/2023	ND	2.05	102	2.00	5.10	
Toluene*	<0.050	0.050	07/21/2023	ND	1.96	98.2	2.00	4.39	
Ethylbenzene*	<0.050	0.050	07/21/2023	ND	2.04	102	2.00	4.82	
Total Xylenes*	<0.150	0.150	07/21/2023	ND	6.07	101	6.00	3.00	
Total BTEX	<0.300	0.300	07/21/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *108 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**144**	16.0	07/21/2023	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/21/2023	ND	141	70.5	200	14.7	
DRO >C10-C28*	**28.3**	10.0	07/21/2023	ND	187	93.7	200	4.22	
EXT DRO >C28-C36	<10.0	10.0	07/21/2023	ND					

Surrogate: 1-Chlorooctane *83.3 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *95.5 %* *49.1-148*

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CARDINAL Laboratories

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Analytical Results For:

VERTEX RESOURCE GROUP
CHANCE DIXON
420 SOUTH MAIN, SUITE 202
TULSA OK, 74103
Fax To: NA

Received:	07/20/2023	Sampling Date:	07/20/2023
Reported:	07/24/2023	Sampling Type:	Soil
Project Name:	PECOS IRRIGATION 1-10 TANK BATTER\	Sampling Condition:	** (See Notes)
Project Number:	22E-00933	Sample Received By:	Tamara Oldaker
Project Location:	BTA -EDDY CO NM		

Sample ID: BS 23 - 26 4FT (H233799-12)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/21/2023	ND	2.05	102	2.00	5.10	
Toluene*	<0.050	0.050	07/21/2023	ND	1.96	98.2	2.00	4.39	
Ethylbenzene*	<0.050	0.050	07/21/2023	ND	2.04	102	2.00	4.82	
Total Xylenes*	<0.150	0.150	07/21/2023	ND	6.07	101	6.00	3.00	
Total BTEX	<0.300	0.300	07/21/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *105 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**128**	16.0	07/21/2023	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/21/2023	ND	141	70.5	200	14.7	
DRO >C10-C28*	**41.8**	10.0	07/21/2023	ND	187	93.7	200	4.22	
EXT DRO >C28-C36	<10.0	10.0	07/21/2023	ND					

Surrogate: 1-Chlorooctane *84.1 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *95.6 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE GROUP
CHANCE DIXON
420 SOUTH MAIN, SUITE 202
TULSA OK, 74103
Fax To: NA

Received:	07/20/2023	Sampling Date:	07/20/2023
Reported:	07/24/2023	Sampling Type:	Soil
Project Name:	PECOS IRRIGATION 1-10 TANK BATTER\	Sampling Condition:	** (See Notes)
Project Number:	22E-00933	Sample Received By:	Tamara Oldaker
Project Location:	BTA -EDDY CO NM		

Sample ID: BS 23 - 27 4FT (H233799-13)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/21/2023	ND	2.05	102	2.00	5.10	
Toluene*	<0.050	0.050	07/21/2023	ND	1.96	98.2	2.00	4.39	
Ethylbenzene*	<0.050	0.050	07/21/2023	ND	2.04	102	2.00	4.82	
Total Xylenes*	<0.150	0.150	07/21/2023	ND	6.07	101	6.00	3.00	
Total BTEX	<0.300	0.300	07/21/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *104 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**64.0**	16.0	07/21/2023	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/21/2023	ND	141	70.5	200	14.7	
DRO >C10-C28*	**40.4**	10.0	07/21/2023	ND	187	93.7	200	4.22	
EXT DRO >C28-C36	<10.0	10.0	07/21/2023	ND					

Surrogate: 1-Chlorooctane *96.2 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *111 %* *49.1-148*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Analytical Results For:

VERTEX RESOURCE GROUP
CHANCE DIXON
420 SOUTH MAIN, SUITE 202
TULSA OK, 74103
Fax To: NA

Received:	07/20/2023	Sampling Date:	07/20/2023
Reported:	07/24/2023	Sampling Type:	Soil
Project Name:	PECOS IRRIGATION 1-10 TANK BATTER\	Sampling Condition:	** (See Notes)
Project Number:	22E-00933	Sample Received By:	Tamara Oldaker
Project Location:	BTA -EDDY CO NM		

Sample ID: BS 23 - 28 4FT (H233799-14)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/21/2023	ND	2.05	102	2.00	5.10	
Toluene*	<0.050	0.050	07/21/2023	ND	1.96	98.2	2.00	4.39	
Ethylbenzene*	<0.050	0.050	07/21/2023	ND	2.04	102	2.00	4.82	
Total Xylenes*	<0.150	0.150	07/21/2023	ND	6.07	101	6.00	3.00	
Total BTEX	<0.300	0.300	07/21/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *106 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**80.0**	16.0	07/21/2023	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/21/2023	ND	141	70.5	200	14.7	
DRO >C10-C28*	<10.0	10.0	07/21/2023	ND	187	93.7	200	4.22	
EXT DRO >C28-C36	<10.0	10.0	07/21/2023	ND					

Surrogate: 1-Chlorooctane *91.4 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *106 %* *49.1-148*

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Celey D. Keene, Lab Director/Quality Manager

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Analytical Results For:

VERTEX RESOURCE GROUP
CHANCE DIXON
420 SOUTH MAIN, SUITE 202
TULSA OK, 74103
Fax To: NA

Received:	07/20/2023	Sampling Date:	07/20/2023
Reported:	07/24/2023	Sampling Type:	Soil
Project Name:	PECOS IRRIGATION 1-10 TANK BATTER\	Sampling Condition:	** (See Notes)
Project Number:	22E-00933	Sample Received By:	Tamara Oldaker
Project Location:	BTA -EDDY CO NM		

Sample ID: BS 23 - 29 4FT (H233799-15)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/21/2023	ND	2.05	102	2.00	5.10	
Toluene*	<0.050	0.050	07/21/2023	ND	1.96	98.2	2.00	4.39	
Ethylbenzene*	<0.050	0.050	07/21/2023	ND	2.04	102	2.00	4.82	
Total Xylenes*	<0.150	0.150	07/21/2023	ND	6.07	101	6.00	3.00	
Total BTEX	<0.300	0.300	07/21/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *106 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**96.0**	16.0	07/21/2023	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/21/2023	ND	141	70.5	200	14.7	
DRO >C10-C28*	<10.0	10.0	07/21/2023	ND	187	93.7	200	4.22	
EXT DRO >C28-C36	<10.0	10.0	07/21/2023	ND					

Surrogate: 1-Chlorooctane *101 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *117 %* *49.1-148*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Analytical Results For:

VERTEX RESOURCE GROUP
CHANCE DIXON
420 SOUTH MAIN, SUITE 202
TULSA OK, 74103
Fax To: NA

Received:	07/20/2023	Sampling Date:	07/20/2023
Reported:	07/24/2023	Sampling Type:	Soil
Project Name:	PECOS IRRIGATION 1-10 TANK BATTER\	Sampling Condition:	** (See Notes)
Project Number:	22E-00933	Sample Received By:	Tamara Oldaker
Project Location:	BTA -EDDY CO NM		

Sample ID: BS 23 - 30 4FT (H233799-16)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/21/2023	ND	2.05	102	2.00	5.10	
Toluene*	<0.050	0.050	07/21/2023	ND	1.96	98.2	2.00	4.39	
Ethylbenzene*	<0.050	0.050	07/21/2023	ND	2.04	102	2.00	4.82	
Total Xylenes*	<0.150	0.150	07/21/2023	ND	6.07	101	6.00	3.00	
Total BTEX	<0.300	0.300	07/21/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *104 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**224**	16.0	07/21/2023	ND	432	108	400	0.00	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/21/2023	ND	141	70.5	200	14.7	
DRO >C10-C28*	<10.0	10.0	07/21/2023	ND	187	93.7	200	4.22	
EXT DRO >C28-C36	<10.0	10.0	07/21/2023	ND					

Surrogate: 1-Chlorooctane *118 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *126 %* *49.1-148*

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Notes and Definitions

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

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CARDINAL Laboratories

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

1 of 2

Company Name:	Vertex
Project Manager:	Chance Dixon
Address:	3101 Boyd Dr
City:	Carlsbad State: NM Zip: 88220
Phone #:	575 988 1472 Fax #:
Project #:	22E-00933 Project Owner:
Project Name:	Pecos Irrigation 1-10 Tank Battery
Project Location:	Carlsbad, NM
Sampler Name:	Fernando Rodriguez

BILL TO

P.O. #:	
Company:	BTA Oil Prod.
Attn:	Kelton Beaird
Address:	104 S. Pecos St.
City:	Midland
State:	TX Zip: 79701
Phone #:	
Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.		(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	BTEX	TPH: 8015D (GRO/DRO)	Cl
H233799																		
1	BS23-15	4ft	G	1			✓					✓		7/20	8:00	✓	✓	✓
2	BS23-16	4ft					✓					✓			8:05	✓	✓	✓
3	BS23-17	4ft					✓					✓			8:10	✓	✓	✓
4	BS23-18	4ft					✓					✓			8:15	✓	✓	✓
5	BS23-19	4ft					✓					✓			8:20	✓	✓	✓
6	BS23-20	4ft					✓					✓			8:25	✓	✓	✓
7	BS23-21	4ft					✓					✓			8:30	✓	✓	✓
8	BS23-22	4ft					✓					✓			8:35	✓	✓	✓
9	BS23-23	4ft					✓					✓			8:40	✓	✓	✓
10	BS23-24	4ft	↓	↓			✓					✓		↓	8:45	✓	✓	✓

Relinquished By:	Date: 7-20-23	Received By:	
	Time: 1609		
Relinquished By:	Date:	Received By:	
	Time:		

Verbal Result: ☐ Yes ☐ No Add'l Phone #: 575 361 4509

All Results are emailed. Please provide Email address: cdixon@vertex.ca / Analytical@vertex.ca / Permian@vertex.ca

REMARKS: Temp Blank -1.9c

Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Observed Temp. °C 16.9	Sample Condition Cool: ☐ Yes ☑ No	Intact: ☑ Yes ☐ No	CHECKED BY: (Initials) JO.
	Corrected Temp. °C			

Turnaround Time: Standard ☐ Rush ☑ #140 48hrs JO 7/24/23

Thermometer ID #113 Correction Factor -0.5°C

Bacteria (only) Sample Condition: Cool ☐ Yes ☐ No Intact ☐ Yes ☐ No Observed Temp. °C Corrected Temp. °C

FORM-006 R 3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

2 of 2

Company Name:	Vertex
Project Manager:	
Address:	
City:	State: Zip:
Phone #:	Fax #:
Project #:	Project Owner:
Project Name:	
Project Location:	
Sampler Name:	

BILL TO

P.O. #:	
Company:	
Attn:	
Address:	
City:	
State: Zip:	
Phone #:	
Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	BTEX	TPH 8015D	CL
H233799																	
11	BS23-25 4ft	5	2			✓					✓		7/20	8:50	✓	✓	✓
12	BS23-26 4ft					✓					✓			8:55	✓	✓	✓
13	BS23-27 4ft					✓					✓			9:00	✓	✓	✓
14	BS23-28 4ft					✓					✓			9:05	✓	✓	✓
15	BS23-29 4ft					✓					✓			9:10	✓	✓	✓
16	BS23-30 4ft					✓					✓			9:15	✓	✓	✓

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

Relinquished By:	Date: 7.20.23	Received By:	Verbal Result: ☐ Yes ☐ No Add'l Phone #: 575 361 4509
	Time: 1609		All Results are emailed. Please provide Email address:
Relinquished By:	Date:	Received By:	cDixon@vertex.ca / Analytical@vertex.ca / Permian@vertex.ca
	Time:		REMARKS:

Delivered By: (Circle One)	Observed Temp. °C 16.9	Sample Condition: Cool ☐ Yes ☑ No; Intact ☑ Yes ☐ No	CHECKED BY: (Initials)	Turnaround Time: Standard ☐ Rush ☑
Sampler - UPS - Bus - Other:	Corrected Temp. °C			Thermometer ID #113 #140 Correction Factor -0.5°C T: 7/20/23

Bacteria (only) Sample Condition: Cool ☐ Yes ☐ No; Intact ☐ Yes ☐ No; Observed Temp. °C; Corrected Temp. °C

FORM-006 R 3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

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 246370

CONDITIONS

Operator: BTA OIL PRODUCERS, LLC 104 S Pecos Midland, TX 79701	OGRID: 260297
	Action Number: 246370
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
rhamlet	We have received your Remediation Closure Report for Incident #NAPP2204056995 PECOS IRRIGATION 1-10 TANK BATTERY, thank you. This Remediation Closure Report is approved. Areas reasonably needed for production or subsequent drilling operations will need to be reclaimed and revegetated as soon as they are no longer reasonably needed. A report for reclamation and revegetation including pictures of the contoured backfilled excavation surface and a thorough discussion on reseeding mixture, vegetation ratio, timelines, etc.., will need to be submitted and approved prior to this incident receiving the final status of "Restoration Complete".	1/11/2024