



Incident Number: nAPP2327744458

Release Assessment and Closure

Piglet State SWD #1

Section 21, Township 17 South, Range 28 East

API: 30-015-40820

County: Eddy

Vertex File Number: 23E-05383

Prepared for:

Silverback Exploration

Prepared by:

Vertex Resource Services Inc.

Date:

June 2024

Silverback Exploration
Piglet State SWD #1

Release Assessment and Closure
June 2024

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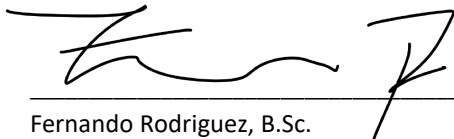
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Silverback Exploration
108 South 4th Street
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New Mexico Oil Conservation Division – District 2 – Artesia
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Artesia, New Mexico 88210

Prepared by:

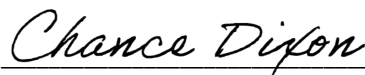
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June 17, 2024

Date



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June 17, 2024

Date

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1.0 Introduction

Silverback Exploration (Silverback) retained Vertex Resource Services Inc. (Vertex) to conduct a Release Assessment and Closure for a produced water release that occurred on October 2, 2023, at Piglet State SWD #1 API 30-015-40820 (hereafter referred to as the “site”). Silverback submitted an initial C-141 Release Notification (Appendix A) to New Mexico Oil Conservation Division (NMOCD) District 2 on October 4, 2023. Incident ID number nAPP2327744458 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 deferred until such time as all oil and gas activities are terminated and the site is reclaimed as per NMAC 19.15.29.13.

2.0 Incident Description

The release occurred on October 2, 2023, due to a lightning strike on one of the fiberglass water tanks and causing a fire. Immediate notice was given on October 2, 2023, and involved the release of approximately 1,200 barrels (bbl.) of produced water into the lined containment and on the constructed caliche pad. Approximately 1,000 bbl. of standing fluids were recovered 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 12.8 miles East of Artesia, New Mexico. The legal location for the site is Section 21, Township 17 South and Range 28 East in Eddy County, New Mexico. The release area is located on State property. An aerial photograph and site schematic are presented on Figure 1.

The location is typical of oil and gas exploration and production sites in the Permian Basin and is currently used for oil and gas production and storage. The following sections specifically describe the release area surrounding the tank battery facility on the constructed pad.

The Geological Map of New Mexico (New Mexico Bureau of Geology and Mineral Resources, 2023) indicates the site’s surface geology primarily comprises Qoa – Older alluvial deposits (middle to lower Pleistocene), and is characterized as Simona sandy loam. Predominant soil texture on the site is fine sandy loam. Soils can be classified as well-drained with a moderately slow runoff class. There is low potential for karst geology at the site (United States Department of the Interior, Bureau of Land Management, 2018).

The surrounding landscape is associated with upland plains, and tops of low ridges and mesas with elevations ranging between 2,842 and 4,500 feet. The climate is semiarid with average annual precipitation ranging between 8 and 13 inches. Using information from the United States Department of Agriculture, the historical plant community was determined to be a black grama dominated grassland sparsely dotted with shrubs. Fire suppression, and the loss of

grass cover due to overgrazing and drought may facilitate the increase and encroachment of shrubs (United States Department of Agriculture, Natural Resources Conservation Service, 2023). Limited to no vegetation is allowed to grow on the compacted production pad, right-of-way and access road.

4.0 Closure Criteria Determination

The depth to groundwater was determined by drilling a borehole permitted by the New Mexico Office of the State Engineer (NMOSE) within a 0.5-mile radius of the site. The borehole was advanced to a depth of 55 feet. The borehole was left to recharge as per the requirements on the WR-07 Application for Permit to Drill a Well with No Water Rights, and an interface probe was utilized to determine whether groundwater was present at the conclusion of the 72-hour recharge period. No water was found to be present at that time. The borehole was plugged and abandoned according to the WD-08 permit, Well Plugging Plan of Operations, filed with NMOSE. Documentation related to the exploratory borehole is included in Appendix F.

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 Red Lake located approximately 1.3 miles northeast of the site (United States Fish and Wildlife Service, 2023).

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

Silverback Exploration
Piglet State SWD #1

Release Assessment and Closure
June 2024

Table 1. Closure Criteria Determination			
Site Specific Conditions		Value	Unit
1	Depth to Groundwater (nearest reference)	>55	feet
	Distance between release and nearest DTGW reference	680	feet
		0.12	miles
	Date of nearest DTGW reference measurement	January 22, 2024	
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	873	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	6,844	feet
4	Within 300 feet from an occupied residence, school, hospital, institution or church	3,330	feet
5	i) Within 500 feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or	679	feet
	ii) Within 1000 feet of any fresh water well or spring		feet
6	Within incorporated municipal boundaries or within a defined municipal fresh water field covered under a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978 as amended, unless the municipality specifically approves	No	(Y/N)
7	Within 300 feet of a wetland	2,819	feet
8	Within the area overlying a subsurface mine	No	(Y/N)
	Distance between release and nearest registered mine	9,346	feet
9	Within an unstable area (Karst Map)	Low	Critical High Medium Low
	Distance between release and nearest unstable area	7,337	feet
10	Within a 100-year Floodplain	500	year
	Distance between release and nearest FEMA Zone A (100-year Floodplain)	4,791	feet
11	Soil Type	SA: Simona sandy loam	
12	Ecological Classification	R070BD002NM — Shallow Sandy	
13	Geology	Qoa- Older alluvial deposits	
	NMAC 19.15.29.12 E (Table 1) Closure Criteria	51-100'	<50' 51-100' >100'

The closure criteria determined for the site are associated with the following constituent concentration limits as presented in Table 2.

Table 2. Closure Criteria for Soils Impacted by a Release		
Minimum depth below any point within the horizontal boundary of the release to groundwater less than 10,000 mg/l TDS	Constituent	Limit
51 feet - 100 feet	Chloride	10,000 mg/kg
	TPH (GRO+DRO+MRO)	2,500 mg/kg
	GRO+DRO	1,000 mg/kg
	BTEX	50 mg/kg
	Benzene	10 mg/kg

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

5.0 Remedial Actions Taken

An initial site inspection of the release area was completed on October 9, 2023, which identified the area of the release specified in the initial C-141 Report, estimated the approximate volume of the release and white lined the area required for the One Call request. The impacted area was determined to be approximately 323 feet long and 320 feet wide; the total affected area is 72,864 square feet. Site characterization activities were conducted by Vertex between October 12 and October 18, 2023. A total of 14 sampling boreholes were established to obtain both horizontal and vertical delineation. From these boreholes, a total of 31 samples were collected at several depths and submitted to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico. The Daily Field Reports (DFRs) and site photographs associated with the site inspection are included in Appendix C. Characterization laboratory results are presented in Table 3.

Remediation efforts began on October 3, 2023, and were finalized on May 23, 2024, for areas that exceeded the selected closure criteria. During this period, work crews deconstructed standing equipment and other infrastructure affected by the fire. The fiberglass tank debris that resulted from the fire were also removed and hauled off to a disposal location. Vertex personnel supervised the removal of impacted soils. Field screening was completed on a total of 68 sample points and consisted of analysis using a Photo Ionization Detector (volatile hydrocarbons), Dextsil Petroflag using EPA SW-846 Method 9074 (extractable hydrocarbons) and Silver Nitrate titrations (chlorides). Field screening results were used to identify areas requiring further remediation. Using information from the characterization, exceedances were identified to be on the northeast section of the pad. These materials were removed to a depth of 0.5 feet bgs. Impacted soil was transported by a licensed waste hauler and disposed of at an approved waste management facility. The final DFR with photographs of the remediated site prior to backfill is included in Appendix C.

Notification that confirmatory samples were being collected was provided to the NMOCD on October 31, 2023, and is included in Appendix D. Confirmatory composite samples were collected from the surface of the excavation in 200 square foot increments. A total of 68 confirmation samples (60 base samples and eight wall samples) were collected

for laboratory analysis following NMOCD soil sampling procedures. Samples were submitted to Hall Environmental Analysis Laboratory under chain-of-custody protocols and analyzed for BTEX (EPA Method 8021B), total petroleum hydrocarbons (GRO, DRO, MRO – EPA Method 8015D) and total chlorides (EPA Method 300.0). Laboratory results are presented in Table 4, and the laboratory data reports are included in Appendix E. All confirmatory samples collected and analyzed were below closure criteria for the site.

5.1 NMOCD Response to Closure

On April 10, 2024, the C-141 application for a remediation closure report was denied. The operator was emailed details stating: "Please continue to laterally delineate/excavate sidewall sample locations until they meet closure criteria standards. Sidewall/edge samples should be delineated/excavated to 600 mg/kg for chlorides and 100 mg/kg for TPH to define the edge of the release. All sidewall samples should be taken from the sidewall of the excavation." On May 15, 2024, Vertex and Silverback held a meeting with the NMOCD to discuss the next steps towards achieving incident closure.

5.1.1 Corrective Actions

On May 23, 2024, in response to the NMOCD closure report denial and request to continue to laterally delineate the sidewall sample locations until they meet closure criteria standards, a total of 8 sampling boreholes were established to complete horizontal delineation. From these boreholes, a total of 16 samples were collected at depths of 0 to 2 feet and submitted to Cardinal Laboratories in Hobbs, New Mexico. The sampling locations of these points were established surrounding the initial impacted area to ensure comprehensive coverage and to define the edge of the release. The Daily Field Report (DFR) and site photographs associated with this sampling event are included in Appendix C. The laboratory results are also included in Table 4.

6.0 Closure Request

Vertex recommends no additional remedial actions at the site. Laboratory analyses of confirmation samples collected at the site show final confirmatory values below NMOCD closure criteria for areas where depth to groundwater is between 51 to 100 feet, as presented in Table 2. There are no anticipated risks to human, ecological, or hydrological receptors at this site. The excavation was backfilled with non-waste-containing, uncontaminated, earthen material, sourced locally, and placed to meet the site's existing grade to prevent water ponding and erosion. Additionally, a 2-foot earthen berm was placed around the perimeter of the pad to eliminate the possibility of surface runoff into off-pad areas outside the lease boundary. The reclamation requirements of 19.15.29.13 NMAC will be completed when the site is decommissioned, and all water-transferring activities are terminated.

Vertex requests that this incident (nAPP2327744458) be closed as all closure requirements set forth in Subsection E of 19.15.29.12 NMAC have been met. Silverback certifies that all information in this report and the appendices are correct and that they have complied with all applicable closure requirements and conditions specified in Division rules and directives to meet NMOCD requirements to obtain closure on the site.

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

7.0 References

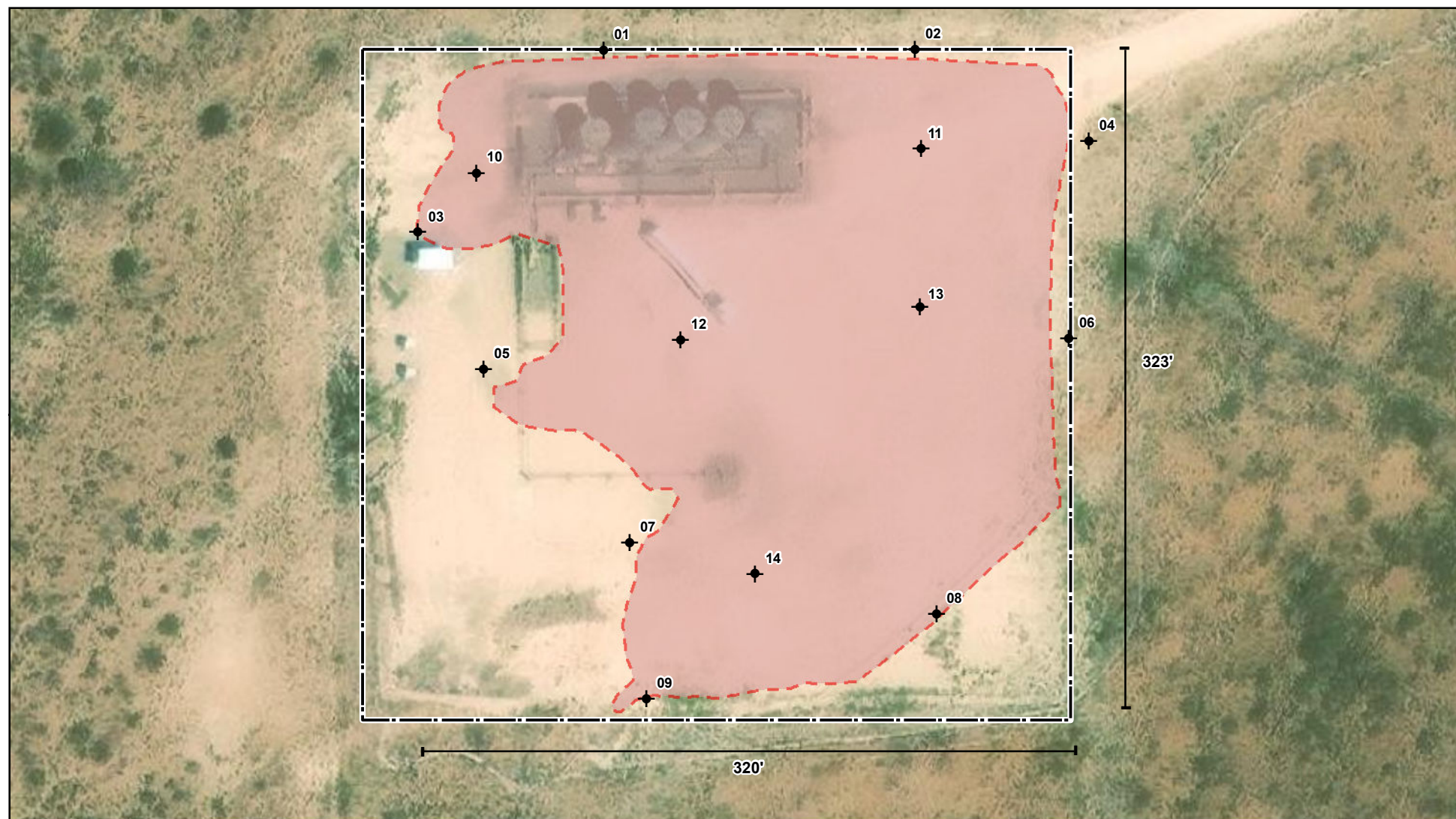
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8.0 Limitations

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

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

FIGURES



- ◆ Borehole (Prefixed by "BH23-")
 Approximate Release Area (~72,864 sq. ft.)
 Approximate Lease Boundary



0 25 50 ft
 Map Center:
 Lat/Long: 32.818941, -104.178801

NAD 1983 UTM Zone 13N
 Date: Nov 07/23



Characterization Sampling Site Schematic Piglet State SWD #1

FIGURE:

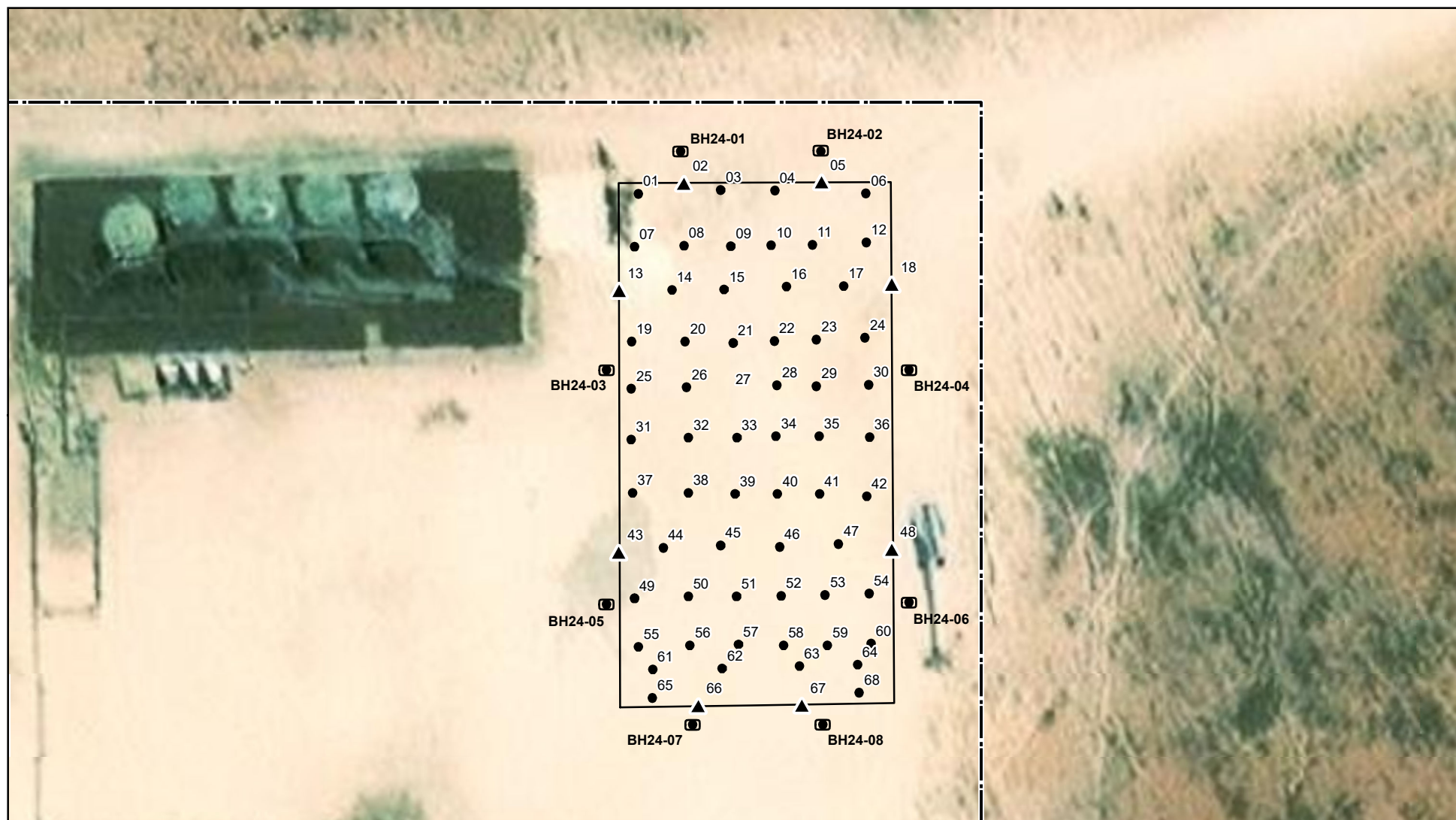
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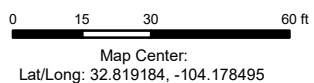
Geospatial data presented in this figure may be derived from external sources and Vertex does not assume any liability for inaccuracies. This figure is intended for reference use only and is not certified for legal, survey, or engineering purposes.

Note: Georeferenced image from Esri, 2022. Approximate lease boundary from imagery by Vertex Professional Services Ltd. (Vertex), 2023. Site features from GPS by Vertex, 2023.

VERSATILITY. EXPERTISE.



- Base Sample (Excavated) (Prefixed by "BS23-")
- ▲ Wall Sample (Excavated) (Prefixed by "WS23-")
- ◻ Borehole Sample (Excavated) (Prefixed by "BH24-")
- ◻ Approximate Lease Boundary
- ◻ Sampling Area



NAD 1983 UTM Zone 13N
Date: June 2024



Confirmatory Sampling Site Schematic Piglet State SWD #1 Battery

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, 2022. Approximate lease boundary from imagery by Vertex Professional Services Ltd. (Vertex), 2023. Site features from GPS by Vertex, 2023.

VERSATILITY. EXPERTISE.

TABLES

Client Name: Silverback Exploration
 Site Name: Piglet State SWD #1
 NMOCD Tracking #: nAPP2327744458
 Project #: 23E-05383
 Lab Reports: 2310833 and 2310A67

Table 3. Initial Characterization Field Screen and Laboratory Results

Table 3. Initial Characterization Field Screen and Laboratory Results													
Sample Description			Field Screening			Petroleum Hydrocarbons							Inorganic
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroFlag)	Chloride Concentration	Volatile		Extractable					
						Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	
			(ppm)	(ppm)	(ppm)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	
Depth to Groundwater: 51-100 feet bgs													
BH23-01	0	October 13, 2023	ND	61	70	ND	ND	ND	ND	ND	ND	ND	ND
BH23-01	2	October 13, 2023	ND	58	108	ND	ND	ND	ND	ND	ND	ND	ND
BH23-02	0	October 13, 2023	ND	89	63	ND	ND	ND	ND	ND	ND	ND	ND
BH23-02	2	October 13, 2023	ND	76	93	ND	ND	ND	ND	ND	ND	ND	ND
BH23-03	0	October 13, 2023	ND	74	75	ND	ND	ND	ND	ND	ND	ND	ND
BH23-03	2	October 13, 2023	ND	81	93	ND	ND	ND	ND	ND	ND	ND	ND
BH23-04	0	October 12, 2023	ND	85	14	ND	ND	ND	ND	ND	ND	ND	ND
BH23-04	2	October 12, 2023	ND	64	266	ND	ND	ND	ND	ND	ND	ND	79
BH23-05	0	October 12, 2023	ND	68	191	ND	ND	ND	ND	ND	ND	ND	ND
BH23-05	2	October 12, 2023	ND	-	216	ND	ND	ND	ND	ND	ND	ND	ND
BH23-06	0	October 12, 2023	ND	66	25	ND	ND	ND	ND	ND	ND	ND	ND
BH23-06	2	October 12, 2023	ND	-	83	ND	ND	ND	ND	ND	ND	ND	ND
BH23-07	0	October 12, 2023	ND	90	554	ND	ND	ND	ND	ND	ND	ND	290
BH23-07	2	October 12, 2023	ND	81	463	ND	ND	ND	ND	ND	ND	ND	280
BH23-08	0	October 12, 2023	ND	56	46	ND	ND	ND	ND	ND	ND	ND	ND
BH23-08	2	October 12, 2023	ND	-	69	ND	ND	ND	ND	ND	ND	ND	ND
BH23-09	0	October 12, 2023	ND	80	116	ND	ND	ND	ND	ND	ND	ND	ND
BH23-09	2	October 12, 2023	ND	-	145	ND	ND	ND	ND	ND	ND	ND	81
BH23-10	0	October 16, 2023	5	357	831	ND	ND	ND	ND	ND	ND	ND	540
BH23-10	1	October 16, 2023	ND	99	305	ND	ND	ND	ND	ND	ND	ND	ND
BH23-11	0	October 16, 2023	135	1,830	13,958	ND	ND	ND	600	500	600	1100	18,000
BH23-11	1	October 16, 2023	ND	-	453	ND	ND	ND	ND	ND	ND	ND	ND
BH23-11	2	October 16, 2023	ND	69	323	ND	ND	ND	ND	ND	ND	ND	ND
BH23-12	0	October 16, 2023	209	1,640	4,064	ND	ND	ND	110	100	110	210	3,400
BH23-12	1	October 16, 2023	ND	154	528	ND	ND	ND	12	ND	12	12	160
BH23-12	2	October 18, 2023	ND	82	46	ND	ND	ND	ND	ND	ND	ND	68
BH23-13	0	October 16, 2023	101	1,370	14,258	ND	ND	ND	240	260	240	500	16,000
BH23-13	1	October 16, 2023	ND	82	665	ND	ND	ND	ND	ND	ND	ND	400
BH23-13	2	October 18, 2023	ND	86	266	ND	ND	ND	ND	ND	ND	ND	140
BH23-14	0	October 16, 2023	5	185	5,441	ND	ND	ND	ND	ND	ND	ND	4,800
BH23-14	1	October 16, 2023	ND	115	2,193	ND	ND	ND	ND	ND	ND	ND	1,900
BH23-14	2	October 18, 2023	ND	75	392	ND	ND	ND	ND	ND	ND	ND	190

"ND" Not Detected at the Reporting Limit

"-" indicates not analyzed/assessed

Bold and grey shaded indicates exceedance outside of NMOCD Closure Criteria (on-pad)

Client Name: Silverback Exploration

Site Name: Piglet State SWD #1

NMOCD Tracking #: nAPP2327744458

Project #: 23E-05383

Lab Report(sX): 2211351, 2311454, 2311549, and H242938

Table 4. Confirmatory Sample Field Screen and Laboratory Results

Sample Description			Field Screening			Petroleum Hydrocarbons							Inorganic
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroFlag)	Chloride Concentration	Volatile		Extractable					
						Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	
			(ppm)	(ppm)	(ppm)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	
Depth to Groundwater: 51-100 feet bgs													
BS23-01	0.5	November 6, 2023	ND	1,076	7,295	ND	ND	ND	240	280	240	520	5,700
WS23-02	0.5	November 6, 2023	ND	1,464	3,536	ND	ND	ND	540	520	540	1,060	2,300
BS23-03	0.5	November 6, 2023	ND	1,846	5,383	ND	ND	ND	720	780	720	1,500	4,500
BS23-04	0.5	November 6, 2023	ND	1,253	8,659	ND	ND	ND	410	530	410	940	4,300
WS23-05	0.5	November 6, 2023	ND	1,223	1,317	ND	ND	ND	540	620	540	1,160	850
BS23-06	0.5	November 6, 2023	ND	1,197	913	ND	ND	ND	220	150	220	370	440
BS23-07	0.5	November 6, 2023	ND	461	8,082	ND	ND	ND	52	64	52	116	2,100
BS23-08	0.5	November 6, 2023	ND	1,559	7,284	ND	ND	ND	260	380	260	640	7,100
BS23-09	0.5	November 6, 2023	ND	565	8,655	ND	ND	ND	88	97	88	185	2,600
BS23-10	0.5	November 6, 2023	ND	1,493	8,752	ND	ND	ND	310	350	310	660	5,900
BS23-11	0.5	November 6, 2023	ND	1,049	7,673	ND	ND	ND	130	150	130	280	6,300
BS23-12	0.5	November 6, 2023	ND	574	9,492	ND	ND	ND	78	89	78	167	2,900
WS23-13	0.5	November 6, 2023	ND	1,511	3,974	ND	ND	ND	380	460	380	840	2,700
BS23-14	0.5	November 6, 2023	ND	1,499	3,282	ND	ND	ND	380	440	380	820	2,300
BS23-15	0.5	November 6, 2023	ND	810	8,333	ND	ND	ND	220	270	220	490	2,800
BS23-16	0.5	November 6, 2023	ND	1,255	8,011	ND	ND	ND	210	260	210	470	5,100
BS23-17	0.5	November 6, 2023	ND	1,278	1,306	ND	ND	ND	440	530	440	970	820
WS23-18	0.5	November 6, 2023	ND	1,373	1,561	ND	ND	ND	340	240	340	580	780
BS23-19	0.5	November 6, 2023	ND	584	8,388	ND	ND	ND	77	100	77	177	4,200
BS23-20	0.5	November 6, 2023	ND	892	7,821	ND	ND	ND	130	140	130	270	5,300
BS23-21	0.5	November 6, 2023	ND	1,044	8,554	ND	ND	ND	140	150	140	290	8,300
BS23-22	0.5	November 6, 2023	ND	1,396	5,926	ND	ND	ND	210	240	210	450	4,600
BS23-23	0.5	November 6, 2023	ND	1,293	4,771	ND	ND	ND	240	300	240	540	3,900
BS23-24	0.5	November 6, 2023	ND	954	6,604	ND	ND	ND	110	130	110	240	6,000
BS23-25	0.5	November 7, 2023	ND	538	2,836	ND	ND	ND	180	170	180	350	1,900
BS23-26	0.5	November 7, 2023	ND	426	1,675	ND	ND	ND	110	110	110	220	1,200
BS23-27	0.5	November 7, 2023	ND	555	2,434	ND	ND	ND	150	150	150	300	1,800
BS23-28	0.5	November 7, 2023	ND	578	2,750	ND	ND	ND	180	180	180	360	2,300
BS23-29	0.5	November 7, 2023	ND	527	2,108	ND	ND	ND	120	120	120	240	1,500
BS23-30	0.5	November 7, 2023	ND	720	3,244	ND	ND	ND	200	190	200	390	2,200
BS23-31	0.5	November 7, 2023	ND	569	2,232	ND	ND	ND	140	140	140	280	1,500
BS23-32	0.5	November 7, 2023	ND	414	2,247	ND	ND	ND	100	100	100	200	1,600
BS23-33	0.5	November 7, 2023	ND	772	3,191	ND	ND	ND	250	250	250	500	1,900
BS23-34	0.5	November 7, 2023	ND	643	2,489	ND	ND	ND	190	190	190	380	2,300
BS23-35	0.5	November 7, 2023	ND	671	3,061	ND	ND	ND	160	160	160	320	1,900
BS23-36	0.5	November 7, 2023	ND	725	2,696	ND	ND	ND	120	140	120	260	2,200
BS23-37	0.5	November 7, 2023	ND	484	2,470	ND	ND	ND	110	130	110	240	1,700
BS23-38	0.5	November 7, 2023	ND	559	2,582	ND	ND	ND	100	120	100	220	2,100
BS23-39	0.5	November 7, 2023	ND	623	2,423	ND	ND	ND	110	150	110	260	1,700
BS23-40	0.5	November 7, 2023	ND	1,066	4,578	ND	ND	ND	200	260	200	460	3,000
BS23-41	0.5	November 7, 2023	ND	526	2,612	ND	ND	ND	88	120	88	208	1,700
BS23-42	0.5	November 7, 2023	ND	863	3,589	ND	ND	ND	210	260	210	470	3,200
WS23-43	0.5	November 7, 2023	ND	1,085	2,771	ND	ND	ND	170	220	170	390	1,500
BS23-44	0.5	November 7, 2023	ND	696	2,573	ND	ND	ND	200	240	200	440	2,200
BS23-45	0.5	November 7, 2023	ND	850	2,789	ND	ND	ND	170	210	170	380	2,300
BS23-46	0.5	November 7, 2023	ND	889	2,629	ND	ND	ND	180	230	180	410	2,200
BS23-47	0.5	November 7, 2023	ND	646	2,413	ND	ND	ND	140	180	140	320	2,100
WS23-48	0.5	November 7, 2023	ND	692	2,470	ND	ND	ND	130	150	130	280	1,900
BS23-49	0.5	November 8, 2023	ND	580	2,792	ND	ND	ND	100	120	100	220	2,100
BS23-50	0.5	November 8, 2023	ND	648	2,518	ND	ND	ND	120	150	120	270	2,200

Table 4. Confirmatory Sample Field Screen and Laboratory Results

Sample Description			Field Screening			Petroleum Hydrocarbons							Inorganic
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroFlag)	Chloride Concentration	Volatile		Extractable					
						Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	
			(ppm)	(ppm)	(ppm)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Depth to Groundwater: 51-100 feet bgs													
BS23-51	0.5	November 8, 2023	ND	621	2,423	ND	ND	ND	100	140	100	240	1,900
BS23-52	0.5	November 8, 2023	ND	699	2,596	ND	ND	ND	130	170	130	300	1,900
BS23-53	0.5	November 8, 2023	ND	560	2,567	ND	ND	ND	130	170	130	300	1,800
BS23-54	0.5	November 8, 2023	ND	419	2,244	ND	ND	ND	89	130	89	219	1,700
BS23-55	0.5	November 8, 2023	ND	891	2,678	ND	ND	ND	190	220	190	410	2,300
BS23-56	0.5	November 8, 2023	ND	778	3,241	ND	ND	ND	160	210	160	370	2,100
BS23-57	0.5	November 8, 2023	ND	853	2,876	ND	ND	ND	280	320	280	600	2,300
BS23-58	0.5	November 8, 2023	ND	529	2,110	ND	ND	ND	100	140	100	240	1,600
BS23-59	0.5	November 8, 2023	ND	869	3,602	ND	ND	ND	170	200	170	370	3,000
BS23-60	0.5	November 8, 2023	ND	428	1,682	ND	ND	ND	82	110	82	192	1,200
BS23-61	0.5	November 8, 2023	ND	1,089	2,765	ND	ND	ND	190	220	190	410	2,100
BS23-62	0.5	November 8, 2023	ND	488	2,457	ND	ND	ND	75	100	75	175	1,900
BS23-63	0.5	November 8, 2023	ND	728	2,678	ND	ND	ND	100	120	100	220	2,200
BS23-64	0.5	November 8, 2023	ND	560	2,404	ND	ND	ND	97	120	97	217	1,800
BS23-65	0.5	November 8, 2023	ND	1,067	4,608	ND	ND	ND	210	250	210	460	3,600
WS23-66	0.5	November 8, 2023	ND	570	2,221	ND	ND	ND	90	110	90	200	1,600
WS23-67	0.5	November 8, 2023	ND	648	2,472	ND	ND	ND	140	170	140	310	2,200
BH24-01	0	May 23, 2024	ND	-	486	ND	ND	ND	ND	ND	ND	ND	160
BH24-01	2	May 23, 2024	ND	-	96	ND	ND	ND	ND	ND	ND	ND	64
BH24-02	0	May 23, 2024	ND	-	196	ND	ND	ND	ND	ND	ND	ND	96
BH24-02	2	May 23, 2024	ND	-	158	ND	ND	ND	ND	ND	ND	ND	80
BH24-03	0	May 23, 2024	ND	-	412	ND	ND	ND	ND	ND	ND	ND	32
BH24-03	2	May 23, 2024	ND	-	427	ND	ND	ND	ND	ND	ND	ND	32
BH24-04	0	May 23, 2024	ND	-	456	ND	ND	ND	ND	ND	ND	ND	32
BH24-04	2	May 23, 2024	ND	-	124	ND	ND	ND	ND	ND	ND	ND	96
BH24-05	0	May 23, 2024	ND	-	56	ND	ND	ND	ND	ND	ND	ND	32
BH24-05	2	May 23, 2024	ND	-	138	ND	ND	ND	ND	ND	ND	ND	80
BH24-06	0	May 23, 2024	ND	-	431	ND	ND	ND	ND	ND	ND	ND	80
BH24-06	2	May 23, 2024	ND	-	272	ND	ND	ND	ND	ND	ND	ND	128
BH24-07	0	May 23, 2024	ND	-	80	ND	ND	ND	ND	ND	ND	ND	80
BH24-07	2	May 23, 2024	ND	-	95	ND	ND	ND	ND	ND	ND	ND	64
BH24-08	0	May 23, 2024	ND	-	37	ND	ND	ND	ND	ND	ND	ND	80
BH24-08	2	May 23, 2024	ND	-	51	ND	ND	ND	ND	ND	ND	ND	32

"ND" Not Detected at the Reporting Limit

"- " Indicates not analyzed/assessed

Bold and grey shaded indicates exceedance outside of NMOCD Closure Criteria (on-pad)

APPENDIX A - NMOCD C-141 Report

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

State of New Mexico
Energy Minerals and Natural
Resources Department

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

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

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party	OGRID
Contact Name	Contact Telephone
Contact email	Incident # (assigned by OCD)
Contact mailing address	

Location of Release Source

Latitude _____ Longitude _____
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Site Type
Date Release Discovered	API# (if applicable)

Unit Letter	Section	Township	Range	County

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☐ Private (Name: _____)

Nature and Volume of Release

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

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

Cause of Release

Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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

Initial Response

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

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

APPENDIX B – Closure Criteria Research Documentation



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

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

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

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
RA 12307 POD1	RA	ED		4	2	2	14	17S	28E	580495	3633981	4391	140	58	82
RA 12456 POD1	RA	ED		1	4	4	24	17S	27E	572348	3630969	4552	220	92	128

Average Depth to Water: **75 feet**

Minimum Depth: **58 feet**

Maximum Depth: **92 feet**

Record Count: 2

UTMNAD83 Radius Search (in meters):

Easting (X): 576869

Northing (Y): 3631504

Radius: 5000

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.

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Page 1 of 1

WATER COLUMN/ AVERAGE
DEPTH TO WATER

Piglet State SWD #1

Closest USGS well (324855104093101) location: 1.17mi SE

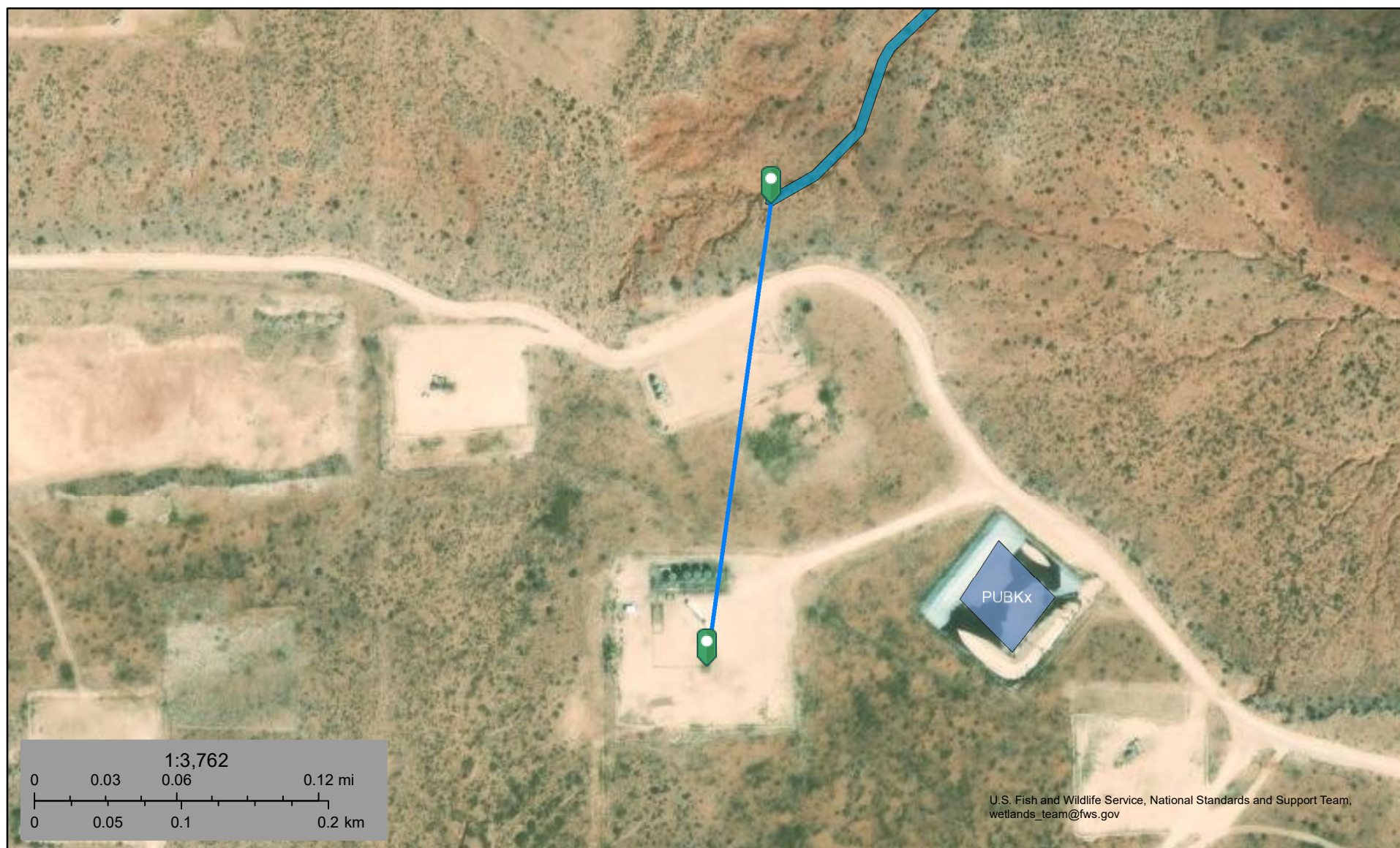
Legend

-  Circle Measure
-  Feature 3





Piglet State SWD #1 Watercourse



October 3, 2023

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

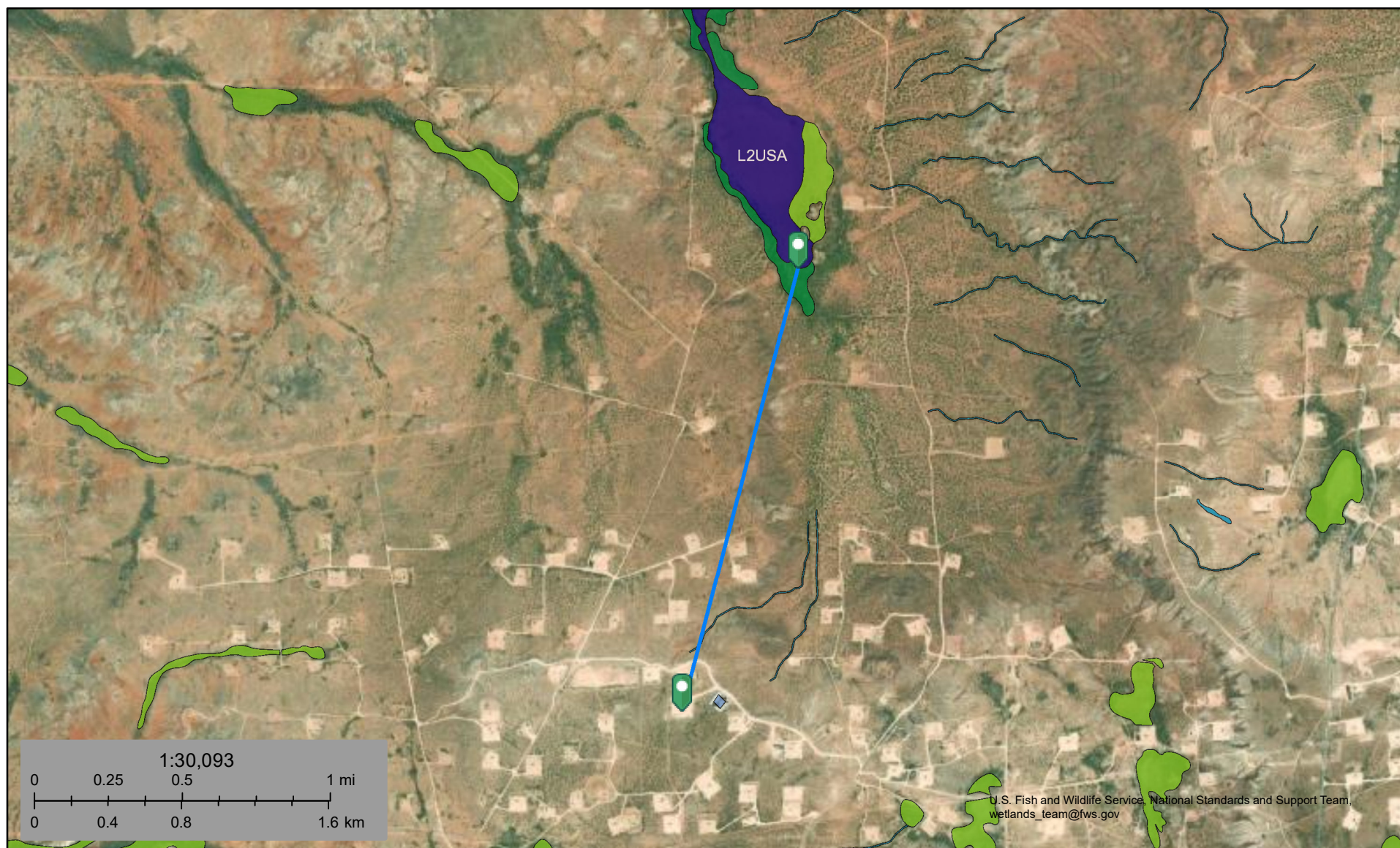
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

- 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.



Piglet State SWD #1 Lake



October 3, 2023

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

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



- Lake
- Other
- Riverine

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Piglet State SWD #1

Closest Residence: 0.63mi E

Legend

-  Piglet State SWD #1
-  Residence

Piglet State SWD #1

Residence

Google Earth

1000 ft





New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(acre ft per annum)																			
WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Well Tag	Code	Grant	Source	q 64	q 16	q 4	Sec	Tws	Rng	X	Y	Distance
RA 12030	RA	MON	0	OXY USA WTP LP	ED	RA 12030 POD15					4	3	2	21	17S	28E	577009	3631656	207
					ED	RA 12030 POD18					2	3	4	21	17S	28E	576906	3631135	370
					ED	RA 12030 POD13					1	3	2	21	17S	28E	576811	3631969	468
					ED	RA 12030 POD20					3	4	1	21	17S	28E	576382	3631725	535
					ED	RA 12030 POD14					4	4	2	21	17S	28E	577375	3631748	562
					ED	RA 12030 POD46					2	4	3	21	17S	28E	576496	3631083	562
					ED	RA 12030 POD17					2	4	4	21	17S	28E	577327	3631151	578
					ED	RA 12030 POD21					2	1	3	21	17S	28E	576271	3631506	597
					ED	RA 12030 POD43					3	3	4	21	17S	28E	576760	3630857	655
					ED	RA 12030 POD44					3	4	4	21	17S	28E	577156	3630844	718
					ED	RA 12030 POD16					3	1	3	22	17S	28E	577573	3631310	730
					ED	RA 12030 POD11					3	2	1	21	17S	28E	576420	3632135	774
					ED	RA 12030 POD12					2	1	2	21	17S	28E	577035	3632272	786
					ED	RA 12030 POD45					4	4	4	21	17S	28E	577441	3630902	830
					ED	RA 12030 POD35					3	4	3	21	17S	28E	576391	3630814	838
					ED	RA 12030 POD22					1	1	3	21	17S	28E	575988	3631461	881
					ED	RA 12030 POD10					1	3	1	21	17S	28E	576042	3631898	915
					ED	RA 12030 POD40					3	1	2	28	17S	28E	576799	3630524	981

(R=POD has been replaced



















and no longer serves this file, (quarters are 1=NW 2=NE 3=SW 4=SE)

C=the file is closed)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(R=POD has been replaced
and no longer serves this file, (quarters are 1=NW 2=NE 3=SW 4=SE)
C=the file is closed) (quarters are smallest to largest) (NAD83 UTM in meters)

(acre ft per annum)					C=the file is closed)					(quarters are smallest to largest)					(NAD83 UTM in meters)						
WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Well Tag	Code	Grant	Source	q 64	q 16	q 4	Sec	Tws	Rng	X	Y	Distance		
					ED	RA 12030 POD8					3	3	4	16	17S	28E	576724	3632486		992	
					ED	RA 12030 POD42						3	2	2	28	17S	28E	577163	3630555		993
					ED	RA 12030 POD6						3	1	1	21	17S	28E	576009	3632172		1088
					ED	RA 12030 POD36						3	2	1	28	17S	28E	576409	3630515		1089
					ED	RA 12030 POD9						2	2	4	20	17S	28E	575715	3631468		1153
					ED	RA 12030 POD23						2	4	4	20	17S	28E	575733	3631163		1185
					ED	RA 12030 POD31						1	1	1	28	17S	28E	576008	3630651		1211
					ED	RA 12030 POD25						4	4	4	20	17S	28E	575808	3630877		1231
					ED	RA 12030 POD41						1	4	2	28	17S	28E	577142	3630238		1295
					ED	RA 12030 POD5						1	4	2	20	17S	28E	575574	3631870		1345
RA 08230	RA	STK	1.42	BOGLE FARMS	ED	RA 08230								22	17S	28E	578281	3631638*		1418	
RA 12030	RA	MON	0	OXY USA WTP LP	ED	RA 12030 POD39					3	3	2	28	17S	28E	576764	3630081		1426	
					ED	RA 12030 POD37					3	4	1	28	17S	28E	576381	3630112		1474	
					ED	RA 12030 POD7					4	4	4	17	17S	28E	575842	3632583		1489	
					ED	RA 12030 POD4					2	1	4	20	17S	28E	575375	3631480		1494	
					ED	RA 12030 POD32					4	2	2	29	17S	28E	575869	3630391		1495	
					ED	RA 12030 POD24					4	3	4	20	17S	28E	575433	3630960		1534	
					ED	RA 12030 POD28					3	2	2	29	17S	28E	575616	3630503		1603	

*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.

Record Count: 36

UTMNAD83 Radius Search (in meters):

Easting (X): 576869 **Northing (Y):** 3631504 **Radius:** 1610

Sorted by: Distance



Piglet State SWD #1 Wetland



October 3, 2023

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.

Piglet State SWD #1 Mine

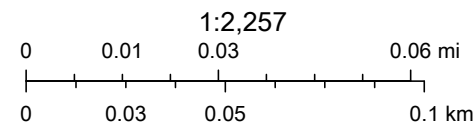


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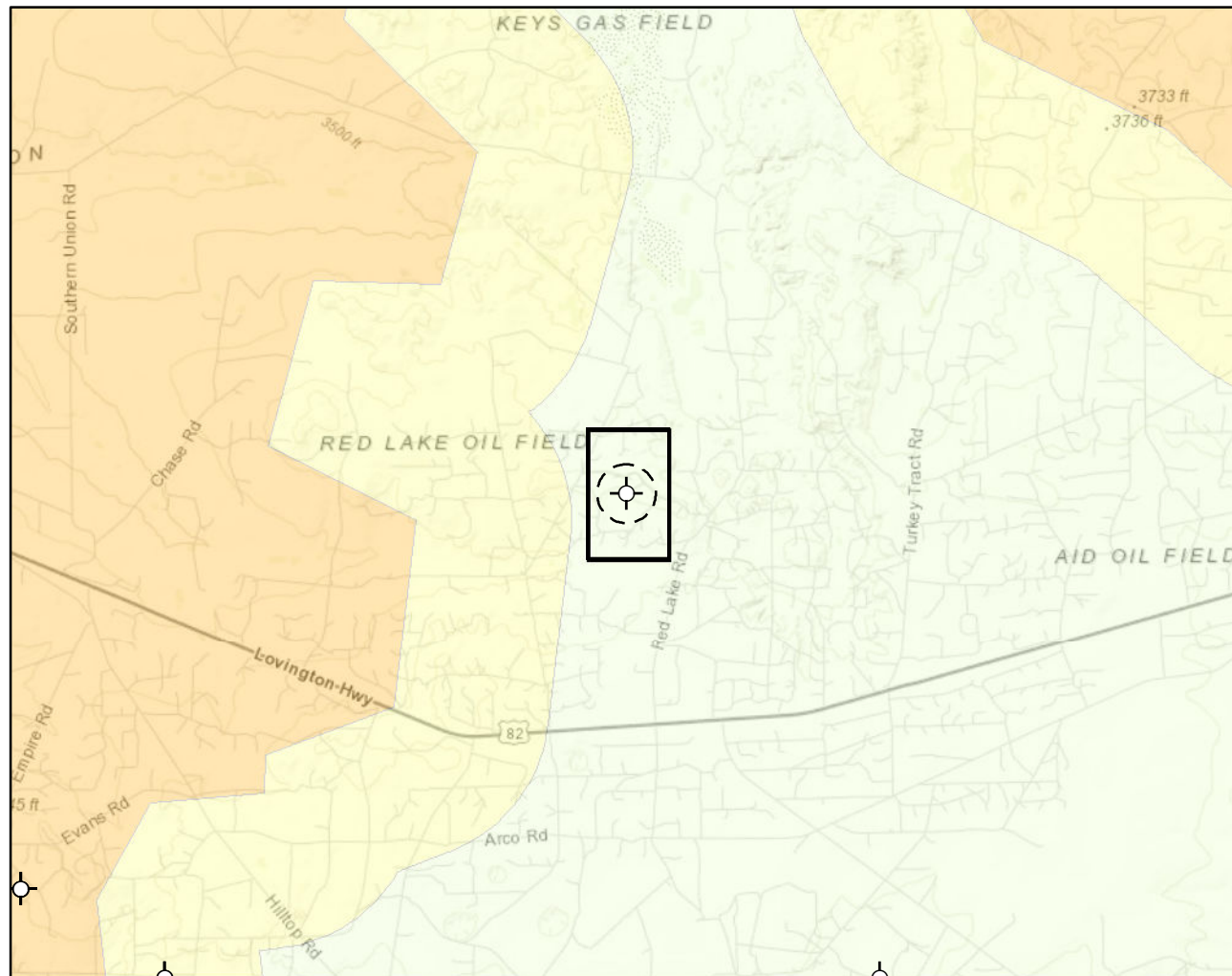
Land Ownership S

 BLM PLSS Second Division

 PLSS First Division



U.S. BLM, Maxar, Microsoft, Esri, HERE, Garmin, iPC, BLM

**Karst Potential**

- Critical
- High
- Medium
- Low
- +
 Site Location
- +
 Buffer Location (1,000 ft.)

Overview Map

0 0.25 0.5 1 mi

**Detail Map**

0 150 300 600 ft



Map Center:
Lat/Long: 32.818855, -104.178816

NAD 1983 UTM Zone 13N
Date: Nov 07/23



Karst Potential Map Piglet State SWD #1

FIGURE:

X

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

Note: Inset Map, Esri 2022; Overview Map: Esri World Topographic. Karst potential data sourced from Roswell Field Office, Bureau of Land Management, 2020 or United States Department of the Interior, Bureau of Land Management. (2018). Karst Potential.

VERSATILITY. EXPERTISE.

National Flood Hazard Layer FIRMette



104°11'2"W 32°49'23"N



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

1:6,000

104°10'25"W 32°48'53"N

Legend

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

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



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

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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 10/3/2023 at 6:04 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.

Soil Map—Eddy Area, New Mexico
(Piglet State SWD #1)Natural Resources
Conservation ServiceWeb Soil Survey
National Cooperative Soil Survey10/3/2023
Page 1 of 3

Soil Map—Eddy Area, New Mexico
(Piglet State SWD #1)


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.

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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)

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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.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
SA	Simona sandy loam, 0 to 3 percent slopes	4.6	100.0%
Totals for Area of Interest		4.6	100.0%



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



October 3, 2023

Preface

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

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

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

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

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

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

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How Soil Surveys Are Made

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

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

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

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

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

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

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

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

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

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

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

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

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

Soil Map


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

Custom Soil Resource Report
Soil Map (Piglet State SWD #1)

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

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

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Map Unit Legend (Piglet State SWD #1)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
SA	Simona sandy loam, 0 to 3 percent slopes	4.6	100.0%
Totals for Area of Interest		4.6	100.0%

Map Unit Descriptions (Piglet State SWD #1)

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**SA—Simona sandy loam, 0 to 3 percent slopes****Map Unit Setting***National map unit symbol:* 1w5v*Elevation:* 3,000 to 4,200 feet*Mean annual precipitation:* 10 to 16 inches*Mean annual air temperature:* 60 to 64 degrees F*Frost-free period:* 180 to 220 days*Farmland classification:* Not prime farmland**Map Unit Composition***Simona and similar soils:* 95 percent*Minor components:* 5 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 6 inches:* sandy loam*H2 - 6 to 20 inches:* fine sandy loam*H3 - 20 to 24 inches:* indurated**Properties and qualities***Slope:* 0 to 3 percent*Depth to restrictive feature:* 7 to 24 inches to petrocalcic*Drainage class:* Well drained*Runoff class:* 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 2.5 inches)**Interpretive groups***Land capability classification (irrigated):* 4s*Land capability classification (nonirrigated):* 7e*Hydrologic Soil Group:* D*Ecological site:* R070BD002NM - Shallow Sandy*Hydric soil rating:* No

Custom Soil Resource Report

Minor Components

Unnamed soils

Percent of map unit: 4 percent

Hydric soil rating: No

Playa

Percent of map unit: 1 percent

Landform: Flood-plain playas

Landform position (three-dimensional): Talf

Down-slope shape: Convex

Across-slope shape: Convex, linear

Ecological site: R070BC017NM - Bottomland

Hydric soil rating: Yes

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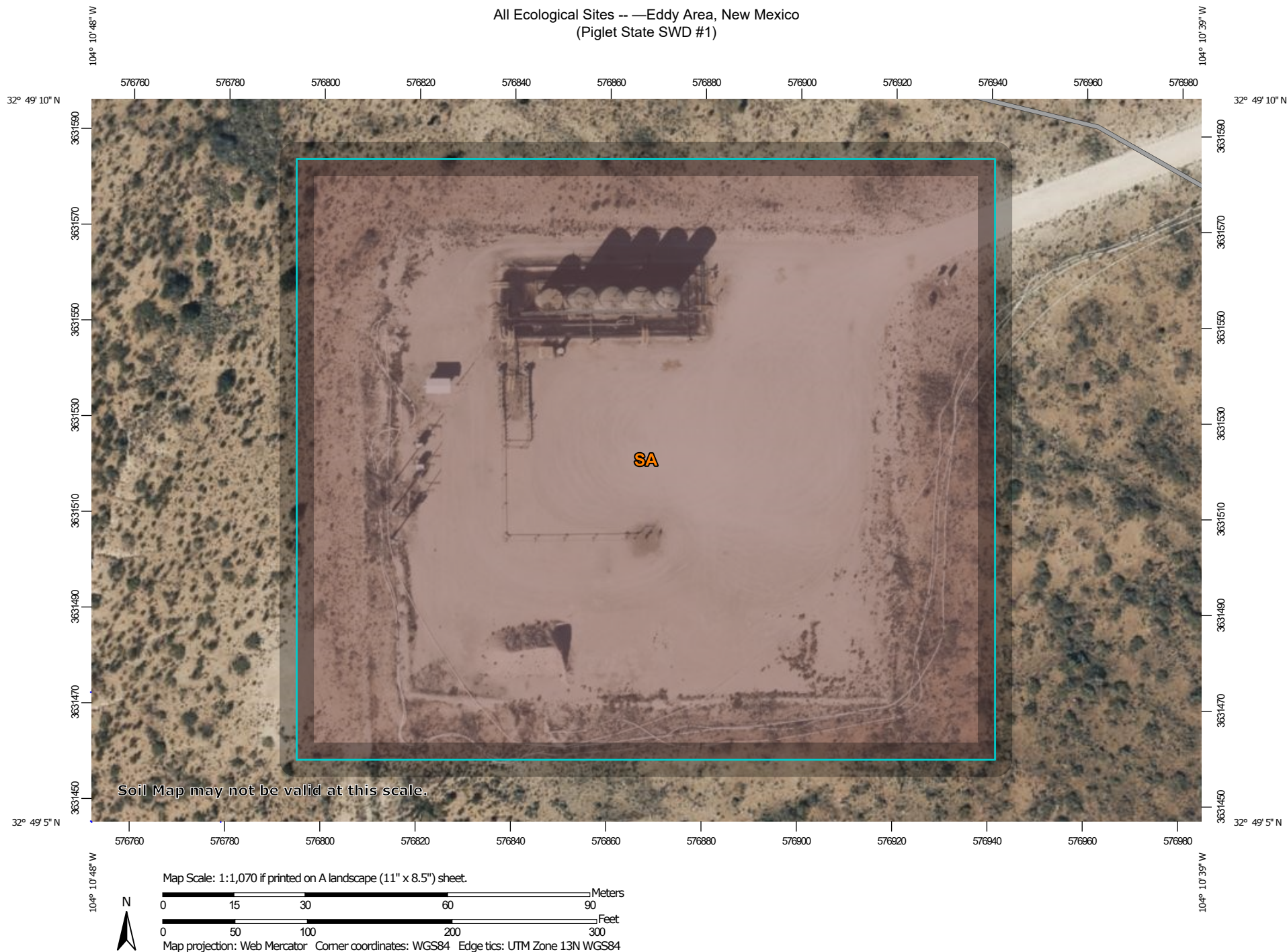
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All Ecological Sites -- Eddy Area, New Mexico
(Piglet State SWD #1)



Natural Resources
Conservation Service


Web Soil Survey
National Cooperative Soil Survey

10/3/2023
Page 1 of 3

All Ecological Sites -- Eddy Area, New Mexico
(Piglet State SWD #1)


MAP LEGEND


Area of Interest (AOI)

 Area of Interest (AOI)


Soils


Soil Rating Polygons

 R070BD002NM


 Not rated or not available


Soil Rating Lines

 R070BD002NM


 Not rated or not available

Soil Rating Points

 R070BD002NM

 Not rated or not available

Water Features

 Streams and Canals


Transportation

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 Major Roads

 Local Roads

Background

 Aerial Photography

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All Ecological Sites —

Map unit symbol	Map unit name	Component name (percent)	Ecological site	Acres in AOI	Percent of AOI
SA	Simona sandy loam, 0 to 3 percent slopes	Simona (95%)	R070BD002NM — Shallow Sandy	4.6	100.0%
		Unnamed soils (4%)			
		Playa (1%)	R070BC017NM — Bottomland		
Totals for Area of Interest				4.6	100.0%



Ecological site R070BD002NM

Shallow Sandy

Accessed: 10/03/2023

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.

Associated sites

R070BD004NM	Sandy Sandy sites often occur in association or in a complex with Shallow Sandy Sites.
-------------	--

Similar sites

R070BD004NM	Sandy Sandy ecological sites are similar to Shallow Sandy sites in species composition and Transition pathways.
-------------	---

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site occurs on plains, alluvial fans, uplands, or fan piedmonts. The parent material consists of mixed loamy alluvium or eolian material derived from igneous and sedimentary bedrock. The petrocalcic layer is at a depth of 10 to 25 inches and undulating.

Slopes are nearly level to undulating, usually less than 9 percent. Elevations range from 2,842 to 4,500 feet.

Table 2. Representative physiographic features

Landforms	(1) Plain (2) Fan piedmont (3) Alluvial fan
Elevation	2,842–4,500 ft
Slope	1–9%
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 from 207 to 220 days. The last killing frost is in 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 the site. The vegetation of this site can take advantage of the moisture and the time it falls. Because of the soil profile, little moisture can be stored in the soil for any length of time. Moisture is readily available to the plants from the time it falls. Strong winds from the southwest blow from January through June which rapidly dries out the soil profile during a critical period for 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)	221 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

Soils are very shallow to shallow, less than 20 inches in depth. Surface and subsurface textures are gravelly loamy sand, gravelly fine sandy loam or fine sandy loam.

An indurated calache layer occurs at depths of 6 to 25 inches and is at an average of 15 inches from the surface. Underlying material textures are very gravelly fine sandy loam, very gravelly sandy loam, gravelly fine sandy loam. Gravels are calcium carbonate concretions, calcium carbonate content ranges from 30 to 65 percent.

The indurated caliche layer typically holds water up in the profile for short periods within the root zone of plants. These soils will blow if left unprotected by vegetation.

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

Characteristic soils are:

- Simona
- Jerag

Table 4. Representative soil features

Surface texture	(1) Fine sandy loam (2) Loamy fine sand (3) Gravelly fine sandy loam
Family particle size	(1) Loamy
Drainage class	Well drained to moderately well drained
Permeability class	Moderately slow to moderate

Soil depth	7–24 in
Surface fragment cover <=3"	5–25%
Surface fragment cover >3"	0%
Available water capacity (0-40in)	1–2 in
Calcium carbonate equivalent (0-40in)	5–15%
Electrical conductivity (0-40in)	0–4 mmhos/cm
Sodium adsorption ratio (0-40in)	0
Soil reaction (1:1 water) (0-40in)	7.4–8
Subsurface fragment volume <=3" (Depth not specified)	5–25%
Subsurface fragment volume >3" (Depth not specified)	0%

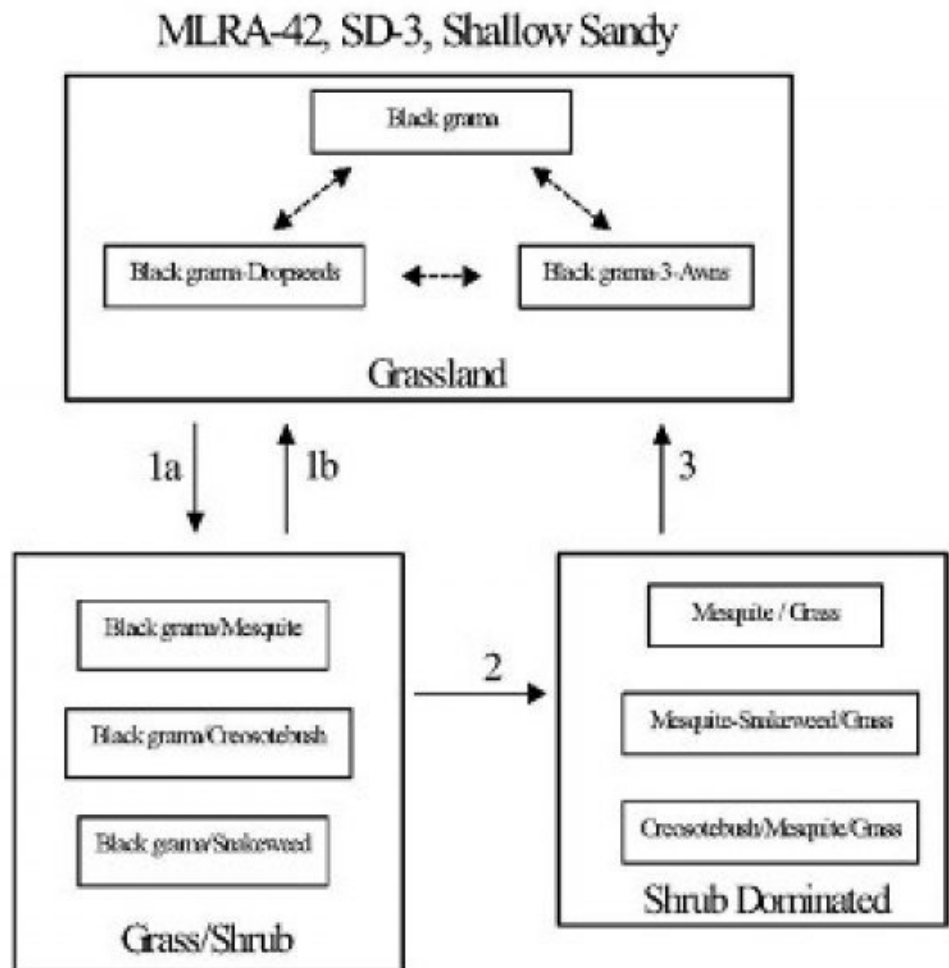
Ecological dynamics

Overview

The Shallow Sandy site occurs on upland plains, and tops of low ridges and mesas, associated with Sandy, Loamy Sand, and Shallow sites. Coarse to moderately coarse soil surface textures, shallow depth (<20 inches) to an indurated caliche layer (petrocalcic horizon), and an overwhelming dominance by black grama help to distinguish this site. The historic plant community of the Shallow Sandy site is a black grama dominated grassland sparsely dotted with shrubs. Shrubs, especially mesquite and creosotebush can increase or colonize due to the dispersal of shrub seeds by livestock or wildlife. This increase in mesquite and colonization of creosotebush may be enhanced by proximity to areas with existing high shrub densities. Fire suppression, and the loss of grass cover due to overgrazing or drought may facilitate the increase and encroachment of shrubs. Persistent loss of grass cover, competition for resources by shrubs, and periods of climate with increased winter precipitation and dry summers, may initiate the transition to a shrub-dominated state.

State and transition model

Plant Communities and Transitional Pathways (diagram)



1a. Seed dispersal, drought, overgrazing, fire suppression.

1b. Prescribed fire, brush control, prescribed grazing.

2. Persistent loss of grass cover, resource competition, increased winter precipitation.

3. Brush control, range seeding, prescribed grazing.

State 1

Historic Climax Plant Community

Community 1.1

Historic Climax Plant Community

Grassland: This site responds well to management and is resistant to state change, due to the shallow depth to petrocalcic horizon and sandy surface textures. The sandy surface textures allow rapid water infiltration and the petrocalcic horizon helps to keep water perched and available to shallow rooted grasses. Black grama is the dominant species in the historic plant community, averaging 50 to 60 percent of the total production for this site. Bush muhly, blue grama, and dropseeds are present as sub-dominants. Typically, yucca, javalinabush, range ratany, prickly pear, and mesquite are sparsely dotted across the landscape. Leatherweed croton, cutleaf

happlopappus, wooly groundsel, and threadleaf groundsel are common forbs. Continuous heavy grazing or extended periods of drought will cause a loss of grass cover characterized by a decrease in black grama, bush muhly, blue and sideoats grama, plains bristlegrass, and Arizona cottontop. Dropseeds and or threeawns may increase and become sub-dominant to black grama. Continued loss of grass cover in conjunction with dispersal of shrub seeds and fire suppression is believed to cause the transition to a state with increased amounts of shrubs (Grass/Shrub state). Diagnosis: Black grama is the dominant grass species. Grass cover uniformly distributed. Shrubs are a minor component averaging only two to five percent canopy cover. Litter cover is high (40-50 percent of area), and litter movement is limited to smaller size class litter and short distances (<. 5m). Other grasses that could appear on this site would include: six-weeks grama, fluffgrass, false-buffalograss, hairy grama, little bluestem, bristle panicum, cane bluestem, Indian ricegrass, tridens spp., and red lovegrass. Other woody plants include: pricklypear, cholla, fourwing saltbush, catclaw mimosa, winterfat, American tarbush and mesquite. Other forbs include: globemallow, verbena, desert holly, senna, plains blackfoot, trailing fleabane, fiddleneck, deerstongue, wooly Indianwheat, and locoweed.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	474	652	830
Forb	78	107	136
Shrub/Vine	48	66	84
Total	600	825	1050

Table 6. Ground cover

Tree foliar cover	0%
Shrub/vine/liana foliar cover	0%
Grass/grasslike foliar cover	30-35%
Forb foliar cover	0%
Non-vascular plants	0%
Biological crusts	0%
Litter	40-50%
Surface fragments >0.25" and <=3"	0%
Surface fragments >3"	0%
Bedrock	0%
Water	0%
Bare ground	15-25%

Figure 5. Plant community growth curve (percent production by month). NM2802, R042XC002NM-Shallow Sandy-HCPC. SD-3 Shallow Sandy - 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
Grass/Shrub

Community 2.1
Grass/Shrub

Grass/Shrub: This state is characterized by the notable presence of shrubs, especially mesquite, broom snakeweed, and/or creosotebush, however grasses remain as the dominant species. Black grama is the dominant

grass species. Threeawns and or dropseeds are sub-dominant. The susceptibility of the Shallow Sandy site to shrub encroachment may be higher when located adjacent to other sites with high densities of mesquite or creosotebush. Retrogression within this site is characterized by decreases in grass cover and increasing densities of shrubs. Diagnosis: Black grama remains as the dominant grass species. Grass cover varies in response to the amount of shrub increase, ranging from uniform to patchy. Shrubs are found at increased densities relative to the grassland state, especially mesquite, creosotebush, or broom snakeweed. Transition to Grass/Shrub (1a) Historically fire may have kept mesquite and other shrubs in check by completely killing some species and disrupting seed production cycles and suppressing the establishment of shrub seedlings in others. Fire suppression combined with seed dispersal by livestock and wildlife is believed to be the factors responsible for the establishment and increase in shrubs.1, 3 Loss of grass cover due to overgrazing, prolonged periods of drought, or their combination, reduces fire fuel loads and increases the susceptibility of the site to shrub establishment. Key indicators of approach to transition: Increase in the relative abundance of dropseeds and threeawns Presence of shrub seedlings Loss of organic matter—evidenced by an increase in physical soil crusts 8 Transition back to Grassland (1b) Brush control is necessary to initiate the transition back to the grassland state. If adequate fuel loads remain, possibly the reintroduction of fire as a management tool will assist in the transition back, however, mixed results have been observed concerning the effects of fire on black grama grasslands.6 Prescribed grazing will help ensure adequate rest following brush control and will assist in the establishment and maintenance of grass cover capable of sustaining fire.

State 3
Shrub Dominated

Community 3.1
Shrub Dominated

Shrub-Dominated: Across the range of soil types included in the Shallow Sandy site, mesquite is typically the dominant shrub, but it does occur as a co-dominant or sub-dominant species with creosotebush or broom snakeweed. Mesquite tends to dominate when the Shallow Sandy site occurs as part of a complex or in association with Sandy or Loamy Sand sites. Creosotebush tends to dominate on Shallow Sandy sites that occur as part of, or adjacent to Shallow Sites. Broom snakeweed increases in response to heavy grazing, but tends to cycle in and out depending on timing of rainfall. However, once the site is dominated by shrubs and snakeweed becomes well established, it tends to remain as a major component in the shrub dominated state. Diagnosis: Mesquite, creosotebush, or snakeweed cover is high, exceeding that of grasses. Grass cover is patchy with large connected bare areas present. Black grama, threeawns, or dropseeds may be the dominant grass. Evidence of accelerated wind erosion in the form of pedestalling of plants, and soil deposition around shrub bases may be common. Transition to Shrub-Dominated (2) Persistent loss of grass cover and the resulting increased competition between shrubs and remaining grasses for dwindling resources (especially soil moisture) may drive this transition.5 Additionally periods of increased winter precipitation may facilitate periodic episodes of shrub expansion and establishment. 4 Key indicators of approach to transition: Increase in size and frequency of bare patches. Loss of grass cover in shrub interspaces. Increased signs of erosion, evidenced by pedestalling of plants, and soil and litter deposition on leeward side of plants. 7 Transition back to Grassland (3) Brush control is necessary to reduce competition from shrubs and reestablish grasses. Range seeding may be necessary if insufficient grasses remain, The benefits, and costs, will vary depending upon the degree of site degradation, and adequate precipitation following seeding.

Additional community tables

Table 7. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
Grass/Grasslike					
1	Warm Season			413–495	
	black grama	BOER4	<i>Bouteloua eriopoda</i>	413–495	–
2	Warm Season			41–83	
	bush muhly	MUPO2	<i>Muhlenbergia porteri</i>	41–83	–
3	Warm Season			41–83	

	blue grama	BOGR2	<i>Bouteloua gracilis</i>	41–83	–
4	Warm Season			25–41	
	sideoats grama	BOCU	<i>Bouteloua curtipendula</i>	25–41	–
5	Warm Season			41–83	
	spike dropseed	SPCO4	<i>Sporobolus contractus</i>	41–83	–
	sand dropseed	SPCR	<i>Sporobolus cryptandrus</i>	41–83	–
	mesa dropseed	SPFL2	<i>Sporobolus flexuosus</i>	41–83	–
6	Warm Season			17–41	
	threeawn	ARIST	<i>Aristida</i>	17–41	–
7	Warm Season			41–83	
	Arizona cottontop	DICA8	<i>Digitaria californica</i>	41–83	–
	plains bristlegrass	SEVU2	<i>Setaria vulpiseta</i>	41–83	–
8	Warm Season			41–83	
	mat sandbur	CELO3	<i>Cenchrus longispinus</i>	41–83	–
	hooded windmill grass	CHCU2	<i>Chloris cucullata</i>	41–83	–
9	Other Perennial Grasses			25–41	
	Grass, perennial	2GP	<i>Grass, perennial</i>	25–41	–
Shrub/Vine					
10	Shrub			8–25	
	javelina bush	COER5	<i>Condalia ericoides</i>	8–25	–
11	Shrub			8–25	
	yucca	YUCCA	<i>Yucca</i>	8–25	–
12	Shrub			8–25	
	jointfir	EPHED	<i>Ephedra</i>	8–25	–
	littleleaf ratany	KRER	<i>Krameria erecta</i>	8–25	–
13	Shrub			8–25	
	featherplume	DAFO	<i>Dalea formosa</i>	8–25	–
14	Shrub			8–25	
	broom snakeweed	GUSA2	<i>Gutierrezia sarothrae</i>	8–25	–
15	Other Shrubs			25–41	
	Shrub (>.5m)	2SHRUB	<i>Shrub (>.5m)</i>	25–41	–
Forb					
16	Forb			17–41	
	leatherweed	CRPOP	<i>Croton pottsii</i> var. <i>pottsii</i>	17–41	–
	Goodding's tansyaster	MAPIG2	<i>Machaeranthera pinnatifida</i> ssp. <i>gooddingii</i> var. <i>gooddingii</i>	17–41	–
17	Forb			17–41	
	woolly groundsel	PACA15	<i>Packera cana</i>	17–41	–
	threadleaf ragwort	SEFLF	<i>Senecio flaccidus</i> var. <i>flaccidus</i>	17–41	–
18	Forb			8–25	
	whitest evening primrose	OEAL	<i>Oenothera albicaulis</i>	8–25	–
19	Other Forbs			8–25	
	Forb (herbaceous, not grass nor grass-like)	2FORB	<i>Forb (herbaceous, not grass nor grass-like)</i>	8–25	–

Animal community

This site provides habitats which support a resident animal community that is characterized by pronghorn antelope, swift fox, black-tailed jackrabbit, spotted ground squirrel, Ord's kangaroo rat, northern grasshopper mouse, coyote, horned lark, meadowlark, lark bunting, scaled quail, morning dove, side-blotched lizard, round-tailed horned lizard, marbled whiptail, prairie rattlesnake and ornate box turtle.

Hydrological functions

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

Hydrologic Interpretations
Soil Series Hydrologic Group
Jarag D
Simona D

Recreational uses

This site offers recreation for hiking, horseback riding, nature observation and photography, and quail and dove hunting. During years of abundant spring moisture, this site displays a riot of color from wildflowers during May and June. A few summer and fall flowers also occur.

Wood products

The natural potential plant community of this site affords little or no wood products. Where the site has been invaded by mesquite or cholla cactus the roots and stems of these plants provide attractive material for a variety of curiosities, such as lamps and small furniture.

Other products

This site is suitable for grazing by all kinds and classes of livestock during all seasons of the year. Because of the sandy textures and shallow profile, this site will respond rapidly to management. As this site deteriorates, plants such as black grama, bush muhly, blue and sideoats grama, plains bristlegrass and Arizona cottontop, will decrease and be replaced by plants such as threeawns, mesquite, creosote bush, and broom snakeweed. This also causes a decrease in ground cover, leaving the soil to blow. This site responds best to a system of management that rotates the season of use.

Other information

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month
Similarity Index Ac/AUM
100 - 76 2.5 – 3.5
75 – 51 3.2 – 4.6
50 – 26 4.5 – 7.5
25 – 0 7.6 +

Inventory data references

Data collection for this site was done in conjunction with the progressive soil surveys within the Southern Desertic Basins, Plains and Mountains, Major Land Resource Areas of New Mexico. This site has been mapped and correlated with soils in the following soil surveys. Eddy County, Lea County, and Chaves County.

Other references

Literature References:

1. Brooks, M.L. and D.A. Pyke. 2001. Invasive plants and fire in the deserts of North America. Pages 1–14 in K.E.M. Galley and T.P. Wilson (eds.). Proceedings of the Invasive Species Workshop: the Role of Fire in the Control and Spread of Invasive Species.
2. Hennessy, J.T., R.P. Gibbens, J.M. Tromble, and M. Cardenas. 1983. Water properties of caliche. J. Range Manage. 36: 723-726.
3. Humphrey, R.R. 1974. Fire in the deserts and desert grassland of North America. In: Kozlowski, T. T.; Ahlgren, C. E., eds. Fire and ecosystems. New York: Academic Press: 365-400.
4. Moir, W.H., and J. A. Ludwig. 1991. Plant succession and changing land features in desert grasslands. P. 15-18. In P.F. Ffolliott and W.T. Swank (eds.) People and the temperate region: a summary of research from the United States Man and the Biosphere Program 1991. U.S. Dept. State, Publ No. 9839, Nat. Tech. Info. Serv., U.S. Dept. Commerce, Springfield, Illinois. 63 p.
5. Tiedemann, A. R. and J. O. Klemmedson. 1977. Effect of mesquite trees on vegetation and soils in the desert grassland. J. Range Manage. 30: 361-367.
6. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (2002, September). Fire Effects Information System, [Online]. Available: <http://www.fs.fed.us/database/feis/> [accessed 2/10/03].
7. U.S. Department of Agriculture, Natural Resources Conservation Service. 2001. Soil Quality Information Sheets. Rangeland Soil Quality—Wind Erosion. Rangeland Sheet 10 [Online]. Available: <http://www.statlab.iastate.edu/survey/SQL/range.html>
8. U.S. Department of Agriculture, Natural Resources Conservation Service. 2001. Soil Quality Information Sheets. Rangeland Soil Quality—Physical and Biological Soil Crusts. Rangeland Sheet 7 [Online]. Available: <http://www.statlab.iastate.edu/survey/SQL/range.html>

Contributors

David Trujillo
Don Sylvester

Rangeland health reference sheet

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

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

Indicators

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

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

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

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

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

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

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

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

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

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

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

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

Dominant:

Sub-dominant:

Other:

Additional:

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

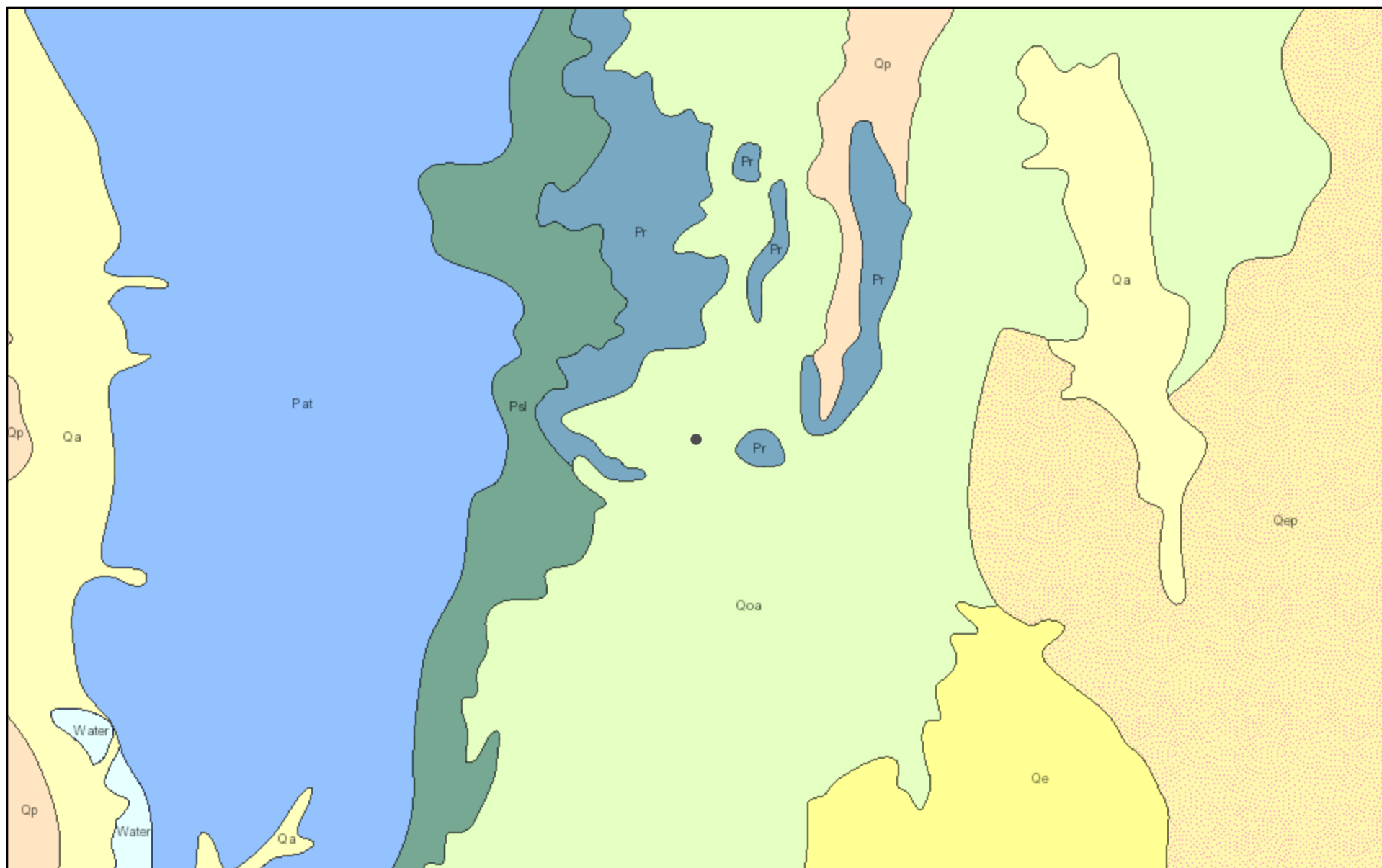
14. **Average percent litter cover (%) and depth (in):**

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

16. **Potential invasive (including noxious) species (native and non-native). List species which BOTH characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if their future establishment and growth is not actively controlled by management interventions. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasive plants. Note that unlike other indicators, we are describing what is NOT expected in the reference state for the ecological site:**

17. **Perennial plant reproductive capability:**

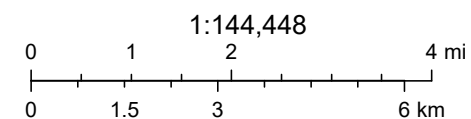
Piglet State SWD #1 Geology



10/3/2023, 4:14:45 PM

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

ArcGIS Web AppBuilder

APPENDIX C – Daily Field Reports



Daily Site Visit Report

Client:	Silverback Exploration	Inspection Date:	10/16/2023
Site Location Name:	Piglet State SWD #1 Battery	Report Run Date:	10/16/2023 10:18 PM
Client Contact Name:	Mark Ritchie	API #:	
Client Contact Phone #:	713-553-8320		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	10/16/2023 7:55 AM
Departed Site	10/16/2023 2:00 PM

Field Notes

8:11 Arrived at location and filled out safety paperwork. On site to continue site characterization/delineation. Will start to focus on middle sample points and getting vertical delineation.

13:40 Collected BH23-10,11,12,13,& 14 @ depths of 0ft and 1ft. Hit refusal at 1ft for all boreholes except for BH23-11. This borehole was excavated down to 2ft. Field screened all samples for chlorides and TPH. Placed all samples into glass jars and will send in for laboratory analysis. Added all sample points to Field Maps and DSS.

Next Steps & Recommendations

1

Daily Site Visit Report



Site Photos

Viewing Direction: East



Descriptive Photo - 1
Viewing Direction: East
Desc: BH23-10 @ 0-1ft
Created: 10/16/2023 1:28:15 PM
Lat:32.818245, Long:-104.178289

BH23-10 @ 0-1ft

Viewing Direction: North



Descriptive Photo - 2
Viewing Direction: North
Desc: BH23-12 @ 0-1ft
Created: 10/16/2023 1:27:32 PM
Lat:32.818005, Long:-104.178005

BH23-12 @ 0-1ft

Viewing Direction: West



Descriptive Photo - 3
Viewing Direction: West
Desc: BH23-13 @ 0-1ft
Created: 10/16/2023 1:28:20 PM
Lat:32.818245, Long:-104.178289

BH23-13 @ 0-1ft

Viewing Direction: West



Descriptive Photo - 4
Viewing Direction: West
Desc: BH23-11 @ 0-2ft
Created: 10/16/2023 1:28:23 PM
Lat:32.818122, Long:-104.178488

BH23-11 @ 0-2ft



Daily Site Visit Report

Viewing Direction: North



BH23-14 @ 0-1ft

Viewing Direction: East



Overview of site

Viewing Direction: Northwest



Overview of site

Viewing Direction: Southwest



Overview of site

Daily Site Visit Report



Daily Site Visit Signature

Inspector: Fernando Rodriguez

Signature: 
Signature



Daily Site Visit Report

Client:	Silverback Exploration	Inspection Date:	11/8/2023
Site Location Name:	Piglet State SWD #1 Battery	Report Run Date:	11/8/2023 9:18 PM
Client Contact Name:	Mark Ritchie	API #:	
Client Contact Phone #:	713-553-8320		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	11/8/2023 7:01 AM
Departed Site	11/8/2023 2:00 PM

Field Notes

7:02 Arrived at location and filled out safety paperwork. On site to continue confirmation sampling from the east side of the pad.

13:54 Collected last set of confirmation samples for the location and labeled: WS and BS23- 49-68. Field screened samples for chlorides and TPH. Placed soil samples into glass jars and will send in for laboratory analysis. Added sample points to Field Maps and DSS.

Next Steps & Recommendations

1

Daily Site Visit Report



Site Photos

Viewing Direction: Southwest



Overview of sampling area

Viewing Direction: Southeast



Overview of sampling area

Viewing Direction: Northeast



Overview of sampling area

Viewing Direction: Northwest



Overview of sampling area

Daily Site Visit Report



Daily Site Visit Signature

Inspector: Fernando Rodriguez

Signature: 
Signature

Daily Site Visit Report



Client	Silverback Exploration	Inspection Date	5/23/2024
Site Location Name	Piglet State SWD #1	API #	
Client Contact Name	Mark Ritchie	Project Owner	
Client Contact Phone #	713-553-8320	Project Manager	
Project Reference #			
Unique Project ID			

Summary of Times

Arrived at Site 5/23/2024 8:30 AM

Departed Site 5/23/2024 3:20 PM

Field Notes

10:38 Arrived at location and filled out safety paperwork. At location to collect confirmatory samples from areas of the excavation.

13:18 Collected a total of 16 confirmation samples. Field screened these samples for chlorides. Placed samples into glass jars and will send in for laboratory analysis. Added sample points to Field Maps and DSS.

Next Steps & Recommendations

1

Daily Site Visit Report



Site Photos

Viewing Direction: South



Overview of sampling area (BH24-01 @ 0-2ft)

Viewing Direction: South



Overview of sampling area (BH24-02 @ 0-2ft)

Viewing Direction: East



Overview of sampling area (BH24-03 @ 0-2ft)

Viewing Direction: West



Overview of sampling area (BH24-04 @ 0-2ft)

Daily Site Visit Report



Site Photos

Viewing Direction: East



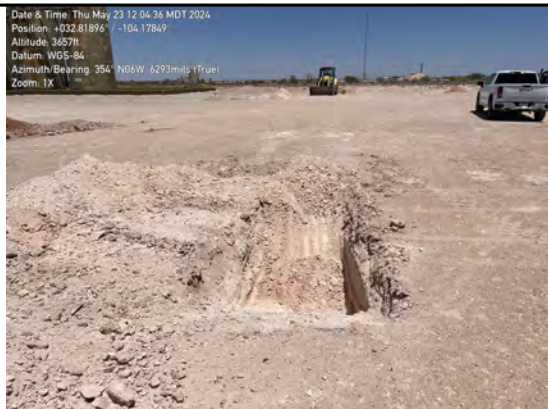
Overview of sampling area (BH24-05 @ 0-2ft)

Viewing Direction: West



Overview of sampling area (BH24-06 @ 0-2ft)

Viewing Direction: North



Overview of sampling area (BH24-07 @ 0-2ft)

Viewing Direction: Northwest



Overview of sampling area (BH24-08 @ 0-2ft)

Daily Site Visit Report



Daily Site Visit Signature

Inspector: Fernando Rodriguez

Signature:


Signature

APPENDIX D – Notifications

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

Thank you,

Shelly

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
<http://www.emnrd.state.nm.us/OCD/>

From: Dhugal Hanton <vertexresourcegroupusa@gmail.com>
Sent: Tuesday, October 31, 2023 12:24 PM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>; eco@slo.state.nm.us
Cc: cdixon@vertex.ca; mritchie@silverbackexp.com
Subject: [EXTERNAL] 48-Hour Notification - Piglet State SWD #1

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

All,

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

Piglet State SWD #1, nAPP2327744458

Confirmation sampling is scheduled to begin Thursday, November 2, 2023, at approximately 12:30 p.m. and will continue through Wednesday, November 8, 2023. If you have any questions regarding this notification, please contact 575-361-4509.

Thanks,

Fernando Rodriguez B.Sc
Intermediate Biologist

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

C 575.361.4509

APPENDIX E – Laboratory Data Reports and Chain of Custody Forms



Environment Testing

Eurofins Environment Testing South
Central, LLC
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

November 06, 2023

Chance Dixon

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX:

RE: Piglet State SWD 1

OrderNo.: 2310833

Dear Chance Dixon:

Eurofins Environment Testing South Central, LLC received 29 sample(s) on 10/18/2023 for the analyses presented in the following report.

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

Please do not hesitate to contact Eurofins Albuquerque for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", with a stylized flourish at the end.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-01 0ft

Project: Piglet State SWD 1

Collection Date: 10/13/2023 10:00:00 AM

Lab ID: 2310833-001

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	10/21/2023 1:53:23 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/21/2023 1:53:23 AM
Surr: DNOP	70.4	69-147		%Rec	1	10/21/2023 1:53:23 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	10/19/2023 6:35:32 PM
Surr: BFB	90.6	15-244		%Rec	1	10/19/2023 6:35:32 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	10/19/2023 6:35:32 PM
Toluene	ND	0.047		mg/Kg	1	10/19/2023 6:35:32 PM
Ethylbenzene	ND	0.047		mg/Kg	1	10/19/2023 6:35:32 PM
Xylenes, Total	ND	0.095		mg/Kg	1	10/19/2023 6:35:32 PM
Surr: 4-Bromofluorobenzene	97.8	39.1-146		%Rec	1	10/19/2023 6:35:32 PM
EPA METHOD 300.0: ANIONS						Analyst: JTT
Chloride	ND	60		mg/Kg	20	10/20/2023 10:57:24 PM

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

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

Analytical Report

Lab Order 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-01 2ft

Project: Piglet State SWD 1

Collection Date: 10/13/2023 10:05:00 AM

Lab ID: 2310833-002

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	10/23/2023 7:21:10 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/23/2023 7:21:10 PM
Surr: DNOP	84.5	69-147		%Rec	1	10/23/2023 7:21:10 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/19/2023 6:59:03 PM
Surr: BFB	91.0	15-244		%Rec	1	10/19/2023 6:59:03 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.025		mg/Kg	1	10/19/2023 6:59:03 PM
Toluene	ND	0.050		mg/Kg	1	10/19/2023 6:59:03 PM
Ethylbenzene	ND	0.050		mg/Kg	1	10/19/2023 6:59:03 PM
Xylenes, Total	ND	0.099		mg/Kg	1	10/19/2023 6:59:03 PM
Surr: 4-Bromofluorobenzene	100	39.1-146		%Rec	1	10/19/2023 6:59:03 PM
EPA METHOD 300.0: ANIONS						Analyst: JTT
Chloride	ND	60		mg/Kg	20	10/20/2023 11:09:49 PM

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

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

Analytical Report

Lab Order 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-02 0ft

Project: Piglet State SWD 1

Collection Date: 10/13/2023 10:10:00 AM

Lab ID: 2310833-003

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	10/21/2023 2:15:22 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	10/21/2023 2:15:22 AM
Surr: DNOP	78.2	69-147		%Rec	1	10/21/2023 2:15:22 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/19/2023 7:22:17 PM
Surr: BFB	91.7	15-244		%Rec	1	10/19/2023 7:22:17 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	10/19/2023 7:22:17 PM
Toluene	ND	0.048		mg/Kg	1	10/19/2023 7:22:17 PM
Ethylbenzene	ND	0.048		mg/Kg	1	10/19/2023 7:22:17 PM
Xylenes, Total	ND	0.096		mg/Kg	1	10/19/2023 7:22:17 PM
Surr: 4-Bromofluorobenzene	98.7	39.1-146		%Rec	1	10/19/2023 7:22:17 PM
EPA METHOD 300.0: ANIONS						Analyst: JTT
Chloride	ND	60		mg/Kg	20	10/20/2023 11:22:13 PM

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

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

Analytical Report

Lab Order 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-02 2ft

Project: Piglet State SWD 1

Collection Date: 10/13/2023 10:15:00 AM

Lab ID: 2310833-004

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	10/21/2023 2:26:19 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/21/2023 2:26:19 AM
Surr: DNOP	71.0	69-147		%Rec	1	10/21/2023 2:26:19 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/19/2023 7:45:42 PM
Surr: BFB	92.1	15-244		%Rec	1	10/19/2023 7:45:42 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.025		mg/Kg	1	10/19/2023 7:45:42 PM
Toluene	ND	0.049		mg/Kg	1	10/19/2023 7:45:42 PM
Ethylbenzene	ND	0.049		mg/Kg	1	10/19/2023 7:45:42 PM
Xylenes, Total	ND	0.099		mg/Kg	1	10/19/2023 7:45:42 PM
Surr: 4-Bromofluorobenzene	99.7	39.1-146		%Rec	1	10/19/2023 7:45:42 PM
EPA METHOD 300.0: ANIONS						Analyst: JTT
Chloride	ND	60		mg/Kg	20	10/20/2023 11:59:27 PM

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

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

Analytical Report

Lab Order 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-03 0ft

Project: Piglet State SWD 1

Collection Date: 10/13/2023 10:20:00 AM

Lab ID: 2310833-005

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	10/21/2023 2:37:14 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/21/2023 2:37:14 AM
Surr: DNOP	90.9	69-147		%Rec	1	10/21/2023 2:37:14 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/19/2023 8:09:12 PM
Surr: BFB	90.9	15-244		%Rec	1	10/19/2023 8:09:12 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	10/19/2023 8:09:12 PM
Toluene	ND	0.048		mg/Kg	1	10/19/2023 8:09:12 PM
Ethylbenzene	ND	0.048		mg/Kg	1	10/19/2023 8:09:12 PM
Xylenes, Total	ND	0.096		mg/Kg	1	10/19/2023 8:09:12 PM
Surr: 4-Bromofluorobenzene	99.1	39.1-146		%Rec	1	10/19/2023 8:09:12 PM
EPA METHOD 300.0: ANIONS						Analyst: JTT
Chloride	ND	60		mg/Kg	20	10/21/2023 12:11:52 AM

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

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

Analytical Report

Lab Order 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-03 2ft

Project: Piglet State SWD 1

Collection Date: 10/13/2023 10:25:00 AM

Lab ID: 2310833-006

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	10/21/2023 2:48:09 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	10/21/2023 2:48:09 AM
Surr: DNOP	83.4	69-147		%Rec	1	10/21/2023 2:48:09 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/19/2023 8:32:48 PM
Surr: BFB	91.3	15-244		%Rec	1	10/19/2023 8:32:48 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	10/19/2023 8:32:48 PM
Toluene	ND	0.048		mg/Kg	1	10/19/2023 8:32:48 PM
Ethylbenzene	ND	0.048		mg/Kg	1	10/19/2023 8:32:48 PM
Xylenes, Total	ND	0.095		mg/Kg	1	10/19/2023 8:32:48 PM
Surr: 4-Bromofluorobenzene	98.9	39.1-146		%Rec	1	10/19/2023 8:32:48 PM
EPA METHOD 300.0: ANIONS						Analyst: JTT
Chloride	ND	60		mg/Kg	20	10/21/2023 12:24:17 AM

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

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

Analytical Report

Lab Order 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-04 0ft

Project: Piglet State SWD 1

Collection Date: 10/12/2023 10:00:00 AM

Lab ID: 2310833-007

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	10/21/2023 2:59:02 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/21/2023 2:59:02 AM
Surr: DNOP	82.0	69-147		%Rec	1	10/21/2023 2:59:02 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/19/2023 8:56:24 PM
Surr: BFB	91.6	15-244		%Rec	1	10/19/2023 8:56:24 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	10/19/2023 8:56:24 PM
Toluene	ND	0.048		mg/Kg	1	10/19/2023 8:56:24 PM
Ethylbenzene	ND	0.048		mg/Kg	1	10/19/2023 8:56:24 PM
Xylenes, Total	ND	0.097		mg/Kg	1	10/19/2023 8:56:24 PM
Surr: 4-Bromofluorobenzene	99.8	39.1-146		%Rec	1	10/19/2023 8:56:24 PM
EPA METHOD 300.0: ANIONS						Analyst: JTT
Chloride	ND	60		mg/Kg	20	10/21/2023 12:36:41 AM

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

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

Analytical Report

Lab Order 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-04 2ft

Project: Piglet State SWD 1

Collection Date: 10/12/2023 10:05:00 AM

Lab ID: 2310833-008

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	10/21/2023 3:09:54 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/21/2023 3:09:54 AM
Surr: DNOP	77.5	69-147		%Rec	1	10/21/2023 3:09:54 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/19/2023 9:20:02 PM
Surr: BFB	89.2	15-244		%Rec	1	10/19/2023 9:20:02 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	10/19/2023 9:20:02 PM
Toluene	ND	0.048		mg/Kg	1	10/19/2023 9:20:02 PM
Ethylbenzene	ND	0.048		mg/Kg	1	10/19/2023 9:20:02 PM
Xylenes, Total	ND	0.096		mg/Kg	1	10/19/2023 9:20:02 PM
Surr: 4-Bromofluorobenzene	97.4	39.1-146		%Rec	1	10/19/2023 9:20:02 PM
EPA METHOD 300.0: ANIONS						Analyst: JTT
Chloride	79	60		mg/Kg	20	10/21/2023 12:49:06 AM

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

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

Analytical Report

Lab Order 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-05 0ft

Project: Piglet State SWD 1

Collection Date: 10/12/2023 10:10:00 AM

Lab ID: 2310833-009

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	10/21/2023 3:20:45 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/21/2023 3:20:45 AM
Surr: DNOP	76.7	69-147		%Rec	1	10/21/2023 3:20:45 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/19/2023 9:43:30 PM
Surr: BFB	93.5	15-244		%Rec	1	10/19/2023 9:43:30 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	10/19/2023 9:43:30 PM
Toluene	ND	0.048		mg/Kg	1	10/19/2023 9:43:30 PM
Ethylbenzene	ND	0.048		mg/Kg	1	10/19/2023 9:43:30 PM
Xylenes, Total	ND	0.096		mg/Kg	1	10/19/2023 9:43:30 PM
Surr: 4-Bromofluorobenzene	101	39.1-146		%Rec	1	10/19/2023 9:43:30 PM
EPA METHOD 300.0: ANIONS						Analyst: JTT
Chloride	ND	60		mg/Kg	20	10/21/2023 1:01:31 AM

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

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

CLIENT: Vertex Resources Services, Inc.
Project: Piglet State SWD 1
Lab ID: 2310833-010

Client Sample ID: BH23-05 2ft
Collection Date: 10/12/2023 10:15:00 AM
Received Date: 10/18/2023 7:18:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	10/23/2023 7:45:39 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/23/2023 7:45:39 PM
Surr: DNOP	88.1	69-147		%Rec	1	10/23/2023 7:45:39 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/19/2023 10:06:50 PM
Surr: BFB	93.9	15-244		%Rec	1	10/19/2023 10:06:50 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	10/19/2023 10:06:50 PM
Toluene	ND	0.048		mg/Kg	1	10/19/2023 10:06:50 PM
Ethylbenzene	ND	0.048		mg/Kg	1	10/19/2023 10:06:50 PM
Xylenes, Total	ND	0.097		mg/Kg	1	10/19/2023 10:06:50 PM
Surr: 4-Bromofluorobenzene	102	39.1-146		%Rec	1	10/19/2023 10:06:50 PM
EPA METHOD 300.0: ANIONS						Analyst: JTT
Chloride	ND	60		mg/Kg	20	10/21/2023 1:13:55 AM

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

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

Analytical Report

Lab Order 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-06 0ft

Project: Piglet State SWD 1

Collection Date: 10/12/2023 10:20:00 AM

Lab ID: 2310833-011

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	10/20/2023 2:09:38 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	10/20/2023 2:09:38 PM
Surr: DNOP	96.1	69-147		%Rec	1	10/20/2023 2:09:38 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/21/2023 5:33:22 AM
Surr: BFB	96.2	15-244		%Rec	1	10/21/2023 5:33:22 AM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	10/21/2023 5:33:22 AM
Toluene	ND	0.048		mg/Kg	1	10/21/2023 5:33:22 AM
Ethylbenzene	ND	0.048		mg/Kg	1	10/21/2023 5:33:22 AM
Xylenes, Total	ND	0.095		mg/Kg	1	10/21/2023 5:33:22 AM
Surr: 4-Bromofluorobenzene	101	39.1-146		%Rec	1	10/21/2023 5:33:22 AM
EPA METHOD 300.0: ANIONS						Analyst: JTT
Chloride	ND	60		mg/Kg	20	10/21/2023 1:26:20 AM

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

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

Analytical Report

Lab Order 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-06 2ft

Project: Piglet State SWD 1

Collection Date: 10/12/2023 10:25:00 AM

Lab ID: 2310833-012

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	10/20/2023 2:42:10 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/20/2023 2:42:10 PM
Surr: DNOP	89.7	69-147		%Rec	1	10/20/2023 2:42:10 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/21/2023 5:56:59 AM
Surr: BFB	97.2	15-244		%Rec	1	10/21/2023 5:56:59 AM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	10/21/2023 5:56:59 AM
Toluene	ND	0.048		mg/Kg	1	10/21/2023 5:56:59 AM
Ethylbenzene	ND	0.048		mg/Kg	1	10/21/2023 5:56:59 AM
Xylenes, Total	ND	0.095		mg/Kg	1	10/21/2023 5:56:59 AM
Surr: 4-Bromofluorobenzene	103	39.1-146		%Rec	1	10/21/2023 5:56:59 AM
EPA METHOD 300.0: ANIONS						Analyst: JTT
Chloride	ND	60		mg/Kg	20	10/21/2023 1:38:45 AM

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

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

Analytical Report

Lab Order 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-07 0ft

Project: Piglet State SWD 1

Collection Date: 10/12/2023 10:30:00 AM

Lab ID: 2310833-013

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	10/23/2023 3:21:08 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/23/2023 3:21:08 PM
Surr: DNOP	103	69-147		%Rec	1	10/23/2023 3:21:08 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	10/21/2023 6:20:29 AM
Surr: BFB	96.1	15-244		%Rec	1	10/21/2023 6:20:29 AM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.023		mg/Kg	1	10/21/2023 6:20:29 AM
Toluene	ND	0.046		mg/Kg	1	10/21/2023 6:20:29 AM
Ethylbenzene	ND	0.046		mg/Kg	1	10/21/2023 6:20:29 AM
Xylenes, Total	ND	0.092		mg/Kg	1	10/21/2023 6:20:29 AM
Surr: 4-Bromofluorobenzene	101	39.1-146		%Rec	1	10/21/2023 6:20:29 AM
EPA METHOD 300.0: ANIONS						Analyst: JTT
Chloride	290	60		mg/Kg	20	10/21/2023 1:51:09 AM

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

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

Analytical Report

Lab Order 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-07 2ft

Project: Piglet State SWD 1

Collection Date: 10/12/2023 10:35:00 AM

Lab ID: 2310833-014

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/20/2023 10:23:31 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/20/2023 10:23:31 AM
Surr: DNOP	88.8	69-147		%Rec	1	10/20/2023 10:23:31 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/20/2023 11:24:00 AM
Surr: BFB	98.3	15-244		%Rec	1	10/20/2023 11:24:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	10/20/2023 11:24:00 AM
Toluene	ND	0.049		mg/Kg	1	10/20/2023 11:24:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	10/20/2023 11:24:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	10/20/2023 11:24:00 AM
Surr: 4-Bromofluorobenzene	88.3	39.1-146		%Rec	1	10/20/2023 11:24:00 AM
EPA METHOD 300.0: ANIONS						Analyst: JTT
Chloride	280	60		mg/Kg	20	10/21/2023 2:28:23 AM

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

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

Analytical Report

Lab Order 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-08 0ft

Project: Piglet State SWD 1

Collection Date: 10/12/2023 10:40:00 AM

Lab ID: 2310833-015

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	10/20/2023 10:34:08 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/20/2023 10:34:08 AM
Surr: DNOP	79.2	69-147		%Rec	1	10/20/2023 10:34:08 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/20/2023 12:29:00 PM
Surr: BFB	101	15-244		%Rec	1	10/20/2023 12:29:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	10/20/2023 12:29:00 PM
Toluene	ND	0.048		mg/Kg	1	10/20/2023 12:29:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	10/20/2023 12:29:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	10/20/2023 12:29:00 PM
Surr: 4-Bromofluorobenzene	89.2	39.1-146		%Rec	1	10/20/2023 12:29:00 PM
EPA METHOD 300.0: ANIONS						Analyst: JTT
Chloride	ND	60		mg/Kg	20	10/21/2023 2:40:48 AM

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

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

Analytical Report

Lab Order 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-08 2ft

Project: Piglet State SWD 1

Collection Date: 10/12/2023 10:45:00 AM

Lab ID: 2310833-016

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	10/23/2023 4:32:44 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	10/23/2023 4:32:44 PM
Surr: DNOP	107	69-147		%Rec	1	10/23/2023 4:32:44 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/20/2023 1:34:00 PM
Surr: BFB	103	15-244		%Rec	1	10/20/2023 1:34:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	10/20/2023 1:34:00 PM
Toluene	ND	0.048		mg/Kg	1	10/20/2023 1:34:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	10/20/2023 1:34:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	10/20/2023 1:34:00 PM
Surr: 4-Bromofluorobenzene	87.6	39.1-146		%Rec	1	10/20/2023 1:34:00 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	ND	60		mg/Kg	20	10/22/2023 2:28:39 AM

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

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

Analytical Report

Lab Order 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-09 0ft

Project: Piglet State SWD 1

Collection Date: 10/12/2023 10:50:00 AM

Lab ID: 2310833-017

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	10/20/2023 10:55:29 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/20/2023 10:55:29 AM
Surr: DNOP	111	69-147		%Rec	1	10/20/2023 10:55:29 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/20/2023 1:56:00 PM
Surr: BFB	105	15-244		%Rec	1	10/20/2023 1:56:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.025		mg/Kg	1	10/20/2023 1:56:00 PM
Toluene	ND	0.050		mg/Kg	1	10/20/2023 1:56:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	10/20/2023 1:56:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	10/20/2023 1:56:00 PM
Surr: 4-Bromofluorobenzene	89.2	39.1-146		%Rec	1	10/20/2023 1:56:00 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	ND	60		mg/Kg	20	10/22/2023 2:41:03 AM

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

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

Analytical Report

Lab Order 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-09 2ft

Project: Piglet State SWD 1

Collection Date: 10/12/2023 10:55:00 AM

Lab ID: 2310833-018

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	10/23/2023 4:56:31 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	10/23/2023 4:56:31 PM
Surr: DNOP	112	69-147		%Rec	1	10/23/2023 4:56:31 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/20/2023 2:17:00 PM
Surr: BFB	101	15-244		%Rec	1	10/20/2023 2:17:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	10/20/2023 2:17:00 PM
Toluene	ND	0.049		mg/Kg	1	10/20/2023 2:17:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	10/20/2023 2:17:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	10/20/2023 2:17:00 PM
Surr: 4-Bromofluorobenzene	86.2	39.1-146		%Rec	1	10/20/2023 2:17:00 PM
EPA METHOD 300.0: ANIONS						Analyst: KCB
Chloride	81	60		mg/Kg	20	10/23/2023 1:04:32 PM

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

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

Analytical Report

Lab Order 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-10 0ft

Project: Piglet State SWD 1

Collection Date: 10/16/2023 9:00:00 AM

Lab ID: 2310833-019

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	10/20/2023 11:27:41 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	10/20/2023 11:27:41 AM
Surr: DNOP	76.0	69-147		%Rec	1	10/20/2023 11:27:41 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/20/2023 2:39:00 PM
Surr: BFB	103	15-244		%Rec	1	10/20/2023 2:39:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.025		mg/Kg	1	10/20/2023 2:39:00 PM
Toluene	ND	0.050		mg/Kg	1	10/20/2023 2:39:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	10/20/2023 2:39:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	10/20/2023 2:39:00 PM
Surr: 4-Bromofluorobenzene	90.7	39.1-146		%Rec	1	10/20/2023 2:39:00 PM
EPA METHOD 300.0: ANIONS						Analyst: KCB
Chloride	540	60		mg/Kg	20	10/23/2023 1:41:45 PM

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

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

Analytical Report

Lab Order 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-10 1ft

Project: Piglet State SWD 1

Collection Date: 10/16/2023 9:05:00 AM

Lab ID: 2310833-020

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	ND	9.0		mg/Kg	1	10/23/2023 5:20:24 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	10/23/2023 5:20:24 PM
Surr: DNOP	109	69-147		%Rec	1	10/23/2023 5:20:24 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/20/2023 3:01:00 PM
Surr: BFB	101	15-244		%Rec	1	10/20/2023 3:01:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	10/20/2023 3:01:00 PM
Toluene	ND	0.048		mg/Kg	1	10/20/2023 3:01:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	10/20/2023 3:01:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	10/20/2023 3:01:00 PM
Surr: 4-Bromofluorobenzene	87.2	39.1-146		%Rec	1	10/20/2023 3:01:00 PM
EPA METHOD 300.0: ANIONS						Analyst: KCB
Chloride	ND	60		mg/Kg	20	10/23/2023 2:18:59 PM

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

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

Analytical Report

Lab Order 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-11 0ft

Project: Piglet State SWD 1

Collection Date: 10/16/2023 9:10:00 AM

Lab ID: 2310833-021

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	600	96		mg/Kg	10	10/20/2023 10:02:19 AM
Motor Oil Range Organics (MRO)	500	480		mg/Kg	10	10/20/2023 10:02:19 AM
Surr: DNOP	0	69-147	S	%Rec	10	10/20/2023 10:02:19 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	10/20/2023 3:22:00 PM
Surr: BFB	97.2	15-244		%Rec	1	10/20/2023 3:22:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	10/20/2023 3:22:00 PM
Toluene	ND	0.047		mg/Kg	1	10/20/2023 3:22:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	10/20/2023 3:22:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	10/20/2023 3:22:00 PM
Surr: 4-Bromofluorobenzene	86.6	39.1-146		%Rec	1	10/20/2023 3:22:00 PM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	18000	1500		mg/Kg	500	10/24/2023 1:31:32 PM

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

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

Analytical Report

Lab Order 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-11 1ft

Project: Piglet State SWD 1

Collection Date: 10/16/2023 9:15:00 AM

Lab ID: 2310833-022

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/20/2023 11:49:07 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/20/2023 11:49:07 AM
Surr: DNOP	97.0	69-147		%Rec	1	10/20/2023 11:49:07 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/20/2023 3:44:00 PM
Surr: BFB	98.6	15-244		%Rec	1	10/20/2023 3:44:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	10/20/2023 3:44:00 PM
Toluene	ND	0.048		mg/Kg	1	10/20/2023 3:44:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	10/20/2023 3:44:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	10/20/2023 3:44:00 PM
Surr: 4-Bromofluorobenzene	87.7	39.1-146		%Rec	1	10/20/2023 3:44:00 PM
EPA METHOD 300.0: ANIONS						Analyst: KCB
Chloride	ND	60		mg/Kg	20	10/23/2023 3:08:38 PM

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

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

CLIENT: Vertex Resources Services, Inc.
Project: Piglet State SWD 1
Lab ID: 2310833-023

Matrix: SOIL

Client Sample ID: BH23-11 2ft
Collection Date: 10/16/2023 9:20:00 AM
Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	10/20/2023 11:59:52 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/20/2023 11:59:52 AM
Surr: DNOP	95.4	69-147		%Rec	1	10/20/2023 11:59:52 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/20/2023 4:06:00 PM
Surr: BFB	104	15-244		%Rec	1	10/20/2023 4:06:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.025		mg/Kg	1	10/20/2023 4:06:00 PM
Toluene	ND	0.049		mg/Kg	1	10/20/2023 4:06:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	10/20/2023 4:06:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	10/20/2023 4:06:00 PM
Surr: 4-Bromofluorobenzene	89.5	39.1-146		%Rec	1	10/20/2023 4:06:00 PM
EPA METHOD 300.0: ANIONS						Analyst: KCB
Chloride	ND	60		mg/Kg	20	10/23/2023 3:21:03 PM

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

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

Analytical Report

Lab Order 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-12 0ft

Project: Piglet State SWD 1

Collection Date: 10/16/2023 9:25:00 AM

Lab ID: 2310833-024

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	110	9.4		mg/Kg	1	10/20/2023 9:41:06 AM
Motor Oil Range Organics (MRO)	100	47		mg/Kg	1	10/20/2023 9:41:06 AM
Surr: DNOP	72.2	69-147		%Rec	1	10/20/2023 9:41:06 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/20/2023 4:49:00 PM
Surr: BFB	98.2	15-244		%Rec	1	10/20/2023 4:49:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	10/20/2023 4:49:00 PM
Toluene	ND	0.049		mg/Kg	1	10/20/2023 4:49:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	10/20/2023 4:49:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	10/20/2023 4:49:00 PM
Surr: 4-Bromofluorobenzene	86.5	39.1-146		%Rec	1	10/20/2023 4:49:00 PM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	3400	150		mg/Kg	50	10/24/2023 1:56:13 PM

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

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

Analytical Report

Lab Order 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-12 1ft

Project: Piglet State SWD 1

Collection Date: 10/16/2023 9:30:00 AM

Lab ID: 2310833-025

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	12	8.4		mg/Kg	1	10/23/2023 5:44:14 PM
Motor Oil Range Organics (MRO)	ND	42		mg/Kg	1	10/23/2023 5:44:14 PM
Surr: DNOP	108	69-147		%Rec	1	10/23/2023 5:44:14 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/20/2023 5:11:00 PM
Surr: BFB	99.9	15-244		%Rec	1	10/20/2023 5:11:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	10/20/2023 5:11:00 PM
Toluene	ND	0.049		mg/Kg	1	10/20/2023 5:11:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	10/20/2023 5:11:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	10/20/2023 5:11:00 PM
Surr: 4-Bromofluorobenzene	87.5	39.1-146		%Rec	1	10/20/2023 5:11:00 PM
EPA METHOD 300.0: ANIONS						Analyst: KCB
Chloride	160	60		mg/Kg	20	10/23/2023 3:45:52 PM

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

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

Analytical Report

Lab Order 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-13 0ft

Project: Piglet State SWD 1

Collection Date: 10/16/2023 9:35:00 AM

Lab ID: 2310833-026

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	240	9.7		mg/Kg	1	10/21/2023 4:03:44 AM
Motor Oil Range Organics (MRO)	260	49		mg/Kg	1	10/21/2023 4:03:44 AM
Surr: DNOP	101	69-147		%Rec	1	10/21/2023 4:03:44 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/20/2023 5:32:00 PM
Surr: BFB	96.8	15-244		%Rec	1	10/20/2023 5:32:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.025		mg/Kg	1	10/20/2023 5:32:00 PM
Toluene	ND	0.049		mg/Kg	1	10/20/2023 5:32:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	10/20/2023 5:32:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	10/20/2023 5:32:00 PM
Surr: 4-Bromofluorobenzene	84.3	39.1-146		%Rec	1	10/20/2023 5:32:00 PM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	16000	1500		mg/Kg	500	10/24/2023 1:43:53 PM

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

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

Analytical Report

Lab Order 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-13 1ft

Project: Piglet State SWD 1

Collection Date: 10/16/2023 9:40:00 AM

Lab ID: 2310833-027

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	10/20/2023 12:21:19 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	10/20/2023 12:21:19 PM
Surr: DNOP	102	69-147		%Rec	1	10/20/2023 12:21:19 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/20/2023 5:54:00 PM
Surr: BFB	101	15-244		%Rec	1	10/20/2023 5:54:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.025		mg/Kg	1	10/20/2023 5:54:00 PM
Toluene	ND	0.050		mg/Kg	1	10/20/2023 5:54:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	10/20/2023 5:54:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	10/20/2023 5:54:00 PM
Surr: 4-Bromofluorobenzene	88.4	39.1-146		%Rec	1	10/20/2023 5:54:00 PM
EPA METHOD 300.0: ANIONS						Analyst: KCB
Chloride	400	60		mg/Kg	20	10/23/2023 4:10:41 PM

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

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

Analytical Report

Lab Order 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-14 0ft

Project: Piglet State SWD 1

Collection Date: 10/16/2023 9:45:00 AM

Lab ID: 2310833-028

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	10/20/2023 12:32:05 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/20/2023 12:32:05 PM
Surr: DNOP	101	69-147		%Rec	1	10/20/2023 12:32:05 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/20/2023 6:16:00 PM
Surr: BFB	104	15-244		%Rec	1	10/20/2023 6:16:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.025		mg/Kg	1	10/20/2023 6:16:00 PM
Toluene	ND	0.050		mg/Kg	1	10/20/2023 6:16:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	10/20/2023 6:16:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	10/20/2023 6:16:00 PM
Surr: 4-Bromofluorobenzene	89.3	39.1-146		%Rec	1	10/20/2023 6:16:00 PM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	4800	300		mg/Kg	100	10/24/2023 2:08:34 PM

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

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

Analytical Report

Lab Order 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-14 1ft

Project: Piglet State SWD 1

Collection Date: 10/16/2023 9:50:00 AM

Lab ID: 2310833-029

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	10/23/2023 6:08:11 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	10/23/2023 6:08:11 PM
Surr: DNOP	111	69-147		%Rec	1	10/23/2023 6:08:11 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/20/2023 6:38:00 PM
Surr: BFB	103	15-244		%Rec	1	10/20/2023 6:38:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.025		mg/Kg	1	10/20/2023 6:38:00 PM
Toluene	ND	0.050		mg/Kg	1	10/20/2023 6:38:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	10/20/2023 6:38:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	10/20/2023 6:38:00 PM
Surr: 4-Bromofluorobenzene	90.9	39.1-146		%Rec	1	10/20/2023 6:38:00 PM
EPA METHOD 300.0: ANIONS						Analyst: KCB
Chloride	1900	60		mg/Kg	20	10/23/2023 4:35:30 PM

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2310833

07-Nov-23

Client: Vertex Resources Services, Inc.**Project:** Piglet State SWD 1

Sample ID: MB-78279	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBS	Batch ID: 78279		RunNo: 100629							
Prep Date: 10/20/2023	Analysis Date: 10/20/2023		SeqNo: 3689537		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-78279	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSS	Batch ID: 78279		RunNo: 100629							
Prep Date: 10/20/2023	Analysis Date: 10/20/2023		SeqNo: 3689538		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.3	90	110			

Sample ID: MB-78284	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBS	Batch ID: 78284		RunNo: 100650							
Prep Date: 10/21/2023	Analysis Date: 10/21/2023		SeqNo: 3690958		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-78284	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSS	Batch ID: 78284		RunNo: 100650							
Prep Date: 10/21/2023	Analysis Date: 10/21/2023		SeqNo: 3690959		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.0	90	110			

Sample ID: MB-78305	SampType: mblk		TestCode: EPA Method 300.0: Anions							
Client ID: PBS	Batch ID: 78305		RunNo: 100680							
Prep Date: 10/23/2023	Analysis Date: 10/23/2023		SeqNo: 3691878		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-78305	SampType: lcs		TestCode: EPA Method 300.0: Anions							
Client ID: LCSS	Batch ID: 78305		RunNo: 100680							
Prep Date: 10/23/2023	Analysis Date: 10/23/2023		SeqNo: 3691879		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.1	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of standard limits. If undiluted results may be estimated.

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

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

WO#: 2310833

07-Nov-23

Client: Vertex Resources Services, Inc.**Project:** Piglet State SWD 1

Sample ID: 2310833-011AMS	SampType: MS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: BH23-06 0ft	Batch ID: 78254	RunNo: 100627								
Prep Date: 10/19/2023	Analysis Date: 10/20/2023	SeqNo: 3689289 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	57	9.9	49.36	0	115	54.2	135			
Surr: DNOP	4.7		4.936		95.6	69	147			

Sample ID: 2310833-011AMSD	SampType: MSD	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: BH23-06 0ft	Batch ID: 78254	RunNo: 100627								
Prep Date: 10/19/2023	Analysis Date: 10/20/2023	SeqNo: 3689290 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	9.8	49.16	0	97.8	54.2	135	16.7	29.2	
Surr: DNOP	4.0		4.916		80.4	69	147	0	0	

Sample ID: LCS-78243	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 78243	RunNo: 100627								
Prep Date: 10/19/2023	Analysis Date: 10/20/2023	SeqNo: 3689324 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	96.3	61.9	130			
Surr: DNOP	4.5		5.000		89.7	69	147			

Sample ID: LCS-78254	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 78254	RunNo: 100627								
Prep Date: 10/19/2023	Analysis Date: 10/20/2023	SeqNo: 3689325 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	10	50.00	0	107	61.9	130			
Surr: DNOP	4.9		5.000		99.0	69	147			

Sample ID: LCS-78263	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 78263	RunNo: 100627								
Prep Date: 10/19/2023	Analysis Date: 10/20/2023	SeqNo: 3689326 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54	10	50.00	0	107	61.9	130			
Surr: DNOP	4.9		5.000		97.9	69	147			

Sample ID: MB-78243	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 78243	RunNo: 100627								
Prep Date: 10/19/2023	Analysis Date: 10/20/2023	SeqNo: 3689328 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2310833

07-Nov-23

Client: Vertex Resources Services, Inc.**Project:** Piglet State SWD 1

Sample ID: MB-78243	SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: PBS	Batch ID: 78243		RunNo: 100627							
Prep Date: 10/19/2023	Analysis Date: 10/20/2023		SeqNo: 3689328		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.1		10.00		91.5	69	147			

Sample ID: MB-78254	SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: PBS	Batch ID: 78254		RunNo: 100627							
Prep Date: 10/19/2023	Analysis Date: 10/20/2023		SeqNo: 3689329		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.9		10.00		99.2	69	147			

Sample ID: MB-78263	SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: PBS	Batch ID: 78263		RunNo: 100627							
Prep Date: 10/19/2023	Analysis Date: 10/20/2023		SeqNo: 3689330		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	12		10.00		117	69	147			

Sample ID: MB-78296	SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: PBS	Batch ID: 78296		RunNo: 100662							
Prep Date: 10/23/2023	Analysis Date: 10/23/2023		SeqNo: 3691338		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		103	69	147			

Sample ID: LCS-78296	SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: LCSS	Batch ID: 78296		RunNo: 100662							
Prep Date: 10/23/2023	Analysis Date: 10/23/2023		SeqNo: 3691339		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	10	50.00	0	101	61.9	130			
Surr: DNOP	4.8		5.000		96.8	69	147			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2310833

07-Nov-23

Client: Vertex Resources Services, Inc.

Project: Piglet State SWD 1

Sample ID: 2310833-013AMS	SampType: MS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: BH23-07 0ft	Batch ID: 78296	RunNo: 100662								
Prep Date: 10/23/2023	Analysis Date: 10/23/2023	SeqNo: 3691341	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	8.6	42.77	0	105	54.2	135			
Surr: DNOP	4.5		4.277		104	69	147			

Sample ID: 2310833-013AMSD	SampType: MSD	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: BH23-07 0ft	Batch ID: 78296	RunNo: 100662								
Prep Date: 10/23/2023	Analysis Date: 10/23/2023	SeqNo: 3691342	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	9.6	48.03	0	107	54.2	135	13.3	29.2	
Surr: DNOP	5.1		4.803		106	69	147	0	0	

Qualifiers:

*

Value exceeds Maximum Contaminant Level.

D

Sample Diluted Due to Matrix

H

Holding times for preparation or analysis exceeded

ND

Not Detected at the Reporting Limit

PQL

Practical Quantitative Limit

S

% Recovery outside of standard limits. If undiluted results may be estimated.

B

Analyte detected in the associated Method Blank

E

Above Quantitation Range/Estimated Value

J

Analyte detected below quantitation limits

P

Sample pH Not In Range

RL

Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2310833

07-Nov-23

Client: Vertex Resources Services, Inc.

Project: Piglet State SWD 1

Sample ID: lcs-78237	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: LCSS	Batch ID: 78237			RunNo: 100590						
Prep Date: 10/18/2023	Analysis Date: 10/19/2023			SeqNo: 3687197		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	92.6	70	130			
Surr: BFB	1900		1000		192	15	244			

Sample ID: mb-78237	SampType: MBLK			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: PBS	Batch ID: 78237			RunNo: 100590						
Prep Date: 10/18/2023	Analysis Date: 10/19/2023			SeqNo: 3687198		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	920		1000		92.5	15	244			

Sample ID: lcs-78260	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: LCSS	Batch ID: 78260			RunNo: 100625						
Prep Date: 10/19/2023	Analysis Date: 10/20/2023			SeqNo: 3689250		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	102	70	130			
Surr: BFB	2200		1000		218	15	244			

Sample ID: mb-78260	SampType: MBLK			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: PBS	Batch ID: 78260			RunNo: 100625						
Prep Date: 10/19/2023	Analysis Date: 10/20/2023			SeqNo: 3689251		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		104	15	244			

Sample ID: 2310833-014ams	SampType: MS			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: BH23-07 2ft	Batch ID: 78260			RunNo: 100625						
Prep Date: 10/19/2023	Analysis Date: 10/20/2023			SeqNo: 3689253		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	4.9	24.27	0	97.6	70	130			
Surr: BFB	2100		970.9		218	15	244			

Sample ID: 2310833-014amsd	SampType: MSD			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: BH23-07 2ft	Batch ID: 78260			RunNo: 100625						
Prep Date: 10/19/2023	Analysis Date: 10/20/2023			SeqNo: 3689254		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	4.9	24.27	0	97.6	70	130			
Surr: BFB	2100		970.9		218	15	244			

Qualifiers:

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

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

WO#: 2310833

07-Nov-23

Client: Vertex Resources Services, Inc.**Project:** Piglet State SWD 1

Sample ID: 2310833-014amsd	SampType: MSD	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: BH23-07 2ft	Batch ID: 78260	RunNo: 100625								
Prep Date: 10/19/2023	Analysis Date: 10/20/2023	SeqNo: 3689254	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	4.8	24.08	0	97.8	70	130	0.528	20	
Surr: BFB	2200		963.4		224	15	244	0	0	

Sample ID: lcs-78252	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID: 78252	RunNo: 100615								
Prep Date: 10/19/2023	Analysis Date: 10/20/2023	SeqNo: 3690477	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	94.9	70	130			
Surr: BFB	1900		1000		194	15	244			

Sample ID: mb-78252	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: 78252	RunNo: 100615								
Prep Date: 10/19/2023	Analysis Date: 10/20/2023	SeqNo: 3690478	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	930		1000		92.9	15	244			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2310833

07-Nov-23

Client: Vertex Resources Services, Inc.**Project:** Piglet State SWD 1

Sample ID: LCS-78237	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batch ID: 78237		RunNo: 100590							
Prep Date: 10/18/2023	Analysis Date: 10/19/2023		SeqNo: 3687200		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.85	0.025	1.000	0	85.5	70	130			
Toluene	0.88	0.050	1.000	0	87.6	70	130			
Ethylbenzene	0.89	0.050	1.000	0	89.3	70	130			
Xylenes, Total	2.7	0.10	3.000	0	89.2	70	130			
Surr: 4-Bromofluorobenzene	1.0		1.000		102	39.1	146			

Sample ID: mb-78237	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	Batch ID: 78237		RunNo: 100590							
Prep Date: 10/18/2023	Analysis Date: 10/19/2023		SeqNo: 3687201		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		101	39.1	146			

Sample ID: lcs-78260	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batch ID: 78260		RunNo: 100625							
Prep Date: 10/19/2023	Analysis Date: 10/20/2023		SeqNo: 3689264		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.025	1.000	0	88.9	70	130			
Toluene	0.89	0.050	1.000	0	89.1	70	130			
Ethylbenzene	0.90	0.050	1.000	0	90.4	70	130			
Xylenes, Total	2.7	0.10	3.000	0	90.4	70	130			
Surr: 4-Bromofluorobenzene	0.90		1.000		90.4	39.1	146			

Sample ID: mb-78260	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	Batch ID: 78260		RunNo: 100625							
Prep Date: 10/19/2023	Analysis Date: 10/20/2023		SeqNo: 3689265		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.92		1.000		91.7	39.1	146			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2310833

07-Nov-23

Client: Vertex Resources Services, Inc.

Project: Piglet State SWD 1

Sample ID: 2310833-015ams	SampType: MS	TestCode: EPA Method 8021B: Volatiles								
Client ID: BH23-08 0ft	Batch ID: 78260	RunNo: 100625								
Prep Date: 10/19/2023	Analysis Date: 10/20/2023	SeqNo: 3689268 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.83	0.024	0.9560	0	87.0	70	130			
Toluene	0.83	0.048	0.9560	0	86.9	70	130			
Ethylbenzene	0.85	0.048	0.9560	0	88.9	70	130			
Xylenes, Total	2.5	0.096	2.868	0	88.5	70	130			
Surr: 4-Bromofluorobenzene	0.84		0.9560		88.0	39.1	146			

Sample ID: 2310833-015amsd	SampType: MSD	TestCode: EPA Method 8021B: Volatiles								
Client ID: BH23-08 0ft	Batch ID: 78260	RunNo: 100625								
Prep Date: 10/19/2023	Analysis Date: 10/20/2023	SeqNo: 3689269 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.85	0.024	0.9569	0	88.6	70	130	1.93	20	
Toluene	0.85	0.048	0.9569	0	89.1	70	130	2.64	20	
Ethylbenzene	0.88	0.048	0.9569	0	91.8	70	130	3.26	20	
Xylenes, Total	2.6	0.096	2.871	0	91.4	70	130	3.29	20	
Surr: 4-Bromofluorobenzene	0.85		0.9569		88.7	39.1	146	0	0	

Sample ID: LCS-78252	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch ID: 78252	RunNo: 100615								
Prep Date: 10/19/2023	Analysis Date: 10/20/2023	SeqNo: 3690508 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.99	0.025	1.000	0	98.9	70	130			
Toluene	1.0	0.050	1.000	0	99.9	70	130			
Ethylbenzene	1.0	0.050	1.000	0	100	70	130			
Xylenes, Total	3.0	0.10	3.000	0	101	70	130			
Surr: 4-Bromofluorobenzene	0.98		1.000		98.0	39.1	146			

Sample ID: mb-78252	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBS	Batch ID: 78252	RunNo: 100615								
Prep Date: 10/19/2023	Analysis Date: 10/20/2023	SeqNo: 3690509 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.98		1.000		97.6	39.1	146			

Qualifiers:

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



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

Sample Log-In Check List

Client Name: Vertex Resources Services, Inc. Work Order Number: 2310833 RcptNo: 1

Received By: Tracy Casarrubias 10/18/2023 7:18:00 AM

Completed By: Tracy Casarrubias 10/18/2023 7:47:00 AM

Reviewed By: SM 10/18/23

Chain of Custody

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

2. How was the sample delivered? Courier

Log In

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

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

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

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

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

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

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

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

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

(Note discrepancies on chain of custody)

of preserved bottles checked for pH:

(<2 or >12 unless noted)

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

Adjusted?

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

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

(If no, notify customer for authorization.)

Checked by: SM 10/18/23

Special Handling (if applicable)

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

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions: Mailing address, phone number and Email/Fax are missing on COC- TMC 10/18/23

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.7	Good	Yes	Morty		

Client: Silverback

vertex

Mailing Address: ON FILE

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC

☐ Other

☐ EDD (Type)

Date	Time	Matrix	Sample Name
------	------	--------	-------------

Time Matrix

Sample Name

10:00
Soil

BH23-01 0ft

10.05 Soil

BH23-01 2ft

10:10 Soil

BH23-02 0ft

10:15	Soil
-------	------

BH23-02 2ft

10:20	Soil
-------	------

BH23-03 0ft

10:25	Soil
-------	------

BH23-03 2ft

Date:	Time:
-------	-------

Relinquished by:

1

Date: {	Time: {
---------	---------

Relinquished by:

—

Received by: Via:

Date _____ Time _____

Received by: Via:

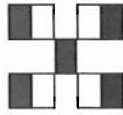
Date _____ Time _____

Remarks:

Remarks: CC: Chance Dixon & Fernando Rodriguez

Direct Bill to Silverback

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

**HALL ENVIRONMENTAL
ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Turn-Around Time:		Standard <input checked="" type="checkbox"/> Rush <input checked="" type="checkbox"/> 5 Day	
Project Name: Piglet State SWD #1			
Project #:		23E-05383	
Project Manager:		Chance Dixon	
Sampler: Fernando Rodriguez		On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No morning	
# of Coolers: 1		Cooler Temp (including CFI): 3.7-4.3 3.7 ~	
Container Type and #	Preservative Type	HEAL No. 2310833	
1, 4oz jar	Ice	019	
1, 4oz jar	Ice	020	
1, 4oz jar	Ice	021	
1, 4oz jar	Ice	022	
1, 4oz jar	Ice	023	
1, 4oz jar	Ice	024	
1, 4oz jar	Ice	025	
1, 4oz jar	Ice	026	
1, 4oz jar	Ice	027	
1, 4oz jar	Ice	028	
1, 4oz jar	Ice	029	
Date	Time	Matrix	Sample Name
10/16/23	9:00	Soil	BH23-10 0ft
10/16/23	9:05	Soil	BH23-10 1ft
10/16/23	9:10	Soil	BH23-11 0ft
10/16/23	9:15	Soil	BH23-11 1ft
10/16/23	9:20	Soil	BH23-11 2ft
10/16/23	9:25	Soil	BH23-12 0ft
10/16/23	9:30	Soil	BH23-12 1ft
10/16/23	9:35	Soil	BH23-13 0ft
10/16/23	9:40	Soil	BH23-13 1ft
10/16/23	9:45	Soil	BH23-14 0ft
10/16/23	9:50	Soil	BH23-14 1ft
Date	Time	Relinquished by:	Relinquished by:
10/16/23	17:00	[Signature]	[Signature]
Date	Time	Relinquished by:	Relinquished by:
10/16/23	19:00	[Signature]	[Signature]

Client: Silverback	Project Name: Piglet State SWD #1
Mailing Address: Vertex Onfile	Project #:
Phone #:	Project Manager:
email or Fax#:	Sampler: Fernando Rodriguez
QA/QC Package:	On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No morning
<input type="checkbox"/> Standard <input type="checkbox"/> Level 4 (Full Validation)	# of Coolers: 1
Accreditation: <input type="checkbox"/> Az Compliance <input type="checkbox"/> NELAC <input type="checkbox"/> Other	Cooler Temp (including CFI): 3.7-4.3 3.7 ~
<input type="checkbox"/> EDD (Type)	Container Type and #
	Preservative Type
	HEAL No. 2310833
	1, 4oz jar
	Ice
	019
	1, 4oz jar
	Ice
	020
	1, 4oz jar
	Ice
	021
	1, 4oz jar
	Ice
	022
	1, 4oz jar
	Ice
	023
	1, 4oz jar
	Ice
	024
	1, 4oz jar
	Ice
	025
	1, 4oz jar
	Ice
	026
	1, 4oz jar
	Ice
	027
	1, 4oz jar
	Ice
	028
	1, 4oz jar
	Ice
	029

Received by:	Via:	Date	Time
[Signature]		10/16/23	9:00
Received by:	Via:	Date	Time
[Signature]		10/16/23	7:18

Remarks:	
CC: Chance Dixon & Fernando Rodriguez	
Direct Bill to Silverback	

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



Environment Testing

Eurofins Environment Testing South
Central, LLC
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

November 03, 2023

Chance Dixon

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX:

RE: Piglet State SWD 1

OrderNo.: 2310A67

Dear Chance Dixon:

Eurofins Environment Testing South Central, LLC received 3 sample(s) on 10/21/2023 for the analyses presented in the following report.

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

Please do not hesitate to contact Eurofins Albuquerque for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", with a stylized flourish at the end.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 2310A67

Date Reported: 11/3/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-12 2ft

Project: Piglet State SWD 1

Collection Date: 10/18/2023 10:30:00 AM

Lab ID: 2310A67-001

Matrix: SOIL

Received Date: 10/21/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	10/24/2023 12:09:32 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/24/2023 12:09:32 PM
Surr: DNOP	103	69-147		%Rec	1	10/24/2023 12:09:32 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/24/2023 5:23:25 PM
Surr: BFB	95.1	15-244		%Rec	1	10/24/2023 5:23:25 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	10/24/2023 5:23:25 PM
Toluene	ND	0.048		mg/Kg	1	10/24/2023 5:23:25 PM
Ethylbenzene	ND	0.048		mg/Kg	1	10/24/2023 5:23:25 PM
Xylenes, Total	ND	0.097		mg/Kg	1	10/24/2023 5:23:25 PM
Surr: 4-Bromofluorobenzene	103	39.1-146		%Rec	1	10/24/2023 5:23:25 PM
EPA METHOD 300.0: ANIONS						Analyst: KCB
Chloride	68	60		mg/Kg	20	10/26/2023 5:09:19 PM

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

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

Page 1 of 7

Analytical Report

Lab Order 2310A67

Date Reported: 11/3/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-13 2ft

Project: Piglet State SWD 1

Collection Date: 10/18/2023 10:35:00 AM

Lab ID: 2310A67-002

Matrix: SOIL

Received Date: 10/21/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	10/25/2023 3:35:19 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/25/2023 3:35:19 PM
Surr: DNOP	70.5	69-147		%Rec	1	10/25/2023 3:35:19 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/24/2023 5:46:50 PM
Surr: BFB	95.8	15-244		%Rec	1	10/24/2023 5:46:50 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	10/24/2023 5:46:50 PM
Toluene	ND	0.048		mg/Kg	1	10/24/2023 5:46:50 PM
Ethylbenzene	ND	0.048		mg/Kg	1	10/24/2023 5:46:50 PM
Xylenes, Total	ND	0.095		mg/Kg	1	10/24/2023 5:46:50 PM
Surr: 4-Bromofluorobenzene	103	39.1-146		%Rec	1	10/24/2023 5:46:50 PM
EPA METHOD 300.0: ANIONS						Analyst: KCB
Chloride	140	60		mg/Kg	20	10/26/2023 5:21:44 PM

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

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

Page 2 of 7

Analytical Report

Lab Order 2310A67

Date Reported: 11/3/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-14 2ft

Project: Piglet State SWD 1

Collection Date: 10/18/2023 10:40:00 AM

Lab ID: 2310A67-003

Matrix: SOIL

Received Date: 10/21/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	10/24/2023 12:31:20 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/24/2023 12:31:20 PM
Surr: DNOP	102	69-147		%Rec	1	10/24/2023 12:31:20 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/24/2023 6:10:19 PM
Surr: BFB	96.8	15-244		%Rec	1	10/24/2023 6:10:19 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	10/24/2023 6:10:19 PM
Toluene	ND	0.049		mg/Kg	1	10/24/2023 6:10:19 PM
Ethylbenzene	ND	0.049		mg/Kg	1	10/24/2023 6:10:19 PM
Xylenes, Total	ND	0.098		mg/Kg	1	10/24/2023 6:10:19 PM
Surr: 4-Bromofluorobenzene	104	39.1-146		%Rec	1	10/24/2023 6:10:19 PM
EPA METHOD 300.0: ANIONS						Analyst: KCB
Chloride	190	60		mg/Kg	20	10/26/2023 5:34:08 PM

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

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

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2310A67
03-Nov-23

Client: Vertex Resources Services, Inc.
Project: Piglet State SWD 1

Sample ID: MB-78391		SampType: mblk		TestCode: EPA Method 300.0: Anions						
Client ID: PBS		Batch ID: 78391		RunNo: 100758						
Prep Date: 10/26/2023		Analysis Date: 10/26/2023		SeqNo: 3696871		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-78391		SampType: lcs		TestCode: EPA Method 300.0: Anions						
Client ID: LCSS		Batch ID: 78391		RunNo: 100758						
Prep Date: 10/26/2023		Analysis Date: 10/26/2023		SeqNo: 3696872		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.1	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

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

B Analyte detected in the associated Method Blank

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2310A67

03-Nov-23

Client: Vertex Resources Services, Inc.
Project: Piglet State SWD 1

Sample ID: LCS-78319	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 78319	RunNo: 100704								
Prep Date: 10/23/2023	Analysis Date: 10/24/2023	SeqNo: 3693071	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	10	50.00	0	105	61.9	130			
Surr: DNOP	5.4		5.000		107	69	147			

Sample ID: MB-78319	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 78319	RunNo: 100704								
Prep Date: 10/23/2023	Analysis Date: 10/24/2023	SeqNo: 3693073	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	13		10.00		133	69	147			

Qualifiers:

*

Value exceeds Maximum Contaminant Level.

D

Sample Diluted Due to Matrix

H

Holding times for preparation or analysis exceeded

ND

Not Detected at the Reporting Limit

PQL

Practical Quantitative Limit

S

% Recovery outside of standard limits. If undiluted results may be estimated.

B

Analyte detected in the associated Method Blank

E

Above Quantitation Range/Estimated Value

J

Analyte detected below quantitation limits

P

Sample pH Not In Range

RL

Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2310A67

03-Nov-23

Client: Vertex Resources Services, Inc.

Project: Piglet State SWD 1

Sample ID: lcs-78310	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSS	Batch ID: 78310		RunNo: 100707							
Prep Date: 10/23/2023	Analysis Date: 10/24/2023		SeqNo: 3693006		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	91.6	70	130			
Surr: BFB	2000		1000		199	15	244			

Sample ID: lcs-78320	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSS	Batch ID: 78320		RunNo: 100707							
Prep Date: 10/23/2023	Analysis Date: 10/24/2023		SeqNo: 3693007		Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	2000		1000		199	15	244			

Sample ID: mb-78310	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBS	Batch ID: 78310		RunNo: 100707							
Prep Date: 10/23/2023	Analysis Date: 10/24/2023		SeqNo: 3693008		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	950		1000		95.1	15	244			

Sample ID: mb-78320	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBS	Batch ID: 78320		RunNo: 100707							
Prep Date: 10/23/2023	Analysis Date: 10/24/2023		SeqNo: 3693009		Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	960		1000		96.1	15	244			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of standard limits. If undiluted results may be estimated.

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2310A67

03-Nov-23

Client: Vertex Resources Services, Inc.

Project: Piglet State SWD 1

Sample ID: LCS-78310	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batch ID: 78310		RunNo: 100707							
Prep Date: 10/23/2023	Analysis Date: 10/24/2023		SeqNo: 3693018		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	100	70	130			
Toluene	1.0	0.050	1.000	0	100	70	130			
Ethylbenzene	1.0	0.050	1.000	0	100	70	130			
Xylenes, Total	3.0	0.10	3.000	0	101	70	130			
Surr: 4-Bromofluorobenzene	1.0		1.000		103	39.1	146			

Sample ID: LCS-78320	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batch ID: 78320		RunNo: 100707							
Prep Date: 10/23/2023	Analysis Date: 10/24/2023		SeqNo: 3693019		Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		103	39.1	146			

Sample ID: mb-78310	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	Batch ID: 78310		RunNo: 100707							
Prep Date: 10/23/2023	Analysis Date: 10/24/2023		SeqNo: 3693020		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		102	39.1	146			

Sample ID: mb-78320	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	Batch ID: 78320		RunNo: 100707							
Prep Date: 10/23/2023	Analysis Date: 10/24/2023		SeqNo: 3693021		Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		102	39.1	146			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of standard limits. If undiluted results may be estimated.

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

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

Sample Log-In Check List

Client Name: Vertex Resources
Services, Inc.

Work Order Number: 2310A67

RcptNo: 1

Received By: Tracy Casarrubias 10/21/2023 8:00:00 AM

Completed By: Tracy Casarrubias 10/21/2023 9:02:24 AM

Reviewed By: *TMC 10/23/23*

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☒ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
9. Received at least 1 vial with headspace $<1/4$ " for AQ VOA? Yes ☐ No ☐ NA ☒
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
13. Is it clear what analyses were requested? Yes ☒ No ☐
14. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved
bottles checked
for pH:

(≤ 2 or >12 unless noted)

Adjusted?

Checked by: *TMC 10/21/23*

Special Handling (if applicable)

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

Person Notified: _____

Date: _____

By Whom: _____

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: Mailing address, phone number and Email/Fax are missing on COC- TMC 10/21/23

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.6	Good	Yes	Yogi		



Environment Testing

Eurofins Environment Testing South
Central, LLC
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

November 30, 2023

Chance Dixon

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX:

RE: Piglet State SWD 1

OrderNo.: 2311351

Dear Chance Dixon:

Eurofins Environment Testing South Central, LLC received 24 sample(s) on 11/8/2023 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued November 21, 2023.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please do not hesitate to contact Eurofins Albuquerque for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", with a stylized flourish at the end.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 2311351

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-1 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/6/2023 10:00:00 AM

Lab ID: 2311351-001

Matrix: SOIL

Received Date: 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	240	9.3		mg/Kg	1	11/14/2023 12:07:54 PM
Motor Oil Range Organics (MRO)	280	47		mg/Kg	1	11/14/2023 12:07:54 PM
Surr: DNOP	103	69-147		%Rec	1	11/14/2023 12:07:54 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/14/2023 5:17:25 PM
Surr: BFB	88.9	15-244		%Rec	1	11/14/2023 5:17:25 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	11/14/2023 5:17:25 PM
Toluene	ND	0.048		mg/Kg	1	11/14/2023 5:17:25 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/14/2023 5:17:25 PM
Xylenes, Total	ND	0.096		mg/Kg	1	11/14/2023 5:17:25 PM
Surr: 4-Bromofluorobenzene	91.6	39.1-146		%Rec	1	11/14/2023 5:17:25 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	5700	300		mg/Kg	100	11/15/2023 7:19:39 PM

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

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

CLIENT: Vertex Resources Services, Inc.
Project: Piglet State SWD 1
Lab ID: 2311351-002

Client Sample ID: WS23-2 0.5ft
Collection Date: 11/6/2023 10:05:00 AM
Received Date: 11/8/2023 7:35:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	540	95		mg/Kg	10	11/14/2023 1:00:48 AM
Motor Oil Range Organics (MRO)	520	480		mg/Kg	10	11/14/2023 1:00:48 AM
Surr: DNOP	0	69-147	S	%Rec	10	11/14/2023 1:00:48 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/14/2023 5:40:40 PM
Surr: BFB	89.0	15-244		%Rec	1	11/14/2023 5:40:40 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	11/14/2023 5:40:40 PM
Toluene	ND	0.048		mg/Kg	1	11/14/2023 5:40:40 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/14/2023 5:40:40 PM
Xylenes, Total	ND	0.097		mg/Kg	1	11/14/2023 5:40:40 PM
Surr: 4-Bromofluorobenzene	91.8	39.1-146		%Rec	1	11/14/2023 5:40:40 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	2300	150		mg/Kg	50	11/15/2023 7:32:03 PM

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

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

Analytical Report

Lab Order 2311351

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-3 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/6/2023 10:10:00 AM

Lab ID: 2311351-003

Matrix: SOIL

Received Date: 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	720	100		mg/Kg	10	11/11/2023 11:35:13 AM
Motor Oil Range Organics (MRO)	780	500		mg/Kg	10	11/11/2023 11:35:13 AM
Surr: DNOP	0	69-147	S	%Rec	10	11/11/2023 11:35:13 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/14/2023 6:04:02 PM
Surr: BFB	89.3	15-244		%Rec	1	11/14/2023 6:04:02 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.025		mg/Kg	1	11/14/2023 6:04:02 PM
Toluene	ND	0.049		mg/Kg	1	11/14/2023 6:04:02 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/14/2023 6:04:02 PM
Xylenes, Total	ND	0.099		mg/Kg	1	11/14/2023 6:04:02 PM
Surr: 4-Bromofluorobenzene	91.3	39.1-146		%Rec	1	11/14/2023 6:04:02 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	4500	150		mg/Kg	50	11/15/2023 2:46:36 PM

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

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

Analytical Report

Lab Order 2311351

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-4 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/6/2023 10:15:00 AM

Lab ID: 2311351-004

Matrix: SOIL

Received Date: 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	410	49		mg/Kg	5	11/14/2023 12:57:42 PM
Motor Oil Range Organics (MRO)	530	240		mg/Kg	5	11/14/2023 12:57:42 PM
Surr: DNOP	103	69-147		%Rec	5	11/14/2023 12:57:42 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/14/2023 6:27:24 PM
Surr: BFB	86.6	15-244		%Rec	1	11/14/2023 6:27:24 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.023		mg/Kg	1	11/14/2023 6:27:24 PM
Toluene	ND	0.047		mg/Kg	1	11/14/2023 6:27:24 PM
Ethylbenzene	ND	0.047		mg/Kg	1	11/14/2023 6:27:24 PM
Xylenes, Total	ND	0.094		mg/Kg	1	11/14/2023 6:27:24 PM
Surr: 4-Bromofluorobenzene	90.0	39.1-146		%Rec	1	11/14/2023 6:27:24 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	4300	150		mg/Kg	50	11/15/2023 2:59:01 PM

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

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

Analytical Report

Lab Order 2311351

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS23-5 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/6/2023 10:20:00 AM

Lab ID: 2311351-005

Matrix: SOIL

Received Date: 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	540	96		mg/Kg	10	11/11/2023 12:22:37 PM
Motor Oil Range Organics (MRO)	620	480		mg/Kg	10	11/11/2023 12:22:37 PM
Surr: DNOP	0	69-147	S	%Rec	10	11/11/2023 12:22:37 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/14/2023 6:50:48 PM
Surr: BFB	91.1	15-244		%Rec	1	11/14/2023 6:50:48 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	11/14/2023 6:50:48 PM
Toluene	ND	0.049		mg/Kg	1	11/14/2023 6:50:48 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/14/2023 6:50:48 PM
Xylenes, Total	ND	0.098		mg/Kg	1	11/14/2023 6:50:48 PM
Surr: 4-Bromofluorobenzene	92.4	39.1-146		%Rec	1	11/14/2023 6:50:48 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	850	60		mg/Kg	20	11/14/2023 9:52:33 PM

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

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

Analytical Report

Lab Order 2311351

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-6 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/6/2023 10:25:00 AM

Lab ID: 2311351-006

Matrix: SOIL

Received Date: 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	220	9.9		mg/Kg	1	11/14/2023 6:28:21 AM
Motor Oil Range Organics (MRO)	150	50		mg/Kg	1	11/14/2023 6:28:21 AM
Surr: DNOP	83.2	69-147		%Rec	1	11/14/2023 6:28:21 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/14/2023 3:36:00 AM
Surr: BFB	99.2	15-244		%Rec	1	11/14/2023 3:36:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	11/14/2023 3:36:00 AM
Toluene	ND	0.047		mg/Kg	1	11/14/2023 3:36:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	11/14/2023 3:36:00 AM
Xylenes, Total	ND	0.095		mg/Kg	1	11/14/2023 3:36:00 AM
Surr: 4-Bromofluorobenzene	95.8	39.1-146		%Rec	1	11/14/2023 3:36:00 AM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	440	59		mg/Kg	20	11/14/2023 10:04:58 PM

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

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

Analytical Report

Lab Order 2311351

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-7 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/6/2023 10:30:00 AM

Lab ID: 2311351-007

Matrix: SOIL

Received Date: 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	52	9.2		mg/Kg	1	11/14/2023 7:30:22 AM
Motor Oil Range Organics (MRO)	64	46		mg/Kg	1	11/14/2023 7:30:22 AM
Surr: DNOP	80.7	69-147		%Rec	1	11/14/2023 7:30:22 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/14/2023 4:41:00 AM
Surr: BFB	102	15-244		%Rec	1	11/14/2023 4:41:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	11/14/2023 4:41:00 AM
Toluene	ND	0.049		mg/Kg	1	11/14/2023 4:41:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/14/2023 4:41:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	11/14/2023 4:41:00 AM
Surr: 4-Bromofluorobenzene	94.0	39.1-146		%Rec	1	11/14/2023 4:41:00 AM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	2100	150		mg/Kg	50	11/15/2023 3:11:26 PM

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

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

Analytical Report

Lab Order 2311351

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-8 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/6/2023 10:35:00 AM

Lab ID: 2311351-008

Matrix: SOIL

Received Date: 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	260	9.6		mg/Kg	1	11/14/2023 11:34:09 PM
Motor Oil Range Organics (MRO)	380	48		mg/Kg	1	11/14/2023 11:34:09 PM
Surr: DNOP	97.0	69-147		%Rec	1	11/14/2023 11:34:09 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/14/2023 5:46:00 AM
Surr: BFB	99.1	15-244		%Rec	1	11/14/2023 5:46:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	11/14/2023 5:46:00 AM
Toluene	ND	0.049		mg/Kg	1	11/14/2023 5:46:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/14/2023 5:46:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	11/14/2023 5:46:00 AM
Surr: 4-Bromofluorobenzene	94.0	39.1-146		%Rec	1	11/14/2023 5:46:00 AM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	7100	300		mg/Kg	100	11/15/2023 3:23:51 PM

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

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

Analytical Report

Lab Order 2311351

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-9 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/6/2023 10:40:00 AM

Lab ID: 2311351-009

Matrix: SOIL

Received Date: 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	88	9.4		mg/Kg	1	11/14/2023 7:51:16 AM
Motor Oil Range Organics (MRO)	97	47		mg/Kg	1	11/14/2023 7:51:16 AM
Surr: DNOP	79.6	69-147		%Rec	1	11/14/2023 7:51:16 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/14/2023 6:08:00 AM
Surr: BFB	98.7	15-244		%Rec	1	11/14/2023 6:08:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	11/14/2023 6:08:00 AM
Toluene	ND	0.048		mg/Kg	1	11/14/2023 6:08:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/14/2023 6:08:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	11/14/2023 6:08:00 AM
Surr: 4-Bromofluorobenzene	94.4	39.1-146		%Rec	1	11/14/2023 6:08:00 AM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	2600	150		mg/Kg	50	11/15/2023 4:01:05 PM

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

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

Analytical Report

Lab Order 2311351

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-10 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/6/2023 10:45:00 AM

Lab ID: 2311351-010

Matrix: SOIL

Received Date: 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	310	9.6		mg/Kg	1	11/15/2023 12:14:09 AM
Motor Oil Range Organics (MRO)	350	48		mg/Kg	1	11/15/2023 12:14:09 AM
Surr: DNOP	99.8	69-147		%Rec	1	11/15/2023 12:14:09 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/14/2023 6:29:00 AM
Surr: BFB	98.7	15-244		%Rec	1	11/14/2023 6:29:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	11/14/2023 6:29:00 AM
Toluene	ND	0.047		mg/Kg	1	11/14/2023 6:29:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	11/14/2023 6:29:00 AM
Xylenes, Total	ND	0.095		mg/Kg	1	11/14/2023 6:29:00 AM
Surr: 4-Bromofluorobenzene	93.9	39.1-146		%Rec	1	11/14/2023 6:29:00 AM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	5900	300		mg/Kg	100	11/15/2023 4:13:30 PM

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

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

Analytical Report

Lab Order 2311351

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-11 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/6/2023 10:50:00 AM

Lab ID: 2311351-011

Matrix: SOIL

Received Date: 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	130	9.7		mg/Kg	1	11/15/2023 12:54:08 AM
Motor Oil Range Organics (MRO)	150	48		mg/Kg	1	11/15/2023 12:54:08 AM
Surr: DNOP	90.8	69-147		%Rec	1	11/15/2023 12:54:08 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/14/2023 6:51:00 AM
Surr: BFB	96.4	15-244		%Rec	1	11/14/2023 6:51:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	11/14/2023 6:51:00 AM
Toluene	ND	0.048		mg/Kg	1	11/14/2023 6:51:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/14/2023 6:51:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	11/14/2023 6:51:00 AM
Surr: 4-Bromofluorobenzene	93.8	39.1-146		%Rec	1	11/14/2023 6:51:00 AM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	6300	300		mg/Kg	100	11/15/2023 4:25:54 PM

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

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

Analytical Report

Lab Order 2311351

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-12 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/6/2023 10:55:00 AM

Lab ID: 2311351-012

Matrix: SOIL

Received Date: 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	78	9.3		mg/Kg	1	11/14/2023 8:22:42 AM
Motor Oil Range Organics (MRO)	89	46		mg/Kg	1	11/14/2023 8:22:42 AM
Surr: DNOP	79.6	69-147		%Rec	1	11/14/2023 8:22:42 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/14/2023 7:13:00 AM
Surr: BFB	101	15-244		%Rec	1	11/14/2023 7:13:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.023		mg/Kg	1	11/14/2023 7:13:00 AM
Toluene	ND	0.047		mg/Kg	1	11/14/2023 7:13:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	11/14/2023 7:13:00 AM
Xylenes, Total	ND	0.093		mg/Kg	1	11/14/2023 7:13:00 AM
Surr: 4-Bromofluorobenzene	96.0	39.1-146		%Rec	1	11/14/2023 7:13:00 AM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	2900	150		mg/Kg	50	11/15/2023 4:38:19 PM

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

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

Analytical Report

Lab Order 2311351

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS23-13 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/6/2023 11:00:00 AM

Lab ID: 2311351-013

Matrix: SOIL

Received Date: 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	380	9.6		mg/Kg	1	11/14/2023 10:32:00 AM
Motor Oil Range Organics (MRO)	460	48		mg/Kg	1	11/14/2023 10:32:00 AM
Surr: DNOP	92.6	69-147		%Rec	1	11/14/2023 10:32:00 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/14/2023 7:35:00 AM
Surr: BFB	98.7	15-244		%Rec	1	11/14/2023 7:35:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.023		mg/Kg	1	11/14/2023 7:35:00 AM
Toluene	ND	0.047		mg/Kg	1	11/14/2023 7:35:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	11/14/2023 7:35:00 AM
Xylenes, Total	ND	0.093		mg/Kg	1	11/14/2023 7:35:00 AM
Surr: 4-Bromofluorobenzene	95.0	39.1-146		%Rec	1	11/14/2023 7:35:00 AM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	2700	150		mg/Kg	50	11/15/2023 4:50:43 PM

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

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

Analytical Report

Lab Order 2311351

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-14 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/6/2023 11:05:00 AM

Lab ID: 2311351-014

Matrix: SOIL

Received Date: 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	380	9.5		mg/Kg	1	11/14/2023 10:53:05 AM
Motor Oil Range Organics (MRO)	440	48		mg/Kg	1	11/14/2023 10:53:05 AM
Surr: DNOP	98.0	69-147		%Rec	1	11/14/2023 10:53:05 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/14/2023 7:56:00 AM
Surr: BFB	104	15-244		%Rec	1	11/14/2023 7:56:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	11/14/2023 7:56:00 AM
Toluene	ND	0.048		mg/Kg	1	11/14/2023 7:56:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/14/2023 7:56:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	11/14/2023 7:56:00 AM
Surr: 4-Bromofluorobenzene	95.2	39.1-146		%Rec	1	11/14/2023 7:56:00 AM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	2300	150		mg/Kg	50	11/15/2023 5:03:08 PM

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

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

Analytical Report

Lab Order 2311351

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-15 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/6/2023 11:10:00 AM

Lab ID: 2311351-015

Matrix: SOIL

Received Date: 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	220	9.4		mg/Kg	1	11/14/2023 11:38:37 AM
Motor Oil Range Organics (MRO)	270	47		mg/Kg	1	11/14/2023 11:38:37 AM
Surr: DNOP	109	69-147		%Rec	1	11/14/2023 11:38:37 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/14/2023 4:28:00 PM
Surr: BFB	103	15-244		%Rec	1	11/14/2023 4:28:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.025		mg/Kg	1	11/14/2023 4:28:00 PM
Toluene	ND	0.050		mg/Kg	1	11/14/2023 4:28:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	11/14/2023 4:28:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	11/14/2023 4:28:00 PM
Surr: 4-Bromofluorobenzene	95.8	39.1-146		%Rec	1	11/14/2023 4:28:00 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	2800	150		mg/Kg	50	11/15/2023 5:15:32 PM

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

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

Analytical Report

Lab Order 2311351

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-16 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/6/2023 11:15:00 AM

Lab ID: 2311351-016

Matrix: SOIL

Received Date: 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	210	9.3		mg/Kg	1	11/14/2023 12:19:19 PM
Motor Oil Range Organics (MRO)	260	47		mg/Kg	1	11/14/2023 12:19:19 PM
Surr: DNOP	88.9	69-147		%Rec	1	11/14/2023 12:19:19 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/14/2023 4:50:00 PM
Surr: BFB	101	15-244		%Rec	1	11/14/2023 4:50:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	11/14/2023 4:50:00 PM
Toluene	ND	0.047		mg/Kg	1	11/14/2023 4:50:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	11/14/2023 4:50:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	11/14/2023 4:50:00 PM
Surr: 4-Bromofluorobenzene	96.2	39.1-146		%Rec	1	11/14/2023 4:50:00 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	5100	300		mg/Kg	100	11/15/2023 5:27:56 PM

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

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

CLIENT: Vertex Resources Services, Inc.
Project: Piglet State SWD 1
Lab ID: 2311351-017

Client Sample ID: BS23-17 0.5ft
Collection Date: 11/6/2023 11:20:00 AM
Received Date: 11/8/2023 7:35:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	440	9.4		mg/Kg	1	11/14/2023 1:00:07 PM
Motor Oil Range Organics (MRO)	530	47		mg/Kg	1	11/14/2023 1:00:07 PM
Surr: DNOP	113	69-147		%Rec	1	11/14/2023 1:00:07 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/14/2023 5:11:00 PM
Surr: BFB	102	15-244		%Rec	1	11/14/2023 5:11:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	11/14/2023 5:11:00 PM
Toluene	ND	0.048		mg/Kg	1	11/14/2023 5:11:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/14/2023 5:11:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	11/14/2023 5:11:00 PM
Surr: 4-Bromofluorobenzene	93.7	39.1-146		%Rec	1	11/14/2023 5:11:00 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	820	60		mg/Kg	20	11/15/2023 12:46:19 AM

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

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

Analytical Report

Lab Order 2311351

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS23-18 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/6/2023 11:25:00 AM

Lab ID: 2311351-018

Matrix: SOIL

Received Date: 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	340	9.2		mg/Kg	1	11/14/2023 1:55:09 PM
Motor Oil Range Organics (MRO)	240	46		mg/Kg	1	11/14/2023 1:55:09 PM
Surr: DNOP	97.0	69-147		%Rec	1	11/14/2023 1:55:09 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/14/2023 5:33:00 PM
Surr: BFB	97.2	15-244		%Rec	1	11/14/2023 5:33:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.023		mg/Kg	1	11/14/2023 5:33:00 PM
Toluene	ND	0.046		mg/Kg	1	11/14/2023 5:33:00 PM
Ethylbenzene	ND	0.046		mg/Kg	1	11/14/2023 5:33:00 PM
Xylenes, Total	ND	0.092		mg/Kg	1	11/14/2023 5:33:00 PM
Surr: 4-Bromofluorobenzene	91.6	39.1-146		%Rec	1	11/14/2023 5:33:00 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	780	61		mg/Kg	20	11/15/2023 12:58:44 AM

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

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

Analytical Report

Lab Order 2311351

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-19 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/6/2023 11:30:00 AM

Lab ID: 2311351-019

Matrix: SOIL

Received Date: 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	77	9.4		mg/Kg	1	11/15/2023 1:53:35 PM
Motor Oil Range Organics (MRO)	100	47		mg/Kg	1	11/15/2023 1:53:35 PM
Surr: DNOP	90.2	69-147		%Rec	1	11/15/2023 1:53:35 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/14/2023 5:54:00 PM
Surr: BFB	102	15-244		%Rec	1	11/14/2023 5:54:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.023		mg/Kg	1	11/14/2023 5:54:00 PM
Toluene	ND	0.047		mg/Kg	1	11/14/2023 5:54:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	11/14/2023 5:54:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	11/14/2023 5:54:00 PM
Surr: 4-Bromofluorobenzene	95.6	39.1-146		%Rec	1	11/14/2023 5:54:00 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	4200	150		mg/Kg	50	11/15/2023 5:40:20 PM

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

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

Analytical Report

Lab Order 2311351

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-20 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/6/2023 11:35:00 AM

Lab ID: 2311351-020

Matrix: SOIL

Received Date: 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	130	9.6		mg/Kg	1	11/14/2023 3:17:13 PM
Motor Oil Range Organics (MRO)	140	48		mg/Kg	1	11/14/2023 3:17:13 PM
Surr: DNOP	84.4	69-147		%Rec	1	11/14/2023 3:17:13 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/14/2023 6:16:00 PM
Surr: BFB	103	15-244		%Rec	1	11/14/2023 6:16:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	11/14/2023 6:16:00 PM
Toluene	ND	0.049		mg/Kg	1	11/14/2023 6:16:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/14/2023 6:16:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	11/14/2023 6:16:00 PM
Surr: 4-Bromofluorobenzene	96.6	39.1-146		%Rec	1	11/14/2023 6:16:00 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	5300	300		mg/Kg	100	11/15/2023 5:52:45 PM

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

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

Analytical Report

Lab Order 2311351

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-21 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/6/2023 11:40:00 AM

Lab ID: 2311351-021

Matrix: SOIL

Received Date: 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	140	9.7		mg/Kg	1	11/14/2023 3:57:54 PM
Motor Oil Range Organics (MRO)	150	48		mg/Kg	1	11/14/2023 3:57:54 PM
Surr: DNOP	101	69-147		%Rec	1	11/14/2023 3:57:54 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/14/2023 6:38:00 PM
Surr: BFB	99.1	15-244		%Rec	1	11/14/2023 6:38:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	11/14/2023 6:38:00 PM
Toluene	ND	0.048		mg/Kg	1	11/14/2023 6:38:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/14/2023 6:38:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	11/14/2023 6:38:00 PM
Surr: 4-Bromofluorobenzene	97.1	39.1-146		%Rec	1	11/14/2023 6:38:00 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	8300	300		mg/Kg	100	11/15/2023 6:30:00 PM

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

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

Analytical Report

Lab Order 2311351

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-22 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/6/2023 11:45:00 AM

Lab ID: 2311351-022

Matrix: SOIL

Received Date: 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	210	9.9		mg/Kg	1	11/14/2023 4:38:25 PM
Motor Oil Range Organics (MRO)	240	49		mg/Kg	1	11/14/2023 4:38:25 PM
Surr: DNOP	103	69-147		%Rec	1	11/14/2023 4:38:25 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/14/2023 7:00:00 PM
Surr: BFB	102	15-244		%Rec	1	11/14/2023 7:00:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	11/14/2023 7:00:00 PM
Toluene	ND	0.049		mg/Kg	1	11/14/2023 7:00:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/14/2023 7:00:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	11/14/2023 7:00:00 PM
Surr: 4-Bromofluorobenzene	97.2	39.1-146		%Rec	1	11/14/2023 7:00:00 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	4600	150		mg/Kg	50	11/15/2023 6:42:25 PM

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

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

Analytical Report

Lab Order 2311351

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-23 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/6/2023 11:50:00 AM

Lab ID: 2311351-023

Matrix: SOIL

Received Date: 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	240	9.3		mg/Kg	1	11/14/2023 5:18:52 PM
Motor Oil Range Organics (MRO)	300	47		mg/Kg	1	11/14/2023 5:18:52 PM
Surr: DNOP	94.7	69-147		%Rec	1	11/14/2023 5:18:52 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/14/2023 7:43:00 PM
Surr: BFB	103	15-244		%Rec	1	11/14/2023 7:43:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.025		mg/Kg	1	11/14/2023 7:43:00 PM
Toluene	ND	0.050		mg/Kg	1	11/14/2023 7:43:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	11/14/2023 7:43:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	11/14/2023 7:43:00 PM
Surr: 4-Bromofluorobenzene	95.1	39.1-146		%Rec	1	11/14/2023 7:43:00 PM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	3900	150		mg/Kg	50	11/16/2023 4:20:08 PM

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

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

Analytical Report

Lab Order 2311351

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-24 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/6/2023 11:55:00 AM

Lab ID: 2311351-024

Matrix: SOIL

Received Date: 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	110	9.7		mg/Kg	1	11/14/2023 5:59:20 PM
Motor Oil Range Organics (MRO)	130	49		mg/Kg	1	11/14/2023 5:59:20 PM
Surr: DNOP	85.2	69-147		%Rec	1	11/14/2023 5:59:20 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/14/2023 8:05:00 PM
Surr: BFB	98.8	15-244		%Rec	1	11/14/2023 8:05:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	11/14/2023 8:05:00 PM
Toluene	ND	0.049		mg/Kg	1	11/14/2023 8:05:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/14/2023 8:05:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	11/14/2023 8:05:00 PM
Surr: 4-Bromofluorobenzene	95.5	39.1-146		%Rec	1	11/14/2023 8:05:00 PM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	6000	300		mg/Kg	100	11/16/2023 4:32:32 PM

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2311351

30-Nov-23

Client: Vertex Resources Services, Inc.**Project:** Piglet State SWD 1

Sample ID: MB-78778	SampType: MBLK	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 78778	RunNo: 101177								
Prep Date: 11/14/2023	Analysis Date: 11/14/2023	SeqNo: 3717888 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-78778	SampType: LCS	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 78778	RunNo: 101177								
Prep Date: 11/14/2023	Analysis Date: 11/14/2023	SeqNo: 3717889 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.9	90	110			

Sample ID: MB-78780	SampType: MBLK	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 78780	RunNo: 101183								
Prep Date: 11/14/2023	Analysis Date: 11/14/2023	SeqNo: 3718410 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-78780	SampType: LCS	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 78780	RunNo: 101183								
Prep Date: 11/14/2023	Analysis Date: 11/14/2023	SeqNo: 3718411 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.4	90	110			

Sample ID: MB-78770	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 78770	RunNo: 101196								
Prep Date: 11/14/2023	Analysis Date: 11/14/2023	SeqNo: 3718725 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-78770	SampType: lcs	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 78770	RunNo: 101196								
Prep Date: 11/14/2023	Analysis Date: 11/14/2023	SeqNo: 3718726 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.1	90	110			

Qualifiers:

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

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

WO#: 2311351

30-Nov-23

Client: Vertex Resources Services, Inc.**Project:** Piglet State SWD 1

Sample ID: MB-78706	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 78706	RunNo: 101132								
Prep Date: 11/10/2023	Analysis Date: 11/11/2023	SeqNo: 3714471 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		106	69	147			

Sample ID: LCS-78706	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 78706	RunNo: 101132								
Prep Date: 11/10/2023	Analysis Date: 11/11/2023	SeqNo: 3714472 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	10	50.00	0	104	61.9	130			
Surr: DNOP	4.9		5.000		99.0	69	147			

Sample ID: MB-78735	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 78735	RunNo: 101145								
Prep Date: 11/13/2023	Analysis Date: 11/14/2023	SeqNo: 3715614 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.0		10.00		79.6	69	147			

Sample ID: 2311351-006AMSD	SampType: MSD	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: BS23-6 0.5ft	Batch ID: 78735	RunNo: 101124								
Prep Date: 11/13/2023	Analysis Date: 11/14/2023	SeqNo: 3715689 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	180	9.2	46.04	222.9	-93.5	54.2	135	23.5	29.2	S
Surr: DNOP	3.6		4.604		78.3	69	147	0	0	

Sample ID: 2311351-006AMS	SampType: MS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: BS23-6 0.5ft	Batch ID: 78735	RunNo: 101145								
Prep Date: 11/13/2023	Analysis Date: 11/14/2023	SeqNo: 3717267 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	230	9.6	47.94	222.9	10.2	54.2	135			S
Surr: DNOP	4.0		4.794		84.3	69	147			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2311351

30-Nov-23

Client: Vertex Resources Services, Inc.**Project:** Piglet State SWD 1

Sample ID: LCS-78735	SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: LCSS	Batch ID: 78735		RunNo: 101145							
Prep Date: 11/13/2023	Analysis Date: 11/14/2023		SeqNo: 3717323		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	10	50.00	0	83.9	61.9	130			
Surr: DNOP	3.6		5.000		72.4	69	147			

Sample ID: MB-78785	SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: PBS	Batch ID: 78785		RunNo: 101178							
Prep Date: 11/14/2023	Analysis Date: 11/15/2023		SeqNo: 3720894		Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	11		10.00		106	69	147			

Sample ID: LCS-78785	SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: LCSS	Batch ID: 78785		RunNo: 101178							
Prep Date: 11/14/2023	Analysis Date: 11/15/2023		SeqNo: 3720895		Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.7		5.000		94.7	69	147			

Qualifiers:

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

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

WO#: 2311351

30-Nov-23

Client: Vertex Resources Services, Inc.**Project:** Piglet State SWD 1

Sample ID: lcs-78688	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: LCSS	Batch ID: 78688			RunNo: 101130						
Prep Date: 11/9/2023	Analysis Date: 11/13/2023			SeqNo: 3715350		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	84.7	70	130			
Surr: BFB	1800		1000		176	15	244			

Sample ID: mb-78688	SampType: MBLK			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: PBS	Batch ID: 78688			RunNo: 101130						
Prep Date: 11/9/2023	Analysis Date: 11/14/2023			SeqNo: 3715352		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	840		1000		84.5	15	244			

Sample ID: lcs-78710	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: LCSS	Batch ID: 78710			RunNo: 101136						
Prep Date: 11/10/2023	Analysis Date: 11/14/2023			SeqNo: 3716489		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	94.3	70	130			
Surr: BFB	2200		1000		216	15	244			

Sample ID: mb-78710	SampType: MBLK			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: PBS	Batch ID: 78710			RunNo: 101136						
Prep Date: 11/10/2023	Analysis Date: 11/14/2023			SeqNo: 3716490		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		100	15	244			

Sample ID: 2311351-006ams	SampType: MS			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: BS23-6 0.5ft	Batch ID: 78710			RunNo: 101136						
Prep Date: 11/10/2023	Analysis Date: 11/14/2023			SeqNo: 3716493		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	4.8	23.76	0	97.5	70	130			
Surr: BFB	2100		950.6		218	15	244			

Sample ID: 2311351-006amsd	SampType: MSD			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: BS23-6 0.5ft	Batch ID: 78710			RunNo: 101136						
Prep Date: 11/10/2023	Analysis Date: 11/14/2023			SeqNo: 3716494		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2311351

30-Nov-23

Client: Vertex Resources Services, Inc.

Project: Piglet State SWD 1

Sample ID: 2311351-006amsd		SampType: MSD			TestCode: EPA Method 8015D: Gasoline Range					
Client ID: BS23-6 0.5ft		Batch ID: 78710			RunNo: 101136					
Prep Date: 11/10/2023		Analysis Date: 11/14/2023			SeqNo: 3716494		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	4.7	23.58	0	91.2	70	130	7.45	20	
Surr: BFB	2100		943.4		218	15	244	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

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

B Analyte detected in the associated Method Blank

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2311351

30-Nov-23

Client: Vertex Resources Services, Inc.**Project:** Piglet State SWD 1

Sample ID: LCS-78688	SampType: LCS			TestCode: EPA Method 8021B: Volatiles						
Client ID: LCSS	Batch ID: 78688			RunNo: 101130						
Prep Date: 11/9/2023	Analysis Date: 11/14/2023			SeqNo: 3715395		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.025	1.000	0	91.8	70	130			
Toluene	0.93	0.050	1.000	0	92.7	70	130			
Ethylbenzene	0.90	0.050	1.000	0	89.8	70	130			
Xylenes, Total	2.7	0.10	3.000	0	88.8	70	130			
Surr: 4-Bromofluorobenzene	0.89		1.000		89.1	39.1	146			

Sample ID: mb-78688	SampType: MBLK			TestCode: EPA Method 8021B: Volatiles						
Client ID: PBS	Batch ID: 78688			RunNo: 101130						
Prep Date: 11/9/2023	Analysis Date: 11/14/2023			SeqNo: 3715397		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.85		1.000		85.0	39.1	146			

Sample ID: lcs-78710	SampType: LCS			TestCode: EPA Method 8021B: Volatiles						
Client ID: LCSS	Batch ID: 78710			RunNo: 101136						
Prep Date: 11/10/2023	Analysis Date: 11/14/2023			SeqNo: 3716505		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.025	1.000	0	92.8	70	130			
Toluene	0.94	0.050	1.000	0	94.2	70	130			
Ethylbenzene	0.95	0.050	1.000	0	94.8	70	130			
Xylenes, Total	2.8	0.10	3.000	0	94.4	70	130			
Surr: 4-Bromofluorobenzene	0.97		1.000		96.9	39.1	146			

Sample ID: mb-78710	SampType: MBLK			TestCode: EPA Method 8021B: Volatiles						
Client ID: PBS	Batch ID: 78710			RunNo: 101136						
Prep Date: 11/10/2023	Analysis Date: 11/14/2023			SeqNo: 3716506		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.97		1.000		96.8	39.1	146			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quantitative Limit	RL	Reporting Limit
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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2311351

30-Nov-23

Client: Vertex Resources Services, Inc.

Project: Piglet State SWD 1

Sample ID: 2311351-007ams	SampType: MS			TestCode: EPA Method 8021B: Volatiles						
Client ID: BS23-7 0.5ft	Batch ID: 78710			RunNo: 101136						
Prep Date: 11/10/2023	Analysis Date: 11/14/2023			SeqNo: 3716510		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.87	0.024	0.9785	0	89.1	70	130			
Toluene	0.89	0.049	0.9785	0	90.6	70	130			
Ethylbenzene	0.91	0.049	0.9785	0	93.4	70	130			
Xylenes, Total	2.7	0.098	2.935	0	92.7	70	130			
Surr: 4-Bromofluorobenzene	0.92		0.9785		93.9	39.1	146			

Sample ID: 2311351-007amsd		SampType: MSD		TestCode: EPA Method 8021B: Volatiles						
Client ID: BS23-7 0.5ft		Batch ID: 78710		RunNo: 101136						
Prep Date: 11/10/2023		Analysis Date: 11/14/2023		SeqNo: 3716511		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.024	0.9794	0	92.7	70	130	4.07	20	
Toluene	0.91	0.049	0.9794	0	93.2	70	130	2.97	20	
Ethylbenzene	0.93	0.049	0.9794	0	95.2	70	130	1.96	20	
Xylenes, Total	2.8	0.098	2.938	0	95.0	70	130	2.62	20	
Surr: 4-Bromofluorobenzene	0.95		0.9794		96.6	39.1	146	0	0	

Qualifiers:

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



Environment Testin.

Eurofins Environment Testing South
Central, LLC4901 Hawkins NE
Albuquerque, NM 87109

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

Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Vertex Resources

Work Order Number: 2311351

RcptNo: 1

Received By: Tracy Casarrubias 11/8/2023 7:35:00 AM

Completed By: Tracy Casarrubias 11/8/2023 7:58:10 AM

Reviewed By: *[Signature]* 11-8-23Chain of Custody

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

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☒ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
9. Received at least 1 vial with headspace $<1/4"$ for AQ VOA? Yes ☐ No ☐ NA ☒
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
13. Is it clear what analyses were requested? Yes ☒ No ☐
14. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted?

Checked by: *11/11/8/23*Special Handling (if applicable)

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

Person Notified: Date: By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In PersonRegarding:

Client Instructions: Mailing address, phone number, and Email/Fax are missing on COC- TMC 11/8/23

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.4	Good	Yes	Yogi		

Chain-of-Custody Record

Client: Silverback

(Vertex)

Mailing Address: On file

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)Accreditation: ☐ Az Compliance☐ NELAC ☐ Other☐ EDD (Type)

Turn-Around Time:

Standard ☒ Rush 5 Day

Project Name: Piglet State SWD #1

Project #:

23E-05383

Project Manager:

Chance Dixon

Sampler: Fernando Rodriguez

On Ice: ☒ Yes ☐ No

of Coolers: 1

Cooler Temp (including CF): 24 - 0 = 24 °C

Container Type and #

Preservative Type

HEAL No.

1, 4oz jar

Ice

001

1, 4oz jar

Ice

002

1, 4oz jar

Ice

003

1, 4oz jar

Ice

004

1, 4oz jar

Ice

005

1, 4oz jar

Ice

006

1, 4oz jar

Ice

007

1, 4oz jar

Ice

008

1, 4oz jar

Ice

009

1, 4oz jar

Ice

010

1, 4oz jar

Ice

011

1, 4oz jar

Ice

012

1, 4oz jar

Ice

012

Relinquished by:

Time: 11/6 17:00

Relinquished by:

Time: 11/13 1900

Received by:

Via:

Date: 11/13 1000

Received by:

Via:

Date: 11/13 7:35

Remarks:

CC: Chance Dixon & Fernando Rodriguez

Direct bill to Silverback

11/28/23 Per Fernando R. - All Sample ID's and depth's have been updated. me

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



Environment Testing

Eurofins Environment Testing South
Central, LLC

4901 Hawkins NE

Albuquerque, NM 87109

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

Website: www.hallenvironmental.com

November 30, 2023

Chance Dixon

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX:

RE: Piglet State SWD 1

OrderNo.: 2311454

Dear Chance Dixon:

Eurofins Environment Testing South Central, LLC received 24 sample(s) on 11/9/2023 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued November 22, 2023.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please do not hesitate to contact Eurofins Albuquerque for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", with a stylized flourish at the end.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 2311454

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-25 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/7/2023 8:00:00 AM

Lab ID: 2311454-001

Matrix: SOIL

Received Date: 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	180	9.6		mg/Kg	1	11/16/2023 3:54:32 AM
Motor Oil Range Organics (MRO)	170	48		mg/Kg	1	11/16/2023 3:54:32 AM
Surr: DNOP	113	69-147		%Rec	1	11/16/2023 3:54:32 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/15/2023 5:54:00 PM
Surr: BFB	105	15-244		%Rec	1	11/15/2023 5:54:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	11/15/2023 5:54:00 PM
Toluene	ND	0.047		mg/Kg	1	11/15/2023 5:54:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	11/15/2023 5:54:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	11/15/2023 5:54:00 PM
Surr: 4-Bromofluorobenzene	95.2	39.1-146		%Rec	1	11/15/2023 5:54:00 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	1900	60		mg/Kg	20	11/16/2023 12:03:35 AM

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

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

Analytical Report

Lab Order 2311454

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-26 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/7/2023 8:05:00 AM

Lab ID: 2311454-002

Matrix: SOIL

Received Date: 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	110	9.6		mg/Kg	1	11/16/2023 4:41:37 AM
Motor Oil Range Organics (MRO)	110	48		mg/Kg	1	11/16/2023 4:41:37 AM
Surr: DNOP	115	69-147		%Rec	1	11/16/2023 4:41:37 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/15/2023 6:16:00 PM
Surr: BFB	97.8	15-244		%Rec	1	11/15/2023 6:16:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	11/15/2023 6:16:00 PM
Toluene	ND	0.049		mg/Kg	1	11/15/2023 6:16:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/15/2023 6:16:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	11/15/2023 6:16:00 PM
Surr: 4-Bromofluorobenzene	95.7	39.1-146		%Rec	1	11/15/2023 6:16:00 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	1200	59		mg/Kg	20	11/15/2023 2:07:58 PM

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

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

Analytical Report

Lab Order 2311454

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-27 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/7/2023 8:10:00 AM

Lab ID: 2311454-003

Matrix: SOIL

Received Date: 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	150	10		mg/Kg	1	11/16/2023 5:05:07 AM
Motor Oil Range Organics (MRO)	150	50		mg/Kg	1	11/16/2023 5:05:07 AM
Surr: DNOP	116	69-147		%Rec	1	11/16/2023 5:05:07 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/15/2023 6:38:00 PM
Surr: BFB	99.2	15-244		%Rec	1	11/15/2023 6:38:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.023		mg/Kg	1	11/15/2023 6:38:00 PM
Toluene	ND	0.046		mg/Kg	1	11/15/2023 6:38:00 PM
Ethylbenzene	ND	0.046		mg/Kg	1	11/15/2023 6:38:00 PM
Xylenes, Total	ND	0.092		mg/Kg	1	11/15/2023 6:38:00 PM
Surr: 4-Bromofluorobenzene	96.1	39.1-146		%Rec	1	11/15/2023 6:38:00 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	1800	59		mg/Kg	20	11/15/2023 3:34:49 PM

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

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

Analytical Report

Lab Order 2311454

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-28 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/7/2023 8:15:00 AM

Lab ID: 2311454-004

Matrix: SOIL

Received Date: 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	180	9.9		mg/Kg	1	11/16/2023 5:28:40 AM
Motor Oil Range Organics (MRO)	180	50		mg/Kg	1	11/16/2023 5:28:40 AM
Surr: DNOP	118	69-147		%Rec	1	11/16/2023 5:28:40 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/15/2023 7:00:00 PM
Surr: BFB	100	15-244		%Rec	1	11/15/2023 7:00:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.025		mg/Kg	1	11/15/2023 7:00:00 PM
Toluene	ND	0.049		mg/Kg	1	11/15/2023 7:00:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/15/2023 7:00:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	11/15/2023 7:00:00 PM
Surr: 4-Bromofluorobenzene	97.3	39.1-146		%Rec	1	11/15/2023 7:00:00 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	2300	60		mg/Kg	20	11/15/2023 3:47:14 PM

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

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

Analytical Report

Lab Order 2311454

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-29 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/7/2023 8:20:00 AM

Lab ID: 2311454-005

Matrix: SOIL

Received Date: 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	120	10		mg/Kg	1	11/16/2023 6:16:12 AM
Motor Oil Range Organics (MRO)	120	50		mg/Kg	1	11/16/2023 6:16:12 AM
Surr: DNOP	116	69-147		%Rec	1	11/16/2023 6:16:12 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/15/2023 7:21:00 PM
Surr: BFB	97.4	15-244		%Rec	1	11/15/2023 7:21:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	11/15/2023 7:21:00 PM
Toluene	ND	0.048		mg/Kg	1	11/15/2023 7:21:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/15/2023 7:21:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	11/15/2023 7:21:00 PM
Surr: 4-Bromofluorobenzene	94.7	39.1-146		%Rec	1	11/15/2023 7:21:00 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	1500	59		mg/Kg	20	11/15/2023 3:59:39 PM

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

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

Analytical Report

Lab Order 2311454

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-30 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/7/2023 8:25:00 AM

Lab ID: 2311454-006

Matrix: SOIL

Received Date: 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	200	9.6		mg/Kg	1	11/16/2023 6:40:01 AM
Motor Oil Range Organics (MRO)	190	48		mg/Kg	1	11/16/2023 6:40:01 AM
Surr: DNOP	111	69-147		%Rec	1	11/16/2023 6:40:01 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/15/2023 7:43:00 PM
Surr: BFB	104	15-244		%Rec	1	11/15/2023 7:43:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.025		mg/Kg	1	11/15/2023 7:43:00 PM
Toluene	ND	0.049		mg/Kg	1	11/15/2023 7:43:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/15/2023 7:43:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	11/15/2023 7:43:00 PM
Surr: 4-Bromofluorobenzene	97.2	39.1-146		%Rec	1	11/15/2023 7:43:00 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	2200	60		mg/Kg	20	11/15/2023 4:12:04 PM

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

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

Analytical Report

Lab Order 2311454

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-31 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/7/2023 8:30:00 AM

Lab ID: 2311454-007

Matrix: SOIL

Received Date: 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	140	9.7		mg/Kg	1	11/16/2023 7:03:55 AM
Motor Oil Range Organics (MRO)	140	48		mg/Kg	1	11/16/2023 7:03:55 AM
Surr: DNOP	108	69-147		%Rec	1	11/16/2023 7:03:55 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/15/2023 8:05:00 PM
Surr: BFB	104	15-244		%Rec	1	11/15/2023 8:05:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	11/15/2023 8:05:00 PM
Toluene	ND	0.048		mg/Kg	1	11/15/2023 8:05:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/15/2023 8:05:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	11/15/2023 8:05:00 PM
Surr: 4-Bromofluorobenzene	99.0	39.1-146		%Rec	1	11/15/2023 8:05:00 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	1500	60		mg/Kg	20	11/15/2023 4:24:28 PM

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

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

Analytical Report

Lab Order 2311454

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-32 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/7/2023 8:35:00 AM

Lab ID: 2311454-008

Matrix: SOIL

Received Date: 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	100	9.3		mg/Kg	1	11/16/2023 7:51:20 AM
Motor Oil Range Organics (MRO)	100	46		mg/Kg	1	11/16/2023 7:51:20 AM
Surr: DNOP	109	69-147		%Rec	1	11/16/2023 7:51:20 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/15/2023 8:27:00 PM
Surr: BFB	99.8	15-244		%Rec	1	11/15/2023 8:27:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	11/15/2023 8:27:00 PM
Toluene	ND	0.048		mg/Kg	1	11/15/2023 8:27:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/15/2023 8:27:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	11/15/2023 8:27:00 PM
Surr: 4-Bromofluorobenzene	94.4	39.1-146		%Rec	1	11/15/2023 8:27:00 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	1600	60		mg/Kg	20	11/15/2023 4:36:52 PM

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

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

Analytical Report

Lab Order 2311454

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-33 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/7/2023 8:40:00 AM

Lab ID: 2311454-009

Matrix: SOIL

Received Date: 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	250	9.2		mg/Kg	1	11/16/2023 8:15:03 AM
Motor Oil Range Organics (MRO)	250	46		mg/Kg	1	11/16/2023 8:15:03 AM
Surr: DNOP	114	69-147		%Rec	1	11/16/2023 8:15:03 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/15/2023 8:48:00 PM
Surr: BFB	101	15-244		%Rec	1	11/15/2023 8:48:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.025		mg/Kg	1	11/15/2023 8:48:00 PM
Toluene	ND	0.050		mg/Kg	1	11/15/2023 8:48:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	11/15/2023 8:48:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	11/15/2023 8:48:00 PM
Surr: 4-Bromofluorobenzene	98.3	39.1-146		%Rec	1	11/15/2023 8:48:00 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	1900	60		mg/Kg	20	11/15/2023 5:14:05 PM

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

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

Analytical Report

Lab Order 2311454

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-34 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/7/2023 8:45:00 AM

Lab ID: 2311454-010

Matrix: SOIL

Received Date: 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	190	9.6		mg/Kg	1	11/16/2023 9:02:26 AM
Motor Oil Range Organics (MRO)	190	48		mg/Kg	1	11/16/2023 9:02:26 AM
Surr: DNOP	111	69-147		%Rec	1	11/16/2023 9:02:26 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/15/2023 9:32:00 PM
Surr: BFB	99.4	15-244		%Rec	1	11/15/2023 9:32:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	11/15/2023 9:32:00 PM
Toluene	ND	0.048		mg/Kg	1	11/15/2023 9:32:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/15/2023 9:32:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	11/15/2023 9:32:00 PM
Surr: 4-Bromofluorobenzene	95.0	39.1-146		%Rec	1	11/15/2023 9:32:00 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	2300	61		mg/Kg	20	11/15/2023 5:26:29 PM

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

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

Analytical Report

Lab Order 2311454

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-35 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/7/2023 8:50:00 AM

Lab ID: 2311454-011

Matrix: SOIL

Received Date: 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	160	9.4		mg/Kg	1	11/16/2023 9:26:10 AM
Motor Oil Range Organics (MRO)	160	47		mg/Kg	1	11/16/2023 9:26:10 AM
Surr: DNOP	111	69-147		%Rec	1	11/16/2023 9:26:10 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/15/2023 10:15:00 PM
Surr: BFB	99.9	15-244		%Rec	1	11/15/2023 10:15:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	11/15/2023 10:15:00 PM
Toluene	ND	0.047		mg/Kg	1	11/15/2023 10:15:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	11/15/2023 10:15:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	11/15/2023 10:15:00 PM
Surr: 4-Bromofluorobenzene	94.3	39.1-146		%Rec	1	11/15/2023 10:15:00 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	1900	60		mg/Kg	20	11/15/2023 5:38:54 PM

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

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

Analytical Report

Lab Order 2311454

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-36 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/7/2023 8:55:00 AM

Lab ID: 2311454-012

Matrix: SOIL

Received Date: 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	120	9.1		mg/Kg	1	11/15/2023 2:14:45 PM
Motor Oil Range Organics (MRO)	140	46		mg/Kg	1	11/15/2023 2:14:45 PM
Surr: DNOP	92.8	69-147		%Rec	1	11/15/2023 2:14:45 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/15/2023 11:04:13 PM
Surr: BFB	89.6	15-244		%Rec	1	11/15/2023 11:04:13 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	11/15/2023 11:04:13 PM
Toluene	ND	0.048		mg/Kg	1	11/15/2023 11:04:13 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/15/2023 11:04:13 PM
Xylenes, Total	ND	0.097		mg/Kg	1	11/15/2023 11:04:13 PM
Surr: 4-Bromofluorobenzene	91.5	39.1-146		%Rec	1	11/15/2023 11:04:13 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	2200	61		mg/Kg	20	11/15/2023 5:51:18 PM

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

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

Analytical Report

Lab Order 2311454

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-37 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/7/2023 9:00:00 AM

Lab ID: 2311454-013

Matrix: SOIL

Received Date: 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	110	9.6		mg/Kg	1	11/15/2023 2:25:20 PM
Motor Oil Range Organics (MRO)	130	48		mg/Kg	1	11/15/2023 2:25:20 PM
Surr: DNOP	84.0	69-147		%Rec	1	11/15/2023 2:25:20 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/15/2023 11:27:44 PM
Surr: BFB	90.6	15-244		%Rec	1	11/15/2023 11:27:44 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.023		mg/Kg	1	11/15/2023 11:27:44 PM
Toluene	ND	0.047		mg/Kg	1	11/15/2023 11:27:44 PM
Ethylbenzene	ND	0.047		mg/Kg	1	11/15/2023 11:27:44 PM
Xylenes, Total	ND	0.093		mg/Kg	1	11/15/2023 11:27:44 PM
Surr: 4-Bromofluorobenzene	93.4	39.1-146		%Rec	1	11/15/2023 11:27:44 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	1700	59		mg/Kg	20	11/15/2023 6:03:43 PM

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

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

Analytical Report

Lab Order 2311454

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-38 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/7/2023 9:05:00 AM

Lab ID: 2311454-014

Matrix: SOIL

Received Date: 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	100	10		mg/Kg	1	11/15/2023 2:36:01 PM
Motor Oil Range Organics (MRO)	120	50		mg/Kg	1	11/15/2023 2:36:01 PM
Surr: DNOP	89.4	69-147		%Rec	1	11/15/2023 2:36:01 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/15/2023 11:51:17 PM
Surr: BFB	91.1	15-244		%Rec	1	11/15/2023 11:51:17 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	11/15/2023 11:51:17 PM
Toluene	ND	0.049		mg/Kg	1	11/15/2023 11:51:17 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/15/2023 11:51:17 PM
Xylenes, Total	ND	0.097		mg/Kg	1	11/15/2023 11:51:17 PM
Surr: 4-Bromofluorobenzene	93.0	39.1-146		%Rec	1	11/15/2023 11:51:17 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	2100	61		mg/Kg	20	11/15/2023 6:16:08 PM

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

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

Analytical Report

Lab Order 2311454

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-39 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/7/2023 9:10:00 AM

Lab ID: 2311454-015

Matrix: SOIL

Received Date: 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	110	9.4		mg/Kg	1	11/15/2023 2:46:38 PM
Motor Oil Range Organics (MRO)	150	47		mg/Kg	1	11/15/2023 2:46:38 PM
Surr: DNOP	84.5	69-147		%Rec	1	11/15/2023 2:46:38 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 12:14:52 AM
Surr: BFB	89.6	15-244		%Rec	1	11/16/2023 12:14:52 AM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.025		mg/Kg	1	11/16/2023 12:14:52 AM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 12:14:52 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 12:14:52 AM
Xylenes, Total	ND	0.099		mg/Kg	1	11/16/2023 12:14:52 AM
Surr: 4-Bromofluorobenzene	90.9	39.1-146		%Rec	1	11/16/2023 12:14:52 AM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	1700	60		mg/Kg	20	11/15/2023 6:28:33 PM

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

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

Analytical Report

Lab Order 2311454

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-40 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/7/2023 9:15:00 AM

Lab ID: 2311454-016

Matrix: SOIL

Received Date: 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	200	9.4		mg/Kg	1	11/15/2023 2:57:28 PM
Motor Oil Range Organics (MRO)	260	47		mg/Kg	1	11/15/2023 2:57:28 PM
Surr: DNOP	99.8	69-147		%Rec	1	11/15/2023 2:57:28 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 12:38:20 AM
Surr: BFB	90.2	15-244		%Rec	1	11/16/2023 12:38:20 AM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	11/16/2023 12:38:20 AM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 12:38:20 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 12:38:20 AM
Xylenes, Total	ND	0.098		mg/Kg	1	11/16/2023 12:38:20 AM
Surr: 4-Bromofluorobenzene	91.2	39.1-146		%Rec	1	11/16/2023 12:38:20 AM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	3000	150		mg/Kg	50	11/16/2023 9:22:56 AM

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

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

Analytical Report

Lab Order 2311454

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-41 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/7/2023 9:20:00 AM

Lab ID: 2311454-017

Matrix: SOIL

Received Date: 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	88	9.8		mg/Kg	1	11/15/2023 3:08:18 PM
Motor Oil Range Organics (MRO)	120	49		mg/Kg	1	11/15/2023 3:08:18 PM
Surr: DNOP	97.4	69-147		%Rec	1	11/15/2023 3:08:18 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/16/2023 1:01:45 AM
Surr: BFB	88.0	15-244		%Rec	1	11/16/2023 1:01:45 AM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	11/16/2023 1:01:45 AM
Toluene	ND	0.048		mg/Kg	1	11/16/2023 1:01:45 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/16/2023 1:01:45 AM
Xylenes, Total	ND	0.096		mg/Kg	1	11/16/2023 1:01:45 AM
Surr: 4-Bromofluorobenzene	90.2	39.1-146		%Rec	1	11/16/2023 1:01:45 AM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	1700	60		mg/Kg	20	11/15/2023 6:53:21 PM

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

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

Analytical Report

Lab Order 2311454

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-42 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/7/2023 9:25:00 AM

Lab ID: 2311454-018

Matrix: SOIL

Received Date: 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	210	9.4		mg/Kg	1	11/15/2023 3:19:05 PM
Motor Oil Range Organics (MRO)	260	47		mg/Kg	1	11/15/2023 3:19:05 PM
Surr: DNOP	92.9	69-147		%Rec	1	11/15/2023 3:19:05 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/16/2023 1:25:16 AM
Surr: BFB	89.6	15-244		%Rec	1	11/16/2023 1:25:16 AM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	11/16/2023 1:25:16 AM
Toluene	ND	0.048		mg/Kg	1	11/16/2023 1:25:16 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/16/2023 1:25:16 AM
Xylenes, Total	ND	0.095		mg/Kg	1	11/16/2023 1:25:16 AM
Surr: 4-Bromofluorobenzene	92.2	39.1-146		%Rec	1	11/16/2023 1:25:16 AM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	3200	150		mg/Kg	50	11/16/2023 9:35:20 AM

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

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

Analytical Report

Lab Order 2311454

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS23-43 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/7/2023 9:30:00 AM

Lab ID: 2311454-019

Matrix: SOIL

Received Date: 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	170	9.7		mg/Kg	1	11/15/2023 3:29:54 PM
Motor Oil Range Organics (MRO)	220	49		mg/Kg	1	11/15/2023 3:29:54 PM
Surr: DNOP	99.3	69-147		%Rec	1	11/15/2023 3:29:54 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 1:48:47 AM
Surr: BFB	91.8	15-244		%Rec	1	11/16/2023 1:48:47 AM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.025		mg/Kg	1	11/16/2023 1:48:47 AM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 1:48:47 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 1:48:47 AM
Xylenes, Total	ND	0.098		mg/Kg	1	11/16/2023 1:48:47 AM
Surr: 4-Bromofluorobenzene	93.7	39.1-146		%Rec	1	11/16/2023 1:48:47 AM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	1500	60		mg/Kg	20	11/16/2023 2:07:41 AM

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

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

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-44 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/7/2023 9:35:00 AM

Lab ID: 2311454-020

Matrix: SOIL

Received Date: 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	200	9.6		mg/Kg	1	11/15/2023 3:40:39 PM
Motor Oil Range Organics (MRO)	240	48		mg/Kg	1	11/15/2023 3:40:39 PM
Surr: DNOP	91.9	69-147		%Rec	1	11/15/2023 3:40:39 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/16/2023 2:12:13 AM
Surr: BFB	92.5	15-244		%Rec	1	11/16/2023 2:12:13 AM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	11/16/2023 2:12:13 AM
Toluene	ND	0.048		mg/Kg	1	11/16/2023 2:12:13 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/16/2023 2:12:13 AM
Xylenes, Total	ND	0.095		mg/Kg	1	11/16/2023 2:12:13 AM
Surr: 4-Bromofluorobenzene	93.8	39.1-146		%Rec	1	11/16/2023 2:12:13 AM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	2200	60		mg/Kg	20	11/16/2023 2:20:06 AM

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

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

Analytical Report

Lab Order 2311454

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-45 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/7/2023 9:40:00 AM

Lab ID: 2311454-021

Matrix: SOIL

Received Date: 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	170	9.7		mg/Kg	1	11/15/2023 3:51:26 PM
Motor Oil Range Organics (MRO)	210	49		mg/Kg	1	11/15/2023 3:51:26 PM
Surr: DNOP	89.2	69-147		%Rec	1	11/15/2023 3:51:26 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 2:59:05 AM
Surr: BFB	91.0	15-244		%Rec	1	11/16/2023 2:59:05 AM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	11/16/2023 2:59:05 AM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 2:59:05 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 2:59:05 AM
Xylenes, Total	ND	0.097		mg/Kg	1	11/16/2023 2:59:05 AM
Surr: 4-Bromofluorobenzene	92.6	39.1-146		%Rec	1	11/16/2023 2:59:05 AM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	2300	150		mg/Kg	50	11/16/2023 9:47:44 AM

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

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

Analytical Report

Lab Order 2311454

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-46 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/7/2023 9:45:00 AM

Lab ID: 2311454-022

Matrix: SOIL

Received Date: 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	180	9.3		mg/Kg	1	11/15/2023 4:02:10 PM
Motor Oil Range Organics (MRO)	230	47		mg/Kg	1	11/15/2023 4:02:10 PM
Surr: DNOP	107	69-147		%Rec	1	11/15/2023 4:02:10 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 3:22:35 AM
Surr: BFB	85.9	15-244		%Rec	1	11/16/2023 3:22:35 AM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.025		mg/Kg	1	11/16/2023 3:22:35 AM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 3:22:35 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 3:22:35 AM
Xylenes, Total	ND	0.099		mg/Kg	1	11/16/2023 3:22:35 AM
Surr: 4-Bromofluorobenzene	87.0	39.1-146		%Rec	1	11/16/2023 3:22:35 AM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	2200	150		mg/Kg	50	11/16/2023 10:00:09 AM

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

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

Analytical Report

Lab Order 2311454

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-47 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/7/2023 9:50:00 AM

Lab ID: 2311454-023

Matrix: SOIL

Received Date: 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	140	9.7		mg/Kg	1	11/15/2023 4:12:55 PM
Motor Oil Range Organics (MRO)	180	48		mg/Kg	1	11/15/2023 4:12:55 PM
Surr: DNOP	90.7	69-147		%Rec	1	11/15/2023 4:12:55 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/16/2023 3:46:02 AM
Surr: BFB	90.7	15-244		%Rec	1	11/16/2023 3:46:02 AM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.025		mg/Kg	1	11/16/2023 3:46:02 AM
Toluene	ND	0.050		mg/Kg	1	11/16/2023 3:46:02 AM
Ethylbenzene	ND	0.050		mg/Kg	1	11/16/2023 3:46:02 AM
Xylenes, Total	ND	0.099		mg/Kg	1	11/16/2023 3:46:02 AM
Surr: 4-Bromofluorobenzene	92.3	39.1-146		%Rec	1	11/16/2023 3:46:02 AM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	2100	61		mg/Kg	20	11/16/2023 3:22:09 AM

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

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

Analytical Report

Lab Order 2311454

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS23-48 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/7/2023 9:55:00 AM

Lab ID: 2311454-024

Matrix: SOIL

Received Date: 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	130	9.9		mg/Kg	1	11/15/2023 5:16:29 PM
Motor Oil Range Organics (MRO)	150	50		mg/Kg	1	11/15/2023 5:16:29 PM
Surr: DNOP	91.6	69-147		%Rec	1	11/15/2023 5:16:29 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/15/2023 11:42:00 PM
Surr: BFB	107	15-244		%Rec	1	11/15/2023 11:42:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	11/15/2023 11:42:00 PM
Toluene	ND	0.048		mg/Kg	1	11/15/2023 11:42:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/15/2023 11:42:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	11/15/2023 11:42:00 PM
Surr: 4-Bromofluorobenzene	100	39.1-146		%Rec	1	11/15/2023 11:42:00 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	1900	59		mg/Kg	20	11/16/2023 3:34:33 AM

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2311454

30-Nov-23

Client: Vertex Resources Services, Inc.**Project:** Piglet State SWD 1

Sample ID: MB-78811	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBS	Batch ID: 78811		RunNo: 101219							
Prep Date: 11/15/2023	Analysis Date: 11/15/2023		SeqNo: 3720672		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-78811	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSS	Batch ID: 78811		RunNo: 101219							
Prep Date: 11/15/2023	Analysis Date: 11/15/2023		SeqNo: 3720673		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.7	90	110			

Sample ID: MB-78812	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBS	Batch ID: 78812		RunNo: 101219							
Prep Date: 11/15/2023	Analysis Date: 11/15/2023		SeqNo: 3720674		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-78812	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSS	Batch ID: 78812		RunNo: 101219							
Prep Date: 11/15/2023	Analysis Date: 11/15/2023		SeqNo: 3720675		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.4	90	110			

Sample ID: MB-78817	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBS	Batch ID: 78817		RunNo: 101219							
Prep Date: 11/15/2023	Analysis Date: 11/16/2023		SeqNo: 3720765		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	30								

Sample ID: LCS-78817	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSS	Batch ID: 78817		RunNo: 101219							
Prep Date: 11/15/2023	Analysis Date: 11/16/2023		SeqNo: 3720767		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.1	90	110			

Qualifiers:

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

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

WO#: 2311454

30-Nov-23

Client: Vertex Resources Services, Inc.**Project:** Piglet State SWD 1

Sample ID: LCS-78800	SampType: LCS			TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID: LCSS	Batch ID: 78800			RunNo: 101145						
Prep Date: 11/15/2023	Analysis Date: 11/15/2023			SeqNo: 3719019		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	41	10	50.00	0	81.1	61.9	130			
Surr: DNOP	3.8		5.000		75.7	69	147			

Sample ID: MB-78800	SampType: MBLK			TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID: PBS	Batch ID: 78800			RunNo: 101145						
Prep Date: 11/15/2023	Analysis Date: 11/15/2023			SeqNo: 3719020		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.5		10.00		84.6	69	147			

Sample ID: LCS-78805	SampType: LCS			TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID: LCSS	Batch ID: 78805			RunNo: 101145						
Prep Date: 11/15/2023	Analysis Date: 11/15/2023			SeqNo: 3719807		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	89.7	61.9	130			
Surr: DNOP	4.2		5.000		84.7	69	147			

Sample ID: MB-78805	SampType: MBLK			TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID: PBS	Batch ID: 78805			RunNo: 101145						
Prep Date: 11/15/2023	Analysis Date: 11/15/2023			SeqNo: 3719809		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.1		10.00		81.5	69	147			

Sample ID: MB-78774	SampType: MBLK			TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID: PBS	Batch ID: 78774			RunNo: 101201						
Prep Date: 11/14/2023	Analysis Date: 11/15/2023			SeqNo: 3719857		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		106	69	147			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2311454

30-Nov-23

Client: Vertex Resources Services, Inc.

Project: Piglet State SWD 1

Sample ID: LCS-78774	SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: LCSS	Batch ID: 78774		RunNo: 101201							
Prep Date: 11/14/2023	Analysis Date: 11/15/2023		SeqNo: 3719858		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	10	50.00	0	105	61.9	130			
Surr: DNOP	4.8		5.000		95.9	69	147			

Sample ID: 2311454-011AMS	SampType: MS		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: BS23-35 0.5ft	Batch ID: 78774		RunNo: 101201							
Prep Date: 11/14/2023	Analysis Date: 11/16/2023		SeqNo: 3721602		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	210	9.9	49.36	156.3	115	54.2	135			
Surr: DNOP	5.6		4.936		113	69	147			

Sample ID: 2311454-011AMSD	SampType: MSD		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: BS23-35 0.5ft	Batch ID: 78774		RunNo: 101201							
Prep Date: 11/14/2023	Analysis Date: 11/16/2023		SeqNo: 3721603		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	220	9.4	47.21	156.3	126	54.2	135	1.49	29.2	
Surr: DNOP	5.3		4.721		113	69	147	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2311454

30-Nov-23

Client: Vertex Resources Services, Inc.

Project: Piglet State SWD 1

Sample ID: ics-78760	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSS	Batch ID: 78760		RunNo: 101155							
Prep Date: 11/13/2023	Analysis Date: 11/15/2023		SeqNo: 3717629		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	87.3	70	130			
Surr: BFB	1900		1000		189	15	244			

Sample ID: mb-78760	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBS	Batch ID: 78760		RunNo: 101155							
Prep Date: 11/13/2023	Analysis Date: 11/15/2023		SeqNo: 3717630		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	920		1000		91.5	15	244			

Sample ID: ics-78756	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSS	Batch ID: 78756		RunNo: 101220							
Prep Date: 11/13/2023	Analysis Date: 11/15/2023		SeqNo: 3720827		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	99.1	70	130			
Surr: BFB	2200		1000		223	15	244			

Sample ID: mb-78756	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBS	Batch ID: 78756		RunNo: 101220							
Prep Date: 11/13/2023	Analysis Date: 11/15/2023		SeqNo: 3720828		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		103	15	244			

Sample ID: ics-78790	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSS	Batch ID: 78790		RunNo: 101220							
Prep Date: 11/14/2023	Analysis Date: 11/15/2023		SeqNo: 3720851		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	93.6	70	130			
Surr: BFB	2200		1000		217	15	244			

Sample ID: mb-78790	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBS	Batch ID: 78790		RunNo: 101220							
Prep Date: 11/14/2023	Analysis Date: 11/15/2023		SeqNo: 3720852		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2311454

30-Nov-23

Client: Vertex Resources Services, Inc.

Project: Piglet State SWD 1

Sample ID: mb-78790	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: 78790	RunNo: 101220								
Prep Date: 11/14/2023	Analysis Date: 11/15/2023	SeqNo: 3720852		Units: mg/Kg						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		101	15	244			

Sample ID: 2311454-024ams	SampType: MS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: WS23-48 0.5ft	Batch ID: 78790	RunNo: 101220								
Prep Date: 11/14/2023	Analysis Date: 11/16/2023	SeqNo: 3720854		Units: mg/Kg						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	4.9	24.27	0	99.8	70	130			
Surr: BFB	2200		970.9		228	15	244			

Sample ID: 2311454-024amsd	SampType: MSD	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: WS23-48 0.5ft	Batch ID: 78790	RunNo: 101220								
Prep Date: 11/14/2023	Analysis Date: 11/16/2023	SeqNo: 3720855		Units: mg/Kg						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	4.8	24.22	0	102	70	130	1.95	20	
Surr: BFB	2200		969.0		224	15	244	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of standard limits. If undiluted results may be estimated.

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2311454

30-Nov-23

Client: Vertex Resources Services, Inc.

Project: Piglet State SWD 1

Sample ID: LCS-78760	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batch ID: 78760		RunNo: 101155							
Prep Date: 11/13/2023	Analysis Date: 11/15/2023		SeqNo: 3717753		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.025	1.000	0	96.2	70	130			
Toluene	0.97	0.050	1.000	0	96.7	70	130			
Ethylbenzene	0.96	0.050	1.000	0	95.8	70	130			
Xylenes, Total	2.8	0.10	3.000	0	94.5	70	130			
Surr: 4-Bromofluorobenzene	0.98		1.000		97.7	39.1	146			

Sample ID: mb-78760	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	Batch ID: 78760		RunNo: 101155							
Prep Date: 11/13/2023	Analysis Date: 11/15/2023		SeqNo: 3717754		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.95		1.000		95.1	39.1	146			

Sample ID: lcs-78756	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batch ID: 78756		RunNo: 101220							
Prep Date: 11/13/2023	Analysis Date: 11/15/2023		SeqNo: 3720712		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.025	1.000	0	96.2	70	130			
Toluene	0.99	0.050	1.000	0	98.7	70	130			
Ethylbenzene	1.0	0.050	1.000	0	99.8	70	130			
Xylenes, Total	3.0	0.10	3.000	0	99.1	70	130			
Surr: 4-Bromofluorobenzene	0.98		1.000		98.3	39.1	146			

Sample ID: mb-78756	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	Batch ID: 78756		RunNo: 101220							
Prep Date: 11/13/2023	Analysis Date: 11/15/2023		SeqNo: 3720715		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.97		1.000		97.5	39.1	146			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2311454

30-Nov-23

Client: Vertex Resources Services, Inc.**Project:** Piglet State SWD 1

Sample ID: lcs-78790	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batch ID: 78790		RunNo: 101220							
Prep Date: 11/14/2023	Analysis Date: 11/15/2023		SeqNo: 3720764		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.025	1.000	0	89.6	70	130			
Toluene	0.91	0.050	1.000	0	90.5	70	130			
Ethylbenzene	0.92	0.050	1.000	0	92.1	70	130			
Xylenes, Total	2.8	0.10	3.000	0	91.9	70	130			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	39.1	146			

Sample ID: mb-78790	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	Batch ID: 78790		RunNo: 101220							
Prep Date: 11/14/2023	Analysis Date: 11/15/2023		SeqNo: 3720766		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.96		1.000		96.3	39.1	146			

Qualifiers:

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



Environment Testin

Eurofins Environment Testing South

Central, LLC

4901 Hawkins NE

Albuquerque, NM 87109

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

Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Vertex Resources

Work Order Number: 2311454

RcptNo: 1

Received By: Tracy Casarrubias

11/9/2023 7:40:00 AM

Completed By: Tracy Casarrubias

11/9/2023 8:30:49 AM

Reviewed By:

7m 11/9/23

Chain of Custody

1. Is Chain of Custody complete?

Yes ☐No ☒Not Present ☐

2. How was the sample delivered?

CourierLog In

3. Was an attempt made to cool the samples?

Yes ☒No ☐NA ☐

4. Were all samples received at a temperature of >0° C to 6.0°C

Yes ☒No ☐NA ☐

5. Sample(s) in proper container(s)?

Yes ☒No ☐

6. Sufficient sample volume for indicated test(s)?

Yes ☒No ☐

7. Are samples (except VOA and ONG) properly preserved?

Yes ☒No ☐

8. Was preservative added to bottles?

Yes ☐No ☒NA ☐

9. Received at least 1 vial with headspace <1/4" for AQ VOA?

Yes ☐No ☐NA ☒

10. Were any sample containers received broken?

Yes ☐No ☒

11. Does paperwork match bottle labels?

Yes ☒No ☐

(Note discrepancies on chain of custody)

12. Are matrices correctly identified on Chain of Custody?

Yes ☒No ☐

13. Is it clear what analyses were requested?

Yes ☒No ☐

14. Were all holding times able to be met?

Yes ☒No ☐

(if no, notify customer for authorization.)

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted?

Checked by:

SCM 11/9/23

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order?

Yes ☐No ☐NA ☒

Person Notified:

Date:

By Whom:

Via:

☐ eMail☐ Phone☐ Fax☐ In Person

Regarding:

Client Instructions:

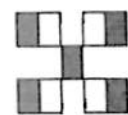
Mailing address, phone number, and Email/Fax are missing on COC- TMC 11/9/23

16. Additional remarks:

Client did not relinquish chain of custod

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.9	Good	Yes	Yogi		



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Chain-of-Custody Record

Client: Silverback

Mailing Address: (Nextex)
On file

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard☐ Level 4 (Full Validation)Accreditation: ☐ Az Compliance☐ NELAC☐ Other☐ EDD (Type)

Sampler: Fernando Rodriguez

On Ice: ☒ Yes ☐ No# of Coolers: 1Cooler Temp (including off): 2.8 to 0.1 = 2.9 °C

Date Time Matrix Sample Name

11/07/23	8:00	Soil	B-SS23-25 0# 0.5
11/07/23	8:05	Soil	B-SS23-26 0#
11/07/23	8:10	Soil	B-SS23-27 0#
11/07/23	8:15	Soil	B-SS23-28 0#
11/07/23	8:20	Soil	B-SS23-29 0#
11/07/23	8:25	Soil	B-SS23-30 0#
11/07/23	8:30	Soil	B-SS23-31 0#
11/07/23	8:35	Soil	B-SS23-32 0#
11/07/23	8:40	Soil	B-SS23-33 0#
11/07/23	8:45	Soil	B-SS23-34 0#
11/07/23	8:50	Soil	B-SS23-35 0#
11/07/23	8:55	Soil	B-SS23-36 0#

Date: 11/07/23 Time: 12:00Relinquished by: [Signature]Date: 11/07/23 Time: 9:00Relinquished by: [Signature]Received by: [Signature]Date: 11/07/23 Time: 9:45Received by: [Signature]Date: 11/07/23 Time: 7:46

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

Turn-Around Time: 1 Standard 5 Rush 5 SWD #1
Project Name: Piglet State SWD #1Project #: 23E-05383Project Manager: Chance Dixon

Analysis Request

BTEx	MTBE / TMBs (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl F, Br, NO ₃ , NO ₂ , PO ₄ , SO ₄	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel 505-345-3975

Remarks:

2/11/11 2/15

Time	Date	Remarks
4:46	4/11	4/11/11

Received by: _____
via: _____

22/5/11

contracted to other accredited laboratories. This serves as notice of the

Remarks:
cc: Charles Dixon & Fernandez Rodriguez

Direct bill to Silverback

91A
91A
11-11-13
This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



Environment Testing

Eurofins Environment Testing South
Central, LLC
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

November 30, 2023

Chance Dixon

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX:

RE: Piglet State SWD 1

OrderNo.: 2311549

Dear Chance Dixon:

Eurofins Environment Testing South Central, LLC received 20 sample(s) on 11/10/2023 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued November 22, 2023.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please do not hesitate to contact Eurofins Albuquerque for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", with a stylized flourish at the end.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 2311549

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-49 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/8/2023 8:10:00 AM

Lab ID: 2311549-001

Matrix: SOIL

Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	100	9.4		mg/Kg	1	11/15/2023 9:31:31 AM
Motor Oil Range Organics (MRO)	120	47		mg/Kg	1	11/15/2023 9:31:31 AM
Surr: DNOP	93.5	69-147		%Rec	1	11/15/2023 9:31:31 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 11:56:00 AM
Surr: BFB	105	15-244		%Rec	1	11/16/2023 11:56:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.025		mg/Kg	1	11/16/2023 11:56:00 AM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 11:56:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 11:56:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	11/16/2023 11:56:00 AM
Surr: 4-Bromofluorobenzene	99.0	39.1-146		%Rec	1	11/16/2023 11:56:00 AM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	2100	60		mg/Kg	20	11/16/2023 6:15:50 AM

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

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

Analytical Report

Lab Order 2311549

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-50 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/8/2023 8:05:00 AM

Lab ID: 2311549-002

Matrix: SOIL

Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	120	9.7		mg/Kg	1	11/15/2023 9:56:03 AM
Motor Oil Range Organics (MRO)	150	48		mg/Kg	1	11/15/2023 9:56:03 AM
Surr: DNOP	89.6	69-147		%Rec	1	11/15/2023 9:56:03 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 1:02:00 PM
Surr: BFB	100	15-244		%Rec	1	11/16/2023 1:02:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.025		mg/Kg	1	11/16/2023 1:02:00 PM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 1:02:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 1:02:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	11/16/2023 1:02:00 PM
Surr: 4-Bromofluorobenzene	97.8	39.1-146		%Rec	1	11/16/2023 1:02:00 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	2200	61		mg/Kg	20	11/16/2023 6:28:15 AM

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

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

Analytical Report

Lab Order 2311549

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-51 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/8/2023 8:10:00 AM

Lab ID: 2311549-003

Matrix: SOIL

Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	100	9.7		mg/Kg	1	11/15/2023 12:49:57 PM
Motor Oil Range Organics (MRO)	140	49		mg/Kg	1	11/15/2023 12:49:57 PM
Surr: DNOP	103	69-147		%Rec	1	11/15/2023 12:49:57 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/16/2023 2:07:00 PM
Surr: BFB	101	15-244		%Rec	1	11/16/2023 2:07:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	11/16/2023 2:07:00 PM
Toluene	ND	0.048		mg/Kg	1	11/16/2023 2:07:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/16/2023 2:07:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	11/16/2023 2:07:00 PM
Surr: 4-Bromofluorobenzene	96.0	39.1-146		%Rec	1	11/16/2023 2:07:00 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	1900	60		mg/Kg	20	11/16/2023 6:40:40 AM

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

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

Analytical Report

Lab Order 2311549

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-52 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/8/2023 8:15:00 AM

Lab ID: 2311549-004

Matrix: SOIL

Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	130	9.9		mg/Kg	1	11/15/2023 1:14:58 PM
Motor Oil Range Organics (MRO)	170	49		mg/Kg	1	11/15/2023 1:14:58 PM
Surr: DNOP	96.7	69-147		%Rec	1	11/15/2023 1:14:58 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/16/2023 2:28:00 PM
Surr: BFB	97.9	15-244		%Rec	1	11/16/2023 2:28:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	11/16/2023 2:28:00 PM
Toluene	ND	0.047		mg/Kg	1	11/16/2023 2:28:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	11/16/2023 2:28:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	11/16/2023 2:28:00 PM
Surr: 4-Bromofluorobenzene	93.4	39.1-146		%Rec	1	11/16/2023 2:28:00 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	1900	60		mg/Kg	20	11/16/2023 6:53:04 AM

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

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

Analytical Report

Lab Order 2311549

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-53 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/8/2023 8:20:00 AM

Lab ID: 2311549-005

Matrix: SOIL

Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	130	9.5		mg/Kg	1	11/15/2023 1:39:50 PM
Motor Oil Range Organics (MRO)	170	47		mg/Kg	1	11/15/2023 1:39:50 PM
Surr: DNOP	90.7	69-147		%Rec	1	11/15/2023 1:39:50 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/16/2023 2:50:00 PM
Surr: BFB	97.4	15-244		%Rec	1	11/16/2023 2:50:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	11/16/2023 2:50:00 PM
Toluene	ND	0.048		mg/Kg	1	11/16/2023 2:50:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/16/2023 2:50:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	11/16/2023 2:50:00 PM
Surr: 4-Bromofluorobenzene	93.9	39.1-146		%Rec	1	11/16/2023 2:50:00 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	1800	60		mg/Kg	20	11/16/2023 7:05:28 AM

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

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

Analytical Report

Lab Order 2311549

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-54 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/8/2023 8:25:00 AM

Lab ID: 2311549-006

Matrix: SOIL

Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	89	9.9		mg/Kg	1	11/15/2023 2:04:42 PM
Motor Oil Range Organics (MRO)	130	50		mg/Kg	1	11/15/2023 2:04:42 PM
Surr: DNOP	90.4	69-147		%Rec	1	11/15/2023 2:04:42 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/16/2023 3:12:00 PM
Surr: BFB	105	15-244		%Rec	1	11/16/2023 3:12:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	11/16/2023 3:12:00 PM
Toluene	ND	0.047		mg/Kg	1	11/16/2023 3:12:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	11/16/2023 3:12:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	11/16/2023 3:12:00 PM
Surr: 4-Bromofluorobenzene	97.3	39.1-146		%Rec	1	11/16/2023 3:12:00 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	1700	60		mg/Kg	20	11/15/2023 8:09:17 PM

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

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

Analytical Report

Lab Order 2311549

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-55 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/8/2023 8:30:00 AM

Lab ID: 2311549-007

Matrix: SOIL

Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	190	9.4		mg/Kg	1	11/15/2023 2:29:38 PM
Motor Oil Range Organics (MRO)	220	47		mg/Kg	1	11/15/2023 2:29:38 PM
Surr: DNOP	101	69-147		%Rec	1	11/15/2023 2:29:38 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/16/2023 3:34:00 PM
Surr: BFB	103	15-244		%Rec	1	11/16/2023 3:34:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.023		mg/Kg	1	11/16/2023 3:34:00 PM
Toluene	ND	0.047		mg/Kg	1	11/16/2023 3:34:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	11/16/2023 3:34:00 PM
Xylenes, Total	ND	0.093		mg/Kg	1	11/16/2023 3:34:00 PM
Surr: 4-Bromofluorobenzene	96.5	39.1-146		%Rec	1	11/16/2023 3:34:00 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	2300	60		mg/Kg	20	11/15/2023 9:11:20 PM

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

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

Analytical Report

Lab Order 2311549

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-56 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/8/2023 8:35:00 AM

Lab ID: 2311549-008

Matrix: SOIL

Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	160	9.7		mg/Kg	1	11/15/2023 2:54:26 PM
Motor Oil Range Organics (MRO)	210	48		mg/Kg	1	11/15/2023 2:54:26 PM
Surr: DNOP	89.0	69-147		%Rec	1	11/15/2023 2:54:26 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/16/2023 3:55:00 PM
Surr: BFB	101	15-244		%Rec	1	11/16/2023 3:55:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	11/16/2023 3:55:00 PM
Toluene	ND	0.048		mg/Kg	1	11/16/2023 3:55:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/16/2023 3:55:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	11/16/2023 3:55:00 PM
Surr: 4-Bromofluorobenzene	94.4	39.1-146		%Rec	1	11/16/2023 3:55:00 PM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	2100	150		mg/Kg	50	11/16/2023 10:37:23 AM

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

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

Analytical Report

Lab Order 2311549

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-57 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/8/2023 8:40:00 AM

Lab ID: 2311549-009

Matrix: SOIL

Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	280	9.9		mg/Kg	1	11/15/2023 3:19:17 PM
Motor Oil Range Organics (MRO)	320	49		mg/Kg	1	11/15/2023 3:19:17 PM
Surr: DNOP	103	69-147		%Rec	1	11/15/2023 3:19:17 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 4:17:00 PM
Surr: BFB	102	15-244		%Rec	1	11/16/2023 4:17:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.025		mg/Kg	1	11/16/2023 4:17:00 PM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 4:17:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 4:17:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	11/16/2023 4:17:00 PM
Surr: 4-Bromofluorobenzene	95.3	39.1-146		%Rec	1	11/16/2023 4:17:00 PM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	2300	150		mg/Kg	50	11/16/2023 10:49:47 AM

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

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

Analytical Report

Lab Order 2311549

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-58 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/8/2023 8:45:00 AM

Lab ID: 2311549-010

Matrix: SOIL

Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	100	9.9		mg/Kg	1	11/15/2023 4:09:07 PM
Motor Oil Range Organics (MRO)	140	50		mg/Kg	1	11/15/2023 4:09:07 PM
Surr: DNOP	94.0	69-147		%Rec	1	11/15/2023 4:09:07 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/16/2023 4:39:00 PM
Surr: BFB	102	15-244		%Rec	1	11/16/2023 4:39:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	11/16/2023 4:39:00 PM
Toluene	ND	0.047		mg/Kg	1	11/16/2023 4:39:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	11/16/2023 4:39:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	11/16/2023 4:39:00 PM
Surr: 4-Bromofluorobenzene	95.1	39.1-146		%Rec	1	11/16/2023 4:39:00 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	1600	60		mg/Kg	20	11/15/2023 10:13:23 PM

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

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

Analytical Report

Lab Order 2311549

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-59 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/8/2023 8:50:00 AM

Lab ID: 2311549-011

Matrix: SOIL

Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	170	9.7		mg/Kg	1	11/15/2023 4:58:16 PM
Motor Oil Range Organics (MRO)	200	49		mg/Kg	1	11/15/2023 4:58:16 PM
Surr: DNOP	98.7	69-147		%Rec	1	11/15/2023 4:58:16 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 5:22:00 PM
Surr: BFB	97.0	15-244		%Rec	1	11/16/2023 5:22:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.025		mg/Kg	1	11/16/2023 5:22:00 PM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 5:22:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 5:22:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	11/16/2023 5:22:00 PM
Surr: 4-Bromofluorobenzene	93.4	39.1-146		%Rec	1	11/16/2023 5:22:00 PM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	3000	150		mg/Kg	50	11/16/2023 11:02:12 AM

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

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

CLIENT: Vertex Resources Services, Inc.
Project: Piglet State SWD 1
Lab ID: 2311549-012

Client Sample ID: BS23-60 0.5ft
Collection Date: 11/8/2023 8:55:00 AM
Received Date: 11/10/2023 7:50:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	82	9.7		mg/Kg	1	11/15/2023 5:22:58 PM
Motor Oil Range Organics (MRO)	110	48		mg/Kg	1	11/15/2023 5:22:58 PM
Surr: DNOP	100	69-147		%Rec	1	11/15/2023 5:22:58 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 5:44:00 PM
Surr: BFB	103	15-244		%Rec	1	11/16/2023 5:44:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	11/16/2023 5:44:00 PM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 5:44:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 5:44:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	11/16/2023 5:44:00 PM
Surr: 4-Bromofluorobenzene	94.2	39.1-146		%Rec	1	11/16/2023 5:44:00 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	1200	60		mg/Kg	20	11/15/2023 10:38:12 PM

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

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

Analytical Report

Lab Order 2311549

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-61 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/8/2023 9:00:00 AM

Lab ID: 2311549-013

Matrix: SOIL

Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	190	9.6		mg/Kg	1	11/15/2023 5:47:41 PM
Motor Oil Range Organics (MRO)	220	48		mg/Kg	1	11/15/2023 5:47:41 PM
Surr: DNOP	104	69-147		%Rec	1	11/15/2023 5:47:41 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 6:05:00 PM
Surr: BFB	96.0	15-244		%Rec	1	11/16/2023 6:05:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	11/16/2023 6:05:00 PM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 6:05:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 6:05:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	11/16/2023 6:05:00 PM
Surr: 4-Bromofluorobenzene	95.8	39.1-146		%Rec	1	11/16/2023 6:05:00 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	2100	60		mg/Kg	20	11/15/2023 11:15:26 PM

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

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

Analytical Report

Lab Order 2311549

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-62 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/8/2023 9:05:00 AM

Lab ID: 2311549-014

Matrix: SOIL

Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	75	9.7		mg/Kg	1	11/15/2023 6:12:24 PM
Motor Oil Range Organics (MRO)	100	49		mg/Kg	1	11/15/2023 6:12:24 PM
Surr: DNOP	94.3	69-147		%Rec	1	11/15/2023 6:12:24 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/16/2023 6:27:00 PM
Surr: BFB	99.5	15-244		%Rec	1	11/16/2023 6:27:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	11/16/2023 6:27:00 PM
Toluene	ND	0.048		mg/Kg	1	11/16/2023 6:27:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/16/2023 6:27:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	11/16/2023 6:27:00 PM
Surr: 4-Bromofluorobenzene	93.2	39.1-146		%Rec	1	11/16/2023 6:27:00 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	1900	60		mg/Kg	20	11/15/2023 11:27:51 PM

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

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

Analytical Report

Lab Order 2311549

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-63 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/8/2023 9:10:00 AM

Lab ID: 2311549-015

Matrix: SOIL

Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	100	9.4		mg/Kg	1	11/15/2023 6:37:07 PM
Motor Oil Range Organics (MRO)	120	47		mg/Kg	1	11/15/2023 6:37:07 PM
Surr: DNOP	92.8	69-147		%Rec	1	11/15/2023 6:37:07 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 6:49:00 PM
Surr: BFB	98.5	15-244		%Rec	1	11/16/2023 6:49:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.025		mg/Kg	1	11/16/2023 6:49:00 PM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 6:49:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 6:49:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	11/16/2023 6:49:00 PM
Surr: 4-Bromofluorobenzene	93.8	39.1-146		%Rec	1	11/16/2023 6:49:00 PM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	2200	150		mg/Kg	50	11/16/2023 11:14:37 AM

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

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

Analytical Report

Lab Order 2311549

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-64 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/8/2023 9:15:00 AM

Lab ID: 2311549-016

Matrix: SOIL

Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	97	9.4		mg/Kg	1	11/15/2023 7:01:51 PM
Motor Oil Range Organics (MRO)	120	47		mg/Kg	1	11/15/2023 7:01:51 PM
Surr: DNOP	97.8	69-147		%Rec	1	11/15/2023 7:01:51 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 7:10:00 PM
Surr: BFB	98.6	15-244		%Rec	1	11/16/2023 7:10:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.025		mg/Kg	1	11/16/2023 7:10:00 PM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 7:10:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 7:10:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	11/16/2023 7:10:00 PM
Surr: 4-Bromofluorobenzene	93.5	39.1-146		%Rec	1	11/16/2023 7:10:00 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	1800	60		mg/Kg	20	11/15/2023 11:52:40 PM

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

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

Analytical Report

Lab Order 2311549

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-65 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/8/2023 9:20:00 AM

Lab ID: 2311549-017

Matrix: SOIL

Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	210	9.4		mg/Kg	1	11/15/2023 7:26:35 PM
Motor Oil Range Organics (MRO)	250	47		mg/Kg	1	11/15/2023 7:26:35 PM
Surr: DNOP	99.6	69-147		%Rec	1	11/15/2023 7:26:35 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 7:32:00 PM
Surr: BFB	98.6	15-244		%Rec	1	11/16/2023 7:32:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	11/16/2023 7:32:00 PM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 7:32:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 7:32:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	11/16/2023 7:32:00 PM
Surr: 4-Bromofluorobenzene	93.6	39.1-146		%Rec	1	11/16/2023 7:32:00 PM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	3600	150		mg/Kg	50	11/16/2023 11:27:01 AM

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

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

Analytical Report

Lab Order 2311549

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS23-66 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/8/2023 9:25:00 AM

Lab ID: 2311549-018

Matrix: SOIL

Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	90	9.6		mg/Kg	1	11/15/2023 8:15:46 PM
Motor Oil Range Organics (MRO)	110	48		mg/Kg	1	11/15/2023 8:15:46 PM
Surr: DNOP	85.2	69-147		%Rec	1	11/15/2023 8:15:46 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/16/2023 7:54:00 PM
Surr: BFB	101	15-244		%Rec	1	11/16/2023 7:54:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.025		mg/Kg	1	11/16/2023 7:54:00 PM
Toluene	ND	0.050		mg/Kg	1	11/16/2023 7:54:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	11/16/2023 7:54:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	11/16/2023 7:54:00 PM
Surr: 4-Bromofluorobenzene	93.8	39.1-146		%Rec	1	11/16/2023 7:54:00 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	1600	60		mg/Kg	20	11/16/2023 12:17:30 AM

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

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

Analytical Report

Lab Order 2311549

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS23-67 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/8/2023 9:30:00 AM

Lab ID: 2311549-019

Matrix: SOIL

Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	140	9.4		mg/Kg	1	11/15/2023 8:40:20 PM
Motor Oil Range Organics (MRO)	170	47		mg/Kg	1	11/15/2023 8:40:20 PM
Surr: DNOP	91.5	69-147		%Rec	1	11/15/2023 8:40:20 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 8:16:00 PM
Surr: BFB	97.7	15-244		%Rec	1	11/16/2023 8:16:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.025		mg/Kg	1	11/16/2023 8:16:00 PM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 8:16:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 8:16:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	11/16/2023 8:16:00 PM
Surr: 4-Bromofluorobenzene	94.9	39.1-146		%Rec	1	11/16/2023 8:16:00 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	2200	60		mg/Kg	20	11/16/2023 12:29:55 AM

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

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

Analytical Report

Lab Order 2311549

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-68 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/8/2023 9:35:00 AM

Lab ID: 2311549-020

Matrix: SOIL

Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	82	9.5		mg/Kg	1	11/15/2023 9:04:47 PM
Motor Oil Range Organics (MRO)	100	48		mg/Kg	1	11/15/2023 9:04:47 PM
Surr: DNOP	79.0	69-147		%Rec	1	11/15/2023 9:04:47 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: KMN
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/16/2023 8:37:00 PM
Surr: BFB	102	15-244		%Rec	1	11/16/2023 8:37:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: KMN
Benzene	ND	0.025		mg/Kg	1	11/16/2023 8:37:00 PM
Toluene	ND	0.050		mg/Kg	1	11/16/2023 8:37:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	11/16/2023 8:37:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	11/16/2023 8:37:00 PM
Surr: 4-Bromofluorobenzene	95.6	39.1-146		%Rec	1	11/16/2023 8:37:00 PM
EPA METHOD 300.0: ANIONS						Analyst: RBC
Chloride	1800	60		mg/Kg	20	11/16/2023 12:42:20 AM

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2311549

30-Nov-23

Client: Vertex Resources Services, Inc.**Project:** Piglet State SWD 1

Sample ID: MB-78817	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBS	Batch ID: 78817		RunNo: 101219							
Prep Date: 11/15/2023	Analysis Date: 11/16/2023		SeqNo: 3720765		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	30								

Sample ID: LCS-78817	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSS	Batch ID: 78817		RunNo: 101219							
Prep Date: 11/15/2023	Analysis Date: 11/16/2023		SeqNo: 3720767		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.1	90	110			

Sample ID: MB-78835	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBS	Batch ID: 78835		RunNo: 101209							
Prep Date: 11/15/2023	Analysis Date: 11/15/2023		SeqNo: 3721143		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-78835	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSS	Batch ID: 78835		RunNo: 101209							
Prep Date: 11/15/2023	Analysis Date: 11/15/2023		SeqNo: 3721144		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	98.1	90	110			

Qualifiers:

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

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

WO#: 2311549

30-Nov-23

Client: Vertex Resources Services, Inc.**Project:** Piglet State SWD 1

Sample ID: MB-78793	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 78793	RunNo: 101178								
Prep Date: 11/14/2023	Analysis Date: 11/15/2023	SeqNo: 3719024			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.9		10.00		99.3	69	147			

Sample ID: LCS-78793	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 78793	RunNo: 101178								
Prep Date: 11/14/2023	Analysis Date: 11/15/2023	SeqNo: 3719025			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Diesel Range Organics (DRO)	50	10	50.00	0	100	61.9	130			
Surr: DNOP	4.4		5.000		88.2	69	147			

Sample ID: 2311549-020AMS	SampType: MS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: BS23-68 0.5ft	Batch ID: 78793	RunNo: 101178								
Prep Date: 11/14/2023	Analysis Date: 11/15/2023	SeqNo: 3720891			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Diesel Range Organics (DRO)	120	9.6	48.22	81.74	87.5	54.2	135			
Surr: DNOP	4.6		4.822		94.8	69	147			

Sample ID: 2311549-020AMSD	SampType: MSD	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: BS23-68 0.5ft	Batch ID: 78793	RunNo: 101178								
Prep Date: 11/14/2023	Analysis Date: 11/15/2023	SeqNo: 3720892			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Diesel Range Organics (DRO)	120	9.6	48.08	81.74	72.0	54.2	135	6.33	29.2	
Surr: DNOP	4.5		4.808		93.2	69	147	0	0	

Sample ID: MB-78785	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 78785	RunNo: 101178								
Prep Date: 11/14/2023	Analysis Date: 11/15/2023	SeqNo: 3720894			Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Surr: DNOP	11		10.00		106	69	147			
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Sample ID: LCS-78785	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 78785	RunNo: 101178								
Prep Date: 11/14/2023	Analysis Date: 11/15/2023	SeqNo: 3720895			Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2311549

30-Nov-23

Client: Vertex Resources Services, Inc.

Project: Piglet State SWD 1

Sample ID: LCS-78785	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 78785	RunNo: 101178								
Prep Date: 11/14/2023	Analysis Date: 11/15/2023	SeqNo: 3720895		Units: %Rec						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.7		5.000		94.7	69	147			

- Qualifiers:
- *

Value exceeds Maximum Contaminant Level.

D

Sample Diluted Due to Matrix

H

Holding times for preparation or analysis exceeded

ND

Not Detected at the Reporting Limit

PQL

Practical Quantitative Limit

S

% Recovery outside of standard limits. If undiluted results may be estimated.

- B

Analyte detected in the associated Method Blank
- E

Above Quantitation Range/Estimated Value
- J

Analyte detected below quantitation limits
- P

Sample pH Not In Range
- RL

Reporting Limit

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

WO#: 2311549

30-Nov-23

Client: Vertex Resources Services, Inc.**Project:** Piglet State SWD 1

Sample ID: ics-78788	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSS	Batch ID: 78788		RunNo: 101268							
Prep Date: 11/14/2023	Analysis Date: 11/16/2023		SeqNo: 3723560		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	96.5	70	130			
Surr: BFB	2200		1000		217	15	244			

Sample ID: mb-78788	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBS	Batch ID: 78788		RunNo: 101268							
Prep Date: 11/14/2023	Analysis Date: 11/16/2023		SeqNo: 3723561		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1100		1000		106	15	244			

Sample ID: 2311549-001ams	SampType: MS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: BS23-49 0.5ft	Batch ID: 78788		RunNo: 101268							
Prep Date: 11/14/2023	Analysis Date: 11/16/2023		SeqNo: 3723563		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	4.9	24.56	0	100	70	130			
Surr: BFB	2200		982.3		228	15	244			

Sample ID: 2311549-001amsd	SampType: MSD		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: BS23-49 0.5ft	Batch ID: 78788		RunNo: 101268							
Prep Date: 11/14/2023	Analysis Date: 11/16/2023		SeqNo: 3723564		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	4.9	24.51	0	103	70	130	2.09	20	
Surr: BFB	2200		980.4		228	15	244	0	0	

Qualifiers:

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

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

WO#: 2311549

30-Nov-23

Client: Vertex Resources Services, Inc.**Project:** Piglet State SWD 1

Sample ID: lcs-78788	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batch ID: 78788		RunNo: 101268							
Prep Date: 11/14/2023	Analysis Date: 11/16/2023		SeqNo: 3723511		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.025	1.000	0	93.5	70	130			
Toluene	0.93	0.050	1.000	0	93.4	70	130			
Ethylbenzene	0.96	0.050	1.000	0	96.2	70	130			
Xylenes, Total	2.9	0.10	3.000	0	95.8	70	130			
Surr: 4-Bromofluorobenzene	0.97		1.000		97.0	39.1	146			

Sample ID: mb-78788	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	Batch ID: 78788		RunNo: 101268							
Prep Date: 11/14/2023	Analysis Date: 11/16/2023		SeqNo: 3723512		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		101	39.1	146			

Sample ID: 2311549-002ams	SampType: MS		TestCode: EPA Method 8021B: Volatiles							
Client ID: BS23-50 0.5ft	Batch ID: 78788		RunNo: 101268							
Prep Date: 11/14/2023	Analysis Date: 11/16/2023		SeqNo: 3723515		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.024	0.9775	0	90.9	70	130			
Toluene	0.91	0.049	0.9775	0	93.2	70	130			
Ethylbenzene	0.93	0.049	0.9775	0	95.4	70	130			
Xylenes, Total	2.8	0.098	2.933	0	94.9	70	130			
Surr: 4-Bromofluorobenzene	0.92		0.9775		94.2	39.1	146			

Sample ID: 2311549-002amsd	SampType: MSD		TestCode: EPA Method 8021B: Volatiles							
Client ID: BS23-50 0.5ft	Batch ID: 78788		RunNo: 101268							
Prep Date: 11/14/2023	Analysis Date: 11/16/2023		SeqNo: 3723516		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.025	0.9852	0	88.8	70	130	1.51	20	
Toluene	0.90	0.049	0.9852	0	91.3	70	130	1.25	20	
Ethylbenzene	0.92	0.049	0.9852	0	93.5	70	130	1.16	20	
Xylenes, Total	2.8	0.099	2.956	0	93.1	70	130	1.11	20	
Surr: 4-Bromofluorobenzene	0.93		0.9852		94.5	39.1	146	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of standard limits. If undiluted results may be estimated.

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



Environment Testing

Eurofins Environment Testing South
Central, LLC
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Vertex Resources Work Order Number: 2311549 RcptNo: 1
Received By: Juan Rojas 11/10/2023 7:50:00 AM *Juan Rojas*
Completed By: Tracy Casarrubias 11/10/2023 8:24:27 AM
Reviewed By: DAD 11/10/23

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☒ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☒ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☐ No ☐ NA ☒
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
13. Is it clear what analyses were requested? Yes ☒ No ☐
14. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted?

Checked by: *ju 11/10/23*

Special Handling (if applicable)

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

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions: Mailing address, phone number, and Email/Fax are missing on COC- TMC 11/10/23

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.4	Good	Yes	Yogi		



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

May 31, 2024

CHANCE DIXON

VERTEX RESOURCE GROUP

420 SOUTH MAIN, SUITE 202

TULSA, OK 74103

RE: PIGLET STATE SWD #1

Enclosed are the results of analyses for samples received by the laboratory on 05/28/24 10:16.

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.

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 "Mike Snyder". The signature is fluid and cursive, with the first name "Mike" and last name "Snyder" clearly distinguishable.

Mike Snyder For Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

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

Received: 05/28/2024
 Reported: 05/31/2024
 Project Name: PIGLET STATE SWD #1
 Project Number: 23E - 05383
 Project Location: SILVERBACK EXP - EDDY CO NM

Sampling Date: 05/23/2024
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: BH24 - 01 0FT (H242938-01)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/30/2024	ND	1.94	96.8	2.00	2.44	
Toluene*	<0.050	0.050	05/30/2024	ND	1.88	94.2	2.00	2.47	
Ethylbenzene*	<0.050	0.050	05/30/2024	ND	1.90	95.0	2.00	2.98	
Total Xylenes*	<0.150	0.150	05/30/2024	ND	5.49	91.6	6.00	2.92	
Total BTX	<0.300	0.300	05/30/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 90.5 % 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	05/31/2024	ND	448	112	400	3.51		

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	05/29/2024	ND	213	106	200	0.477	
DRO >C10-C28*	<10.0	10.0	05/29/2024	ND	194	97.2	200	0.910	
EXT DRO >C28-C36	<10.0	10.0	05/29/2024	ND					

Surrogate: 1-Chlorooctane 71.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 81.2 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

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

Received: 05/28/2024
 Reported: 05/31/2024
 Project Name: PIGLET STATE SWD #1
 Project Number: 23E - 05383
 Project Location: SILVERBACK EXP - EDDY CO NM

Sampling Date: 05/23/2024
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: BH24 - 01 2FT (H242938-02)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/30/2024	ND	1.94	96.8	2.00	2.44		
Toluene*	<0.050	0.050	05/30/2024	ND	1.88	94.2	2.00	2.47		
Ethylbenzene*	<0.050	0.050	05/30/2024	ND	1.90	95.0	2.00	2.98		
Total Xylenes*	<0.150	0.150	05/30/2024	ND	5.49	91.6	6.00	2.92		
Total BTEX	<0.300	0.300	05/30/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 91.6 % 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	64.0	16.0	05/30/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/29/2024	ND	213	106	200	0.477	
DRO >C10-C28*	<10.0	10.0	05/29/2024	ND	194	97.2	200	0.910	
EXT DRO >C28-C36	<10.0	10.0	05/29/2024	ND					

Surrogate: 1-Chlorooctane 79.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 88.9 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

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

Received: 05/28/2024
 Reported: 05/31/2024
 Project Name: PIGLET STATE SWD #1
 Project Number: 23E - 05383
 Project Location: SILVERBACK EXP - EDDY CO NM

Sampling Date: 05/23/2024
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: BH24 - 02 0FT (H242938-03)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/30/2024	ND	1.94	96.8	2.00	2.44		
Toluene*	<0.050	0.050	05/30/2024	ND	1.88	94.2	2.00	2.47		
Ethylbenzene*	<0.050	0.050	05/30/2024	ND	1.90	95.0	2.00	2.98		
Total Xylenes*	<0.150	0.150	05/30/2024	ND	5.49	91.6	6.00	2.92		
Total BTEx	<0.300	0.300	05/30/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 91.7 % 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	96.0	16.0	05/30/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/29/2024	ND	213	106	200	0.477	
DRO >C10-C28*	<10.0	10.0	05/29/2024	ND	194	97.2	200	0.910	
EXT DRO >C28-C36	<10.0	10.0	05/29/2024	ND					

Surrogate: 1-Chlorooctane 81.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 90.8 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 05/28/2024
 Reported: 05/31/2024
 Project Name: PIGLET STATE SWD #1
 Project Number: 23E - 05383
 Project Location: SILVERBACK EXP - EDDY CO NM

Sampling Date: 05/23/2024
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: BH24 - 02 2FT (H242938-04)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/30/2024	ND	1.94	96.8	2.00	2.44		
Toluene*	<0.050	0.050	05/30/2024	ND	1.88	94.2	2.00	2.47		
Ethylbenzene*	<0.050	0.050	05/30/2024	ND	1.90	95.0	2.00	2.98		
Total Xylenes*	<0.150	0.150	05/30/2024	ND	5.49	91.6	6.00	2.92		
Total BTEX	<0.300	0.300	05/30/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 91.0 % 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	05/30/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/29/2024	ND	213	106	200	0.477	
DRO >C10-C28*	<10.0	10.0	05/29/2024	ND	194	97.2	200	0.910	
EXT DRO >C28-C36	<10.0	10.0	05/29/2024	ND					

Surrogate: 1-Chlorooctane 72.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 81.0 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

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

Received: 05/28/2024
 Reported: 05/31/2024
 Project Name: PIGLET STATE SWD #1
 Project Number: 23E - 05383
 Project Location: SILVERBACK EXP - EDDY CO NM

Sampling Date: 05/23/2024
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: BH24 - 03 0FT (H242938-05)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/30/2024	ND	1.94	96.8	2.00	2.44		
Toluene*	<0.050	0.050	05/30/2024	ND	1.88	94.2	2.00	2.47		
Ethylbenzene*	<0.050	0.050	05/30/2024	ND	1.90	95.0	2.00	2.98		
Total Xylenes*	<0.150	0.150	05/30/2024	ND	5.49	91.6	6.00	2.92		
Total BTEX	<0.300	0.300	05/30/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 90.6 % 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	05/30/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/29/2024	ND	213	106	200	0.477	
DRO >C10-C28*	<10.0	10.0	05/29/2024	ND	194	97.2	200	0.910	
EXT DRO >C28-C36	<10.0	10.0	05/29/2024	ND					

Surrogate: 1-Chlorooctane 72.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 81.4 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

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

Received: 05/28/2024
 Reported: 05/31/2024
 Project Name: PIGLET STATE SWD #1
 Project Number: 23E - 05383
 Project Location: SILVERBACK EXP - EDDY CO NM

Sampling Date: 05/23/2024
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: BH24 - 03 2FT (H242938-06)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/30/2024	ND	1.94	96.8	2.00	2.44		
Toluene*	<0.050	0.050	05/30/2024	ND	1.88	94.2	2.00	2.47		
Ethylbenzene*	<0.050	0.050	05/30/2024	ND	1.90	95.0	2.00	2.98		
Total Xylenes*	<0.150	0.150	05/30/2024	ND	5.49	91.6	6.00	2.92		
Total BTEX	<0.300	0.300	05/30/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 91.1 % 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	05/30/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/29/2024	ND	213	106	200	0.477	
DRO >C10-C28*	<10.0	10.0	05/29/2024	ND	194	97.2	200	0.910	
EXT DRO >C28-C36	<10.0	10.0	05/29/2024	ND					

Surrogate: 1-Chlorooctane 74.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 84.5 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

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

Received: 05/28/2024
 Reported: 05/31/2024
 Project Name: PIGLET STATE SWD #1
 Project Number: 23E - 05383
 Project Location: SILVERBACK EXP - EDDY CO NM

Sampling Date: 05/23/2024
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: BH24 - 04 0FT (H242938-07)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/30/2024	ND	1.94	96.8	2.00	2.44		
Toluene*	<0.050	0.050	05/30/2024	ND	1.88	94.2	2.00	2.47		
Ethylbenzene*	<0.050	0.050	05/30/2024	ND	1.90	95.0	2.00	2.98		
Total Xylenes*	<0.150	0.150	05/30/2024	ND	5.49	91.6	6.00	2.92		
Total BTEX	<0.300	0.300	05/30/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 92.5 % 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	05/30/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/29/2024	ND	213	106	200	0.477	
DRO >C10-C28*	<10.0	10.0	05/29/2024	ND	194	97.2	200	0.910	
EXT DRO >C28-C36	<10.0	10.0	05/29/2024	ND					

Surrogate: 1-Chlorooctane 79.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 89.7 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

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

Received: 05/28/2024
 Reported: 05/31/2024
 Project Name: PIGLET STATE SWD #1
 Project Number: 23E - 05383
 Project Location: SILVERBACK EXP - EDDY CO NM

Sampling Date: 05/23/2024
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: BH24 - 04 2FT (H242938-08)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/30/2024	ND	1.94	96.8	2.00	2.44		
Toluene*	<0.050	0.050	05/30/2024	ND	1.88	94.2	2.00	2.47		
Ethylbenzene*	<0.050	0.050	05/30/2024	ND	1.90	95.0	2.00	2.98		
Total Xylenes*	<0.150	0.150	05/30/2024	ND	5.49	91.6	6.00	2.92		
Total BTEX	<0.300	0.300	05/30/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 92.7 % 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	96.0	16.0	05/30/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/29/2024	ND	213	106	200	0.477	
DRO >C10-C28*	<10.0	10.0	05/29/2024	ND	194	97.2	200	0.910	
EXT DRO >C28-C36	<10.0	10.0	05/29/2024	ND					

Surrogate: 1-Chlorooctane 87.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 99.9 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

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

Received: 05/28/2024
 Reported: 05/31/2024
 Project Name: PIGLET STATE SWD #1
 Project Number: 23E - 05383
 Project Location: SILVERBACK EXP - EDDY CO NM

Sampling Date: 05/23/2024
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: BH24 - 05 0FT (H242938-09)

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	05/30/2024	ND	1.76	87.8	2.00	3.88		
Toluene*	<0.050	0.050	05/30/2024	ND	1.77	88.7	2.00	3.81		
Ethylbenzene*	<0.050	0.050	05/30/2024	ND	1.75	87.4	2.00	4.38		
Total Xylenes*	<0.150	0.150	05/30/2024	ND	5.46	91.0	6.00	4.47		
Total BTEX	<0.300	0.300	05/30/2024	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	32.0	16.0	05/30/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/29/2024	ND	213	106	200	0.477	
DRO >C10-C28*	<10.0	10.0	05/29/2024	ND	194	97.2	200	0.910	
EXT DRO >C28-C36	<10.0	10.0	05/29/2024	ND					

Surrogate: 1-Chlorooctane 92.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 105 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

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

Received: 05/28/2024
 Reported: 05/31/2024
 Project Name: PIGLET STATE SWD #1
 Project Number: 23E - 05383
 Project Location: SILVERBACK EXP - EDDY CO NM

Sampling Date: 05/23/2024
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: BH24 - 05 2FT (H242938-10)

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	05/30/2024	ND	1.76	87.8	2.00	3.88		
Toluene*	<0.050	0.050	05/30/2024	ND	1.77	88.7	2.00	3.81		
Ethylbenzene*	<0.050	0.050	05/30/2024	ND	1.75	87.4	2.00	4.38		
Total Xylenes*	<0.150	0.150	05/30/2024	ND	5.46	91.0	6.00	4.47		
Total BTEX	<0.300	0.300	05/30/2024	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	80.0	16.0	05/30/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/29/2024	ND	213	106	200	0.477	
DRO >C10-C28*	<10.0	10.0	05/29/2024	ND	194	97.2	200	0.910	
EXT DRO >C28-C36	<10.0	10.0	05/29/2024	ND					

Surrogate: 1-Chlorooctane 86.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 98.0 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

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

Received: 05/28/2024
 Reported: 05/31/2024
 Project Name: PIGLET STATE SWD #1
 Project Number: 23E - 05383
 Project Location: SILVERBACK EXP - EDDY CO NM

Sampling Date: 05/23/2024
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: BH24 - 06 0FT (H242938-11)

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	05/30/2024	ND	1.76	87.8	2.00	3.88		
Toluene*	<0.050	0.050	05/30/2024	ND	1.77	88.7	2.00	3.81		
Ethylbenzene*	<0.050	0.050	05/30/2024	ND	1.75	87.4	2.00	4.38		
Total Xylenes*	<0.150	0.150	05/30/2024	ND	5.46	91.0	6.00	4.47		
Total BTEX	<0.300	0.300	05/30/2024	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	80.0	16.0	05/30/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/29/2024	ND	213	106	200	0.477	
DRO >C10-C28*	<10.0	10.0	05/29/2024	ND	194	97.2	200	0.910	
EXT DRO >C28-C36	<10.0	10.0	05/29/2024	ND					

Surrogate: 1-Chlorooctane 75.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 85.4 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

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

Received: 05/28/2024
 Reported: 05/31/2024
 Project Name: PIGLET STATE SWD #1
 Project Number: 23E - 05383
 Project Location: SILVERBACK EXP - EDDY CO NM

Sampling Date: 05/23/2024
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: BH24 - 06 2FT (H242938-12)

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	05/30/2024	ND	1.76	87.8	2.00	3.88		
Toluene*	<0.050	0.050	05/30/2024	ND	1.77	88.7	2.00	3.81		
Ethylbenzene*	<0.050	0.050	05/30/2024	ND	1.75	87.4	2.00	4.38		
Total Xylenes*	<0.150	0.150	05/30/2024	ND	5.46	91.0	6.00	4.47		
Total BTEx	<0.300	0.300	05/30/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 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	128	16.0	05/30/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/29/2024	ND	213	106	200	0.477	
DRO >C10-C28*	<10.0	10.0	05/29/2024	ND	194	97.2	200	0.910	
EXT DRO >C28-C36	<10.0	10.0	05/29/2024	ND					

Surrogate: 1-Chlorooctane 75.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 85.2 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

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

Received: 05/28/2024
 Reported: 05/31/2024
 Project Name: PIGLET STATE SWD #1
 Project Number: 23E - 05383
 Project Location: SILVERBACK EXP - EDDY CO NM

Sampling Date: 05/23/2024
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: BH24 - 07 0FT (H242938-13)

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	05/30/2024	ND	1.76	87.8	2.00	3.88		
Toluene*	<0.050	0.050	05/30/2024	ND	1.77	88.7	2.00	3.81		
Ethylbenzene*	<0.050	0.050	05/30/2024	ND	1.75	87.4	2.00	4.38		
Total Xylenes*	<0.150	0.150	05/30/2024	ND	5.46	91.0	6.00	4.47		
Total BTEX	<0.300	0.300	05/30/2024	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	80.0	16.0	05/30/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/29/2024	ND	213	106	200	0.477	
DRO >C10-C28*	<10.0	10.0	05/29/2024	ND	194	97.2	200	0.910	
EXT DRO >C28-C36	<10.0	10.0	05/29/2024	ND					

Surrogate: 1-Chlorooctane 84.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 98.6 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

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

Received: 05/28/2024
 Reported: 05/31/2024
 Project Name: PIGLET STATE SWD #1
 Project Number: 23E - 05383
 Project Location: SILVERBACK EXP - EDDY CO NM

Sampling Date: 05/23/2024
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: BH24 - 07 2FT (H242938-14)

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	05/30/2024	ND	1.76	87.8	2.00	3.88		
Toluene*	<0.050	0.050	05/30/2024	ND	1.77	88.7	2.00	3.81		
Ethylbenzene*	<0.050	0.050	05/30/2024	ND	1.75	87.4	2.00	4.38		
Total Xylenes*	<0.150	0.150	05/30/2024	ND	5.46	91.0	6.00	4.47		
Total BTEX	<0.300	0.300	05/30/2024	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	64.0	16.0	05/30/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/29/2024	ND	213	106	200	0.477	
DRO >C10-C28*	<10.0	10.0	05/29/2024	ND	194	97.2	200	0.910	
EXT DRO >C28-C36	<10.0	10.0	05/29/2024	ND					

Surrogate: 1-Chlorooctane 81.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 92.1 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

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

Received: 05/28/2024
 Reported: 05/31/2024
 Project Name: PIGLET STATE SWD #1
 Project Number: 23E - 05383
 Project Location: SILVERBACK EXP - EDDY CO NM

Sampling Date: 05/23/2024
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: BH24 - 08 0FT (H242938-15)

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	05/30/2024	ND	1.76	87.8	2.00	3.88		
Toluene*	<0.050	0.050	05/30/2024	ND	1.77	88.7	2.00	3.81		
Ethylbenzene*	<0.050	0.050	05/30/2024	ND	1.75	87.4	2.00	4.38		
Total Xylenes*	<0.150	0.150	05/30/2024	ND	5.46	91.0	6.00	4.47		
Total BTEX	<0.300	0.300	05/30/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 100 % 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	05/30/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/30/2024	ND	213	106	200	0.477	
DRO >C10-C28*	<10.0	10.0	05/30/2024	ND	194	97.2	200	0.910	
EXT DRO >C28-C36	<10.0	10.0	05/30/2024	ND					

Surrogate: 1-Chlorooctane 76.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 86.2 % 49.1-148

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

Received: 05/28/2024
 Reported: 05/31/2024
 Project Name: PIGLET STATE SWD #1
 Project Number: 23E - 05383
 Project Location: SILVERBACK EXP - EDDY CO NM

Sampling Date: 05/23/2024
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: BH24 - 08 2FT (H242938-16)

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	05/30/2024	ND	1.76	87.8	2.00	3.88	
Toluene*	<0.050	0.050	05/30/2024	ND	1.77	88.7	2.00	3.81	
Ethylbenzene*	<0.050	0.050	05/30/2024	ND	1.75	87.4	2.00	4.38	
Total Xylenes*	<0.150	0.150	05/30/2024	ND	5.46	91.0	6.00	4.47	
Total BTEX	<0.300	0.300	05/30/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 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	05/30/2024	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/30/2024	ND	213	106	200	0.477	
DRO >C10-C28*	<10.0	10.0	05/30/2024	ND	194	97.2	200	0.910	
EXT DRO >C28-C36	<10.0	10.0	05/30/2024	ND					

Surrogate: 1-Chlorooctane 72.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 81.8 % 49.1-148

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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 "Mike Snyder", is written over a horizontal line.

Mike Snyder For 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: Vertex Resource Services		P.O. #:		BILL TO																									
Project Manager: Chance Dixon				ANALYSIS REQUEST																									
Address: 3101 Boyd Dr		City: Carlsbad		State: NM		Zip: 88220		Company: Silverback Exploration																					
Phone #: 575-988-1472		Fax #:		Attn: Mark Ritchie		Address: 108 S. 4th St.		City: Artesia																					
Project #: 23E-05383		Project Owner:		State: NM		Zip: 88210		Phone #:																					
Project Location: Eddy County, NM		Sampler Name: F. Rodriguez		Fax #:																									
FOR LAB USE ONLY																													
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	TPH: (8015) EXT	BTEX (8021B)	Chloride (SM 4500)												
BH24-01 0ft	BH24-01 0ft	C 1	X	X	X	X	X	X	X	X	X	X	5/23/24	10:00	X	X	X												
BH24-01 2ft	BH24-01 2ft	C 1	X	X	X	X	X	X	X	X	X	X	5/23/24	10:05	X	X	X												
BH24-02 0ft	BH24-02 0ft	C 1	X	X	X	X	X	X	X	X	X	X	5/23/24	10:10	X	X	X												
BH24-02 2ft	BH24-02 2ft	C 1	X	X	X	X	X	X	X	X	X	X	5/23/24	10:15	X	X	X												
BH24-03 0ft	BH24-03 0ft	C 1	X	X	X	X	X	X	X	X	X	X	5/23/24	10:20	X	X	X												
BH24-03 2ft	BH24-03 2ft	C 1	X	X	X	X	X	X	X	X	X	X	5/23/24	10:25	X	X	X												
BH24-04 0ft	BH24-04 0ft	C 1	X	X	X	X	X	X	X	X	X	X	5/23/24	10:30	X	X	X												
BH24-04 2ft	BH24-04 2ft	C 1	X	X	X	X	X	X	X	X	X	X	5/23/24	10:35	X	X	X												
BH24-05 0ft	BH24-05 0ft	C 1	X	X	X	X	X	X	X	X	X	X	5/23/24	10:40	X	X	X												
BH24-05 2ft	BH24-05 2ft	C 1	X	X	X	X	X	X	X	X	X	X	5/23/24	10:45	X	X	X												
BH24-06 0ft	BH24-06 0ft	C 1	X	X	X	X	X	X	X	X	X	X	5/23/24	10:50	X	X	X												
BH24-06 2ft	BH24-06 2ft	C 1	X	X	X	X	X	X	X	X	X	X	5/23/24	10:55	X	X	X												
BH24-07 0ft	BH24-07 0ft	C 1	X	X	X	X	X	X	X	X	X	X	5/23/24	11:00	X	X	X												
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Relinquished By:		Date: 5/28/24		Received By:		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Phone #:		REMARKS:																			
Relinquished By:		Time: 10:10		Received By:		Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Fax #:		Direct bill to Silverback Exploration Email results to: cdixon@vertex.ca & frodriguez@vertex.ca																			
Delivered By: (Circle One)		Sample Condition		CHECKED BY:																									
Sample ID: 106 R Bus - Other: 440		Cool <input type="checkbox"/> Intact <input checked="" type="checkbox"/>		(Initials)																									
		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		AD																									

3. Please fax written changes to 575-393-2476



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]

APPENDIX F – Depth to Groundwater Drilling

Owner's Name: STANDARD SAFETY Owner Well #: P16LETT

Owners Street or RFD: _____ Latitude: 72.820469

Owners City: _____ Longitude: -104.179961

Owners State: _____ Elevation: _____

Owners Zip Code: _____ GPS Brand Used: GARMIN / MAGELLAN

Wells Street or RFD: 175 MILES WEST OF RED LAKE RD. Type of Work: (circle one) New Well

Well County: EDDY Deepening

Well's City: ARTESIA Reconditioning

Well's Zip Code: _____ Replacement

Proposed Use: (circle one)	Monitor Industrial <u>Environmental Soil Boring</u> De-Watering	Irrigation Public Supply Domestic Injection	Geothermal Heat Loop Test well Rig Supply Stock	If public supply were plans approved by TCEQ? Yes No
-------------------------------	--	--	--	---

Drilling Start Date: 1-18-24Drilling Completion Date: 1-18-24

Diameter of Hole: <u>6 1/4</u> in.	From: <u>0</u>	To: <u>55</u>
Diameter of Hole: _____ in.	From: _____	To: _____
Diameter of Hole: _____ in.	From: _____	To: _____

Description & color of formation materials

From	To	Description
0	1	CALICHI PAD
1	5	BROKEN AND CALICHI
5	20	TAN SAND
20	30	TAN SAND STONE
30	55	RED SAND STONE

(circle one)

Bored

Hollow Stem Auger

Air Rotary

Cable Tool

Other:

Borehole
Completion:
(circle one)

Open Hole

Straight Wall

Other

Underreamed

Gravel Packed:

from:

to:

with:

Casing, Blank Pipe & Well Screen Data:

Dia (in)	New or Used	Steel, Plastic, Perf., Screen, Slotted, Mfg., if commercial	Setting (ft) From/To	Gauge Casing Screen

Annular Seal Data:	From _____ ft.	To: _____ ft.
	Number of sacks & material used: <u>PLUGGED 22 B469 HOLE PLUG</u>	
	From _____ ft.	To: _____ ft.
	Number of sacks & material used: _____	

Method Used: _____	Cemented By: _____
Distance to Septic Field or other Concentrated Contamination _____	
Distance to Property Line: _____	Method of Verification: _____

Surface Completion: (circle one)	Surface Slab Installed Pitless Adapter Used	Surface Sleeve Installed Alternative Procedure Used
-------------------------------------	--	--

Static Level below land surface: _____ ft. Date: _____

Artesian Flow: _____ GPM

Packers	Type	Depth	Was Chemical analysis made:	Yes	No
			Did you knowingly penetrate any strata which contains undesirable constituents?:	Yes	No

Plugged: well plugged within 48 hrs?	Casing left in well		Cement/Bentonite placed in well:		
	from (ft)	to (ft)	from (ft)	to (ft)	cement/bentonite - no. of sacks

Type of Pump: (circle one)	Turbine	Submersible	Depth to pump _____ ft. bowl:
	Jet	Cylinder	

Well Test Types: (circle one)	Pump	Jettied	Yield _____ GPM with (ft.) _____ drawdown after _____ hrs.
	Bailer	Estimated	

Type of Water:	_____
Depth of Strata:	_____ ft.

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

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

QUESTIONS

Action 355458

QUESTIONS

Operator: Silverback Operating II, LLC 19707 IH10 West, Suite 201 San Antonio, TX 78256	OGRID:	330968
	Action Number:	355458
	Action Type:	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Prerequisites	
Incident ID (n#)	nAPP2327744458
Incident Name	NAPP2327744458 PIGLET STATE SWD #001 @ 0
Incident Type	Produced Water Release
Incident Status	Remediation Closure Report Received

Location of Release Source	
Please answer all the questions in this group.	
Site Name	Piglet State SWD #001
Date Release Discovered	10/02/2023
Surface Owner	State

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	Yes
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	Not answered.
Produced Water Released (bbls) Details	Cause: Lightning Tank (Any) Produced Water Released: 1,200 BBL Recovered: 1,000 BBL Lost: 200 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	Yes
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 355458

QUESTIONS (continued)

Operator: Silverback Operating II, LLC 19707 IH10 West, Suite 201 San Antonio, TX 78256	OGRID:	330968
	Action Number:	355458
	Action Type:	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Nature and Volume of Release (continued)	
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; (2) an unauthorized release of a volume that: (a) results in a fire or is the result of a fire.
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: Heather Treffert Title: Field Operations Analyst Email: htrefert@silverbackexp.com Date: 06/18/2024
--	--

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State of New Mexico
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Santa Fe, NM 87505

QUESTIONS, Page 3

Action 355458

QUESTIONS (continued)

Operator: Silverback Operating II, LLC 19707 IH10 West, Suite 201 San Antonio, TX 78256	OGRID: 330968
	Action Number: 355458
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

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)	Greater than 1000 (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
What is the minimum distance, between the closest lateral extents of the release and the following surface areas:	
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)	Greater than 5 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Between ½ and 1 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 500 and 1000 (ft.)
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 ½ and 1 (mi.)
A subsurface mine	Between 1 and 5 (mi.)
An (non-karst) unstable area	Between 1 and 5 (mi.)
Categorize the risk of this well / site being in a karst geology	Low
A 100-year floodplain	Between 1 and 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	No

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
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.	
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)	18000
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	1100
GRO+DRO (EPA SW-846 Method 8015M)	600
BTEX (EPA SW-846 Method 8021B or 8260B)	0
Benzene (EPA SW-846 Method 8021B or 8260B)	0

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	10/09/2023
On what date will (or did) the final sampling or liner inspection occur	05/24/2024
On what date will (or was) the remediation complete(d)	05/24/2024
What is the estimated surface area (in square feet) that will be reclaimed	72864
What is the estimated volume (in cubic yards) that will be reclaimed	5960
What is the estimated surface area (in square feet) that will be remediated	11920
What is the estimated volume (in cubic yards) that will be remediated	5960

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 355458

QUESTIONS (continued)

Operator: Silverback Operating II, LLC 19707 IH10 West, Suite 201 San Antonio, TX 78256	OGRID: 330968
	Action Number: 355458
	Action Type:
	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS**Remediation Plan (continued)**

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.

This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:

(Select all answers below that apply.)

(Ex Situ) Excavation and off-site disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for off-site disposal	LEA LAND LANDFILL [fEEM0112342028]
OR which OCD approved well (API) will be used for off-site disposal	Not answered.
OR is the off-site disposal site, to be used, out-of-state	Not answered.
OR is the off-site disposal site, to be used, an NMED facility	Not answered.
(Ex Situ) Excavation and on-site remediation (i.e. On-Site Land Farms)	No
(In Situ) Soil Vapor Extraction	No
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	No
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	No
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	No
Ground Water Abatement pursuant to 19.15.30 NMAC	No
OTHER (Non-listed remedial process)	No

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 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: Heather Treffert Title: Field Operations Analyst Email: htrefert@silverbackexp.com Date: 06/18/2024
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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.

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

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

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Action 355458

QUESTIONS (continued)

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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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Action 355458

QUESTIONS (continued)

Operator: Silverback Operating II, LLC 19707 IH10 West, Suite 201 San Antonio, TX 78256	OGRID:	330968
	Action Number:	355458
	Action Type:	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	345936
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	05/24/2024
What was the (estimated) number of samples that were to be gathered	8
What was the sampling surface area in square feet	1600

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	11920
What was the total volume (cubic yards) remediated	5960
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	72864
What was the total volume (in cubic yards) reclaimed	5960
Summarize any additional remediation activities not included by answers (above)	N/A

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: Heather Treffert Title: Field Operations Analyst Email: htrefert@silverbackexp.com Date: 06/18/2024
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Action 355458

QUESTIONS (continued)

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QUESTIONS

Reclamation Report	
Only answer the questions in this group if all reclamation steps have been completed.	
Requesting a reclamation approval with this submission	No

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CONDITIONS

Action 355458

CONDITIONS

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	Action Number: 355458
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

CONDITIONS

Created By	Condition	Condition Date
rhamlet	We have received your Remediation Closure Report for Incident #NAPP2327744458 PIGLET STATE SWD #001, thank you. This Remediation Closure Report is approved.	6/28/2024