Site Characterization Report and Remediation Workplan

September 25, 2020

East Caprock SWD #5 Produced Water Release

NRM2020531357

Prepared For:

BXP Operating, LLC
1515 Calle Sur, Suite 174
Hobbs, New Mexico 88240

Prepared By:

Crain Environmental
2925 East 17th Street
Odessa, Texas 79761

Cynthia K. Crain, P.G.

Crain Environmental

Table of Contents

TABLES

FIGURES

APPENDICES

1.0 Introduction

Crain Environmental (CE), on behalf of BXP Operating, LLC (BXP), has prepared this *Site Characterization Report and Remediation Workplan* for the produced water release at East Caprock SWD #5 (Site), located approximately 21 miles west of Tatum, in Lea County, New Mexico. The global positioning system (GPS) coordinates for the Release Site are 32.295825, -103.682856. The property surface rights are privately owned. The location of the Release Site is depicted on Figure 1.

2.0 Background

On July 13, 2020, a bad connection resulted in a release of approximately 70 barrels (bbls) of produced water. Immediately following the release, the area was secured, and the connection was repaired.

The released produced water flowed on the ground approximately 900 feet east from the release point. Land use in the Site vicinity is primarily oil and gas production activity and cattle grazing. No free-standing produced water was recovered.

Verbal notification of the release was provided to the NMOCD on July 13, 2020, and the NMOCD Form C-141 (Release Notification Report) was submitted on July 24, 2020. A copy of the NMOCD Form C-141 is provided in Appendix A. The C-141 was approved by the NMOCD on and the Site was given a NMOCD Tracking Number of NRM2020531357. Produced water surface impacts at the Site cover approximately 67,500 square feet. The release point and the surface extent of the produced water release are depicted on Figure 2.

This *Site Characterization Report and Remediation Workplan* is due within 90 days of discovering the release (i.e., by October 11, 2020) in accordance with 19.15.29.11 New Mexico Administrative Code (NMAC).

3.0 NMOCD Closure Criteria

Cleanup standards for produced water spills are provided in 19.15.29 NMAC. The cleanup standards (described in the rule as “Closure Criteria”) are based primarily on depth to groundwater but are also based on other criteria. Three different Closure Criteria are provided in the rule. The most stringent apply to sites where groundwater is found within 50 feet of the ground surface or if the release occurred within one of the following areas:

- Within 300 feet of any continuously flowing watercourse or any other significant watercourse.
- Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary highwater mark).
- Within 300 feet from an occupied permanent residence, school, hospital, institution or church.
- 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.
- Within 1,000 feet of any fresh water well or spring.
- Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978 as amended.
- Within 300 feet of a wetland.
- Within the area overlying a subsurface mine.

- Within an unstable area such as a karst formation.
- Within a 100-year floodplain.

CE reviewed available information to determine the Closure Criteria for the Site. The findings of this evaluation are summarized below.

3.1 Groundwater Evaluation

Review of the New Mexico Office of the State Engineer (NMOSE) records indicated there are no water wells located within 0.5 mile of the Site. The NMOSE records did provide depth to groundwater measurements at one well located approximately one mile north of the Site, at three wells located approximately one mile south of the Site, at one well located approximately one mile west of the Site, and at one well located approximately one mile southeast of the Site. Depth to groundwater in the six wells surrounding the Site ranged from 34 to 85 feet below ground surface (bgs). All wells except one were drilled prior to 1967. One well located approximately one mile south of the Site, was drilled to a depth of 95 feet bgs in 1984. That well was dry and was plugged and abandoned. All wells located approximately one mile from the Site are listed in the table below. Figure 3 provides a ½ mile radius circle around the Site, and no water wells are shown within that radius. Based on the water well data available in NMOSE records, it is estimated that depth to groundwater at the Site is approximately 50 feet bgs.

Nearby Water Wells

Well ID	Location from Release Site	Year Installed	Use	Well Depth and Depth to Water (feet bgs)
L01936	Approx. 1 mile to the north	1953	N/A	164 feet/60 feet
L02000	Approx. 1 mile to the south	1953	N/A	125 feet/85 feet
L02023	Approx. 1 mile to the south	1958	N/A	96 feet/35 feet
L09539	Approx. 1 mile to the south	1984	DRY	95 feet
L06148	Approx. 1 mile to the west	1967	N/A	101 feet/81 feet
L14223 POD 1	Approx. 1 mile to the southeast	1921	N/A	47 feet/34 feet

3.2 Surface Features and Other Development

CE reviewed recent aerial photographs, topographic maps, the NMOSE Point of Discharge (POD) GIS website, and information available from the Lea County, New Mexico Central Appraisal District website. As shown on Figure 3, the Site is **not** located:

- Within 300 feet of any continuously flowing watercourse or any other significant watercourse.
  - No continuously flowing watercourses (rivers, streams, arroyos, etc.) are apparent within 300 feet of the Site in the topographic map (Figure 3). Figure 3 does show a stream feature located approximately 400 feet to the north of the Site; however, this feature is ephemeral and not a continuously flowing watercourse.
- Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary highwater mark).
  - The topographic map (Figure 3) indicates there is not a lakebed, sinkhole or playa lake located within 200 feet of the Site.
- Within 300 feet from an occupied permanent residence, school, hospital, institution or church.

- The Site Location Map (Figure 1) and information available from the Lea County, New Mexico Central Appraisal District do not show or list any permanent residence, school, hospital, institution or church located within 300 feet of the Site.

- 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.
  - No wells or springs located within 500 feet of the Site appear in any of the NMOSE records reviewed by CE.
- Within 1,000 feet of any fresh water well or spring.
  - No fresh water wells or springs located within 1,000 feet of the Site appear in any of the records reviewed by CE.
- Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978 as amended.
  - Based on the property and other records review by CE, the Site is not located in incorporated municipal boundaries or within a defined municipal fresh water well field.
- Within the area overlying a subsurface mine
  - Based on the property and other records reviewed by CE, the Site is not located within an area overlying a subsurface mine.

3.3 Wetlands, Floodplain, and Karst Geology

A review of the United States Fish and Wildlife Service (USFWS) wetlands map indicated the Site is not located within 300 feet of a wetland. The New Mexico Bureau of Land Management (BLM) karst potential map indicates the Site is located within a "low karst potential" area. Finally, review of the Federal Emergency Management Act (FEMA) floodplain map indicates the release at the Site is located outside of a 100-year floodplain. Figures 4 and 5 depict the FEMA floodplain information and the karst potential data, respectively.

3.4 Closure Criteria Currently Assumed Applicable to the Site

The Closure Criteria applicable to the Site will be based on the estimated depth to groundwater at the Release Site, which dictates the most stringent regulatory guidelines typically associated with groundwater depths of less than fifty (50) feet bgs. A summary of the Closure Criteria is provided in the table below and in Table 1.

NMOCD Closure Criteria

Constituent of Concern		Closure Criteria Based on Depth to Groundwater (mg/kg)		
		≤ 50 feet bgs	51 feet to 100 feet bgs	> 100 feet bgs
Chloride (EPA 300)		600	10,000	20,000
TPH (EPA 8015M)	GRO + DRO + MRO	100	2,500	2,500
	GRO + DRO	NA	1,000	1,000
Total BTEX (EPA 8021 or 8260)		50	50	50
Benzene (EPA 8021 or 8260)		10	10	10

Notes: NA = not applicable
bgs = below ground surface
mg/kg = milligrams per kilogram
GRO = gasoline range organics
DRO = diesel range organics
MRO = motor oil range organics
TPH = total petroleum hydrocarbons
BTEX = benzene, toluene, ethylbenzene, and total xylenes
Green highlighted cells denote applicable Closure Criteria.

4.0 Site Assessment/Characterization Results

As per 19.15.29.11 NMAC, a Site Characterization Report will have the components described in Sections 4.1 through 4.5 of this document.

4.1 Site Map

As required by 19.15.29.11 NMAC, a scaled diagram showing significant Site infrastructure, sample point locations, and known subsurface features such as utilities is provided as Figure 2.

4.2 Depth to Groundwater

As discussed in Section 3.1, the exact depth to groundwater beneath the Site is unknown. During investigation activities, a maximum depth of 7 feet bgs was reached, at which groundwater was not encountered. A review of the NMOSE water well records indicates that groundwater was not present at a depth of 95 feet at the nearest well drilled since 1967 (L09539, located approximately one mile south of the Site.

4.3 Wellhead Protection Area

The 0.5-mile wellhead protection area is shown on Figure 3. No known water wells are located within 0.5 mile of the Site. There were no other water sources, springs, or other sources of fresh water extraction identified within 0.5-mile of the Site.

4.4 Distance to Nearest Significant Watercourse

The horizontal distance to the nearest significant watercourse as defined in Subsection P of 19.15.17.7 NMAC is greater than 0.5-mile from the Site.

4.5 Summary of July 2020 Analytical Results

On July 27, 2020 small holes were excavated at six locations along the release path to collect soil samples. Depths were determined by visual evidence of removal of chloride impacted soil and ranged from three to seven feet bgs.

On July 28, 2020 soil samples were collected from the bottom of each hole (SS-1 through SS-6) and one soil sample (SS-7) was collected from the surface (0 to 6 inches) at the end of the release path.

Soil samples were placed in clean glass sample jars, properly labeled, immediately placed on ice and hand delivered to Eurofins/Xenco Environmental Testing (Eurofins) in Midland, Texas under proper chain-of-custody control. All samples were analyzed for total petroleum hydrocarbons (TPH) by Environmental Protection Agency (EPA) SW-846 Method 8015 Modified, for benzene, toluene, ethylbenzene and

xylenes (collectively referred to as BTEX) by EPA SW-846 Method 8021B, and for chlorides by EPA Method 300.

Table 1 provides a summary of the laboratory results, and sample locations with concentrations that exceeded the Closure Criteria are provided on Figure 2. Photographs of the release area are provided in Appendix B. The laboratory report and chain-of-custody documentation is provided in Appendix C.

Referring to Table 1, concentrations of BTEX were reported below the test method detection limits in all samples. Concentrations of TPH in soil exceeded Closure Criteria at only at the sample point nearest the release point (SS-1) at a depth of seven feet bgs. Chloride concentrations exceeded the Closure Criteria at each sample location (SS-1 through SS-6) except for the sample collected at the end of the release path (SS-7). Soils with TPH and chloride exceedances will be addressed in accordance with the Remediation Workplan discussed in Section 5.0.

4.6 Laboratory Analytical Data Quality Assurance/Quality Control Results

Data reported in Work Order 668541 generated by Eurofins in Midland, Texas, was reviewed to ensure that reported analytical results met data quality objectives. It was determined by quality control data associated with analytical results that reported concentrations of target analytes are defensible and that measurement data reliability is within the expected limits of sampling and analytical error. All analytical results are usable for characterization of soil at the Site. The laboratory analytical results are provided as Appendix C.

5.0 Proposed Remediation Workplan

5.1 Proposed Remedial Activities

Benzene and BTEX concentrations were reported below the test method detection limits in all samples. A TPH concentration above the Closure Criteria was only reported in one sample (SS-1) and chloride concentrations that exceed the Closure Criteria were reported in samples SS-1 through SS-6.

BXP proposes to install one soil boring to a depth of 51 feet bgs to determine an accurate depth to groundwater. Temporary casing will be installed in the boring and the boring will remain open for a period of 72 hours. After the 72-hour time period, a water level indicator will be used to determine if groundwater is present.

If groundwater is not present in the bore hole, the boring will be plugged with bentonite and the Closure Criteria for TPH will be increased to 2,500 mg/kg (for GRO+DRO+MRO) or 1,000 mg/kg (for GRO+DRO) and the chloride Criteria will be increased to 10,000 mg/kg.

If groundwater is present in the bore hole after 72 hours, a groundwater sample will be collected and analyzed for BTEX, TPH and chlorides.

Following a determination of an accurate depth to groundwater; thereby and accurate Closure Criteria, the area will be excavated until confirmation samples collected from the base and sidewalls of the excavation indicate soil exhibiting TPH and chloride concentrations above NMOCD Closure Criteria have been removed. Due to the large footprint of the Release Site, BXP requests a variance from the one soil sample per 200 square foot requirement for confirmation sampling. BXP requests composite confirmation sample collection be performed for each 1,000 square feet of excavation floor and each 200 linear feet of excavation sidewall. As initial BTEX concentrations were below the test method detection limits and TPH was only detected at one sample location, each confirmation sample will be analyzed only for chlorides by EPA

Method 300. Pursuant to 19.15.29.12(D) NMAC, confirmation samples will consist of five-point composite samples, and discrete grab samples will be collected from any wet or discolored areas.

The excavated material will be characterized and transported under manifest to a NMOCD approved disposal facility. Up to 7,500 cubic yards of soil may be excavated and disposed.

Upon receipt of laboratory results that all chloride concentrations are below the Closure Criteria, the excavation will be backfilled to grade with non-impacted similar material. Pursuant to 19.15.29.13 NMAC, the impacted surface areas will be restored to pre-release conditions. Surface grading will be performed to near original conditions and contoured to prevent erosion and ponding, promote stability, and preserve storm water flow patterns.

BXP requests a remediation schedule of 150 days from the date of NMOCD approval of this Remediation Workplan to complete the proposed remediation activities and submit a *Remediation Summary and Closure Report* for NMOCD approval, pending the results of the confirmation samples. The closure report will summarize remedial activities and confirmation sampling results, and will include the final Form C-141.

6.0 Distribution

Copy 1: Mike Bratcher
New Mexico Energy, Minerals, and Natural Resources Department
Oil Conservation Division, District 2
811 S. First Street
Artesia, New Mexico 88210

Copy 2: Merch Merchant
BXP Operating, LLC
1515 Calle Sur, Suite 174
Hobbs, New Mexico 88240

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TABLE

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS
BXP OPERATING, LLC
EAST CAPROCK SWD #5 PRODUCED WATER RELEASE
NMOCD TRACKING NO.: NRM2020531357

Sample ID	Sample Date	Sample Depth (feet bgs)	Soil Status	TPH (GRO)	TPH (DRO)	TPH (MRO)	Total TPH	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	Chloride
				milligrams per kilogram (mg/kg)									
NMOCD Closure Criteria				-	-	-	100	10	-	-	-	50	600
SS-1 (7')	07/28/20	7	In-Situ	<49.9	**126**	<49.9	**126**	<0.00198	>0.00198	>0.00198	>0.00198	>0.00198	**7,770**
SS-2 (3')	07/28/20	3	In-Situ	<50.0	<50.0	<50.0	<50.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	**26,400**
SS-3 (3')	07/28/20	3	In-Situ	<50.0	<50.0	<50.0	<50.0	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	**16,700**
SS-4 (4')	07/28/20	4	In-Situ	<49.9	<49.9	<49.9	<49.9	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	**8,120**
SS-5 (3')	07/28/20	3	In-Situ	<49.9	<49.9	<49.9	<49.9	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	**9,720**
SS-6 (4')	07/28/20	4	In-Situ	<49.8	<49.8	<49.8	<49.8	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	**7,220**
SS-7 (0-6")	07/28/20	0-6"	In-Situ	<50.0	<50.0	<50.0	<50.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	**14.2**

Notes:

1. GRO: Gasoline Range Organics
2. DRO: Diesel Range Organics
3. MRO: Motor Oil Range Organics
4. -: No NMOCD Closure Criteria established.
5. Bold and highlighting indicates the COC was detected above the NMOCD Closure Criteria.
6. < indicates the COC was below the appropriate laboratory method/sample detection limit
7. Yellow highlighting indicates the COC concentration exceeds the NMOCD Closure Criteria

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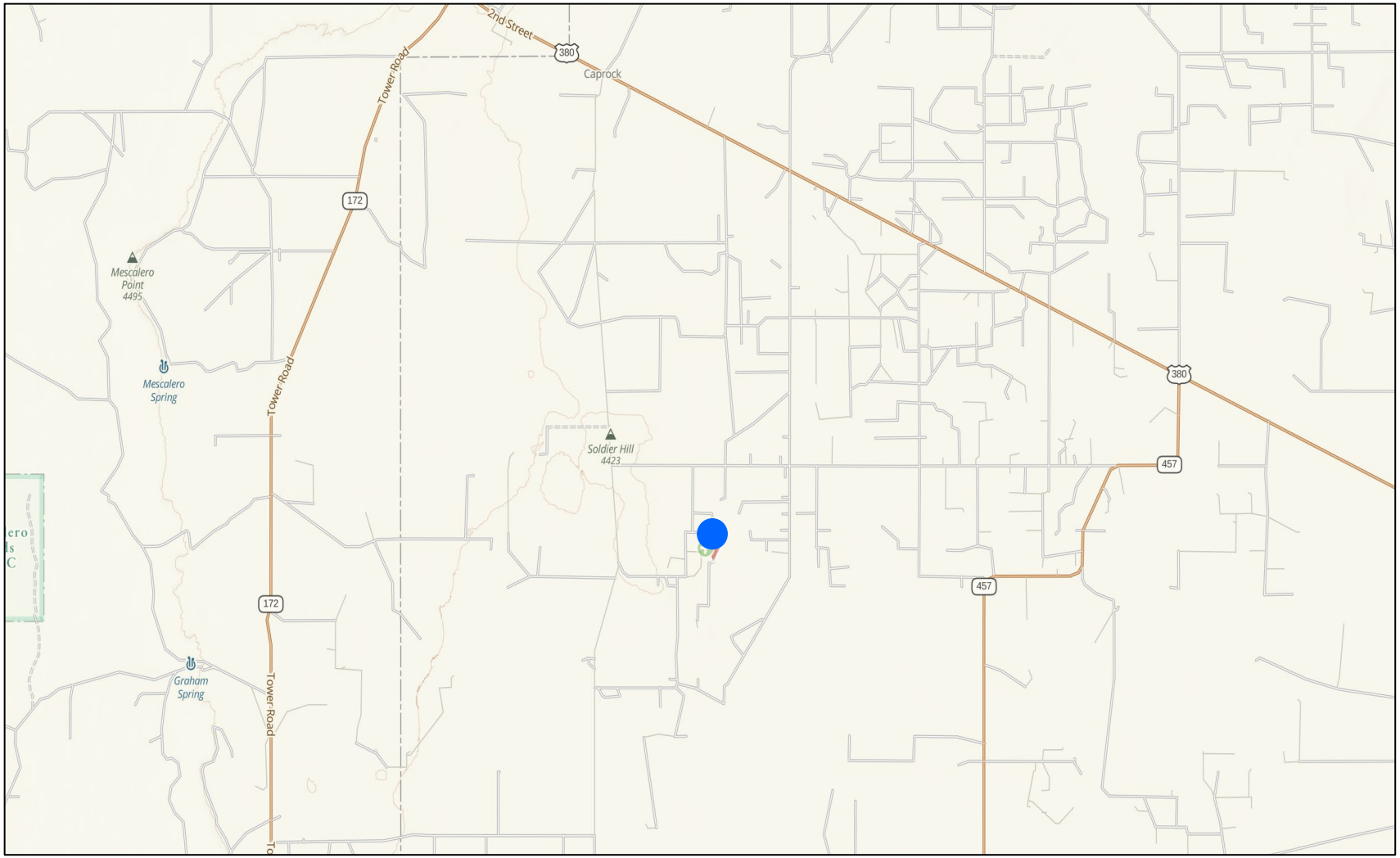
FIGURES



LEGEND:

Site Location

Base Map from GAIA GPS

N W E S

Figure 1
Site Location Map
BXP Operating, LLC
East Caprock SWD #5
Lea County, New Mexico

Drafted by: CC | Checked by: CC	
Draft: September 1, 2020	
GPS:	33.295825° -103.682856°

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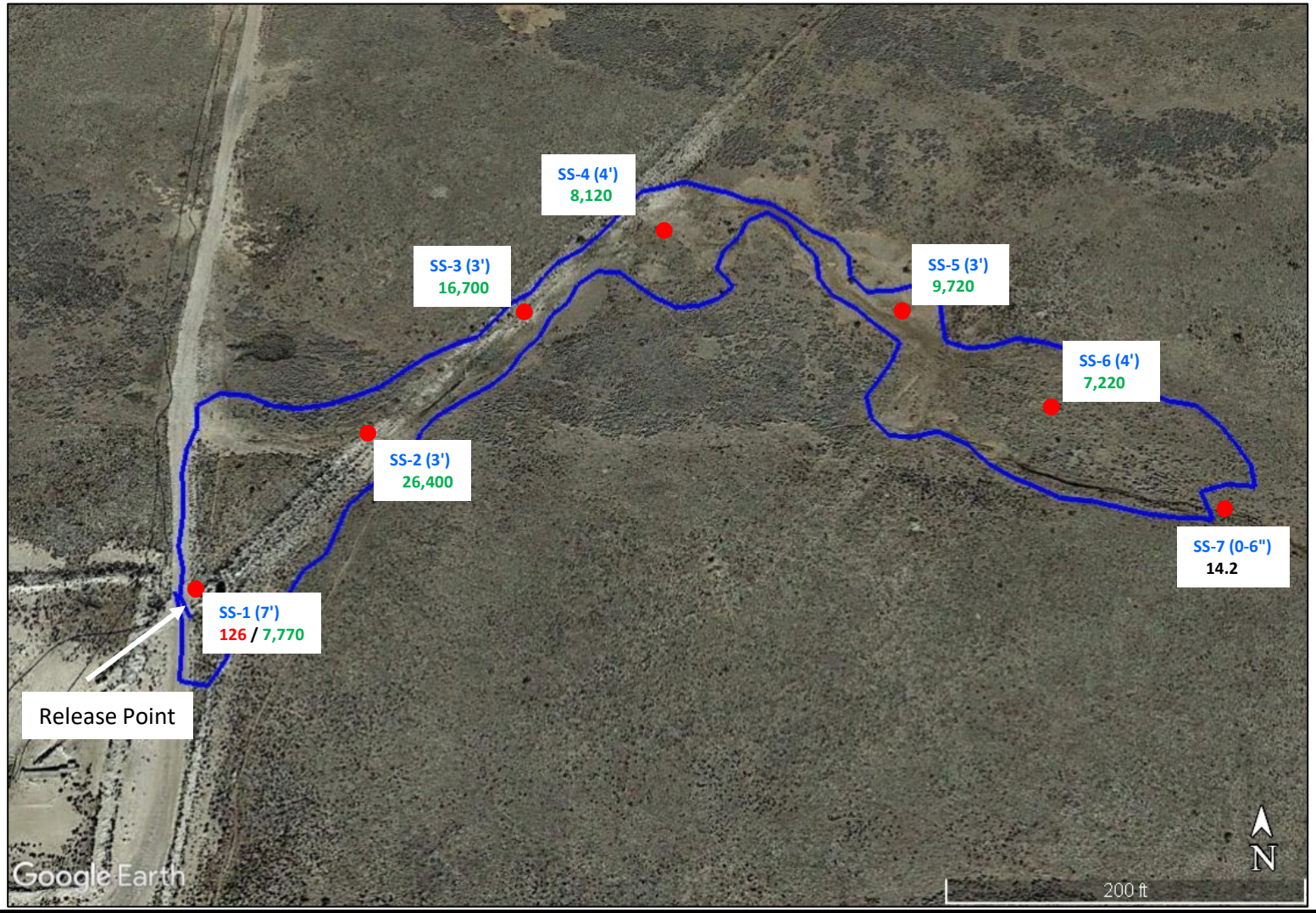


LEGEND:

Release Path

SS-1 (7')
126 / 7,770
Sample Location With Depth (below ground surface) and TPH/Chloride Concentrations (mg/kg) That Exceed Closure Criteria

N
W
E
S

Figure 2
Soil Sample Analtical Results Map
BXP Operating, LLC
East Caprock SWD #5
Lea County, New Mexico

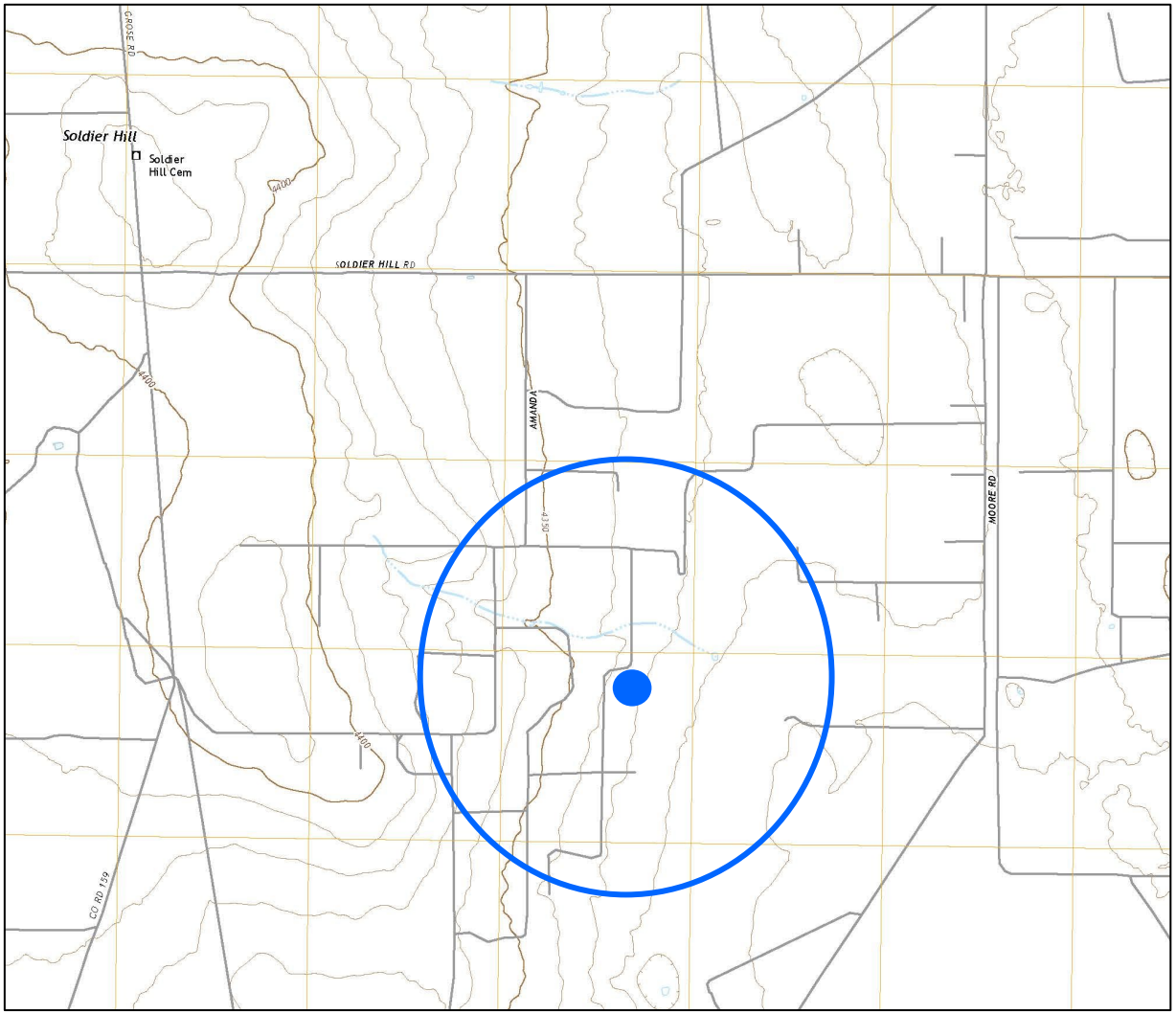
Drafted by: CC | Checked by: CC

Draft: September 1, 2020

GPS: 33.295825° -103.682856°

Base Map from Google Earth

Grain Environmental



LEGEND:

Site Location

1/2 Mile Radius

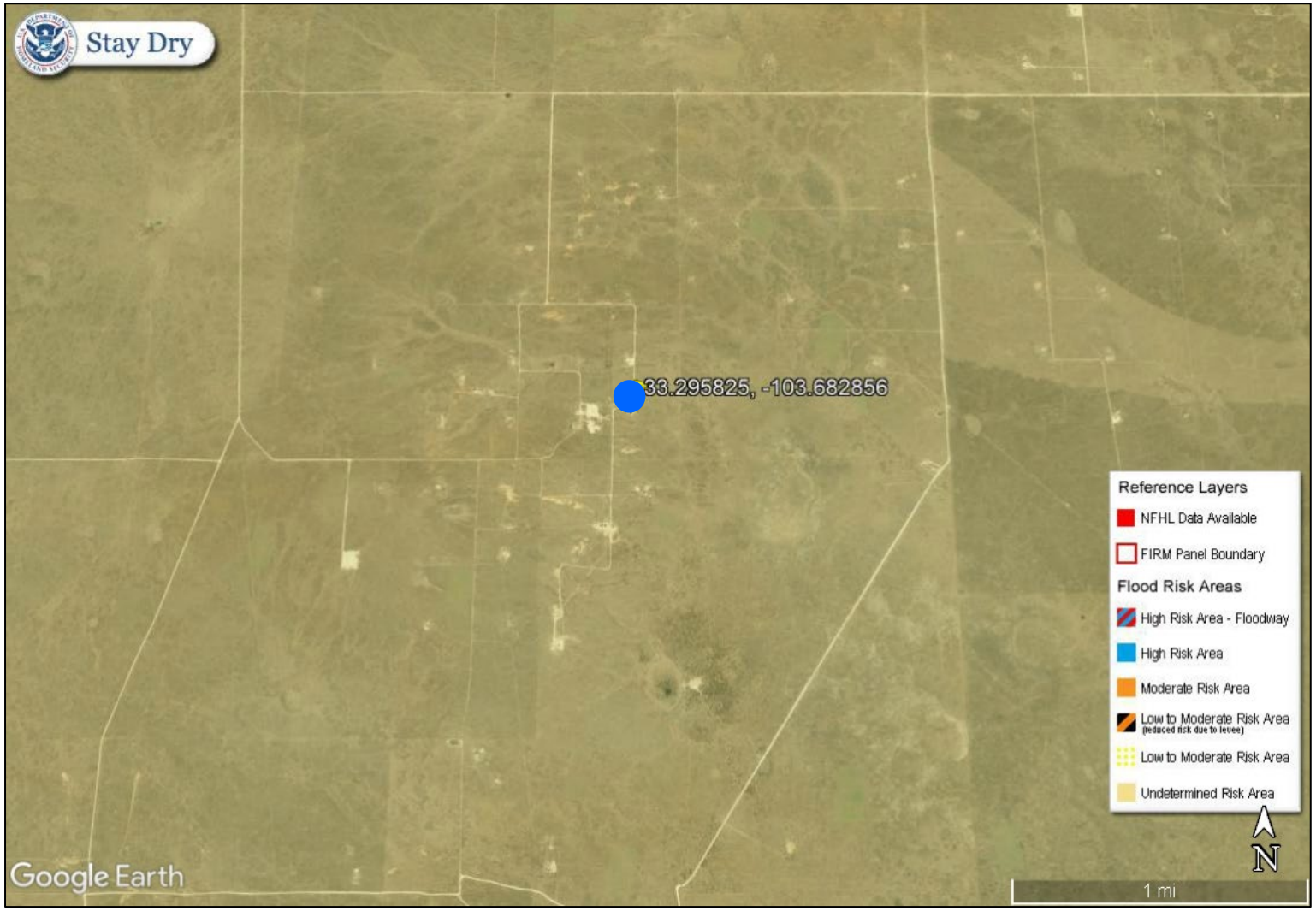
Base Map from USGS 7.5 Minute Topographical Series-Solder Hill, NM (2020)

N W E S

Figure 3
Wellhead Protection Area Map
BXP Operating, LLC
East Caprock SWD #5
Lea County, New Mexico

Drafted by: CC | Checked by: CC	
Draft: September 1, 2020	
GPS:	33.295825° -103.682856°

Grain Environmental



LEGEND:

Site Location

Base Map from Google Earth and FEMA StayDry

N W E S

Figure 4
FEMA Floodplain Map
BXP Operating, LLC
East Caprock SWD #5
Lea County, New Mexico

Drafted by: CC | Checked by: CC	
Draft: September 1, 2020	
GPS:	33.295825° -103.682856°

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LEGEND: Site Location Low Karst Potential Medium Karst Potential High Karst Potential N W E S	**Figure 5** Karst Potential Map BXP Operating, LLC East Caprock SWD #5		Grain Environmental
		Drafted by: CC | Checked by: CC Draft: September 1, 2020 GPS: 33.295825° -103.682856° Base Map from Google Earth and NM BLM	
Base Map from Google Earth and Bureau of Land Management	Lea County, New Mexico		

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Appendix A: Release Notification and Corrective Action Form (NMOCD Form C-141)

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

State of New Mexico
Energy Minerals and Natural Resources Department

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

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

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party BXP Operating, LLC	OGRID 329487
Contact Name M. Y. Merchant	Contact Telephone 575-492-1236
Contact email mymerch@penrocoil.com	Incident # *(assigned by OCD)*
Contact mailing address 1515 Calle Sur, Suite 174 Hobbs, NM 88241	

Location of Release Source

* Location of release

Latitude 33.295825 Longitude -103.682856

(NAD 83 in decimal degrees to 5 decimal places)

* Source of release

Site Name East Caprock SWD #5(Flowline coming to Posey #5)	Site Type Salt Water Disposal
Date Release Discovered 7/13/2020	API# *(if applicable)* 30-025-40335

Unit Letter	Section	Township	Range	County
H	11	12S	32E	LEA

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (*Name: Mr. Pearce*)

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls) 0	Volume Recovered (bbls) 0
☒ Produced Water	Volume Released (bbls) 70	Volume Recovered (bbls) 0
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☒ Yes ☐ No
☐ Condensate	Volume Released (bbls) 0	Volume Recovered (bbls) 0
☐ Natural Gas	Volume Released (Mcf) 0	Volume Recovered (Mcf) 0
☐ Other (describe)	Volume/Weight Released (provide units) 0	Volume/Weight Recovered (provide units) 0

Cause of Release
Bad connection, replaced w/proper connection. Fluid ran downhill in an area approx. 200' long and 8' wide. Ran down rocky current flowline, no accumulation.

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? More than 5bbl release.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Yes, Shane Ferguson found release and notified Gary from OCD through phone 7/13/2020.	

Initial Response

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

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

If all the actions described above have not been undertaken, explain why:
Test for BTex, TPH, & Chlorides w/independent contractor. Plan to dig and remove contaminated dirt to approved disposal. Replace w/clean dirt.

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

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

Printed Name: [redacted] Title: Production Supervisor

Signature: M. Y. Merchant Date: 7/23/2020

email: mymerch@penrocoil.com Telephone: 575-492-1236

OCD Only

Received by: Date:

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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?	_____ (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: ***Each of the following items must be included in the report.***

☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
☒ Field data
☒ Data table of soil contaminant concentration data
☒ Depth to water determination
☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
☐ Boring or excavation logs
☒ Photographs including date and GIS information
☒ Topographic/Aerial maps
☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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

Printed Name: M. Y. Merchant Title: Production Manager

Signature: [signature] Date: 9/25/2020

email: mymerch@pennzoil.com Telephone: (575) 492-1236

OCD Only

Received by: Date:

Form C-141
Page 5

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: ***Each of the following items must be included in the plan.***

- ☒ Detailed description of proposed remediation technique
- ☒ Scaled sitemap with GPS coordinates showing delineation points
- ☒ Estimated volume of material to be remediated
- ☒ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☒ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

- ☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☐ Extents of contamination must be fully delineated.
- ☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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

Printed Name: M. Y. Merchant Title: Production Manager

Signature: [signature] Date: 9/25/2020

email: mymerch@penroc oil.com Telephone: (575) 492-1236

OCD Only

Received by: _____ Date: _____

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: _____ Date: _____

Form C-141
Page 7

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Location of release: 33.295825, -103.682856, from Google Earth 7/20/2020.
By: Dillon Salas

Grain Environmental

Appendix B: Photographic Documentation

APPENDIX B

Photo 1: View to E of release point (7/28/20).

Photo 2: View to E along spill path (7/28/20).

Photo 3: View to E along spill path (7/28/20).

Photo 4: View to E along spill path (7/28/20).

Photographs Taken By:	Page No.	Client:	Site Name & Address:	
Cindy Crain	1 of 1	BXP Operating, LLC	East Caprock SWD #5 Lea County, New Mexico	Crain Environmental

Grain Environmental

Appendix C: Laboratory Analytical Reports

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Certificate of Analysis Summary 668541

Crain Environmental, Odessa, TX

Project Name: East Caprock SWD

Project Id:

Contact: Cindy Crain

Project Location:

Date Received in Lab: Wed 07.29.2020 14:01

Report Date: 08.14.2020 08:14

Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	668541-001		668541-002		668541-003		668541-004		668541-005		668541-006	
	Field Id:	SS-1 (7')		SS-2 (3')		SS-3 (3')		SS-4 (4')		SS-5 (3')		SS-6 (4')	
	Depth:	7- ft		3- ft		3- ft		4- ft		3- ft		4- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	07.28.2020 18:15		07.28.2020 18:25		07.28.2020 18:40		07.28.2020 18:50		07.28.2020 19:00		07.28.2020 19:10	
BTEX by EPA 8021B	***Extracted:***	08.03.2020 08:00		08.03.2020 08:00		08.03.2020 08:00		08.03.2020 08:00		08.03.2020 08:00		08.03.2020 08:00	
	Analyzed:	08.03.2020 12:04		08.03.2020 12:25		08.03.2020 12:45		08.03.2020 13:06		08.03.2020 13:26		08.03.2020 13:47	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00198	0.00198	<0.00200	0.00200	<0.00198	0.00198	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199
Toluene		<0.00198	0.00198	<0.00200	0.00200	<0.00198	0.00198	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199
Ethylbenzene		<0.00198	0.00198	<0.00200	0.00200	<0.00198	0.00198	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199
m,p-Xylenes		<0.00396	0.00396	<0.00401	0.00401	<0.00397	0.00397	<0.00399	0.00399	<0.00399	0.00399	<0.00398	0.00398
o-Xylene		<0.00198	0.00198	<0.00200	0.00200	<0.00198	0.00198	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199
Total Xylenes		<0.00198	0.00198	<0.00200	0.00200	<0.00198	0.00198	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199
Total BTEX		<0.00198	0.00198	<0.00200	0.00200	<0.00198	0.00198	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199
Chloride by EPA 300	***Extracted:***	07.30.2020 14:45		07.30.2020 14:45		07.30.2020 14:45		07.30.2020 14:00		07.30.2020 14:00		07.30.2020 14:00	
	Analyzed:	07.30.2020 23:18		07.30.2020 23:23		07.30.2020 23:28		07.31.2020 11:15		07.31.2020 11:22		07.31.2020 11:47	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		7770	50.0	26400	250	16700	99.4	8120	50.2	9720	248	7220	49.7
TPH By SW8015 Mod	***Extracted:***	07.30.2020 16:00		07.30.2020 16:00		07.30.2020 16:00		07.30.2020 16:00		07.30.2020 16:00		07.30.2020 16:00	
	Analyzed:	07.30.2020 16:37		07.30.2020 17:34		07.30.2020 17:54		07.30.2020 18:13		07.30.2020 18:32		07.30.2020 18:51	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<49.9	49.9	<50.0	50.0	<50.0	50.0	<49.9	49.9	<49.9	49.9	<49.8	49.8
Diesel Range Organics (DRO)		126	49.9	<50.0	50.0	<50.0	50.0	<49.9	49.9	<49.9	49.9	<49.8	49.8
Motor Oil Range Hydrocarbons (MRO)		<49.9	49.9	<50.0	50.0	<50.0	50.0	<49.9	49.9	<49.9	49.9	<49.8	49.8
Total TPH		126	49.9	<50.0	50.0	<50.0	50.0	<49.9	49.9	<49.9	49.9	<49.8	49.8

BRL - Below Reporting Limit

Jessica Kramer

eurofins | Environment Testing Xenco

Certificate of Analysis Summary 668541

Crain Environmental, Odessa, TX

Project Name: East Caprock SWD

Project Id:

Contact: Cindy Crain

Project Location:

Date Received in Lab: Wed 07.29.2020 14:01

Report Date: 08.14.2020 08:14

Project Manager: Jessica Kramer

Analysis Requested							
	Lab Id:	668541-007					
	Field Id:	SS-7 (0-6")					
	Depth:	0-6 In					
	Matrix:	SOIL					
	Sampled:	07.28.2020 19:25					
BTEX by EPA 8021B	***Extracted:***	08.03.2020 14:00					
	Analyzed:	08.04.2020 06:30					
	Units/RL:	mg/kg RL					
Benzene		<0.00199 0.00199					
Toluene		<0.00199 0.00199					
Ethylbenzene		<0.00199 0.00199					
m,p-Xylenes		<0.00398 0.00398					
o-Xylene		<0.00199 0.00199					
Total Xylenes		<0.00199 0.00199					
Total BTEX		<0.00199 0.00199					
Chloride by EPA 300	***Extracted:***	07.30.2020 14:00					
	Analyzed:	07.31.2020 11:28					
	Units/RL:	mg/kg RL					
Chloride		14.2 5.00					
TPH By SW8015 Mod	***Extracted:***	07.30.2020 16:00					
	Analyzed:	07.30.2020 19:10					
	Units/RL:	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0					
Diesel Range Organics (DRO)		<50.0 50.0					
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0					
Total TPH		<50.0 50.0					

BRL - Below Reporting Limit

Jessica Kramer

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

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Analytical Report 668541

for

Crain Environmental

Project Manager: Cindy Crain

East Caprock SWD

08.14.2020

Collected By: Client

1211 W. Florida Ave
Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-36), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-25), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-17)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-22)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-7)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

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08.14.2020

Project Manager: **Cindy Crain**
Crain Environmental
2925 E 17th St.
Odessa, TX 79761

Reference: Eurofins Xenco, LLC Report No(s): **668541**
East Caprock SWD
Project Address:

Cindy Crain:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the Eurofins Xenco, LLC Report Number(s) 668541. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by Eurofins Xenco, LLC. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 668541 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting Eurofins Xenco, LLC to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Jessica Kramer

Jessica Kramer
Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

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Sample Cross Reference 668541

Crain Environmental, Odessa, TX

East Caprock SWD

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS-1 (7')	S	07.28.2020 18:15	7 ft	668541-001
SS-2 (3')	S	07.28.2020 18:25	3 ft	668541-002
SS-3 (3')	S	07.28.2020 18:40	3 ft	668541-003
SS-4 (4')	S	07.28.2020 18:50	4 ft	668541-004
SS-5 (3')	S	07.28.2020 19:00	3 ft	668541-005
SS-6 (4')	S	07.28.2020 19:10	4 ft	668541-006
SS-7 (0-6")	S	07.28.2020 19:25	0 - 6 In	668541-007

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CASE NARRATIVE

Client Name: Crain Environmental

Project Name: East Caprock SWD

Project ID:
Work Order Number(s): *668541*

Report Date: *08.14.2020*
Date Received: *07.29.2020*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3133198 TPH By SW8015 Mod
Surrogate o-Terphenyl recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 668541-002.

Batch: LBA-3133368 BTEX by EPA 8021B
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.
Samples affected are: 668541-001,668541-004,668541-003.

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Certificate of Analytical Results 668541

Crain Environmental, Odessa, TX

East Caprock SWD

Sample Id:	**SS-1 (7')**	Matrix:	Soil	Date Received:	07.29.2020 14:01
Lab Sample Id:	668541-001	Date Collected:	07.28.2020 18:15	Sample Depth:	7 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.30.2020 14:45	Basis:	Wet Weight
Seq Number:	3133121				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**7770**	50.0	mg/kg	07.30.2020 23:18		10

Analytical Method:	TPH By SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.30.2020 16:00	Basis:	Wet Weight
Seq Number:	3133198				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	07.30.2020 16:37	U	1
Diesel Range Organics (DRO)	C10C28DRO	**126**	49.9	mg/kg	07.30.2020 16:37		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	07.30.2020 16:37	U	1
Total TPH	PHC635	**126**	49.9	mg/kg	07.30.2020 16:37		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	121	%	70-130	07.30.2020 16:37	
o-Terphenyl	84-15-1	128	%	70-130	07.30.2020 16:37	

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Certificate of Analytical Results 668541

Crain Environmental, Odessa, TX

East Caprock SWD

Sample Id:	**SS-1 (7')**	Matrix:	Soil	Date Received:	07.29.2020 14:01
Lab Sample Id:	668541-001	Date Collected:	07.28.2020 18:15	Sample Depth:	7 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	08.03.2020 08:00	Basis:	Wet Weight
Seq Number:	3133368				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.03.2020 12:04	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	08.03.2020 12:04	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	08.03.2020 12:04	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	08.03.2020 12:04	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	08.03.2020 12:04	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	08.03.2020 12:04	U	1
Total BTEX		<0.00198	0.00198	mg/kg	08.03.2020 12:04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	137	%	70-130	08.03.2020 12:04	**
1,4-Difluorobenzene	540-36-3	111	%	70-130	08.03.2020 12:04	

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Certificate of Analytical Results 668541

Crain Environmental, Odessa, TX

East Caprock SWD

Sample Id:	**SS-2 (3')**	Matrix:	Soil	Date Received:	07.29.2020 14:01
Lab Sample Id:	668541-002	Date Collected:	07.28.2020 18:25	Sample Depth:	3 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.30.2020 14:45	Basis:	Wet Weight
Seq Number:	3133121				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**26400**	250	mg/kg	07.30.2020 23:23		50

Analytical Method:	TPH By SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.30.2020 16:00	Basis:	Wet Weight
Seq Number:	3133198				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	07.30.2020 17:34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	07.30.2020 17:34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	07.30.2020 17:34	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	07.30.2020 17:34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	125	%	70-130	07.30.2020 17:34	
o-Terphenyl	84-15-1	131	%	70-130	07.30.2020 17:34	**

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Certificate of Analytical Results 668541

Crain Environmental, Odessa, TX

East Caprock SWD

Sample Id:	**SS-2 (3')**	Matrix:	Soil	Date Received:	07.29.2020 14:01
Lab Sample Id:	668541-002	Date Collected:	07.28.2020 18:25	Sample Depth:	3 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	08.03.2020 08:00	Basis:	Wet Weight
Seq Number:	3133368				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.03.2020 12:25	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.03.2020 12:25	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.03.2020 12:25	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	08.03.2020 12:25	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.03.2020 12:25	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.03.2020 12:25	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.03.2020 12:25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	111	%	70-130	08.03.2020 12:25	
4-Bromofluorobenzene	460-00-4	125	%	70-130	08.03.2020 12:25	

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Certificate of Analytical Results 668541

Crain Environmental, Odessa, TX

East Caprock SWD

Sample Id:	**SS-3 (3')**	Matrix:	Soil	Date Received:	07.29.2020 14:01
Lab Sample Id:	668541-003	Date Collected:	07.28.2020 18:40	Sample Depth:	3 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.30.2020 14:45	Basis:	Wet Weight
Seq Number:	3133121				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**16700**	99.4	mg/kg	07.30.2020 23:28		20

Analytical Method:	TPH By SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.30.2020 16:00	Basis:	Wet Weight
Seq Number:	3133198				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	07.30.2020 17:54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	07.30.2020 17:54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	07.30.2020 17:54	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	07.30.2020 17:54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	120	%	70-130	07.30.2020 17:54	
o-Terphenyl	84-15-1	126	%	70-130	07.30.2020 17:54	

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Certificate of Analytical Results 668541

Crain Environmental, Odessa, TX

East Caprock SWD

Sample Id:	**SS-3 (3')**	Matrix:	Soil	Date Received:	07.29.2020 14:01
Lab Sample Id:	668541-003	Date Collected:	07.28.2020 18:40	Sample Depth:	3 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	08.03.2020 08:00	Basis:	Wet Weight
Seq Number:	3133368				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.03.2020 12:45	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	08.03.2020 12:45	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	08.03.2020 12:45	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	08.03.2020 12:45	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	08.03.2020 12:45	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	08.03.2020 12:45	U	1
Total BTEX		<0.00198	0.00198	mg/kg	08.03.2020 12:45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	135	%	70-130	08.03.2020 12:45	**
1,4-Difluorobenzene	540-36-3	111	%	70-130	08.03.2020 12:45	

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Certificate of Analytical Results 668541

Crain Environmental, Odessa, TX

East Caprock SWD

Sample Id:	**SS-4 (4')**	Matrix:	Soil	Date Received:	07.29.2020 14:01
Lab Sample Id:	668541-004	Date Collected:	07.28.2020 18:50	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.30.2020 14:00	Basis:	Wet Weight
Seq Number:	3133195				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**8120**	50.2	mg/kg	07.31.2020 11:15		10

Analytical Method:	TPH By SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.30.2020 16:00	Basis:	Wet Weight
Seq Number:	3133198				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	07.30.2020 18:13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	07.30.2020 18:13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	07.30.2020 18:13	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	07.30.2020 18:13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-130	07.30.2020 18:13	
o-Terphenyl	84-15-1	121	%	70-130	07.30.2020 18:13	

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Certificate of Analytical Results 668541

Crain Environmental, Odessa, TX

East Caprock SWD

Sample Id:	**SS-4 (4')**	Matrix:	Soil	Date Received:	07.29.2020 14:01
Lab Sample Id:	668541-004	Date Collected:	07.28.2020 18:50	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	08.03.2020 08:00	Basis:	Wet Weight
Seq Number:	3133368				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.03.2020 13:06	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.03.2020 13:06	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.03.2020 13:06	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.03.2020 13:06	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.03.2020 13:06	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.03.2020 13:06	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.03.2020 13:06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	133	%	70-130	08.03.2020 13:06	**
1,4-Difluorobenzene	540-36-3	109	%	70-130	08.03.2020 13:06	

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Crain Environmental, Odessa, TX

East Caprock SWD

Sample Id:	**SS-5 (3')**	Matrix:	Soil	Date Received:	07.29.2020 14:01
Lab Sample Id:	668541-005	Date Collected:	07.28.2020 19:00	Sample Depth:	3 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.30.2020 14:00	Basis:	Wet Weight
Seq Number:	3133195				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**9720**	248	mg/kg	07.31.2020 11:22		50

Analytical Method:	TPH By SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.30.2020 16:00	Basis:	Wet Weight
Seq Number:	3133198				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	07.30.2020 18:32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	07.30.2020 18:32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	07.30.2020 18:32	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	07.30.2020 18:32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-130	07.30.2020 18:32	
o-Terphenyl	84-15-1	122	%	70-130	07.30.2020 18:32	

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Crain Environmental, Odessa, TX

East Caprock SWD

Sample Id:	**SS-5 (3')**	Matrix:	Soil	Date Received:	07.29.2020 14:01
Lab Sample Id:	668541-005	Date Collected:	07.28.2020 19:00	Sample Depth:	3 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	08.03.2020 08:00	Basis:	Wet Weight
Seq Number:	3133368				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.03.2020 13:26	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.03.2020 13:26	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.03.2020 13:26	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.03.2020 13:26	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.03.2020 13:26	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.03.2020 13:26	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.03.2020 13:26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	111	%	70-130	08.03.2020 13:26	
4-Bromofluorobenzene	460-00-4	129	%	70-130	08.03.2020 13:26	

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Certificate of Analytical Results 668541

Crain Environmental, Odessa, TX

East Caprock SWD

Sample Id:	**SS-6 (4')**	Matrix:	Soil	Date Received:	07.29.2020 14:01
Lab Sample Id:	668541-006	Date Collected:	07.28.2020 19:10	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.30.2020 14:00	Basis:	Wet Weight
Seq Number:	3133195				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**7220**	49.7	mg/kg	07.31.2020 11:47		10

Analytical Method:	TPH By SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.30.2020 16:00	Basis:	Wet Weight
Seq Number:	3133198				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	07.30.2020 18:51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	07.30.2020 18:51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	07.30.2020 18:51	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	07.30.2020 18:51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-130	07.30.2020 18:51	
o-Terphenyl	84-15-1	120	%	70-130	07.30.2020 18:51	

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Crain Environmental, Odessa, TX

East Caprock SWD

Sample Id:	**SS-6 (4')**	Matrix:	Soil	Date Received:	07.29.2020 14:01
Lab Sample Id:	668541-006	Date Collected:	07.28.2020 19:10	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	08.03.2020 08:00	Basis:	Wet Weight
Seq Number:	3133368				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.03.2020 13:47	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.03.2020 13:47	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.03.2020 13:47	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.03.2020 13:47	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.03.2020 13:47	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.03.2020 13:47	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.03.2020 13:47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	110	%	70-130	08.03.2020 13:47	
4-Bromofluorobenzene	460-00-4	127	%	70-130	08.03.2020 13:47	

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Crain Environmental, Odessa, TX

East Caprock SWD

Sample Id:	**SS-7 (0-6")**	Matrix:	Soil	Date Received:	07.29.2020 14:01
Lab Sample Id:	668541-007	Date Collected:	07.28.2020 19:25	Sample Depth:	0 - 6 In

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.30.2020 14:00	Basis:	Wet Weight
Seq Number:	3133195				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**14.2**	5.00	mg/kg	07.31.2020 11:28		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.30.2020 16:00	Basis:	Wet Weight
Seq Number:	3133198				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	07.30.2020 19:10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	07.30.2020 19:10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	07.30.2020 19:10	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	07.30.2020 19:10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	121	%	70-130	07.30.2020 19:10	
o-Terphenyl	84-15-1	122	%	70-130	07.30.2020 19:10	

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Crain Environmental, Odessa, TX

East Caprock SWD

Sample Id:	**SS-7 (0-6")**	Matrix:	Soil	Date Received:	07.29.2020 14:01
Lab Sample Id:	668541-007	Date Collected:	07.28.2020 19:25	Sample Depth:	0 - 6 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	AMF			% Moisture:	
Analyst:	AMF	Date Prep:	08.03.2020 14:00	Basis:	Wet Weight
Seq Number:	3133452				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.04.2020 06:30	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.04.2020 06:30	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.04.2020 06:30	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.04.2020 06:30	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.04.2020 06:30	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.04.2020 06:30	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.04.2020 06:30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	103	%	70-130	08.04.2020 06:30	
4-Bromofluorobenzene	460-00-4	113	%	70-130	08.04.2020 06:30	

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Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit. **ND** Not Detected.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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QC Summary 668541

Crain Environmental

East Caprock SWD

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3133195 — Matrix: Solid — Date Prep: 07.30.2020
MB Sample Id: 7708400-1-BLK — LCS Sample Id: 7708400-1-BKS — LCSD Sample Id: 7708400-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	269	108	270	108	90-110	0	20	mg/kg	07.31.2020 09:48	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3133121 — Matrix: Solid — Date Prep: 07.30.2020
MB Sample Id: 7708398-1-BLK — LCS Sample Id: 7708398-1-BKS — LCSD Sample Id: 7708398-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	275	110	273	109	90-110	1	20	mg/kg	07.30.2020 20:55	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3133195 — Matrix: Soil — Date Prep: 07.30.2020
Parent Sample Id: 668541-007 — MS Sample Id: 668541-007 S — MSD Sample Id: 668541-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	14.2	250	284	108	283	108	90-110	0	20	mg/kg	07.31.2020 11:34	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3133195 — Matrix: Soil — Date Prep: 07.30.2020
Parent Sample Id: 668612-001 — MS Sample Id: 668612-001 S — MSD Sample Id: 668612-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	392	250	642	100	641	100	90-110	0	20	mg/kg	07.31.2020 10:06	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3133121 — Matrix: Soil — Date Prep: 07.30.2020
Parent Sample Id: 668426-001 — MS Sample Id: 668426-001 S — MSD Sample Id: 668426-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	515	251	763	99	761	98	90-110	0	20	mg/kg	07.30.2020 21:11	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3133121 — Matrix: Soil — Date Prep: 07.30.2020
Parent Sample Id: 668500-004 — MS Sample Id: 668500-004 S — MSD Sample Id: 668500-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	88.2	249	358	108	358	108	90-110	0	20	mg/kg	07.30.2020 22:25	

MS/MSD Percent Recovery — [D] = 100*(C-A) / B — LCS = Laboratory Control Sample — MS = Matrix Spike
Relative Percent Difference — RPD = 200* | (C-E) / (C+E) | — A = Parent Result — B = Spike Added
LCS/LCSD Recovery — [D] = 100 * (C) / [B] — C = MS/LCS Result — D = MSD/LCSD % Rec
Log Difference — Log Diff. = Log(Sample Duplicate) - Log(Original Sample) — E = MSD/LCSD Result

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QC Summary 668541

Crain Environmental

East Caprock SWD

Analytical Method: TPH By SW8015 Mod — Prep Method: SW8015P
Seq Number: 3133198 — Matrix: Solid — Date Prep: 07.30.2020
MB Sample Id: 7708446-1-BLK — LCS Sample Id: 7708446-1-BKS — LCSD Sample Id: 7708446-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	881	88	933	93	70-130	6	20	mg/kg	07.30.2020 15:58	
Diesel Range Organics (DRO)	<50.0	1000	869	87	917	92	70-130	5	20	mg/kg	07.30.2020 15:58	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	125		123		130		70-130	%	07.30.2020 15:58
o-Terphenyl	116		120		130		70-130	%	07.30.2020 15:58

Analytical Method: TPH By SW8015 Mod — Prep Method: SW8015P
Seq Number: 3133198 — Matrix: Solid — Date Prep: 07.30.2020
MB Sample Id: 7708446-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	07.30.2020 15:39	

Analytical Method: TPH By SW8015 Mod — Prep Method: SW8015P
Seq Number: 3133198 — Matrix: Soil — Date Prep: 07.30.2020
Parent Sample Id: 668541-001 — MS Sample Id: 668541-001 S — MSD Sample Id: 668541-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.8	996	984	99	1050	105	70-130	6	20	mg/kg	07.30.2020 16:56	
Diesel Range Organics (DRO)	126	996	1070	95	1160	104	70-130	8	20	mg/kg	07.30.2020 16:56	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	129		108		70-130	%	07.30.2020 16:56
o-Terphenyl	114		120		70-130	%	07.30.2020 16:56

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5035A
Seq Number: 3133368 — Matrix: Solid — Date Prep: 08.03.2020
MB Sample Id: 7708604-1-BLK — LCS Sample Id: 7708604-1-BKS — LCSD Sample Id: 7708604-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0967	97	0.0923	92	70-130	5	35	mg/kg	08.03.2020 09:10	
Toluene	<0.00200	0.100	0.0918	92	0.0875	88	70-130	5	35	mg/kg	08.03.2020 09:10	
Ethylbenzene	<0.00200	0.100	0.0899	90	0.0861	86	70-130	4	35	mg/kg	08.03.2020 09:10	
m,p-Xylenes	<0.00400	0.200	0.189	95	0.181	91	70-130	4	35	mg/kg	08.03.2020 09:10	
o-Xylene	<0.00200	0.100	0.0907	91	0.0872	87	70-130	4	35	mg/kg	08.03.2020 09:10	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	111		101		100		70-130	%	08.03.2020 09:10
4-Bromofluorobenzene	114		104		105		70-130	%	08.03.2020 09:10

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

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QC Summary 668541

Crain Environmental

East Caprock SWD

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5035A
Seq Number: 3133452 — Matrix: Solid — Date Prep: 08.03.2020
MB Sample Id: 7708650-1-BLK — LCS Sample Id: 7708650-1-BKS — LCSD Sample Id: 7708650-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.106	106	0.103	103	70-130	3	35	mg/kg	08.03.2020 23:41	
Toluene	<0.00200	0.100	0.103	103	0.0994	99	70-130	4	35	mg/kg	08.03.2020 23:41	
Ethylbenzene	<0.00200	0.100	0.103	103	0.0992	99	70-130	4	35	mg/kg	08.03.2020 23:41	
m,p-Xylenes	<0.00400	0.200	0.209	105	0.200	100	70-130	4	35	mg/kg	08.03.2020 23:41	
o-Xylene	<0.00200	0.100	0.103	103	0.0990	99	70-130	4	35	mg/kg	08.03.2020 23:41	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		98		97		70-130	%	08.03.2020 23:41
4-Bromofluorobenzene	111		108		106		70-130	%	08.03.2020 23:41

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5035A
Seq Number: 3133368 — Matrix: Soil — Date Prep: 08.03.2020
Parent Sample Id: 668541-001 — MS Sample Id: 668541-001 S — MSD Sample Id: 668541-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.0953	96	0.0891	88	70-130	7	35	mg/kg	08.03.2020 09:51	
Toluene	<0.00199	0.0994	0.0910	92	0.0822	81	70-130	10	35	mg/kg	08.03.2020 09:51	
Ethylbenzene	<0.00199	0.0994	0.0887	89	0.0769	76	70-130	14	35	mg/kg	08.03.2020 09:51	
m,p-Xylenes	<0.00398	0.199	0.187	94	0.163	81	70-130	14	35	mg/kg	08.03.2020 09:51	
o-Xylene	<0.00199	0.0994	0.0899	90	0.0791	78	70-130	13	35	mg/kg	08.03.2020 09:51	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		102		70-130	%	08.03.2020 09:51
4-Bromofluorobenzene	111		116		70-130	%	08.03.2020 09:51

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5035A
Seq Number: 3133452 — Matrix: Soil — Date Prep: 08.03.2020
Parent Sample Id: 668591-001 — MS Sample Id: 668591-001 S — MSD Sample Id: 668591-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0957	96	0.0879	89	70-130	8	35	mg/kg	08.03.2020 09:51	
Toluene	<0.00200	0.0998	0.0914	92	0.0810	82	70-130	12	35	mg/kg	08.03.2020 09:51	
Ethylbenzene	<0.00200	0.0998	0.0890	89	0.0758	76	70-130	16	35	mg/kg	08.03.2020 09:51	
m,p-Xylenes	<0.00399	0.200	0.188	94	0.161	81	70-130	15	35	mg/kg	08.03.2020 09:51	
o-Xylene	<0.00200	0.0998	0.0902	90	0.0780	79	70-130	15	35	mg/kg	08.03.2020 09:51	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		102		70-130	%	08.03.2020 09:51
4-Bromofluorobenzene	111		116		70-130	%	08.03.2020 09:51

MS/MSD Percent Recovery — [D] = 100*(C-A) / B — LCS = Laboratory Control Sample — MS = Matrix Spike
Relative Percent Difference — RPD = 200* | (C-E) / (C+E) | — A = Parent Result — B = Spike Added
LCS/LCSD Recovery — [D] = 100 * (C) / [B] — C = MS/LCS Result — D = MSD/LCSD % Rec
Log Difference — Log Diff. = Log(Sample Duplicate) - Log(Original Sample) — E = MSD/LCSD Result

XENCO LABORATORIES

Chain of Custody

Work Order No: 1106541

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

www.xenco.com Page 1 of 1

Project Manager:	Cindy Crain	Bill to: (if different)	Nicole Cornwell ncornwell@bxpltd.com
Company Name:	Crain Environmental	Company Name:	BXP Operating, LLC
Address:	2925 E. 17th St.	Address:	11757 Katy Frwy, Ste. 475
City, State ZIP:	Odessa, TX 79761	City, State ZIP:	Houston, TX 77079
Phone:	(575) 441-7244	Email:	cindy.crain@gmail.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project: NM
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	East Caprock SWD	Turn Around	
Project Number:	–	Routine	☒
P.O. Number:	–	Rush:	
Sampler's Name:	Cindy Crain	Due Date:	

SAMPLE RECEIPT			
Temperature (°C):	0.8/0.4	Temp Blank:	Yes (No)
Received Intact:	(Yes) No	Wet Ice:	(Yes) No
Cooler Custody Seals:	Yes No (N/A)	Thermometer ID	AF8
Sample Custody Seals:	Yes No (N/A)	Correction Factor:	-0.4
		Total Containers:	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH 8015M	BTEX 8021B	Chlorides
SS-1 (7')	S	7/28/20	1815	7'	1	X	X	X
SS-2 (3')	S	7/28/20	1825	3'	1	X	X	X
SS-3 (3')	S	7/28/20	1840	3'	1	X	X	X
SS-4 (4')	S	7/28/20	1850	4'	1	X	X	X
SS-5 (3')	S	7/28/20	1900	3'	1	X	X	X
SS-6 (4')	S	7/28/20	1910	4'	1	X	X	X
SS-7 (0-6")	S	7/28/20	1925	0-6"	1	X	X	X

Work Order Notes

TAT starts the day recevied by the lab, if received by 4:30pm

Sample Comments

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Cindy Crain		7/29/20	2		
3				4		
5			1401	6		

Revised Date 051418 Rev. 2018.1

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Crain Environmental

Date/ Time Received: 07.29.2020 02.01.00 PM

Work Order #: 668541

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : IR-8

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	.4	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**	
#5 Custody Seals intact on sample bottles?	**N/A**	
#6*Custody Seals Signed and dated?	**N/A**	
#7 *Chain of Custody present?	**Yes**	
#8 Any missing/extra samples?	**No**	
#9 Chain of Custody signed when relinquished/ received?	**Yes**	
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**	
#11 Container label(s) legible and intact?	**Yes**	
#12 Samples in proper container/ bottle?	**Yes**	BTEX was in bulk container
#13 Samples properly preserved?	**Yes**	
#14 Sample container(s) intact?	**Yes**	
#15 Sufficient sample amount for indicated test(s)?	**Yes**	
#16 All samples received within hold time?	**Yes**	
#17 Subcontract of sample(s)?	**N/A**	
#18 Water VOC samples have zero headspace?	**N/A**	

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 07.29.2020
Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 07.29.2020
Jessica Kramer

Form C-141
Page 5

State of New Mexico
Oil Conservation Division

Incident ID	NRM2020531357
District RP	
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: ***Each of the following items must be included in the plan.***

- ☒ Detailed description of proposed remediation technique
- ☒ Scaled sitemap with GPS coordinates showing delineation points
- ☒ Estimated volume of material to be remediated
- ☒ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☒ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

- ☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☐ Extents of contamination must be fully delineated.
- ☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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

Printed Name: M. Y. Merchant Title: Production Manager

Signature: [signature] Date: 9/25/2020

email: mymerch@pensoco il.com Telephone: (575)492-1236

OCD Only

Received by: Robert Hamlet Date: 3/3/2021

☐ Approved ☒ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: Robert Hamlet Date: 3/3/2021

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 10353

CONDITIONS OF APPROVAL

Operator:	OGRID:	Action Number:	Action Type:
BXP OPERATING, LLC P.O. Box 7227 Dallas, TX75209	329487	10353	C-141

OCD Reviewer	Condition
rhamlet	Variance is approved for "500 sq/ft" closure samples. Borehole to 51' showing no groundwater and approved Site Assessment/Characterization would allow for vertical delineation to 2,500 mg/kg (for GRO+DRO+MRO) or 1,000 mg/kg (for GRO+DRO) and chlorides to 10,000 mg/kg. Please make sure the release is horizontally delineated to 600 mg/kg for chlorides and 100 mg/kg for TPH on the periphery (edges/sidewalls) of the release area.