General Information

NMOCD District:	District 2 - Artesia	Incident ID:	nAPP2326256394
Landowner:	Private – Wilbanks Ranch	RP Reference:	N/A
Client:	Silverback Exploration	Site Location:	Boyd Y Water Transfer Line
Date:	December 13, 2023	Project #:	23E-05378
Client Contact:	Mark Ritchie	Phone #:	713.553.8320
Vertex PM:	Chance Dixon	Phone #:	575.988.1472

Objective

The objective of the environmental remediation work plan is to identify exceedances found during the site assessment/characterization activity and propose an appropriate remediation technique to address these areas. The Areas of environmental concern identified and delineated include pasture areas and the pipeline right-of-way. Closure criteria have been selected as per New Mexico Administrative Code 19.15.29. All applicable research as it pertains to closure criteria selection is presented in Attachment 3. The closure criteria for the site are presented below.

Table 1. Closure Criteria for Soils to Remediation & Reclamation Standards

	Constituent	Limit
0-4 feet bgs (19.15.29.13)	Chloride	600 mg/kg
	TPH (GRO+DRO+MRO)	100 mg/kg
DTGW 51-100 feet (19.15.29.12)	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

bgs – Below ground surface
DTGW – Depth to groundwater
TPH – Total petroleum hydrocarbons = gasoline range organics (GRO) + diesel range organics (DRO) + motor oil range organics (MRO)
BTEX - Benzene, toluene, ethylbenzene, and xylenes

Site Assessment/Characterization

Site characterization was completed on October 20, 2023. A total of 15 sample points were established, and samples were collected for field screening. Samples at the deepest vertical distance below closure criteria were submitted to the laboratory for analysis. In total, 31 samples were submitted to Hall Environmental Analysis Laboratory in Alburquerque, New Mexico, for analysis. The sample locations are presented on Figure 1 (Attachment 1). Laboratory analysis results have been compared to the above-noted closure criteria and the results from the characterization activity are presented in Attachment 2. Exceedances are identified in the table as bold with a green background. Laboratory data reports are presented in Attachment 4.

Proposed Remedial Activities

Areas identified with contaminant concentrations above closure criteria will be remediated through excavation. Laboratory results from the site assessment/characterization have been referenced to estimate both the vertical and horizontal limits of the impacts and the volume of soil to be removed. The soil will be excavated to the extent of the known contamination or in 2-foot increments, whichever is less.

Exceedances to closure criteria were identified at all sample points within the stained area. A hydrovac truck will be utilized to locate underground facilities and hand excavation will be used to remove all contaminated soil within a 30-inch tolerance zone of all buried equipment. Heavy equipment will be used to complete excavation outside of the tolerance zone. Field screening will be utilized to confirm the removal of contaminated soil below the applicable closure criteria. Contaminated soils will be stored on a 30mil liner prior to disposal at an approved facility. Once excavation is complete, confirmatory samples will be collected and laboratory analysis completed to confirm closure criteria guidelines are met. Excavations will be backfilled with clean soil sourced locally.

The estimated volume to be excavated is **860 cubic yards**.

Sample Point	Excavation Depth	Remediation Method
BH23-03	2.5ft	Trackhoe
BH23-06	2ft	Trackhoe
BH23-10	2ft	Trackhoe
BH23-11	2ft	Trackhoe
BH23-13	2ft	Trackhoe
BH23-14	2ft	Trackhoe

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

Fernando Rodriguez, B.Sc.
INTERMEDIATE BIOLOGIST, REPORTING

December 13, 2023
Date

Chance Dixon

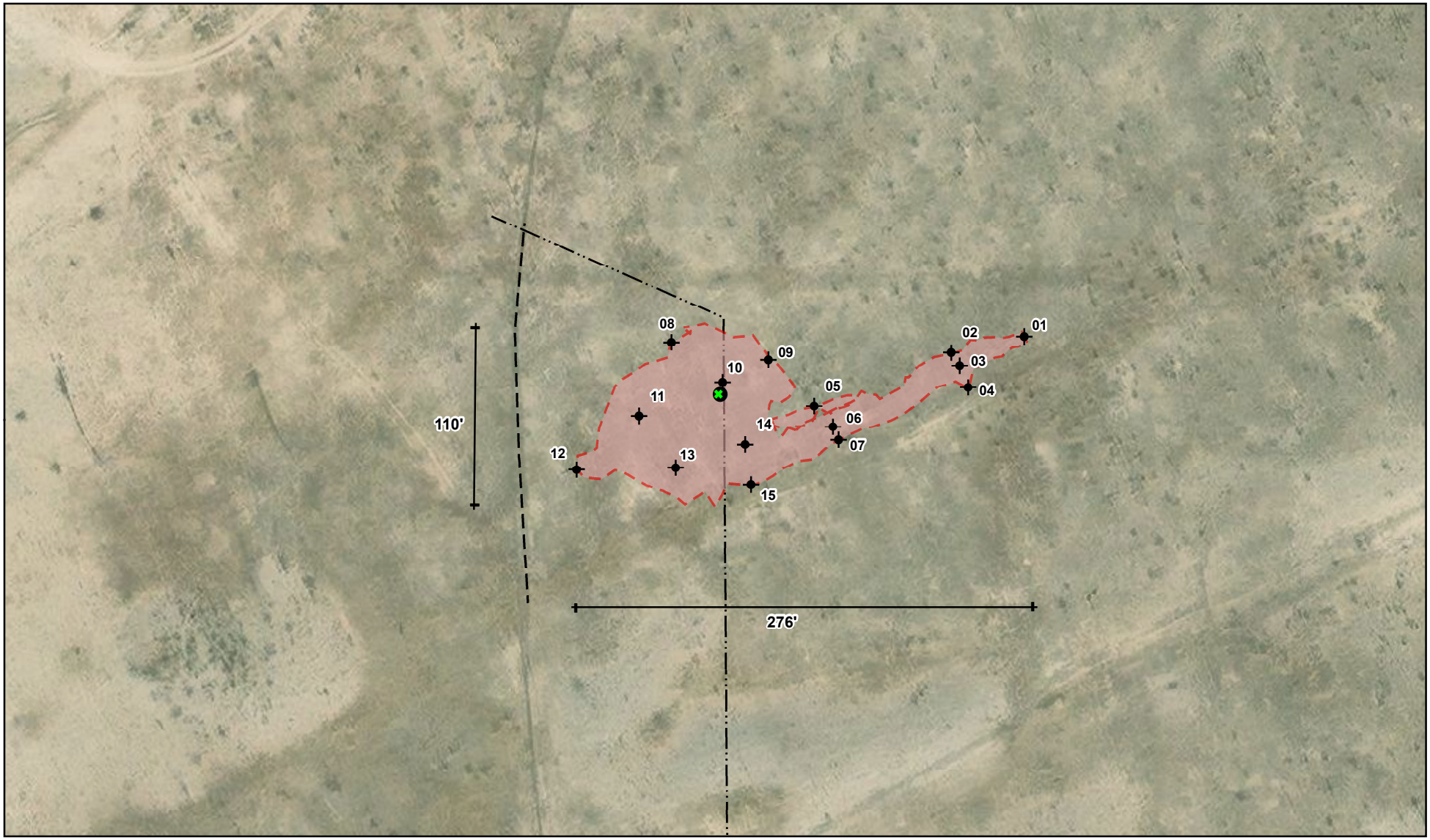
Chance Dixon, B.Sc.
PROJECT MANAGER, REPORT REVIEW

December 13, 2023
Date

Attachments

Attachment 1. Characterization Schematic
Attachment 2. Characterization Table
Attachment 3. Closure Criteria Research
Attachment 4. Laboratory Data Reports and Chain of Custody Forms

ATTACHMENT 1



Borehole (Prefixed by "BH23-") | Release Point | Pipeline (Aboveground) | Pipeline (Underground) | Approximate Release Area (~11,571 sq.ft.)

VERTEX

0 25 50 ft

Map Center:
Lat/Long: 32.664405, -104.455277

NAD 1983 UTM Zone 13N
Date: Nov 02/23

N

Characterization Schematic
Boyd Y Water Transfer Line

FIGURE:
1

SILVERBACK EXPLORATION

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.

Document Path: G:\1-Projects_US PROJECTS\Silverback Exploration\23E-05378\Figure 1 Characterization Schematic (23E-05378).mxd

ATTACHMENT 2

Client Name: Silverback Exploration
Site Name: Boyd Y Water Transfer Line
NMOCD Tracking #: nAPP2326256394
Project #: 23E-05378
Lab Report(sX): 2310A70, 2310B10

Table 2. Initial Characterization Field Screen and Laboratory Results - Depth to Groundwater 51-100 feet bgs

Sample Description			Field Screening			Petroleum Hydrocarbons							Inorganic
						Volatile		Extractable					
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroFlag)	Chloride Concentration	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	Chloride Concentration
			(ppm)	(ppm)	(ppm)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BH23-01	0	2023-10-17	ND	32	36	ND	ND	ND	ND	ND	ND	ND	ND
BH23-01	2	2023-10-17	ND	21	30	ND	ND	ND	ND	ND	ND	ND	ND
BH23-02	0	2023-10-17	ND	23	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-02	2	2023-10-17	ND	28	1	ND	ND	ND	ND	ND	ND	ND	ND
BH23-03	0	2023-10-17	ND	54	20,015	ND	ND	ND	ND	ND	ND	ND	**20,000**
BH23-03	2	2023-10-17	ND	43	2,046	ND	ND	ND	ND	ND	ND	ND	**2,200**
BH23-03	3	2023-10-19	ND	21	145	ND	ND	ND	ND	ND	ND	ND	ND
BH23-04	0	2023-10-19	ND	47	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-04	2	2023-10-19	ND	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-05	0	2023-10-19	ND	32	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-05	2	2023-10-19	ND	-	222	ND	ND	ND	ND	ND	ND	ND	150
BH23-06	0	2023-10-19	ND	51	15,819	ND	ND	ND	ND	ND	ND	ND	**8,600**
BH23-06	2	2023-10-19	ND	-	108	ND	ND	ND	ND	ND	ND	ND	93
BH23-07	0	2023-10-19	ND	34	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-07	2	2023-10-19	ND	-	59	ND	ND	ND	ND	ND	ND	ND	ND
BH23-08	0	2023-10-20	ND	37	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-08	2	2023-10-20	ND	-	12	ND	ND	ND	ND	ND	ND	ND	ND
BH23-09	0	2023-10-20	ND	41	2	ND	ND	ND	ND	ND	ND	ND	ND
BH23-09	2	2023-10-20	ND	-	252	ND	ND	ND	ND	ND	ND	ND	130
BH23-10	0	2023-10-20	ND	52	4,885	ND	ND	ND	ND	ND	ND	ND	**4,900**
BH23-10	2	2023-10-20	ND	-	108	ND	ND	ND	ND	ND	ND	ND	ND
BH23-11	0	2023-10-20	ND	55	1,450	ND	ND	ND	ND	ND	ND	ND	**2,000**
BH23-11	2	2023-10-20	ND	-	248	ND	ND	ND	ND	ND	ND	ND	67
BH23-12	0	2023-10-20	ND	21	36	ND	ND	ND	ND	ND	ND	ND	ND
BH23-12	2	2023-10-20	ND	-	40	ND	ND	ND	ND	ND	ND	ND	ND
BH23-13	0	2023-10-20	ND	51	5,001	ND	ND	ND	ND	ND	ND	ND	**5,600**
BH23-13	2	2023-10-20	ND	-	93	ND	ND	ND	ND	ND	ND	ND	ND
BH23-14	0	2023-10-20	ND	57	5,371	ND	ND	ND	ND	ND	ND	ND	**7,100**
BH23-14	2	2023-10-20	ND	-	215	ND	ND	ND	ND	ND	ND	ND	ND
BH23-15	0	2023-10-20	ND	23	23	ND	ND	ND	ND	ND	ND	ND	ND
BH23-15	2	2023-10-20	ND	-	47	ND	ND	ND	ND	ND	ND	ND	ND

"ND" Not Detected at the Reporting Limit
"-" indicates not analyzed/assessed
Bold and green shaded indicates exceedance outside of NMOCD Reclamation Criteria (off-pad)

VERTEX

ATTACHMENT 3

Closure Criteria Worksheet			
Site Name: Boyd Y Water Line			
Spill Coordinates: 32.664452, -104.455277		X: 551078	Y: 3614220
Site Specific Conditions		Value	Unit
1	Depth to Groundwater	**97**	feet
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	38,855	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	30,890	feet
4	Within 300 feet from an occupied residence, school, hospital, institution or church	6,660	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**	3,415	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	5,484	feet
8	Within the area overlying a subsurface mine	No	(Y/N)
9	Within an unstable area (Karst Map)	Medium	Critical High Medium Low
10	Within a 100-year Floodplain	500	year
11	Soil Type	Reagan loam, 0 to 1 percent slopes	
12	Ecological Classification	R070BC007NM — Loamy	
13	Geology	Qp- Piedmont alluvial deposits	
	NMAC 19.15.29.12 E (Table 1) Closure Criteria	51-100'	<50' 51-100' >100'

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-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
RA 05450	RA	CH		4	2	15	19S	25E	550057	3614015*	1041	204	80	124
RA 09295	RA	ED	4	3	4	13	19S	25E	552979	3613115*	2198	250	85	165
RA 13210 POD1	RA	ED	3	2	4	23	19S	25E	551644	3611983	2307	101	82	19
RA 09293	RA	ED	3	4	4	13	19S	25E	553180	3613114*	2375	250	60	190
RA 09294	RA	ED	3	4	4	13	19S	25E	553180	3613114*	2375	194	76	118
RA 03983	RA	CH		4	3	01	19S	25E	552457	3616444*	2616	375	100	275
RA 05900	RA	ED		2	2	16	19S	25E	548442	3614424*	2643	185	95	90
RA 01343	RA	ED	2	1	1	18	19S	26E	553777	3614525*	2716	440	69	371
RA 04208	RA	ED		2	4	03	19S	25E	550036	3616845*	2824	110		
RA 08611	RA	ED	1	1	1	19	19S	26E	553583	3612909*	2827	235	90	145
RA 04236	RA	CH	3	3	1	02	19S	25E	550335	3617145*	3017	360	204	156
RA 04722	RA	ED		3	1	02	19S	25E	550436	3617246*	3093	200	42	158
RA 02909	RA	ED		1	3	22	19S	25E	548864	3611989*	3143	188	130	58
RA 07639	RA	ED		3	1	01	19S	25E	552049	3617250*	3181	260	172	88
RA 08612	RA	ED	1	2	1	19	19S	26E	553989	3612912*	3191	221	80	141
RA 05333	RA	ED		2	2	09	19S	25E	548430	3616046*	3216	315	260	55
RA 04128	RA	ED			2	02	19S	25E	551443	3617449*	3249	211	100	111
RA 08986	RA	ED	1	3	3	22	19S	25E	548825	3611507	3526	320	220	100
RA 09988	RA	ED	2	4	1	19	19S	26E	554190	3612507*	3552	100	65	35
RA 13122 POD2	RA	ED	3	3	2	21	19S	25E	547996	3612385	3586	108	102	6
RA 13122 POD1	RA	ED	1	3	2	21	19S	25E	547935	3612424	3619			
RA 07817	RA	ED	2	1	2	19	19S	26E	554592	3612915*	3748	224	145	79
RA 07817 CLW	RA	ED	2	1	2	19	19S	26E	554592	3612915*	3748	275	130	145
RA 09077	RA	ED	2	1	2	19	19S	26E	554592	3612915*	3748	200		
RA 13269 POD1	RA	ED	4	1	1	16	19S	25E	547276	3614401	3806	55		
RA 03304	RA	ED			1	27	19S	25E	549081	3610973*	3811	130	60	70

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

(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-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
RA 10262	RA	ED	2	2	2	19	19S	26E	554994	3612917*	4127	200	85	115
RA 03975	RA	ED	3	1	3	36	18S	25E	551942	3618353*	4222	430	270	160
RA 10496	RA	ED	3	3	4	25	19S	25E	552801	3609865*	4683	110	40	70
RA 10155	RA	ED	4	3	4	25	19S	25E	553001	3609865*	4760	225	60	165
RA 13291 POD2	RA	ED	4	3	2	34	18S	25E	549603	3618848	4857	105		
RA 13291 POD1	RA	ED	3	3	2	34	18S	25E	549587	3618857	4870	105		
RA 07026	RA	ED		3	3	30	19S	26E	553699	3609975*	4988	135	105	30

Average Depth to Water: **111 feet**
Minimum Depth: **40 feet**
Maximum Depth: **270 feet**

Record Count: 33

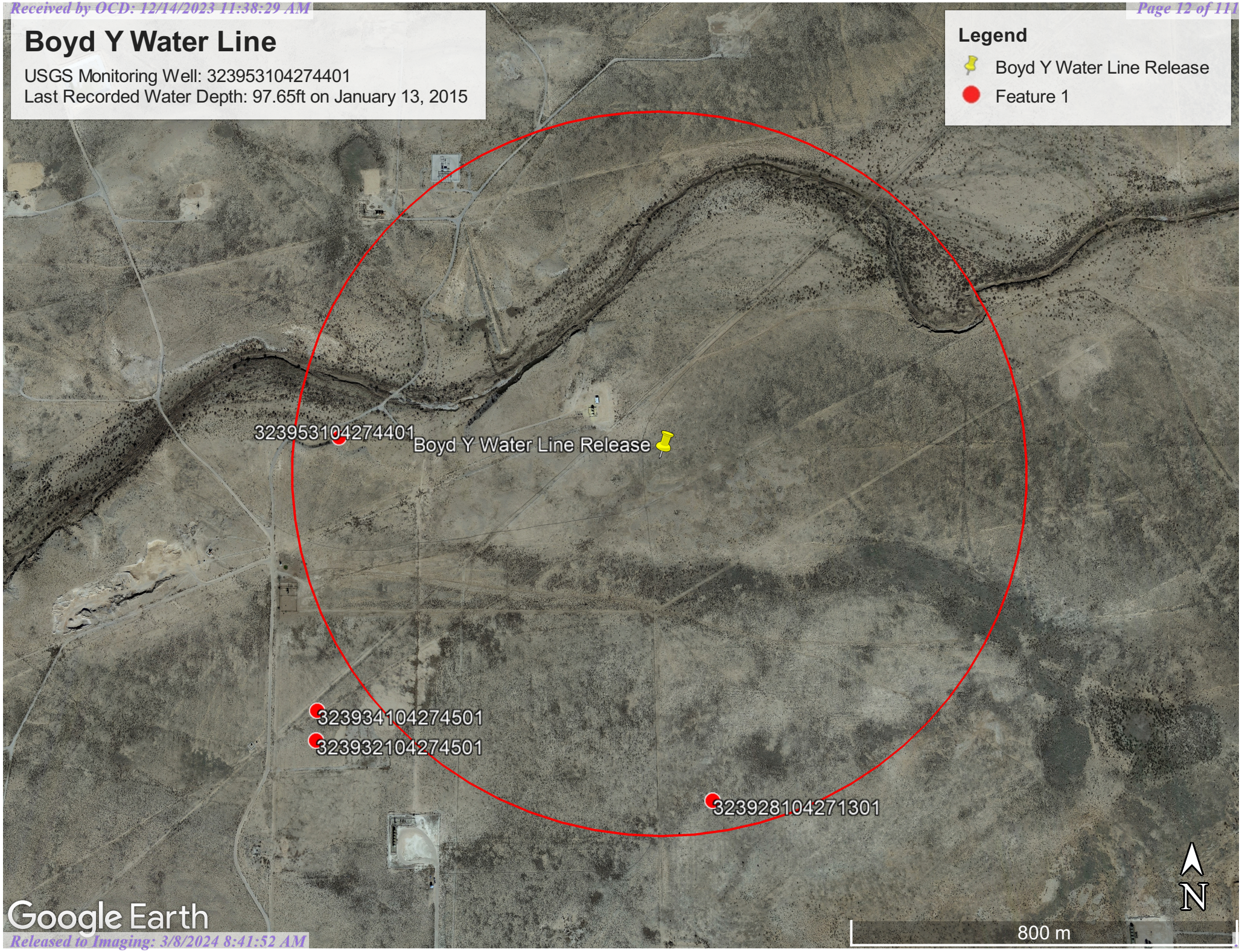
UTMNAD83 Radius Search (in meters):

Easting (X): 551078 **Northing (Y):** 3614220 **Radius:** 5000

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

Boyd Y Water Line

USGS Monitoring Well: 323953104274401
Last Recorded Water Depth: 97.65ft on January 13, 2015



MENU

Important for you to know:

- How are we doing? We want to hear from you. Take our quick survey to tell us what you think.

IMPORTANT Inventory Page

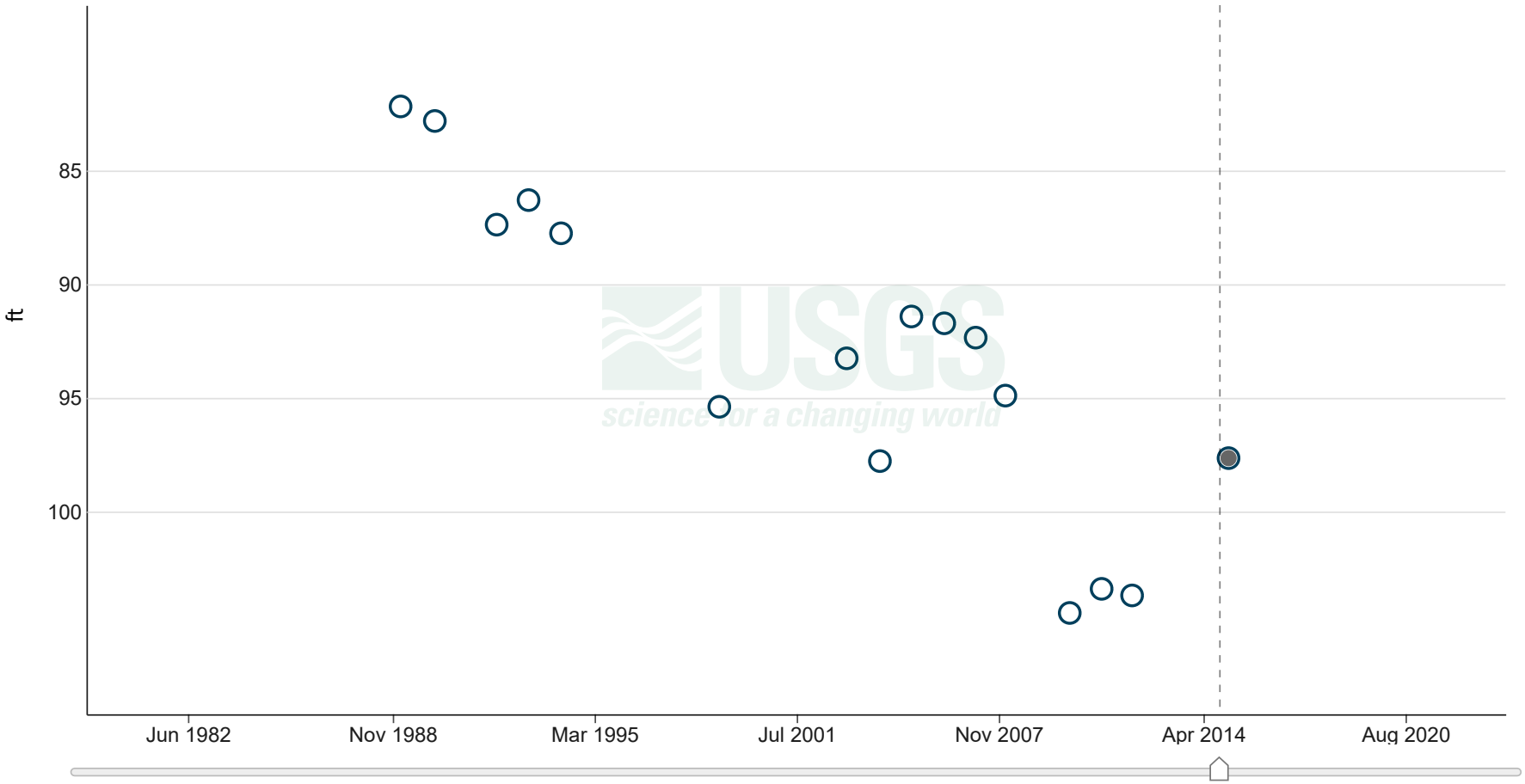
1 year 10 years Period of record

19S.25E.14.133131 - 323953104274401

March 27, 1979 - September 19, 2023

Depth to water level, ft below land surface

97.65 ft - Jan 13, 2015 01:23:00 PM MST



IMPORTANT Data may be provisional

Show legend

	Value	Status	Time
Selected	97.65 ft	Approved	Jan 13, 2015 01:23:00 PM MST

Hide graph details

Statistics are not currently supported for the data type:

Hide statistics

Change time span | Download data | View data records

Start typing a time code to filter the Time column:

Depth to water level, ft below land surface -- field visit data

Time ↓	Result	Accuracy	Approval	Qualifiers
2015-01-13T13:23:00.000-07:00	97.65	0.01	Approved	Static
2012-01-05T08:45:00.000-07:00	103.69	0.01	Approved	Static
2011-01-21T10:35:00.000-07:00	103.40	0.01	Approved	Static
2010-01-21T10:00:00.000-07:00	104.46	0.01	Approved	Static
2008-01-15T09:25:00.000-07:00	94.90	0.01	Approved	Static
2007-02-09T11:00:00.000-07:00	92.35	0.01	Approved	Static
2006-02-14T12:30:00.000-07:00	91.72	0.01	Approved	Static
2005-02-03T09:45:00.000-07:00	91.42	0.01	Approved	Static
2004-02-09T00:00:00.000-07:00	97.78	0.01	Approved	Static
2003-01-24T00:00:00.000-07:00	93.26	0.01	Approved	Static

Time ↓	Result	Accuracy	Approval	Qualifiers
1999-01-27T00:00:00.000-07:00	95.39	0.01	Approved	Static
1994-02-10T00:00:00.000-07:00	87.76	0.01	Approved	Static
1993-02-03T00:00:00.000-07:00	86.30	0.01	Approved	Static
1992-02-04T00:00:00.000-07:00	87.38	0.01	Approved	Static
1990-02-26T00:00:00.000-07:00	82.82	0.01	Approved	Static
1989-01-30T00:00:00.000-07:00	82.18	0.01	Approved	Static

Hide view data records ^

Select data to graph

◉ Depth to water level, ft below land surface	1979-03-27 to 2015-01-13	^
○ Groundwater level above NAVD 1988, ft	1979-03-27 to 2015-01-13	v
○ Groundwater level above NGVD 1929, feet	1979-03-27 to 2015-01-13	v

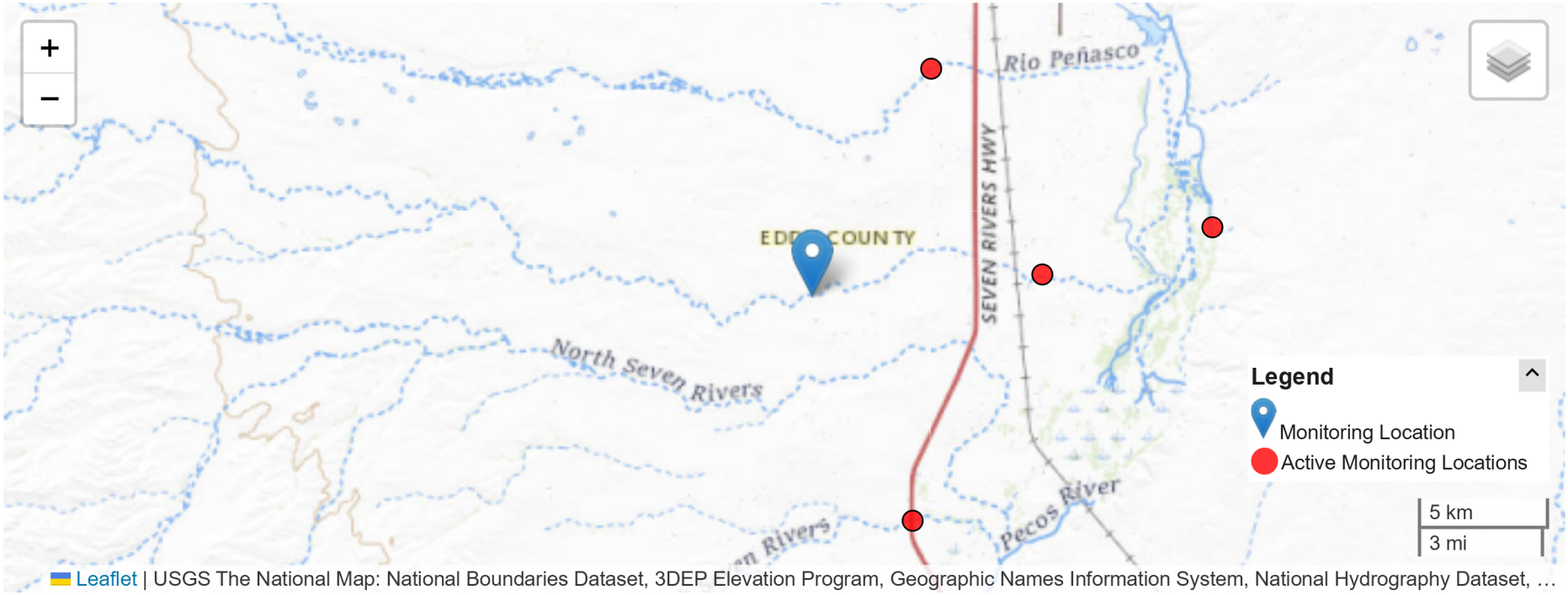
Monitoring camera

There are no cameras currently available at this monitoring location.

Groundwater data **BETA**

Why don't I see a groundwater graph?

No groundwater level statistical daily data has been reported for this location.



Interested in understanding how to access the upstream/downstream data? Learn about the Network-Linked Data Index (NLDI)

Summary of available field and laboratory sample data

No sample data is available.

Summary of all available data

USGS Parameter Group	Data Types	Start Date	End Date
Physical	Groundwater Levels	1979-03-27	2015-01-13

Water Data for the Nation inventory

Location metadata

Monitoring location 323953104274401 is associated with a Well in Eddy County, New Mexico. Water data back to 1979 are available online.

Metadata Element	Location Metadata	Metadata Code
Agency	U.S. Geological Survey	USGS
Site identification number	323953104274401	n/a
Site name	19S.25E.14.133131	n/a
Site type	Well	GW
DMS latitude	323953	n/a
DMS longitude	1042744	n/a
Decimal latitude	32.66483546	n/a

Metadata Element	Location Metadata	Metadata Code
Decimal longitude	-104.4627419	n/a
Latitude-longitude method	Interpolated from MAP.	M
Latitude-longitude accuracy	Accurate to + or - 10 sec.	T
Latitude-longitude datum	North American Datum of 1927	NAD27
Decimal Latitude-longitude datum	North American Datum of 1983	NAD83
District	New Mexico	35
State	New Mexico	35
County	Eddy County	015
Country	US	n/a
Land net location description	SWSWNWS14 T19S R25E	n/a
Name of location map		n/a
Scale of location map		n/a
Altitude of Gage/land surface	3433	n/a
Method altitude determined	Interpolated from Digital Elevation Model	N
Altitude accuracy	4.3	n/a

Metadata Element	Location Metadata	Metadata Code
Altitude datum	North American Vertical Datum of 1988	NAVD88
Subbasin hydrologic unit		13060011
Drainage basin	29	n/a
Topographic setting		n/a
Flags for instruments at site	NNNNNNNNNNNNNNNNNNNNNNNNNNNNN	n/a
Date of first construction		n/a
Date site established or inventoried		n/a
Drainage area		n/a
Contributing drainage area		n/a
Time Zone abbreviation	MST	n/a
Site honors Daylight Saving Time	Y	n/a
Data reliability	Unchecked data.	U
Data-other GW files	YYNYNYNN	n/a
National aquifer	Roswell Basin aquifer system	S400RSWLBS
Local aquifer	Alluvium, Bolson Deposits and Other Surface Deposits	110AVMB

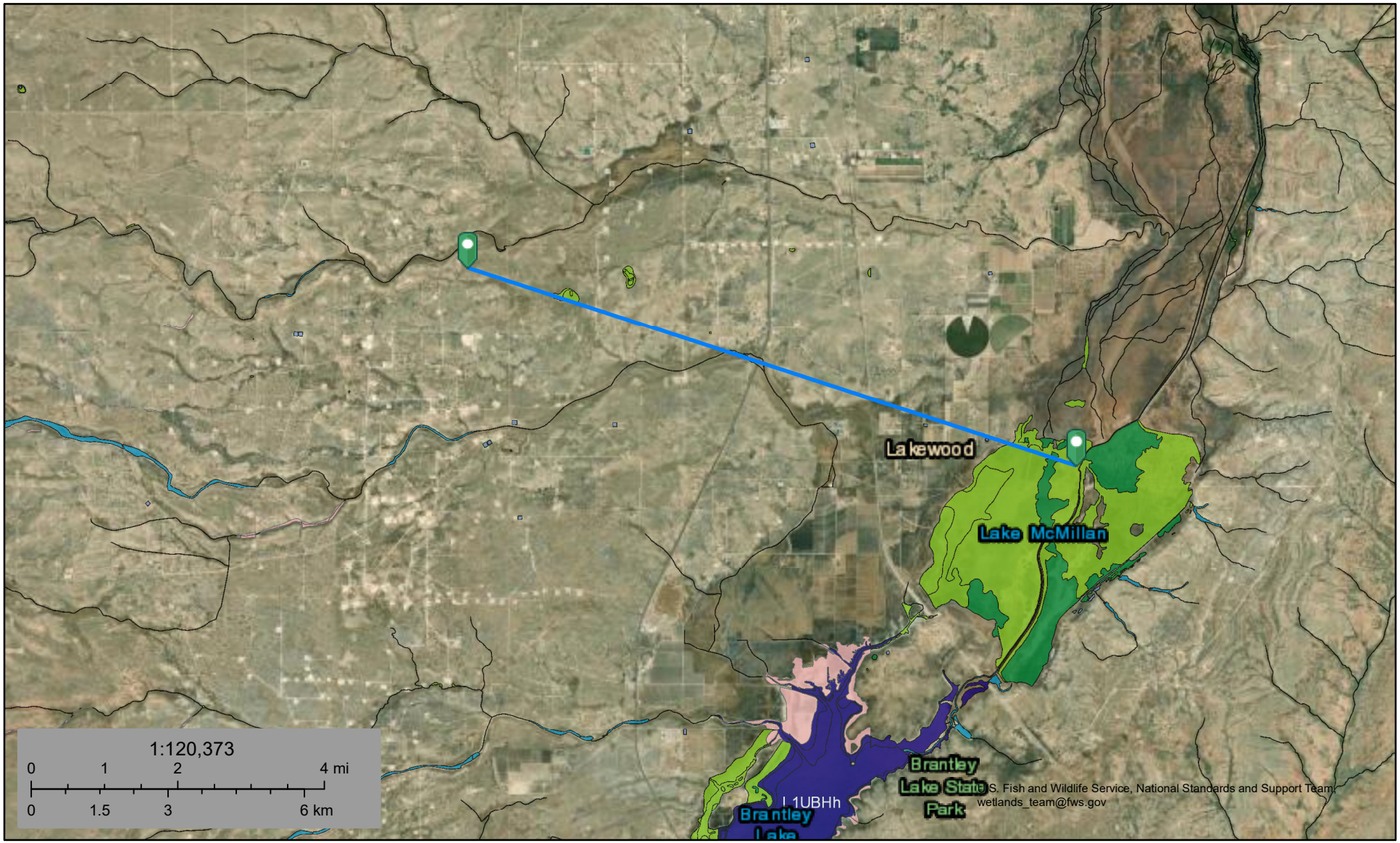
Metadata Element	Location Metadata	Metadata Code
Local aquifer type		n/a
Well depth		n/a
Hole depth		n/a
Source of depth data		n/a
Project number	463527100	n/a

Questions or Comments

U.S. Fish and Wildlife Service

National Wetlands Inventory

Boyd Y Water Line Watercourse



September 19, 2023

Wetlands

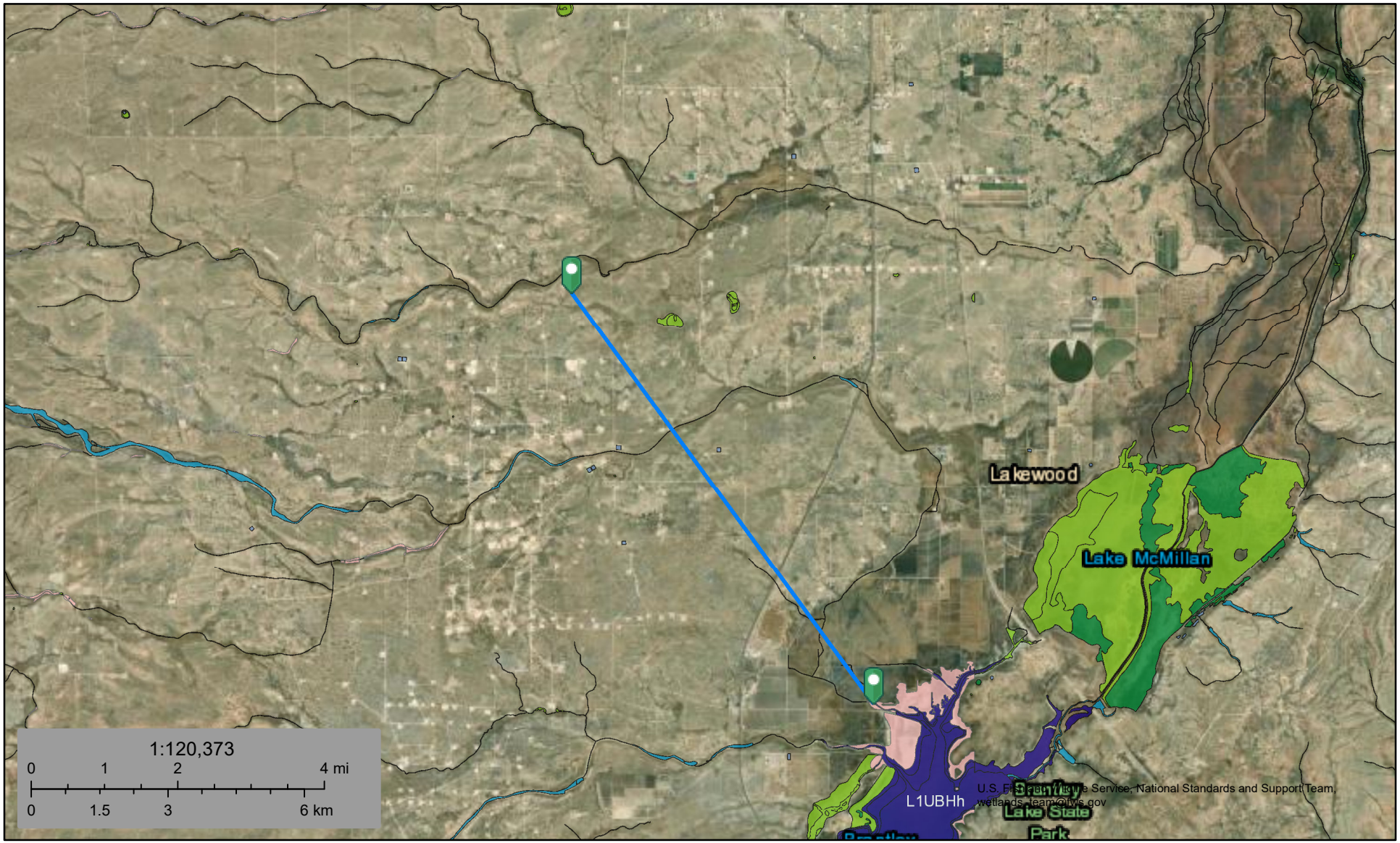
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

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.

U.S. Fish and Wildlife Service

National Wetlands Inventory

Boyd Y Water Line Lake



September 19, 2023

Wetlands

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

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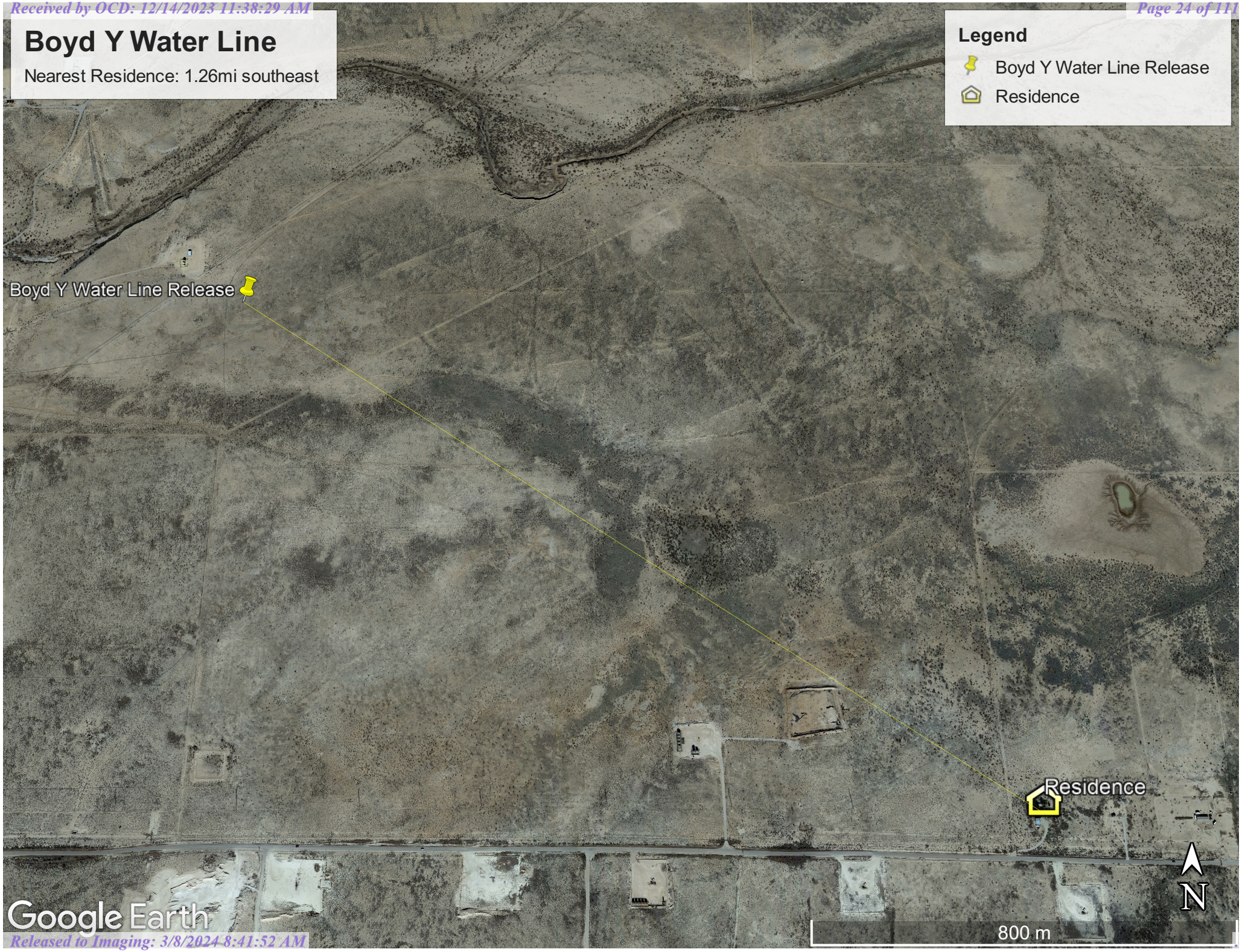
National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

Boyd Y Water Line

Nearest Residence: 1.26mi southeast



New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(acre ft per annum)

(R=POD has been replaced and no longer serves this file, C=the file is closed)

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Well Tag	Code	Grant	Source	q q q 6416 4	Sec	Tws	Rng	X	Y	Distance
RA 05450	RA	STK	0	LEATHERWOOD DRILLING CO.	CH	RA 05450				Shallow	4 2	15	19S	25E	550057	3614015*	1041

Record Count: 1

UTMNAD83 Radius Search (in meters):

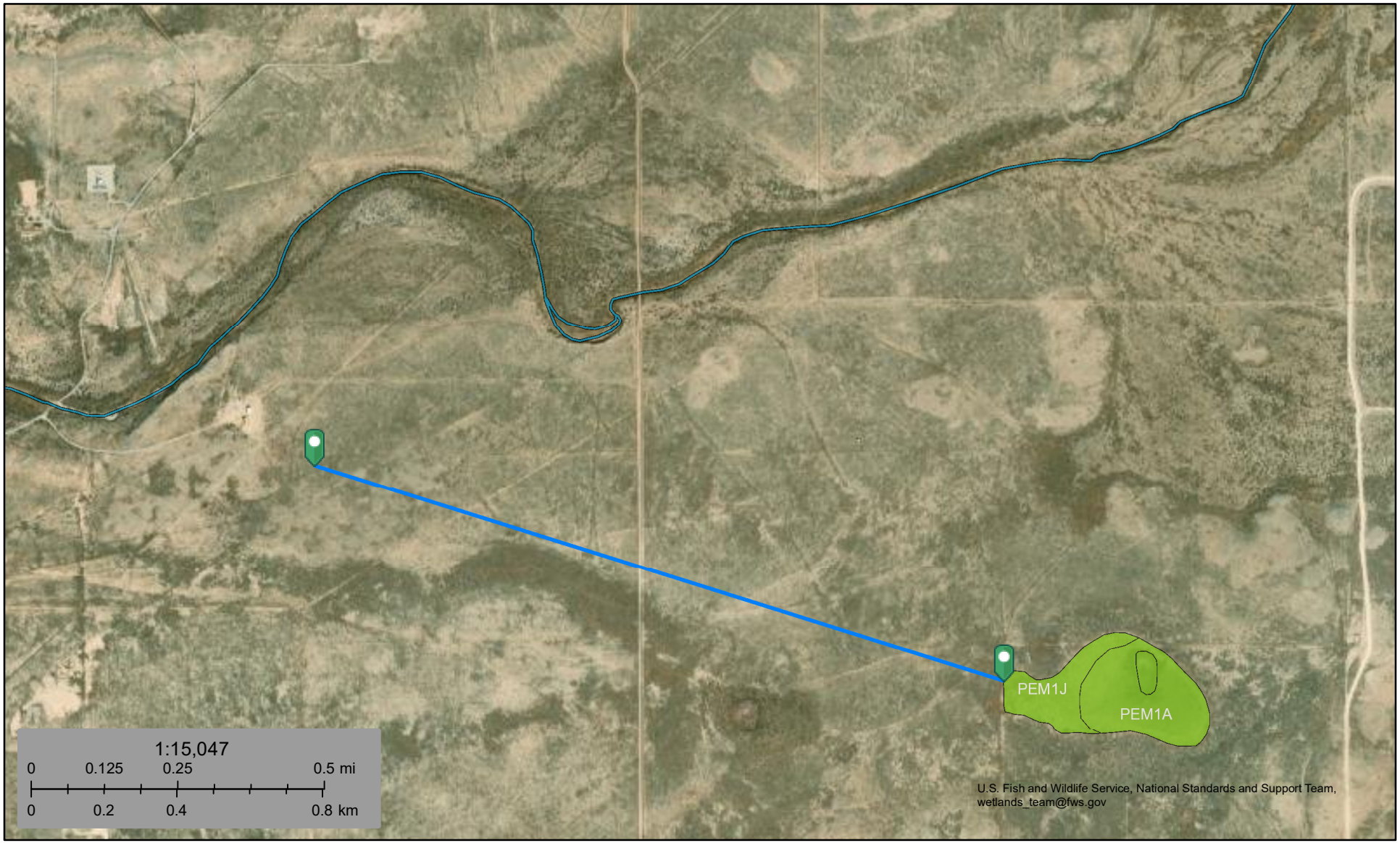
Easting (X): 551078 **Northing (Y):** 3614220 **Radius:** 1610

Sorted by: Distance

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

U.S. Fish and Wildlife Service
National Wetlands Inventory

Boyd Y Water Line Wetland



September 19, 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.

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

Boyd Y Water Line Mine

9/19/2023, 8:49:06 AM

Land Ownership

P

PLSS Second Division

PLSS First Division

1:2,257

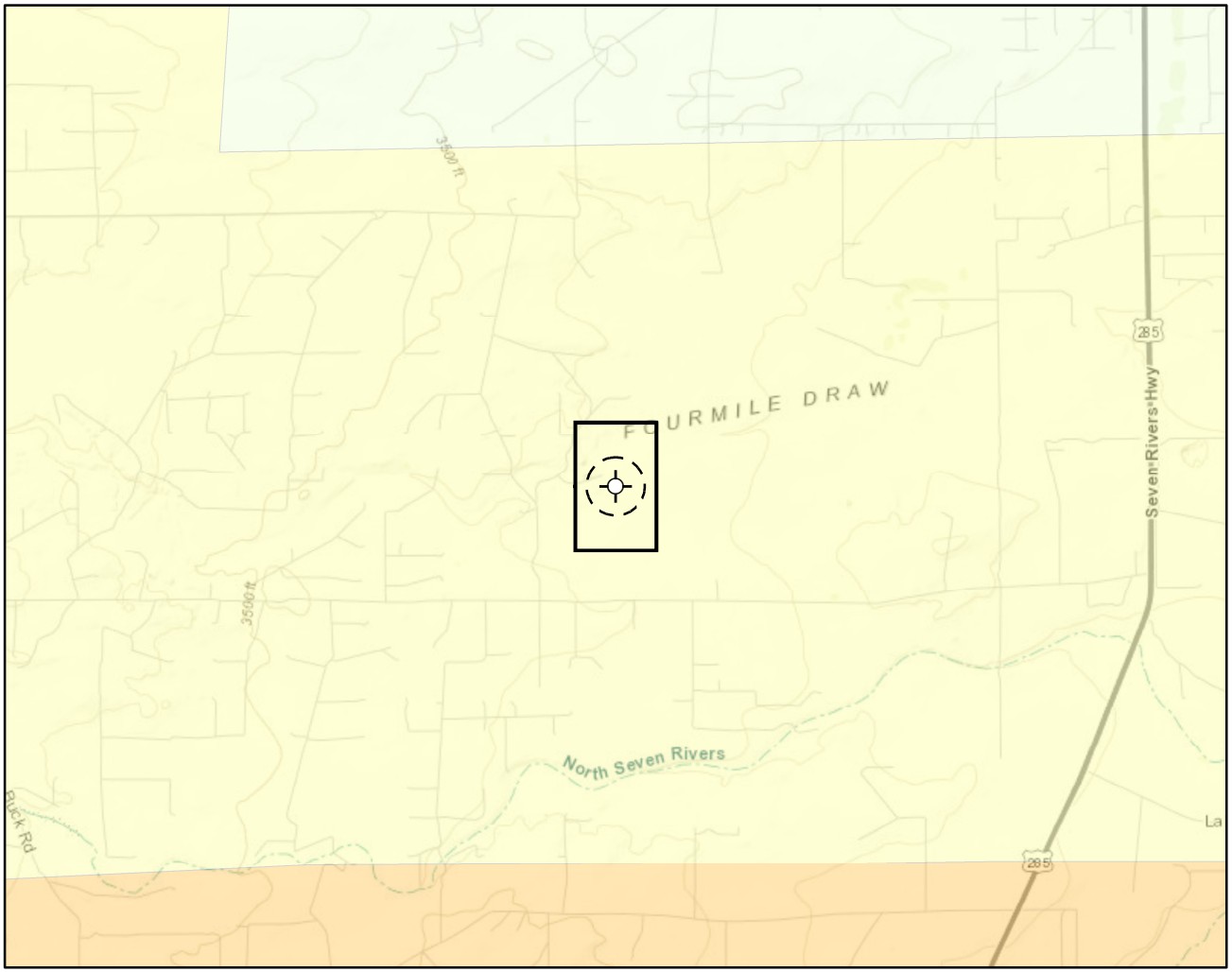
0 0.01 0.03 0.06 mi

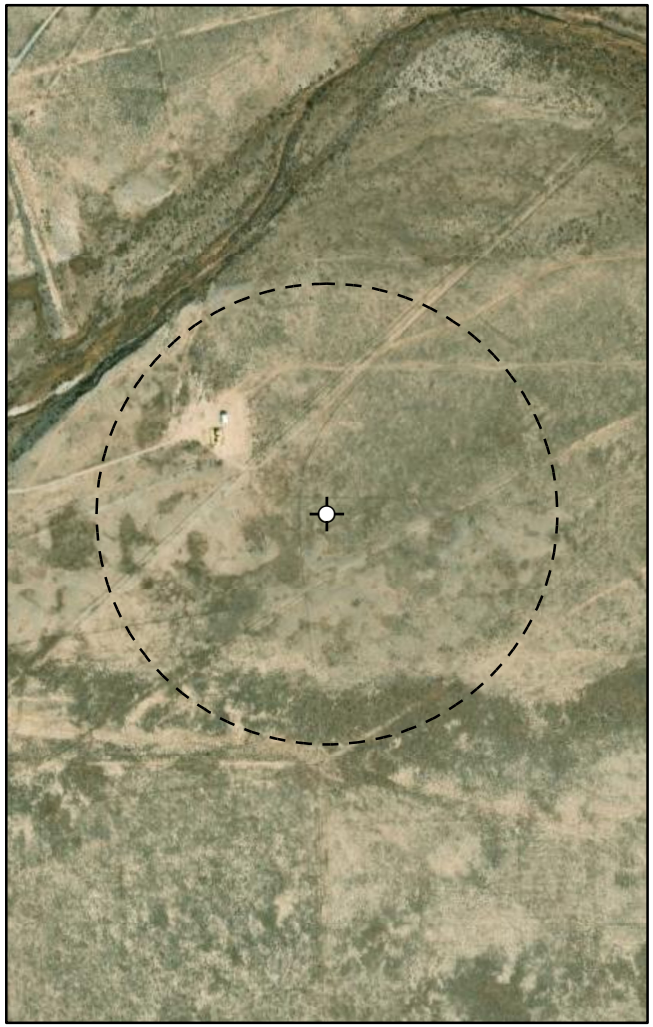
0 0.03 0.05 0.1 km

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

EMNRD MMD GIS Coordinator

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





Karst Potential

- Critical
- High
- Medium
- Low

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

Overview Map

0 0.25 0.5 1 mi

Detail Map

0 150 300 600 ft

VERTEX

Map Center:
Lat/Long: 32.664452, -104.455277

NAD 1983 UTM Zone 13N
Date: Nov 02/23

N

Karst Potential Schematic
Boyd Y Water Transfer Line

FIGURE:
X

SILVERBACK EXPLORATION

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.

Document Path: G:\1-Projects_US PROJECTS\Silverback Exploration\23E-05378\Figure 1 KarstPotential Map (_mxd

National Flood Hazard Layer FIRMette

FEMA

104°27'38"W 32°40'7"N

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

1:6,000

104°27'W 32°39'37"N

Basemap Imagery Source: USGS National Map 2023

Legend

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

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

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

N

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

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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 9/19/2023 at 10:53 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

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

Custom Soil Resource Report for Eddy Area, New Mexico

September 19, 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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Contents

How Soil Surveys Are Made

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

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

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

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

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

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

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

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

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

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

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

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

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

Soil Map

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

Custom Soil Resource Report
Soil Map (Boyd Y Water Line)

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 18, Sep 8, 2022

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 (Boyd Y Water Line)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
RE	Reagan-Upton association, 0 to 9 percent slopes	1.5	100.0%
Totals for Area of Interest		**1.5**	**100.0%**

Map Unit Descriptions (Boyd Y Water Line)

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

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

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

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

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

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

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

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

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

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

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

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

Eddy Area, New Mexico

RE—Reagan-Upton association, 0 to 9 percent slopes

Map Unit Setting

National map unit symbol: 1w5d
Elevation: 1,100 to 5,400 feet
Mean annual precipitation: 6 to 14 inches
Mean annual air temperature: 60 to 64 degrees F
Frost-free period: 180 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Reagan and similar soils: 70 percent
Upton and similar soils: 25 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Reagan

Setting

Landform: Fan remnants, alluvial fans
Landform position (three-dimensional): Rise
Down-slope shape: Convex, linear
Across-slope shape: Linear
Parent material: Alluvium and/or eolian deposits

Typical profile

H1 - 0 to 8 inches: loam
H2 - 8 to 60 inches: loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Maximum salinity: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Moderate (about 8.2 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: R042CY153NM - Loamy
Hydric soil rating: No

Description of Upton

Setting

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

Typical profile

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

Properties and qualities

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

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: R042CY159NM - Shallow Loamy
Hydric soil rating: No

Minor Components

Atoka

Percent of map unit: 3 percent
Ecological site: R070BC007NM - Loamy
Hydric soil rating: No

Pima

Percent of map unit: 2 percent
Ecological site: R070BC017NM - Bottomland
Hydric soil rating: No

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Soil Map—Eddy Area, New Mexico
(Boyd Y Water Line)

Soil Map—Eddy Area, New Mexico
(Boyd Y Water Line)

MAP LEGEND

Area of Interest (AOI)
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- Lava Flow
- Marsh or swamp
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- 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

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- Interstate Highways
- US Routes
- Major Roads
- Local Roads

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- Aerial Photography

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

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

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

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

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

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

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

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 18, Sep 8, 2022

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
RE	Reagan-Upton association, 0 to 9 percent slopes	1.5	100.0%
Totals for Area of Interest		**1.5**	**100.0%**

All Ecological Sites -- —Eddy Area, New Mexico
(Boyd Y Water Line)

All Ecological Sites -- —Eddy Area, New Mexico
(Boyd Y Water Line)

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- R042CY153NM
- Not rated or not available

Soil Rating Lines
- R042CY153NM
- Not rated or not available

Soil Rating Points
- R042CY153NM
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 18, Sep 8, 2022

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

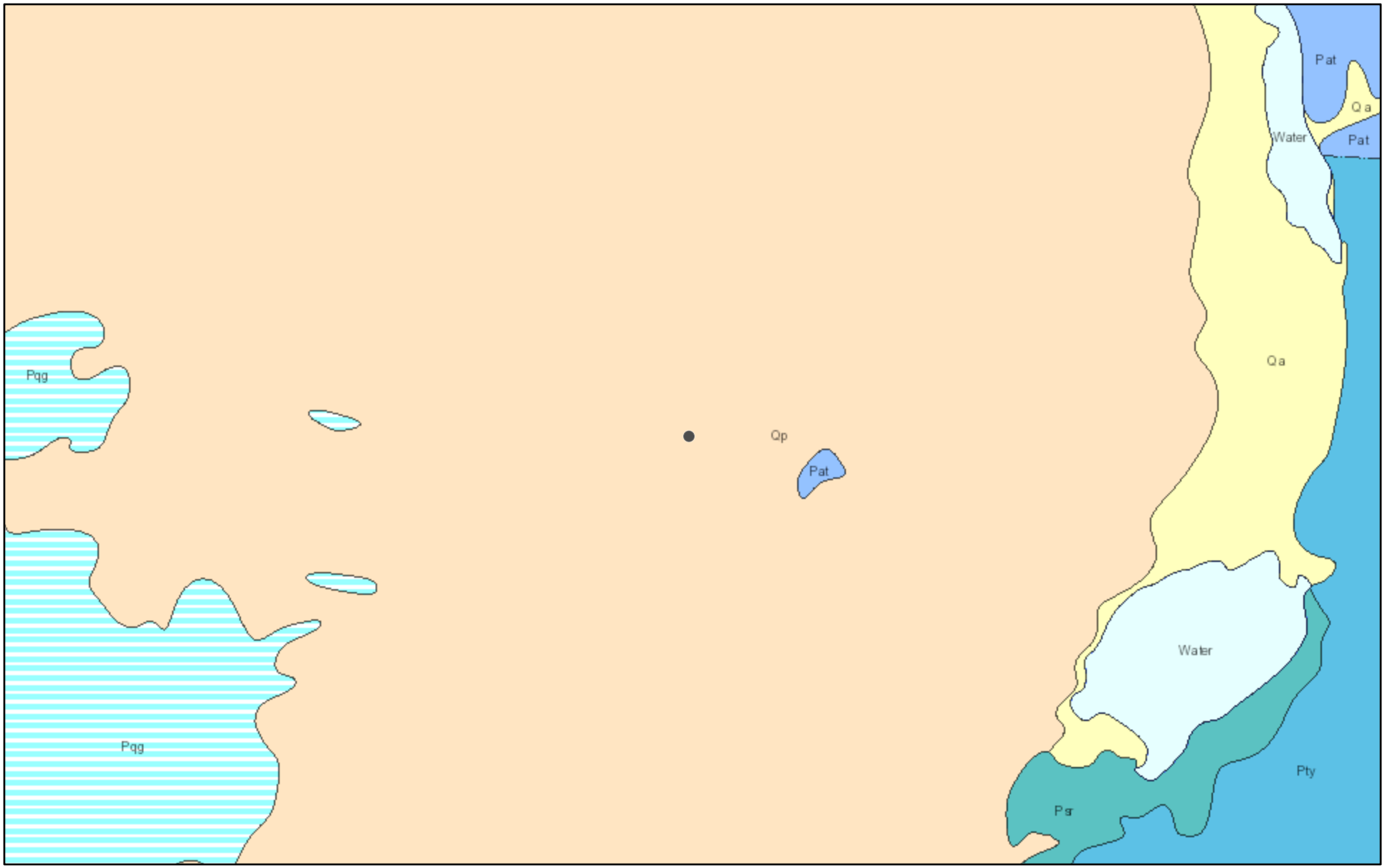
Date(s) aerial images were photographed: Nov 12, 2022—Dec 2, 2022

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.

All Ecological Sites —

Map unit symbol	Map unit name	Component name (percent)	Ecological site	Acres in AOI	Percent of AOI
RE	Reagan-Upton association, 0 to 9 percent slopes	Reagan (70%)	R042CY153NM — Loamy	1.5	100.0%
		Upton (25%)	R042CY159NM — Shallow Loamy		
		Atoka (3%)	R070BC007NM — Loamy		
		Pima (2%)	R070BC017NM — Bottomland		
Totals for Area of Interest				**1.5**	**100.0%**

Boyd Y Water Line Geology



9/19/2023, 10:01:56 AM

1:144,448

0 1 2 4 mi

0 1.5 3 6 km

Lithologic Units

- Playa—Alluvium and evaporite deposits (Holocene)
- Water—Perenial 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

USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global

ATTACHMENT 4

eurofins | 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: Boyd Y Water Transfer OrderNo.: 2310A70

Dear Chance Dixon:

Eurofins Environment Testing South Central, LLC received 15 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,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2310A70**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-01 0ft
Project: Boyd Y Water Transfer
Collection Date: 10/17/2023 1:00:00 PM
Lab ID: 2310A70-001 **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	9.6		mg/Kg	1	10/24/2023 12:42:17 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/24/2023 12:42:17 PM
Surr: DNOP	77.6	69-147		%Rec	1	10/24/2023 12:42:17 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	10/24/2023 6:33:42 PM
Surr: BFB	95.6	15-244		%Rec	1	10/24/2023 6:33:42 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	10/24/2023 6:33:42 PM
Toluene	ND	0.047		mg/Kg	1	10/24/2023 6:33:42 PM
Ethylbenzene	ND	0.047		mg/Kg	1	10/24/2023 6:33:42 PM
Xylenes, Total	ND	0.094		mg/Kg	1	10/24/2023 6:33:42 PM
Surr: 4-Bromofluorobenzene	104	39.1-146		%Rec	1	10/24/2023 6:33:42 PM
EPA METHOD 300.0: ANIONS						Analyst: **KCB**
Chloride	ND	60		mg/Kg	20	10/26/2023 5:46:33 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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310A70**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-01 2ft
Project: Boyd Y Water Transfer
Collection Date: 10/17/2023 1:05:00 PM
Lab ID: 2310A70-002 **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: **PRD**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	10/24/2023 12:53:12 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	10/24/2023 12:53:12 PM
Surr: DNOP	92.4	69-147		%Rec	1	10/24/2023 12:53:12 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	10/24/2023 6:57:03 PM
Surr: BFB	98.7	15-244		%Rec	1	10/24/2023 6:57:03 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	10/24/2023 6:57:03 PM
Toluene	ND	0.047		mg/Kg	1	10/24/2023 6:57:03 PM
Ethylbenzene	ND	0.047		mg/Kg	1	10/24/2023 6:57:03 PM
Xylenes, Total	ND	0.094		mg/Kg	1	10/24/2023 6:57:03 PM
Surr: 4-Bromofluorobenzene	107	39.1-146		%Rec	1	10/24/2023 6:57:03 PM
EPA METHOD 300.0: ANIONS						Analyst: **KCB**
Chloride	ND	60		mg/Kg	20	10/26/2023 7:50:38 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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310A70**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-02 0ft
Project: Boyd Y Water Transfer
Collection Date: 10/17/2023 1:10:00 PM
Lab ID: 2310A70-003 **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	9.4		mg/Kg	1	10/24/2023 1:04:07 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	10/24/2023 1:04:07 PM
Surr: DNOP	72.8	69-147		%Rec	1	10/24/2023 1:04:07 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/24/2023 7:20:29 PM
Surr: BFB	97.3	15-244		%Rec	1	10/24/2023 7:20:29 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	10/24/2023 7:20:29 PM
Toluene	ND	0.048		mg/Kg	1	10/24/2023 7:20:29 PM
Ethylbenzene	ND	0.048		mg/Kg	1	10/24/2023 7:20:29 PM
Xylenes, Total	ND	0.095		mg/Kg	1	10/24/2023 7:20:29 PM
Surr: 4-Bromofluorobenzene	105	39.1-146		%Rec	1	10/24/2023 7:20:29 PM
EPA METHOD 300.0: ANIONS						Analyst: **KCB**
Chloride	ND	60		mg/Kg	20	10/26/2023 8:27:51 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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310A70**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-02 2ft
Project: Boyd Y Water Transfer
Collection Date: 10/17/2023 1:15:00 PM
Lab ID: 2310A70-004 **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	10		mg/Kg	1	10/25/2023 5:01:39 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2023 5:01:39 PM
Surr: DNOP	99.0	69-147		%Rec	1	10/25/2023 5:01:39 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/25/2023 12:02:55 AM
Surr: BFB	94.3	15-244		%Rec	1	10/25/2023 12:02:55 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	10/25/2023 12:02:55 AM
Toluene	ND	0.048		mg/Kg	1	10/25/2023 12:02:55 AM
Ethylbenzene	ND	0.048		mg/Kg	1	10/25/2023 12:02:55 AM
Xylenes, Total	ND	0.096		mg/Kg	1	10/25/2023 12:02:55 AM
Surr: 4-Bromofluorobenzene	101	39.1-146		%Rec	1	10/25/2023 12:02:55 AM
EPA METHOD 300.0: ANIONS						Analyst: **KCB**
Chloride	ND	60		mg/Kg	20	10/26/2023 8:40:15 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	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 Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2310A70**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-03 0ft
Project: Boyd Y Water Transfer
Collection Date: 10/17/2023 1:20:00 PM
Lab ID: 2310A70-005 **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)	9.6	9.4		mg/Kg	1	10/25/2023 5:44:24 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	10/25/2023 5:44:24 PM
Surr: DNOP	103	69-147		%Rec	1	10/25/2023 5:44:24 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/25/2023 1:13:36 AM
Surr: BFB	93.4	15-244		%Rec	1	10/25/2023 1:13:36 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	10/25/2023 1:13:36 AM
Toluene	ND	0.048		mg/Kg	1	10/25/2023 1:13:36 AM
Ethylbenzene	ND	0.048		mg/Kg	1	10/25/2023 1:13:36 AM
Xylenes, Total	ND	0.095		mg/Kg	1	10/25/2023 1:13:36 AM
Surr: 4-Bromofluorobenzene	98.8	39.1-146		%Rec	1	10/25/2023 1:13:36 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	20000	1500		mg/Kg	500	10/27/2023 4:12:24 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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310A70**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-03 2ft
Project: Boyd Y Water Transfer
Collection Date: 10/17/2023 1:25:00 PM
Lab ID: 2310A70-006 **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	9.8		mg/Kg	1	10/25/2023 5:55:10 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/25/2023 5:55:10 PM
Surr: DNOP	102	69-147		%Rec	1	10/25/2023 5:55:10 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	10/25/2023 2:24:04 AM
Surr: BFB	93.8	15-244		%Rec	1	10/25/2023 2:24:04 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	10/25/2023 2:24:04 AM
Toluene	ND	0.047		mg/Kg	1	10/25/2023 2:24:04 AM
Ethylbenzene	ND	0.047		mg/Kg	1	10/25/2023 2:24:04 AM
Xylenes, Total	ND	0.094		mg/Kg	1	10/25/2023 2:24:04 AM
Surr: 4-Bromofluorobenzene	100	39.1-146		%Rec	1	10/25/2023 2:24:04 AM
EPA METHOD 300.0: ANIONS						Analyst: **KCB**
Chloride	2200	60		mg/Kg	20	10/26/2023 9:54:42 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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310A70**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-03 3ft
Project: Boyd Y Water Transfer
Collection Date: 10/19/2023 12:00:00 PM
Lab ID: 2310A70-007 **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	9.9		mg/Kg	1	10/25/2023 6:05:56 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/25/2023 6:05:56 PM
Surr: DNOP	92.2	69-147		%Rec	1	10/25/2023 6:05:56 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/25/2023 2:47:40 AM
Surr: BFB	93.1	15-244		%Rec	1	10/25/2023 2:47:40 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	10/25/2023 2:47:40 AM
Toluene	ND	0.049		mg/Kg	1	10/25/2023 2:47:40 AM
Ethylbenzene	ND	0.049		mg/Kg	1	10/25/2023 2:47:40 AM
Xylenes, Total	ND	0.097		mg/Kg	1	10/25/2023 2:47:40 AM
Surr: 4-Bromofluorobenzene	98.4	39.1-146		%Rec	1	10/25/2023 2:47:40 AM
EPA METHOD 300.0: ANIONS						Analyst: **KCB**
Chloride	ND	60		mg/Kg	20	10/26/2023 10:07:06 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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310A70**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-04 0ft
Project: Boyd Y Water Transfer
Collection Date: 10/19/2023 12:05:00 PM
Lab ID: 2310A70-008 **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	10		mg/Kg	1	10/25/2023 6:16:42 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2023 6:16:42 PM
Surr: DNOP	105	69-147		%Rec	1	10/25/2023 6:16:42 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/25/2023 3:11:09 AM
Surr: BFB	93.3	15-244		%Rec	1	10/25/2023 3:11:09 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	10/25/2023 3:11:09 AM
Toluene	ND	0.048		mg/Kg	1	10/25/2023 3:11:09 AM
Ethylbenzene	ND	0.048		mg/Kg	1	10/25/2023 3:11:09 AM
Xylenes, Total	ND	0.095		mg/Kg	1	10/25/2023 3:11:09 AM
Surr: 4-Bromofluorobenzene	99.9	39.1-146		%Rec	1	10/25/2023 3:11:09 AM
EPA METHOD 300.0: ANIONS						Analyst: **KCB**
Chloride	ND	60		mg/Kg	20	10/26/2023 10:19:30 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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310A70**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-04 2ft
Project: Boyd Y Water Transfer
Collection Date: 10/19/2023 12:10:00 PM
Lab ID: 2310A70-009 **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 6:27:28 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/25/2023 6:27:28 PM
Surr: DNOP	113	69-147		%Rec	1	10/25/2023 6:27:28 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	10/25/2023 3:34:29 AM
Surr: BFB	95.2	15-244		%Rec	1	10/25/2023 3:34:29 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	10/25/2023 3:34:29 AM
Toluene	ND	0.047		mg/Kg	1	10/25/2023 3:34:29 AM
Ethylbenzene	ND	0.047		mg/Kg	1	10/25/2023 3:34:29 AM
Xylenes, Total	ND	0.093		mg/Kg	1	10/25/2023 3:34:29 AM
Surr: 4-Bromofluorobenzene	101	39.1-146		%Rec	1	10/25/2023 3:34:29 AM
EPA METHOD 300.0: ANIONS						Analyst: **KCB**
Chloride	ND	60		mg/Kg	20	10/26/2023 10:31:55 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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310A70**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-05 0ft
Project: Boyd Y Water Transfer
Collection Date: 10/19/2023 12:15:00 PM
Lab ID: 2310A70-010 **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	9.6		mg/Kg	1	10/25/2023 6:38:13 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/25/2023 6:38:13 PM
Surr: DNOP	102	69-147		%Rec	1	10/25/2023 6:38:13 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/25/2023 3:58:05 AM
Surr: BFB	95.3	15-244		%Rec	1	10/25/2023 3:58:05 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	10/25/2023 3:58:05 AM
Toluene	ND	0.048		mg/Kg	1	10/25/2023 3:58:05 AM
Ethylbenzene	ND	0.048		mg/Kg	1	10/25/2023 3:58:05 AM
Xylenes, Total	ND	0.095		mg/Kg	1	10/25/2023 3:58:05 AM
Surr: 4-Bromofluorobenzene	101	39.1-146		%Rec	1	10/25/2023 3:58:05 AM
EPA METHOD 300.0: ANIONS						Analyst: **KCB**
Chloride	ND	60		mg/Kg	20	10/26/2023 10:44:20 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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310A70**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-05 2ft
Project: Boyd Y Water Transfer
Collection Date: 10/19/2023 12:20:00 PM
Lab ID: 2310A70-011 **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 6:48:58 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/25/2023 6:48:58 PM
Surr: DNOP	77.4	69-147		%Rec	1	10/25/2023 6:48:58 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	10/25/2023 4:21:40 AM
Surr: BFB	94.2	15-244		%Rec	1	10/25/2023 4:21:40 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	10/25/2023 4:21:40 AM
Toluene	ND	0.047		mg/Kg	1	10/25/2023 4:21:40 AM
Ethylbenzene	ND	0.047		mg/Kg	1	10/25/2023 4:21:40 AM
Xylenes, Total	ND	0.094		mg/Kg	1	10/25/2023 4:21:40 AM
Surr: 4-Bromofluorobenzene	99.8	39.1-146		%Rec	1	10/25/2023 4:21:40 AM
EPA METHOD 300.0: ANIONS						Analyst: **KCB**
Chloride	150	60		mg/Kg	20	10/26/2023 10:56:45 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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310A70**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-06 0ft
Project: Boyd Y Water Transfer
Collection Date: 10/19/2023 12:25:00 PM
Lab ID: 2310A70-012 **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	9.3		mg/Kg	1	10/25/2023 6:59:46 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	10/25/2023 6:59:46 PM
Surr: DNOP	87.3	69-147		%Rec	1	10/25/2023 6:59:46 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	10/25/2023 10:23:25 AM
Surr: BFB	95.2	15-244		%Rec	1	10/25/2023 10:23:25 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	10/25/2023 10:23:25 AM
Toluene	ND	0.047		mg/Kg	1	10/25/2023 10:23:25 AM
Ethylbenzene	ND	0.047		mg/Kg	1	10/25/2023 10:23:25 AM
Xylenes, Total	ND	0.095		mg/Kg	1	10/25/2023 10:23:25 AM
Surr: 4-Bromofluorobenzene	102	39.1-146		%Rec	1	10/25/2023 10:23:25 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	8600	600		mg/Kg	200	10/27/2023 4:24:45 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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310A70**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-06 2ft
Project: Boyd Y Water Transfer
Collection Date: 10/19/2023 12:30:00 PM
Lab ID: 2310A70-013 **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	10		mg/Kg	1	10/25/2023 7:10:35 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2023 7:10:35 PM
Surr: DNOP	92.0	69-147		%Rec	1	10/25/2023 7:10:35 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/25/2023 10:47:06 AM
Surr: BFB	95.3	15-244		%Rec	1	10/25/2023 10:47:06 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	10/25/2023 10:47:06 AM
Toluene	ND	0.049		mg/Kg	1	10/25/2023 10:47:06 AM
Ethylbenzene	ND	0.049		mg/Kg	1	10/25/2023 10:47:06 AM
Xylenes, Total	ND	0.099		mg/Kg	1	10/25/2023 10:47:06 AM
Surr: 4-Bromofluorobenzene	102	39.1-146		%Rec	1	10/25/2023 10:47:06 AM
EPA METHOD 300.0: ANIONS						Analyst: **KCB**
Chloride	93	60		mg/Kg	20	10/26/2023 11:46:22 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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310A70**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-07 0ft
Project: Boyd Y Water Transfer
Collection Date: 10/19/2023 12:35:00 PM
Lab ID: 2310A70-014 **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	9.7		mg/Kg	1	10/25/2023 7:21:22 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/25/2023 7:21:22 PM
Surr: DNOP	120	69-147		%Rec	1	10/25/2023 7:21:22 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	10/25/2023 11:10:44 AM
Surr: BFB	95.5	15-244		%Rec	1	10/25/2023 11:10:44 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	10/25/2023 11:10:44 AM
Toluene	ND	0.047		mg/Kg	1	10/25/2023 11:10:44 AM
Ethylbenzene	ND	0.047		mg/Kg	1	10/25/2023 11:10:44 AM
Xylenes, Total	ND	0.094		mg/Kg	1	10/25/2023 11:10:44 AM
Surr: 4-Bromofluorobenzene	102	39.1-146		%Rec	1	10/25/2023 11:10:44 AM
EPA METHOD 300.0: ANIONS						Analyst: **KCB**
Chloride	ND	60		mg/Kg	20	10/26/2023 11:58:47 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	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 Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2310A70**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-07 2ft
Project: Boyd Y Water Transfer
Collection Date: 10/19/2023 12:40:00 PM
Lab ID: 2310A70-015 **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 7:32:08 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/25/2023 7:32:08 PM
Surr: DNOP	102	69-147		%Rec	1	10/25/2023 7:32:08 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/25/2023 11:34:17 AM
Surr: BFB	98.6	15-244		%Rec	1	10/25/2023 11:34:17 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	10/25/2023 11:34:17 AM
Toluene	ND	0.050		mg/Kg	1	10/25/2023 11:34:17 AM
Ethylbenzene	ND	0.050		mg/Kg	1	10/25/2023 11:34:17 AM
Xylenes, Total	ND	0.10		mg/Kg	1	10/25/2023 11:34:17 AM
Surr: 4-Bromofluorobenzene	101	39.1-146		%Rec	1	10/25/2023 11:34:17 AM
EPA METHOD 300.0: ANIONS						Analyst: **KCB**
Chloride	ND	60		mg/Kg	20	10/27/2023 12:11:12 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 Quanitative 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#: **2310A70**

03-Nov-23

Client: Vertex Resources Services, Inc.

Project: Boyd Y Water Transfer

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			

Sample ID: **MB-78395**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **78395**	RunNo: **100758**
Prep Date: **10/26/2023**	Analysis Date: **10/26/2023**	SeqNo: **3696895** Units: **mg/Kg**

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

Sample ID: **LCS-78395**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **78395**	RunNo: **100758**
Prep Date: **10/26/2023**	Analysis Date: **10/26/2023**	SeqNo: **3696896** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.2	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of 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#: **2310A70**

03-Nov-23

Client: Vertex Resources Services, Inc.

Project: Boyd Y Water Transfer

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			

Sample ID: **2310A70-004AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH23-02 2ft**	Batch ID: **78336**	RunNo: **100748**
Prep Date: **10/24/2023**	Analysis Date: **10/25/2023**	SeqNo: **3695308** 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	90.1	54.2	135			
Surr: DNOP	5.2		5.000		104	69	147			

Sample ID: **2310A70-004AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH23-02 2ft**	Batch ID: **78336**	RunNo: **100748**
Prep Date: **10/24/2023**	Analysis Date: **10/25/2023**	SeqNo: **3695309** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	9.5	47.26	0	113	54.2	135	16.7	29.2	
Surr: DNOP	6.1		4.726		129	69	147	0	0	

Sample ID: **LCS-78336**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **78336**	RunNo: **100748**
Prep Date: **10/24/2023**	Analysis Date: **10/25/2023**	SeqNo: **3695349** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	55	10	50.00	0	110	61.9	130			
Surr: DNOP	6.1		5.000		122	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 Quanitative 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#: **2310A70**

03-Nov-23

Client: Vertex Resources Services, Inc.

Project: Boyd Y Water Transfer

Sample ID: **MB-78336**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **78336**	RunNo: **100748**
Prep Date: **10/24/2023**	Analysis Date: **10/25/2023**	SeqNo: **3695351** 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		107	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 Quanitative 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#: **2310A70**

03-Nov-23

Client: Vertex Resources Services, Inc.

Project: Boyd Y Water Transfer

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: **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	92.0	70	130			
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: **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	960		1000		96.1	15	244			

Sample ID: **2310a70-004ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-02 2ft**	Batch ID: **78320**	RunNo: **100707**
Prep Date: **10/23/2023**	Analysis Date: **10/25/2023**	SeqNo: **3693103** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	4.8	23.81	0	103	70	130			
Surr: BFB	2000		952.4		211	15	244			

Sample ID: **2310a70-004amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-02 2ft**	Batch ID: **78320**	RunNo: **100707**
Prep Date: **10/23/2023**	Analysis Date: **10/25/2023**	SeqNo: **3693104** Units: **mg/Kg**

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of 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#: **2310A70**

03-Nov-23

Client: Vertex Resources Services, Inc.

Project: Boyd Y Water Transfer

Sample ID: **2310a70-004amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-02 2ft**	Batch ID: **78320**	RunNo: **100707**
Prep Date: **10/23/2023**	Analysis Date: **10/25/2023**	SeqNo: **3693104** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	4.8	23.85	0	103	70	130	0.0810	20	
Surr: BFB	2000		954.2		214	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 Quanitative 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#: **2310A70**

03-Nov-23

Client: Vertex Resources Services, Inc.

Project: Boyd Y Water Transfer

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: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	101	70	130			
Toluene	1.0	0.050	1.000	0	101	70	130			
Ethylbenzene	1.0	0.050	1.000	0	101	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: **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: **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			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of 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#: **2310A70**

03-Nov-23

Client: Vertex Resources Services, Inc.

Project: Boyd Y Water Transfer

Sample ID: **2310a70-005ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-03 0ft**	Batch ID: **78320**	RunNo: **100707**
Prep Date: **10/23/2023**	Analysis Date: **10/25/2023**	SeqNo: **3693156** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.024	0.9497	0	111	70	130			
Toluene	1.1	0.047	0.9497	0	113	70	130			
Ethylbenzene	1.1	0.047	0.9497	0	115	70	130			
Xylenes, Total	3.3	0.095	2.849	0	115	70	130			
Surr: 4-Bromofluorobenzene	0.99		0.9497		104	39.1	146			

Sample ID: **2310a70-005amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-03 0ft**	Batch ID: **78320**	RunNo: **100707**
Prep Date: **10/23/2023**	Analysis Date: **10/25/2023**	SeqNo: **3693158** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.024	0.9488	0	114	70	130	2.92	20	
Toluene	1.1	0.047	0.9488	0	115	70	130	1.58	20	
Ethylbenzene	1.1	0.047	0.9488	0	118	70	130	2.29	20	
Xylenes, Total	3.3	0.095	2.846	0	117	70	130	0.911	20	
Surr: 4-Bromofluorobenzene	0.99		0.9488		104	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 Quanitative 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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: Vertex Resources Services, Inc.

Work Order Number: 2310A70

RcptNo: 1

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

Completed By: **Tracy Casarrubias** 10/21/2023 9:06:26 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° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: 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 °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: Office

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: Boyd Y Water Transfer

Project #: 23E-05378

Project Manager: Chance Dixon

Sampler: Fernando Rodriguez

On Ice: ☒ Yes ☐ No 4.0g

# of Coolers: 1

Cooler Temp(including CF): 2.4 -0 = 2.4 c

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

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2310A70	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
10/17/23	1:00	Soil	BH23-01 0ft	1, 4oz jar	Ice	001	X	X					X			
10/17/23	1:05	Soil	BH23-01 2ft	1, 4oz jar	Ice	002	X	X					X			
10/17/23	1:10	Soil	BH23-02 0ft	1, 4oz jar	Ice	003	X	X					X			
10/17/23	1:15	Soil	BH23-02 2ft	1, 4oz jar	Ice	004	X	X					X			
10/17/23	1:20	Soil	BH23-03 0ft	1, 4oz jar	Ice	005	X	X					X			
10/17/23	1:25	Soil	BH23-03 2ft	1, 4oz jar	Ice	006	X	X					X			

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
10/19	17:00				10/20/23	930
10/20/23	1900			Courier	10/21/23	8:00

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.

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: Boyd Y Water Transfer

Project #: 23E-05378

Project Manager: Chance Dixon

Sampler: Fernando Rodriguez

On Ice: ~~Yes~~ ☐ No 4oz

# of Coolers: 1

Cooler Temp(including CF): 2.4-0=2.4 ~

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2310A70	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
10/19/23	12:00	Soil	BH23-03 3ft	1, 4oz jar	Ice	007	X	X					X			
10/19/23	12:05	Soil	BH23-04 0ft	1, 4oz jar	Ice	008	X	X					X			
10/19/23	12:10	Soil	BH23-04 2ft	1, 4oz jar	Ice	009	X	X					X			
10/19/23	12:15	Soil	BH23-05 0ft	1, 4oz jar	Ice	010	X	X					X			
10/19/23	12:20	Soil	BH23-05 2ft	1, 4oz jar	Ice	011	X	X					X			
10/19/23	12:25	Soil	BH23-06 0ft	1, 4oz jar	Ice	012	X	X					X			
10/19/23	12:30	Soil	BH23-06 2ft	1, 4oz jar	Ice	013	X	X					X			
10/19/23	12:35	Soil	BH23-07 0ft	1, 4oz jar	Ice	014	X	X					X			
10/19/23	12:40	Soil	BH23-07 2ft	1, 4oz jar	Ice	015	X	X					X			

Analysis Request

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
10/19/23	17:00				10/20/23	930
10/20/23	1910			Courier	10/21/23	9:00

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.

eurofins | 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: Boyd Y Water Transfer OrderNo.: 2310B10

Dear Chance Dixon:

Eurofins Environment Testing South Central, LLC received 16 sample(s) on 10/24/2023 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,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2310B10**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-08 0ft
Project: Boyd Y Water Transfer
Collection Date: 10/20/2023 10:00:00 AM
Lab ID: 2310B10-001 **Matrix:** SOIL **Received Date:** 10/24/2023 7:50:00 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	10/25/2023 7:33:17 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/25/2023 7:33:17 PM
Surr: DNOP	105	69-147		%Rec	1	10/25/2023 7:33:17 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	10/25/2023 8:08:00 PM
Surr: BFB	102	15-244		%Rec	1	10/25/2023 8:08:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	10/25/2023 8:08:00 PM
Toluene	ND	0.047		mg/Kg	1	10/25/2023 8:08:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	10/25/2023 8:08:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	10/25/2023 8:08:00 PM
Surr: 4-Bromofluorobenzene	88.6	39.1-146		%Rec	1	10/25/2023 8:08:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **KCB**
Chloride	ND	60		mg/Kg	20	10/30/2023 2:46:28 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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310B10**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-08 2ft
Project: Boyd Y Water Transfer
Collection Date: 10/20/2023 10:05:00 AM
Lab ID: 2310B10-002 **Matrix:** SOIL **Received Date:** 10/24/2023 7:50:00 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	10/25/2023 7:57:09 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	10/25/2023 7:57:09 PM
Surr: DNOP	104	69-147		%Rec	1	10/25/2023 7:57:09 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/25/2023 9:13:00 PM
Surr: BFB	100	15-244		%Rec	1	10/25/2023 9:13:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	10/25/2023 9:13:00 PM
Toluene	ND	0.049		mg/Kg	1	10/25/2023 9:13:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	10/25/2023 9:13:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	10/25/2023 9:13:00 PM
Surr: 4-Bromofluorobenzene	88.5	39.1-146		%Rec	1	10/25/2023 9:13:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **KCB**
Chloride	ND	60		mg/Kg	20	10/30/2023 2:58:52 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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310B10**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-09 0ft
Project: Boyd Y Water Transfer
Collection Date: 10/20/2023 10:10:00 AM
Lab ID: 2310B10-003 **Matrix:** SOIL **Received Date:** 10/24/2023 7:50:00 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	10/25/2023 8:21:01 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/25/2023 8:21:01 PM
Surr: DNOP	103	69-147		%Rec	1	10/25/2023 8:21:01 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/25/2023 10:18:00 PM
Surr: BFB	99.5	15-244		%Rec	1	10/25/2023 10:18:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	10/25/2023 10:18:00 PM
Toluene	ND	0.048		mg/Kg	1	10/25/2023 10:18:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	10/25/2023 10:18:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	10/25/2023 10:18:00 PM
Surr: 4-Bromofluorobenzene	87.9	39.1-146		%Rec	1	10/25/2023 10:18:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **KCB**
Chloride	ND	60		mg/Kg	20	10/30/2023 3:11:17 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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310B10**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-09 2ft
Project: Boyd Y Water Transfer
Collection Date: 10/20/2023 10:15:00 AM
Lab ID: 2310B10-004 **Matrix:** SOIL **Received Date:** 10/24/2023 7:50:00 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 9:08:44 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/25/2023 9:08:44 PM
Surr: DNOP	105	69-147		%Rec	1	10/25/2023 9:08:44 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	10/25/2023 10:40:00 PM
Surr: BFB	101	15-244		%Rec	1	10/25/2023 10:40:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.023		mg/Kg	1	10/25/2023 10:40:00 PM
Toluene	ND	0.047		mg/Kg	1	10/25/2023 10:40:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	10/25/2023 10:40:00 PM
Xylenes, Total	ND	0.093		mg/Kg	1	10/25/2023 10:40:00 PM
Surr: 4-Bromofluorobenzene	89.2	39.1-146		%Rec	1	10/25/2023 10:40:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **KCB**
Chloride	130	60		mg/Kg	20	10/30/2023 3:23:42 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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310B10**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-10 0ft
Project: Boyd Y Water Transfer
Collection Date: 10/20/2023 10:20:00 AM
Lab ID: 2310B10-005 **Matrix:** SOIL **Received Date:** 10/24/2023 7:50:00 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	10/25/2023 9:32:38 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2023 9:32:38 PM
Surr: DNOP	104	69-147		%Rec	1	10/25/2023 9:32:38 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/25/2023 11:02:00 PM
Surr: BFB	104	15-244		%Rec	1	10/25/2023 11:02:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	10/25/2023 11:02:00 PM
Toluene	ND	0.049		mg/Kg	1	10/25/2023 11:02:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	10/25/2023 11:02:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	10/25/2023 11:02:00 PM
Surr: 4-Bromofluorobenzene	87.5	39.1-146		%Rec	1	10/25/2023 11:02:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	4900	300		mg/Kg	100	10/31/2023 11:33:41 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2310B10**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-10 2ft
Project: Boyd Y Water Transfer
Collection Date: 10/20/2023 10:25:00 AM
Lab ID: 2310B10-006 **Matrix:** SOIL **Received Date:** 10/24/2023 7:50:00 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	10/25/2023 9:56:27 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/25/2023 9:56:27 PM
Surr: DNOP	105	69-147		%Rec	1	10/25/2023 9:56:27 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/25/2023 11:23:00 PM
Surr: BFB	99.2	15-244		%Rec	1	10/25/2023 11:23:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	10/25/2023 11:23:00 PM
Toluene	ND	0.048		mg/Kg	1	10/25/2023 11:23:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	10/25/2023 11:23:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	10/25/2023 11:23:00 PM
Surr: 4-Bromofluorobenzene	87.2	39.1-146		%Rec	1	10/25/2023 11:23:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **KCB**
Chloride	ND	60		mg/Kg	20	10/30/2023 3:48:31 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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310B10**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-11 0ft
Project: Boyd Y Water Transfer
Collection Date: 10/20/2023 10:30:00 AM
Lab ID: 2310B10-007 **Matrix:** SOIL **Received Date:** 10/24/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	10/25/2023 10:20:15 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	10/25/2023 10:20:15 PM
Surr: DNOP	106	69-147		%Rec	1	10/25/2023 10:20:15 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	10/25/2023 11:45:00 PM
Surr: BFB	103	15-244		%Rec	1	10/25/2023 11:45:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.023		mg/Kg	1	10/25/2023 11:45:00 PM
Toluene	ND	0.047		mg/Kg	1	10/25/2023 11:45:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	10/25/2023 11:45:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	10/25/2023 11:45:00 PM
Surr: 4-Bromofluorobenzene	88.9	39.1-146		%Rec	1	10/25/2023 11:45:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **KCB**
Chloride	2000	60		mg/Kg	20	10/30/2023 4:00:56 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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310B10**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-11 2ft
Project: Boyd Y Water Transfer
Collection Date: 10/20/2023 10:35:00 AM
Lab ID: 2310B10-008 **Matrix:** SOIL **Received Date:** 10/24/2023 7:50:00 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	10/25/2023 10:44:04 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2023 10:44:04 PM
Surr: DNOP	107	69-147		%Rec	1	10/25/2023 10:44:04 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	10/26/2023 12:07:00 AM
Surr: BFB	106	15-244		%Rec	1	10/26/2023 12:07:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.023		mg/Kg	1	10/26/2023 12:07:00 AM
Toluene	ND	0.046		mg/Kg	1	10/26/2023 12:07:00 AM
Ethylbenzene	ND	0.046		mg/Kg	1	10/26/2023 12:07:00 AM
Xylenes, Total	ND	0.092		mg/Kg	1	10/26/2023 12:07:00 AM
Surr: 4-Bromofluorobenzene	89.6	39.1-146		%Rec	1	10/26/2023 12:07:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **KCB**
Chloride	67	60		mg/Kg	20	10/30/2023 4:13:20 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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310B10**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-12 0ft
Project: Boyd Y Water Transfer
Collection Date: 10/20/2023 10:40:00 AM
Lab ID: 2310B10-009 **Matrix:** SOIL **Received Date:** 10/24/2023 7:50:00 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	10/25/2023 11:07:53 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2023 11:07:53 PM
Surr: DNOP	110	69-147		%Rec	1	10/25/2023 11:07:53 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/26/2023 12:29:00 AM
Surr: BFB	107	15-244		%Rec	1	10/26/2023 12:29:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	10/26/2023 12:29:00 AM
Toluene	ND	0.050		mg/Kg	1	10/26/2023 12:29:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	10/26/2023 12:29:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	10/26/2023 12:29:00 AM
Surr: 4-Bromofluorobenzene	90.0	39.1-146		%Rec	1	10/26/2023 12:29:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **KCB**
Chloride	ND	60		mg/Kg	20	10/30/2023 4:25:44 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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310B10**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-12 2ft
Project: Boyd Y Water Transfer
Collection Date: 10/20/2023 10:45:00 AM
Lab ID: 2310B10-010 **Matrix:** SOIL **Received Date:** 10/24/2023 7:50:00 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 11:31:37 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	10/25/2023 11:31:37 PM
Surr: DNOP	106	69-147		%Rec	1	10/25/2023 11:31:37 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/26/2023 12:50:00 AM
Surr: BFB	105	15-244		%Rec	1	10/26/2023 12:50:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	10/26/2023 12:50:00 AM
Toluene	ND	0.050		mg/Kg	1	10/26/2023 12:50:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	10/26/2023 12:50:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	10/26/2023 12:50:00 AM
Surr: 4-Bromofluorobenzene	91.3	39.1-146		%Rec	1	10/26/2023 12:50:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **KCB**
Chloride	ND	60		mg/Kg	20	10/30/2023 4:38:09 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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310B10**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-13 0ft
Project: Boyd Y Water Transfer
Collection Date: 10/20/2023 10:50:00 AM
Lab ID: 2310B10-011 **Matrix:** SOIL **Received Date:** 10/24/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	10/25/2023 11:55:19 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	10/25/2023 11:55:19 PM
Surr: DNOP	103	69-147		%Rec	1	10/25/2023 11:55:19 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/26/2023 1:34:00 AM
Surr: BFB	106	15-244		%Rec	1	10/26/2023 1:34:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	10/26/2023 9:00:00 PM
Toluene	ND	0.050		mg/Kg	1	10/26/2023 9:00:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	10/26/2023 9:00:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	10/26/2023 9:00:00 PM
Surr: 4-Bromofluorobenzene	89.2	39.1-146		%Rec	1	10/26/2023 9:00:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	5600	300		mg/Kg	100	10/31/2023 11:46:06 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2310B10**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-13 2ft
Project: Boyd Y Water Transfer
Collection Date: 10/20/2023 10:55:00 AM
Lab ID: 2310B10-012 **Matrix:** SOIL **Received Date:** 10/24/2023 7:50:00 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	10/26/2023 12:19:02 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/26/2023 12:19:02 AM
Surr: DNOP	106	69-147		%Rec	1	10/26/2023 12:19:02 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/26/2023 1:56:00 AM
Surr: BFB	105	15-244		%Rec	1	10/26/2023 1:56:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	10/26/2023 9:21:00 PM
Toluene	ND	0.048		mg/Kg	1	10/26/2023 9:21:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	10/26/2023 9:21:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	10/26/2023 9:21:00 PM
Surr: 4-Bromofluorobenzene	90.0	39.1-146		%Rec	1	10/26/2023 9:21:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **KCB**
Chloride	ND	60		mg/Kg	20	10/30/2023 5:27:47 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310B10**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-14 0ft
Project: Boyd Y Water Transfer
Collection Date: 10/20/2023 11:00:00 AM
Lab ID: 2310B10-013 **Matrix:** SOIL **Received Date:** 10/24/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	10/26/2023 12:42:43 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	10/26/2023 12:42:43 AM
Surr: DNOP	107	69-147		%Rec	1	10/26/2023 12:42:43 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/26/2023 2:17:00 AM
Surr: BFB	101	15-244		%Rec	1	10/26/2023 2:17:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	10/26/2023 9:43:00 PM
Toluene	ND	0.050		mg/Kg	1	10/26/2023 9:43:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	10/26/2023 9:43:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	10/26/2023 9:43:00 PM
Surr: 4-Bromofluorobenzene	89.2	39.1-146		%Rec	1	10/26/2023 9:43:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	7100	300		mg/Kg	100	10/31/2023 11:58:31 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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310B10**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-14 2ft
Project: Boyd Y Water Transfer
Collection Date: 10/20/2023 11:05:00 AM
Lab ID: 2310B10-014 **Matrix:** SOIL **Received Date:** 10/24/2023 7:50:00 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	10/26/2023 1:06:28 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	10/26/2023 1:06:28 AM
Surr: DNOP	102	69-147		%Rec	1	10/26/2023 1:06:28 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/26/2023 2:39:00 AM
Surr: BFB	104	15-244		%Rec	1	10/26/2023 2:39:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	10/26/2023 10:05:00 PM
Toluene	ND	0.049		mg/Kg	1	10/26/2023 10:05:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	10/26/2023 10:05:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	10/26/2023 10:05:00 PM
Surr: 4-Bromofluorobenzene	87.0	39.1-146		%Rec	1	10/26/2023 10:05:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **KCB**
Chloride	ND	60		mg/Kg	20	10/30/2023 5:52:37 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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310B10**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-15 0ft
Project: Boyd Y Water Transfer
Collection Date: 10/20/2023 11:10:00 AM
Lab ID: 2310B10-015 **Matrix:** SOIL **Received Date:** 10/24/2023 7:50:00 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	10/26/2023 1:30:12 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	10/26/2023 1:30:12 AM
Surr: DNOP	104	69-147		%Rec	1	10/26/2023 1:30:12 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/26/2023 3:01:00 AM
Surr: BFB	103	15-244		%Rec	1	10/26/2023 3:01:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	10/26/2023 10:27:00 PM
Toluene	ND	0.048		mg/Kg	1	10/26/2023 10:27:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	10/26/2023 10:27:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	10/26/2023 10:27:00 PM
Surr: 4-Bromofluorobenzene	88.0	39.1-146		%Rec	1	10/26/2023 10:27:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **KCB**
Chloride	ND	60		mg/Kg	20	10/30/2023 6:05:01 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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310B10**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-15 2ft
Project: Boyd Y Water Transfer
Collection Date: 10/20/2023 11:15:00 AM
Lab ID: 2310B10-016 **Matrix:** SOIL **Received Date:** 10/24/2023 7:50:00 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	10/26/2023 1:53:51 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/26/2023 1:53:51 AM
Surr: DNOP	104	69-147		%Rec	1	10/26/2023 1:53:51 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	10/26/2023 3:23:00 AM
Surr: BFB	99.6	15-244		%Rec	1	10/26/2023 3:23:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.023		mg/Kg	1	10/26/2023 10:48:00 PM
Toluene	ND	0.047		mg/Kg	1	10/26/2023 10:48:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	10/26/2023 10:48:00 PM
Xylenes, Total	ND	0.093		mg/Kg	1	10/26/2023 10:48:00 PM
Surr: 4-Bromofluorobenzene	89.7	39.1-146		%Rec	1	10/26/2023 10:48:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **KCB**
Chloride	ND	60		mg/Kg	20	10/30/2023 6:17:26 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 Quanitative 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#: **2310B10**

03-Nov-23

Client: Vertex Resources Services, Inc.

Project: Boyd Y Water Transfer

Sample ID: **MB-78435**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **78435**	RunNo: **100821**
Prep Date: **10/30/2023**	Analysis Date: **10/30/2023**	SeqNo: **3699446** Units: **mg/Kg**

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

Sample ID: **LCS-78435**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **78435**	RunNo: **100821**
Prep Date: **10/30/2023**	Analysis Date: **10/30/2023**	SeqNo: **3699447** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.5	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of 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#: **2310B10**

03-Nov-23

Client: Vertex Resources Services, Inc.

Project: Boyd Y Water Transfer

Sample ID: **MB-78364**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **78364**	RunNo: **100744**
Prep Date: **10/25/2023**	Analysis Date: **10/25/2023**	SeqNo: **3695174** 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: **LCS-78364**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **78364**	RunNo: **100744**
Prep Date: **10/25/2023**	Analysis Date: **10/25/2023**	SeqNo: **3695175** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	102	61.9	130			
Surr: DNOP	5.1		5.000		103	69	147			

Sample ID: **2310B10-016AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH23-15 2ft**	Batch ID: **78364**	RunNo: **100744**
Prep Date: **10/25/2023**	Analysis Date: **10/26/2023**	SeqNo: **3695197** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	9.3	46.38	0	107	54.2	135			
Surr: DNOP	5.0		4.638		107	69	147			

Sample ID: **2310B10-016AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH23-15 2ft**	Batch ID: **78364**	RunNo: **100744**
Prep Date: **10/25/2023**	Analysis Date: **10/26/2023**	SeqNo: **3695198** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	9.8	49.07	0	106	54.2	135	4.61	29.2	
Surr: DNOP	5.2		4.907		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 Quanitative 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#: **2310B10**

03-Nov-23

Client: Vertex Resources Services, Inc.

Project: Boyd Y Water Transfer

Sample ID: **lcs-78352**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **78352**	RunNo: **100731**
Prep Date: **10/24/2023**	Analysis Date: **10/25/2023**	SeqNo: **3694380** 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	95.5	70	130			
Surr: BFB	2200		1000		219	15	244			

Sample ID: **mb-78352**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **78352**	RunNo: **100731**
Prep Date: **10/24/2023**	Analysis Date: **10/25/2023**	SeqNo: **3694381** 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	990		1000		99.1	15	244			

Sample ID: **2310B10-001ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-08 0ft**	Batch ID: **78352**	RunNo: **100731**
Prep Date: **10/24/2023**	Analysis Date: **10/25/2023**	SeqNo: **3694383** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	4.7	23.72	0	103	70	130			
Surr: BFB	2200		948.8		233	15	244			

Sample ID: **2310B10-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-08 0ft**	Batch ID: **78352**	RunNo: **100731**
Prep Date: **10/24/2023**	Analysis Date: **10/25/2023**	SeqNo: **3694384** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	4.7	23.65	0	111	70	130	6.95	20	
Surr: BFB	2300		946.1		238	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 Quanitative 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#: **2310B10**

03-Nov-23

Client: Vertex Resources Services, Inc.

Project: Boyd Y Water Transfer

Sample ID: **lcs-78352**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **78352**	RunNo: **100731**
Prep Date: **10/24/2023**	Analysis Date: **10/25/2023**	SeqNo: **3694424** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.025	1.000	0	87.7	70	130			
Toluene	0.89	0.050	1.000	0	89.2	70	130			
Ethylbenzene	0.90	0.050	1.000	0	89.6	70	130			
Xylenes, Total	2.7	0.10	3.000	0	89.1	70	130			
Surr: 4-Bromofluorobenzene	0.90		1.000		89.5	39.1	146			

Sample ID: **mb-78352**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **78352**	RunNo: **100731**
Prep Date: **10/24/2023**	Analysis Date: **10/25/2023**	SeqNo: **3694425** 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	0.88		1.000		88.5	39.1	146			

Sample ID: **2310B10-002ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-08 2ft**	Batch ID: **78352**	RunNo: **100731**
Prep Date: **10/24/2023**	Analysis Date: **10/25/2023**	SeqNo: **3694428** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.024	0.9756	0	91.6	70	130			
Toluene	0.93	0.049	0.9756	0	95.1	70	130			
Ethylbenzene	0.95	0.049	0.9756	0	97.8	70	130			
Xylenes, Total	2.8	0.098	2.927	0	96.7	70	130			
Surr: 4-Bromofluorobenzene	0.86		0.9756		87.9	39.1	146			

Sample ID: **2310B10-002amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-08 2ft**	Batch ID: **78352**	RunNo: **100731**
Prep Date: **10/24/2023**	Analysis Date: **10/25/2023**	SeqNo: **3694429** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.024	0.9718	0	95.4	70	130	3.75	20	
Toluene	0.94	0.049	0.9718	0	96.9	70	130	1.51	20	
Ethylbenzene	0.97	0.049	0.9718	0	99.6	70	130	1.46	20	
Xylenes, Total	2.9	0.097	2.915	0	99.1	70	130	2.07	20	
Surr: 4-Bromofluorobenzene	0.88		0.9718		90.4	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 Quanitative 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#: **2310B10**

03-Nov-23

Client: Vertex Resources Services, Inc.

Project: Boyd Y Water Transfer

Sample ID: **lcs-78352**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **78352**	RunNo: **100755**
Prep Date: **10/24/2023**	Analysis Date: **10/26/2023**	SeqNo: **3696790** 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	91.9	70	130			
Toluene	0.92	0.050	1.000	0	92.1	70	130			
Ethylbenzene	0.93	0.050	1.000	0	93.4	70	130			
Xylenes, Total	2.8	0.10	3.000	0	93.0	70	130			
Surr: 4-Bromofluorobenzene	0.92		1.000		92.2	39.1	146			

Sample ID: **mb-78352**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **78352**	RunNo: **100755**
Prep Date: **10/24/2023**	Analysis Date: **10/26/2023**	SeqNo: **3696791** 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		91.6	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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: Vertex Resources Services, Inc.

Work Order Number: 2310B10

RcptNo: 1

Received By: Tracy Casarrubias 10/24/2023 7:50:00 AM

Completed By: Tracy Casarrubias 10/24/2023 8:57:54 AM

Reviewed By: SCM 10/24/23

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 ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: TMC 10/24/23

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 10/24/23

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.4	Good	Yes	Morty		

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: Boyd Y Water Transfer

Project #: 23E-05378

Project Manager: Chance Dixon

Sampler: Fernando Rodriguez

On Ice: ☒ Yes ☐ No morty

# of Coolers: 1

Cooler Temp(including CF): 5.5 - 0.1 = 5.4 °C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2310B10	Analysis Request: (BTEX) MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	(Cl, F, Br, NO_3, NO_2, PO_4, SO_4)	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
10/20/23	10:00	Soil	BH23-08 0ft	1, 4oz jar	Ice	001	X	X					X			
10/20/23	10:05	Soil	BH23-08 2ft	1, 4oz jar	Ice	002	X	X					X			
10/20/23	10:10	Soil	BH23-09 0ft	1, 4oz jar	Ice	003	X	X					X			
10/20/23	10:15	Soil	BH23-09 2ft	1, 4oz jar	Ice	004	X	X					X			
10/20/23	10:20	Soil	BH23-10 0ft	1, 4oz jar	Ice	005	X	X					X			
10/20/23	10:25	Soil	BH23-10 2ft	1, 4oz jar	Ice	006	X	X					X			
10/20/23	10:30	Soil	BH23-11 0ft	1, 4oz jar	Ice	007	X	X					X			
10/20/23	10:35	Soil	BH23-11 2ft	1, 4oz jar	Ice	008	X	X					X			
10/20/23	10:40	Soil	BH23-12 0ft	1, 4oz jar	Ice	009	X	X					X			
10/20/23	10:45	Soil	BH23-12 2ft	1, 4oz jar	Ice	010	X	X					X			
10/20/23	10:50	Soil	BH23-13 0ft	1, 4oz jar	Ice	011	X	X					X			
10/20/23	10:55	Soil	BH23-13 2ft	1, 4oz jar	Ice	012	X	X					X			

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
10/20	17:00				10/23/23	1100
10/23/23	1900			courier	10/24/23	7:58

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.

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

Project Name: Boyd Y Water Transfer

Project #: 23E-05378

Project Manager: Chance Dixon

Sampler: Fernando Rodriguez

On Ice: ☒ Yes ☐ No morty

# of Coolers: 1

Cooler Temp(including CF): 5.5 - 0.1 = 5.4°c

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

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2310B10	Analysis Request: (BTEX) MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	(Cl, F, Br, NO_3, NO_2, PO_4, SO_4)	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
10/20/23	11:00	Soil	BH23-14 0ft	1, 4oz jar	Ice	013	X	X					X			
10/20/23	11:05	Soil	BH23-14 2ft	1, 4oz jar	Ice	014	X	X					X			
10/20/23	11:10	Soil	BH23-15 0ft	1, 4oz jar	Ice	015	X	X					X			
10/20/23	11:15	Soil	BH23-15 2ft	1, 4oz jar	Ice	016	X	X					X			

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
10/20	17:00				10/23/23	1100
10/23/23	1900			courier	10/24/23	7:50

Remarks: cc: Chance Dixon & Fernando Rodriguez

Direct Bill to Silvertack

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QUESTIONS

Action 294550

QUESTIONS

Operator: Silverback Operating II, LLC 19707 IH10 West, Suite 201 San Antonio, TX 78256	OGRID: 330968
	Action Number: 294550
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Prerequisites	
Incident ID (n#)	**nAPP2326256394**
Incident Name	**NAPP2326256394 BOYD Y WATER TRANSFER LINE @ 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	Boyd Y Water Transfer Line
Date Release Discovered	09/16/2023
Surface Owner	Private

Incident Details	
Please answer all the questions in this group.	
Incident Type	Produced Water Release
Did this release result in a fire or is the result of a fire	No
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release	
Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.	
Crude Oil Released (bbls) Details	*Not answered.*
Produced Water Released (bbls) Details	Cause: Human Error | Fitting | Produced Water | Released: 0 BBL (Unknown Released Amount) | Recovered: 60 BBL | Lost: -60 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 (continued)

Operator: Silverback Operating II, LLC 19707 IH10 West, Suite 201 San Antonio, TX 78256	OGRID: 330968
	Action Number: 294550
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

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;** **(?) reported amounts release resulting in negative volume.**
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: htreffert@silverbackexp.com Date: 12/14/2023

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QUESTIONS (continued)

Operator: Silverback Operating II, LLC 19707 IH10 West, Suite 201 San Antonio, TX 78256	OGRID: 330968
	Action Number: 294550
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Site Characterization	
Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 75 and 100 (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	Greater than 5 (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between 1 and 5 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Between 1 and 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between ½ and 1 (mi.)
Any other fresh water well or spring	Between ½ and 1 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 1 and 5 (mi.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Between 1 and 5 (mi.)
Categorize the risk of this well / site being in a karst geology	Medium
A 100-year floodplain	Between 1000 (ft.) and ½ (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)	20000
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	0
GRO+DRO (EPA SW-846 Method 8015M)	0
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	10/20/2023
On what date will (or did) the final sampling or liner inspection occur	12/18/2023
On what date will (or was) the remediation complete(d)	12/15/2023
What is the estimated surface area (in square feet) that will be reclaimed	11571
What is the estimated volume (in cubic yards) that will be reclaimed	1010
What is the estimated surface area (in square feet) that will be remediated	11571
What is the estimated volume (in cubic yards) that will be remediated	1010
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 (continued)

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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: htreffert@silverbackexp.com Date: 12/14/2023
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 (continued)

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	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Deferral Requests Only	
Only answer the questions in this group if seeking a deferral upon approval this submission. Each of the following items must be confirmed as part of any request for deferral of remediation.	
Requesting a deferral of the remediation closure due date with the approval of this submission	No

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QUESTIONS (continued)

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	Action Number: 294550
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	**293847**
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	**12/15/2023**
What was the (estimated) number of samples that were to be gathered	**32**
What was the sampling surface area in square feet	**13645**

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	No

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CONDITIONS

Action 294550

CONDITIONS

Operator:	OGRID:
Silverback Operating II, LLC 19707 IH10 West, Suite 201 San Antonio, TX 78256	330968
	Action Number: 294550
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

CONDITIONS

Created By	Condition	Condition Date
rhamlet	The Remediation Plan is Conditionally Approved. All samples must be analyzed for all constituents listed in Table I of 19.15.29.12 NMAC. Floor confirmation samples should be delineated/excavated to meet closure criteria standards from Table 1 of the OCD Spill Rule for site assessment/characterization/proven depth to water determination. 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. Please collect confirmation samples, representing no more than 200 ft2. All sidewall samples should be taken from the sidewall of the excavation. Please make sure that the edge of the release extent is accurately defined. All off pad areas must meet reclamation standards set forth in the OCD Spill Rule. The work will need to occur in 90 days after the report has been reviewed.	3/8/2024