



Incident Number: nAPP2403257469

## Release Assessment and Closure

Rana Salada Pad A

Unit A, Section 06, Township 23 South, Range 29 East

API: 30-015-46085

County: Eddy

Vertex File Number: 24E-04030

**Prepared for:**

Permian Resources Operating, LLC

**Prepared by:**

Vertex Resource Services Inc.

**Date:**

November 2024

**Permian Resources**  
Rana Salada Pad A

**Release Assessment and Closure**  
December 2024

**Release Assessment and Closure**  
**Rana Salada Pad A**  
**Unit A, Section 06, Township 23 South, Range 29 East**  
**API: 30-015-46085**  
**County: Eddy**

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## 1.0 Introduction

Permian Resources (Permian) retained Vertex Resource Services Inc. (Vertex) to conduct a Release Assessment and Closure for a produced water release that occurred on January 19, 2024, at Rana Salada Pad A API 30-015-46085 (hereafter referred to as the “site”). Permian submitted an initial C-141 Release Notification to New Mexico Oil Conservation Division (NMOCD) on February 6, 2024. Incident ID number nAPP2403257469, 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 closure of this release, with the understanding that restoration of the release site will be completed following remediation activities as per NMAC 19.15.29.13.

## 2.0 Incident Description

The release occurred on January 19, 2024, due to a loose butterfly valve on a SWD pipeline. The incident was reported on February 6, 2024, and involved the release of approximately 370 barrels (bbl.) of produced water into the pasture. Approximately 210 bbl. of free fluid was removed during 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 16 miles southeast of Carlsbad, New Mexico. The legal location for the site is Unit A, Section 06, Township 23 South and Range 29 East in Eddy County, New Mexico. The release area is located on federal property. An aerial photograph and site schematic are presented in Figure 1.

The location is typical of oil and gas exploration and pipelines in the Permian Basin and is currently used for oil and gas production and transport. The following sections specifically describe the release area in the pasture or in proximity to the pipeline right-of-way (Figure 1).

*The Geological Map of New Mexico* (New Mexico Bureau of Geology and Mineral Resources, 2024) indicates the site’s surface geology primarily comprises Qoa - older alluvial deposits (Quaternary) and the soil at the site is characterized as gravely loam (United States Department of Agriculture, Natural Resources Conservation Service, 2024). Additional soil characteristics include a drainage class of well drained with a runoff class of very high. 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 hills with elevations ranging between 2,750 and 5,000 feet. The climate is semiarid with average annual precipitation ranging between 8 and 16 inches. Using information from the United States Department of Agriculture, the dominant vegetation was determined to be sideoats grama and black grama. Grasses with shrubs and shrubs dominate the historical plant community (United States Department of Agriculture, Natural Resources Conservation Service, 2024). Limited to no vegetation is allowed to grow on the right-of-way and access road.

#### 4.0 Closure Criteria Determination

The nearest active well to the site is a New Mexico Office of the State Engineer (NMOSE) monitoring well located approximately 0.48 miles west of the site (United States Geological Survey, 2024). Data from 2021 shows the NMOSE borehole recorded a depth to groundwater of 55 feet below ground surface (bgs). Information pertaining to the depth to ground water determination is included in Appendix A.

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 an intermittent watercourse (National Wetlands Inventory) located approximately 0.28 miles west of the site (United States Fish and Wildlife Service, 2024).

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

**Permian Resources**  
Rana Salada Pad A

**Release Assessment and Closure**  
December 2024

<b>Table 1. Closure Criteria Determination</b>			
<b>Site Name: Rana Salada Pad A</b>			
<b>Spill Coordinates: 32.339020,-104.030917</b>		<b>X: 591198.54</b>	<b>Y: 3578427.10</b>
<b>Site Specific Conditions</b>		<b>Value</b>	<b>Unit</b>
1	Depth to Groundwater (nearest reference)	>55	feet
	Distance between release and nearest DTGW reference	2,493	feet
		0.48	miles
	Date of nearest DTGW reference measurement	July 31, 2024	
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	1,507	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	9,373	feet
4	Within 300 feet from an occupied residence, school, hospital, institution or church	24,728	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, <b>or</b>	42,579	feet
	ii) Within 1000 feet of any fresh water well or spring	42,759	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	3,041	feet
8	Within the area overlying a subsurface mine	No	(Y/N)
	Distance between release and nearest registered mine	39,018	feet
9	Within an unstable area (Karst Map)	Medium	Critical High Medium Low
	Distance between release and nearest unstable area	12,551	feet
10	Within a 100-year Floodplain	100-500	year
	Distance between release and nearest FEMA Zone A (100-year Floodplain)	1,558	feet
11	Soil Type	Gravelly Loam	
12	Ecological Classification	Shallow	
13	Geology	Qoa	
	<b>NMAC 19.15.29.12 E (Table 1) Closure Criteria</b>	<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 DTGW <50 feet bgs		
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

On April 16, 2021, eTech Environmental & Safety Solutions, Inc. (eTech) conducted initial site assessment activities, which included field screening procedures. The characterization sample locations from eTech's delineation activities are presented in Figure 1. Analytical data for eTech’s delineation are summarized in Table 3. Oversight of the remediation field work and confirmatory sampling was provided by Vertex. During delineation activities, sample points TT2 through TT4 were not vertically delineated. To ensure vertical delineation was completed per requirements in 19.15.29. NMAC, Vertex collected BH24-01 through BH24-03 during as discrete samples at 3 feet bgs in the same locations as TT2 through TT4. Analytical data for Vertex’s delineation samples are included at the top of Table 4.

Remediation efforts began on August 30, 2024, and were finalized on November 7, 2024. Vertex personnel supervised the excavation of impacted soils. Field screening was completed with a total of 99 sample points and consisted of analysis using the methods listed below.

- Photo Ionization Detector (volatile hydrocarbons)
- Dextsil Petroflag using EPA SW-846 Method 9074 (extractable hydrocarbons)
- Hach Silver Nitrate (chlorides).

Field screening and lab results were used to identify areas requiring further remediation. Soils were removed to a depth of 3 to 6 feet bgs. Wall samples WS24-01 through WS24-23 were utilized to remediate the upper 3 feet while WS24-24 through WS24-30 were utilized for confirmation for the deeper depths (below 3 feet). Impacted soil was transported by a licensed waste hauler and disposed of at an approved waste management facility. Field screening and confirmatory sampling laboratory results are presented in Table 4. A Daily Field Report (DFR) photo documenting the final excavation before the backfill is presented in Appendix B. Laboratory results are presented in Appendix C.

## 6.0 Closure Request

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

The excavation was backfilled with uncontaminated earthen material sourced locally and placed to meet the site's existing grade to prevent water ponding and erosion. Samples were collected from the caliche and topsoil material prior to backfill activities. Analytical data pertaining to the backfill samples is included in Table 4. The top layer of the backfill was seeded on November 21, 2024, with the Bureau of Land Management (BLM) recommended seed mixture for loamy soils.

Vertex requests that this open incident be approved for reclamation closure as all requirements set forth in 19.15.29 NMAC have been met. Permian certifies that all information and appendices in this report are correct and that they have complied with all applicable closure requirements and conditions. The site will be monitored bi-annually until it reaches at least a 70% revegetation. A Revegetation Report will be submitted to NMOCD and BLM when the site has been successfully revegetated.

## 7.0 Land Reclamation

The land reclamation for the site (surface reclamation) is detailed below. This section outlines the principles that were used during the surface reclamation phase for the site. The DFR and site photographs obtained during reclamation procedures are included in Appendix B.

### 7.1 End Land Use and Capability

The land use surrounding the site is defined as natural; therefore, the end land use would be natural land. A natural area is described as: away from human habitation and activities, where the primary concern is the protection of ecological receptors. The site was reclaimed so that the capability of the land matches that of the areas immediately surrounding the site, which consists of rangeland.

### 7.2 Restoration of Drainage

Currently, the site consists of a pasture area that slopes southward along the pipeline right-of-way. The site was contoured to match surrounding topography as near as practicable to restore natural drainage, which was generally in a west-to-east direction. Any compaction on-site was addressed by de-compaction to an approximate depth of 6 inches to avoid caliche material from resurfacing. The decompaction was completed in the direction in which the area is sloped to ensure that future rainfall will be able to drain away from the site. All de-compaction activities were conducted post-backfill procedures and pre-seeding to maximize seed to soil contact and promote vegetation establishment.

### 7.3 Soil Replacement

Surface reclamation included determination of background topsoil depth as site conditions are required to

meet pre-existing conditions. Reclamation of the location was completed after backfilling operations. Clean, locally sourced topsoil and caliche was imported to the site to backfill the excavation. The pasture areas were fenced with a 4-strand barbed wire fence.

## 7.4 Erosion Control

There are currently no erosion concerns on-site, and the use of erosion control devices at this location is not anticipated; however, erosion control devices will be installed at the discretion of the on-site environmental inspector.

## 7.5 Re-vegetation

### 7.5.1 Seeding

A seed mix suitable for the site and surrounding area was used and applied at appropriate rates. Seed establishment and re-vegetation will be monitored, bi-annually, to determine success. A Bureau of Land Management loamy seed mix consisting of Sideoats grama – 4.0 lb/acre, Blue grama – 2lb/acre, Plains bristlegrass – 2lb/acre, Little bluestem – 1lb/acre was obtained for the site and administered by Vertex personnel. Seeding was completed using a tractor with rotating discs and broadcasted on all areas under reclamation. Photo documentation of the excavation area after backfill and seeding is included in Appendix B.

### 7.5.2 Reclamation Standards

Reclamation success will meet requirements outlined in Chapter 6 of The Gold Book (United States Department of the Interior and U.S. Department of Agriculture, 2007) which states that “a self-sustaining, vigorous, diverse, native (or otherwise approved) plant community is established on site, with a density sufficient to control erosion and non-native plant invasion and to re-establish wildlife habitat or forage production”.

## 7.6 Weed Management

The site will be monitored for vegetative growth throughout the year. Should noxious vegetation be identified on-site, a control program will be implemented and managed as required.

Weed management programs will identify weed species of concern and utilize effective control methods. These methods include but are not limited to: chemical (herbicide) control, mechanical (mowing) control or biological control as approved by governing regulatory agencies.

## 8.0 Monitoring Program

Bi-annual inspections will be conducted, during the growing season, to monitor site progression and assess the need for additional best management practices (BMPs). Inspections will include photographs of the site and BMPs implemented.

### 8.1 Final Assessment and Closure Request

During the bi-annual inspections, if site conditions are at or nearing background conditions, a final re-vegetation report will be completed. The report will provide a summary of the vegetation establishment, a summary and interpretation

of monitoring data collected, interpretation of historical monitoring data, and suggested corrective actions if applicable.

Should you have any questions or concerns, please do not hesitate to contact Chance Dixon at 575.988.1472 or Cdixon@vertexresource.com

## 9.0 References

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**Permian Resources**

Rana Salada Pad A

**Release Assessment and Closure**

December 2024

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## 10.0 Limitations

This report has been prepared for the sole benefit of Permian Resources Operating, LLC. This document may not be used by any other person or entity, with the exception of the New Mexico Oil Conservation Division and the Bureau of Land Management, without the express written consent of Vertex Resource Services Inc. (Vertex) and Permian Resources Operating, 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**



# Figure 1

Characterization (eTech)

## Legend

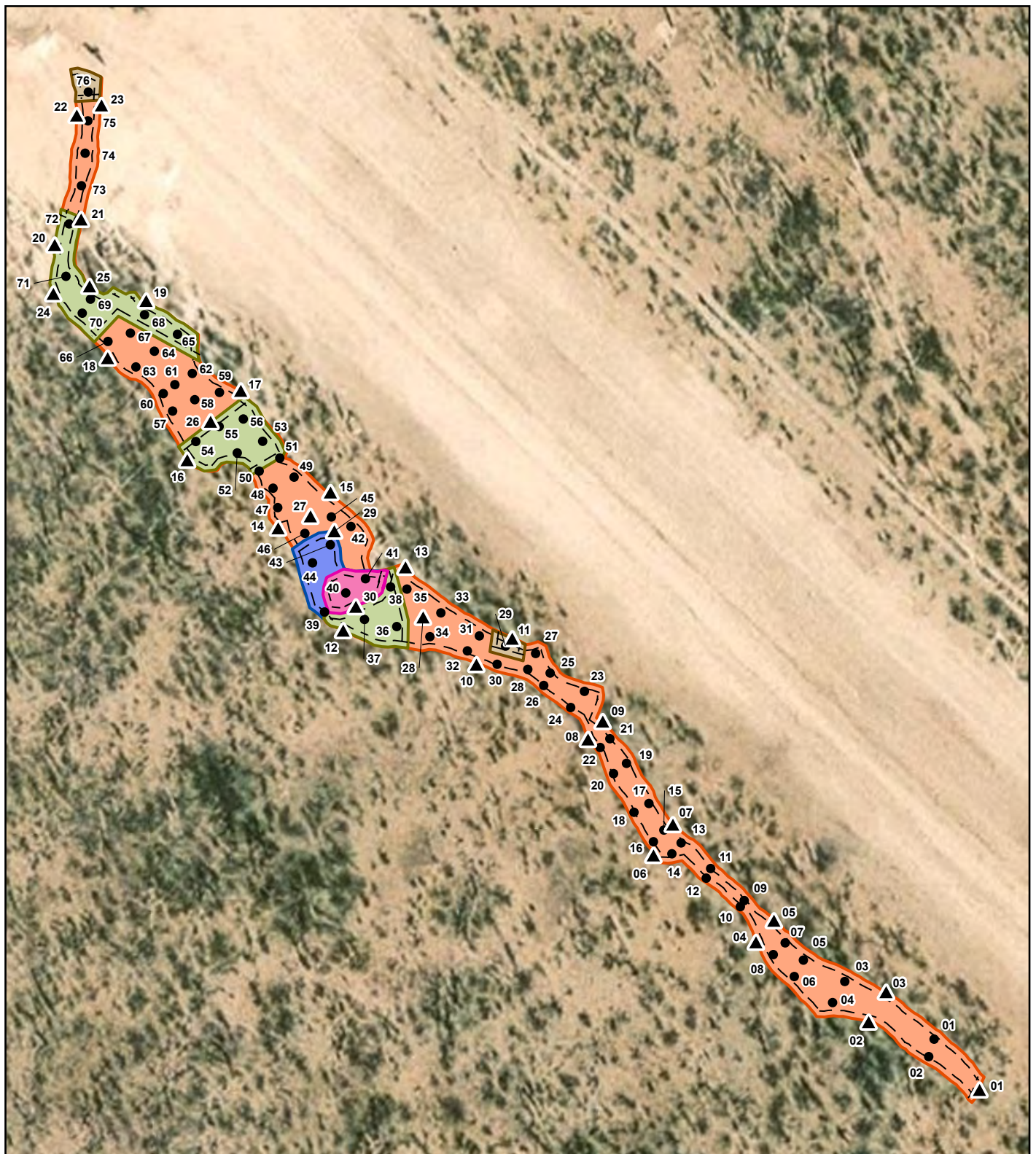
- Release Area
- Test Pits



Google Earth

200 ft





- Base Sample (Excavated) (Prefixed by "BES24-")
- ▲ Wall Sample (Excavated) (Prefixed by "WS24-")
- Excavation to 3' bgs (~ 9,677 sq. ft. | 1,494 ft. )
- Excavation to 3.5' bgs (~ 129 sq. ft. | 51 ft. )
- Excavation to 4' bgs (~ 2,841 sq. ft. | 480 ft. )
- Excavation to 5' bgs (~ 544 sq. ft. | 100 ft. )
- Excavation to 6' bgs (~ 465 sq. ft. | 94 ft. )



0 15 30 60 ft  
 Map Center:  
 NAD 1983 UTM Zone 13N Lat: 32.33852°N  
 Date: Dec 12/24 Long: 104.030336°W



## Confirmation Sampling Site Schematic Rana Salada Pad A

FIGURE:  
**2**




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

Note: Georeferenced image from Esri, 2023. Site features from GPS by Vertex Professional Services Ltd., 2024.

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 Reclaimed Area (~37,515 st.ft. | 1,491 ft.)



0 20 40 80 ft  
NAD 1983 UTM Zone 13N  
Date: Dec 12/24

Map Center:  
Lat: 32.338542°N,  
Long: 104.030432°W



### Reclaimed Area Schematic Rana Salada Pad A

FIGURE:  
**3**



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, 2023. Site features from GPS by Vertex Professional Services Ltd., 2024.

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## **TABLES**





Client Name: Permian Resources

Site Name: Rana Salada Pad A

NMOCD Tracking #: nAPP2403257469

Project #: 24E-04030

Lab Reports: H245696, H246259, H246788, H246788A, H246841

Table 4. Confirmation Sample Field Screen and Laboratory Results - Depth to Groundwater <50 feet bgs												
Sample Description			Field Screening		Petroleum Hydrocarbons							Inorganic
Sample ID	Depth (ft)	Sample Date	Extractable Organic Compounds (PetroFlag)	Chloride Concentration	Volatile		Extractable					
					Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	
			(ppm)	(ppm)								
BG24-01	N/A	November 6, 2024	16	85	ND	ND	ND	ND	ND	ND	ND	32
BG24-02	N/A	November 6, 2024	15	98	ND	ND	ND	ND	ND	ND	ND	32
BH24-01	3	November 6, 2024	13	200	ND	ND	ND	ND	ND	ND	ND	32
BH24-02	3	November 6, 2024	15	158	ND	ND	ND	ND	ND	ND	ND	32
BH24-03	3	November 6, 2024	14	168	ND	ND	ND	ND	ND	ND	ND	48
BS24-01	3	September 17, 2024	86	322	ND	ND	ND	ND	ND	ND	ND	32
BS24-02	3	September 17, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	16
BS24-03	3	September 17, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	ND
BS24-04	3	September 17, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	ND
BS24-05	3	September 17, 2024	94	350	ND	ND	ND	ND	ND	ND	ND	16
BS24-06	3	September 17, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	16
BS24-07	3	September 17, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	32
BS24-08	3	September 17, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	16
BS24-09	3	September 17, 2024	38	335	ND	ND	ND	ND	ND	ND	ND	ND
BS24-10	3	September 17, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	ND
BS24-11	3	September 17, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	ND
BS24-12	3	September 17, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	16
BS24-13	3	September 17, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	16
BS24-14	3	September 17, 2024	41	588	ND	ND	ND	ND	ND	ND	ND	16
BS24-15	3	September 17, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	16
BS24-16	3	September 17, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	16
BS24-17	3	September 17, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	16
BS24-18	3	September 17, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	32
BS24-19	3	September 17, 2024	35	412	ND	ND	ND	ND	ND	ND	ND	16
BS24-20	3	September 17, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	32
BS24-21	3	September 17, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	32
BS24-22	3	September 17, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	32
BS24-23	3	September 17, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	32
BS24-24	3	September 17, 2024	55	410	ND	ND	ND	ND	ND	ND	ND	32
BS24-25	3	September 17, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	32
BS24-26	3	September 17, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	32
BS24-27	3	October 10, 2024	30	275	ND	ND	ND	ND	ND	ND	ND	160
BS24-28	3	October 10, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	80
BS24-29	3	October 10, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	768
	3.5	November 5, 2024	4	258	ND	ND	ND	ND	ND	ND	ND	128
BS24-30	3	October 10, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	240
BS24-31	3	October 10, 2024	60	325	ND	ND	ND	ND	ND	ND	ND	256
BS24-32	3	October 10, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	160
BS24-33	3	October 10, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	544
BS24-34	3	October 10, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	224
BS24-35	3	October 10, 2024	98	350	ND	ND	ND	ND	ND	ND	ND	224
BS24-36	3	October 10, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	3,680
	4	November 5, 2024	-	355	ND	ND	ND	ND	ND	ND	ND	208
BS24-37	3	October 10, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	1,180
	4	November 5, 2024	26	545	ND	ND	ND	ND	ND	ND	ND	416
BS24-38	3	October 10, 2024	-	-	-	-	-	-	-	-	-	-
	4	November 5, 2024	-	378	ND	ND	ND	ND	ND	ND	ND	256
BS24-39	3	October 10, 2024	39	4,245	-	-	-	-	-	-	-	-
	4	November 5, 2024	-	1,670	-	-	-	-	-	-	-	-
	5	November 6, 2024	42	343	ND	ND	ND	ND	ND	ND	ND	160



Sample Description			Field Screening		Petroleum Hydrocarbons							Inorganic
Sample ID	Depth (ft)	Sample Date	Extractable Organic Compounds (PetroFlag)	Chloride Concentration	Volatile		Extractable					Chloride Concentration
					Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	
			(ppm)	(ppm)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BS24-40	3	October 10, 2024	-	-	-	-	-	-	-	-	-	-
	4	November 5, 2024	-	1,950	-	-	-	-	-	-	-	-
	5	November 6, 2024	-	3,625	-	-	-	-	-	-	-	-
	6	November 6, 2024	-	1,188	ND	ND	ND	ND	ND	ND	ND	32
BS24-41	3	October 10, 2024	-	-	-	-	-	-	-	-	-	-
	4	November 5, 2024	-	2,838	-	-	-	-	-	-	-	-
	5	November 6, 2024	-	1,788	-	-	-	-	-	-	-	-
	6	November 6, 2024	-	1,618	ND	ND	ND	ND	ND	ND	ND	48
BS24-42	3	October 10, 2024	-	-	-	-	-	-	-	-	-	-
	4	November 5, 2024	4	185	-	-	-	-	-	-	-	80
BS24-43	3	October 10, 2024	-	2,725	-	-	-	-	-	-	-	-
	4	November 5, 2024	-	2,025	-	-	-	-	-	-	-	-
	5	November 6, 2024	-	345	ND	ND	ND	ND	ND	ND	ND	320
BS24-44	3	October 10, 2024	-	-	-	-	-	-	-	-	-	-
	4	November 5, 2024	-	770	-	-	-	-	-	-	-	-
	5	November 6, 2024	39	350	ND	ND	ND	ND	ND	ND	ND	240
BS24-45	3	October 10, 2024	-	-	-	-	-	-	-	-	-	-
	4	November 5, 2024	-	210	ND	ND	ND	ND	ND	ND	ND	64
BS24-46	3	October 10, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	752
	4	November 5, 2024	2	228	ND	ND	ND	ND	ND	ND	ND	48
BS24-47	3	October 10, 2024	48	440	ND	ND	ND	ND	ND	ND	ND	304
BS24-48	3	October 10, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	240
BS24-49	3	October 10, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	288
BS24-50	3	October 11, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	432
BS24-51	3	October 11, 2024	-	690	ND	ND	ND	ND	ND	ND	ND	432
BS24-52	3	October 11, 2024	-	-	-	-	-	-	-	-	-	-
	4	November 5, 2024	19	233	ND	ND	ND	ND	ND	ND	ND	112
BS24-53	3	October 11, 2024	-	1,103	-	-	-	-	-	-	-	-
	4	November 5, 2024	-	353	ND	ND	ND	ND	ND	ND	ND	208
BS24-54	3	October 11, 2024	-	-	-	-	-	-	-	-	-	-
	4	November 5, 2024	1	170	ND	ND	ND	ND	ND	ND	ND	96
BS24-55	3	October 11, 2024	-	1,213	-	-	-	-	-	-	-	-
	4	November 5, 2024	-	298	ND	ND	ND	ND	ND	ND	ND	176
BS24-56	3	October 11, 2024	-	-	-	-	-	-	-	-	-	-
	4	November 5, 2024	4	180	ND	ND	ND	ND	ND	ND	ND	80
BS24-57	3	October 11, 2024	-	443	ND	ND	ND	ND	ND	ND	ND	288
BS24-58	3	October 11, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	256
BS24-59	3	October 11, 2024	21	278	ND	ND	ND	ND	ND	ND	ND	144
BS24-60	3	October 11, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	352
BS24-61	3	October 11, 2024	-	353	ND	ND	ND	ND	ND	ND	ND	240
BS24-62	3	October 11, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	240
BS24-63	3	October 11, 2024	28	290	ND	ND	ND	ND	ND	ND	ND	160
BS24-64	3	October 11, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	496
BS24-65	3	October 11, 2024	-	983	ND	ND	ND	ND	ND	ND	ND	832
	3.5	November 5, 2024	-	423	ND	ND	ND	ND	ND	ND	ND	304
BS24-66	3	October 11, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	144
BS24-67	3	October 11, 2024	-	538	ND	ND	ND	ND	ND	ND	ND	272
BS24-68	3	October 11, 2024	-	-	-	-	-	-	-	-	-	-
	4	November 6, 2024	17	445	ND	ND	ND	ND	ND	ND	ND	256
BS24-69	3	October 12, 2024	-	1,445	-	-	-	-	-	-	-	-
	4	November 6, 2024	-	360	ND	ND	ND	ND	ND	ND	ND	160
BS24-70	3	October 12, 2024	-	-	-	-	-	-	-	-	-	-
	4	November 6, 2024	18	378	ND	ND	ND	ND	ND	ND	ND	256

Sample Description			Field Screening		Petroleum Hydrocarbons							Inorganic Chloride Concentration
Sample ID	Depth (ft)	Sample Date	Extractable Organic Compounds (PetroFlag)	Chloride Concentration	Volatile		Extractable					
					Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	
BS24-71	3	October 12, 2024	-	835	-	-	-	-	-	-	-	-
	4	November 6, 2024	-	320	ND	ND	ND	ND	ND	ND	ND	176
BS24-72	3	October 12, 2024	-	-	-	-	-	-	-	-	-	-
	4	November 6, 2024	12	218	ND	ND	ND	ND	ND	ND	ND	144
BS24-73	3	October 12, 2024	21	555	ND	ND	ND	ND	ND	ND	ND	432
BS24-74	3	October 12, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	256
BS24-75	3	October 12, 2024	33	590	ND	ND	ND	ND	ND	ND	ND	496
BS24-76	3	October 12, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	640
	4	November 5, 2024	9	273	ND	ND	ND	ND	ND	ND	ND	80
WS24-01	0-3	September 17, 2024	8	535	ND	ND	ND	ND	ND	ND	ND	32
WS24-02	0-3	September 17, 2024	-	-	ND	ND	ND	ND	ND	ND	ND	32
WS24-03	0-3	October 10, 2024	54	518	ND	ND	ND	ND	ND	ND	ND	144
WS24-04	0-3	October 10, 2024	37	385	ND	ND	ND	ND	ND	ND	ND	112
WS24-05	0-3	October 10, 2024	55	475	ND	ND	ND	ND	ND	ND	ND	368
WS24-06	0-3	October 10, 2024	-	293	ND	ND	ND	ND	ND	ND	ND	80
WS24-07	0-3	October 10, 2024	18	248	ND	ND	ND	ND	ND	ND	ND	96
WS24-08	0-3	October 10, 2024	41	320	ND	ND	ND	ND	ND	ND	ND	160
WS24-09	0-3	October 10, 2024	-	263	ND	ND	ND	ND	ND	ND	ND	128
WS24-10	0-3	October 10, 2024	14	255	ND	ND	ND	ND	ND	ND	ND	112
WS24-11	0-3	October 10, 2024	41	600	ND	ND	ND	ND	ND	ND	ND	320
WS24-12	0-3	October 11, 2024	-	425	ND	ND	ND	ND	ND	ND	ND	176
WS24-13	0-3	October 11, 2024	-	290	ND	ND	ND	ND	ND	ND	ND	80
WS24-14	0-3	October 11, 2024	48	340	ND	ND	ND	ND	ND	ND	ND	176
WS24-15	0-3	October 11, 2024	52	310	ND	ND	ND	ND	ND	ND	ND	128
WS24-16	0-3	October 12, 2024	18	345	ND	ND	ND	ND	ND	ND	ND	160
WS24-17	0-3	October 12, 2024	22	415	ND	ND	ND	ND	ND	ND	ND	128
WS24-18	0-3	October 12, 2024	-	263	ND	ND	ND	ND	ND	ND	ND	128
WS24-19	0-3	October 12, 2024	-	580	ND	ND	ND	ND	ND	ND	ND	368
WS24-20	0-3	October 12, 2024	-	593	ND	ND	ND	ND	ND	ND	ND	384
WS24-21	0-3	October 12, 2024	-	353	ND	ND	ND	ND	ND	ND	ND	160
WS24-22	0-3	October 12, 2024	31	598	ND	ND	ND	ND	ND	ND	ND	320
WS24-23	0-3	October 12, 2024	23	343	ND	ND	ND	ND	ND	ND	ND	208
WS24-24	3-4	November 7, 2024	24	520	ND	ND	ND	ND	ND	ND	ND	288
WS24-25	3-4	November 7, 2024	-	453	ND	ND	ND	ND	ND	ND	ND	384
WS24-26	3-4	November 7, 2024	11	320	ND	ND	ND	ND	ND	ND	ND	176
WS24-27	3-4	November 7, 2024	-	225	ND	ND	ND	ND	ND	ND	ND	144
WS24-28	3-4	November 7, 2024	-	548	ND	ND	ND	ND	ND	ND	ND	400
WS24-29	4-5	November 7, 2024	-	408	ND	ND	ND	ND	ND	ND	ND	304
WS24-30	5-6	November 7, 2024	18	150	ND	ND	ND	ND	ND	ND	ND	96

"ND" Not Detected at the Reporting Limit

"-" indicates not analyzed/assessed


**Bold and green shaded indicates exceedance outside of NMOCD Remediation Closure Criteria**

## **APPENDIX A – Closure Criteria Research Documentation**

# 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 Nbr	Q64	Q16	Q4	Sec	Tw	Rng	X	Y	Map
NA	C 04524 POD1	NW	NW	NE	01	23S	28E	590451.9	3578629.4	

\* UTM location was derived from PLSS - see Help

Driller License:	1456	Driller Company:	WHITE DRILLING COMPANY
Driller Name:	NOVO OIL & GAS NORTHERN DELAWARE LLC		
Drill Start Date:	2021-04-13	Drill Finish Date:	2021-04-14
Log File Date:	2021-05-10	PCW Rcv Date:	
Pump Type:		Pipe Discharge Size:	
Casing Size:		Depth Well:	55

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



# OSE POD Location Map



11/19/2024, 3:03:55 PM

GIS WATERS PODs

- Active
- Plugged

OSE District Boundary

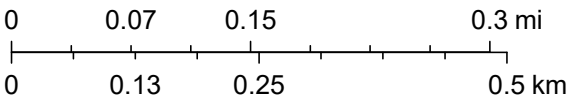
Water Right Regulations

Artesian Planning Area

NHD Flowlines

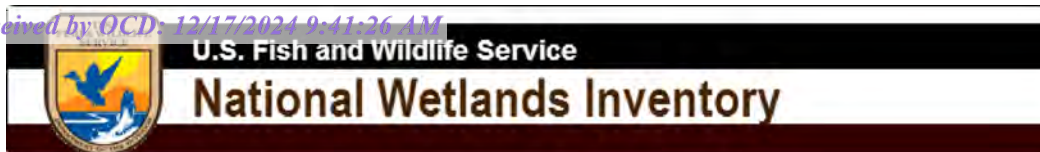
Stream River

1:9,028



Esri, HERE, iPC, Esri, HERE, Garmin, iPC, Maxar





## Rana Salada Pad A Watercourse 1,507ft.



August 29, 2024

**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.





## Rana Salada Lake 9,373 ft



August 29, 2024

**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.

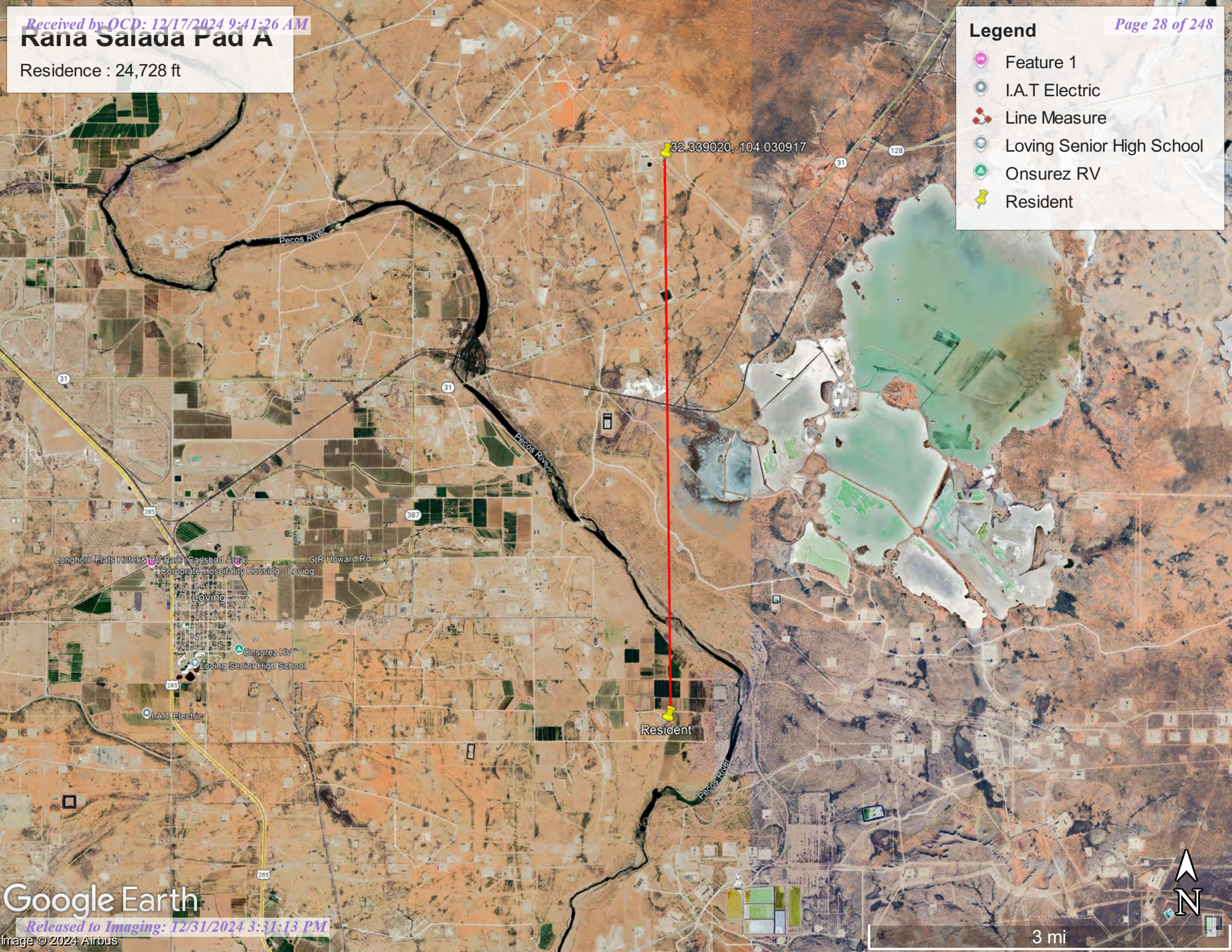


# Rana Salada Pad A

Residence : 24,728 ft

Legend

- Feature 1
- I.A.T Electric
- Line Measure
- Loving Senior High School
- Onsurez RV
- Resident







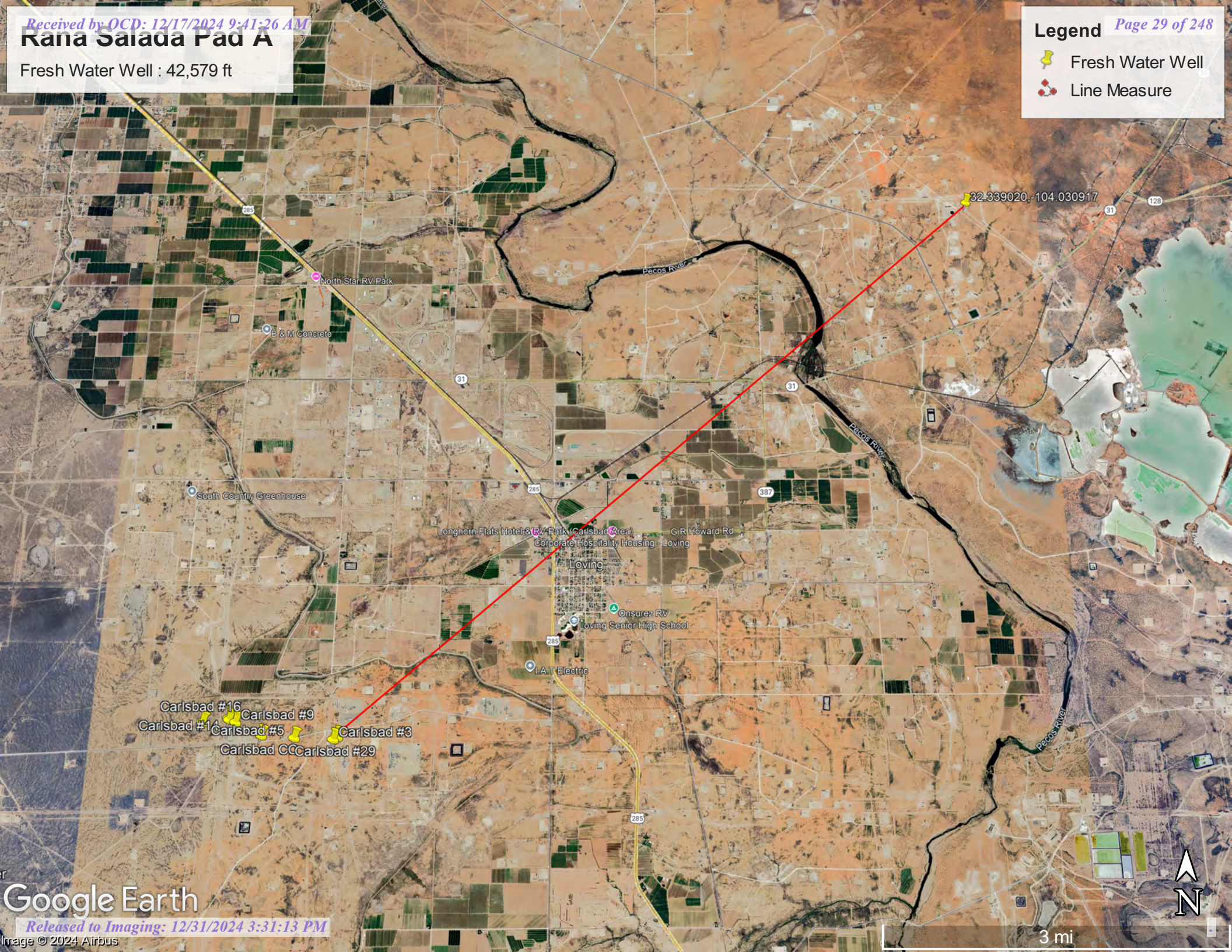
# Rana Salada Pad A

Fresh Water Well : 42,579 ft

Legend Page 29 of 248

 Fresh Water Well

 Line Measure





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)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Well Tag	Code	Grant	Source
<a href="#">C 04539</a>	CUB	MON	0.000	DEVON ENERGY CORPORATION	ED	<a href="#">C 04539 POD1</a>	NA			
<a href="#">C 04524</a>	CUB	MON	0.000	NOVO OIL & GAS NORTHERN	ED	<a href="#">C 04524 POD1</a>	NA			
<a href="#">C 04609</a>	CUB	MON	0.000	NORTHERN DELAWARE LLC NOVO OIL & GAS	ED	<a href="#">C 04609 POD1</a>	NA			
<a href="#">C 04417</a>	CUB	MON	0.000	WPX ENERGY	ED	<a href="#">C 04417 POD1</a>	NA			

Record Count: 4

Filters Applied:

UTM Filters (in meters):

Easting: 591198.54  
Northing: 3578427.10  
Radius: 1610

Sorted By: Distance

\* UTM location was derived from PLSS - see Help

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



## Rana Salada Wetland 3,041 ft



August 29, 2024

**Wetlands**

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

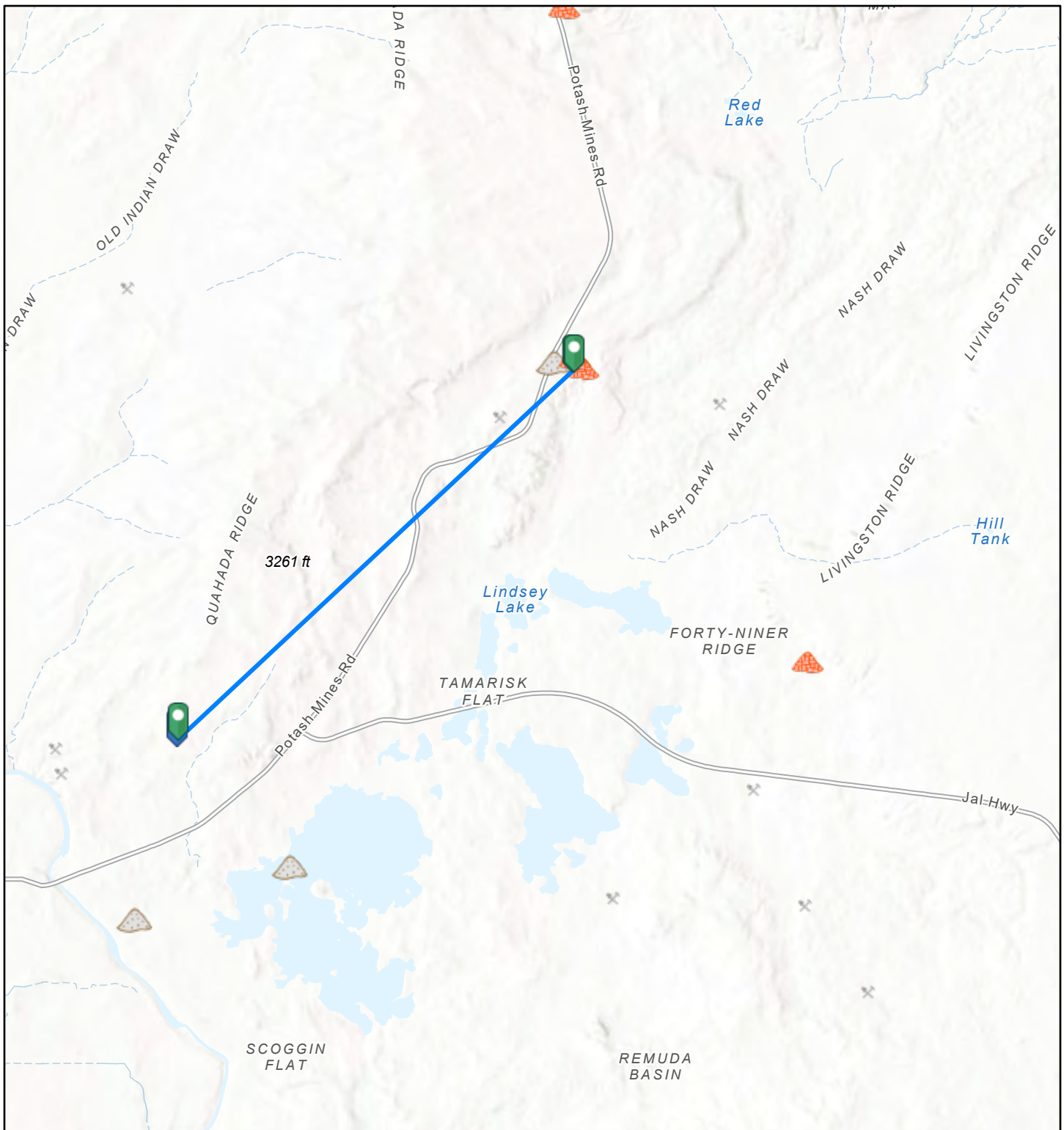
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

- 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.



## Rana Salada Mine 39,018 ft



8/29/2024, 4:25:58 PM

1:144,448

## Registered Mines



Aggregate, Stone etc.



Aggregate, Stone etc.



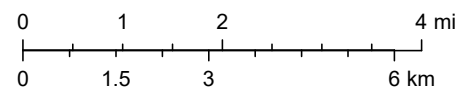
Potash



Aggregate, Stone etc.



Salt




Esri, NASA, NGA, USGS, Texas Parks & Wildlife, CONANP, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS





# Rana Salada Pad A


Distance to High Karst : 12,551 ft


Legend

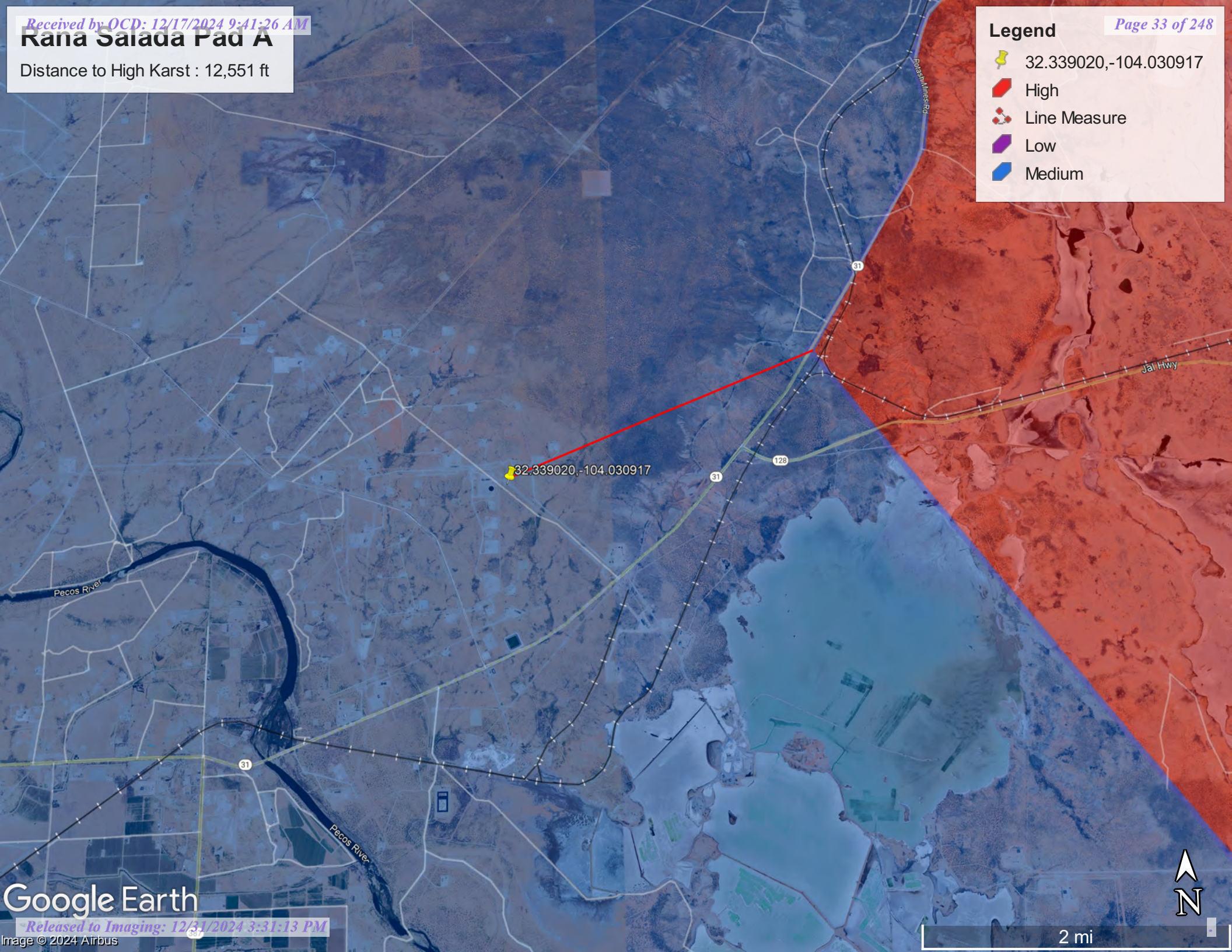
 32.339020,-104.030917

 High

 Line Measure

 Low

 Medium





# National Flood Hazard Layer FIRMette



104°2'10"W 32°20'36"N



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

1:6,000

104°1'33"W 32°20'5"N

Released to Imaging: 12/31/2024 3:31:13 PM

Basemap Imagery Source: USGS National Map 2023

## Legend

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

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



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

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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 8/29/2024 at 6:53 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.

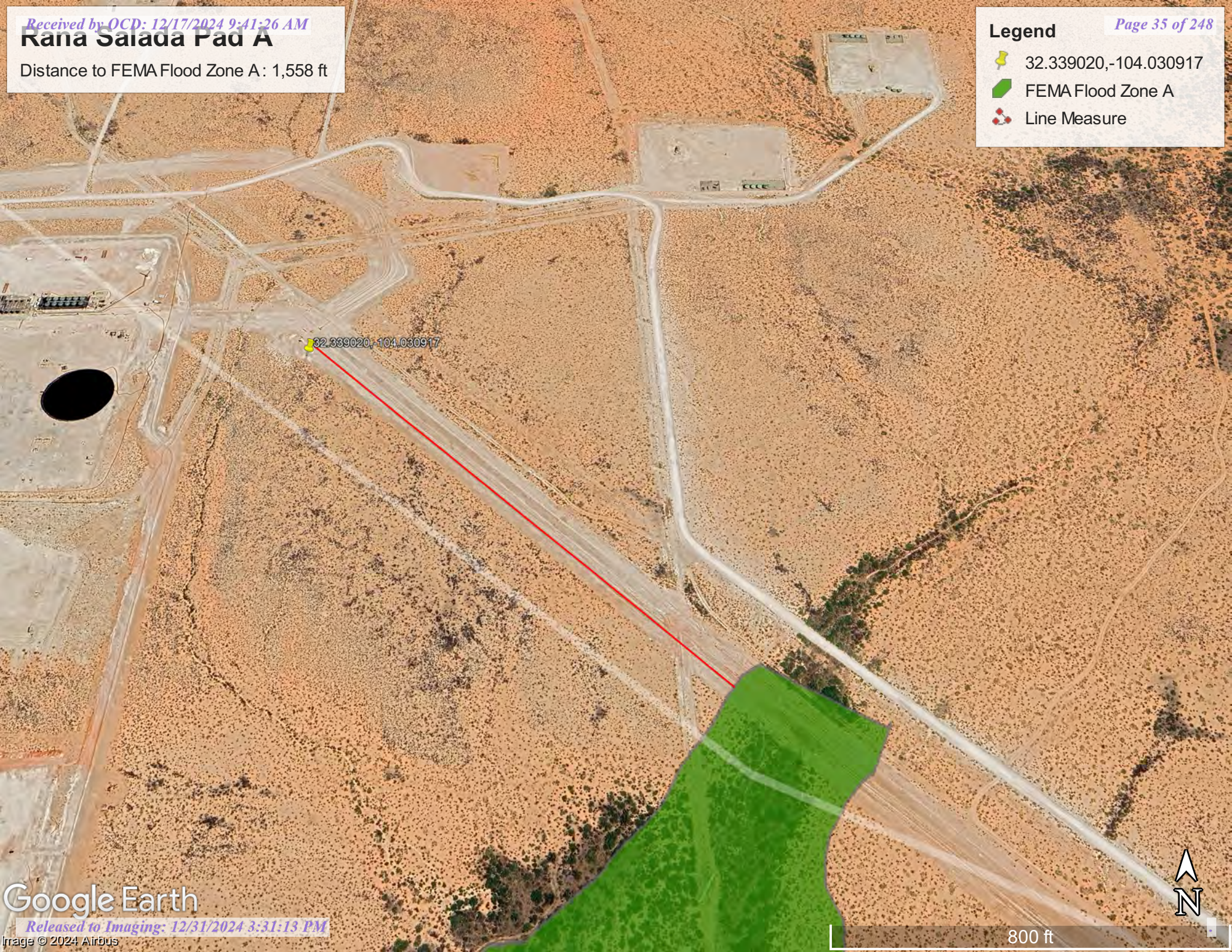


# Rana Salada Pad A

Distance to FEMA Flood Zone A: 1,558 ft

## Legend

-  32.339020,-104.030917
-  FEMA Flood Zone A
-  Line Measure







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



August 29, 2024



Custom Soil Resource Report  
Soil Map


## Custom Soil Resource Report

## 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 19, Sep 7, 2023

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

Date(s) aerial images were photographed: Nov 12, 2022—Dec 2, 2022

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.

## Custom Soil Resource Report

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
PS	Potter-Simona complex, 5 to 25 percent slopes	8.1	68.1%
SM	Simona-Bippus complex, 0 to 5 percent slopes	3.8	31.9%
<b>Totals for Area of Interest</b>		<b>11.9</b>	<b>100.0%</b>

## 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,



## Custom Soil Resource Report

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.



## Custom Soil Resource Report

**Eddy Area, New Mexico****PS—Potter-Simona complex, 5 to 25 percent slopes****Map Unit Setting**

*National map unit symbol:* 1w57  
*Elevation:* 2,750 to 5,000 feet  
*Mean annual precipitation:* 8 to 16 inches  
*Mean annual air temperature:* 57 to 70 degrees F  
*Frost-free period:* 180 to 230 days  
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Potter and similar soils:* 80 percent  
*Simona and similar soils:* 15 percent  
*Minor components:* 5 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Potter****Setting**

*Landform:* Ridges, hills  
*Landform position (two-dimensional):* Shoulder, backslope, footslope, toeslope  
*Landform position (three-dimensional):* Side slope, head slope, nose slope, crest  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Parent material:* Alluvium

**Typical profile**

*H1 - 0 to 10 inches:* gravelly loam  
*H2 - 10 to 60 inches:* cemented material

**Properties and qualities**

*Slope:* 5 to 25 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Runoff class:* Very high  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.06 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 60 percent  
*Maximum salinity:* Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)  
*Sodium adsorption ratio, maximum:* 1.0  
*Available water supply, 0 to 60 inches:* Very low (about 1.2 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7s  
*Hydrologic Soil Group:* D  
*Ecological site:* R070BC025NM - Shallow  
*Hydric soil rating:* No

## Custom Soil Resource Report

**Description of Simona****Setting**

*Landform:* Plains, alluvial fans  
*Landform position (three-dimensional):* Rise  
*Down-slope shape:* Convex, linear  
*Across-slope shape:* Linear  
*Parent material:* Mixed alluvium and/or eolian sands

**Typical profile**

*H1 - 0 to 11 inches:* gravelly fine sandy loam  
*H2 - 11 to 19 inches:* gravelly fine sandy loam  
*H3 - 19 to 60 inches:* cemented material

**Properties and qualities**

*Slope:* 5 to 10 percent  
*Depth to restrictive feature:* 7 to 20 inches to petrocalcic  
*Drainage class:* Well drained  
*Runoff class:* Very high  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.06 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 15 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 2.2 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7e  
*Hydrologic Soil Group:* D  
*Ecological site:* R070BD002NM - Shallow Sandy  
*Hydric soil rating:* No

**Minor Components****Simona**

*Percent of map unit:* 3 percent  
*Ecological site:* R070BD002NM - Shallow Sandy  
*Hydric soil rating:* No

**Rock outcrop**

*Percent of map unit:* 2 percent  
*Hydric soil rating:* No

## Custom Soil Resource Report

**SM—Simona-Bippus complex, 0 to 5 percent slopes****Map Unit Setting**

*National map unit symbol:* 1w5x  
*Elevation:* 1,800 to 5,000 feet  
*Mean annual precipitation:* 8 to 24 inches  
*Mean annual air temperature:* 57 to 70 degrees F  
*Frost-free period:* 180 to 230 days  
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Simona and similar soils:* 55 percent  
*Bippus and similar soils:* 30 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Simona****Setting**

*Landform:* Plains, alluvial fans  
*Landform position (three-dimensional):* Rise  
*Down-slope shape:* Convex, linear  
*Across-slope shape:* Linear  
*Parent material:* Mixed alluvium and/or eolian sands

**Typical profile**

*H1 - 0 to 19 inches:* gravelly fine sandy loam  
*H2 - 19 to 23 inches:* indurated

**Properties and qualities**

*Slope:* 0 to 3 percent  
*Depth to restrictive feature:* 7 to 20 inches to petrocalcic  
*Drainage class:* Well drained  
*Runoff class:* Very high  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.06 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 15 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 2.1 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7e  
*Hydrologic Soil Group:* D  
*Ecological site:* R070BD002NM - Shallow Sandy

## Custom Soil Resource Report

*Hydric soil rating:* No

**Description of Bippus****Setting**

*Landform:* Flood plains, alluvial fans

*Landform position (three-dimensional):* Talf, rise

*Down-slope shape:* Convex, linear

*Across-slope shape:* Linear

*Parent material:* Mixed alluvium

**Typical profile**

*H1 - 0 to 37 inches:* silty clay loam

*H2 - 37 to 60 inches:* clay loam

**Properties and qualities**

*Slope:* 0 to 5 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Well drained

*Runoff class:* Very low

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 2.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* Occasional

*Frequency of ponding:* None

*Calcium carbonate, maximum content:* 40 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:* Moderate (about 8.7 inches)

**Interpretive groups**

*Land capability classification (irrigated):* 2e

*Land capability classification (nonirrigated):* 3e

*Hydrologic Soil Group:* B

*Ecological site:* R070BC017NM - Bottomland

*Hydric soil rating:* No

**Minor Components****Simona**

*Percent of map unit:* 8 percent

*Ecological site:* R070BD002NM - Shallow Sandy

*Hydric soil rating:* No

**Bippus**

*Percent of map unit:* 7 percent

*Ecological site:* R070BC017NM - Bottomland

*Hydric soil rating:* No





# Ecological site R070BC025NM Shallow

Accessed: 08/30/2024

## General information

**Provisional.** A provisional ecological site description has undergone quality control and quality assurance review. It contains a working state and transition model and enough information to identify the ecological site.

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:

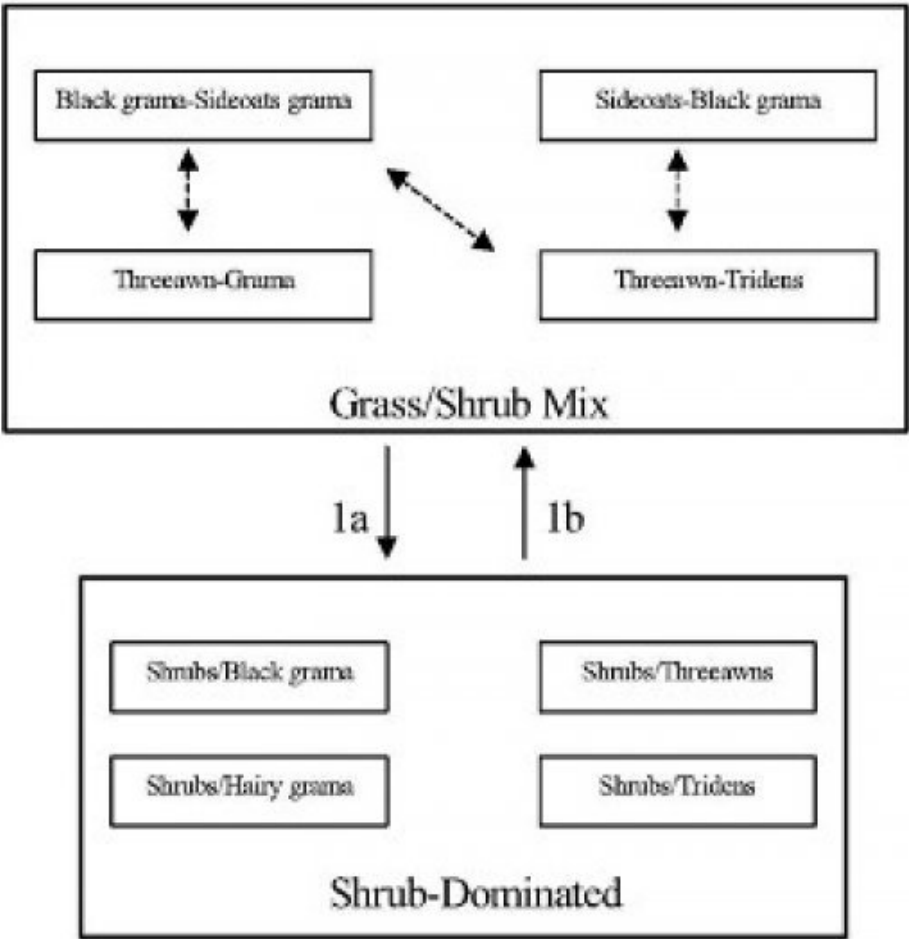
The Shallow site is associated with and Limestone Hills, Loamy, and Shallow Sandy sites. When associated with Limestone Hills, the Shallow site occurs on the summits, foot slopes and toeslopes of hills. Loamy sites often occur as areas between low elongated hills with rounded crests (Shallow site). When 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)

MLRA-42, SD-3, Shallow



1a. Extended drought, overgrazing, no fire

1b. Brush control, Prescribed grazing

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

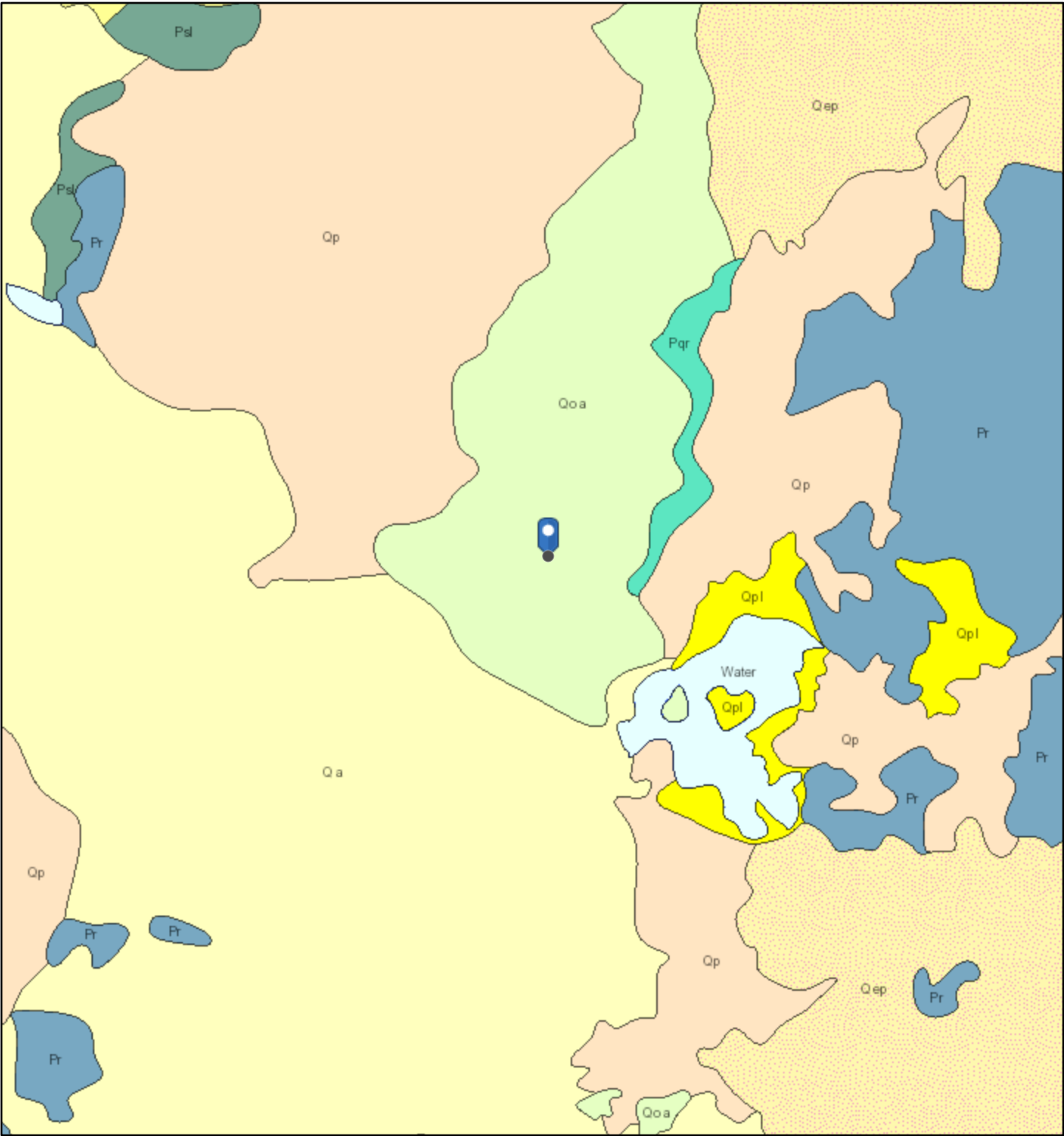
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	3	5	10	10	25	30	12	5	0	0

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

# Rana Salada Pad A Geology

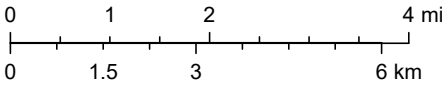


8/29/2024, 5:15:40 PM

1:144,448

Lithologic Units

- Playa—Alluvium and evaporite deposits (Holocene)
- Water—Perennial standing water
- Qa—Alluvium (Holocene to upper Pleistocene)



Esri, NASA, NGA, USGS, NMBGMR, 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



## **APPENDIX B – Daily Field Report**

## Daily Site Visit Report



## Site Photos

Viewing Direction: South



Area where WS24-24 was collected at 3-4 ft bgs.

Viewing Direction: Southeast



Area where WS24-24 was collected at 3-4 ft bgs.

Viewing Direction: Southeast



Area where WS24-25 was collected at 3-4 ft bgs.





Viewing Direction: East



Area where WS24-25 was collected at 3-4 ft bgs.







## Daily Site Visit Report

<p><b>Viewing Direction: North</b></p>  <p><small>Descriptive Photo: 2 Viewing Direction: North Date: Area where WS24-26 was collected at 3-4 ft bgs. Created: 11/7/2024 3:32:10 PM Lat: 32.338794, Long: -104.630745</small></p> <p>Area where WS24-26 was collected at 3-4 ft bgs.</p>	<p><b>Viewing Direction: Southeast</b></p>  <p><small>Descriptive Photo: 3 Viewing Direction: Southeast Date: Area where WS24-26 was collected at 3-4 ft bgs. Created: 11/7/2024 3:32:36 PM Lat: 32.338793, Long: -104.630758</small></p> <p>Area where WS24-26 was collected at 3-4 ft bgs.</p>
<p><b>Viewing Direction: Southwest</b></p>  <p><small>Descriptive Photo: 4 Viewing Direction: Southwest Date: Area where WS24-26 was collected at 3-4 ft bgs. Created: 11/7/2024 3:34:03 PM Lat: 32.338794, Long: -104.630745</small></p> <p>Area where WS24-26 was collected at 3-4 ft bgs.</p>	<p><b>Viewing Direction: Northeast</b></p>  <p><small>Descriptive Photo: 5 Viewing Direction: Northeast Date: Area where WS24-27 was collected at 3-4 ft bgs. Created: 11/7/2024 3:38:01 PM Lat: 32.338794, Long: -104.630745</small></p> <p>Area where WS24-27 was collected at 3-4 ft bgs.</p>





## Daily Site Visit Report

<p><b>Viewing Direction: Southwest</b></p>  <p> <i>Descriptive Photo - 9</i>  <i>Viewing Direction: Southwest</i>  <i>Area where WS24-27 was collected at 3-4 ft bgs.</i>  <i>Created: 11/8/2024 3:24:18 PM</i>  <i>Latitude: 33.0523, Longitude: -104.03023</i> </p> <p>Area where WS24-27 was collected at 3-4 ft bgs.</p>	<p><b>Viewing Direction: East</b></p>  <p> <i>Descriptive Photo - 10</i>  <i>Viewing Direction: East</i>  <i>Area where WS24-28 was collected at 3-4 ft bgs.</i>  <i>Created: 11/8/2024 3:27:05 PM</i>  <i>Latitude: 33.0517, Longitude: -104.030593</i> </p> <p>Area where WS24-28 was collected at 3-4 ft bgs.</p>
<p><b>Viewing Direction: Northeast</b></p>  <p> <i>Descriptive Photo - 11</i>  <i>Viewing Direction: Northeast</i>  <i>Area where WS24-28 was collected at 3-4 ft bgs.</i>  <i>Created: 11/8/2024 3:27:05 PM</i>  <i>Latitude: 33.0517, Longitude: -104.030593</i> </p> <p>Area where WS24-28 was collected at 3-4 ft bgs.</p>	<p><b>Viewing Direction: South</b></p>  <p> <i>Descriptive Photo - 12</i>  <i>Viewing Direction: South</i>  <i>Area where WS24-29 was collected at 4-5 ft bgs.</i>  <i>Created: 11/8/2024 3:28:05 PM</i>  <i>Latitude: 33.0517, Longitude: -104.030593</i> </p> <p>Area where WS24-29 was collected at 4-5 ft bgs.</p>



## Daily Site Visit Report

**Viewing Direction: Northwest**



Area where WS24-29 was collected at 4-5 ft bgs.

**Viewing Direction: Southeast**



Area where WS24-30 was collected at 5-6 ft bgs.

**Viewing Direction: North**



Area where WS24-30 was collected at 5-6 ft bgs.

**Viewing Direction: West**



Overview of 4', 5', and 6' excavations.





## Daily Site Visit Report

Viewing Direction: South



Overview of 4', 5', and 6' excavations.

Viewing Direction: West



Overview of 4', 5', and 6' excavations.

Viewing Direction: Northwest



Overview of 4' excavation

Viewing Direction: West



Overview of 4' excavation





## Daily Site Visit Report

Viewing Direction: Southeast



SecretView Photo: 51  
Viewing Direction: Southeast  
Desc: Overview of 4.0' excavation  
Created: 11/7/2024 3:43:06 PM  
Lat: 33.0065, Long: -104.551061

Overview of 4' excavation

## Daily Site Visit Report



Daily Site Visit Signature

**Inspector:** Andrew Ludvik

**Signature:**

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

# Daily Site Visit Report



## Site Photos

Viewing Direction: North



Overview of the backfilled excavation from the north end.

Viewing Direction: East



Northwest corner of the backfilled excavation.

Viewing Direction: Southeast



North end of the backfilled excavation.

Viewing Direction: Southeast



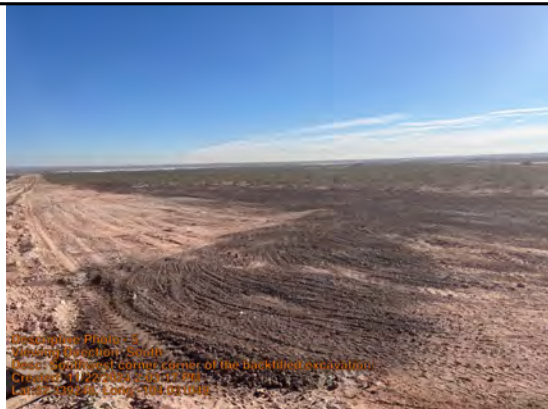
BLM approved Loamy seed mix on the surface of the backfilled excavation.



## Daily Site Visit Report



**Viewing Direction: South**



Northeast corner corner of the backfilled excavation.

**Viewing Direction: Southeast**



Eastern wall of the backfilled excavation.

**Viewing Direction: South**



Eastern wall of the backfilled excavation where it meets the ROW.

**Viewing Direction: Northwest**



Eastern wall of the backfilled excavation.

# Daily Site Visit Report



**Viewing Direction: Southeast**



Southeast corner of the backfilled excavation.

**Viewing Direction: Northwest**



Southern end corner of the backfilled excavation.

**Viewing Direction: North**



Southwest corner corner of the backfilled excavation.

**Viewing Direction: Northwest**



Southwest corner corner of the backfilled excavation viewing along the western wall.



## Daily Site Visit Report



**Viewing Direction: Northwest**



Seeds seed mix visible on the surface at the southwest section corner of the backfilled excavation.

**Viewing Direction: Northeast**



Central western wall corner of the backfilled excavation.

**Viewing Direction: Northwest**



Northern portion of the western wall corner of the backfilled excavation.

## Daily Site Visit Report



Daily Site Visit Signature

**Inspector:** John Rewis

**Signature:**

A handwritten signature in black ink, appearing to be 'JR', written over a horizontal line. The word 'signature' is faintly visible on the line.

## **APPENDIX C – Laboratory Data Reports and Chain of Custody Forms**





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

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April 23, 2024

ROBBIE RUNNELS

Etech Environmental & Safety Solutions

2617 W MARLAND

HOBBS, NM 88240

RE: RANA SALIDA PAD A

Enclosed are the results of analyses for samples received by the laboratory on 04/17/24 14:58.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-23-16. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 ROBBIE RUNNELS  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 04/17/2024  
 Reported: 04/23/2024  
 Project Name: RANA SALIDA PAD A  
 Project Number: 19696 PERMIAN RESOURCES  
 Project Location: 32.23915, -104.03128

Sampling Date: 04/16/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: TT 3 @ SURF (H242047-01)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>77600</b>	16.0	04/19/2024	ND	480	120	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	04/18/2024	ND	204	102	200	1.75	
DRO >C10-C28*	<10.0	10.0	04/18/2024	ND	201	101	200	6.43	
EXT DRO >C28-C36	<10.0	10.0	04/18/2024	ND					
Surrogate: 1-Chlorooctane	110 %	48.2-134							
Surrogate: 1-Chlorooctadecane	117 %	49.1-148							

**Sample ID: TT 3 @ 20" (H242047-02)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>5200</b>	16.0	04/19/2024	ND	480	120	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	04/18/2024	ND	204	102	200	1.75	
DRO >C10-C28*	<10.0	10.0	04/18/2024	ND	201	101	200	6.43	
EXT DRO >C28-C36	<10.0	10.0	04/18/2024	ND					
Surrogate: 1-Chlorooctane	92.2 %	48.2-134							
Surrogate: 1-Chlorooctadecane	97.3 %	49.1-148							

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 ROBBIE RUNNELS  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	04/17/2024	Sampling Date:	04/16/2024
Reported:	04/23/2024	Sampling Type:	Soil
Project Name:	RANA SALIDA PAD A	Sampling Condition:	Cool & Intact
Project Number:	19696 PERMIAN RESOURCES	Sample Received By:	Shalyn Rodriguez
Project Location:	32.23915, -104.03128		

**Sample ID: TT 3 @ 2' (H242047-03)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1080	16.0	04/19/2024	ND	480	120	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	04/18/2024	ND	204	102	200	1.75	
DRO >C10-C28*	<10.0	10.0	04/18/2024	ND	201	101	200	6.43	
EXT DRO >C28-C36	<10.0	10.0	04/18/2024	ND					
Surrogate: 1-Chlorooctane	70.9 %	48.2-134							
Surrogate: 1-Chlorooctadecane	74.4 %	49.1-148							

**Sample ID: TT 4 @ SURF (H242047-04)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	43200	16.0	04/19/2024	ND	480	120	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	04/18/2024	ND	204	102	200	1.75	
DRO >C10-C28*	<10.0	10.0	04/18/2024	ND	201	101	200	6.43	
EXT DRO >C28-C36	<10.0	10.0	04/18/2024	ND					
Surrogate: 1-Chlorooctane	94.2 %	48.2-134							
Surrogate: 1-Chlorooctadecane	96.8 %	49.1-148							

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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 ROBBIE RUNNELS  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 04/17/2024  
 Reported: 04/23/2024  
 Project Name: RANA SALIDA PAD A  
 Project Number: 19696 PERMIAN RESOURCES  
 Project Location: 32.23915, -104.03128

Sampling Date: 04/16/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: TT 4 @ 18" (H242047-05)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>1800</b>	16.0	04/19/2024	ND	480	120	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	04/18/2024	ND	204	102	200	1.75		
DRO >C10-C28*	<10.0	10.0	04/18/2024	ND	201	101	200	6.43		
EXT DRO >C28-C36	<10.0	10.0	04/18/2024	ND						
Surrogate: 1-Chlorooctane	93.9 %	48.2-134								
Surrogate: 1-Chlorooctadecane	96.6 %	49.1-148								

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- \*\* Samples not received at proper temperature of 6°C or below.
- \*\*\* Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported on an as received basis (wet) unless otherwise noted on report

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

Celey D. Keene, Lab Director/Quality Manager



ARDINAL LABORATORIES

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Etech Environmental & Safety Solutions, Inc.  
Project Manager: Robbie Runnels  
Address: 2617 West Marland  
City: Hobbs  
Phone #: (575) 264-9884  
Project #: 19696  
Project Name: Rana Salda Pad A  
Project Location: 32.33915, -104.03128  
Sampler Name: Abe Buehler

BILL TO

Page 1 of 1

ANALYSIS REQUEST

P.O. #: \_\_\_\_\_  
Company: Permian Resources  
Attn: Montgomery Floyd  
Address: \_\_\_\_\_  
City: \_\_\_\_\_  
State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Phone #: \_\_\_\_\_  
Fax #: \_\_\_\_\_

Chloride  
TPH (8015M)  
BTEX (8021B)

FOR LAB USE ONLY  
Sample I.D. H-24097  
Lab I.D. \_\_\_\_\_

	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME										
			GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :												
1	TT 3 @ Surf	G 1	X						4/16/24		X	X								
2	TT 3 @ 20"	G 1	X						4/16/24		X	X								
3	TT 3 @ 2'	G 1	X						4/16/24		X	X								
4	TT 4 @ Surf	G 1	X						4/16/24		X	X								
5	TT 4 @ 18"	G 1	X						4/16/24		X	X								

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Phone Result: ☐ Yes ☐ No Add'l Phone #: \_\_\_\_\_  
Fax Result: ☐ Yes ☐ No Add'l Fax #: \_\_\_\_\_  
REMARKS: \_\_\_\_\_

Inquired By: \_\_\_\_\_  
Date: 4/17/24  
Time: 1458  
Received By: \_\_\_\_\_  
Date: \_\_\_\_\_  
Time: \_\_\_\_\_

Delivered By: (Circle One)  
Carrier - UPS - Bus - Other: -14  
#140

Sample Condition  
Cool ☒ Intact ☒  
Yes ☒ No ☐  
Checked By: (Initials) \_\_\_\_\_

FORM-006  
Revision 1.0  
Please email copy of COC and results to pm@etechenv.com.





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

April 23, 2024

ROBBIE RUNNELS

Etech Environmental & Safety Solutions

2617 W MARLAND

HOBBS, NM 88240

RE: RANA SALIDA PAD A

Enclosed are the results of analyses for samples received by the laboratory on 04/17/24 14:58.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-23-16. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 ROBBIE RUNNELS  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 04/17/2024  
 Reported: 04/23/2024  
 Project Name: RANA SALIDA PAD A  
 Project Number: 19696 PERMIAN RESOURCES  
 Project Location: 32.33915, -104.03128

Sampling Date: 04/16/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: TT 1 @ SURF. (H242051-01)**

BTX 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	04/19/2024	ND	2.04	102	2.00	0.237	
Toluene*	<0.050	0.050	04/19/2024	ND	2.04	102	2.00	5.60	
Ethylbenzene*	<0.050	0.050	04/19/2024	ND	2.10	105	2.00	7.91	
Total Xylenes*	<0.150	0.150	04/19/2024	ND	6.28	105	6.00	8.54	
Total BTX	<0.300	0.300	04/19/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	56800	16.0	04/19/2024	ND	464	116	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	04/18/2024	ND	204	102	200	1.75	
DRO >C10-C28*	11.3	10.0	04/18/2024	ND	201	101	200	6.43	
EXT DRO >C28-C36	<10.0	10.0	04/18/2024	ND					

Surrogate: 1-Chlorooctane 103 % 48.2-134

Surrogate: 1-Chlorooctadecane 107 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 ROBBIE RUNNELS  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 04/17/2024  
 Reported: 04/23/2024  
 Project Name: RANA SALIDA PAD A  
 Project Number: 19696 PERMIAN RESOURCES  
 Project Location: 32.33915, -104.03128

Sampling Date: 04/16/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: TT 1 @ 2' (H242051-02)**

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	04/19/2024	ND	2.04	102	2.00	0.237		
Toluene*	<0.050	0.050	04/19/2024	ND	2.04	102	2.00	5.60		
Ethylbenzene*	<0.050	0.050	04/19/2024	ND	2.10	105	2.00	7.91		
Total Xylenes*	<0.150	0.150	04/19/2024	ND	6.28	105	6.00	8.54		
Total BTEX	<0.300	0.300	04/19/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	352	16.0	04/19/2024	ND	464	116	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	04/18/2024	ND	204	102	200	1.75	
DRO >C10-C28*	<10.0	10.0	04/18/2024	ND	201	101	200	6.43	
EXT DRO >C28-C36	<10.0	10.0	04/18/2024	ND					

Surrogate: 1-Chlorooctane 90.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 95.2 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 ROBBIE RUNNELS  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 04/17/2024  
 Reported: 04/23/2024  
 Project Name: RANA SALIDA PAD A  
 Project Number: 19696 PERMIAN RESOURCES  
 Project Location: 32.33915, -104.03128

Sampling Date: 04/16/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: TT 2 @ SURF. (H242051-03)**

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	04/19/2024	ND	2.04	102	2.00	0.237		
Toluene*	<0.050	0.050	04/19/2024	ND	2.04	102	2.00	5.60		
Ethylbenzene*	<0.050	0.050	04/19/2024	ND	2.10	105	2.00	7.91		
Total Xylenes*	<0.150	0.150	04/19/2024	ND	6.28	105	6.00	8.54		
Total BTEX	<0.300	0.300	04/19/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	53600	16.0	04/19/2024	ND	464	116	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	04/18/2024	ND	204	102	200	1.75	
DRO >C10-C28*	21.5	10.0	04/18/2024	ND	201	101	200	6.43	
EXT DRO >C28-C36	<10.0	10.0	04/18/2024	ND					

Surrogate: 1-Chlorooctane 97.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 101 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 ROBBIE RUNNELS  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 04/17/2024  
 Reported: 04/23/2024  
 Project Name: RANA SALIDA PAD A  
 Project Number: 19696 PERMIAN RESOURCES  
 Project Location: 32.33915, -104.03128

Sampling Date: 04/16/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: TT 2 @ 25" (H242051-04)**

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	04/19/2024	ND	2.04	102	2.00	0.237		
Toluene*	<0.050	0.050	04/19/2024	ND	2.04	102	2.00	5.60		
Ethylbenzene*	<0.050	0.050	04/19/2024	ND	2.10	105	2.00	7.91		
Total Xylenes*	<0.150	0.150	04/19/2024	ND	6.28	105	6.00	8.54		
Total BTEX	<0.300	0.300	04/19/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	880	16.0	04/19/2024	ND	464	116	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	04/19/2024	ND	204	102	200	1.75	
DRO >C10-C28*	<10.0	10.0	04/19/2024	ND	201	101	200	6.43	
EXT DRO >C28-C36	<10.0	10.0	04/19/2024	ND					

Surrogate: 1-Chlorooctane 94.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 99.9 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 ROBBIE RUNNELS  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 04/17/2024  
 Reported: 04/23/2024  
 Project Name: RANA SALIDA PAD A  
 Project Number: 19696 PERMIAN RESOURCES  
 Project Location: 32.33915, -104.03128

Sampling Date: 04/16/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: TT 5 @ SURF. (H242051-05)**

BTX 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	04/19/2024	ND	2.04	102	2.00	0.237		
Toluene*	<0.050	0.050	04/19/2024	ND	2.04	102	2.00	5.60		
Ethylbenzene*	<0.050	0.050	04/19/2024	ND	2.10	105	2.00	7.91		
Total Xylenes*	<0.150	0.150	04/19/2024	ND	6.28	105	6.00	8.54		
Total BTX	<0.300	0.300	04/19/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	26000	16.0	04/19/2024	ND	464	116	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	04/19/2024	ND	204	102	200	1.75	
DRO >C10-C28*	<10.0	10.0	04/19/2024	ND	201	101	200	6.43	
EXT DRO >C28-C36	<10.0	10.0	04/19/2024	ND					

Surrogate: 1-Chlorooctane 96.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 101 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 ROBBIE RUNNELS  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 04/17/2024  
 Reported: 04/23/2024  
 Project Name: RANA SALIDA PAD A  
 Project Number: 19696 PERMIAN RESOURCES  
 Project Location: 32.33915, -104.03128

Sampling Date: 04/16/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: TT 5 @ 4' (H242051-06)**

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	04/19/2024	ND	2.04	102	2.00	0.237		
Toluene*	<0.050	0.050	04/19/2024	ND	2.04	102	2.00	5.60		
Ethylbenzene*	<0.050	0.050	04/19/2024	ND	2.10	105	2.00	7.91		
Total Xylenes*	<0.150	0.150	04/19/2024	ND	6.28	105	6.00	8.54		
Total BTEx	<0.300	0.300	04/19/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	04/19/2024	ND	464	116	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	04/19/2024	ND	204	102	200	1.75	
DRO >C10-C28*	25.1	10.0	04/19/2024	ND	201	101	200	6.43	
EXT DRO >C28-C36	12.2	10.0	04/19/2024	ND					

Surrogate: 1-Chlorooctane 86.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 89.9 % 49.1-148

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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 ROBBIE RUNNELS  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 04/17/2024  
 Reported: 04/23/2024  
 Project Name: RANA SALIDA PAD A  
 Project Number: 19696 PERMIAN RESOURCES  
 Project Location: 32.33915, -104.03128

Sampling Date: 04/16/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: NH @ SURF. (H242051-07)**

BTX 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	04/19/2024	ND	2.04	102	2.00	0.237		
Toluene*	<0.050	0.050	04/19/2024	ND	2.04	102	2.00	5.60		
Ethylbenzene*	<0.050	0.050	04/19/2024	ND	2.10	105	2.00	7.91		
Total Xylenes*	<0.150	0.150	04/19/2024	ND	6.28	105	6.00	8.54		
Total BTX	<0.300	0.300	04/19/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	04/19/2024	ND	464	116	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	04/19/2024	ND	204	102	200	1.75	
DRO >C10-C28*	<10.0	10.0	04/19/2024	ND	201	101	200	6.43	
EXT DRO >C28-C36	<10.0	10.0	04/19/2024	ND					

Surrogate: 1-Chlorooctane 89.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 93.4 % 49.1-148

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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 ROBBIE RUNNELS  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 04/17/2024  
 Reported: 04/23/2024  
 Project Name: RANA SALIDA PAD A  
 Project Number: 19696 PERMIAN RESOURCES  
 Project Location: 32.33915, -104.03128

Sampling Date: 04/16/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: NH @ 2' (H242051-08)**

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	04/19/2024	ND	2.04	102	2.00	0.237		
Toluene*	<0.050	0.050	04/19/2024	ND	2.04	102	2.00	5.60		
Ethylbenzene*	<0.050	0.050	04/19/2024	ND	2.10	105	2.00	7.91		
Total Xylenes*	<0.150	0.150	04/19/2024	ND	6.28	105	6.00	8.54		
Total BTEX	<0.300	0.300	04/19/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	04/19/2024	ND	464	116	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	04/19/2024	ND	204	102	200	1.75	
DRO >C10-C28*	<10.0	10.0	04/19/2024	ND	201	101	200	6.43	
EXT DRO >C28-C36	<10.0	10.0	04/19/2024	ND					

Surrogate: 1-Chlorooctane 101 % 48.2-134

Surrogate: 1-Chlorooctadecane 104 % 49.1-148

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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 ROBBIE RUNNELS  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 04/17/2024  
 Reported: 04/23/2024  
 Project Name: RANA SALIDA PAD A  
 Project Number: 19696 PERMIAN RESOURCES  
 Project Location: 32.33915, -104.03128

Sampling Date: 04/16/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SH @ SURF. (H242051-09)**

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	04/19/2024	ND	2.04	102	2.00	0.237		
Toluene*	<0.050	0.050	04/19/2024	ND	2.04	102	2.00	5.60		
Ethylbenzene*	<0.050	0.050	04/19/2024	ND	2.10	105	2.00	7.91		
Total Xylenes*	<0.150	0.150	04/19/2024	ND	6.28	105	6.00	8.54		
Total BTEX	<0.300	0.300	04/19/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	04/19/2024	ND	464	116	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	04/19/2024	ND	195	97.7	200	5.28	
DRO >C10-C28*	<10.0	10.0	04/19/2024	ND	196	98.0	200	7.66	
EXT DRO >C28-C36	13.9	10.0	04/19/2024	ND					

Surrogate: 1-Chlorooctane 90.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 111 % 49.1-148

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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 ROBBIE RUNNELS  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 04/17/2024  
 Reported: 04/23/2024  
 Project Name: RANA SALIDA PAD A  
 Project Number: 19696 PERMIAN RESOURCES  
 Project Location: 32.33915, -104.03128

Sampling Date: 04/16/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SH @ 16" (H242051-10)**

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	04/19/2024	ND	2.04	102	2.00	0.237		
Toluene*	<0.050	0.050	04/19/2024	ND	2.04	102	2.00	5.60		
Ethylbenzene*	<0.050	0.050	04/19/2024	ND	2.10	105	2.00	7.91		
Total Xylenes*	<0.150	0.150	04/19/2024	ND	6.28	105	6.00	8.54		
Total BTEX	<0.300	0.300	04/19/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	04/19/2024	ND	464	116	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	04/19/2024	ND	195	97.7	200	5.28	
DRO >C10-C28*	<10.0	10.0	04/19/2024	ND	196	98.0	200	7.66	
EXT DRO >C28-C36	<10.0	10.0	04/19/2024	ND					

Surrogate: 1-Chlorooctane 95.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 117 % 49.1-148

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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 ROBBIE RUNNELS  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 04/17/2024  
 Reported: 04/23/2024  
 Project Name: RANA SALIDA PAD A  
 Project Number: 19696 PERMIAN RESOURCES  
 Project Location: 32.33915, -104.03128

Sampling Date: 04/16/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: NEH 1 @ SURF. (H242051-11)**

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	04/19/2024	ND	2.04	102	2.00	0.237		
Toluene*	<0.050	0.050	04/19/2024	ND	2.04	102	2.00	5.60		
Ethylbenzene*	<0.050	0.050	04/19/2024	ND	2.10	105	2.00	7.91		
Total Xylenes*	<0.150	0.150	04/19/2024	ND	6.28	105	6.00	8.54		
Total BTEX	<0.300	0.300	04/19/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	04/19/2024	ND	464	116	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	04/19/2024	ND	195	97.7	200	5.28	
DRO >C10-C28*	<10.0	10.0	04/19/2024	ND	196	98.0	200	7.66	
EXT DRO >C28-C36	<10.0	10.0	04/19/2024	ND					

Surrogate: 1-Chlorooctane 86.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 101 % 49.1-148

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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 ROBBIE RUNNELS  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 04/17/2024  
 Reported: 04/23/2024  
 Project Name: RANA SALIDA PAD A  
 Project Number: 19696 PERMIAN RESOURCES  
 Project Location: 32.33915, -104.03128

Sampling Date: 04/16/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: NEH 1 @ 2' (H242051-12)**

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	04/20/2024	ND	2.13	106	2.00	3.48		
Toluene*	<0.050	0.050	04/20/2024	ND	2.07	103	2.00	3.66		
Ethylbenzene*	<0.050	0.050	04/20/2024	ND	2.01	101	2.00	4.05		
Total Xylenes*	<0.150	0.150	04/20/2024	ND	5.93	98.9	6.00	3.91		
Total BTEX	<0.300	0.300	04/20/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 90.3 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	04/19/2024	ND	464	116	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	04/19/2024	ND	195	97.7	200	5.28	
DRO >C10-C28*	<10.0	10.0	04/19/2024	ND	196	98.0	200	7.66	
EXT DRO >C28-C36	<10.0	10.0	04/19/2024	ND					

Surrogate: 1-Chlorooctane 54.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 67.9 % 49.1-148

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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 ROBBIE RUNNELS  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 04/17/2024  
 Reported: 04/23/2024  
 Project Name: RANA SALIDA PAD A  
 Project Number: 19696 PERMIAN RESOURCES  
 Project Location: 32.33915, -104.03128

Sampling Date: 04/16/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: NEH 2 @ SURF. (H242051-13)**

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	04/20/2024	ND	2.13	106	2.00	3.48		
Toluene*	<0.050	0.050	04/20/2024	ND	2.07	103	2.00	3.66		
Ethylbenzene*	<0.050	0.050	04/20/2024	ND	2.01	101	2.00	4.05		
Total Xylenes*	<0.150	0.150	04/20/2024	ND	5.93	98.9	6.00	3.91		
Total BTEX	<0.300	0.300	04/20/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 92.0 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	04/19/2024	ND	464	116	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	04/19/2024	ND	195	97.7	200	5.28	
DRO >C10-C28*	<10.0	10.0	04/19/2024	ND	196	98.0	200	7.66	
EXT DRO >C28-C36	<10.0	10.0	04/19/2024	ND					

Surrogate: 1-Chlorooctane 81.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 101 % 49.1-148

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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 ROBBIE RUNNELS  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 04/17/2024  
 Reported: 04/23/2024  
 Project Name: RANA SALIDA PAD A  
 Project Number: 19696 PERMIAN RESOURCES  
 Project Location: 32.33915, -104.03128

Sampling Date: 04/16/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: NEH 2 @ 16" (H242051-14)**

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	04/20/2024	ND	2.13	106	2.00	3.48		
Toluene*	<0.050	0.050	04/20/2024	ND	2.07	103	2.00	3.66		
Ethylbenzene*	<0.050	0.050	04/20/2024	ND	2.01	101	2.00	4.05		
Total Xylenes*	<0.150	0.150	04/20/2024	ND	5.93	98.9	6.00	3.91		
Total BTEX	<0.300	0.300	04/20/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 92.2 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	04/19/2024	ND	464	116	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	04/19/2024	ND	196	97.8	200	3.94	
DRO >C10-C28*	<10.0	10.0	04/19/2024	ND	197	98.5	200	7.51	
EXT DRO >C28-C36	<10.0	10.0	04/19/2024	ND					

Surrogate: 1-Chlorooctane 74.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 73.1 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 ROBBIE RUNNELS  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 04/17/2024  
 Reported: 04/23/2024  
 Project Name: RANA SALIDA PAD A  
 Project Number: 19696 PERMIAN RESOURCES  
 Project Location: 32.33915, -104.03128

Sampling Date: 04/16/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SWH 1 @ SURF. (H242051-15)**

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	04/20/2024	ND	2.13	106	2.00	3.48		
Toluene*	<0.050	0.050	04/20/2024	ND	2.07	103	2.00	3.66		
Ethylbenzene*	<0.050	0.050	04/20/2024	ND	2.01	101	2.00	4.05		
Total Xylenes*	<0.150	0.150	04/20/2024	ND	5.93	98.9	6.00	3.91		
Total BTEX	<0.300	0.300	04/20/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 93.1 % 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	<16.0	16.0	04/19/2024	ND	480	120	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	04/19/2024	ND	196	97.8	200	3.94	
DRO >C10-C28*	<10.0	10.0	04/19/2024	ND	197	98.5	200	7.51	
EXT DRO >C28-C36	<10.0	10.0	04/19/2024	ND					

Surrogate: 1-Chlorooctane 77.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 73.9 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 ROBBIE RUNNELS  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 04/17/2024  
 Reported: 04/23/2024  
 Project Name: RANA SALIDA PAD A  
 Project Number: 19696 PERMIAN RESOURCES  
 Project Location: 32.33915, -104.03128

Sampling Date: 04/16/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SWH 1 @ 2' (H242051-16)**

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	04/20/2024	ND	2.13	106	2.00	3.48		
Toluene*	<0.050	0.050	04/20/2024	ND	2.07	103	2.00	3.66		
Ethylbenzene*	<0.050	0.050	04/20/2024	ND	2.01	101	2.00	4.05		
Total Xylenes*	<0.150	0.150	04/20/2024	ND	5.93	98.9	6.00	3.91		
Total BTEX	<0.300	0.300	04/20/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 91.6 % 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	32.0	16.0	04/19/2024	ND	480	120	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	04/19/2024	ND	196	97.8	200	3.94	
DRO >C10-C28*	<10.0	10.0	04/19/2024	ND	197	98.5	200	7.51	
EXT DRO >C28-C36	<10.0	10.0	04/19/2024	ND					

Surrogate: 1-Chlorooctane 81.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 79.8 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 ROBBIE RUNNELS  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 04/17/2024  
 Reported: 04/23/2024  
 Project Name: RANA SALIDA PAD A  
 Project Number: 19696 PERMIAN RESOURCES  
 Project Location: 32.33915, -104.03128

Sampling Date: 04/16/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SWH 2 @ SURF. (H242051-17)**

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	04/20/2024	ND	2.13	106	2.00	3.48		
Toluene*	<0.050	0.050	04/20/2024	ND	2.07	103	2.00	3.66		
Ethylbenzene*	<0.050	0.050	04/20/2024	ND	2.01	101	2.00	4.05		
Total Xylenes*	<0.150	0.150	04/20/2024	ND	5.93	98.9	6.00	3.91		
Total BTEX	<0.300	0.300	04/20/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 90.2 % 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	16.0	16.0	04/19/2024	ND	480	120	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	04/19/2024	ND	196	97.8	200	3.94	
DRO >C10-C28*	<10.0	10.0	04/19/2024	ND	197	98.5	200	7.51	
EXT DRO >C28-C36	<10.0	10.0	04/19/2024	ND					

Surrogate: 1-Chlorooctane 78.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 73.9 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 ROBBIE RUNNELS  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 04/17/2024  
 Reported: 04/23/2024  
 Project Name: RANA SALIDA PAD A  
 Project Number: 19696 PERMIAN RESOURCES  
 Project Location: 32.33915, -104.03128

Sampling Date: 04/16/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SWH 2 @ 1' (H242051-18)**

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	04/20/2024	ND	2.13	106	2.00	3.48		
Toluene*	<0.050	0.050	04/20/2024	ND	2.07	103	2.00	3.66		
Ethylbenzene*	<0.050	0.050	04/20/2024	ND	2.01	101	2.00	4.05		
Total Xylenes*	<0.150	0.150	04/20/2024	ND	5.93	98.9	6.00	3.91		
Total BTEX	<0.300	0.300	04/20/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 91.6 % 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	48.0	16.0	04/19/2024	ND	480	120	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	04/19/2024	ND	196	97.8	200	3.94	
DRO >C10-C28*	<10.0	10.0	04/19/2024	ND	197	98.5	200	7.51	
EXT DRO >C28-C36	<10.0	10.0	04/19/2024	ND					

Surrogate: 1-Chlorooctane 94.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 91.0 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- \*\* Samples not received at proper temperature of 6°C or below.
- \*\*\* Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported on an as received basis (wet) unless otherwise noted on report

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

Celey D. Keene, Lab Director/Quality Manager



ARDINAL LABORATORIES

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 1 of 2

Company Name: Ettech Environmental & Safety Solutions, Inc.										BILL TO										ANALYSIS REQUEST																			
Project Manager: Robbie Runnels										P.O. #:																													
Address: 2617 West Marland										Company: Permian Resources																													
City: Hobbs										Attn: Montgomery Floyd																													
Phone #: (575) 264-9884										Address:																													
Fax #: (575) 264-9884										City:																													
Project #: 19696										State: Zip:																													
Project Name: Rana Salda Pad A										City:																													
Project Location: 32.33915, -104.03128										State: Zip:																													
Sample Name: Abe Buehler										Phone #:																													
FOR LAB USE ONLY										Fax #:																													
Lab I.D. H414051										(G)RAB OR (C)OMP.																													
Sample I.D.										# CONTAINERS																													
										GROUNDWATER																													
										WASTEWATER																													
										SOIL																													
										OIL																													
										SLUDGE																													
										OTHER :																													
										ACID/BASE:																													
										ICE / COOL																													
										OTHER :																													
										DATE										TIME																			
1 TT 1 @ Surf										G 1										4/16/24										X X X									
2 TT 1 @ 2'										G 1										4/16/24										X X X									
3 TT 2 @ Surf										G 1										4/16/24										X X X									
4 TT 2 @ 25"										G 1										4/16/24										X X X									
5 TT 5 @ Surf										G 1										4/16/24										X X X									
6 TT 5 @ 4'										G 1										4/16/24										X X X									
7 NH @ Surf										G 1										4/16/24										X X X									
8 NH @ 2'										G 1										4/16/24										X X X									
9 SH @ Surf										G 1										4/16/24										X X X									
10 SH @ 16"										G 1										4/16/24										X X X									
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Relinquished By: [Signature]										Date: 4-11-24										Received By: [Signature]										Time: 1:58									
Relinquished By: [Signature]										Date:										Received By:										Time:									
Delivered By: (Circle One)										Sample Condition										CHECKED BY: [Signature]																			
Sampler - UPS - Bus - Other: -1.4c #140										Cool <input type="checkbox"/> Intact <input type="checkbox"/>																													
										<input type="checkbox"/> Yes <input type="checkbox"/> No																													
										<input type="checkbox"/> No <input type="checkbox"/> No																													
FORM-006 Revision 1.0 † Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476																																							





ARDINAL LABORATORIES

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(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 2 of 2

BILL TO

ANALYSIS REQUEST

Company Name: Etech Environmental & Safety Solutions, Inc.

Project Manager: Robbie Runnels

Address: 2617 West Marland

City: Hobbs State: NM Zip: 88240

Phone #: (575) 264-9884 Fax #:

Project #: 19696 Project Owner: Permian Resources

Project Name: Rana Salida Pad A

Project Location: 32.33915, -104.03128

Sampler Name: Abe Buehler

FOR LAB USE ONLY

Lab I.D. #H240051

Sample I.D.

		(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	ANALYSIS REQUEST					
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :			Chloride	TPH (8015M)	BTEX (8021B)			

11	NEH 1 @ Surf	G	1	X						4/16/24		X	X	X			
12	NEH 1 @ 2'	G	1	X						4/16/24		X	X	X			
13	NEH 2 @ Surf	G	1	X						4/16/24		X	X	X			
14	NEH 2 @ 16"	G	1	X						4/16/24		X	X	X			
15	SWH 1 @ Surf	G	1	X						4/16/24		X	X	X			
16	SWH 1 @ 2'	G	1	X						4/16/24		X	X	X			
17	SWH 2 @ Surf	G	1	X						4/16/24		X	X	X			
18	SWH 2 @ 1'	G	1	X						4/16/24		X	X	X			

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Relinquished By: [Signature] Date: 4-17-24 Time: 1:58

Received By: [Signature]

Relinquished By: [Signature] Date: [Blank] Time: [Blank]

Received By: [Signature]

Delivered By: (Circle One)

Sampler - UPS - Bus - Other: -14 #140

Sample Condition Cool Intact ☒ Yes ☐ No

CHECKED BY: [Signature]

Phone Result: ☐ Yes ☐ No Add'l Phone #: [Blank]  
Fax Result: ☐ Yes ☐ No Add'l Fax #: [Blank]

REMARKS:

Please email copy of COC and results to pm@etechenv.com.



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

---

September 24, 2024

CHANCE DIXON

VERTEX RESOURCE

3101 BOYD DRIVE

CARLSBAD, NM 88220

RE: RANA SALADA PAD A

Enclosed are the results of analyses for samples received by the laboratory on 09/19/24 9:02.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C24-00112. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 09/19/2024  
 Reported: 09/24/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 09/17/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BES24 - 01 3' (H245696-01)**

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	09/20/2024	ND	2.35	118	2.00	0.452	
Toluene*	<0.050	0.050	09/20/2024	ND	2.42	121	2.00	2.91	
Ethylbenzene*	<0.050	0.050	09/20/2024	ND	2.59	130	2.00	4.51	
Total Xylenes*	<0.150	0.150	09/20/2024	ND	7.82	130	6.00	5.90	
Total BTEx	<0.300	0.300	09/20/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 120 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	09/19/2024	ND	416	104	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	09/19/2024	ND	213	106	200	5.77	
DRO >C10-C28*	<10.0	10.0	09/19/2024	ND	206	103	200	3.89	
EXT DRO >C28-C36	<10.0	10.0	09/19/2024	ND					

Surrogate: 1-Chlorooctane 112 % 48.2-134

Surrogate: 1-Chlorooctadecane 141 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 09/19/2024  
 Reported: 09/24/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 09/17/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BES24 - 02 3' (H245696-02)**

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	09/20/2024	ND	2.35	118	2.00	0.452		
Toluene*	<0.050	0.050	09/20/2024	ND	2.42	121	2.00	2.91		
Ethylbenzene*	<0.050	0.050	09/20/2024	ND	2.59	130	2.00	4.51		
Total Xylenes*	<0.150	0.150	09/20/2024	ND	7.82	130	6.00	5.90		
Total BTEx	<0.300	0.300	09/20/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 120 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	09/19/2024	ND	416	104	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	09/19/2024	ND	213	106	200	5.77	
DRO >C10-C28*	<10.0	10.0	09/19/2024	ND	206	103	200	3.89	
EXT DRO >C28-C36	<10.0	10.0	09/19/2024	ND					

Surrogate: 1-Chlorooctane 107 % 48.2-134

Surrogate: 1-Chlorooctadecane 132 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 09/19/2024  
 Reported: 09/24/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 09/17/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BES24 - 03 3' (H245696-03)**

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	09/20/2024	ND	2.35	118	2.00	0.452		
Toluene*	<0.050	0.050	09/20/2024	ND	2.42	121	2.00	2.91		
Ethylbenzene*	<0.050	0.050	09/20/2024	ND	2.59	130	2.00	4.51		
Total Xylenes*	<0.150	0.150	09/20/2024	ND	7.82	130	6.00	5.90		
Total BTEx	<0.300	0.300	09/20/2024	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	09/19/2024	ND	416	104	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	09/19/2024	ND	213	106	200	5.77	
DRO >C10-C28*	<10.0	10.0	09/19/2024	ND	206	103	200	3.89	
EXT DRO >C28-C36	<10.0	10.0	09/19/2024	ND					

Surrogate: 1-Chlorooctane 112 % 48.2-134

Surrogate: 1-Chlorooctadecane 137 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 09/19/2024  
 Reported: 09/24/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 09/17/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BES24 - 04 3' (H245696-04)**

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	09/20/2024	ND	2.35	118	2.00	0.452		
Toluene*	<0.050	0.050	09/20/2024	ND	2.42	121	2.00	2.91		
Ethylbenzene*	<0.050	0.050	09/20/2024	ND	2.59	130	2.00	4.51		
Total Xylenes*	<0.150	0.150	09/20/2024	ND	7.82	130	6.00	5.90		
Total BTEx	<0.300	0.300	09/20/2024	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	09/19/2024	ND	416	104	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	09/19/2024	ND	213	106	200	5.77	
DRO >C10-C28*	<10.0	10.0	09/19/2024	ND	206	103	200	3.89	
EXT DRO >C28-C36	<10.0	10.0	09/19/2024	ND					

Surrogate: 1-Chlorooctane 111 % 48.2-134

Surrogate: 1-Chlorooctadecane 138 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 09/19/2024  
 Reported: 09/24/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 09/17/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BES24 - 05 3' (H245696-05)**

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	09/20/2024	ND	2.35	118	2.00	0.452		
Toluene*	<0.050	0.050	09/20/2024	ND	2.42	121	2.00	2.91		
Ethylbenzene*	<0.050	0.050	09/20/2024	ND	2.59	130	2.00	4.51		
Total Xylenes*	<0.150	0.150	09/20/2024	ND	7.82	130	6.00	5.90		
Total BTEX	<0.300	0.300	09/20/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 120 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	09/19/2024	ND	416	104	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	09/19/2024	ND	213	106	200	5.77	
DRO >C10-C28*	<10.0	10.0	09/19/2024	ND	206	103	200	3.89	
EXT DRO >C28-C36	<10.0	10.0	09/19/2024	ND					

Surrogate: 1-Chlorooctane 106 % 48.2-134

Surrogate: 1-Chlorooctadecane 134 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 09/19/2024  
 Reported: 09/24/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 09/17/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BES24 - 06 3' (H245696-06)**

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	09/20/2024	ND	2.35	118	2.00	0.452	
Toluene*	<0.050	0.050	09/20/2024	ND	2.42	121	2.00	2.91	
Ethylbenzene*	<0.050	0.050	09/20/2024	ND	2.59	130	2.00	4.51	
Total Xylenes*	<0.150	0.150	09/20/2024	ND	7.82	130	6.00	5.90	
Total BTEx	<0.300	0.300	09/20/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 119 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	09/19/2024	ND	416	104	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	09/19/2024	ND	213	106	200	5.77	
DRO >C10-C28*	<10.0	10.0	09/19/2024	ND	206	103	200	3.89	
EXT DRO >C28-C36	<10.0	10.0	09/19/2024	ND					

Surrogate: 1-Chlorooctane 111 % 48.2-134

Surrogate: 1-Chlorooctadecane 140 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 09/19/2024  
 Reported: 09/24/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 09/17/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BES24 - 07 3' (H245696-07)**

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	09/20/2024	ND	2.35	118	2.00	0.452		
Toluene*	<0.050	0.050	09/20/2024	ND	2.42	121	2.00	2.91		
Ethylbenzene*	<0.050	0.050	09/20/2024	ND	2.59	130	2.00	4.51		
Total Xylenes*	<0.150	0.150	09/20/2024	ND	7.82	130	6.00	5.90		
Total BTEx	<0.300	0.300	09/20/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 114 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	09/19/2024	ND	416	104	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	09/19/2024	ND	213	106	200	5.77	
DRO >C10-C28*	<10.0	10.0	09/19/2024	ND	206	103	200	3.89	
EXT DRO >C28-C36	<10.0	10.0	09/19/2024	ND					

Surrogate: 1-Chlorooctane 108 % 48.2-134

Surrogate: 1-Chlorooctadecane 132 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 09/19/2024  
 Reported: 09/24/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 09/17/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BES24 - 08 3' (H245696-08)**

BTX 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	09/20/2024	ND	2.35	118	2.00	0.452	
Toluene*	<0.050	0.050	09/20/2024	ND	2.42	121	2.00	2.91	
Ethylbenzene*	<0.050	0.050	09/20/2024	ND	2.59	130	2.00	4.51	
Total Xylenes*	<0.150	0.150	09/20/2024	ND	7.82	130	6.00	5.90	
Total BTX	<0.300	0.300	09/20/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 121 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	09/19/2024	ND	416	104	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	09/19/2024	ND	213	106	200	5.77	
DRO >C10-C28*	<10.0	10.0	09/19/2024	ND	206	103	200	3.89	
EXT DRO >C28-C36	<10.0	10.0	09/19/2024	ND					

Surrogate: 1-Chlorooctane 103 % 48.2-134

Surrogate: 1-Chlorooctadecane 126 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 09/19/2024  
 Reported: 09/24/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 09/17/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BES24 - 09 3' (H245696-09)**

BTX 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	09/20/2024	ND	2.35	118	2.00	0.452	
Toluene*	<0.050	0.050	09/20/2024	ND	2.42	121	2.00	2.91	
Ethylbenzene*	<0.050	0.050	09/20/2024	ND	2.59	130	2.00	4.51	
Total Xylenes*	<0.150	0.150	09/20/2024	ND	7.82	130	6.00	5.90	
Total BTX	<0.300	0.300	09/20/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 118 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	09/19/2024	ND	416	104	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	09/19/2024	ND	196	98.2	200	1.40	
DRO >C10-C28*	<10.0	10.0	09/19/2024	ND	192	96.1	200	5.28	
EXT DRO >C28-C36	<10.0	10.0	09/19/2024	ND					

Surrogate: 1-Chlorooctane 101 % 48.2-134

Surrogate: 1-Chlorooctadecane 116 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 09/19/2024  
 Reported: 09/24/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 09/17/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BES24 - 10 3' (H245696-10)**

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	09/20/2024	ND	2.28	114	2.00	0.102		
Toluene*	<0.050	0.050	09/20/2024	ND	2.22	111	2.00	3.27		
Ethylbenzene*	<0.050	0.050	09/20/2024	ND	2.25	113	2.00	4.04		
Total Xylenes*	<0.150	0.150	09/20/2024	ND	6.78	113	6.00	4.14		
Total BTEX	<0.300	0.300	09/20/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	09/19/2024	ND	416	104	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	09/20/2024	ND	196	98.2	200	1.40	
DRO >C10-C28*	<10.0	10.0	09/20/2024	ND	192	96.1	200	5.28	
EXT DRO >C28-C36	<10.0	10.0	09/20/2024	ND					

Surrogate: 1-Chlorooctane 98.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 115 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 09/19/2024  
 Reported: 09/24/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 09/17/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BES24 - 11 3' (H245696-11)**

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	09/20/2024	ND	2.28	114	2.00	0.102		
Toluene*	<0.050	0.050	09/20/2024	ND	2.22	111	2.00	3.27		
Ethylbenzene*	<0.050	0.050	09/20/2024	ND	2.25	113	2.00	4.04		
Total Xylenes*	<0.150	0.150	09/20/2024	ND	6.78	113	6.00	4.14		
Total BTEx	<0.300	0.300	09/20/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	09/19/2024	ND	416	104	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	09/20/2024	ND	196	98.2	200	1.40	
DRO >C10-C28*	<10.0	10.0	09/20/2024	ND	192	96.1	200	5.28	
EXT DRO >C28-C36	<10.0	10.0	09/20/2024	ND					

Surrogate: 1-Chlorooctane 104 % 48.2-134

Surrogate: 1-Chlorooctadecane 120 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 09/19/2024  
 Reported: 09/24/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 09/17/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BES24 - 12 3' (H245696-12)**

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	09/20/2024	ND	2.28	114	2.00	0.102		
Toluene*	<0.050	0.050	09/20/2024	ND	2.22	111	2.00	3.27		
Ethylbenzene*	<0.050	0.050	09/20/2024	ND	2.25	113	2.00	4.04		
Total Xylenes*	<0.150	0.150	09/20/2024	ND	6.78	113	6.00	4.14		
Total BTEX	<0.300	0.300	09/20/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 107 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	09/19/2024	ND	416	104	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	09/20/2024	ND	196	98.2	200	1.40	
DRO >C10-C28*	<10.0	10.0	09/20/2024	ND	192	96.1	200	5.28	
EXT DRO >C28-C36	<10.0	10.0	09/20/2024	ND					

Surrogate: 1-Chlorooctane 103 % 48.2-134

Surrogate: 1-Chlorooctadecane 119 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 09/19/2024  
 Reported: 09/24/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 09/17/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BES24 - 13 3' (H245696-13)**

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	09/20/2024	ND	2.28	114	2.00	0.102		
Toluene*	<0.050	0.050	09/20/2024	ND	2.22	111	2.00	3.27		
Ethylbenzene*	<0.050	0.050	09/20/2024	ND	2.25	113	2.00	4.04		
Total Xylenes*	<0.150	0.150	09/20/2024	ND	6.78	113	6.00	4.14		
Total BTEx	<0.300	0.300	09/20/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	09/19/2024	ND	416	104	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	09/20/2024	ND	196	98.2	200	1.40	
DRO >C10-C28*	<10.0	10.0	09/20/2024	ND	192	96.1	200	5.28	
EXT DRO >C28-C36	<10.0	10.0	09/20/2024	ND					

Surrogate: 1-Chlorooctane 102 % 48.2-134

Surrogate: 1-Chlorooctadecane 119 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 09/19/2024  
 Reported: 09/24/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 09/17/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BES24 - 14 3' (H245696-14)**

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	09/20/2024	ND	2.28	114	2.00	0.102		
Toluene*	<0.050	0.050	09/20/2024	ND	2.22	111	2.00	3.27		
Ethylbenzene*	<0.050	0.050	09/20/2024	ND	2.25	113	2.00	4.04		
Total Xylenes*	<0.150	0.150	09/20/2024	ND	6.78	113	6.00	4.14		
Total BTEX	<0.300	0.300	09/20/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	09/19/2024	ND	416	104	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	09/20/2024	ND	196	98.2	200	1.40	
DRO >C10-C28*	<10.0	10.0	09/20/2024	ND	192	96.1	200	5.28	
EXT DRO >C28-C36	<10.0	10.0	09/20/2024	ND					

Surrogate: 1-Chlorooctane 103 % 48.2-134

Surrogate: 1-Chlorooctadecane 119 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 09/19/2024  
 Reported: 09/24/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 09/17/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BES24 - 15 3' (H245696-15)**

BTX 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	09/20/2024	ND	2.28	114	2.00	0.102	
Toluene*	<0.050	0.050	09/20/2024	ND	2.22	111	2.00	3.27	
Ethylbenzene*	<0.050	0.050	09/20/2024	ND	2.25	113	2.00	4.04	
Total Xylenes*	<0.150	0.150	09/20/2024	ND	6.78	113	6.00	4.14	
Total BTX	<0.300	0.300	09/20/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	09/19/2024	ND	416	104	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	09/20/2024	ND	196	98.2	200	1.40	
DRO >C10-C28*	<10.0	10.0	09/20/2024	ND	192	96.1	200	5.28	
EXT DRO >C28-C36	<10.0	10.0	09/20/2024	ND					

Surrogate: 1-Chlorooctane 104 % 48.2-134

Surrogate: 1-Chlorooctadecane 122 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 09/19/2024  
 Reported: 09/24/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 09/17/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BES24 - 16 3' (H245696-16)**

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	09/20/2024	ND	2.28	114	2.00	0.102		
Toluene*	<0.050	0.050	09/20/2024	ND	2.22	111	2.00	3.27		
Ethylbenzene*	<0.050	0.050	09/20/2024	ND	2.25	113	2.00	4.04		
Total Xylenes*	<0.150	0.150	09/20/2024	ND	6.78	113	6.00	4.14		
Total BTEx	<0.300	0.300	09/20/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	09/20/2024	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/20/2024	ND	196	98.2	200	1.40	
DRO >C10-C28*	<10.0	10.0	09/20/2024	ND	192	96.1	200	5.28	
EXT DRO >C28-C36	<10.0	10.0	09/20/2024	ND					

Surrogate: 1-Chlorooctane 98.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 115 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 09/19/2024  
 Reported: 09/24/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 09/17/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BES24 - 17 3' (H245696-17)**

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	09/20/2024	ND	2.28	114	2.00	0.102	
Toluene*	<0.050	0.050	09/20/2024	ND	2.22	111	2.00	3.27	
Ethylbenzene*	<0.050	0.050	09/20/2024	ND	2.25	113	2.00	4.04	
Total Xylenes*	<0.150	0.150	09/20/2024	ND	6.78	113	6.00	4.14	
Total BTEX	<0.300	0.300	09/20/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	09/20/2024	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/20/2024	ND	196	98.2	200	1.40	
DRO >C10-C28*	<10.0	10.0	09/20/2024	ND	192	96.1	200	5.28	
EXT DRO >C28-C36	<10.0	10.0	09/20/2024	ND					

Surrogate: 1-Chlorooctane 105 % 48.2-134

Surrogate: 1-Chlorooctadecane 123 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 09/19/2024  
 Reported: 09/24/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 09/17/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BES24 - 18 3' (H245696-18)**

BTX 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	09/20/2024	ND	2.28	114	2.00	0.102	
Toluene*	<0.050	0.050	09/20/2024	ND	2.22	111	2.00	3.27	
Ethylbenzene*	<0.050	0.050	09/20/2024	ND	2.25	113	2.00	4.04	
Total Xylenes*	<0.150	0.150	09/20/2024	ND	6.78	113	6.00	4.14	
Total BTX	<0.300	0.300	09/20/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 118 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	09/20/2024	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/20/2024	ND	196	98.2	200	1.40	
DRO >C10-C28*	<10.0	10.0	09/20/2024	ND	192	96.1	200	5.28	
EXT DRO >C28-C36	<10.0	10.0	09/20/2024	ND					

Surrogate: 1-Chlorooctane 103 % 48.2-134

Surrogate: 1-Chlorooctadecane 122 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 09/19/2024  
 Reported: 09/24/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 09/17/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BES24 - 19 3' (H245696-19)**

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	09/20/2024	ND	2.28	114	2.00	0.102		
Toluene*	<0.050	0.050	09/20/2024	ND	2.22	111	2.00	3.27		
Ethylbenzene*	<0.050	0.050	09/20/2024	ND	2.25	113	2.00	4.04		
Total Xylenes*	<0.150	0.150	09/20/2024	ND	6.78	113	6.00	4.14		
Total BTEx	<0.300	0.300	09/20/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	09/20/2024	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/20/2024	ND	196	98.2	200	1.40	
DRO >C10-C28*	<10.0	10.0	09/20/2024	ND	192	96.1	200	5.28	
EXT DRO >C28-C36	<10.0	10.0	09/20/2024	ND					

Surrogate: 1-Chlorooctane 104 % 48.2-134

Surrogate: 1-Chlorooctadecane 122 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 09/19/2024  
 Reported: 09/24/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 09/17/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BES24 - 20 3' (H245696-20)**

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	09/20/2024	ND	2.28	114	2.00	0.102		
Toluene*	<0.050	0.050	09/20/2024	ND	2.22	111	2.00	3.27		
Ethylbenzene*	<0.050	0.050	09/20/2024	ND	2.25	113	2.00	4.04		
Total Xylenes*	<0.150	0.150	09/20/2024	ND	6.78	113	6.00	4.14		
Total BTEx	<0.300	0.300	09/20/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	09/20/2024	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/20/2024	ND	196	98.2	200	1.40	
DRO >C10-C28*	<10.0	10.0	09/20/2024	ND	192	96.1	200	5.28	
EXT DRO >C28-C36	<10.0	10.0	09/20/2024	ND					

Surrogate: 1-Chlorooctane 105 % 48.2-134

Surrogate: 1-Chlorooctadecane 123 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 09/19/2024  
 Reported: 09/24/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 09/17/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BES24 - 21 3' (H245696-21)**

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	09/20/2024	ND	2.28	114	2.00	0.102	
Toluene*	<0.050	0.050	09/20/2024	ND	2.22	111	2.00	3.27	
Ethylbenzene*	<0.050	0.050	09/20/2024	ND	2.25	113	2.00	4.04	
Total Xylenes*	<0.150	0.150	09/20/2024	ND	6.78	113	6.00	4.14	
Total BTEX	<0.300	0.300	09/20/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	09/20/2024	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/20/2024	ND	196	98.2	200	1.40	
DRO >C10-C28*	<10.0	10.0	09/20/2024	ND	192	96.1	200	5.28	
EXT DRO >C28-C36	<10.0	10.0	09/20/2024	ND					

Surrogate: 1-Chlorooctane 105 % 48.2-134

Surrogate: 1-Chlorooctadecane 123 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 09/19/2024  
 Reported: 09/24/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 09/17/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BES24 - 22 3' (H245696-22)**

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	09/20/2024	ND	2.28	114	2.00	0.102		
Toluene*	<0.050	0.050	09/20/2024	ND	2.22	111	2.00	3.27		
Ethylbenzene*	<0.050	0.050	09/20/2024	ND	2.25	113	2.00	4.04		
Total Xylenes*	<0.150	0.150	09/20/2024	ND	6.78	113	6.00	4.14		
Total BTEx	<0.300	0.300	09/20/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	09/20/2024	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/20/2024	ND	196	98.2	200	1.40	
DRO >C10-C28*	<10.0	10.0	09/20/2024	ND	192	96.1	200	5.28	
EXT DRO >C28-C36	<10.0	10.0	09/20/2024	ND					

Surrogate: 1-Chlorooctane 101 % 48.2-134

Surrogate: 1-Chlorooctadecane 118 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 09/19/2024  
 Reported: 09/24/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 09/17/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BES24 - 23 3' (H245696-23)**

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	09/20/2024	ND	2.28	114	2.00	0.102		
Toluene*	<0.050	0.050	09/20/2024	ND	2.22	111	2.00	3.27		
Ethylbenzene*	<0.050	0.050	09/20/2024	ND	2.25	113	2.00	4.04		
Total Xylenes*	<0.150	0.150	09/20/2024	ND	6.78	113	6.00	4.14		
Total BTEx	<0.300	0.300	09/20/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 107 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	09/20/2024	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/20/2024	ND	196	98.2	200	1.40	
DRO >C10-C28*	<10.0	10.0	09/20/2024	ND	192	96.1	200	5.28	
EXT DRO >C28-C36	<10.0	10.0	09/20/2024	ND					

Surrogate: 1-Chlorooctane 103 % 48.2-134

Surrogate: 1-Chlorooctadecane 120 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 09/19/2024  
 Reported: 09/24/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 09/17/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BES24 - 24 3' (H245696-24)**

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	09/20/2024	ND	2.28	114	2.00	0.102		
Toluene*	<0.050	0.050	09/20/2024	ND	2.22	111	2.00	3.27		
Ethylbenzene*	<0.050	0.050	09/20/2024	ND	2.25	113	2.00	4.04		
Total Xylenes*	<0.150	0.150	09/20/2024	ND	6.78	113	6.00	4.14		
Total BTEX	<0.300	0.300	09/20/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	09/20/2024	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/20/2024	ND	196	98.2	200	1.40	
DRO >C10-C28*	<10.0	10.0	09/20/2024	ND	192	96.1	200	5.28	
EXT DRO >C28-C36	<10.0	10.0	09/20/2024	ND					

Surrogate: 1-Chlorooctane 104 % 48.2-134

Surrogate: 1-Chlorooctadecane 120 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 09/19/2024  
 Reported: 09/24/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 09/17/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BES24 - 25 3' (H245696-25)**

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	09/20/2024	ND	2.28	114	2.00	0.102		
Toluene*	<0.050	0.050	09/20/2024	ND	2.22	111	2.00	3.27		
Ethylbenzene*	<0.050	0.050	09/20/2024	ND	2.25	113	2.00	4.04		
Total Xylenes*	<0.150	0.150	09/20/2024	ND	6.78	113	6.00	4.14		
Total BTEX	<0.300	0.300	09/20/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	09/20/2024	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/20/2024	ND	196	98.2	200	1.40	
DRO >C10-C28*	<10.0	10.0	09/20/2024	ND	192	96.1	200	5.28	
EXT DRO >C28-C36	<10.0	10.0	09/20/2024	ND					

Surrogate: 1-Chlorooctane 106 % 48.2-134

Surrogate: 1-Chlorooctadecane 127 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 09/19/2024  
 Reported: 09/24/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 09/17/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BES24 - 26 3' (H245696-26)**

BTX 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	09/20/2024	ND	2.28	114	2.00	0.102		
Toluene*	<0.050	0.050	09/20/2024	ND	2.22	111	2.00	3.27		
Ethylbenzene*	<0.050	0.050	09/20/2024	ND	2.25	113	2.00	4.04		
Total Xylenes*	<0.150	0.150	09/20/2024	ND	6.78	113	6.00	4.14		
Total BTX	<0.300	0.300	09/20/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	09/20/2024	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/20/2024	ND	196	98.2	200	1.40	
DRO >C10-C28*	<10.0	10.0	09/20/2024	ND	192	96.1	200	5.28	
EXT DRO >C28-C36	<10.0	10.0	09/20/2024	ND					

Surrogate: 1-Chlorooctane 104 % 48.2-134

Surrogate: 1-Chlorooctadecane 123 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 09/19/2024  
 Reported: 09/24/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 09/17/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: WES24 - 01 0-3' (H245696-27)**

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	09/20/2024	ND	2.28	114	2.00	0.102		
Toluene*	<0.050	0.050	09/20/2024	ND	2.22	111	2.00	3.27		
Ethylbenzene*	<0.050	0.050	09/20/2024	ND	2.25	113	2.00	4.04		
Total Xylenes*	<0.150	0.150	09/20/2024	ND	6.78	113	6.00	4.14		
Total BTEX	<0.300	0.300	09/20/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	09/20/2024	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/20/2024	ND	196	98.2	200	1.40	
DRO >C10-C28*	<10.0	10.0	09/20/2024	ND	192	96.1	200	5.28	
EXT DRO >C28-C36	<10.0	10.0	09/20/2024	ND					

Surrogate: 1-Chlorooctane 99.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 116 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 09/19/2024  
 Reported: 09/24/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 09/17/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: WES24 - 02 0-3' (H245696-28)**

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	09/20/2024	ND	2.28	114	2.00	0.102		
Toluene*	<0.050	0.050	09/20/2024	ND	2.22	111	2.00	3.27		
Ethylbenzene*	<0.050	0.050	09/20/2024	ND	2.25	113	2.00	4.04		
Total Xylenes*	<0.150	0.150	09/20/2024	ND	6.78	113	6.00	4.14		
Total BTEX	<0.300	0.300	09/20/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	09/20/2024	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/20/2024	ND	196	98.2	200	1.40	
DRO >C10-C28*	<10.0	10.0	09/20/2024	ND	192	96.1	200	5.28	
EXT DRO >C28-C36	<10.0	10.0	09/20/2024	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



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Notes and Definitions

- BS-3            Blank spike recovery outside of lab established statistical limits, but still within method limits. Data is not adversely affected.
- ND            Analyte NOT DETECTED at or above the reporting limit
- RPD           Relative Percent Difference
- \*\*            Samples not received at proper temperature of 6°C or below.
- \*\*\*           Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported on an as received basis (wet) unless otherwise noted on report

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

Celey D. Keene, Lab Director/Quality Manager



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

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]





CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

<b>Company Name:</b> <u>Verter/Parman</u>		<b>P.O. #:</b>		<b>BILL TO</b>		<b>ANALYSIS REQUEST</b>													
<b>Project Manager:</b> <u>Chance Dixon</u>				<b>Company:</b> <u>Parman</u>															
<b>Address:</b> <u>CNF-116</u>				<b>Attn:</b> <u>Montgomery</u>															
<b>City:</b>		<b>State:</b>		<b>Address:</b> <u>Floyd</u>															
<b>Phone #:</b>		<b>Fax #:</b>		<b>City:</b>															
<b>Project #:</b> <u>24E-04036</u>		<b>Project Owner:</b>		<b>State:</b>															
<b>Project Location:</b> <u>Carlsbad</u>				<b>Zip:</b>															
<b>Sampler Name:</b> <u>Chance Dixon</u>				<b>Phone #:</b>															
<b>FOR LAB USE ONLY</b>				<b>Fax #:</b>															
<b>Lab I.D.</b>		<b>Sample I.D.</b>		<b>(G)RAB OR (C)OMP</b>		<b># CONTAINERS</b>		<b>MATRIX</b>		<b>PRESERV.</b>		<b>SAMPLING</b>							
								<b>GROUNDWATER</b>											
								<b>WASTEWATER</b>											
								<b>SOIL</b>											
								<b>OIL</b>											
								<b>SLUDGE</b>											
								<b>OTHER :</b>											
								<b>ACID/BASE:</b>											
								<b>ICE/ COOL</b>											
								<b>OTHER :</b>											
								<b>DATE</b>		<b>TIME</b>									
<u>H245196</u>		<u>BES24-11</u>		<u>3'</u>		<u>CI</u>		<u>9/17</u>		<u>1:50</u>		<u>RTEX 8021</u>							
<u>12</u>		<u>BES24-12</u>		<u>3'</u>		<u>CI</u>		<u>1:55</u>				<u>TPH 8015</u>							
<u>13</u>		<u>BES24-13</u>		<u>3'</u>				<u>2:00</u>				<u>CI</u>							
<u>14</u>		<u>BES24-14</u>		<u>3'</u>				<u>2:05</u>											
<u>15</u>		<u>BES24-15</u>		<u>3'</u>				<u>2:10</u>											
<u>16</u>		<u>BES24-16</u>		<u>3'</u>				<u>2:15</u>											
<u>17</u>		<u>BES24-17</u>		<u>3'</u>				<u>2:20</u>											
<u>18</u>		<u>BES24-18</u>		<u>3'</u>				<u>2:25</u>											
<u>19</u>		<u>BES24-19</u>		<u>3'</u>				<u>2:30</u>											
<u>20</u>		<u>BES24-20</u>		<u>3'</u>				<u>2:35</u>											

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<b>Relinquished By:</b> <u>Cox</u>	<b>Date:</b> <u>9/19</u>	<b>Received By:</b> <u>Rockeignely</u>	<b>Time:</b> <u>9:00</u>	<b>Date:</b> <u>9/19</u>	<b>Received By:</b> <u>Rockeignely</u>	<b>Time:</b>
<b>Relinquished By:</b>	<b>Date:</b>	<b>Received By:</b>	<b>Time:</b>	<b>Date:</b>	<b>Received By:</b>	<b>Time:</b>

<b>Delivered By:</b> (Circle One) Sampler - UPS - Bus - Other:	<b>Observed Temp. °C:</b> <u>16.3</u>	<b>Sample Condition</b> Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>CHECKED BY:</b> <u>SR</u>	<b>Turnaround Time:</b>	<b>Standard</b> <input checked="" type="checkbox"/> <b>Rush</b> <input type="checkbox"/>	<b>Bacteria (only) Sample Condition</b> Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No	<b>Observed Temp. °C</b>
<b>Corrected Temp. °C:</b> <u>5.7</u>		<input type="checkbox"/> Yes <input type="checkbox"/> No		<b>Thermometer ID #140</b>		<input type="checkbox"/> Yes <input type="checkbox"/> No	<b>Corrected Temp. °C</b>
				<b>Correction Factor 0.8°C</b>			

† Cardinal cannot accept verbal changes. Please email changes to caley.keene@cardinalabsnm.com





CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: <u>Ventex/Permian</u>		P.O. #:		BILL TO										ANALYSIS REQUEST																					
Project Manager: <u>Chance Dixon</u>				Company: <u>Permian</u>																															
Address: <u>On E. 116</u>				Attn: <u>Montgomery</u>																															
City: <u>Permian</u>		State: <u>TX</u>		Address: <u>F100yd</u>																															
Phone #: <u>246-04030</u>		Fax #: <u>246-04030</u>		City: <u>Permian</u>																															
Project #: <u>246-04030</u>		Project Owner: <u>Permian</u>		State: <u>TX</u>																															
Project Name: <u>Permian</u>		Project Location: <u>Permian</u>		Phone #: <u>246-04030</u>																															
Sampler Name: <u>Chance Dixon</u>		FOR LAB USE ONLY		Fax #:																															
Lab I.D. <u>A245694</u>		Sample I.D.		(G)RAB OR (C)OMP.		# CONTAINERS		GROUNDWATER		WASTEWATER		SOIL		OIL		SLUDGE		OTHER:		ACID/BASE:		ICE/COOL		OTHER:		DATE		TIME		BTEX		TPH		CI	
21 BES24-21		3'		1		1		1		1		1		1		1		1		1		1		1		9/17		2:40		1		1		1	
22 BES24-22		3'		1		1		1		1		1		1		1		1		1		1		1		9/17		2:45		1		1		1	
23 BES24-23		3'		1		1		1		1		1		1		1		1		1		1		1		9/17		2:50		1		1		1	
24 BES24-24		3'		1		1		1		1		1		1		1		1		1		1		1		9/17		2:55		1		1		1	
25 BES24-25		3'		1		1		1		1		1		1		1		1		1		1		1		9/17		3:00		1		1		1	
26 BES24-26		3'		1		1		1		1		1		1		1		1		1		1		1		9/17		3:05		1		1		1	
27 BES24-01		0-3'		1		1		1		1		1		1		1		1		1		1		1		9/17		3:10		1		1		1	
28 BES24-02		0-3'		1		1		1		1		1		1		1		1		1		1		1		9/17		3:15		1		1		1	



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

November 13, 2024

CHANCE DIXON

VERTEX RESOURCE

3101 BOYD DRIVE

CARLSBAD, NM 88220

RE: RANA SALADA PAD A

Enclosed are the results of analyses for samples received by the laboratory on 11/07/24 14:10.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C24-00112. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 11/07/2024  
 Reported: 11/13/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 11/05/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BS24 - 29 3.5' (H246788-01)**

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	11/09/2024	ND	2.23	111	2.00	2.64	
Toluene*	<0.050	0.050	11/09/2024	ND	2.29	114	2.00	2.49	
Ethylbenzene*	<0.050	0.050	11/09/2024	ND	2.20	110	2.00	2.77	
Total Xylenes*	<0.150	0.150	11/09/2024	ND	6.92	115	6.00	2.96	
Total BTEX	<0.300	0.300	11/09/2024	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	11/11/2024	ND	400	100	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	11/08/2024	ND	192	95.9	200	5.37	
DRO >C10-C28*	<10.0	10.0	11/08/2024	ND	201	100	200	1.60	
EXT DRO >C28-C36	<10.0	10.0	11/08/2024	ND					

Surrogate: 1-Chlorooctane 99.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 96.6 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 11/07/2024  
 Reported: 11/13/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 11/05/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BS24 - 46 3.5' (H246788-02)**

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	11/10/2024	ND	2.23	111	2.00	2.64		
Toluene*	<0.050	0.050	11/10/2024	ND	2.29	114	2.00	2.49		
Ethylbenzene*	<0.050	0.050	11/10/2024	ND	2.20	110	2.00	2.77		
Total Xylenes*	<0.150	0.150	11/10/2024	ND	6.92	115	6.00	2.96		
Total BTEx	<0.300	0.300	11/10/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	11/11/2024	ND	400	100	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	11/08/2024	ND	192	95.9	200	5.37	
DRO >C10-C28*	<10.0	10.0	11/08/2024	ND	201	100	200	1.60	
EXT DRO >C28-C36	<10.0	10.0	11/08/2024	ND					

Surrogate: 1-Chlorooctane 107 % 48.2-134

Surrogate: 1-Chlorooctadecane 105 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 11/07/2024  
 Reported: 11/13/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 11/05/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BS24 - 65 3.5' (H246788-03)**

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	11/10/2024	ND	2.23	111	2.00	2.64	
Toluene*	<0.050	0.050	11/10/2024	ND	2.29	114	2.00	2.49	
Ethylbenzene*	<0.050	0.050	11/10/2024	ND	2.20	110	2.00	2.77	
Total Xylenes*	<0.150	0.150	11/10/2024	ND	6.92	115	6.00	2.96	
Total BTEX	<0.300	0.300	11/10/2024	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	304	16.0	11/11/2024	ND	400	100	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	11/08/2024	ND	192	95.9	200	5.37	
DRO >C10-C28*	<10.0	10.0	11/08/2024	ND	201	100	200	1.60	
EXT DRO >C28-C36	<10.0	10.0	11/08/2024	ND					

Surrogate: 1-Chlorooctane 102 % 48.2-134

Surrogate: 1-Chlorooctadecane 98.6 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 11/07/2024  
 Reported: 11/13/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 11/05/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BS24 - 76 3.5' (H246788-04)**

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	11/10/2024	ND	2.23	111	2.00	2.64	
Toluene*	<0.050	0.050	11/10/2024	ND	2.29	114	2.00	2.49	
Ethylbenzene*	<0.050	0.050	11/10/2024	ND	2.20	110	2.00	2.77	
Total Xylenes*	<0.150	0.150	11/10/2024	ND	6.92	115	6.00	2.96	
Total BTEX	<0.300	0.300	11/10/2024	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	11/11/2024	ND	400	100	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	11/08/2024	ND	192	95.9	200	5.37	
DRO >C10-C28*	<10.0	10.0	11/08/2024	ND	201	100	200	1.60	
EXT DRO >C28-C36	<10.0	10.0	11/08/2024	ND					

Surrogate: 1-Chlorooctane 109 % 48.2-134

Surrogate: 1-Chlorooctadecane 106 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 11/07/2024  
 Reported: 11/13/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 11/05/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BS24 - 36 4.0' (H246788-05)**

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	11/10/2024	ND	2.23	111	2.00	2.64		
Toluene*	<0.050	0.050	11/10/2024	ND	2.29	114	2.00	2.49		
Ethylbenzene*	<0.050	0.050	11/10/2024	ND	2.20	110	2.00	2.77		
Total Xylenes*	<0.150	0.150	11/10/2024	ND	6.92	115	6.00	2.96		
Total BTEX	<0.300	0.300	11/10/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 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	11/11/2024	ND	400	100	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	11/08/2024	ND	192	95.9	200	5.37	
DRO >C10-C28*	<10.0	10.0	11/08/2024	ND	201	100	200	1.60	
EXT DRO >C28-C36	<10.0	10.0	11/08/2024	ND					

Surrogate: 1-Chlorooctane 107 % 48.2-134

Surrogate: 1-Chlorooctadecane 105 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 11/07/2024  
 Reported: 11/13/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 11/05/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BS24 - 37 4.0' (H246788-06)**

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	11/10/2024	ND	2.23	111	2.00	2.64	
Toluene*	<0.050	0.050	11/10/2024	ND	2.29	114	2.00	2.49	
Ethylbenzene*	<0.050	0.050	11/10/2024	ND	2.20	110	2.00	2.77	
Total Xylenes*	<0.150	0.150	11/10/2024	ND	6.92	115	6.00	2.96	
Total BTEX	<0.300	0.300	11/10/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 107 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	416	16.0	11/11/2024	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	11/08/2024	ND	192	95.9	200	5.37	
DRO >C10-C28*	<10.0	10.0	11/08/2024	ND	201	100	200	1.60	
EXT DRO >C28-C36	<10.0	10.0	11/08/2024	ND					

Surrogate: 1-Chlorooctane 104 % 48.2-134

Surrogate: 1-Chlorooctadecane 100 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 11/07/2024  
 Reported: 11/13/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 11/05/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BS24 - 38 4.0' (H246788-07)**

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	11/10/2024	ND	2.23	111	2.00	2.64	
Toluene*	<0.050	0.050	11/10/2024	ND	2.29	114	2.00	2.49	
Ethylbenzene*	<0.050	0.050	11/10/2024	ND	2.20	110	2.00	2.77	
Total Xylenes*	<0.150	0.150	11/10/2024	ND	6.92	115	6.00	2.96	
Total BTEX	<0.300	0.300	11/10/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	256	16.0	11/11/2024	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	11/08/2024	ND	192	95.9	200	5.37	
DRO >C10-C28*	<10.0	10.0	11/08/2024	ND	201	100	200	1.60	
EXT DRO >C28-C36	<10.0	10.0	11/08/2024	ND					

Surrogate: 1-Chlorooctane 102 % 48.2-134

Surrogate: 1-Chlorooctadecane 98.7 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 11/07/2024  
 Reported: 11/13/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 11/05/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BS24 - 42 4.0' (H246788-08)**

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	11/10/2024	ND	2.23	111	2.00	2.64		
Toluene*	<0.050	0.050	11/10/2024	ND	2.29	114	2.00	2.49		
Ethylbenzene*	<0.050	0.050	11/10/2024	ND	2.20	110	2.00	2.77		
Total Xylenes*	<0.150	0.150	11/10/2024	ND	6.92	115	6.00	2.96		
Total BTEX	<0.300	0.300	11/10/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	11/11/2024	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	11/08/2024	ND	198	98.9	200	6.15	
DRO >C10-C28*	<10.0	10.0	11/08/2024	ND	199	99.3	200	6.11	
EXT DRO >C28-C36	<10.0	10.0	11/08/2024	ND					

Surrogate: 1-Chlorooctane 106 % 48.2-134

Surrogate: 1-Chlorooctadecane 97.5 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 11/07/2024  
 Reported: 11/13/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 11/05/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BS24 - 45 4.0' (H246788-09)**

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	11/10/2024	ND	2.23	111	2.00	2.64	
Toluene*	<0.050	0.050	11/10/2024	ND	2.29	114	2.00	2.49	
Ethylbenzene*	<0.050	0.050	11/10/2024	ND	2.20	110	2.00	2.77	
Total Xylenes*	<0.150	0.150	11/10/2024	ND	6.92	115	6.00	2.96	
Total BTEX	<0.300	0.300	11/10/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	11/11/2024	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	11/08/2024	ND	198	98.9	200	6.15	
DRO >C10-C28*	<10.0	10.0	11/08/2024	ND	199	99.3	200	6.11	
EXT DRO >C28-C36	<10.0	10.0	11/08/2024	ND					

Surrogate: 1-Chlorooctane 105 % 48.2-134

Surrogate: 1-Chlorooctadecane 94.9 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 11/07/2024  
 Reported: 11/13/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 11/05/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BS24 - 52 4.0' (H246788-10)**

BTX 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	11/10/2024	ND	2.23	111	2.00	2.64	
Toluene*	<0.050	0.050	11/10/2024	ND	2.29	114	2.00	2.49	
Ethylbenzene*	<0.050	0.050	11/10/2024	ND	2.20	110	2.00	2.77	
Total Xylenes*	<0.150	0.150	11/10/2024	ND	6.92	115	6.00	2.96	
Total BTX	<0.300	0.300	11/10/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	112	16.0	11/11/2024	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	11/08/2024	ND	198	98.9	200	6.15	
DRO >C10-C28*	<10.0	10.0	11/08/2024	ND	199	99.3	200	6.11	
EXT DRO >C28-C36	<10.0	10.0	11/08/2024	ND					

Surrogate: 1-Chlorooctane 100 % 48.2-134

Surrogate: 1-Chlorooctadecane 89.7 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 11/07/2024  
 Reported: 11/13/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 11/05/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BS24 - 53 4.0' (H246788-11)**

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	11/10/2024	ND	2.23	111	2.00	2.64		
Toluene*	<0.050	0.050	11/10/2024	ND	2.29	114	2.00	2.49		
Ethylbenzene*	<0.050	0.050	11/10/2024	ND	2.20	110	2.00	2.77		
Total Xylenes*	<0.150	0.150	11/10/2024	ND	6.92	115	6.00	2.96		
Total BTEx	<0.300	0.300	11/10/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	208	16.0	11/11/2024	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	11/08/2024	ND	198	98.9	200	6.15	
DRO >C10-C28*	<10.0	10.0	11/08/2024	ND	199	99.3	200	6.11	
EXT DRO >C28-C36	<10.0	10.0	11/08/2024	ND					

Surrogate: 1-Chlorooctane 108 % 48.2-134

Surrogate: 1-Chlorooctadecane 98.1 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 11/07/2024  
 Reported: 11/13/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 11/05/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BS24 - 54 4.0' (H246788-12)**

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	11/10/2024	ND	2.23	111	2.00	2.64		
Toluene*	<0.050	0.050	11/10/2024	ND	2.29	114	2.00	2.49		
Ethylbenzene*	<0.050	0.050	11/10/2024	ND	2.20	110	2.00	2.77		
Total Xylenes*	<0.150	0.150	11/10/2024	ND	6.92	115	6.00	2.96		
Total BTEX	<0.300	0.300	11/10/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 107 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	96.0	16.0	11/11/2024	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	11/08/2024	ND	198	98.9	200	6.15	
DRO >C10-C28*	<10.0	10.0	11/08/2024	ND	199	99.3	200	6.11	
EXT DRO >C28-C36	<10.0	10.0	11/08/2024	ND					

Surrogate: 1-Chlorooctane 112 % 48.2-134

Surrogate: 1-Chlorooctadecane 101 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 11/07/2024  
 Reported: 11/13/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 11/05/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BS24 - 55 4.0' (H246788-13)**

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	11/10/2024	ND	2.23	111	2.00	2.64		
Toluene*	<0.050	0.050	11/10/2024	ND	2.29	114	2.00	2.49		
Ethylbenzene*	<0.050	0.050	11/10/2024	ND	2.20	110	2.00	2.77		
Total Xylenes*	<0.150	0.150	11/10/2024	ND	6.92	115	6.00	2.96		
Total BTEX	<0.300	0.300	11/10/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	176	16.0	11/11/2024	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	11/08/2024	ND	198	98.9	200	6.15	
DRO >C10-C28*	<10.0	10.0	11/08/2024	ND	199	99.3	200	6.11	
EXT DRO >C28-C36	<10.0	10.0	11/08/2024	ND					

Surrogate: 1-Chlorooctane 109 % 48.2-134

Surrogate: 1-Chlorooctadecane 100 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 11/07/2024  
 Reported: 11/13/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 11/05/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BS24 - 56 4.0' (H246788-14)**

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	11/10/2024	ND	2.23	111	2.00	2.64		
Toluene*	<0.050	0.050	11/10/2024	ND	2.29	114	2.00	2.49		
Ethylbenzene*	<0.050	0.050	11/10/2024	ND	2.20	110	2.00	2.77		
Total Xylenes*	<0.150	0.150	11/10/2024	ND	6.92	115	6.00	2.96		
Total BTEX	<0.300	0.300	11/10/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 107 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	11/11/2024	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	11/08/2024	ND	198	98.9	200	6.15	
DRO >C10-C28*	<10.0	10.0	11/08/2024	ND	199	99.3	200	6.11	
EXT DRO >C28-C36	<10.0	10.0	11/08/2024	ND					

Surrogate: 1-Chlorooctane 113 % 48.2-134

Surrogate: 1-Chlorooctadecane 103 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 11/07/2024  
 Reported: 11/13/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 11/06/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BS24 - 68 4.0' (H246788-20)**

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	11/10/2024	ND	2.09	104	2.00	5.53		
Toluene*	<0.050	0.050	11/10/2024	ND	1.99	99.3	2.00	5.30		
Ethylbenzene*	<0.050	0.050	11/10/2024	ND	1.98	99.1	2.00	4.93		
Total Xylenes*	<0.150	0.150	11/10/2024	ND	5.87	97.9	6.00	4.88		
Total BTEX	<0.300	0.300	11/10/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.4 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	256	16.0	11/11/2024	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	11/08/2024	ND	198	98.9	200	6.15	
DRO >C10-C28*	<10.0	10.0	11/08/2024	ND	199	99.3	200	6.11	
EXT DRO >C28-C36	<10.0	10.0	11/08/2024	ND					

Surrogate: 1-Chlorooctane 93.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 85.8 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 11/07/2024  
 Reported: 11/13/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 11/06/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BS24 - 69 4.0' (H246788-21)**

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	11/10/2024	ND	2.09	104	2.00	5.53		
Toluene*	<0.050	0.050	11/10/2024	ND	1.99	99.3	2.00	5.30		
Ethylbenzene*	<0.050	0.050	11/10/2024	ND	1.98	99.1	2.00	4.93		
Total Xylenes*	<0.150	0.150	11/10/2024	ND	5.87	97.9	6.00	4.88		
Total BTEX	<0.300	0.300	11/10/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.1 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	11/11/2024	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	11/08/2024	ND	198	98.9	200	6.15	
DRO >C10-C28*	<10.0	10.0	11/08/2024	ND	199	99.3	200	6.11	
EXT DRO >C28-C36	<10.0	10.0	11/08/2024	ND					

Surrogate: 1-Chlorooctane 103 % 48.2-134

Surrogate: 1-Chlorooctadecane 95.4 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 11/07/2024  
 Reported: 11/13/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 11/06/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BS24 - 70 4.0' (H246788-22)**

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	11/10/2024	ND	2.09	104	2.00	5.53		
Toluene*	<0.050	0.050	11/10/2024	ND	1.99	99.3	2.00	5.30		
Ethylbenzene*	<0.050	0.050	11/10/2024	ND	1.98	99.1	2.00	4.93		
Total Xylenes*	<0.150	0.150	11/10/2024	ND	5.87	97.9	6.00	4.88		
Total BTEX	<0.300	0.300	11/10/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.9 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	256	16.0	11/11/2024	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	11/08/2024	ND	198	98.9	200	6.15	
DRO >C10-C28*	<10.0	10.0	11/08/2024	ND	199	99.3	200	6.11	
EXT DRO >C28-C36	<10.0	10.0	11/08/2024	ND					

Surrogate: 1-Chlorooctane 101 % 48.2-134

Surrogate: 1-Chlorooctadecane 90.8 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 11/07/2024  
 Reported: 11/13/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 11/06/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BS24 - 71 4.0' (H246788-23)**

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	11/10/2024	ND	2.09	104	2.00	5.53	
Toluene*	<0.050	0.050	11/10/2024	ND	1.99	99.3	2.00	5.30	
Ethylbenzene*	<0.050	0.050	11/10/2024	ND	1.98	99.1	2.00	4.93	
Total Xylenes*	<0.150	0.150	11/10/2024	ND	5.87	97.9	6.00	4.88	
Total BTEX	<0.300	0.300	11/10/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.4 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	176	16.0	11/11/2024	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	11/08/2024	ND	198	98.9	200	6.15	
DRO >C10-C28*	<10.0	10.0	11/08/2024	ND	199	99.3	200	6.11	
EXT DRO >C28-C36	<10.0	10.0	11/08/2024	ND					

Surrogate: 1-Chlorooctane 102 % 48.2-134

Surrogate: 1-Chlorooctadecane 90.4 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 11/07/2024  
 Reported: 11/13/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 11/06/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BS24 - 72 4.0' (H246788-24)**

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	11/10/2024	ND	2.09	104	2.00	5.53	
Toluene*	<0.050	0.050	11/10/2024	ND	1.99	99.3	2.00	5.30	
Ethylbenzene*	<0.050	0.050	11/10/2024	ND	1.98	99.1	2.00	4.93	
Total Xylenes*	<0.150	0.150	11/10/2024	ND	5.87	97.9	6.00	4.88	
Total BTEX	<0.300	0.300	11/10/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.3 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	144	16.0	11/11/2024	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	11/08/2024	ND	198	98.9	200	6.15	
DRO >C10-C28*	<10.0	10.0	11/08/2024	ND	199	99.3	200	6.11	
EXT DRO >C28-C36	<10.0	10.0	11/08/2024	ND					

Surrogate: 1-Chlorooctane 94.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 84.4 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 11/07/2024  
 Reported: 11/13/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 11/06/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BS24 - 39 5.0' (H246788-25)**

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	11/10/2024	ND	2.09	104	2.00	5.53		
Toluene*	<0.050	0.050	11/10/2024	ND	1.99	99.3	2.00	5.30		
Ethylbenzene*	<0.050	0.050	11/10/2024	ND	1.98	99.1	2.00	4.93		
Total Xylenes*	<0.150	0.150	11/10/2024	ND	5.87	97.9	6.00	4.88		
Total BTEX	<0.300	0.300	11/10/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.9 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	11/11/2024	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	11/08/2024	ND	198	98.9	200	6.15	
DRO >C10-C28*	<10.0	10.0	11/08/2024	ND	199	99.3	200	6.11	
EXT DRO >C28-C36	<10.0	10.0	11/08/2024	ND					

Surrogate: 1-Chlorooctane 110 % 48.2-134

Surrogate: 1-Chlorooctadecane 100 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 11/07/2024  
 Reported: 11/13/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 11/06/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BS24 - 43 5.0' (H246788-26)**

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	11/10/2024	ND	2.09	104	2.00	5.53		
Toluene*	<0.050	0.050	11/10/2024	ND	1.99	99.3	2.00	5.30		
Ethylbenzene*	<0.050	0.050	11/10/2024	ND	1.98	99.1	2.00	4.93		
Total Xylenes*	<0.150	0.150	11/10/2024	ND	5.87	97.9	6.00	4.88		
Total BTEX	<0.300	0.300	11/10/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.8 % 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	11/11/2024	ND	416	104	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	11/08/2024	ND	198	98.9	200	6.15	
DRO >C10-C28*	<10.0	10.0	11/08/2024	ND	199	99.3	200	6.11	
EXT DRO >C28-C36	<10.0	10.0	11/08/2024	ND					

Surrogate: 1-Chlorooctane 107 % 48.2-134

Surrogate: 1-Chlorooctadecane 94.2 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 11/07/2024  
 Reported: 11/13/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 11/06/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BS24 - 44 5.0' (H246788-27)**

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	11/10/2024	ND	2.09	104	2.00	5.53		
Toluene*	<0.050	0.050	11/10/2024	ND	1.99	99.3	2.00	5.30		
Ethylbenzene*	<0.050	0.050	11/10/2024	ND	1.98	99.1	2.00	4.93		
Total Xylenes*	<0.150	0.150	11/10/2024	ND	5.87	97.9	6.00	4.88		
Total BTEX	<0.300	0.300	11/10/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.0 % 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	11/11/2024	ND	416	104	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	11/08/2024	ND	198	98.9	200	6.15	
DRO >C10-C28*	<10.0	10.0	11/08/2024	ND	199	99.3	200	6.11	
EXT DRO >C28-C36	<10.0	10.0	11/08/2024	ND					

Surrogate: 1-Chlorooctane 107 % 48.2-134

Surrogate: 1-Chlorooctadecane 94.7 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 11/07/2024  
 Reported: 11/13/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 11/06/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BS24 - 41 6.0' (H246788-28)**

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	11/10/2024	ND	2.09	104	2.00	5.53		
Toluene*	<0.050	0.050	11/10/2024	ND	1.99	99.3	2.00	5.30		
Ethylbenzene*	<0.050	0.050	11/10/2024	ND	1.98	99.1	2.00	4.93		
Total Xylenes*	<0.150	0.150	11/10/2024	ND	5.87	97.9	6.00	4.88		
Total BTEx	<0.300	0.300	11/10/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.3 % 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	48.0	16.0	11/11/2024	ND	416	104	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	11/08/2024	ND	172	86.2	200	15.9	
DRO >C10-C28*	<10.0	10.0	11/08/2024	ND	183	91.4	200	2.54	
EXT DRO >C28-C36	<10.0	10.0	11/08/2024	ND					

Surrogate: 1-Chlorooctane 116 % 48.2-134

Surrogate: 1-Chlorooctadecane 120 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 11/07/2024  
 Reported: 11/13/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 11/06/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BS24 - 40 6.0' (H246788-29)**

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	11/10/2024	ND	2.09	104	2.00	5.53		
Toluene*	<0.050	0.050	11/10/2024	ND	1.99	99.3	2.00	5.30		
Ethylbenzene*	<0.050	0.050	11/10/2024	ND	1.98	99.1	2.00	4.93		
Total Xylenes*	<0.150	0.150	11/10/2024	ND	5.87	97.9	6.00	4.88		
Total BTEX	<0.300	0.300	11/10/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 95.5 % 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	32.0	16.0	11/11/2024	ND	416	104	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	11/08/2024	ND	172	86.2	200	15.9	
DRO >C10-C28*	<10.0	10.0	11/08/2024	ND	183	91.4	200	2.54	
EXT DRO >C28-C36	<10.0	10.0	11/08/2024	ND					

Surrogate: 1-Chlorooctane 133 % 48.2-134

Surrogate: 1-Chlorooctadecane 138 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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### Notes and Definitions

- QR-03      The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
- ND      Analyte NOT DETECTED at or above the reporting limit
- RPD      Relative Percent Difference
- \*\*      Samples not received at proper temperature of 6°C or below.
- \*\*\*      Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported on an as received basis (wet) unless otherwise noted on report

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

Celey D. Keene, Lab Director/Quality Manager







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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: <b>Vertex</b>		<b>BILL TO</b>		<b>ANALYSIS REQUEST</b>	
Project Manager: <b>Chance Dixon</b>		P.O. #:			
Address: <b>On File</b>		Company: <b>Pernian</b>			
City: <b>↓</b>		Attn: <b>Montgomery</b>			
Phone #: <b>↓</b>		Address: <b>Floyd</b>			
Project #: <b>24E-04030</b>		City: <b>↓</b>			
Project Name: <b>Rona Salada Pad A</b>		State: <b>↓</b>			
Project Location: <b>Carlsbad</b>		Zip: <b>↓</b>			
Sample Name: <b>Andrew Ludvik</b>		Phone #: <b>↓</b>			
Fax #: <b>↓</b>		Fax #: <b>↓</b>			
FOS USE ONLY		PRESERV		SAMPLING	
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP	# CONTAINERS	MATRIX	
		GROUNDWATER		WASTEWATER	
		SOIL		OIL	
		SLUDGE		OTHER	
		ACID/BASE		ICE / COOL	
		OTHER		OTHER	
			DATE	TIME	
<b>#246788</b>					
11 BS24-53	4.0°	C	11/05	1030	BTEX 8021
12 BS24-54	4.0°			1035	TPH 8015
13 BS24-55	4.0			1040	CI
14 BS24-56	4.0			1045	
15 BG24-01	0.0°		11/06	0830	
16 BG24-02	0.0°			0835	
17 BH24-01	3.0			0845	
18 BH24-02	3.0°			0850	
19 BH24-03	3.0°			0855	
20 BS24-68	4.0°			0900	

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Relinquished By: *[Signature]* Date: **11/07/24** Received By: *[Signature]* Date: **11/07/24**

Time: **1:19** Received By: *[Signature]*

Delivered By: (Circle One) Observed Temp. °C **1.9** Sample Condition Cool ☒ Intact ☐ Yes ☐ No ☐ No

Sampler - UPS - Bus - Other: Corrected Temp. °C **1.3** CHECKED BY: (Initials) **qjg**

Turnaround Time: Standard ☒ Rush ☐ Bacteria (only) ☐ Sample Condition Cool ☐ Intact ☐ Yes ☐ No ☐ No Corrected Temp. °C

Thermometer ID: **#140** Correction Factor: **-0.6°**

REMARKS: **cc: cdixon@vertexresources.com**  
**Aludvik@vertexresources.com**

Verbal Result: ☐ Yes ☐ No Add'l Phone #: **↓**

All Results are emailed. Please provide Email address: **↓**

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





## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: <b>Vestek</b>		<b>BILL TO</b>		ANALYSIS REQUEST	
Project Manager: <b>Chance Dixon</b>		P.O. #:			
Address: <b>ON File</b>		Company: <b>Pernian</b>			
City:		State:			
Phone #:		Attn: <b>Montgomery</b>			
Project #: <b>24E-04030</b>		Address: <b>Kloyd</b>			
Project Name: <b>Rana Salada Road A 57469</b>		City:			
Project Location: <b>Carlsbad</b>		State:			
Sampler Name: <b>Andrew Ludvik</b>		Phone #:			
		Fax #:			

FOR LAB USE ONLY		MATRIX		PRESERV.	SAMPLING	
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP	<input checked="" type="checkbox"/> GROUNDWATER <input type="checkbox"/> WASTEWATER <input type="checkbox"/> OIL <input type="checkbox"/> SLUDGE <input type="checkbox"/> OTHER:	<input checked="" type="checkbox"/> ACID/BASE <input type="checkbox"/> ICE / COOL <input type="checkbox"/> OTHER	DATE	TIME
		# CONTAINERS				

Lab I.D.	Sample I.D.	DATE	TIME	BTEx	TPH	CI
<b>H246788</b>						
81	BS24-69	4.0°	11/06	0905		
82	BS24-70	4.0°		0910		
83	BS24-71	4.0°		0915		
84	BS24-72	4.0°		0920		
85	BS24-39	5.0°		1300		
86	BS24-43	5.0°		1305		
87	BS24-44	5.0°		1310		
88	BS24-41	6.0°		1430		
89	BS24-40	6.0°		1435		

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Relinquished By:		Date: <b>11/07/24</b>		Received By:	
Relinquished By:		Date: <b>1410</b>		Received By:	
Time:		Time:		Time:	

Delivered By: (Circle One)	Observed Temp °C	Sample Condition	CHECKED BY: (Initials)
Sampler - UPS - Bus - Other:	Corrected Temp °C	<input checked="" type="checkbox"/> Cool Intact <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>YD</b>
Turnaround Time:		Standard	
Thermometer ID: <b>#1140</b>		Rush	
Correction Factor: <b>-0.6°C</b>		<input type="checkbox"/> Bacteria (only) Sample Condition <input type="checkbox"/> Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No	
Corrected Temp °C			

Cardinal cannot accept verbal changes. Please email changes to [cardinal@vestek.com](mailto:cardinal@vestek.com)



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

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November 13, 2024

CHANCE DIXON

VERTEX RESOURCE

3101 BOYD DRIVE

CARLSBAD, NM 88220

RE: RANA SALADA PAD A

Enclosed are the results of analyses for samples received by the laboratory on 11/07/24 14:10.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C24-00112. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager





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

**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 11/07/2024  
 Reported: 11/13/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 11/06/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BG24 - 01 0.0' (H246788-15)**

BTX 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	11/10/2024	ND	2.23	111	2.00	2.64	
Toluene*	<0.050	0.050	11/10/2024	ND	2.29	114	2.00	2.49	
Ethylbenzene*	<0.050	0.050	11/10/2024	ND	2.20	110	2.00	2.77	
Total Xylenes*	<0.150	0.150	11/10/2024	ND	6.92	115	6.00	2.96	
Total BTX	<0.300	0.300	11/10/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	11/11/2024	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	11/08/2024	ND	198	98.9	200	6.15	
DRO >C10-C28*	<10.0	10.0	11/08/2024	ND	199	99.3	200	6.11	
EXT DRO >C28-C36	<10.0	10.0	11/08/2024	ND					

Surrogate: 1-Chlorooctane 115 % 48.2-134

Surrogate: 1-Chlorooctadecane 107 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 11/07/2024  
 Reported: 11/13/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 11/06/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BG24 - 02 0.0' (H246788-16)**

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	11/10/2024	ND	2.09	104	2.00	5.53		
Toluene*	<0.050	0.050	11/10/2024	ND	1.99	99.3	2.00	5.30		
Ethylbenzene*	<0.050	0.050	11/10/2024	ND	1.98	99.1	2.00	4.93		
Total Xylenes*	<0.150	0.150	11/10/2024	ND	5.87	97.9	6.00	4.88		
Total BTEX	<0.300	0.300	11/10/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.4 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	11/11/2024	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	11/08/2024	ND	198	98.9	200	6.15	
DRO >C10-C28*	<10.0	10.0	11/08/2024	ND	199	99.3	200	6.11	
EXT DRO >C28-C36	<10.0	10.0	11/08/2024	ND					

Surrogate: 1-Chlorooctane 112 % 48.2-134

Surrogate: 1-Chlorooctadecane 102 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 11/07/2024  
 Reported: 11/13/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 11/06/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BH24 - 01 3.0' (H246788-17)**

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	11/10/2024	ND	2.09	104	2.00	5.53	
Toluene*	<0.050	0.050	11/10/2024	ND	1.99	99.3	2.00	5.30	
Ethylbenzene*	<0.050	0.050	11/10/2024	ND	1.98	99.1	2.00	4.93	
Total Xylenes*	<0.150	0.150	11/10/2024	ND	5.87	97.9	6.00	4.88	
Total BTEX	<0.300	0.300	11/10/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.9 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	11/11/2024	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	11/08/2024	ND	198	98.9	200	6.15	
DRO >C10-C28*	<10.0	10.0	11/08/2024	ND	199	99.3	200	6.11	
EXT DRO >C28-C36	<10.0	10.0	11/08/2024	ND					

Surrogate: 1-Chlorooctane 108 % 48.2-134

Surrogate: 1-Chlorooctadecane 97.9 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 11/07/2024  
 Reported: 11/13/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 11/06/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BH24 - 02 3.0' (H246788-18)**

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	11/10/2024	ND	2.09	104	2.00	5.53		
Toluene*	<0.050	0.050	11/10/2024	ND	1.99	99.3	2.00	5.30		
Ethylbenzene*	<0.050	0.050	11/10/2024	ND	1.98	99.1	2.00	4.93		
Total Xylenes*	<0.150	0.150	11/10/2024	ND	5.87	97.9	6.00	4.88		
Total BTEX	<0.300	0.300	11/10/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.8 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	11/11/2024	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	11/08/2024	ND	198	98.9	200	6.15	
DRO >C10-C28*	<10.0	10.0	11/08/2024	ND	199	99.3	200	6.11	
EXT DRO >C28-C36	<10.0	10.0	11/08/2024	ND					

Surrogate: 1-Chlorooctane 102 % 48.2-134

Surrogate: 1-Chlorooctadecane 92.9 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 11/07/2024  
 Reported: 11/13/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 11/06/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BH24 - 03 3.0' (H246788-19)**

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	11/10/2024	ND	2.09	104	2.00	5.53		
Toluene*	<0.050	0.050	11/10/2024	ND	1.99	99.3	2.00	5.30		
Ethylbenzene*	<0.050	0.050	11/10/2024	ND	1.98	99.1	2.00	4.93		
Total Xylenes*	<0.150	0.150	11/10/2024	ND	5.87	97.9	6.00	4.88		
Total BTEX	<0.300	0.300	11/10/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.2 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	11/11/2024	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	11/08/2024	ND	198	98.9	200	6.15	
DRO >C10-C28*	<10.0	10.0	11/08/2024	ND	199	99.3	200	6.11	
EXT DRO >C28-C36	<10.0	10.0	11/08/2024	ND					

Surrogate: 1-Chlorooctane 105 % 48.2-134

Surrogate: 1-Chlorooctadecane 98.3 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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### Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

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

Celey D. Keene, Lab Director/Quality Manager



Yes + 2x

<b>BILL TO</b>	
<b>P.O. #:</b>	

ANALYSIS REQUEST

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Company:	Permian
----------	---------

Phone # \_\_\_\_\_

Project #: 24E-04020

Project Name: <u>Rest 1</u>	Project Owner: <u>Perman</u>
Project Number: <u>212 04030</u>	

Project Name: Kana Salada Pad A 57469

Project Location: Carlsbad

Sampler Name: Andrew Ludvik

FOR LATE USE ONLY

	MATRIX	PRESERV
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## SAMPLING

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Lab I.D.	Sample I.D.

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H/24/0788

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Page 8 of 10





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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: <b>Vertex</b>		<b>BILL TO</b>		<b>ANALYSIS REQUEST</b>	
Project Manager: <b>Chance Dixon</b>		P.O. #:			
Address: <b>On File</b>		Company: <b>Pernian</b>			
City: <b>↓</b>		Attn: <b>Montgomery</b>			
Phone #: <b>↓</b>		Address: <b>Floyd</b>			
Fax #: <b>↓</b>		City: <b>↓</b>			
Project #: <b>24E-04030</b>		State: <b>↓</b>			
Project Owner: <b>Pernian</b>		Zip: <b>↓</b>			
Project Location: <b>Carlsbad</b>		Phone #: <b>↓</b>			
Sample Name: <b>Andrew Ludvik</b>		Fax #: <b>↓</b>			
FOS USE ONLY		PRESERV		SAMPLING	
Lab I.D. <b>#246788</b>		Sample I.D.			
11 BS24-53 4.0°		(G)RAB OR (C)OMP		DATE TIME	
12 BS24-54 4.0°		# CONTAINERS		11/05 1030	
13 BS24-55 4.0°		GROUNDWATER		1035	
14 BS24-56 4.0°		WASTEWATER		1040	
15 BG24-01 0.0°		SOIL		1045	
16 BG24-02 0.0°		OIL		11/06 0830	
17 BH24-01 3.0°		SLUDGE		0835	
18 BH24-02 3.0°		OTHER		0845	
19 BH24-03 3.0°		ACID/BASE		0850	
20 BS24-68 4.0°		ICE / COOL		0855	
		OTHER		0900	
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Relinquished By: <b>[Signature]</b>		Time: <b>11/07/24</b>		Thermometer ID: <b>#140</b>	
Received By: <b>[Signature]</b>		Date: <b>11/07/24</b>		Correction Factor: <b>-0.6°</b>	
Time: <b>1.3</b>		Sample Condition: <b>Cool</b>		Bacteria (only) <b>Yes</b>	
Observed Temp: <b>1.9</b>		Corrected Temp: <b>1.3</b>		Sample Condition: <b>Observed Temp: 1.9</b>	
Sampler - UPS - Bus - Other: <b>1.3</b>		Cardinal cannot accept verbal changes. Please email changes to cely.keene@cardinallabsnm.com			





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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: <b>Vetex</b>		<b>BILL TO</b>		<b>ANALYSIS REQUEST</b>		
Project Manager: <b>Chance Dixon</b>		P.O. #:				
Address: <b>ON File</b>		Company: <b>Petrina</b>				
City:		Attn: <b>Montgomery</b>				
Phone #:		Address: <b>Floyd</b>				
Fax #:		City:				
Project #: <b>24E-04030</b>		State: <b>Zip:</b>				
Project Name: <b>Rana Salada Road A 57469</b>		Phone #:				
Project Location: <b>Carl's bad</b>		Fax #:				
Sampler Name: <b>Andrew Ludvik</b>						
FOR USE ONLY						
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP	# CONTAINERS	MATRIX	PRESERV	SAMPLING
<b>H246788</b>						
81 BS24-69	4.0'	C 1				
82 BS24-70	4.0'					
83 BS24-71	4.0'					
84 BS24-72	4.0'					
85 BS24-39	5.0'					
86 BS24-43	5.0'					
87 BS24-44	5.0'					
88 BS24-41	6.0'					
89 BS24-40	6.0'					
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<b>Relinquished By:</b> <b>Date:</b> 11/07/24 <b>Received By:</b> <b>Date:</b> 11/06/24						
<b>Relinquished By:</b> <b>Date:</b> 11/07/24 <b>Received By:</b> <b>Date:</b> 11/06/24						
<b>Delivered By:</b> (Circle One) <b>Observed Temp. °C:</b> 1.9 <b>Sample Condition:</b> <input checked="" type="checkbox"/> Cool <input type="checkbox"/> Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Checked By:</b> (Initials) <b>Turnaround Time:</b> <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Rush <b>Bacteria (only):</b> <input type="checkbox"/> Sample Condition <input type="checkbox"/> Observed Temp. °C <input type="checkbox"/> Corrected Temp. °C						
<b>Remarks:</b>						



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

November 14, 2024

CHANCE DIXON

VERTEX RESOURCE

3101 BOYD DRIVE

CARLSBAD, NM 88220

RE: RANA SALADA PAD A

Enclosed are the results of analyses for samples received by the laboratory on 11/08/24 14:37.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C24-00112. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 11/08/2024  
 Reported: 11/14/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 11/07/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: WS24 - 24 3-4' (H246841-01)**

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	11/12/2024	ND	1.93	96.4	2.00	2.90		
Toluene*	<0.050	0.050	11/12/2024	ND	1.90	95.2	2.00	0.974		
Ethylbenzene*	<0.050	0.050	11/12/2024	ND	2.04	102	2.00	0.753		
Total Xylenes*	<0.150	0.150	11/12/2024	ND	6.08	101	6.00	1.03		
Total BTEX	<0.300	0.300	11/12/2024	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	288	16.0	11/12/2024	ND	400	100	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	11/11/2024	ND	199	99.4	200	1.28	
DRO >C10-C28*	<10.0	10.0	11/11/2024	ND	183	91.6	200	6.90	
EXT DRO >C28-C36	<10.0	10.0	11/11/2024	ND					

Surrogate: 1-Chlorooctane 82.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 81.1 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 11/08/2024  
 Reported: 11/14/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 11/07/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: WS24 - 25 3-4' (H246841-02)**

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	11/12/2024	ND	1.93	96.4	2.00	2.90		
Toluene*	<0.050	0.050	11/12/2024	ND	1.90	95.2	2.00	0.974		
Ethylbenzene*	<0.050	0.050	11/12/2024	ND	2.04	102	2.00	0.753		
Total Xylenes*	<0.150	0.150	11/12/2024	ND	6.08	101	6.00	1.03		
Total BTEX	<0.300	0.300	11/12/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 111 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	384	16.0	11/12/2024	ND	400	100	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	11/11/2024	ND	210	105	200	1.13	
DRO >C10-C28*	<10.0	10.0	11/11/2024	ND	188	94.0	200	1.90	
EXT DRO >C28-C36	<10.0	10.0	11/11/2024	ND					

Surrogate: 1-Chlorooctane 83.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 80.9 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 11/08/2024  
 Reported: 11/14/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 11/07/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: WS24 - 26 3-4' (H246841-03)**

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	11/12/2024	ND	1.93	96.4	2.00	2.90		
Toluene*	<0.050	0.050	11/12/2024	ND	1.90	95.2	2.00	0.974		
Ethylbenzene*	<0.050	0.050	11/12/2024	ND	2.04	102	2.00	0.753		
Total Xylenes*	<0.150	0.150	11/12/2024	ND	6.08	101	6.00	1.03		
Total BTEX	<0.300	0.300	11/12/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 100 % 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	176	16.0	11/12/2024	ND	400	100	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	11/11/2024	ND	210	105	200	1.13	
DRO >C10-C28*	<10.0	10.0	11/11/2024	ND	188	94.0	200	1.90	
EXT DRO >C28-C36	<10.0	10.0	11/11/2024	ND					

Surrogate: 1-Chlorooctane 96.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 92.0 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 11/08/2024  
 Reported: 11/14/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 11/07/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: WS24 - 27 3-4' (H246841-04)**

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	11/12/2024	ND	2.13	106	2.00	2.38		
Toluene*	<0.050	0.050	11/12/2024	ND	2.21	111	2.00	3.05		
Ethylbenzene*	<0.050	0.050	11/12/2024	ND	2.15	108	2.00	3.75		
Total Xylenes*	<0.150	0.150	11/12/2024	ND	6.82	114	6.00	3.33		
Total BTEX	<0.300	0.300	11/12/2024	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	144	16.0	11/12/2024	ND	400	100	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	11/11/2024	ND	210	105	200	1.13	
DRO >C10-C28*	<10.0	10.0	11/11/2024	ND	188	94.0	200	1.90	
EXT DRO >C28-C36	<10.0	10.0	11/11/2024	ND					

Surrogate: 1-Chlorooctane 100 % 48.2-134

Surrogate: 1-Chlorooctadecane 96.8 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 11/08/2024  
 Reported: 11/14/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 11/07/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: WS24 - 28 3-4' (H246841-05)**

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	11/12/2024	ND	2.13	106	2.00	2.38		
Toluene*	<0.050	0.050	11/12/2024	ND	2.21	111	2.00	3.05		
Ethylbenzene*	<0.050	0.050	11/12/2024	ND	2.15	108	2.00	3.75		
Total Xylenes*	<0.150	0.150	11/12/2024	ND	6.82	114	6.00	3.33		
Total BTEX	<0.300	0.300	11/12/2024	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	400	16.0	11/12/2024	ND	400	100	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	11/11/2024	ND	210	105	200	1.13	
DRO >C10-C28*	<10.0	10.0	11/11/2024	ND	188	94.0	200	1.90	
EXT DRO >C28-C36	<10.0	10.0	11/11/2024	ND					

Surrogate: 1-Chlorooctane 100 % 48.2-134

Surrogate: 1-Chlorooctadecane 97.8 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 11/08/2024  
 Reported: 11/14/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 11/07/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: WS24 - 29 4-5' (H246841-06)**

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	11/12/2024	ND	2.13	106	2.00	2.38	
Toluene*	<0.050	0.050	11/12/2024	ND	2.21	111	2.00	3.05	
Ethylbenzene*	<0.050	0.050	11/12/2024	ND	2.15	108	2.00	3.75	
Total Xylenes*	<0.150	0.150	11/12/2024	ND	6.82	114	6.00	3.33	
Total BTEX	<0.300	0.300	11/12/2024	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	304	16.0	11/12/2024	ND	400	100	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	11/11/2024	ND	210	105	200	1.13	
DRO >C10-C28*	<10.0	10.0	11/11/2024	ND	188	94.0	200	1.90	
EXT DRO >C28-C36	<10.0	10.0	11/11/2024	ND					

Surrogate: 1-Chlorooctane 98.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 93.3 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 11/08/2024  
 Reported: 11/14/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 11/07/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: WS24 - 30 5-6' (H246841-07)**

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	11/12/2024	ND	2.13	106	2.00	2.38	
Toluene*	<0.050	0.050	11/12/2024	ND	2.21	111	2.00	3.05	
Ethylbenzene*	<0.050	0.050	11/12/2024	ND	2.15	108	2.00	3.75	
Total Xylenes*	<0.150	0.150	11/12/2024	ND	6.82	114	6.00	3.33	
Total BTEX	<0.300	0.300	11/12/2024	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	11/12/2024	ND	400	100	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	11/11/2024	ND	210	105	200	1.13	
DRO >C10-C28*	<10.0	10.0	11/11/2024	ND	188	94.0	200	1.90	
EXT DRO >C28-C36	<10.0	10.0	11/11/2024	ND					

Surrogate: 1-Chlorooctane 97.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 90.9 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- \*\* Samples not received at proper temperature of 6°C or below.
- \*\*\* Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported on an as received basis (wet) unless otherwise noted on report

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

Celey D. Keene, Lab Director/Quality Manager



## ANALYSIS REQUEST

Page 10 of 10



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

October 21, 2024

CHANCE DIXON

VERTEX RESOURCE

3101 BOYD DRIVE

CARLSBAD, NM 88220

RE: RANA SALADA PAD A

Enclosed are the results of analyses for samples received by the laboratory on 10/15/24 13:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C24-00112. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager





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

**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/10/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: WS24 - 03 0-3' (H246259-01)**

BTX 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	10/17/2024	ND	2.11	106	2.00	3.19	
Toluene*	<0.050	0.050	10/17/2024	ND	2.16	108	2.00	3.17	
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.18	109	2.00	3.45	
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.49	108	6.00	3.46	
Total BTX	<0.300	0.300	10/17/2024	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	144	16.0	10/16/2024	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	10/16/2024	ND	182	90.8	200	0.143	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	190	94.8	200	1.06	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 81.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 70.8 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/10/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: WS24 - 04 0-3' (H246259-02)**

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	10/17/2024	ND	2.11	106	2.00	3.19		
Toluene*	<0.050	0.050	10/17/2024	ND	2.16	108	2.00	3.17		
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.18	109	2.00	3.45		
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.49	108	6.00	3.46		
Total BTEX	<0.300	0.300	10/17/2024	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	112	16.0	10/16/2024	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	10/16/2024	ND	182	90.8	200	0.143	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	190	94.8	200	1.06	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 81.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 70.4 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/10/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: WS24 - 05 0-3' (H246259-03)**

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	10/17/2024	ND	2.11	106	2.00	3.19		
Toluene*	<0.050	0.050	10/17/2024	ND	2.16	108	2.00	3.17		
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.18	109	2.00	3.45		
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.49	108	6.00	3.46		
Total BTEx	<0.300	0.300	10/17/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 107 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	368	16.0	10/16/2024	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	10/16/2024	ND	182	90.8	200	0.143	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	190	94.8	200	1.06	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 93.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 80.1 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/10/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: WS24 - 06 0-3' (H246259-04)**

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	10/17/2024	ND	2.11	106	2.00	3.19		
Toluene*	<0.050	0.050	10/17/2024	ND	2.16	108	2.00	3.17		
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.18	109	2.00	3.45		
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.49	108	6.00	3.46		
Total BTEX	<0.300	0.300	10/17/2024	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	80.0	16.0	10/16/2024	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	10/16/2024	ND	182	90.8	200	0.143	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	190	94.8	200	1.06	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 90.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 77.9 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/10/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: WS24 - 07 0-3' (H246259-05)**

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	10/17/2024	ND	2.11	106	2.00	3.19		
Toluene*	<0.050	0.050	10/17/2024	ND	2.16	108	2.00	3.17		
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.18	109	2.00	3.45		
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.49	108	6.00	3.46		
Total BTEX	<0.300	0.300	10/17/2024	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	96.0	16.0	10/16/2024	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	10/16/2024	ND	182	90.8	200	0.143	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	190	94.8	200	1.06	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 97.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 84.3 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/10/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: WS24 - 08 0-3' (H246259-06)**

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	10/17/2024	ND	2.11	106	2.00	3.19		
Toluene*	<0.050	0.050	10/17/2024	ND	2.16	108	2.00	3.17		
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.18	109	2.00	3.45		
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.49	108	6.00	3.46		
Total BTEX	<0.300	0.300	10/17/2024	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	160	16.0	10/16/2024	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	10/16/2024	ND	182	90.8	200	0.143	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	190	94.8	200	1.06	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 94.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 85.2 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/10/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: WS24 - 09 0-3' (H246259-07)**

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	10/17/2024	ND	2.11	106	2.00	3.19		
Toluene*	<0.050	0.050	10/17/2024	ND	2.16	108	2.00	3.17		
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.18	109	2.00	3.45		
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.49	108	6.00	3.46		
Total BTEX	<0.300	0.300	10/17/2024	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	128	16.0	10/16/2024	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	10/16/2024	ND	182	90.8	200	0.143	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	190	94.8	200	1.06	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 93.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 80.9 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/10/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: WS24 - 10 0-3' (H246259-08)**

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	10/17/2024	ND	2.11	106	2.00	3.19		
Toluene*	<0.050	0.050	10/17/2024	ND	2.16	108	2.00	3.17		
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.18	109	2.00	3.45		
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.49	108	6.00	3.46		
Total BTEX	<0.300	0.300	10/17/2024	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	112	16.0	10/16/2024	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	10/16/2024	ND	182	90.8	200	0.143	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	190	94.8	200	1.06	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 90.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 80.0 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/10/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: WS24 - 11 0-3' (H246259-09)**

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	10/17/2024	ND	2.11	106	2.00	3.19		
Toluene*	<0.050	0.050	10/17/2024	ND	2.16	108	2.00	3.17		
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.18	109	2.00	3.45		
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.49	108	6.00	3.46		
Total BTEX	<0.300	0.300	10/17/2024	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	10/16/2024	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	10/16/2024	ND	182	90.8	200	0.143	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	190	94.8	200	1.06	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 97.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 85.2 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/10/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: BS24 - 27 3' (H246259-10)**

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	10/17/2024	ND	2.11	106	2.00	3.19	
Toluene*	<0.050	0.050	10/17/2024	ND	2.16	108	2.00	3.17	
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.18	109	2.00	3.45	
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.49	108	6.00	3.46	
Total BTEX	<0.300	0.300	10/17/2024	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	160	16.0	10/16/2024	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	10/16/2024	ND	182	90.8	200	0.143	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	190	94.8	200	1.06	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 105 % 48.2-134

Surrogate: 1-Chlorooctadecane 95.0 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/10/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: BS24 - 28 3' (H246259-11)**

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	10/17/2024	ND	2.11	106	2.00	3.19		
Toluene*	<0.050	0.050	10/17/2024	ND	2.16	108	2.00	3.17		
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.18	109	2.00	3.45		
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.49	108	6.00	3.46		
Total BTEx	<0.300	0.300	10/17/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 107 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	10/16/2024	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	10/16/2024	ND	212	106	200	2.47	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	202	101	200	3.39	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 84.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 85.9 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/10/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: BS24 - 29 3' (H246259-12)**

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	10/17/2024	ND	2.11	106	2.00	3.19	
Toluene*	<0.050	0.050	10/17/2024	ND	2.16	108	2.00	3.17	
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.18	109	2.00	3.45	
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.49	108	6.00	3.46	
Total BTEX	<0.300	0.300	10/17/2024	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	768	16.0	10/16/2024	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	10/16/2024	ND	212	106	200	2.47	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	202	101	200	3.39	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 93.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 94.8 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/10/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: BS24 - 30 3' (H246259-13)**

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	10/17/2024	ND	2.11	106	2.00	3.19	
Toluene*	<0.050	0.050	10/17/2024	ND	2.16	108	2.00	3.17	
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.18	109	2.00	3.45	
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.49	108	6.00	3.46	
Total BTEX	<0.300	0.300	10/17/2024	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	240	16.0	10/16/2024	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	10/16/2024	ND	212	106	200	2.47	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	202	101	200	3.39	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 100 % 48.2-134

Surrogate: 1-Chlorooctadecane 101 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/10/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: BS24 - 31 3' (H246259-14)**

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	10/17/2024	ND	2.11	106	2.00	3.19	
Toluene*	<0.050	0.050	10/17/2024	ND	2.16	108	2.00	3.17	
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.18	109	2.00	3.45	
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.49	108	6.00	3.46	
Total BTEX	<0.300	0.300	10/17/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 107 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	256	16.0	10/16/2024	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/16/2024	ND	212	106	200	2.47	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	202	101	200	3.39	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 104 % 48.2-134

Surrogate: 1-Chlorooctadecane 106 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/10/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: BS24 - 32 3' (H246259-15)**

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	10/17/2024	ND	2.11	106	2.00	3.19	
Toluene*	<0.050	0.050	10/17/2024	ND	2.16	108	2.00	3.17	
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.18	109	2.00	3.45	
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.49	108	6.00	3.46	
Total BTEX	<0.300	0.300	10/17/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	10/16/2024	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/16/2024	ND	212	106	200	2.47	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	202	101	200	3.39	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 98.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 99.3 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/10/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: BS24 - 33 3' (H246259-16)**

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	10/17/2024	ND	2.11	106	2.00	3.19	
Toluene*	<0.050	0.050	10/17/2024	ND	2.16	108	2.00	3.17	
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.18	109	2.00	3.45	
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.49	108	6.00	3.46	
Total BTEX	<0.300	0.300	10/17/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	544	16.0	10/16/2024	ND	400	100	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/16/2024	ND	212	106	200	2.47	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	202	101	200	3.39	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 105 % 48.2-134

Surrogate: 1-Chlorooctadecane 107 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/10/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: BS24 - 34 3' (H246259-17)**

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	10/17/2024	ND	2.11	106	2.00	3.19		
Toluene*	<0.050	0.050	10/17/2024	ND	2.16	108	2.00	3.17		
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.18	109	2.00	3.45		
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.49	108	6.00	3.46		
Total BTEX	<0.300	0.300	10/17/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	224	16.0	10/16/2024	ND	400	100	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/16/2024	ND	212	106	200	2.47	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	202	101	200	3.39	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 83.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 94.9 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/10/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: BS24 - 35 3' (H246259-18)**

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	10/17/2024	ND	2.11	106	2.00	3.19		
Toluene*	<0.050	0.050	10/17/2024	ND	2.16	108	2.00	3.17		
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.18	109	2.00	3.45		
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.49	108	6.00	3.46		
Total BTEX	<0.300	0.300	10/17/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 107 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	224	16.0	10/16/2024	ND	400	100	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/16/2024	ND	212	106	200	2.47	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	202	101	200	3.39	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 124 % 48.2-134

Surrogate: 1-Chlorooctadecane 129 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/10/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: BS24 - 36 3' (H246259-19)**

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	10/17/2024	ND	2.11	106	2.00	3.19		
Toluene*	<0.050	0.050	10/17/2024	ND	2.16	108	2.00	3.17		
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.18	109	2.00	3.45		
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.49	108	6.00	3.46		
Total BTEX	<0.300	0.300	10/17/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3680	16.0	10/16/2024	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/17/2024	ND	212	106	200	2.47	
DRO >C10-C28*	<10.0	10.0	10/17/2024	ND	202	101	200	3.39	
EXT DRO >C28-C36	<10.0	10.0	10/17/2024	ND					

Surrogate: 1-Chlorooctane 92.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 86.8 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/10/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: BS24 - 37 3' (H246259-20)**

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	10/17/2024	ND	2.18	109	2.00	2.17		
Toluene*	<0.050	0.050	10/17/2024	ND	2.08	104	2.00	2.49		
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.10	105	2.00	3.37		
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.34	106	6.00	4.53		
Total BTEX	<0.300	0.300	10/17/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1180	16.0	10/16/2024	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/17/2024	ND	212	106	200	2.47	
DRO >C10-C28*	<10.0	10.0	10/17/2024	ND	202	101	200	3.39	
EXT DRO >C28-C36	<10.0	10.0	10/17/2024	ND					

Surrogate: 1-Chlorooctane 101 % 48.2-134

Surrogate: 1-Chlorooctadecane 93.8 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/10/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: BS24 - 46 3' (H246259-21)**

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	10/17/2024	ND	2.18	109	2.00	2.17		
Toluene*	<0.050	0.050	10/17/2024	ND	2.08	104	2.00	2.49		
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.10	105	2.00	3.37		
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.34	106	6.00	4.53		
Total BTEX	<0.300	0.300	10/17/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	752	16.0	10/16/2024	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/17/2024	ND	212	106	200	2.47	
DRO >C10-C28*	<10.0	10.0	10/17/2024	ND	202	101	200	3.39	
EXT DRO >C28-C36	<10.0	10.0	10/17/2024	ND					

Surrogate: 1-Chlorooctane 111 % 48.2-134

Surrogate: 1-Chlorooctadecane 117 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/10/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: BS24 - 47 3' (H246259-22)**

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	10/17/2024	ND	2.18	109	2.00	2.17		
Toluene*	<0.050	0.050	10/17/2024	ND	2.08	104	2.00	2.49		
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.10	105	2.00	3.37		
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.34	106	6.00	4.53		
Total BTEX	<0.300	0.300	10/17/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	304	16.0	10/16/2024	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/17/2024	ND	212	106	200	2.47	
DRO >C10-C28*	<10.0	10.0	10/17/2024	ND	202	101	200	3.39	
EXT DRO >C28-C36	<10.0	10.0	10/17/2024	ND					

Surrogate: 1-Chlorooctane 113 % 48.2-134

Surrogate: 1-Chlorooctadecane 117 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/10/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: BS24 - 48 3' (H246259-23)**

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	10/17/2024	ND	2.18	109	2.00	2.17		
Toluene*	<0.050	0.050	10/17/2024	ND	2.08	104	2.00	2.49		
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.10	105	2.00	3.37		
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.34	106	6.00	4.53		
Total BTEX	<0.300	0.300	10/17/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	240	16.0	10/16/2024	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/17/2024	ND	212	106	200	2.47	
DRO >C10-C28*	<10.0	10.0	10/17/2024	ND	202	101	200	3.39	
EXT DRO >C28-C36	<10.0	10.0	10/17/2024	ND					

Surrogate: 1-Chlorooctane 100 % 48.2-134

Surrogate: 1-Chlorooctadecane 99.9 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/10/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: BS24 - 49 3' (H246259-24)**

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	10/17/2024	ND	2.18	109	2.00	2.17		
Toluene*	<0.050	0.050	10/17/2024	ND	2.08	104	2.00	2.49		
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.10	105	2.00	3.37		
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.34	106	6.00	4.53		
Total BTEX	<0.300	0.300	10/17/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	288	16.0	10/16/2024	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/17/2024	ND	212	106	200	2.47	
DRO >C10-C28*	<10.0	10.0	10/17/2024	ND	202	101	200	3.39	
EXT DRO >C28-C36	<10.0	10.0	10/17/2024	ND					

Surrogate: 1-Chlorooctane 96.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 97.6 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/11/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: WS24 - 12 0-3' (H246259-25)**

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	10/17/2024	ND	2.18	109	2.00	2.17		
Toluene*	<0.050	0.050	10/17/2024	ND	2.08	104	2.00	2.49		
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.10	105	2.00	3.37		
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.34	106	6.00	4.53		
Total BTEX	<0.300	0.300	10/17/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	176	16.0	10/16/2024	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/16/2024	ND	212	106	200	2.47	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	202	101	200	3.39	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 131 % 48.2-134

Surrogate: 1-Chlorooctadecane 139 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/11/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: WS24 - 13 0-3' (H246259-26)**

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	10/17/2024	ND	2.18	109	2.00	2.17		
Toluene*	<0.050	0.050	10/17/2024	ND	2.08	104	2.00	2.49		
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.10	105	2.00	3.37		
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.34	106	6.00	4.53		
Total BTEX	<0.300	0.300	10/17/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	10/16/2024	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/16/2024	ND	212	106	200	2.47	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	202	101	200	3.39	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 123 % 48.2-134

Surrogate: 1-Chlorooctadecane 128 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/11/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: WS24 - 14 0-3' (H246259-27)**

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	10/17/2024	ND	2.18	109	2.00	2.17	
Toluene*	<0.050	0.050	10/17/2024	ND	2.08	104	2.00	2.49	
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.10	105	2.00	3.37	
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.34	106	6.00	4.53	
Total BTEX	<0.300	0.300	10/17/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	10/16/2024	ND	400	100	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/16/2024	ND	212	106	200	2.47	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	202	101	200	3.39	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 95.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 95.8 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/11/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: WS24 - 15 0-3' (H246259-28)**

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	10/17/2024	ND	2.18	109	2.00	2.17		
Toluene*	<0.050	0.050	10/17/2024	ND	2.08	104	2.00	2.49		
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.10	105	2.00	3.37		
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.34	106	6.00	4.53		
Total BTEX	<0.300	0.300	10/17/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	10/16/2024	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/16/2024	ND	212	106	200	2.47	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	202	101	200	3.39	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 98.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 97.5 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/11/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: BS24 - 50 3' (H246259-29)**

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	10/17/2024	ND	2.18	109	2.00	2.17	
Toluene*	<0.050	0.050	10/17/2024	ND	2.08	104	2.00	2.49	
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.10	105	2.00	3.37	
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.34	106	6.00	4.53	
Total BTEX	<0.300	0.300	10/17/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	432	16.0	10/16/2024	ND	400	100	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/16/2024	ND	212	106	200	2.47	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	202	101	200	3.39	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 104 % 48.2-134

Surrogate: 1-Chlorooctadecane 104 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/11/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: BS24 - 51 3' (H246259-30)**

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	10/17/2024	ND	2.18	109	2.00	2.17	
Toluene*	<0.050	0.050	10/17/2024	ND	2.08	104	2.00	2.49	
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.10	105	2.00	3.37	
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.34	106	6.00	4.53	
Total BTEX	<0.300	0.300	10/17/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	432	16.0	10/16/2024	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/16/2024	ND	212	106	200	2.47	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	202	101	200	3.39	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 86.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 86.6 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/11/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: BS24 - 57 3' (H246259-31)**

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	10/17/2024	ND	2.18	109	2.00	2.17		
Toluene*	<0.050	0.050	10/17/2024	ND	2.08	104	2.00	2.49		
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.10	105	2.00	3.37		
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.34	106	6.00	4.53		
Total BTEX	<0.300	0.300	10/17/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	288	16.0	10/16/2024	ND	400	100	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/16/2024	ND	208	104	200	1.28	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	209	104	200	1.84	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 97.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 91.8 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/11/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: BS24 - 58 3' (H246259-32)**

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	10/17/2024	ND	2.18	109	2.00	2.17		
Toluene*	<0.050	0.050	10/17/2024	ND	2.08	104	2.00	2.49		
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.10	105	2.00	3.37		
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.34	106	6.00	4.53		
Total BTEx	<0.300	0.300	10/17/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	256	16.0	10/16/2024	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/16/2024	ND	208	104	200	1.28	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	209	104	200	1.84	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 92.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 86.0 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/11/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: BS24 - 59 3' (H246259-33)**

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	10/17/2024	ND	2.18	109	2.00	2.17		
Toluene*	<0.050	0.050	10/17/2024	ND	2.08	104	2.00	2.49		
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.10	105	2.00	3.37		
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.34	106	6.00	4.53		
Total BTEX	<0.300	0.300	10/17/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	10/16/2024	ND	400	100	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/16/2024	ND	208	104	200	1.28	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	209	104	200	1.84	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 94.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 89.2 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/11/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: BS24 - 60 3' (H246259-34)**

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	10/17/2024	ND	2.18	109	2.00	2.17	
Toluene*	<0.050	0.050	10/17/2024	ND	2.08	104	2.00	2.49	
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.10	105	2.00	3.37	
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.34	106	6.00	4.53	
Total BTEX	<0.300	0.300	10/17/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 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	10/16/2024	ND	416	104	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	10/16/2024	ND	208	104	200	1.28	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	209	104	200	1.84	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 94.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 87.5 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/11/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: BS24 - 61 3' (H246259-35)**

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	10/17/2024	ND	2.18	109	2.00	2.17		
Toluene*	<0.050	0.050	10/17/2024	ND	2.08	104	2.00	2.49		
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.10	105	2.00	3.37		
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.34	106	6.00	4.53		
Total BTEx	<0.300	0.300	10/17/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	240	16.0	10/16/2024	ND	416	104	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	10/16/2024	ND	208	104	200	1.28	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	209	104	200	1.84	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 93.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 87.0 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/11/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: BS24 - 62 3' (H246259-36)**

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	10/17/2024	ND	2.18	109	2.00	2.17	
Toluene*	<0.050	0.050	10/17/2024	ND	2.08	104	2.00	2.49	
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.10	105	2.00	3.37	
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.34	106	6.00	4.53	
Total BTEX	<0.300	0.300	10/17/2024	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	10/16/2024	ND	416	104	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	10/16/2024	ND	208	104	200	1.28	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	209	104	200	1.84	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 101 % 48.2-134

Surrogate: 1-Chlorooctadecane 94.4 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/11/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: BS24 - 63 3' (H246259-37)**

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	10/17/2024	ND	2.18	109	2.00	2.17	
Toluene*	<0.050	0.050	10/17/2024	ND	2.08	104	2.00	2.49	
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.10	105	2.00	3.37	
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.34	106	6.00	4.53	
Total BTEX	<0.300	0.300	10/17/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	10/16/2024	ND	416	104	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	10/16/2024	ND	208	104	200	1.28	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	209	104	200	1.84	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 93.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 87.6 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/11/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: BS24 - 64 3' (H246259-38)**

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	10/17/2024	ND	2.18	109	2.00	2.17		
Toluene*	<0.050	0.050	10/17/2024	ND	2.08	104	2.00	2.49		
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.10	105	2.00	3.37		
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.34	106	6.00	4.53		
Total BTEX	<0.300	0.300	10/17/2024	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	496	16.0	10/16/2024	ND	416	104	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	10/16/2024	ND	208	104	200	1.28	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	209	104	200	1.84	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 92.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 87.0 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/11/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: BS24 - 65 3' (H246259-39)**

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	10/17/2024	ND	2.18	109	2.00	2.17	
Toluene*	<0.050	0.050	10/17/2024	ND	2.08	104	2.00	2.49	
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.10	105	2.00	3.37	
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.34	106	6.00	4.53	
Total BTEX	<0.300	0.300	10/17/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 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	832	16.0	10/16/2024	ND	416	104	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	10/16/2024	ND	208	104	200	1.28	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	209	104	200	1.84	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 98.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 93.7 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/11/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: BS24 - 66 3' (H246259-40)**

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	10/17/2024	ND	2.31	115	2.00	2.04	
Toluene*	<0.050	0.050	10/17/2024	ND	2.34	117	2.00	0.556	
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.36	118	2.00	0.437	
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.90	115	6.00	0.975	
Total BTEX	<0.300	0.300	10/17/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 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	10/16/2024	ND	416	104	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	10/16/2024	ND	208	104	200	1.28	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	209	104	200	1.84	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 89.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 84.7 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/11/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: BS24 - 67 3' (H246259-41)**

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	10/17/2024	ND	2.31	115	2.00	2.04	
Toluene*	<0.050	0.050	10/17/2024	ND	2.34	117	2.00	0.556	
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.36	118	2.00	0.437	
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.90	115	6.00	0.975	
Total BTEX	<0.300	0.300	10/17/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 112 % 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	272	16.0	10/16/2024	ND	416	104	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	10/16/2024	ND	208	104	200	1.28	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	209	104	200	1.84	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 89.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 82.6 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/12/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: BS24 - 73 3' (H246259-42)**

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	10/17/2024	ND	2.31	115	2.00	2.04	
Toluene*	<0.050	0.050	10/17/2024	ND	2.34	117	2.00	0.556	
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.36	118	2.00	0.437	
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.90	115	6.00	0.975	
Total BTEX	<0.300	0.300	10/17/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 111 % 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	10/16/2024	ND	416	104	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	10/16/2024	ND	208	104	200	1.28	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	209	104	200	1.84	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 90.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 85.1 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/12/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: BS24 - 74 3' (H246259-43)**

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	10/17/2024	ND	2.31	115	2.00	2.04	
Toluene*	<0.050	0.050	10/17/2024	ND	2.34	117	2.00	0.556	
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.36	118	2.00	0.437	
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.90	115	6.00	0.975	
Total BTEX	<0.300	0.300	10/17/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 112 % 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	256	16.0	10/16/2024	ND	416	104	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	10/16/2024	ND	208	104	200	1.28	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	209	104	200	1.84	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 107 % 48.2-134

Surrogate: 1-Chlorooctadecane 102 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/12/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: BS24 - 75 3' (H246259-44)**

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	10/17/2024	ND	2.31	115	2.00	2.04		
Toluene*	<0.050	0.050	10/17/2024	ND	2.34	117	2.00	0.556		
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.36	118	2.00	0.437		
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.90	115	6.00	0.975		
Total BTEx	<0.300	0.300	10/17/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 114 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	496	16.0	10/16/2024	ND	416	104	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	10/16/2024	ND	208	104	200	1.28	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	209	104	200	1.84	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 104 % 48.2-134

Surrogate: 1-Chlorooctadecane 100 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/12/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: BS24 - 76 3' (H246259-45)**

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	10/17/2024	ND	2.31	115	2.00	2.04	
Toluene*	<0.050	0.050	10/17/2024	ND	2.34	117	2.00	0.556	
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.36	118	2.00	0.437	
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.90	115	6.00	0.975	
Total BTEX	<0.300	0.300	10/17/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 112 % 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	640	16.0	10/16/2024	ND	416	104	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	10/16/2024	ND	208	104	200	1.28	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	209	104	200	1.84	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 97.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 91.0 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/12/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: WS24 - 16 0-3' (H246259-46)**

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	10/17/2024	ND	2.31	115	2.00	2.04	
Toluene*	<0.050	0.050	10/17/2024	ND	2.34	117	2.00	0.556	
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.36	118	2.00	0.437	
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.90	115	6.00	0.975	
Total BTEX	<0.300	0.300	10/17/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 113 % 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	10/16/2024	ND	416	104	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	10/16/2024	ND	208	104	200	1.28	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	209	104	200	1.84	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 102 % 48.2-134

Surrogate: 1-Chlorooctadecane 95.5 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/12/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: WS24 - 17 0-3' (H246259-47)**

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	10/17/2024	ND	2.31	115	2.00	2.04		
Toluene*	<0.050	0.050	10/17/2024	ND	2.34	117	2.00	0.556		
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.36	118	2.00	0.437		
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.90	115	6.00	0.975		
Total BTEX	<0.300	0.300	10/17/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 124 % 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	10/16/2024	ND	416	104	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	10/16/2024	ND	208	104	200	1.28	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	209	104	200	1.84	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 105 % 48.2-134

Surrogate: 1-Chlorooctadecane 97.4 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/12/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: WS24 - 18 0-3' (H246259-48)**

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	10/17/2024	ND	2.31	115	2.00	2.04	
Toluene*	<0.050	0.050	10/17/2024	ND	2.34	117	2.00	0.556	
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.36	118	2.00	0.437	
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.90	115	6.00	0.975	
Total BTEX	<0.300	0.300	10/17/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 114 % 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	10/16/2024	ND	416	104	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	10/16/2024	ND	208	104	200	1.28	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	209	104	200	1.84	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 105 % 48.2-134

Surrogate: 1-Chlorooctadecane 98.0 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/12/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: WS24 - 19 0-3' (H246259-49)**

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	10/17/2024	ND	2.31	115	2.00	2.04	
Toluene*	<0.050	0.050	10/17/2024	ND	2.34	117	2.00	0.556	
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.36	118	2.00	0.437	
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.90	115	6.00	0.975	
Total BTEX	<0.300	0.300	10/17/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 112 % 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	368	16.0	10/16/2024	ND	416	104	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	10/16/2024	ND	208	104	200	1.28	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	209	104	200	1.84	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 105 % 48.2-134

Surrogate: 1-Chlorooctadecane 101 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/12/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: WS24 - 20 0-3' (H246259-50)**

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	10/17/2024	ND	2.31	115	2.00	2.04	
Toluene*	<0.050	0.050	10/17/2024	ND	2.34	117	2.00	0.556	
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.36	118	2.00	0.437	
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.90	115	6.00	0.975	
Total BTEX	<0.300	0.300	10/17/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 113 % 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	384	16.0	10/16/2024	ND	416	104	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	10/16/2024	ND	208	104	200	1.28	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	209	104	200	1.84	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 106 % 48.2-134

Surrogate: 1-Chlorooctadecane 98.9 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/12/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: WS24 - 21 0-3' (H246259-51)**

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	10/17/2024	ND	2.31	115	2.00	2.04		
Toluene*	<0.050	0.050	10/17/2024	ND	2.34	117	2.00	0.556		
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.36	118	2.00	0.437		
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.90	115	6.00	0.975		
Total BTEX	<0.300	0.300	10/17/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 112 % 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	10/16/2024	ND	416	104	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	10/16/2024	ND	218	109	200	1.38	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	208	104	200	1.60	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 94.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 91.8 % 49.1-148

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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/12/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: WS24 - 22 0-3' (H246259-52)**

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	10/17/2024	ND	2.31	115	2.00	2.04		
Toluene*	<0.050	0.050	10/17/2024	ND	2.34	117	2.00	0.556		
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.36	118	2.00	0.437		
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.90	115	6.00	0.975		
Total BTEX	<0.300	0.300	10/17/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 113 % 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	10/16/2024	ND	416	104	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	10/16/2024	ND	218	109	200	1.38	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	208	104	200	1.60	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 98.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 96.7 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

VERTEX RESOURCE  
 CHANCE DIXON  
 3101 BOYD DRIVE  
 CARLSBAD NM, 88220  
 Fax To: NA

Received: 10/15/2024  
 Reported: 10/21/2024  
 Project Name: RANA SALADA PAD A  
 Project Number: 24E-04030 ( 57469 )  
 Project Location: PERMIAN RES. - CARLSBAD

Sampling Date: 10/12/2024  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: WS24 - 23 0-3' (H246259-53)**

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	10/17/2024	ND	2.31	115	2.00	2.04	
Toluene*	<0.050	0.050	10/17/2024	ND	2.34	117	2.00	0.556	
Ethylbenzene*	<0.050	0.050	10/17/2024	ND	2.36	118	2.00	0.437	
Total Xylenes*	<0.150	0.150	10/17/2024	ND	6.90	115	6.00	0.975	
Total BTEX	<0.300	0.300	10/17/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 112 % 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	10/16/2024	ND	416	104	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	10/16/2024	ND	218	109	200	1.38	
DRO >C10-C28*	<10.0	10.0	10/16/2024	ND	208	104	200	1.60	
EXT DRO >C28-C36	<10.0	10.0	10/16/2024	ND					

Surrogate: 1-Chlorooctane 98.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 95.5 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- \*\* Samples not received at proper temperature of 6°C or below.
- \*\*\* Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported on an as received basis (wet) unless otherwise noted on report

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

Celey D. Keene, Lab Director/Quality Manager



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## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

<b>Company Name:</b> VERTIX				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>			
<b>Project Manager:</b> Chance Dixon				<b>P.O. #:</b>							
<b>Address:</b> On F1C				<b>Company:</b> Permian							
<b>City:</b>				<b>Attn:</b> Montgomery							
<b>State:</b>				<b>Address:</b> Floyd							
<b>Phone #:</b>				<b>City:</b>							
<b>Fax #:</b>				<b>State:</b>							
<b>Project #:</b> 24E-04036				<b>Zip:</b>							
<b>Project Owner:</b> Permian				<b>Phone #:</b>							
<b>Project Location:</b> Carlsbad				<b>Fax #:</b>							
<b>Sampler Name:</b> Andrew Ludvik											
<b>FOR LAB USE ONLY</b>											
<b>Lab I.D.</b>	<b>Sample I.D.</b>	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX	PRESERV.	SAMPLING					
		GROUNDWATER		SOIL							
		WASTEWATER		OIL							
		SLUDGE		OTHER :							
		ACID/BASE:		ICEY COOL							
		OTHER :									
DATE	TIME										
10/10/00	0910										
10/10/00	0926										
10/10/00	0930										
10/10/00	0946										
10/10/00	0950										
10/10/00	1000										
10/10/00	1010										
10/10/00	1020										
10/10/00	1030										

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<b>Relinquished By:</b>	<b>Date:</b> 10/15/04	<b>Received By:</b>	<b>Verbal Result:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>Add'l Phone #:</b>
<b>Relinquished By:</b>	<b>Date:</b> 10/15/04	<b>Received By:</b>	<b>All Results are emailed. Please provide Email address:</b>	
<b>REMARKS:</b> CC: ALVIN@VERTIXRESOURCE.COM				

<b>Delivered By:</b> (Circle One)	<b>Observed Temp. °C</b>	<b>Sample Condition</b>	<b>CHECKED BY:</b> (Initials)	<b>Turnaround Time:</b>
Sampler - UPS - Bus - Other:	Corrected Temp. °C	Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>		Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>
				Bacteria (only) Sample Condition Cool <input type="checkbox"/> Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
				Thermometer ID #113 #140 Correction Factor -0.0°C -0.0°C





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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: <b>Vertex</b>				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>			
Project Manager: <b>Project Manager</b>				P.O. #: <b>Purman</b>							
Address: <b>on file</b>				Company: <b>Montgomery</b>							
City: _____ State: _____ Zip: _____				Attn: <b>Floyd</b>							
Phone #: _____ Fax #: _____				Address: _____							
Project #: <b>248-04030</b> Project Owner: <b>Purman</b>				City: _____							
Project Name: <b>Ranq 59190th Pad A 57469</b>				State: _____ Zip: _____							
Project Location: <b>Cartsbod</b>				Phone #: _____							
Sampler Name: <b>Andrew Luckritz</b>				Fax #: _____							
FOR LAB USE ONLY											
Lab I.D.		Sample I.D.		MATRIX		PRESERV		SAMPLING			
H246259				(G)RAB OR (C)OMP. # CONTAINERS		ACID/BASE: ICE COOL OTHER: _____		DATE		TIME	
11 BS24-28		3'		GROUNDWATER		OTHER: _____		10/16		1305	
12 BS24-29		3'		WASTEWATER				1310			
13 BS24-30		3'		SOIL				1315			
14 BS24-31		3'		OIL				1320			
15 BS24-32		3'		SLUDGE				1325			
16 BS24-33		3'		OTHER: _____				1330			
17 BS24-34		3'		ACID/BASE: ICE COOL OTHER: _____				1335			
18 BS24-35		3'						1340			
19 BS24-36		3'						1345			
20 BS24-37		3'						1350			
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Relinquished By: <b>Casin</b>				Date: <b>10/15/24</b> Received By: <b>APAVAS</b>				Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #: _____			
Relinquished By: _____				Date: <b>1345</b> Received By: <b>APAVAS</b>				All Results are emailed. Please provide Email address: _____			
Time: _____				Time: _____				REMARKS: _____			
Delivered By: (Circle One)				Observed Temp. °C: <b>-1.3</b>				Sample Condition: <input checked="" type="checkbox"/> Cool <input type="checkbox"/> Intact <input type="checkbox"/> Yes <input type="checkbox"/> No			
Sampler - UPS - Bus - Other: _____				Corrected Temp. °C: <b>-1.9</b>				CHECKED BY: (Initials) <b>AP</b>			
				Turnaround Time: <b>Standard</b> <input checked="" type="checkbox"/> <b>Rush</b> <input type="checkbox"/> <b>#148</b>				Bacteria (only) Sample Condition: <input type="checkbox"/> Cool <input type="checkbox"/> Intact <input type="checkbox"/> Yes <input type="checkbox"/> No			
				Thermometer ID: <b>#148</b>				Observed Temp. °C: _____			
				Correction Factor: <b>-0.6°C</b>				Corrected Temp. °C: _____			

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## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]



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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: <b>Verter</b>		P.O. #:		BILL TO		ANALYSIS REQUEST																													
Project Manager: <b>Chance Dixon</b>		Company: <b>Bermann</b>																																	
Address: <b>on F116</b>		Attn: <b>Montgomery</b>																																	
City: <b>1</b>		Address: <b>F104d</b>																																	
Phone #: <b>1</b>		City:																																	
Fax #: <b>1</b>		State:																																	
Project #: <b>245-04030</b>		Project Owner: <b>Bermann</b>																																	
Project Name: <b>Rang 50100d Pod A 57469</b>		City:																																	
Project Location: <b>Car156ad</b>		State:																																	
Sampler Name: <b>Andrew Luckinik</b>		Phone #:																																	
FOR LAB USE ONLY		Fax #:																																	
Lab I.D.		Sample I.D.		(G)RAB OR (C)OMP		# CONTAINERS		MATRIX		PRESERV		SAMPLING																							
H246859		31 BS24-57		3'		C4		GROUNDWATER		WASTEWATER		SOIL		OIL		SLUDGE		OTHER :		ACID/BASE:		ICE/ COOL		OTHER :		DATE		TIME		BTEX 8021		TPH 8015		CI	
32 BS24-58		3'																								10/11		1000							
33 BS24-59		3'																								10/05		1005							
34 BS24-60		3'																								10/16		1016							
35 BS24-61		3'																								10/15		1015							
36 BS24-62		3'																								10/20		1020							
37 BS24-63		3'																								10/25		1025							
38 BS24-64		3'																								10/30		1030							
39 BS24-65		3'																								10/35		1035							
40 BS24-66		3'																								10/40		1040							
																										10/45		1045							
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Relinquished By: <b>CSK</b>		Date: <b>10/15/24</b>		Received By: <b>APB</b>		Time: <b>1345</b>		Date: <b>10/15/24</b>		Time: <b>1345</b>		Observed Temp °C: <b>-1.3</b>		Corrected Temp °C: <b>-1.9</b>		Sample Condition: <b>Intact</b>		Checked By: <b>APB</b>		Turnaround Time: <b>Standard</b>		Thermometer ID: <b>443-F116</b>		Correction Factor: <b>-0.6</b>		Bacteria (only) Sample Condition: <b>Cool Intact</b>		Observed Temp °C: <b>-1.3</b>		Corrected Temp °C: <b>-1.9</b>					
Delivered By: (Circle One)		Observed Temp °C: <b>-1.3</b>		Corrected Temp °C: <b>-1.9</b>		Sample Condition: <b>Intact</b>		Checked By: <b>APB</b>		Turnaround Time: <b>Standard</b>		Thermometer ID: <b>443-F116</b>		Correction Factor: <b>-0.6</b>		Bacteria (only) Sample Condition: <b>Cool Intact</b>		Observed Temp °C: <b>-1.3</b>		Corrected Temp °C: <b>-1.9</b>															
Sampler - UPS - Bus - Other:		Observed Temp °C: <b>-1.3</b>		Corrected Temp °C: <b>-1.9</b>		Sample Condition: <b>Intact</b>		Checked By: <b>APB</b>		Turnaround Time: <b>Standard</b>		Thermometer ID: <b>443-F116</b>		Correction Factor: <b>-0.6</b>		Bacteria (only) Sample Condition: <b>Cool Intact</b>		Observed Temp °C: <b>-1.3</b>		Corrected Temp °C: <b>-1.9</b>															

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: <b>Verter</b>		<b>BILL TO</b>		<b>ANALYSIS REQUEST</b>																															
Project Manager: <b>Chance Dixon</b>		P.O. #:																																	
Address: <b>on file</b>		Company: <b>Permian</b>																																	
City: <b>Permian</b>		Attn: <b>Margareta</b>																																	
Phone #: <b>246-04030</b>		Address: <b>E104d</b>																																	
Fax #: <b>246-04030</b>		City: <b>Permian</b>																																	
Project Name: <b>Rona Scipada Pad # 57469</b>		State: <b>Permian</b>																																	
Project Location: <b>Carlsbad</b>		Zip: <b>88201</b>																																	
Sampler Name: <b>Andrew Ludrick</b>		Phone #: <b>246-04030</b>																																	
Fax #: <b>246-04030</b>		Zip: <b>88201</b>																																	
FOR LAB USE ONLY		PRESERV		SAMPLING																															
Lab I.D.		Sample I.D.		(G)RAB OR (C)OMP		# CONTAINERS		GROUNDWATER		WASTEWATER		SOIL		OIL		SLUDGE		OTHER :		ACID/BASE:		CEX COOL		OTHER :		DATE		TIME		BTX 8021		TPH 8015		CI	
41		BS24-67 3'		C		2																				10/11		1325							
42		BS24-73 3'																								10/12		1130							
43		BS24-74 3'																								11/35									
44		BS24-75 3'																								11/40									
45		BS24-76 3'																								11/45									
46		BS24-16 0-3'																								0650									
47		BS24-17 0-3'																								1000									
48		BS24-18 0-3'																								1010									
49		BS24-19 0-3'																								1020									
50		BS24-20 0-3'																								1030									
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Relinquished By: <b>Case</b>		Date: <b>10/15/24</b>		Time: <b>1345</b>		Received By: <b>ADAR</b>		Date: <b>10/15/24</b>		Time: <b>1345</b>		Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Add'l Phone #:		All Results are emailed. Please provide Email address:																					
Relinquished By: <b>Case</b>		Date: <b>10/15/24</b>		Time: <b>1345</b>		Received By: <b>ADAR</b>		Date: <b>10/15/24</b>		Time: <b>1345</b>		REMARKS:																							
Delivered By: (Circle One)		Observed Temp. °C		Corrected Temp. °C		Sample Condition		CHECKED BY: (Initials)		Turnaround Time:		Standard		Bacteria (only)		Sample Condition		Observed Temp. °C		Corrected Temp. °C															
Sampler - UPS - Bus - Other:		-1.3		-1.9		Cool Intact		Yes		Yes		RUSH		Yes		Yes		Yes		Yes															
Correction Factor		-0.16		-0.16		No		No		No		No		No		No		No		No															

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# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]

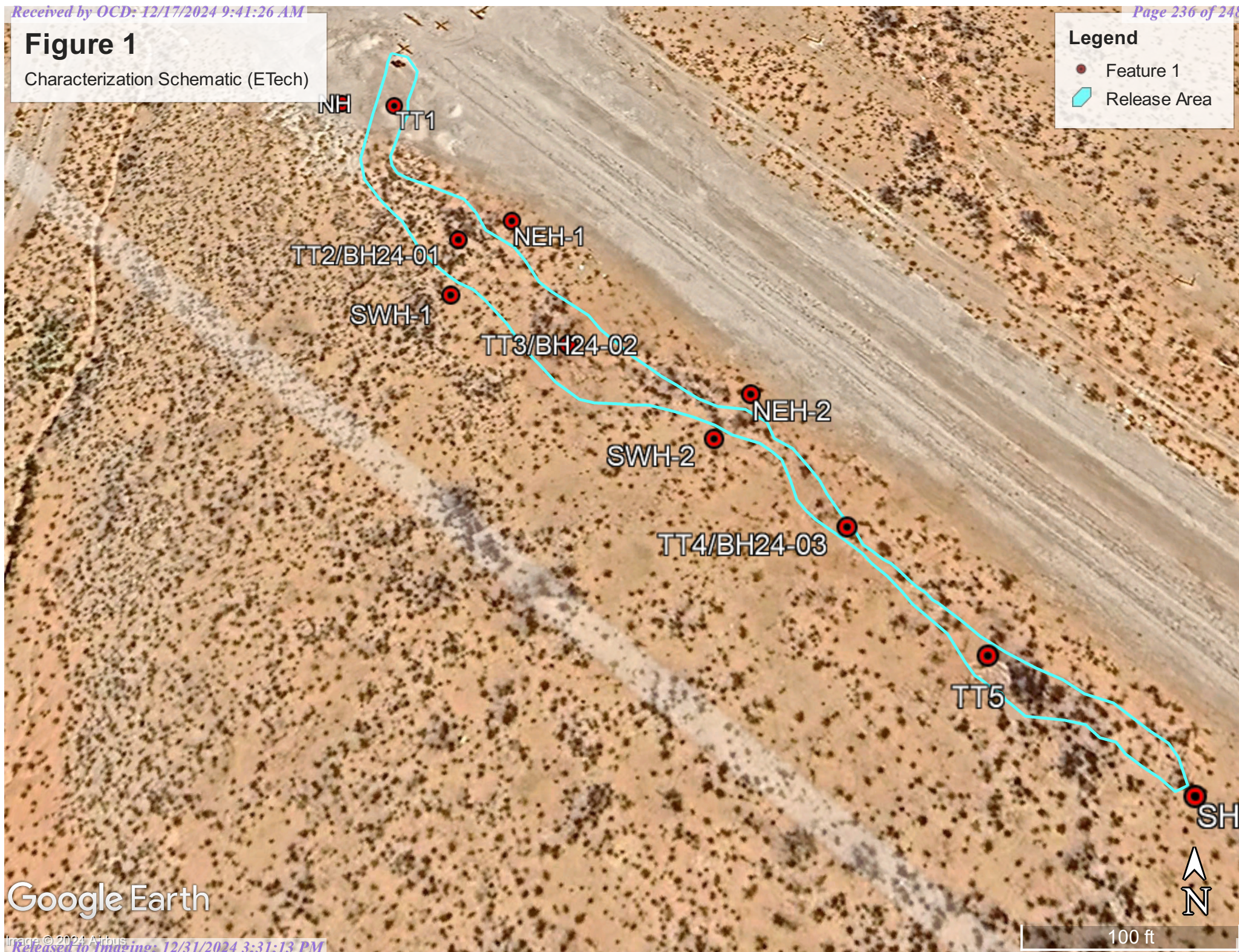


# Figure 1

Characterization Schematic (ETech)

## Legend

- Feature 1
- Release Area





**From:** [Chance Dixon](#)  
**To:** [Wells, Shelly, EMNRD](#)  
**Subject:** RE: [EXTERNAL] Re: NAPP2403257469 RANA SALADA PAD A Questions  
**Date:** Tuesday, December 31, 2024 3:22:08 PM

---

That is correct ma'am. Thank you!

---

**From:** Wells, Shelly, EMNRD <[Shelly.Wells@emnrd.nm.gov](mailto:Shelly.Wells@emnrd.nm.gov)>  
**Sent:** Tuesday, December 31, 2024 3:17 PM  
**To:** Chance Dixon <[cdixon@vertexresource.com](mailto:cdixon@vertexresource.com)>  
**Subject:** RE: [EXTERNAL] Re: NAPP2403257469 RANA SALADA PAD A Questions

**Caution:** This email is from an external sender. Please take care when clicking links or opening attachments. When in doubt, contact your IT Department

Chance,

Thanks for sending this over to me so quickly! One more question...as far as the backfill samples go are they the two samples labeled as BG24-01 and BG24-02?

Thanks again,

Shelly

---

**From:** Chance Dixon <[cdixon@vertexresource.com](mailto:cdixon@vertexresource.com)>  
**Sent:** Tuesday, December 31, 2024 3:14 PM  
**To:** Wells, Shelly, EMNRD <[Shelly.Wells@emnrd.nm.gov](mailto:Shelly.Wells@emnrd.nm.gov)>  
**Subject:** RE: [EXTERNAL] Re: NAPP2403257469 RANA SALADA PAD A Questions

Shelly,

Okay, I see what happened now. When the original consultant for this project delineated, they had their vertical test pits labeled as "V" on this map and "TT" in their table (not sure why). So we had to get their nomenclature changed on the map to match the table and I must have just missed 1 and 5.

Please see the attached for the corrected version.

Thank you,

---

**From:** Wells, Shelly, EMNRD <[Shelly.Wells@emnrd.nm.gov](mailto:Shelly.Wells@emnrd.nm.gov)>

**Sent:** Tuesday, December 31, 2024 2:49 PM

**To:** Chance Dixon <[cdixon@vertexresource.com](mailto:cdixon@vertexresource.com)>

**Subject:** RE: [EXTERNAL] Re: NAPP2403257469 RANA SALADA PAD A Questions

**Caution:** This email is from an external sender. Please take care when clicking links or opening attachments. When in doubt, contact your IT Department

Hi Chance,

That would be awesome if you could update the Figure and email it to me.

Thank you,

Shelly

---

**From:** Chance Dixon <[cdixon@vertexresource.com](mailto:cdixon@vertexresource.com)>

**Sent:** Tuesday, December 31, 2024 2:48 PM

**To:** Wells, Shelly, EMNRD <[Shelly.Wells@emnrd.nm.gov](mailto:Shelly.Wells@emnrd.nm.gov)>

**Subject:** [EXTERNAL] Re: NAPP2403257469 RANA SALADA PAD A Questions

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

Shelly,

I must have made some kind of error when I saved the map as a PDF. My apologies .

Would it be okay to get that map revised and sent over to you?

Chance

Get [Outlook for iOS](#)

---

**From:** Wells, Shelly, EMNRD <[Shelly.Wells@emnrd.nm.gov](mailto:Shelly.Wells@emnrd.nm.gov)>

**Sent:** Tuesday, December 31, 2024 2:39:06 PM

**To:** Chance Dixon <[cdixon@vertexresource.com](mailto:cdixon@vertexresource.com)>

**Subject:** NAPP2403257469 RANA SALADA PAD A Questions

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Hi Chance,

I am reviewing the submitted remediation closure/reclamation report for the following incident **NAPP2403257469 RANA SALADA PAD A** and have some questions. Referring to Figure 1, the locations of TT1 and TT5 are not shown. V-1 and V-15 which are shown in Figure 1 do not have corresponding laboratory data in Table 3. Can you please explain?

Kind regards,

Shelly

P.S. Happy New Year!

Shelly Wells \* Environmental Specialist-Advanced  
Environmental Bureau  
EMNRD-Oil Conservation Division  
1220 S. St. Francis Drive|Santa Fe, NM 87505  
(505)469-7520|[Shelly.Wells@emnrd.nm.gov](mailto:Shelly.Wells@emnrd.nm.gov)  
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QUESTIONS

Action 412407

QUESTIONS

Operator: Permian Resources Operating, LLC 300 N. Marienfeld St Ste 1000 Midland, TX 79701	OGRID: 372165
	Action Number: 412407
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Prerequisites	
Incident ID (n#)	nAPP2403257469
Incident Name	NAPP2403257469 RANA SALADA PAD A @ 30-015-46085
Incident Type	Produced Water Release
Incident Status	Reclamation Report Received
Incident Well	[30-015-46085] RANA SALADA FEDERAL COM 0605 #231H

Location of Release Source	
Please answer all the questions in this group.	
Site Name	RANA SALADA PAD A
Date Release Discovered	01/19/2024
Surface Owner	Federal

Incident Details	
Please answer all the questions in this group.	
Incident Type	Produced Water Release
Did this release result in a fire or is the result of a fire	No
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release	
Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.	
Crude Oil Released (bbls) Details	Cause: Equipment Failure   Pipeline (Any)   Crude Oil   Released: 4 BBL   Recovered: 0 BBL   Lost: 4 BBL.
Produced Water Released (bbls) Details	Cause: Equipment Failure   Pipeline (Any)   Produced Water   Released: 370 BBL   Recovered: 210 BBL   Lost: 160 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	No
Condensate Released (bbls) Details	Not answered.
Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Not answered.
Other Released Details	Not answered.
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	Not answered.

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QUESTIONS, Page 2

Action 412407

**QUESTIONS (continued)**

Operator: Permian Resources Operating, LLC 300 N. Marienfeld St Ste 1000 Midland, TX 79701	OGRID: 372165
	Action Number: 412407
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

**QUESTIONS**

<b>Nature and Volume of Release (continued)</b>	
Is this a gas only submission (i.e. only significant Mcf values reported)	No, according to supplied volumes this does not appear to be a "gas only" report.
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	Yes
Reasons why this would be considered a submission for a notification of a major release	From paragraph A. "Major release" determine using: (1) an unauthorized release of a volume, excluding gases, of 25 barrels or more.
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.	

**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	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	Not answered.

Per Paragraph (4) of Subsection B of 19.15.29.8 NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.

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.

I hereby agree and sign off to the above statement	Name: Montgomery Floyd Title: Environmental Manager Email: montgomery.floyd@permianres.com Date: 02/06/2024
----------------------------------------------------	----------------------------------------------------------------------------------------------------------------------



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QUESTIONS, Page 3

Action 412407

**QUESTIONS (continued)**

Operator: Permian Resources Operating, LLC 300 N. Marienfeld St Ste 1000 Midland, TX 79701	OGRID: 372165
	Action Number: 412407
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

**QUESTIONS****Site Characterization**

Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 51 and 75 (ft.)
What method was used to determine the depth to ground water	NM OSE iWaters Database Search
Did this release impact groundwater or surface water	No
<b>What is the minimum distance, between the closest lateral extents of the release and the following surface areas:</b>	
A continuously flowing watercourse or any other significant watercourse	Between 500 and 1000 (ft.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between 1 and 5 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Between 1 and 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Greater than 5 (mi.)
Any other fresh water well or spring	Greater than 5 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 1 and 5 (mi.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Zero feet, overlying, or within area
Categorize the risk of this well / site being in a karst geology	Medium
A 100-year floodplain	Between 500 and 1000 (ft.)
Did the release impact areas not on an exploration, development, production, or storage site	Yes

**Remediation Plan**

Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

Requesting a remediation plan approval with this submission	Yes
<i>Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.</i>	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No

**Soil Contamination Sampling:** (Provide the highest observable value for each, in milligrams per kilograms.)

Chloride (EPA 300.0 or SM4500 Cl B)	77600
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	37
GRO+DRO (EPA SW-846 Method 8015M)	25
BTEX (EPA SW-846 Method 8021B or 8260B)	19
Benzene (EPA SW-846 Method 8021B or 8260B)	0.1

Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.

On what estimated date will the remediation commence	08/30/2024
On what date will (or did) the final sampling or liner inspection occur	09/17/2024
On what date will (or was) the remediation complete(d)	11/07/2024
What is the estimated surface area (in square feet) that will be reclaimed	37515
What is the estimated volume (in cubic yards) that will be reclaimed	3442
What is the estimated surface area (in square feet) that will be remediated	13656
What is the estimated volume (in cubic yards) that will be remediated	2988

These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.

The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.

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QUESTIONS, Page 4

Action 412407

**QUESTIONS (continued)**

Operator: Permian Resources Operating, LLC 300 N. Marienfeld St Ste 1000 Midland, TX 79701	OGRID: 372165
	Action Number: 412407
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

**QUESTIONS**

<b>Remediation Plan (continued)</b>	
<i>Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.</i>	
<b>This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:</b>	
<i>(Select all answers below that apply.)</i>	
(Ex Situ) Excavation and <b>off-site</b> disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for <b>off-site</b> disposal	LEA LAND LANDFILL [FEEM0112342028]
<b>OR</b> which OCD approved well (API) will be used for <b>off-site</b> disposal	Not answered.
<b>OR</b> is the <b>off-site</b> disposal site, to be used, out-of-state	Not answered.
<b>OR</b> is the <b>off-site</b> disposal site, to be used, an NMED facility	Not answered.
(Ex Situ) Excavation and <b>on-site</b> remediation (i.e. On-Site Land Farms)	Not answered.
(In Situ) Soil Vapor Extraction	Not answered.
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	Not answered.
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	Not answered.
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	Not answered.
Ground Water Abatement pursuant to 19.15.30 NMAC	Not answered.
OTHER (Non-listed remedial process)	Not answered.
<i>Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.</i>	
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.	
I hereby agree and sign off to the above statement	Name: Matthew Taylor Title: Environmental Coordinator Email: <a href="mailto:matthew.taylor@permianres.com">matthew.taylor@permianres.com</a> Date: 12/17/2024
<i>The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.</i>	

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QUESTIONS, Page 5  
  
Action 412407

QUESTIONS (continued)

Operator:  Permian Resources Operating, LLC 300 N. Marienfeld St Ste 1000 Midland, TX 79701	OGRID:  372165
	Action Number:  412407
	Action Type:  [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Deferral Requests Only	
Only answer the questions in this group if seeking a deferral upon approval this submission. Each of the following items must be confirmed as part of any request for deferral of remediation.	
Requesting a deferral of the remediation closure due date with the approval of this submission	No

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QUESTIONS, Page 6

Action 412407

**QUESTIONS (continued)**

Operator: Permian Resources Operating, LLC 300 N. Marienfeld St Ste 1000 Midland, TX 79701	OGRID: 372165
	Action Number: 412407
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

**QUESTIONS**

Sampling Event Information	
Last sampling notification (C-141N) recorded	397959
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	11/08/2024
What was the (estimated) number of samples that were to be gathered	25
What was the sampling surface area in square feet	5000

**Remediation Closure Request**

*Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.*

Requesting a remediation closure approval with this submission	Yes
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
All areas reasonably needed for production or subsequent drilling operations have been stabilized, returned to the sites existing grade, and have a soil cover that prevents ponding of water, minimizing dust and erosion	Yes
What was the total surface area (in square feet) remediated	13656
What was the total volume (cubic yards) remediated	2988
All areas not reasonably needed for production or subsequent drilling operations have been reclaimed to contain a minimum of four feet of non-waste contain earthen material with concentrations less than 600 mg/kg chlorides, 100 mg/kg TPH, 50 mg/kg BTEX, and 10 mg/kg Benzene	Yes
What was the total surface area (in square feet) reclaimed	37515
What was the total volume (in cubic yards) reclaimed	3442
Summarize any additional remediation activities not included by answers (above)	Remediation is complete at the site.

*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 (in .pdf format) 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.*

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.

I hereby agree and sign off to the above statement	Name: Matthew Taylor Title: Environmental Coordinator Email: matthew.taylor@permianres.com Date: 12/17/2024
----------------------------------------------------	----------------------------------------------------------------------------------------------------------------------

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Action 412407

**QUESTIONS (continued)**

Operator: Permian Resources Operating, LLC 300 N. Marienfeld St Ste 1000 Midland, TX 79701	OGRID: 372165
	Action Number: 412407
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

**QUESTIONS**

<b>Reclamation Report</b>	
<i>Only answer the questions in this group if all reclamation steps have been completed.</i>	
Requesting a reclamation approval with this submission	Yes
What was the total reclamation surface area (in square feet) for this site	37515
What was the total volume of replacement material (in cubic yards) for this site	3442
<i>Per Paragraph (1) of Subsection D of 19.15.29.13 NMAC the reclamation must contain a minimum of four feet of non-waste containing, uncontaminated, earthen material with chloride concentrations less than 600 mg/kg as analyzed by EPA Method 300.0, or other test methods approved by the division. The soil cover must include a top layer, which is either the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater.</i>	
Is the soil top layer complete and is it suitable material to establish vegetation	Yes
On what (estimated) date will (or was) the reseeded commence(d)	11/21/2024
Summarize any additional reclamation activities not included by answers (above)	Site has been reseeded.
<i>The responsible party must attach information demonstrating they have complied with all applicable reclamation requirements and any conditions or directives of the OCD. This demonstration should be in the form of attachments (in .pdf format) including a scaled site map, any proposed reseeded plans or relevant field notes, photographs of reclaimed area, and a narrative of the reclamation activities. Refer to 19.15.29.13 NMAC.</i>	
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.	
I hereby agree and sign off to the above statement	Name: Matthew Taylor Title: Environmental Coordinator Email: <a href="mailto:matthew.taylor@permianres.com">matthew.taylor@permianres.com</a> Date: 12/17/2024



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QUESTIONS, Page 8  
  
Action 412407

QUESTIONS (continued)

Operator:  Permian Resources Operating, LLC 300 N. Marienfeld St Ste 1000 Midland, TX 79701	OGRID:  372165
	Action Number:  412407
	Action Type:  [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

<b>Revegetation Report</b>	
<i>Only answer the questions in this group if all surface restoration, reclamation and re-vegetation obligations have been satisfied.</i>	
Requesting a restoration complete approval with this submission	No
<i>Per Paragraph (4) of Subsection (D) of 19.15.29.13 NMAC for any major or minor release containing liquids, the responsible party must notify the division when reclamation and re-vegetation are complete.</i>	

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CONDITIONS

Action 412407

CONDITIONS

Operator: Permian Resources Operating, LLC 300 N. Marienfeld St Ste 1000 Midland, TX 79701	OGRID: 372165
	Action Number: 412407
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

CONDITIONS

Created By	Condition	Condition Date
scwells	Remediation closure and reclamation approved.	12/31/2024