General Information

NMOCD District:	District 2 - Artesia	Incident ID:	nAPP2417953983
Landowner:	Private – Thomas Green	Coordinates:	32.693447, -104.346487
Client:	Silverback Exploration	Site Location:	Scripps Water Transfer Pipeline
Date:	September 3, 2024	Project #:	24E-03808
Client Contact:	Justin Carter	Phone #:	405.286.3375
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 Impacted by a Release DTGW <50 feet bgs

Minimum depth below any point within the horizontal boundary of the release to groundwater less than 10,000 mg/l TDS	Constituent	Limit
< 50 feet	Chloride	600 mg/kg
	TPH (GRO+DRO+MRO)	100 mg/kg
	BTEX	50 mg/kg
	Benzene	10 mg/kg

bgs – Below ground surface
DTGW – Depth to groundwater
TDS – Total dissolved solids
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

The release occurred on June 25, 2024, due to a rupture on the 6in Scripps water transfer pipeline, which caused fluids to overspray surrounding pastures and pipeline right-of-way. No free fluids were recovered but impacted soils were scraped off during the initial site assessment and clean-up. Additional details relevant to the release are presented in the C 141 Report. Daily Field Report (DFR) with site photographs documenting this initial scrape are included in Attachment 4. Site characterization was completed on August 21, 2024. A total of 18 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, 39 samples were submitted to Cardinal Laboratories in Hobbs, 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. The laboratory data report is presented in Attachment 5.

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 with field screening utilized to confirm the removal of contaminated soil below the applicable closure criteria.

Exceedances to closure criteria were identified at sampling locations BH24-02 and BH24-07. The initial scrape proved to be effective for other areas of characterization. This initial remedial response and subsequent delineation revealed no further impacts. Heavy equipment will be utilized to remove remaining impacted material and complete remedial activities in sampling areas BH24-02 and BH24-07. Field screening will be implemented to confirm the removal of contaminated soil below the applicable closure criteria. Contaminated soils will be stockpiled on a 30mil liner prior to disposal at an approved facility. Once excavation is complete, notification for confirmatory samples collection will be provided to the NMOCD two business days prior to conducting final sampling pursuant to 19.15.29.12.D(1)(a). 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 ~**33 cubic yards**.

Sample Point	Excavation Depth	Remediation Method
BH24-02	0.5 ft bgs	Trackhoe
BH27-07	0.5 ft bgs	Trackhoe

Variance Requests

Vertex is requesting a variance in accordance with the requirements of 19.15.29 NMAC related to the final confirmation sampling of the release's remediation activities. Specifically, Vertex seeks approval to use delineation sampling locations: **BH24-01, 03, 04, 05, 06, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, and 18** as a form of final confirmation sampling for the site. Notification for final sampling will be provided to the NMOCD two business days prior to conducting final sampling pursuant to 19.15.29.12.D(1)(a).

During our remediation efforts, we have performed extensive soil sampling and analysis to delineate the impacted area. The delineation sampling locations were strategically selected based on the extent of the release, the topography of the site, and the results of the initial site assessment. Given the thoroughness of the delineation sampling process, these sample points provide a comprehensive representation of the impacted area. The laboratory analytical results from these points depict that the impacted soils have been properly remediated to NMOCD's strictest closure criteria. Vertex and Silverback respectfully request that the NMOCD grant a variance allowing the use of delineation sample points as confirmation for the remediation at the release. We believe this approach is consistent with the intent of the OCD's regulations and will ensure the protection of human health and the environment while allowing for a more efficient resolution of the incident.

Vertex did not anticipate that the remnant impacts would be miniscule. Thus, no confirmation sampling notifications were submitted to NMOCD. Therefore, Vertex would like to respectfully request another variance to use the data explained above to be used for closure without the utilization of confirmation sampling notices.

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

Fernando Rodriguez, B.Sc.
INTERMEDIATE BIOLOGIST, REPORTING

September 3, 2024
Date

Chance Dixon

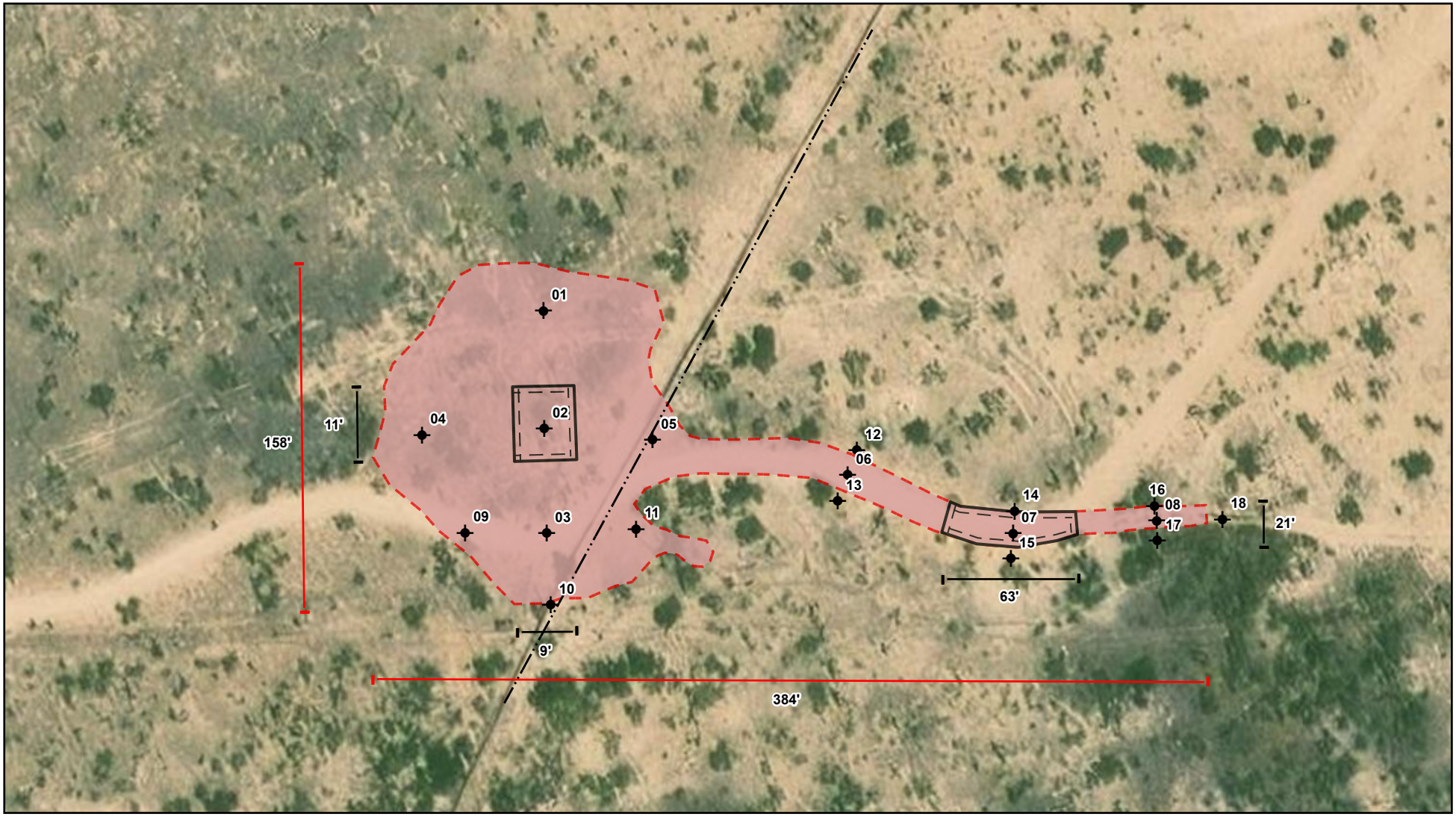
Chance Dixon, B.Sc.
PROJECT MANAGER, REPORT REVIEW

September 3, 2024
Date

Attachments

Attachment 1. Characterization Sampling Site Schematic
Attachment 2. Initial Characterization Field Screen and Laboratory Results
Attachment 3. Closure Criteria Research Documentation
Attachment 4. Daily Field Report with Initial Scrape Photo Documentation
Attachment 5. Laboratory Data Report and Chain of Custody Form

ATTACHMENT 1



Borehole (Prefixed by "BH24-")

Pipeline (Underground)

Release Area/Initial Scrape (~20,671 sq.ft. | 1,046 ft)

Proposed Excavation West 0.5ft bgs (~998 sq.ft.)

Proposed Excavation East 0.5ft bgs (~918 sq. ft.)

VERTEX

0 25 50 ft

NAD 1983 UTM Zone 13N

Date: Aug 29/24

Map Center:
Lat/Long
32.69364°,-104.346253°

N

Characterization Sampling Site Schematic
Scripps Water Transfer Pipeline

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, 2023. Approximate site boundary from sketch by Vertex Professional Services Ltd. (Vertex), 2024. Site features from GPS, Vertex, 2024.

VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects\ US PROJECTS\Silverback Exploration\2024\24E-03808\Project\24E-03808 Scripps Water Transfer Pipeline.aprx

ATTACHMENT 2

Client Name: Silverback Exploration
Site Name: Scripps Water Transfer Pipeline Release
NMOCD Tracking #: nAPP2417953983
Project #: 24E-03808
Lab Reports: H245117

Table 2. Initial Characterization Field Screen and Laboratory Results

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)
			Depth to Groundwater: <50 feet bgs										
BH24-01	0	August 19, 2024	-	-	21	ND	ND	ND	ND	ND	ND	ND	16
	2	August 19, 2024	-	-	35	ND	ND	ND	ND	ND	ND	ND	32
BH24-02	0	August 19, 2024	-	-	1,252	ND	ND	ND	ND	ND	ND	ND	**960**
	2	August 19, 2024	-	-	121	ND	ND	ND	ND	ND	ND	ND	32
	4	August 19, 2024	-	-	56	ND	ND	ND	ND	ND	ND	ND	32
BH24-03	0	August 19, 2024	-	-	891	ND	ND	ND	ND	ND	ND	ND	480
	2	August 19, 2024	-	-	101	ND	ND	ND	ND	ND	ND	ND	32
	4	August 19, 2024	-	-	89	ND	ND	ND	ND	ND	ND	ND	16
BH24-04	0	August 19, 2024	-	-	193	ND	ND	ND	ND	ND	ND	ND	96
	2	August 19, 2024	-	-	109	ND	ND	ND	ND	ND	ND	ND	32
BH24-05	0	August 19, 2024	-	-	318	ND	ND	ND	ND	ND	ND	ND	208
	2	August 19, 2024	-	-	105	ND	ND	ND	ND	ND	ND	ND	80
BH24-06	0	August 19, 2024	-	-	121	ND	ND	ND	ND	ND	ND	ND	160
	2	August 19, 2024	-	-	130	ND	ND	ND	ND	ND	ND	ND	128
BH24-07	0	August 19, 2024	-	-	15,900	ND	ND	ND	ND	ND	ND	ND	**13,800**
	2	August 19, 2024	-	-	193	ND	ND	ND	ND	ND	ND	ND	32
	4	August 19, 2024	-	-	165	ND	ND	ND	ND	ND	ND	ND	32
BH24-08	0	August 19, 2024	-	-	38	ND	ND	ND	ND	ND	ND	ND	16
	2	August 19, 2024	-	-	72	ND	ND	ND	ND	ND	ND	ND	16
BH24-09	0	August 20, 2024	-	-	52	ND	ND	ND	ND	ND	ND	ND	128
	2	August 20, 2024	-	-	80	ND	ND	ND	ND	ND	ND	ND	96
BH24-10	0	August 20, 2024	-	-	32	ND	ND	ND	ND	ND	ND	ND	144
	2	August 20, 2024	-	-	33	ND	ND	ND	ND	ND	ND	ND	96
BH24-11	0	August 20, 2024	-	-	55	ND	ND	ND	ND	ND	ND	ND	96
	2	August 20, 2024	-	-	40	ND	ND	ND	ND	ND	ND	ND	96
BH24-12	0	August 20, 2024	-	-	78	ND	ND	ND	ND	ND	ND	ND	96
	2	August 20, 2024	-	-	95	ND	ND	ND	ND	ND	ND	ND	144
BH24-13	0	August 20, 2024	-	-	56	ND	ND	ND	ND	ND	ND	ND	112
	2	August 20, 2024	-	-	45	ND	ND	ND	ND	ND	ND	ND	112
BH24-14	0	August 20, 2024	-	-	24	ND	ND	ND	ND	ND	ND	ND	48
	2	August 20, 2024	-	-	72	ND	ND	ND	ND	ND	ND	ND	64
BH24-15	0	August 20, 2024	-	-	31	ND	ND	ND	ND	ND	ND	ND	32
	2	August 20, 2024	-	-	45	ND	ND	ND	ND	ND	ND	ND	16
BH24-16	0	August 20, 2024	-	-	91	ND	ND	ND	ND	ND	ND	ND	64
	2	August 20, 2024	-	-	98	ND	ND	ND	ND	ND	ND	ND	96
BH24-17	0	August 20, 2024	-	-	63	ND	ND	ND	ND	ND	ND	ND	32
	2	August 20, 2024	-	-	50	ND	ND	ND	ND	ND	ND	ND	128
BH23-18	0	August 20, 2024	-	-	77	ND	ND	ND	ND	ND	ND	ND	80
	2	August 20, 2024	-	-	35	ND	ND	ND	ND	ND	ND	ND	32

"ND" Not Detected at the Reporting Limit
"-" indicates not analyzed/assessed

Bold and grey: exceeds NMOCD Closure Criteria (on-pad)
Bold and green: exceeds NMOCD Reclamation Criteria (off-pad)

VERTEX

ATTACHMENT 3

Closure Criteria Determination			
Site Name: Scripps Water Transfer Pipeline			
Spill Coordinates: 32.693447, -104.346487		**X: 561259**	**Y: 3617491**
Table 1. Closure Criteria Determination			
Site Specific Conditions		**Value**	**Unit**
1	Depth to Groundwater (nearest reference)	**50**	feet
	Distance between release and nearest DTGW reference	**1,074**	feet
		0.20	miles
	Date of nearest DTGW reference measurement	**September 16, 2002**	
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	2,529	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	4,539	feet
4	Within 300 feet from an occupied residence, school, hospital, institution or church	1,564	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**	1,074	feet
	ii) Within 1000 feet of any fresh water well or spring	1,074	feet
6	Within incorporated municipal boundaries or within a defined municipal fresh water field covered under a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978 as amended, unless the municipality specifically approves	No	(Y/N)
7	Within 300 feet of a wetland	3,638	feet
8	Within the area overlying a subsurface mine	No	(Y/N)
	Distance between release and nearest registered mine	**31,050**	feet
9	Within an unstable area (Karst Map)	Medium	Critical High Medium Low
	Distance between release and nearest unstable area	**11,375**	feet
10	Within a 100-year Floodplain	500	year
	Distance between release and nearest FEMA Zone A (100-year Floodplain)	**750**	feet
11	Soil Type	Hk: Harkey very fine sandy loam	
12	Ecological Classification	R070BD004NM — Sandy	
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 smallest to largest)

(meters)

(In feet)

POD Number	Code	Sub basin	County	Q64	Q16	Q4	Sec	Tws	Range	X	Y	Map	Distance	Well Depth	Depth Water	Water Column
RA 10246		RA	ED	SW	SE	NE	02	19S	26E	561189.0	3617174.0 *		324	220	50	170
RA 11874 POD2		RA	ED	SW	NW	NE	02	19S	26E	560710.4	3617630.0		565	125	58	67
RA 11874 POD1	R	RA	ED	SW	NW	NE	02	19S	26E	560707.2	3617638.6		571	140	40	100
L 04209 POD3		L	LE	NE	NE	NE	04	19S	36E	560771.5	3617845.9		603	162	72	90
RA 12698 POD1		RA	ED	SE	SE	NW	02	19S	26E	560619.3	3617198.3		703	140	90	50
RA 12572 POD1		RA	ED	SE	SE	NW	02	19S	26E	560591.8	3617171.4		739	159		
RA 09211		RA	ED	SE	SE	SW	35	18S	26E	560574.0	3617975.0 *		838	100	45	55
RA 09212		RA	ED	SE	SE	SW	35	18S	26E	560574.0	3617975.0 *		838	120	45	75
RA 09213		RA	ED	SE	SE	SW	35	18S	26E	560574.0	3617975.0 *		838	120	45	75
RA 09214		RA	ED	SE	SE	SW	35	18S	26E	560574.0	3617975.0 *		838	100	45	55

Average Depth to Water: **54 feet**

Minimum Depth: **40 feet**

Maximum Depth: **90 feet**

Record Count: 10

UTM Filters (in meters):

Easting: 561259

Northing: 3617491

Radius: 850

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

Point of Diversion Summary

quarters are 1=NW 2=NE 3=SW 4=SE
quarters are smallest to largest

NAD83 UTM in meters

Well Tag	POD Nbr	Q64	Q16	Q4	Sec	Tws	Rng	X	Y	Map
	RA 10246	SW	SE	NE	02	19S	26E	561189.0	3617174.0 *	

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

Driller License:	1501	**Driller Company:**	BUSTAMANTE, DANIEL L.		
Driller Name:	BUSTAMANTE, DANIEL L.				
Drill Start Date:	2002-09-09	**Drill Finish Date:**	2002-09-16	**Plug Date:**	
Log File Date:	2002-09-18	**PCW Rcv Date:**		**Source:**	Shallow
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	
Casing Size:	5.00	**Depth Well:**	220	**Depth Water:**	50

Water Bearing Stratifications:

Top	Bottom	Description
70	90	Shallow Alluvium/Basin Fill
160	205	Shallow Alluvium/Basin Fill

Casing Perforations:

Top	Bottom
70	170

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

8/20/24 3:29 PM MST **Point of Diversion Summary**

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

OSE POD NUMBER (WELL NUMBER)	OSE FILE NUMBER(S)
RA-11874	
WELL OWNER NAME(S)	PHONE (OPTIONAL)
Charles & Angela Granger	
WELL OWNER MAILING ADDRESS	CITY / STATE / ZIP
348 E. Kincaid Ranch Rd.	Atesia / NM / 88210

WELL LOCATION (FROM GPS)	DEGREES	MINUTES	SECONDS	
LATITUDE	32	41	41	N
LONGITUDE	104	21	8.4	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND
* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE

2. DRILLING & CASING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD-1632	Caleb Curry	Hopper Pump & Drilling Inc.

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
6/30/2014	7/1/2014	123	160	58

COMPLETED WELL IS: ( ) ARTESIAN ( ) DRY HOLE (•) SHALLOW (UNCONFINED) — STATIC WATER LEVEL IN COMPLETED WELL (FT): 58

DRILLING FLUID: ( ) AIR (•) MUD ADDITIVES - SPECIFY:

DRILLING METHOD: ( ) ROTARY ( ) HAMMER ( ) CABLE TOOL ( ) OTHER - SPECIFY:

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
+2	60	8.75	pvc	spline	5	.25	
60	123	8.75	pvc	spline	5	.25	.032

STATE ENGINEER OFFICE ROSWELL, NEW MEXICO 2014 JUL 23 P 4:20

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT
3	23	8.75	3/8 bentonite chip		
23	123	8.75	8/16 silica sand		

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	RA-11874	POD NUMBER	2	TRN NUMBER	546995
LOCATION	21S 19S 26E 02				PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	3	3	Top Soil	○ Y ◉ N	
3	20	17	White Caliche	○ Y ◉ N	
20	35	15	Conglomerate	○ Y ◉ N	
35	50	15	Gravel	○ Y ◉ N	
50	95	45	Red Sand & Clay	◉ Y ○ N	30
95	160	65	Conglomerate	○ Y ◉ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
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				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA: ○ PUMP ○ AIR LIFT ○ BAILER ○ OTHER – SPECIFY:

TOTAL ESTIMATED WELL YIELD (gpm): 30

5. TEST; RIG SUPERVISION

WELL TEST — TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

MISCELLANEOUS INFORMATION:

PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:

6. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 20 DAYS AFTER COMPLETION OF WELL DRILLING:

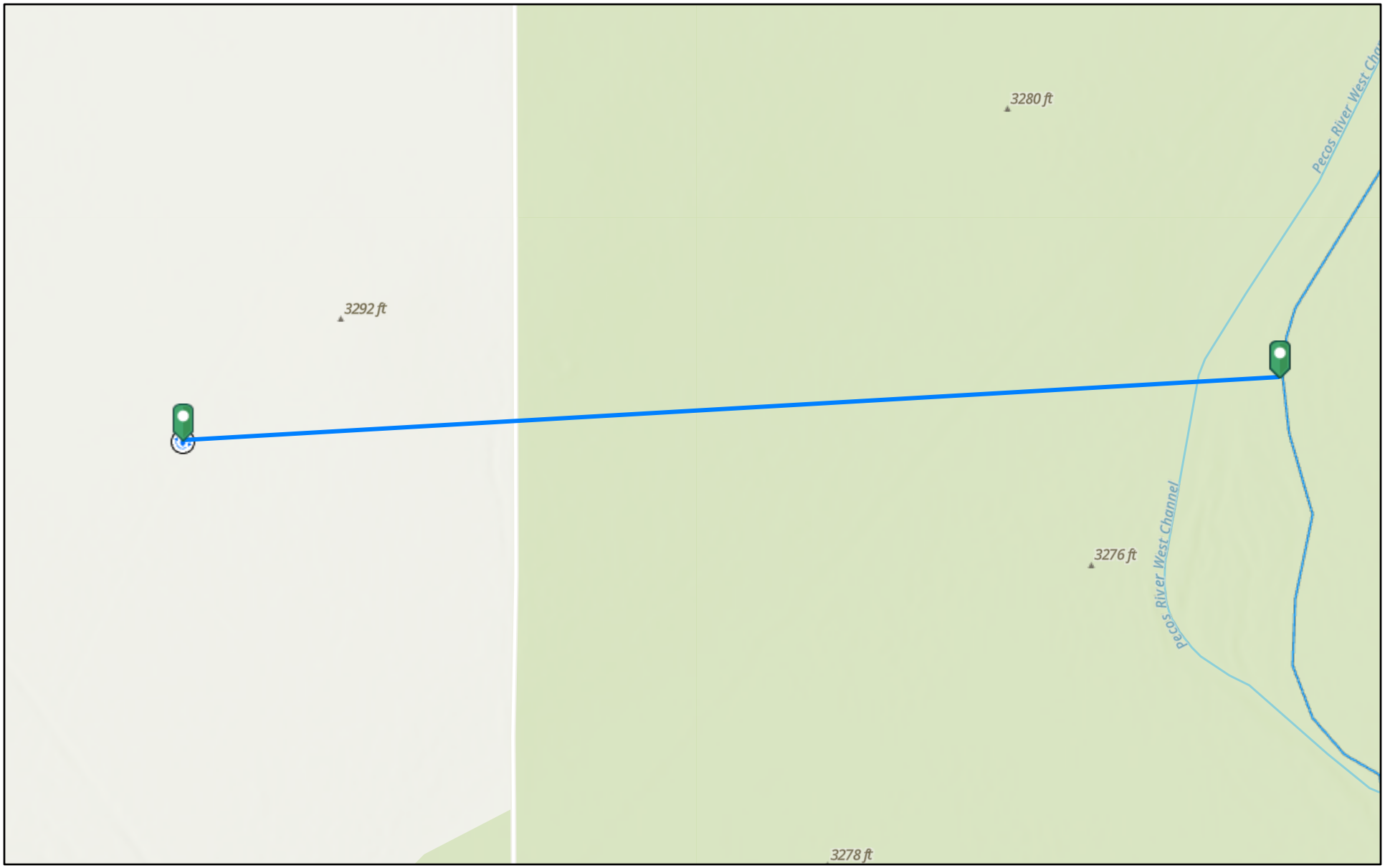
Cutler Cuy — SIGNATURE OF DRILLER / PRINT SIGNEE NAME

7/23/2024 — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	RA-11874	POD NUMBER	2	TRN NUMBER	546995
LOCATION	21S 19S 26E 02				PAGE 2 OF 2

Nearest Significant Watercourse



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Incident Release

Produced Water Release

OSE Streams

1:4,514

0 0.03 0.07 0.13 mi

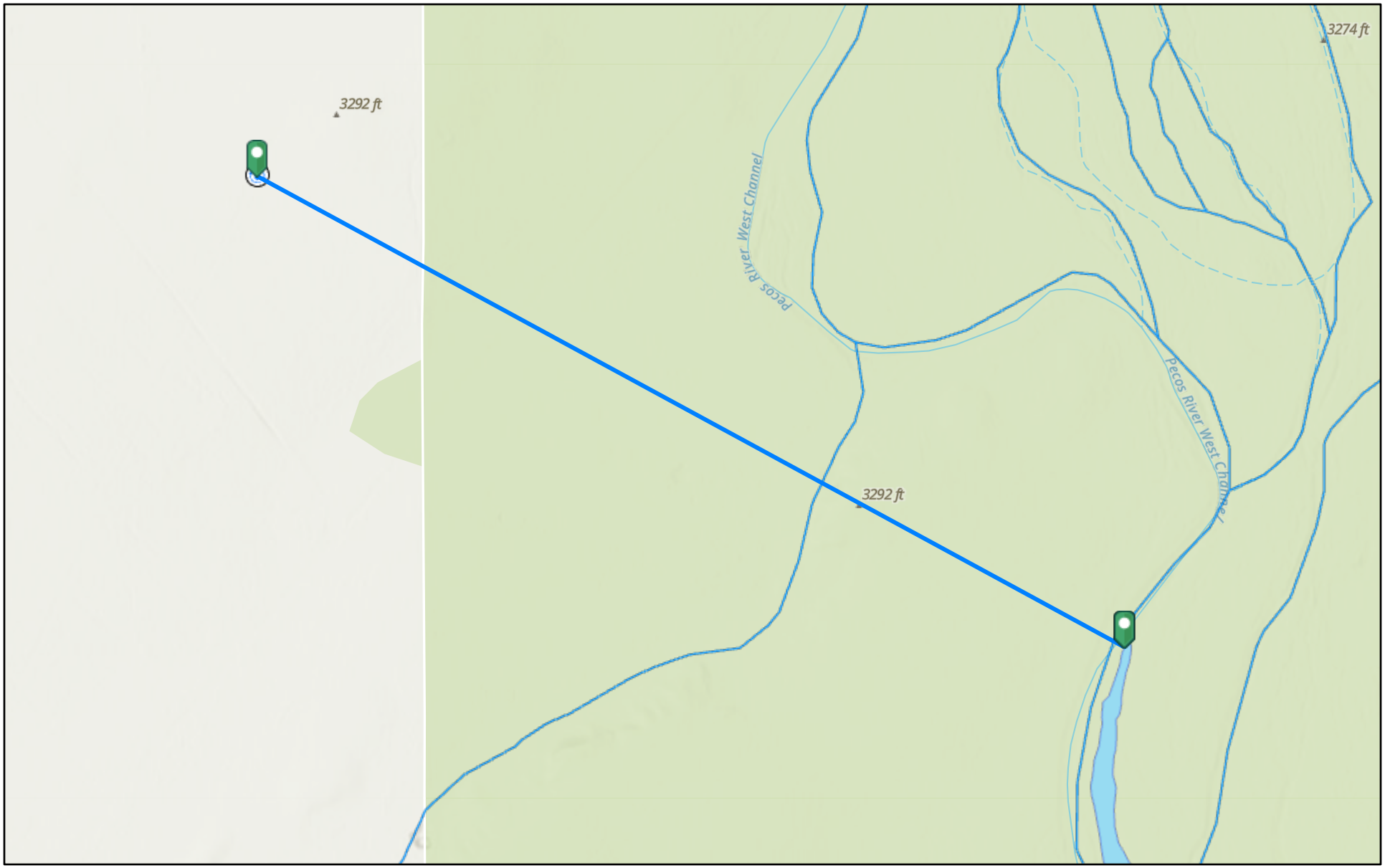
0 0.05 0.1 0.2 km

Oil Conservation Division of the New Mexico Energy, Minerals and Natural Resources Department., Sources: Esri, Airbus DS, USGS, NGA, NASA,

New Mexico Oil Conservation Division

NM OCD Oil and Gas Map. http://nm-emnrd.maps.arcgis.com/apps/webappviewer/index.html?id=4d017f2306164de29fd2fb9f8f35ca75: New Mexico Oil Conservation Division

Nearest Lakebed



8/20/2024, 3:44:57 PM

Incident Release

Produced Water Release

OSW Water Bodys

OSE Streams

1:9,028

0 0.05 0.1 0.2 mi

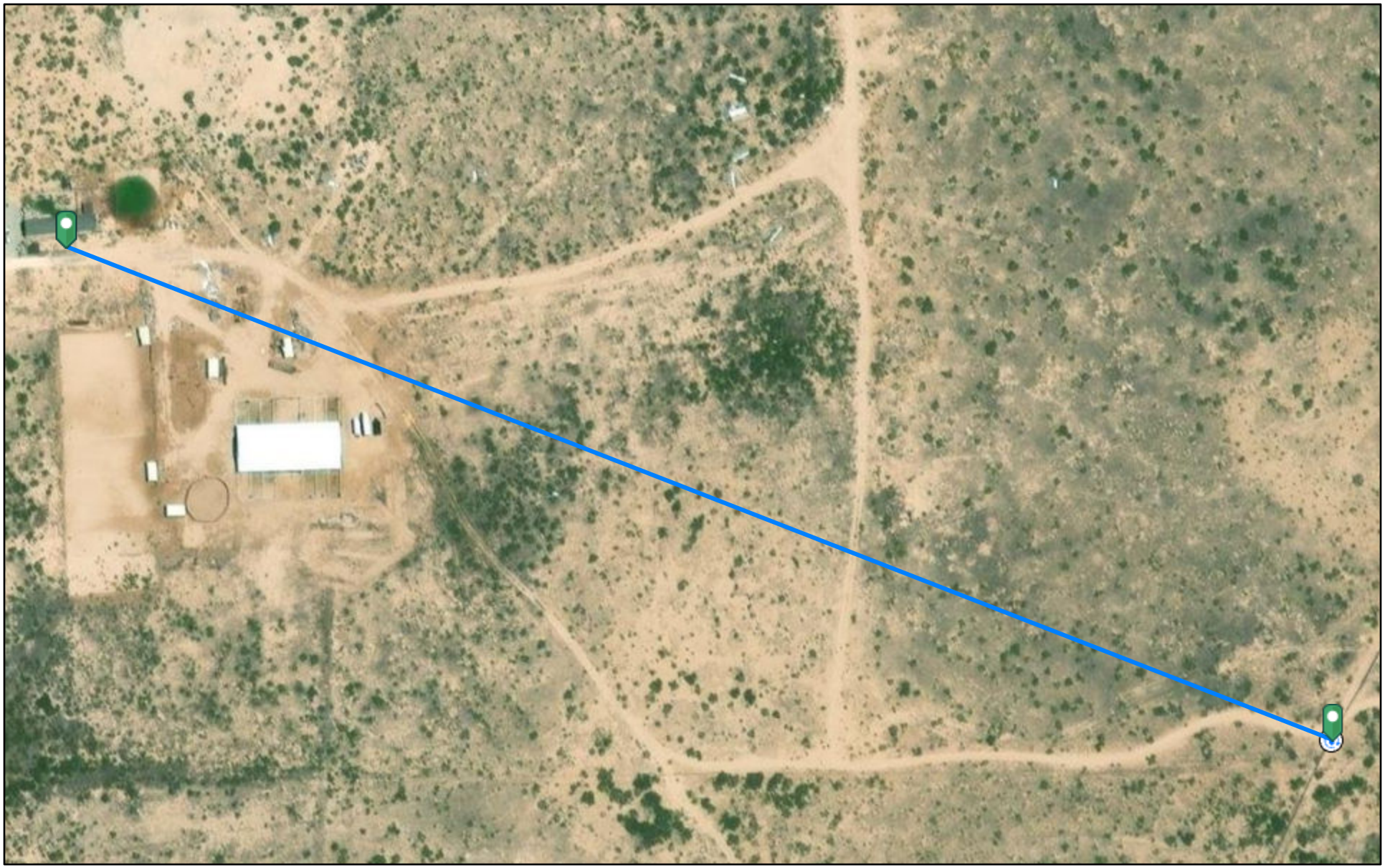
0 0.1 0.2 0.4 km

Esri, NASA, NGA, USGS, FEMA, Oil Conservation Division of the New Mexico Energy, Minerals and Natural Resources Department., Esri

New Mexico Oil Conservation Division

NM OCD Oil and Gas Map. http://nm-emnrd.maps.arcgis.com/apps/webappviewer/index.html?id=4d017f2306164de29fd2fb9f8f35ca75: New Mexico Oil Conservation Division

Nearest Occupied Residence



8/20/2024, 3:47:09 PM

Incident Release

Produced Water Release

1:2,257

0 0.01 0.03 0.06 mi

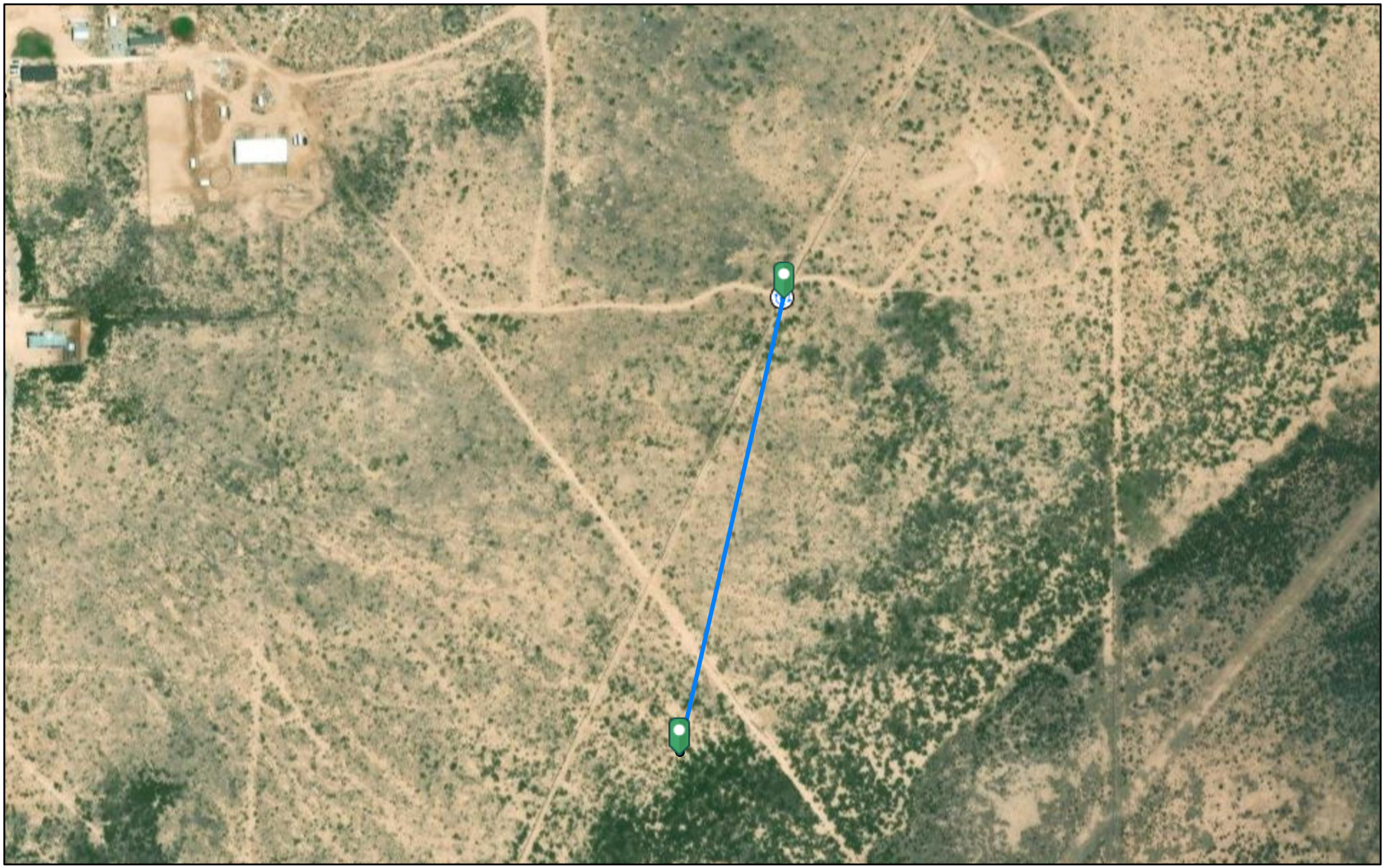
0 0.03 0.05 0.1 km

Maxar, Microsoft, Oil Conservation Division of the New Mexico Energy, Minerals and Natural Resources Department., Esri, HERE, Garmin, iPC, NM

New Mexico Oil Conservation Division

NM OCD Oil and Gas Map. http://nm-emnrd.maps.arcgis.com/apps/webappviewer/index.html?id=4d017f2306164de29fd2fb9f8f35ca75: New Mexico Oil Conservation Division

Nearest Domestic Fresh Water Well



8/20/2024, 4:02:23 PM

OSE Water PODs Incident Release

Active Produced Water Release

1:4,514

0 0.03 0.07 0.13 mi

0 0.05 0.1 0.2 km

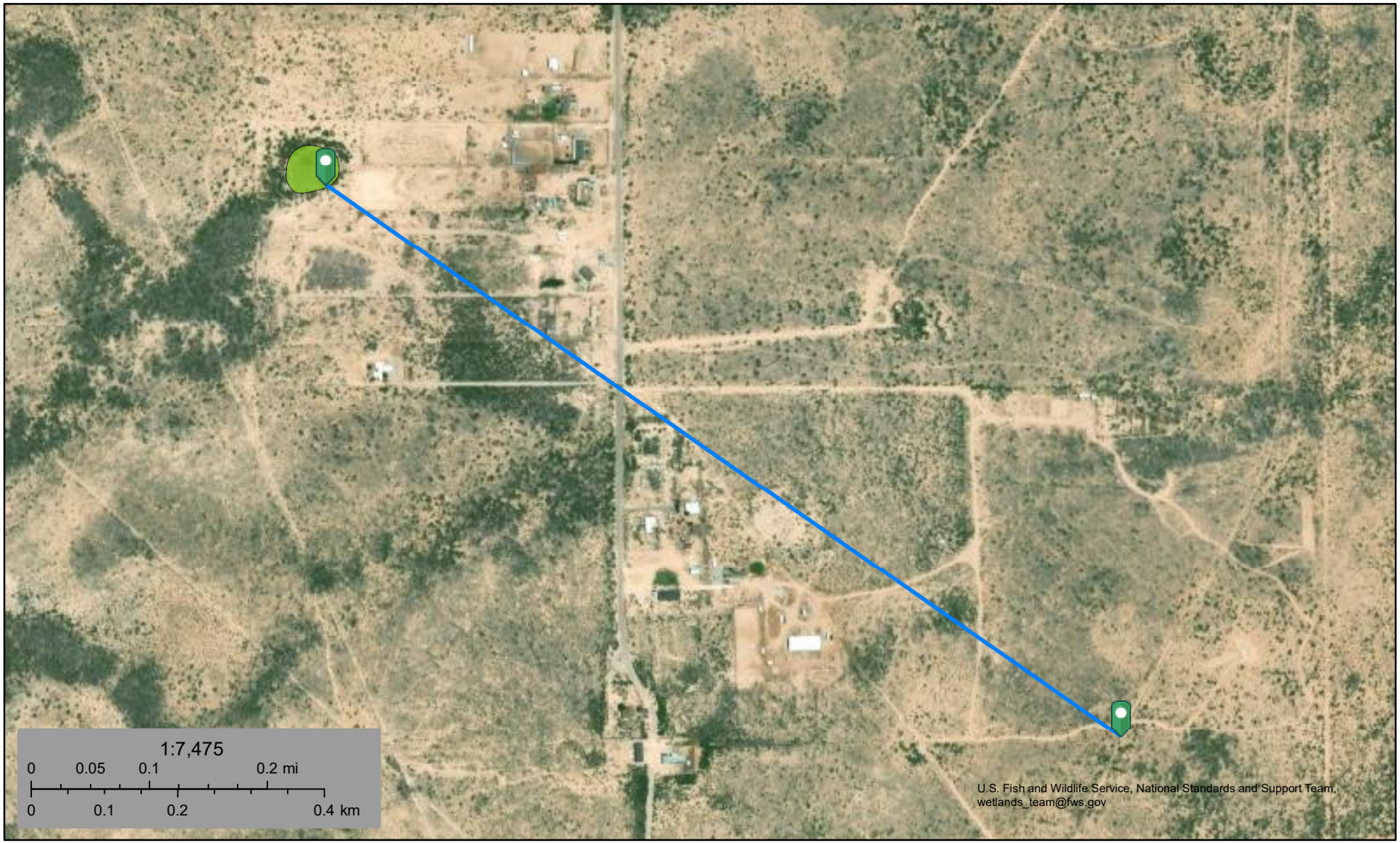
Oil Conservation Division of the New Mexico Energy, Minerals and Natural Resources Department., Esri, HERE, Garmin, iPC, Maxar

New Mexico Oil Conservation Division

NM OCD Oil and Gas Map. http://nm-emnrd.maps.arcgis.com/apps/webappviewer/index.html?id=4d017f2306164de29fd2fb9f8f35ca75: New Mexico Oil Conservation Division

U.S. Fish and Wildlife Service
National Wetlands Inventory

Scripps Pipeline - Nearest Wetland



August 20, 2024

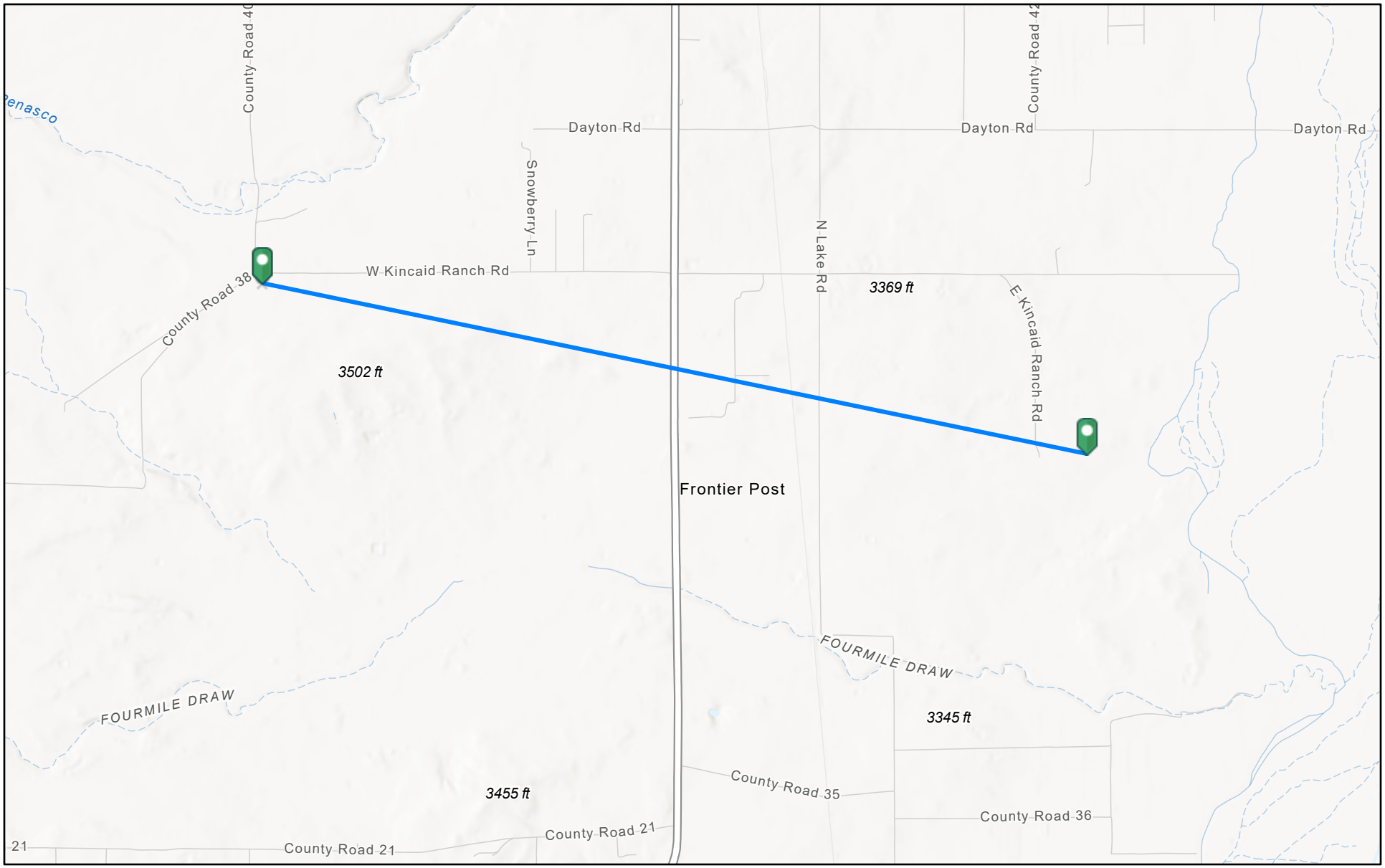
Wetlands

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

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

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

Nearest Registered Mine



8/20/2024, 4:13:47 PM

Registered Mines

Aggregate, Stone etc.

1:72,224

0 0.5 1 2 mi

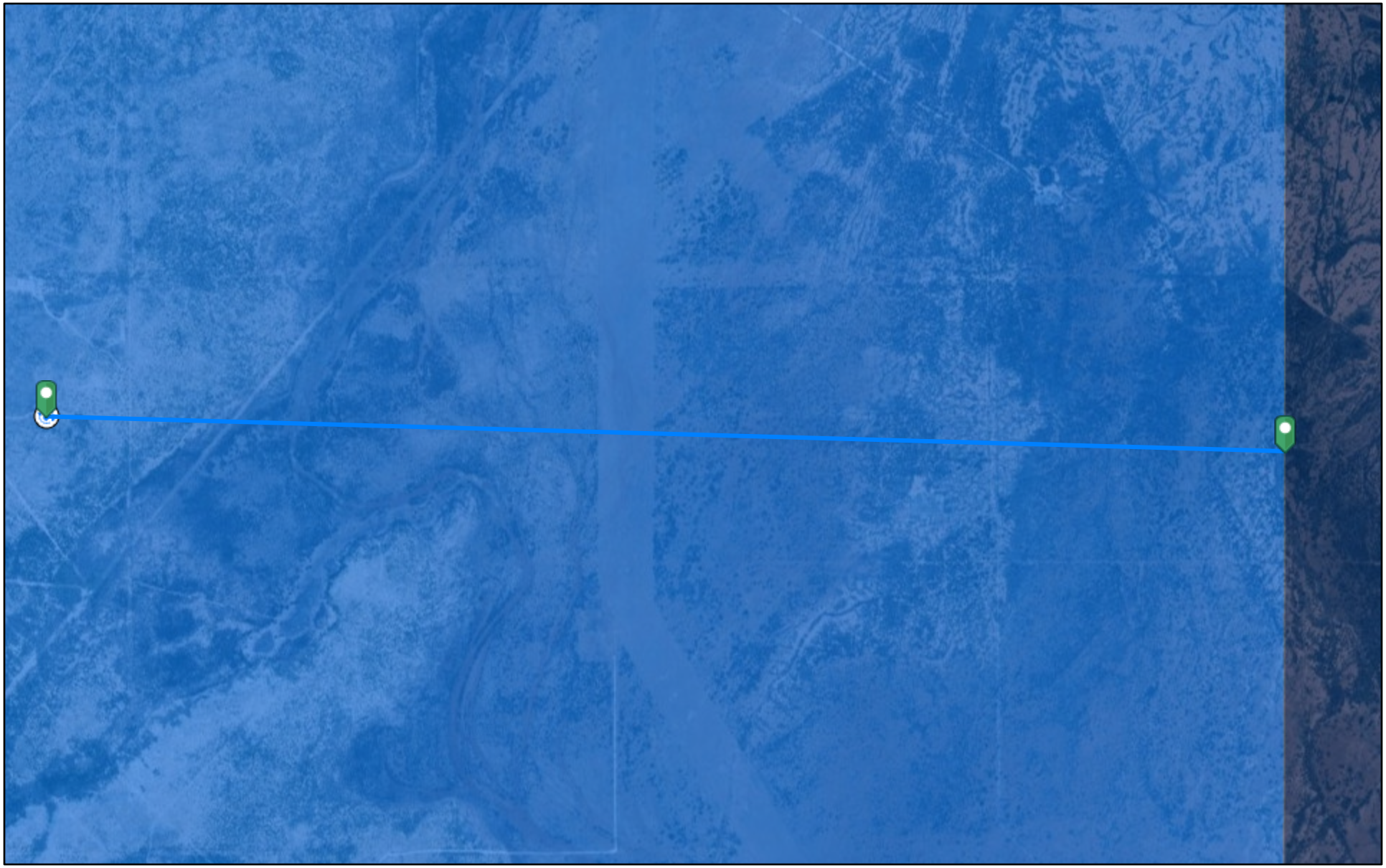
0 0.75 1.5 3 km

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

EMNRD MMD GIS Coordinator

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

Nearest High Karst Area



8/20/2024, 4:17:13 PM

1:18,056

0 0.13 0.25 0.5 mi

0 0.2 0.4 0.8 km

Incident Release

Produced Water Release

Karst Occurrence Potential

High

Medium

BLM, OCD, New Mexico Tech, Oil Conservation Division of the New Mexico Energy, Minerals and Natural Resources Department., Esri, HERE, Garmin,

New Mexico Oil Conservation Division

NM OCD Oil and Gas Map. http://nm-emnrd.maps.arcgis.com/apps/webappviewer/index.html?id=4d017f2306164de29fd2fb9f8f35ca75: New Mexico Oil Conservation Division

National Flood Hazard Layer FIRMette

FEMA

104°21'6"W 32°41'52"N

104°20'29"W 32°41'21"N

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

1:6,000

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
- 513 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

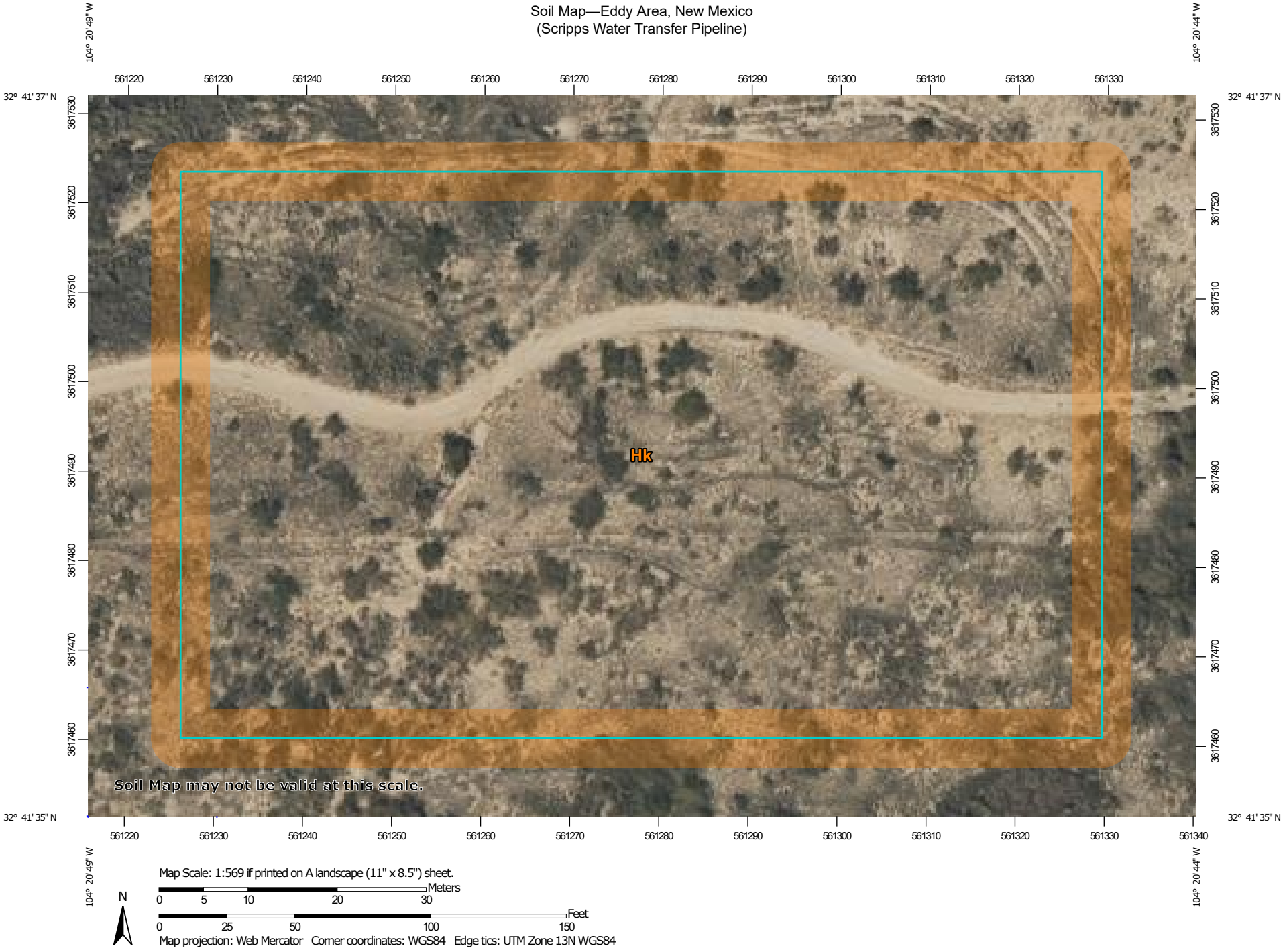
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

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 8/20/2024 at 6:24 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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

Soil Map—Eddy Area, New Mexico
(Scripps Water Transfer Pipeline)



Soil Map—Eddy Area, New Mexico
(Scripps Water Transfer Pipeline)

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
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- Clay Spot
- Closed Depression
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- US Routes
- Major Roads
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The soil surveys that comprise your AOI were mapped at 1:20,000.

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

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

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

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

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 19, Sep 7, 2023

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

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

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Hk	Harkey very fine sandy loam, 0 to 1 percent slopes	1.6	100.0%
Totals for Area of Interest		**1.6**	**100.0%**

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

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

Custom Soil Resource Report for Eddy Area, New Mexico

August 20, 2024

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.

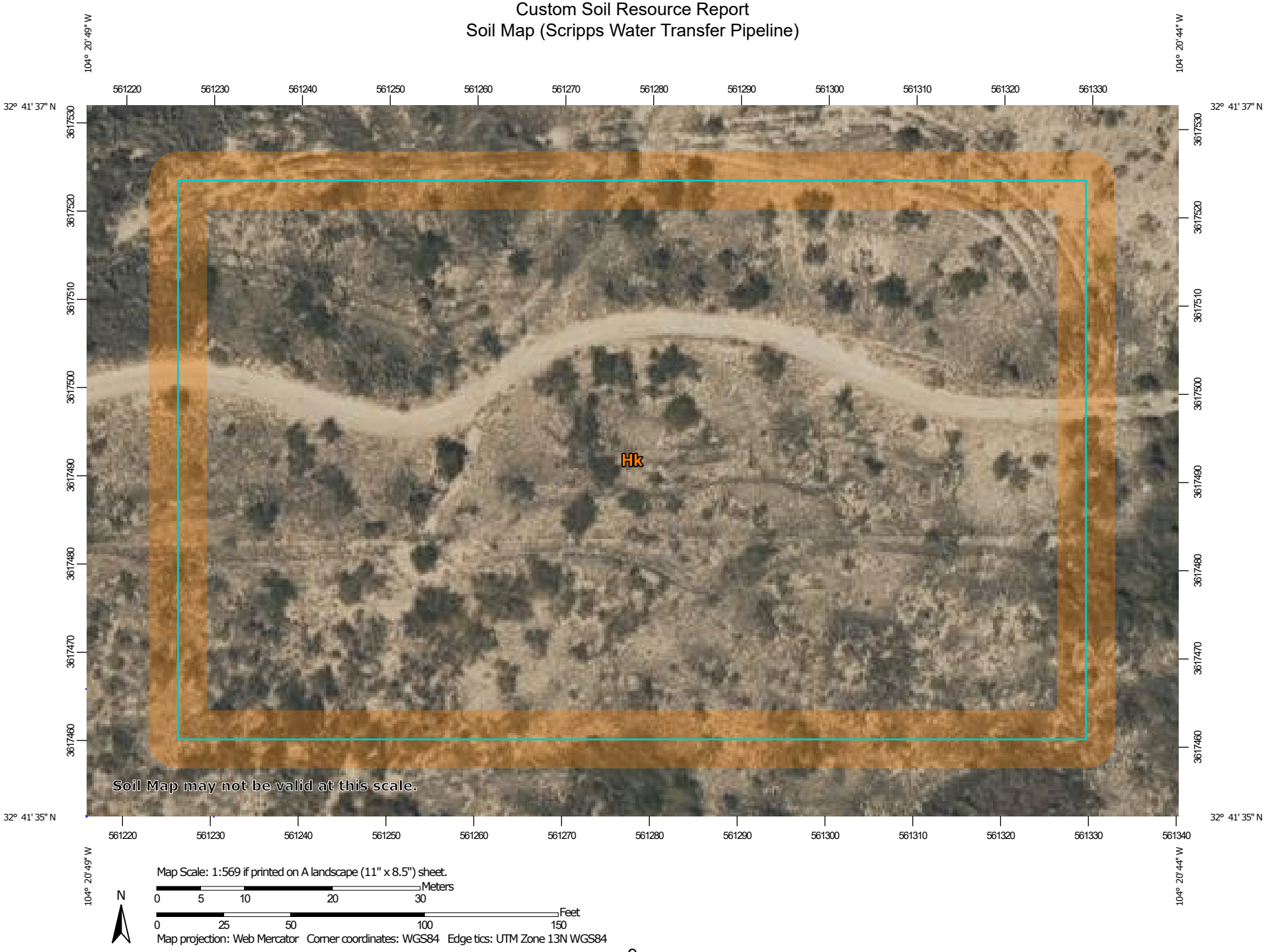
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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 (Scripps Water Transfer Pipeline)



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

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Map Unit Legend (Scripps Water Transfer Pipeline)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Hk	Harkey very fine sandy loam, 0 to 1 percent slopes	1.6	100.0%
Totals for Area of Interest		**1.6**	**100.0%**

Map Unit Descriptions (Scripps Water Transfer Pipeline)

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

Hk—Harkey very fine sandy loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 1w4l
Elevation: 3,000 to 4,200 feet
Mean annual precipitation: 10 to 16 inches
Mean annual air temperature: 60 to 64 degrees F
Frost-free period: 180 to 240 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Harkey and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Harkey

Setting

Landform: Flood plains, alluvial fans
Landform position (three-dimensional): Talf, rise
Down-slope shape: Convex, linear
Across-slope shape: Linear
Parent material: Alluvium derived from sedimentary rock

Typical profile

H1 - 0 to 9 inches: very fine sandy loam
H2 - 9 to 87 inches: very fine sandy loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Gypsum, maximum content: 2 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: B
Ecological site: R070BD004NM - Sandy
Hydric soil rating: No

Minor Components

Unnamed soils

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

Arno

Percent of map unit: 1 percent
Landform: Flood plains, alluvial fans
Landform position (three-dimensional): Talf, rise
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R070BC033NM - Salty Bottomland
Hydric soil rating: Yes

Pima variant

Percent of map unit: 1 percent
Landform: Flood plains, alluvial flats, alluvial fans
Landform position (three-dimensional): Talf, rise
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Ecological site: R070BC017NM - Bottomland
Hydric soil rating: Yes

Anthony

Percent of map unit: 1 percent
Landform: Flood plains, alluvial fans
Landform position (three-dimensional): Talf, rise
Down-slope shape: Convex, linear
Across-slope shape: Linear
Ecological site: R070BD004NM - Sandy
Hydric soil rating: Yes

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USDA Natural Resources Conservation Service

Ecological site R070BD004NM
Sandy

Accessed: 08/20/2024

General information

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

Figure 1. Mapped extent

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

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site is on uplands, plains, dunes, fan piedmonts, terraces and in inter dunal areas. The parent material consists of mixed alluvium and or eolian sands or calcareous alluvium derived from sedimentary rock. Slope range on this site range from 0 to 9 percent with the average of 5 percent.

Low stabilized dunes may occur occasionally on this site. Elevations range from 2,800 to 5,000 feet.

Table 2. Representative physiographic features

Landforms	(1) Plain (2) Fan piedmont (3) Terrace
Flooding frequency	None
Ponding frequency	None
Elevation	2,842–4,500 ft
Slope	0–5%
Aspect	Aspect is not a significant factor

Climatic features

The average annual precipitation ranges from 8 to 13 inches. Variations of 5 inches, more or less, are common. Over 80 percent of the precipitation falls from April through October. Most of the summer precipitation comes in the form of high intensity short duration thunderstorms.
Temperatures are characterized by distinct seasonal changes and large annual and diurnal temperature changes. The average annual temperature is 61 degrees with extremes of 25 degrees below zero in the winter to 112 degrees in the summer.
The average frost-free season is 207 to 220 days. The last killing frost is in late March or early April, and the first killing frost is in late October or early November.
Temperature and rainfall both favor warm season perennial plant growth. In years of abundant spring moisture,

annual forbs and cool season grasses can make up an important component of this site. Strong winds blow from the southwest in January through June which rapidly dries out the soil during a critical period for cool season plant growth.

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

Table 3. Representative climatic features

Frost-free period (average)	200 days
Freeze-free period (average)	219 days
Precipitation total (average)	12 in

Influencing water features

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

Soil features

Soils are moderately deep or very deep. Surface textures are loamy fine sand, fine sandy loam, loamy very fine sand or gravelly sandy loam.

Subsurface is a sandy loam, loam, sandy clay loam, clay loam (contains more than 45 percent sand and 18 to 35 percent clay) and less than 15 percent carbonates.

Substratum is a sandy loam, fine sandy loam, sandy clay loam, clay loam, coarse sandy loam, or coarse sand and Calcium carbonate equivalent of 15 to 40 percent. Some layers high in lime or with caliche fragments may occur at depths of 20 to 30 inches.

These soils, if unprotected by plant cover and organic residue, become wind blown and low hummocks are formed. They contains more than 45 percent sand and 18 to 35 percent clay.

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

Characteristic Soils Are:
Anthony
Berino
Cacique
Harkey
Pajaritio
Reakor
Mobeetie
Wink
Sotim
Vinton
Drake
Onite
Alma
Poquita
Dona Ana
Monahans

Note: *Cacique soils is a shallow soil.

Table 4. Representative soil features

Surface texture	(1) Fine sandy loam (2) Sandy loam (3) Loamy fine sand
Family particle size	(1) Loamy
Drainage class	Well drained to moderately well drained
Permeability class	Moderately rapid to moderately slow
Soil depth	30–72 in
Surface fragment cover <=3"	0–20%
Surface fragment cover >3"	0%
Available water capacity (0-40in)	3–11 in
Calcium carbonate equivalent (0-40in)	5–30%
Electrical conductivity (0-40in)	0–2 mmhos/cm
Sodium adsorption ratio (0-40in)	0–1
Soil reaction (1:1 water) (0-40in)	6.6–8.4
Subsurface fragment volume <=3" (Depth not specified)	0–15%
Subsurface fragment volume >3" (Depth not specified)	0%

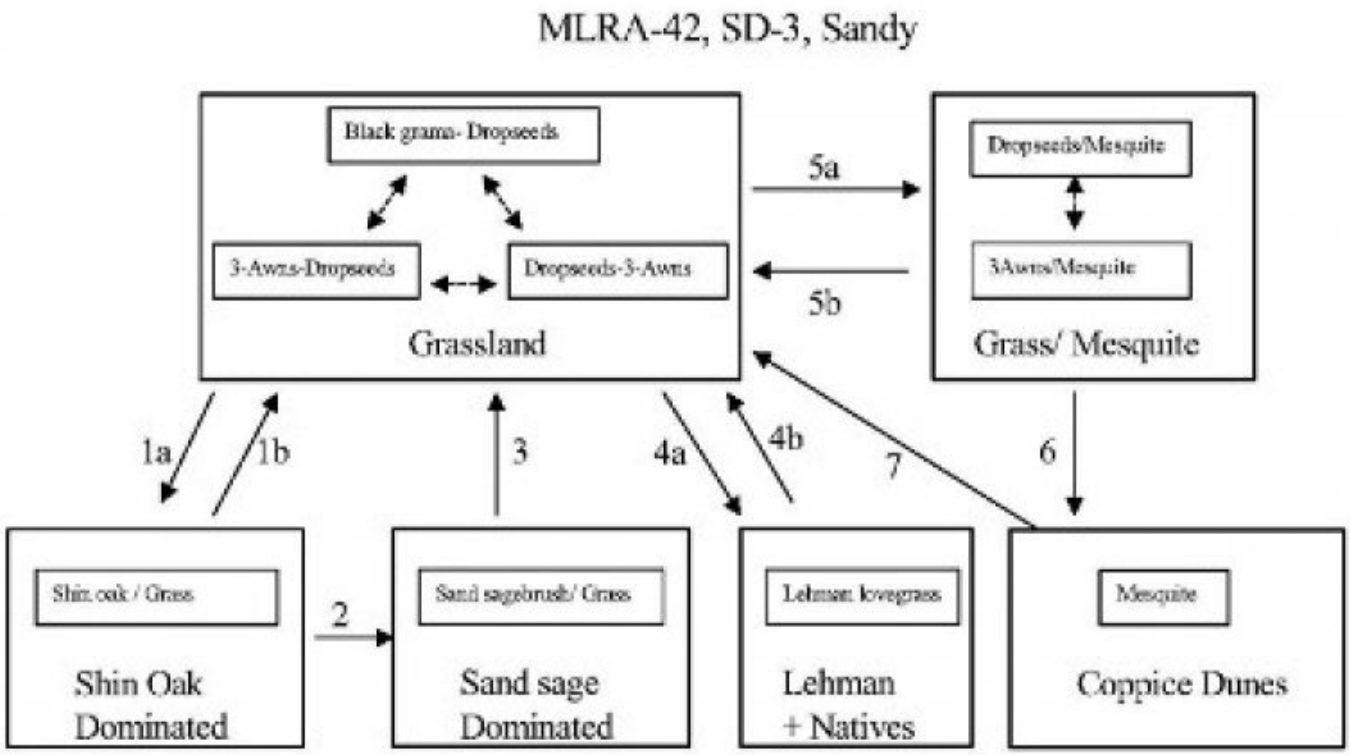
Ecological dynamics

Overview

The Sandy site often intergrades with the Loamy Sand and Deep Sand sites (SD-3). Sandy sites occur on plains, fans, or terraces between drainages. Slopes average less than five percent. Surface textures are usually sandy loams. The historic plant community of the Sandy site is dominated by black grama (*Bouteloua eriopoda*) and dropseeds (*Sporobolus flexuosus*, *S. contractus*, *S. cryptandrus*). Blue grama (*B. gracilis*) also occurs as a subdominant species. Perennial and annual forb abundance is distributed relative to precipitation occurrence. Litter and to a lesser extent, bare ground, compose a significant proportion of the ground cover while grasses compose the remainder. Decreases in black grama and other grass species' cover indicate a transition to states with an increased shrub component. Shinnery oak (*Quercus havardii*), sand sage(*Artemisia filifolia*), and honey mesquite (*Prosopis glandulosa*) can all increase in composition. Lehmann lovegrass (*Eragrostis lehmanniana*) also may occur as a result of invasion and competition among grass species. Heavy grazing intensity and/or drought are influential in decreasing grass cover and subsequently increasing shrub cover. Fire suppression further supports shrub cover increase and an advantage over grass species. However, brush and grazing management may restore grass species and reverse shrub or grass/shrub dominated states back toward the historic plant community.

State and transition model

Plant Communities and Transitional Pathways (diagram)



1a. Climate, fire suppression, competition, over grazing
1b. Brush control, Prescribed grazing

2.Brush control (insufficient chemical).

3. Brush control

4a. Invasion from seeded areas.
4b. Brush control reseed native species.

5a. Overgrazing, seed dispersal, lack of fire.
5b. Brush control, prescribed fire.

6.Severe loss of grass cover, wind erosion.

7. Brush control, seeding

State 1
Historic Climax Plant Community

Community 1.1
Historic Climax Plant Community

Grassland: The historic plant community is composed primarily of black grama, dropseeds, and a secondary component of blue grama. Black grama tends to dominate due to the predominance of sandy loam soils; however, dropseeds increase on more loamy soils. Perennial and annual forbs are common but their abundance and

distribution are dependent on seasonal precipitation. Historical fire frequency is unknown but probably contributed to shrub reduction to the competitive advantage of grass species. Excessive grazing and drought are likely the dominant drivers that decrease black grama and increase dropseed and threeawn abundance within the historic plant community. Black grama has low seed viability, and therefore, reproduces vegetatively during the summer growing season. However, black grama growth is delayed one season after normal precipitation. Black grama is dormant for the remainder of the year; however, black grama retains nutritive value yearlong for grazing. In contrast, dropseeds have relatively abundant, viable seed production and can benefit from early spring as well as summer precipitation. Threeawns also respond to spring and summer moisture and tend to be the year's first palatable species. Threeawns and dropseeds, however, are not palatable during dormant periods, which extends grazing pressure to black grama. Moderate to heavy grazing reduces vegetative cover of black grama which increases its susceptibility to wind erosion and drought (Canfield 1939). Black grama is especially vulnerable to grazing during the summer growing season when stoloniferous growth and rooting occur. Black grama sustains short droughts through reduction of plant tufts which will subsequently emerge with sufficient moisture. Prolonged drought or grazing concurrently under drought conditions can delay or impede recovery of black grama (Nelson 1934) and increase abundance of dropseeds, threeawns, and blue grama. Historical fire events may have benefited black grama, especially, frequent, light intensity/severity fires in conjunction with sufficient moisture to increase stolon production (McPherson 1995). Fires which were hot and severe, however, probably contributed to black grama mortality, more so in drought conditions. Diagnosis: This state is a grassland dominated by black grama, dropseeds, and threeawns, with subdominant blue grama. Shrubs, such as sand sage and mesquite, are sparsely dispersed throughout the grassland. Forb populations are present and fluctuate with precipitation variability. Other grasses that could appear on this site include: fall withchgrass, slim tridens, Almejita signalgrass, Indian ricegrass and fluffgrass. Other shrubs include: pale wolfberry, lotebush, tarbush, Apacheplume, and mesquite. Other forbs include: plains tickseed, plains blackfoot, scorpionweed, nama, wooly guara, wooly dalea, spectaclepod mustard, bladderpod mustard, menodora, prickly lettuce, lambsquarter, wooly Indianwheat and wild buckwheat.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	480	720	960
Forb	90	135	180
Shrub/Vine	30	45	60
Total	**600**	**900**	**1200**

Table 6. Ground cover

Tree foliar cover	0%
Shrub/vine/liana foliar cover	0%
Grass/grasslike foliar cover	35-40%
Forb foliar cover	0%
Non-vascular plants	0%
Biological crusts	0%
Litter	35-45%
Surface fragments >0.25" and <=3"	0%
Surface fragments >3"	0%
Bedrock	0%
Water	0%
Bare ground	15-20%

Figure 7. Plant community growth curve (percent production by month). NM2804, R042XC004NM-Sandy-HCPC. SD-3 Sandy - Warm season plant community .

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	1	3	4	10	10	25	30	12	5	0	0

State 2
Shinnery Oak Dominated

Community 2.1
Shinnery Oak Dominated

Shinnery Oak Dominated: This state is dominated by Shinnery oak with subdominant grass species from the historic plant community. Bare ground is a significant component in this state. Shinnery oak tends to be clumped in distribution in finer soil textures. Shinnery oak density increases (as well as dropseeds, threeawns, and blue grama) in coarse textured (e.g., Loamy Sand sites) and deeper, coarse textured (e.g., Deep Sand and Sandhills sites) soils. Shinnery oak predominates during periods of above average (i.e., 16 in.) precipitation during the months of July and August. Abundance and distribution also increases with disturbance, such as excessive grazing and fire, due to an aggressive rhizome system. Shinnery oak's extensive root system allows competitive exclusion of grasses and forbs. Brush control with herbicide treatments applied in the spring can reduce Shinnery oak (Herbel et al. 1979, Pettit 1986). In addition, repetitive seasons of goat browsing can also decrease Shinnery oak abundance. However, brush management should maintain shrub patches to prevent erosion and to provide wildlife cover and forage. Diagnosis: This state represents a clumped distribution of Shinnery oak with patches of bare ground and subdominant grass species, such as black grama, dropseeds, threeawns, and blue grama. Shinnery oak density increases, as do dropseeds, threeawns, and blue grama, as Sandy site intergrades with Deep Sand and Sandhills sites. Transition to Shinnery Oak-Dominated State (1a): Decrease in black grama with subsequent decrease in dropseeds and threeawns. Increase in Shinnery oak as a result of drought, above average precipitation (>16 inches), grazing, fire suppression, interspecific competition, and coarse textured soils. Key indicators of approach to transition: • Loss of black grama and other grass species cover • Increase of dropseed/threeawn and shinnery oak • Surface soil erosion and bare patch expansion Transition to Historic Plant Community (1b): The Shinnery oak-dominated state begins to transition toward the historic plant community as drivers such as drought, but also above average precipitation (e.g., 16 inches) discontinue. Brush control can also drive the Shinnery oak state toward a grassland state.

State 3
Sand Sage Dominated

Community 3.1
Sand Sage Dominated

Sand Sage Dominated: This state is dominated by sand sage with subdominant grass species from the historic plant community. Sand sage occurs as a result of insufficient herbicide application in Shinnery oak dominated sites with subdominant sand sage. Sand sage either reestablishes dominance or colonizes from an off-site location and stabilizes soils. Sand sage stabilizes light sandy soils from wind erosion and provides a harbor for grass and forb species in heavily grazed conditions (Davis and Bonham 1979). Sand sage abundance increases with drought and/or heavy grazing, but decreases with light grazing due to herbaceous plant competition. Grass and forb species can reestablish as competition from sand sage is relatively light. Herbicide applied in the spring, especially when growth and photosynthesis rates are greatest, can reduce sand sage if there is subsequent rest from grazing (Herbel et al. 1979, Pettit 1986). Brush management should maintain patches of sand sage to prevent wind erosion and subsequent dune formation. Diagnosis: This state is dominated by sand sage with subdominant grass species, such as black grama, dropseeds, threeawns, and blue grama. Sand sage tends to occur in sites with coarser textured soils. Transition to Sand Sage Dominated (2): Sand sage appears from off-site locations and/or increases after insufficient herbicide applications aimed at removing Shinnery oak and sand sage. Key indicators of approach to transition: • Increase of sand sage seedlings and grasses • Reduced soil erosion Transition to Historic Plant Community (3): The sand sage dominated state transitions toward the historic plant community as sand sage decreases primarily through brush management but also with light intensity grazing management. Drought reduction will also support a transition to the historic plant community.

State 4
Lehmann Lovegrass + Natives

Community 4.1
Lehmann Lovegrass + Natives

Lehmann Lovegrass + Natives: This state is dominated by Lehmann lovegrass with subdominant grass species from the historic plant community. Lehmann lovegrass is a warm-season, perennial bunchgrass that was introduced from South Africa in the 1930's for rangeland restoration purposes (Humphrey 1970). Lehmann lovegrass invades from off-site locations with projects utilizing lovegrass for reseeding, soil stabilization, or highway projects. Lehmann lovegrass provides a winter and early spring forage for grazing. Lehmann lovegrass is vigorous in sandy to sandy loam soils which receive approximately 6-8 inches of summer precipitation (Cox et al. 1988). Lehmann lovegrass's aggressive competitive exclusion of native grass species has been attributed to lovegrass's low summer palatability, which reduces vigor of native species and allows lovegrass to increase vigor before grazing. Also, Lehmann lovegrass abundant seed production and establishment, especially after disturbances, allows for increased competition (Cable 1971, Cox et al. 1981). Lehmann lovegrass generally is tolerant to fire because of an aggressive seed-bank; however, severe fires can cause mature lovegrass mortality (Sumrall et al. 1991). Herbicide and reseeding is recommended for control of Lehmann lovegrass (Winn 1991). Diagnosis: Lehmann lovegrass and grass species from the historic plant community, such as black grama, dropseeds, threeawns, and blue grama, dominate this state. Transition to Lehmann lovegrass and native grass species (4a): Decrease in black grama with subsequent decrease in dropseeds and threeawns. Increase in Lehmann lovegrass as a result of drought, grazing, fire and interspecific competition from nearby sources of Lehmann lovegrass. Key indicators of approach to transition: • Loss of black grama and other grass species cover • Disturbance and nearby source of Lehmann lovegrass • Increase of Lehmann lovegrass seedlings Transition to Historic Plant Community (4b): The Lehmann lovegrass/native grass state transitions toward the historic plant community after actions such as herbicide application and native reseeding have occurred. In addition, prevention of disturbances such as fire and livestock grazing also will encourage the transition to a native grass community

State 5
Grass/Mesquite

Community 5.1
Grass/Mesquite

Grass/Mesquite: This state is dominated by honey mesquite with dropseeds and/or threeawns. Black grama generally is rare as a result of heavy grazing intensity. Honey mesquite invades through seed dispersal from grazing livestock and/or wildlife. Dropseeds and threeawns cohabitate with mesquite due to sufficient precipitation. Mesquite tends to be arborescent due to less soil erosion relative to the Coppice Dunes state which reflects large soil loss. Mesquite obtains approximately half of its nitrogen from symbiotic bacteria housed in root nodules (Lajtha and Schlesinger 1986). Mesquite also provides nitrogen and soil organic matter to co-dominant grasses (Ansley and Jacoby 1998, Ansley et al. 1998). Historical fire occurrences reduced mesquite abundance by disrupting seed production cycles and suppressing seedlings; thus, grass species remained dominant. However, fire suppression has allowed mesquite to increase in density and abundance, increasing mesquite resistance to fires through aggressive resprouting. Herbicide application combined with subsequent prescribed fire may be effective in mesquite reduction (Britton and Wright 1971). Diagnosis: This state is co-dominated by honey mesquite and dropseeds or threeawns. Transition to Grass/Mesquite State (5a): This state occurs due to a decrease in black grama primarily from heavy grazing intensity and from an introduction of mesquite seeds from grazers. Dropseeds and threeawns increase and co-exist in the absence of black grama. Fire suppression also is responsible for an increase in mesquite. Key indicators of approach to transition: • Loss of black grama • Increase of dropseeds and/or threeawns • Increase of mesquite seedlings Transition to Historic Plant Community (5b): Transition to the historic plant community requires brush management though herbicide application and possibly prescribed fire to reduce mesquite abundance. Once shrub species are removed, prescribed fire may be useful in maintaining a dominant grassland. Precipitation is also necessary in conjunction with management activities to support a dominant grassland.

State 6

Coppice Dunes

Community 6.1
Coppice Dunes

Coppice Dunes: This state is dominated by coppice mesquite dunes with minimal or no grass cover. Honey mesquite occurs in a multi-stemmed growth form which cultivates it's dune formation by entrapping drifting sands. Mesquite utilizes its extensive tap and lateral roots to benefit from moisture deep in coarse textured soils. Grass species cannot compete for moisture, especially with compounding perturbations such as heavy grazing and drought. Soils succumb to wind erosion with the depletion of grass cover and eventually dunes form around mesquite plants (Gould 1982). Brush management is limited to herbicide application, biological control, or manual removal, as a lack of grass cover prevents prescribed burning. Seeding subsequent to brush control may transition this State toward the historic plant community. Diagnosis: This state is characterized by low growing, multi-stemmed mesquite plants which form Coppice dunes by drifting soils from wind erosion. As grass cover decreases, windblown soils are removed from unprotected, inter-dune areas. Soils are then re-deposited on dunes which increases dune size. Transition to Mesquite Coppice Dunes State (6): Decrease in black grama with subsequent decrease in dropseeds and threeawns due to competition with mesquite especially during drought, heavy grazing, and fire suppression. Competitive exclusion of grasses leads to wind erosion of sandy soils and dune formation of low growing mesquite plants. Key indicators of approach to transition: • Loss of black grama and other grass species cover • Wind erosion as evidenced by pedestalled plants • Bare patch expansion • Increase of Coppice dune mesquites Transition to Historic Plant Community (7): Transition toward the historic plant community requires mesquite removal though either herbicide application, biological control, or manual removal. In addition, seeding of native grass species with subsequent years of sufficient moisture is critical.

Additional community tables

Table 7. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
Grass/Grasslike					
1	**Warm Season**			315–360	
	black grama	BOER4	*Bouteloua eriopoda*	315–360	–
2	**Warm Season**			45–90	
	blue grama	BOGR2	*Bouteloua gracilis*	45–90	–
3	**Warm Season**			27–45	
	bush muhly	MUPO2	*Muhlenbergia porteri*	27–45	–
4	**Warm Season**			90–135	
	spike dropseed	SPCO4	*Sporobolus contractus*	90–135	–
	sand dropseed	SPCR	*Sporobolus cryptandrus*	90–135	–
	mesa dropseed	SPFL2	*Sporobolus flexuosus*	90–135	–
5	**Warm Season**			27–45	
	threeawn	ARIST	*Aristida*	27–45	–
6	**Warm Season**			27–45	
	plains bristlegrass	SEVU2	*Setaria vulpiseta*	27–45	–
7	**Warm Season**			27–45	
	Arizona cottontop	DICA8	*Digitaria californica*	27–45	–
8	**Warm Season**			45–72	
	silver bluestem	BOSA	*Bothriochloa saccharoides*	45–72	–
	little bluestem	SCSC	*Schizachyrium scoparium*	45–72	–
9	**Warm Season**			9–27	
	vine mesquite	PAOB	*Panicum obtusum*	9–27	–

10	**Warm Season**			9–27	
	tobosagrass	PLMU3	*Pleuraphis mutica*	9–27	–
11	**Other Perennial Grasses**			9–27	
	Grass, perennial	2GP	*Grass, perennial*	9–27	–
Shrub/Vine					
12	**Shrub**			9–45	
	yucca	YUCCA	*Yucca*	9–45	–
13	**Shrub**			9–27	
	catclaw mimosa	MIACB	*Mimosa aculeaticarpa var. biuncifera*	9–27	–
14	**Shrub**			9–27	
	fourwing saltbush	ATCA2	*Atriplex canescens*	9–27	–
15	**Shrub**			9–27	
	jointfir	EPHED	*Ephedra*	9–27	–
16	**Shrub**			9–27	
	javelina bush	COER5	*Condalia ericoides*	9–27	–
17	**Shrub**			9–27	
	sand sagebrush	ARFI2	*Artemisia filifolia*	9–27	–
	broom snakeweed	GUSA2	*Gutierrezia sarothrae*	9–27	–
18	**Other Shrubs**			9–27	
	Shrub (>.5m)	2SHRUB	*Shrub (>.5m)*	9–27	–
Forb					
19	**Forb**			27–63	
	croton	CROTO	*Croton*	27–63	–
	globemallow	SPHAE	*Sphaeralcea*	27–63	–
20	**Forb**			27–45	
	curlycup gumweed	GRSQ	*Grindelia squarrosa*	27–45	–
	woolly groundsel	PACA15	*Packera cana*	27–45	–
21	**Forb**			9–27	
	Adonis blazingstar	MEMU3	*Mentzelia multiflora*	9–27	–
22	**Forb**			27–45	
	redstem stork's bill	ERCI6	*Erodium cicutarium*	27–45	–
	Texas stork's bill	ERTE13	*Erodium texanum*	27–45	–
23	**Other Forbs**			9–27	
	Forb (herbaceous, not grass nor grass-like)	2FORB	*Forb (herbaceous, not grass nor grass-like)*	9–27	–

Animal community

This site provides habitat which support a resident animal community that is characterized by pronghorn antelope, black-tailed jackrabbit, spotted ground squirrel, black-tailed prairie dog, yellow-faced pocket gopher, Ord's kangaroo rat, Northern grasshopper mouse, southern plains woodrat, badger, meadowlark, roadrunner, burrowing owl, white-necked raven, cactus wren, pyrrhuloxia, lesser prairie chicken, mourning dove, scaled quail, Harris' hawk, side-blotched lizard, marbled whiptail, Texas horned lizard, prairie rattlesnake, plains spadefoot toad, and ornate box turtle.

Hydrological functions

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

Soil Series Hydrologic Group
Anthony B
Berino B
Cacique C *shallow soil
Harkey B
Pajaritio B
Reakor B
Mobeetie B
Wink B
Sotim B
Vinton B
Drake B
Onite B
Alma B
Poquita B
Dona Ana B
Monahans B

Recreational uses

This site offers recreation potential for hiking, horseback riding, nature observation, and photography, bird, antelope and predator hunting. During years of abundant spring moisture, this site displays a colorful array of wildflowers.

Wood products

This site has no potential for wood products.

Other products

This site is suitable for grazing by all classes and kinds of livestock during all seasons of the year. Under retrogression, plants such as black grama, blue grama, bush muhly, plains bristlegrass, Arizona cottontop, vine mesquite, little bluestem and fourwing saltbush will decrease while the dropseeds, threeawns, tobosa, yucca, catclaw mimosa, javelinabush, mesquite and broom snakeweed will increase. This site responds well to brush management and deferment. It is best suited to a system of management that rotates the season of use.

Other information

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index Ac/AUM
100 - 76 2.7 – 3.8
75 – 51 3.5 – 5.0
50 – 26 5.0 – 8.0
25 – 0 8.1 +

Inventory data references

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

Other references

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Contributors

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Rangeland health reference sheet

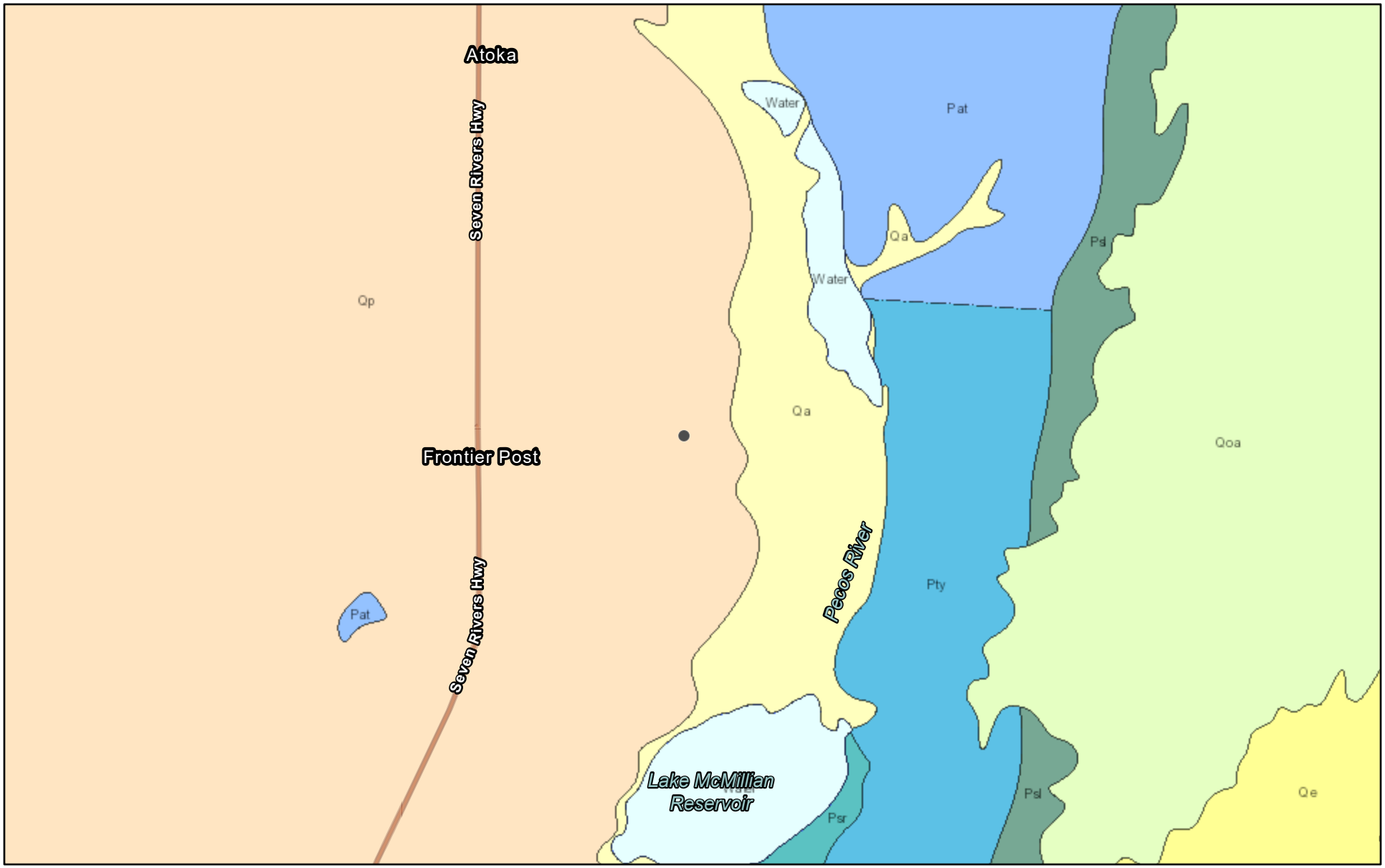
Interpreting Indicators of Rangeland Health is a qualitative assessment protocol used to determine ecosystem condition based on benchmark characteristics described in the Reference Sheet. A suite of 17 (or more) indicators are typically considered in an assessment. The ecological site(s) representative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

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

Indicators

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

Site Geologic Map



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0 1.5 3 6 km

Lithologic Units

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

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

ArcGIS Web AppBuilder

New Mexico Bureau of Geology & Mineral Resources, Bureau of Land Management | New Mexico Bureau of Geology and Mineral Resources | New Mexico Bureau of Geology & Mineral Resources | NMBGMR | NMBGMR, BLM | Earthstar Geographics | Texas Parks &

ATTACHMENT 4

Daily Site Visit Report

Client	Silverback Exploration	Inspection Date	6/27/2024
Site Location Name	Scripps Water Transfer Pipeline	API #	
Client Contact Name	Justin Carter	Project Owner	
Client Contact Phone #	405-286-3375	Project Manager	
Project Reference #			
Unique Project ID			

Summary of Times

Arrived at Site	6/27/2024 10:00 AM
Departed Site	6/27/2024 1:32 PM

Field Notes

12:00 Initial Site Scrape Photographs

Next Steps & Recommendations

1

Daily Site Visit Report

Site Photos

Viewing Direction: Northeast	**Viewing Direction**: Northwest
	
Eastern extent of the release/scraped areas	Western extent of the release/scraped areas
Viewing Direction: Southwest	**Viewing Direction**: Southeast
	
Southern portions of the release/scraped areas	Eastern extent of the release/scraped areas

Daily Site Visit Report

Site Photos

Viewing Direction: East	**Viewing Direction**: North
	
Eastern extent of the release/scraped areas	Western extent of the release/scraped areas

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Fernando Rodriguez

Signature: 
Signature

ATTACHMENT 5

CARDINAL Laboratories

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

August 28, 2024

MICHAEL MOFFITT

VERTEX RESOURCE GROUP

420 SOUTH MAIN, SUITE 202

TULSA, OK 74103

RE: SCRIPPS WATER TRANSFER PIPELINE

Enclosed are the results of analyses for samples received by the laboratory on 08/22/24 14:15.

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/19/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 01 0FT (H245117-01)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	1.83	91.7	2.00	12.1	
Toluene*	<0.050	0.050	08/23/2024	ND	1.82	90.9	2.00	10.8	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	1.85	92.5	2.00	9.60	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	5.53	92.1	6.00	9.47	
Total BTEX	<0.300	0.300	08/23/2024	ND					

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

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**16.0**	16.0	08/23/2024	ND	432	108	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	198	99.0	200	2.33	
DRO >C10-C28*	<10.0	10.0	08/23/2024	ND	206	103	200	6.08	
EXT DRO >C28-C36	<10.0	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *118 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *117 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/19/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 01 2FT (H245117-02)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	1.83	91.7	2.00	12.1	
Toluene*	<0.050	0.050	08/23/2024	ND	1.82	90.9	2.00	10.8	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	1.85	92.5	2.00	9.60	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	5.53	92.1	6.00	9.47	
Total BTEX	<0.300	0.300	08/23/2024	ND					

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

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	08/23/2024	ND	432	108	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	198	99.0	200	2.33	
DRO >C10-C28*	<10.0	10.0	08/23/2024	ND	206	103	200	6.08	
EXT DRO >C28-C36	<10.0	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *106 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *103 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/19/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 02 0FT (H245117-03)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	1.83	91.7	2.00	12.1	
Toluene*	<0.050	0.050	08/23/2024	ND	1.82	90.9	2.00	10.8	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	1.85	92.5	2.00	9.60	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	5.53	92.1	6.00	9.47	
Total BTEX	<0.300	0.300	08/23/2024	ND					

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

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**960**	16.0	08/23/2024	ND	432	108	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	198	99.0	200	2.33	
DRO >C10-C28*	**90.8**	10.0	08/23/2024	ND	206	103	200	6.08	
EXT DRO >C28-C36	**52.6**	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *103 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *100 %* *49.1-148*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/19/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 02 2FT (H245117-04)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	1.83	91.7	2.00	12.1	
Toluene*	<0.050	0.050	08/23/2024	ND	1.82	90.9	2.00	10.8	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	1.85	92.5	2.00	9.60	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	5.53	92.1	6.00	9.47	
Total BTEX	<0.300	0.300	08/23/2024	ND					

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

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	08/23/2024	ND	432	108	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	198	99.0	200	2.33	
DRO >C10-C28*	<10.0	10.0	08/23/2024	ND	206	103	200	6.08	
EXT DRO >C28-C36	<10.0	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *108 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *105 %* *49.1-148*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/19/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 02 4FT (H245117-05)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	1.83	91.7	2.00	12.1	
Toluene*	<0.050	0.050	08/23/2024	ND	1.82	90.9	2.00	10.8	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	1.85	92.5	2.00	9.60	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	5.53	92.1	6.00	9.47	
Total BTEX	<0.300	0.300	08/23/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *96.4 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	08/23/2024	ND	432	108	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	198	99.0	200	2.33	
DRO >C10-C28*	<10.0	10.0	08/23/2024	ND	206	103	200	6.08	
EXT DRO >C28-C36	<10.0	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *112 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *108 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/19/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 03 0FT (H245117-06)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	1.83	91.7	2.00	12.1	
Toluene*	<0.050	0.050	08/23/2024	ND	1.82	90.9	2.00	10.8	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	1.85	92.5	2.00	9.60	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	5.53	92.1	6.00	9.47	
Total BTEX	<0.300	0.300	08/23/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *96.8 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**480**	16.0	08/23/2024	ND	432	108	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	198	99.0	200	2.33	
DRO >C10-C28*	<10.0	10.0	08/23/2024	ND	206	103	200	6.08	
EXT DRO >C28-C36	<10.0	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *112 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *106 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/19/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 03 2FT (H245117-07)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	1.83	91.7	2.00	12.1	
Toluene*	<0.050	0.050	08/23/2024	ND	1.82	90.9	2.00	10.8	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	1.85	92.5	2.00	9.60	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	5.53	92.1	6.00	9.47	
Total BTEX	<0.300	0.300	08/23/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *97.6 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	08/23/2024	ND	432	108	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	198	99.0	200	2.33	
DRO >C10-C28*	<10.0	10.0	08/23/2024	ND	206	103	200	6.08	
EXT DRO >C28-C36	<10.0	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *114 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *110 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/19/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 03 4FT (H245117-08)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	2.11	106	2.00	1.48	
Toluene*	<0.050	0.050	08/23/2024	ND	2.01	101	2.00	1.41	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	2.05	103	2.00	1.07	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	6.07	101	6.00	0.933	
Total BTEX	<0.300	0.300	08/23/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *96.3 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**16.0**	16.0	08/23/2024	ND	432	108	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	198	99.0	200	2.33	
DRO >C10-C28*	<10.0	10.0	08/23/2024	ND	206	103	200	6.08	
EXT DRO >C28-C36	<10.0	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *112 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *109 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/19/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 04 0FT (H245117-09)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	2.11	106	2.00	1.48	
Toluene*	<0.050	0.050	08/23/2024	ND	2.01	101	2.00	1.41	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	2.05	103	2.00	1.07	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	6.07	101	6.00	0.933	
Total BTEX	<0.300	0.300	08/23/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *96.7 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**96.0**	16.0	08/23/2024	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	198	99.0	200	2.33	
DRO >C10-C28*	<10.0	10.0	08/23/2024	ND	206	103	200	6.08	
EXT DRO >C28-C36	<10.0	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *118 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *115 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/19/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 04 2FT (H245117-10)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	1.94	97.0	2.00	9.30	
Toluene*	<0.050	0.050	08/23/2024	ND	2.03	102	2.00	7.86	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	2.07	104	2.00	7.02	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	6.44	107	6.00	6.90	
Total BTEX	<0.300	0.300	08/23/2024	ND					

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

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	08/23/2024	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	198	99.0	200	2.33	
DRO >C10-C28*	<10.0	10.0	08/23/2024	ND	206	103	200	6.08	
EXT DRO >C28-C36	<10.0	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *122 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *120 %* *49.1-148*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/19/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 05 0FT (H245117-11)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	1.94	97.0	2.00	9.30	
Toluene*	<0.050	0.050	08/23/2024	ND	2.03	102	2.00	7.86	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	2.07	104	2.00	7.02	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	6.44	107	6.00	6.90	
Total BTEX	<0.300	0.300	08/23/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *109 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**208**	16.0	08/23/2024	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	198	99.0	200	2.33	
DRO >C10-C28*	**103**	10.0	08/23/2024	ND	206	103	200	6.08	
EXT DRO >C28-C36	**23.5**	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *122 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *122 %* *49.1-148*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/19/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 05 2FT (H245117-12)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	1.94	97.0	2.00	9.30	
Toluene*	<0.050	0.050	08/23/2024	ND	2.03	102	2.00	7.86	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	2.07	104	2.00	7.02	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	6.44	107	6.00	6.90	
Total BTEX	<0.300	0.300	08/23/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *109 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**80.0**	16.0	08/23/2024	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	198	99.0	200	2.33	
DRO >C10-C28*	<10.0	10.0	08/23/2024	ND	206	103	200	6.08	
EXT DRO >C28-C36	<10.0	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *84.7 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *80.5 %* *49.1-148*

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

Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/19/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 06 0FT (H245117-13)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	1.94	97.0	2.00	9.30	
Toluene*	<0.050	0.050	08/23/2024	ND	2.03	102	2.00	7.86	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	2.07	104	2.00	7.02	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	6.44	107	6.00	6.90	
Total BTEX	<0.300	0.300	08/23/2024	ND					

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

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**160**	16.0	08/23/2024	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	198	99.0	200	2.33	
DRO >C10-C28*	<10.0	10.0	08/23/2024	ND	206	103	200	6.08	
EXT DRO >C28-C36	<10.0	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *112 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *116 %* *49.1-148*

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Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/19/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 06 2FT (H245117-14)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	1.94	97.0	2.00	9.30	
Toluene*	<0.050	0.050	08/23/2024	ND	2.03	102	2.00	7.86	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	2.07	104	2.00	7.02	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	6.44	107	6.00	6.90	
Total BTEX	<0.300	0.300	08/23/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *110 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**128**	16.0	08/23/2024	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	198	99.0	200	2.33	
DRO >C10-C28*	<10.0	10.0	08/23/2024	ND	206	103	200	6.08	
EXT DRO >C28-C36	<10.0	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *120 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *116 %* *49.1-148*

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Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/19/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 07 0FT (H245117-15)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	1.94	97.0	2.00	9.30	
Toluene*	<0.050	0.050	08/23/2024	ND	2.03	102	2.00	7.86	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	2.07	104	2.00	7.02	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	6.44	107	6.00	6.90	
Total BTEX	<0.300	0.300	08/23/2024	ND					

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

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**13800**	16.0	08/23/2024	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	198	99.0	200	2.33	
DRO >C10-C28*	**31.8**	10.0	08/23/2024	ND	206	103	200	6.08	
EXT DRO >C28-C36	<10.0	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *115 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *113 %* *49.1-148*

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Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/19/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 07 2FT (H245117-16)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	1.94	97.0	2.00	9.30	
Toluene*	<0.050	0.050	08/23/2024	ND	2.03	102	2.00	7.86	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	2.07	104	2.00	7.02	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	6.44	107	6.00	6.90	
Total BTEX	<0.300	0.300	08/23/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *109 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	08/23/2024	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	198	99.0	200	2.33	
DRO >C10-C28*	<10.0	10.0	08/23/2024	ND	206	103	200	6.08	
EXT DRO >C28-C36	<10.0	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *112 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *109 %* *49.1-148*

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CARDINAL Laboratories

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

Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/19/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 07 4FT (H245117-17)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	1.94	97.0	2.00	9.30	
Toluene*	<0.050	0.050	08/23/2024	ND	2.03	102	2.00	7.86	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	2.07	104	2.00	7.02	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	6.44	107	6.00	6.90	
Total BTEX	<0.300	0.300	08/23/2024	ND					

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

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	08/23/2024	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	198	99.0	200	2.33	
DRO >C10-C28*	<10.0	10.0	08/23/2024	ND	206	103	200	6.08	
EXT DRO >C28-C36	<10.0	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *116 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *112 %* *49.1-148*

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

Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/19/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 08 0FT (H245117-18)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	1.94	97.0	2.00	9.30	
Toluene*	<0.050	0.050	08/23/2024	ND	2.03	102	2.00	7.86	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	2.07	104	2.00	7.02	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	6.44	107	6.00	6.90	
Total BTEX	<0.300	0.300	08/23/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *110 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**16.0**	16.0	08/23/2024	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	198	99.0	200	2.33	
DRO >C10-C28*	<10.0	10.0	08/23/2024	ND	206	103	200	6.08	
EXT DRO >C28-C36	<10.0	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *126 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *126 %* *49.1-148*

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

Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/19/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 08 2FT (H245117-19)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	1.94	97.0	2.00	9.30	
Toluene*	<0.050	0.050	08/23/2024	ND	2.03	102	2.00	7.86	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	2.07	104	2.00	7.02	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	6.44	107	6.00	6.90	
Total BTEX	<0.300	0.300	08/23/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *110 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**16.0**	16.0	08/23/2024	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	220	110	200	3.50	
DRO >C10-C28*	<10.0	10.0	08/23/2024	ND	215	107	200	5.58	
EXT DRO >C28-C36	<10.0	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *94.9 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *113 %* *49.1-148*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/20/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 09 0FT (H245117-20)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	1.94	97.0	2.00	9.30	
Toluene*	<0.050	0.050	08/23/2024	ND	2.03	102	2.00	7.86	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	2.07	104	2.00	7.02	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	6.44	107	6.00	6.90	
Total BTEX	<0.300	0.300	08/23/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *110 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**128**	16.0	08/23/2024	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	220	110	200	3.50	
DRO >C10-C28*	<10.0	10.0	08/23/2024	ND	215	107	200	5.58	
EXT DRO >C28-C36	<10.0	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *95.6 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *117 %* *49.1-148*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/20/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 09 2FT (H245117-21)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	1.94	97.0	2.00	9.30	
Toluene*	<0.050	0.050	08/23/2024	ND	2.03	102	2.00	7.86	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	2.07	104	2.00	7.02	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	6.44	107	6.00	6.90	
Total BTEX	<0.300	0.300	08/23/2024	ND					

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

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**96.0**	16.0	08/23/2024	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	214	107	200	1.25	
DRO >C10-C28*	<10.0	10.0	08/23/2024	ND	227	113	200	7.34	
EXT DRO >C28-C36	<10.0	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *96.0 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *124 %* *49.1-148*

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CARDINAL Laboratories

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Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/20/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 10 0FT (H245117-22)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	1.94	97.0	2.00	9.30	
Toluene*	<0.050	0.050	08/23/2024	ND	2.03	102	2.00	7.86	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	2.07	104	2.00	7.02	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	6.44	107	6.00	6.90	
Total BTEX	<0.300	0.300	08/23/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *112 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**144**	16.0	08/23/2024	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	214	107	200	1.25	
DRO >C10-C28*	<10.0	10.0	08/23/2024	ND	227	113	200	7.34	
EXT DRO >C28-C36	<10.0	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *75.4 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *97.2 %* *49.1-148*

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Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/20/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 10 2FT (H245117-23)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	1.94	97.0	2.00	9.30	
Toluene*	<0.050	0.050	08/23/2024	ND	2.03	102	2.00	7.86	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	2.07	104	2.00	7.02	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	6.44	107	6.00	6.90	
Total BTEX	<0.300	0.300	08/23/2024	ND					

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

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**96.0**	16.0	08/23/2024	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	214	107	200	1.25	
DRO >C10-C28*	<10.0	10.0	08/23/2024	ND	227	113	200	7.34	
EXT DRO >C28-C36	<10.0	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *92.9 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *121 %* *49.1-148*

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Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/20/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 11 0FT (H245117-24)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	1.94	97.0	2.00	9.30	
Toluene*	<0.050	0.050	08/23/2024	ND	2.03	102	2.00	7.86	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	2.07	104	2.00	7.02	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	6.44	107	6.00	6.90	
Total BTEX	<0.300	0.300	08/23/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *112 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**96.0**	16.0	08/23/2024	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	214	107	200	1.25	
DRO >C10-C28*	<10.0	10.0	08/23/2024	ND	227	113	200	7.34	
EXT DRO >C28-C36	<10.0	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *91.8 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *118 %* *49.1-148*

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Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/20/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 11 2FT (H245117-25)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	1.94	97.0	2.00	9.30	
Toluene*	<0.050	0.050	08/23/2024	ND	2.03	102	2.00	7.86	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	2.07	104	2.00	7.02	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	6.44	107	6.00	6.90	
Total BTEX	<0.300	0.300	08/23/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *110 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**96.0**	16.0	08/23/2024	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	214	107	200	1.25	
DRO >C10-C28*	<10.0	10.0	08/23/2024	ND	227	113	200	7.34	
EXT DRO >C28-C36	<10.0	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *86.9 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *111 %* *49.1-148*

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Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/20/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 12 0FT (H245117-26)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	1.94	97.0	2.00	9.30	
Toluene*	<0.050	0.050	08/23/2024	ND	2.03	102	2.00	7.86	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	2.07	104	2.00	7.02	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	6.44	107	6.00	6.90	
Total BTEX	<0.300	0.300	08/23/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *109 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**96.0**	16.0	08/23/2024	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	214	107	200	1.25	
DRO >C10-C28*	<10.0	10.0	08/23/2024	ND	227	113	200	7.34	
EXT DRO >C28-C36	<10.0	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *92.4 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *116 %* *49.1-148*

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CARDINAL Laboratories

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

Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/20/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 12 2FT (H245117-27)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	1.94	97.0	2.00	9.30	
Toluene*	<0.050	0.050	08/23/2024	ND	2.03	102	2.00	7.86	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	2.07	104	2.00	7.02	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	6.44	107	6.00	6.90	
Total BTEX	<0.300	0.300	08/23/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *112 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**144**	16.0	08/23/2024	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	214	107	200	1.25	
DRO >C10-C28*	<10.0	10.0	08/23/2024	ND	227	113	200	7.34	
EXT DRO >C28-C36	<10.0	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *99.3 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *126 %* *49.1-148*

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CARDINAL Laboratories

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

Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/20/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 13 0FT (H245117-28)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	1.94	97.0	2.00	9.30	
Toluene*	<0.050	0.050	08/23/2024	ND	2.03	102	2.00	7.86	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	2.07	104	2.00	7.02	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	6.44	107	6.00	6.90	
Total BTEX	<0.300	0.300	08/23/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *110 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**112**	16.0	08/23/2024	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	214	107	200	1.25	
DRO >C10-C28*	<10.0	10.0	08/23/2024	ND	227	113	200	7.34	
EXT DRO >C28-C36	<10.0	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *95.2 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *121 %* *49.1-148*

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Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/20/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 13 2FT (H245117-29)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	1.94	97.0	2.00	9.30	
Toluene*	<0.050	0.050	08/23/2024	ND	2.03	102	2.00	7.86	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	2.07	104	2.00	7.02	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	6.44	107	6.00	6.90	
Total BTEX	<0.300	0.300	08/23/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *111 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**112**	16.0	08/23/2024	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	214	107	200	1.25	
DRO >C10-C28*	<10.0	10.0	08/23/2024	ND	227	113	200	7.34	
EXT DRO >C28-C36	<10.0	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *95.8 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *121 %* *49.1-148*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/20/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 14 0FT (H245117-30)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	1.96	98.1	2.00	5.24	
Toluene*	<0.050	0.050	08/23/2024	ND	2.06	103	2.00	4.54	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	2.18	109	2.00	1.08	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	6.55	109	6.00	2.07	
Total BTEX	<0.300	0.300	08/23/2024	ND					

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

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**48.0**	16.0	08/23/2024	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	214	107	200	1.25	
DRO >C10-C28*	<10.0	10.0	08/23/2024	ND	227	113	200	7.34	
EXT DRO >C28-C36	<10.0	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *95.8 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *122 %* *49.1-148*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/20/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 14 2FT (H245117-31)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	1.96	98.1	2.00	5.24	
Toluene*	<0.050	0.050	08/23/2024	ND	2.06	103	2.00	4.54	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	2.18	109	2.00	1.08	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	6.55	109	6.00	2.07	
Total BTEX	<0.300	0.300	08/23/2024	ND					

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

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**64.0**	16.0	08/23/2024	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	214	107	200	1.25	
DRO >C10-C28*	<10.0	10.0	08/23/2024	ND	227	113	200	7.34	
EXT DRO >C28-C36	<10.0	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *94.3 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *120 %* *49.1-148*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/20/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 15 0FT (H245117-32)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	1.96	98.1	2.00	5.24	
Toluene*	<0.050	0.050	08/23/2024	ND	2.06	103	2.00	4.54	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	2.18	109	2.00	1.08	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	6.55	109	6.00	2.07	
Total BTEX	<0.300	0.300	08/23/2024	ND					

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

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	08/23/2024	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	214	107	200	1.25	
DRO >C10-C28*	<10.0	10.0	08/23/2024	ND	227	113	200	7.34	
EXT DRO >C28-C36	<10.0	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *91.5 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *116 %* *49.1-148*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/20/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 15 2FT (H245117-33)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	1.96	98.1	2.00	5.24	
Toluene*	<0.050	0.050	08/23/2024	ND	2.06	103	2.00	4.54	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	2.18	109	2.00	1.08	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	6.55	109	6.00	2.07	
Total BTEX	<0.300	0.300	08/23/2024	ND					

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

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**16.0**	16.0	08/23/2024	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	214	107	200	1.25	
DRO >C10-C28*	<10.0	10.0	08/23/2024	ND	227	113	200	7.34	
EXT DRO >C28-C36	<10.0	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *93.3 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *126 %* *49.1-148*

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Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/20/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 16 0FT (H245117-34)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	1.96	98.1	2.00	5.24	
Toluene*	<0.050	0.050	08/23/2024	ND	2.06	103	2.00	4.54	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	2.18	109	2.00	1.08	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	6.55	109	6.00	2.07	
Total BTEX	<0.300	0.300	08/23/2024	ND					

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

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**64.0**	16.0	08/23/2024	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	214	107	200	1.25	
DRO >C10-C28*	<10.0	10.0	08/23/2024	ND	227	113	200	7.34	
EXT DRO >C28-C36	<10.0	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *98.9 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *126 %* *49.1-148*

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Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/20/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 16 2FT (H245117-35)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	1.96	98.1	2.00	5.24	
Toluene*	<0.050	0.050	08/23/2024	ND	2.06	103	2.00	4.54	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	2.18	109	2.00	1.08	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	6.55	109	6.00	2.07	
Total BTEX	<0.300	0.300	08/23/2024	ND					

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

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**96.0**	16.0	08/23/2024	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	214	107	200	1.25	
DRO >C10-C28*	<10.0	10.0	08/23/2024	ND	227	113	200	7.34	
EXT DRO >C28-C36	<10.0	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *98.7 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *125 %* *49.1-148*

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CARDINAL Laboratories

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

Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/20/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 17 0FT (H245117-36)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	1.96	98.1	2.00	5.24	
Toluene*	<0.050	0.050	08/23/2024	ND	2.06	103	2.00	4.54	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	2.18	109	2.00	1.08	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	6.55	109	6.00	2.07	
Total BTEX	<0.300	0.300	08/23/2024	ND					

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

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	08/23/2024	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	214	107	200	1.25	
DRO >C10-C28*	<10.0	10.0	08/23/2024	ND	227	113	200	7.34	
EXT DRO >C28-C36	<10.0	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *90.9 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *115 %* *49.1-148*

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CARDINAL Laboratories

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

Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/20/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 17 2FT (H245117-37)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	1.96	98.1	2.00	5.24	
Toluene*	<0.050	0.050	08/23/2024	ND	2.06	103	2.00	4.54	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	2.18	109	2.00	1.08	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	6.55	109	6.00	2.07	
Total BTEX	<0.300	0.300	08/23/2024	ND					

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

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**128**	16.0	08/23/2024	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	214	107	200	1.25	
DRO >C10-C28*	<10.0	10.0	08/23/2024	ND	227	113	200	7.34	
EXT DRO >C28-C36	<10.0	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *96.9 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *125 %* *49.1-148*

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CARDINAL Laboratories

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

Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/20/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 18 0FT (H245117-38)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	1.96	98.1	2.00	5.24	
Toluene*	<0.050	0.050	08/23/2024	ND	2.06	103	2.00	4.54	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	2.18	109	2.00	1.08	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	6.55	109	6.00	2.07	
Total BTEX	<0.300	0.300	08/23/2024	ND					

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

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**80.0**	16.0	08/23/2024	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	214	107	200	1.25	
DRO >C10-C28*	<10.0	10.0	08/23/2024	ND	227	113	200	7.34	
EXT DRO >C28-C36	<10.0	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *89.7 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *115 %* *49.1-148*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	08/22/2024	Sampling Date:	08/20/2024
Reported:	08/28/2024	Sampling Type:	Soil
Project Name:	SCRIPPS WATER TRANSFER PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	24E-03808	Sample Received By:	Tamara Oldaker
Project Location:	SILVERBACK - EDDY CO NM		

Sample ID: BH 24 - 18 2FT (H245117-39)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/23/2024	ND	1.96	98.1	2.00	5.24	
Toluene*	<0.050	0.050	08/23/2024	ND	2.06	103	2.00	4.54	
Ethylbenzene*	<0.050	0.050	08/23/2024	ND	2.18	109	2.00	1.08	
Total Xylenes*	<0.150	0.150	08/23/2024	ND	6.55	109	6.00	2.07	
Total BTEX	<0.300	0.300	08/23/2024	ND					

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

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	08/23/2024	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/23/2024	ND	214	107	200	1.25	
DRO >C10-C28*	<10.0	10.0	08/23/2024	ND	227	113	200	7.34	
EXT DRO >C28-C36	<10.0	10.0	08/23/2024	ND					

Surrogate: 1-Chlorooctane *93.8 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *118 %* *49.1-148*

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Notes and Definitions

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

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:	Vertex Resource Services	**BILL TO**	
Project Manager:	Michael Moffitt	**P.O. #:**	
Address:	3101 Boyd Dr	**Company:**	Silverback Exploration
City:	Carlsbad **State:** NM **Zip:** 88220	**Attn:**	Rafael Alviso
Phone #:	575-988-2681 **Fax #:**	**Address:**	108 S. 4th St.
Project #:	24E-03808 **Project Owner:**	**City:**	Artesia
Project Name:	Scripps Water Transfer Pipeline	**State:** NM **Zip:** 88210	
Project Location:	Eddy County, NM	**Phone #:**	
Sampler Name:	Fernando Rodriguez	**Fax #:**	

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	TPH: (8015) EXT	BTEX (8021B)	Chloride (SM 4500)
H345117											✓						
1	BH24-01 0ft	C	1			X					X		8/19/24	8:00	X	X	X
2	BH24-01 2ft	C	1			X					X		8/19/24	8:05	X	X	X
3	BH24-02 0ft	C	1			X					X		8/19/24	8:15	X	X	X
4	BH24-02 2ft	C	1			X					X		8/19/24	8:20	X	X	X
5	BH24-02 4ft	C	1			X					X		8/19/24	8:25	X	X	X
6	BH24-03 0ft	C	1			X					X		8/19/24	8:30	X	X	X
7	BH24-03 2ft	C	1			X					X		8/19/24	8:35	X	X	X
8	BH24-03 4ft	C	1			X					X		8/19/24	8:40	X	X	X
9	BH24-04 0ft	C	1			X					X		8/19/24	8:45	X	X	X
10	BH24-04 2ft	C	1			X					X		8/19/24	8:50	X	X	X
11	BH24-05 0ft	C	1			X					X		8/19/24	9:00	X	X	X
12	BH24-05 2ft	C	1			X					X		8/19/24	9:05	X	X	X
13	BH24-06 0ft	C	1			X					X		8/19/24	9:15	X	X	X

Relinquished By:	**Date:** 8-22-24	**Received By:**	Phone Result: ☐ Yes ☐ No	Add'l Phone #:
	Time: 1415		Fax Result: ☐ Yes ☐ No	Add'l Fax #:
Relinquished By:	**Date:**	**Received By:**	REMARKS:	
	Time:			

Direct bill to Silverback Exploration
Email results to: mmoffitt@vertex.ca & frodriguez@vertex.ca

Delivered By: (Circle One)	Sample Condition	CHECKED BY:
Sampler - UPS - Bus - Other: CF -0.6c #140	Cool ☑ Yes ☐ No / Intact ☑ Yes ☐ No	(Initials)
FORM-006 R 2.0 -0.5c/-1.1c		

3. Please fax written changes to 575-393-2476

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name:	Vertex Resource Services	**BILL TO**	
Project Manager:	Michael Moffitt	**P.O. #:**	
Address:	3101 Boyd Dr	**Company:**	Silverback Exploration
City:	Carlsbad **State:** NM **Zip:** 88220	**Attn:**	Rafael Alviso
Phone #:	575-988-2681 **Fax #:**	**Address:**	108 S. 4th St.
Project #:	24E-03808 **Project Owner:**	**City:**	Artesia
Project Name:	Scripps Water Transfer Pipeline	**State:** NM **Zip:** 88210	
Project Location:	Eddy County, NM	**Phone #:**	
Sampler Name:	Fernando Rodriguez	**Fax #:**	

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL ✓	OTHER :	SAMPLING: DATE	TIME	TPH: (8015) EXT	BTEX (8021B)	Chloride (SM 4500)
H245117																	
14	BH24-06 2ft	C	1			X					X		8/19/24	9:20	X	X	X
15	BH24-07 0ft	C	1			X					X		8/19/24	9:30	X	X	X
16	BH24-07 2ft	C	1			X					X		8/19/24	9:35	X	X	X
17	BH24-07 4ft	C	1			X					X		8/19/24	9:40	X	X	X
18	BH24-08 0ft	C	1			X					X		8/19/24	9:45	X	X	X
19	BH24-08 2ft	C	1			X					X		8/19/24	9:50	X	X	X

Relinquished By:	**Date:** 8-22-24	**Received By:**	
	Time: 1415		
Relinquished By:	**Date:**	**Received By:**	
	Time:		

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

Direct bill to Silverback Exploration
Email results to: mmoffitt@vertex.ca & frodriguez@vertex.ca

Delivered By: (Circle One) CF-0.6° #140

Sampler - UPS - Bus - Other: -0.5°C / -1.1°C

Sample Condition: Cool	Intact	CHECKED BY: (Initials)
☑ Yes	☑ Yes	
☐ No	☐ No	

FORM-006 R 2.0

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Project #:	24E-03808 **Project Owner:**	**City:**	Artesia
Project Name:	Scripps Water Transfer Pipeline	**State:** NM **Zip:** 88210	
Project Location:	Eddy County, NM	**Phone #:**	
Sampler Name:	F.Rodriguez	**Fax #:**	

FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		ANALYSIS REQUEST														
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	TPH: (8015) EXT	BTEX (8021B)	Chloride (SM 4500)												
H245717																												
20	BH24-09 0ft	C	1			X					X		8/20/24	8:00	X	X	X											
21	BH24-09 2ft	C	1			X					X		8/20/24	8:05	X	X	X											
22	BH24-10 0ft	C	1			X					X		8/20/24	8:10	X	X	X											
23	BH24-10 2ft	C	1			X					X		8/20/24	8:15	X	X	X											
24	BH24-11 0ft	C	1			X					X		8/20/24	8:20	X	X	X											
25	BH24-11 2ft	C	1			X					X		8/20/24	8:25	X	X	X											
26	BH24-12 0ft	C	1			X					X		8/20/24	8:30	X	X	X											
27	BH24-12 2ft	C	1			X					X		8/20/24	8:35	X	X	X											
28	BH24-13 0ft	C	1			X					X		8/20/24	8:40	X	X	X											
29	BH24-13 2ft	C	1			X					X		8/20/24	8:45	X	X	X											
30	BH24-14 0ft	C	1			X					X		8/20/24	8:50	X	X	X											
31	BH24-14 2ft	C	1			X					X		8/20/24	8:55	X	X	X											

Relinquished By:	**Date:** 8/22/24	**Received By:**	Phone Result: ☐ Yes ☐ No Add'l Phone #:
	Time: 10:25		Fax Result: ☐ Yes ☐ No Add'l Fax #:
Relinquished By:	**Date:** 1415	**Received By:**	REMARKS:
	Time:		

Direct bill to Silverback Exploration
Email results to: mmoffitt@vertex.ca &
frodriguez@vertex.ca

Delivered By: (Circle One) CF-0.6° #140

Sampler - UPS - Bus - Other: -0.5°/-1.1°

Sample Condition		CHECKED BY:
Cool	Intact	(Initials)
☑ Yes	☑ Yes	
☐ No	☐ No	

FORM-006 R 2.0

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Project Location:	Eddy County, NM	**Phone #:**	
Sampler Name:	F.Rodriguez	**Fax #:**	

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING DATE	SAMPLING TIME	ANALYSIS REQUEST: TPH: (8015) EXT	BTEX (8021B)	Chloride (SM 4500)
H245717											✓						
32	BH24-15 0ft	C	1			X					X		8/20/24	9:00	X	X	X
33	BH24-15 2ft	C	1			X					X		8/20/24	9:05	X	X	X
34	BH24-16 0ft	C	1			X					X		8/20/24	9:10	X	X	X
35	BH24-16 2ft	C	1			X					X		8/20/24	9:15	X	X	X
36	BH24-17 0ft	C	1			X					X		8/20/24	9:20	X	X	X
37	BH24-17 2ft	C	1			X					X		8/20/24	9:25	X	X	X
38	BH24-18 0ft	C	1			X					X		8/20/24	9:30	X	X	X
39	BH24-18 2ft	C	1			X					X		8/20/24	9:35	X	X	X

Relinquished By:	**Date:** 8/22/24	**Received By:**	Phone Result: ☐ Yes ☐ No Add'l Phone #:
	Time: 10:25		Fax Result: ☐ Yes ☐ No Add'l Fax #:
Relinquished By:	**Date:** 1415	**Received By:**	REMARKS:
	Time:		

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Delivered By: (Circle One) CF-0.6c #140

Sampler - UPS - Bus - Other: -0.5c/-1.1c

Sample Condition Cool ☑ Yes Intact ☑ Yes ☐ No ☐ No

CHECKED BY: (Initials) T.O.

FORM-006 R 2.0

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

QUESTIONS

Action 380797

QUESTIONS

Operator: Silverback Operating II, LLC 1001 W. Wilshire Blvd Oklahoma City, OK 73112	OGRID: 330968
	Action Number: 380797
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Prerequisites	
Incident ID (n#)	**nAPP2417953983**
Incident Name	**NAPP2417953983 SCRIPPS WATER TRANSFER @ 0**
Incident Type	**Produced Water Release**
Incident Status	**Remediation Plan Received**

Location of Release Source	
Please answer all the questions in this group.	
Site Name	Scripps Water Transfer
Date Release Discovered	06/25/2024
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: Equipment Failure | Pipeline (Any) | Produced Water | Released: 15 BBL | Recovered: 0 BBL | Lost: 15 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	No
Condensate Released (bbls) Details	*Not answered.*
Natural Gas Vented (Mcf) Details	*Not answered.*
Natural Gas Flared (Mcf) Details	*Not answered.*
Other Released Details	*Not answered.*
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	none

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QUESTIONS (continued)

Operator: Silverback Operating II, LLC 1001 W. Wilshire Blvd Oklahoma City, OK 73112	OGRID: 330968
	Action Number: 380797
	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	**No**
Reasons why this would be considered a submission for a notification of a major release	*Unavailable.*
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	N/A
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: Fatma Abdallah Title: Regulatory Manager Email: FAbdallah@silverbackexp.com Date: 09/05/2024

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QUESTIONS (continued)

Operator: Silverback Operating II, LLC 1001 W. Wilshire Blvd Oklahoma City, OK 73112	OGRID: 330968
	Action Number: 380797
	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 51 and 75 (ft.)
What method was used to determine the depth to ground water	NM OSE iWaters Database Search
Did this release impact groundwater or surface water	No
What is the minimum distance, between the closest lateral extents of the release and the following surface areas:	
A continuously flowing watercourse or any other significant watercourse	Between 1000 (ft.) and ½ (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between ½ and 1 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Between 1000 (ft.) and ½ (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 1000 (ft.) and ½ (mi.)
Any other fresh water well or spring	Between 1000 (ft.) and ½ (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Between 1 and 5 (mi.)
A wetland	Between ½ and 1 (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 500 and 1000 (ft.)
Did the release impact areas not on an exploration, development, production, or storage site	Yes

Remediation Plan	
Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
Requesting a remediation plan approval with this submission	Yes
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)	13800
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	10
GRO+DRO (EPA SW-846 Method 8015M)	10
BTEX (EPA SW-846 Method 8021B or 8260B)	0.3
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	10/07/2024
On what date will (or did) the final sampling or liner inspection occur	10/08/2024
On what date will (or was) the remediation complete(d)	10/08/2024
What is the estimated surface area (in square feet) that will be reclaimed	20671
What is the estimated volume (in cubic yards) that will be reclaimed	800
What is the estimated surface area (in square feet) that will be remediated	20671
What is the estimated volume (in cubic yards) that will be remediated	800
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)

Operator: Silverback Operating II, LLC 1001 W. Wilshire Blvd Oklahoma City, OK 73112	OGRID: 330968
	Action Number: 380797
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

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: Fatma Abdallah Title: Regulatory Manager Email: FAbdallah@silverbackexp.com Date: 09/05/2024
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)

Operator: Silverback Operating II, LLC 1001 W. Wilshire Blvd Oklahoma City, OK 73112	OGRID: 330968
	Action Number: 380797
	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: 380797
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	*{Unavailable.}*

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 380797

CONDITIONS

Operator: Silverback Operating II, LLC 1001 W. Wilshire Blvd Oklahoma City, OK 73112	OGRID: 330968
	Action Number: 380797
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

CONDITIONS

Created By	Condition	Condition Date
scott.rodgers	The Remediation Plan is Conditionally Approved. The variance request to use the delineation samples as part of the conformation sampling is approved. Please collect confirmation samples of the entire release area representing no more than 200 ft2. Sidewall/Edge samples should be delineated/excavated to 600 mg/kg for chlorides and 100 mg/kg for TPH to define the edge of the release. All samples must be analyzed for all constituents listed in Table I of 19.15.29.12 NMAC. All off pad areas must meet reclamation standards set forth in the OCD Spill Rule. Please submit the closure report to the OCD by 12/16/2024.	9/17/2024