TETRA TECH

April 24, 2023

Brittany Hall
Projects Environmental Specialist
New Mexico Energy, Minerals, and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, NM 87505

Re: Release Characterization and Revised Deferral Request
ConocoPhillips
Heritage Concho
Corsair State #002H Tank Battery Release
Unit Letter A, Section 2, Township 19 South, Range 31 East
Eddy County, New Mexico
Incident ID# nAB1821442233

Ms. Hall:

Tetra Tech, Inc. (Tetra Tech) was contacted by ConocoPhillips to assess a Heritage Concho release that occurred at the tank battery located on the Corsair State #002H lease pad (API No. 30-015-38062). The release footprint is located in Public Land Survey System (PLSS) Unit Letter A, Section 2, Township 19 South, Range 31 East, in Eddy County, New Mexico (Site). The approximate release point occurred at coordinates 32.6954956°, -103.8326187°, as shown on Figures 1 and 2.

BACKGROUND

According to the State of New Mexico Oil Conservation Division (NMOCD) C-141 Initial Report, the release occurred on July 26, 2018 when lightning struck the facility. The lightning strike damaged several of the tanks inside of the battery, resulting in the release of approximately 250 barrels (bbls) of produced water and 30 bbls of oil. Vacuum trucks were utilized to recover approximately 220 bbls of produced water and 28 bbls of oil during the initial response. The release occurred inside the berm and on the pad area, as shown on Figure 3. The NMOCD approved the initial C-141 on August 2, 2018 and subsequently assigned the release the Incident ID nAB1821442233. The initial C-141 form is included in Appendix A.

This incident is included in an Agreed Compliance Order-Releases (ACO-R) between COG Operating LLC (Concho) and the NMOCD signed on November 20 and 26, 2018, respectively.

SITE CHARACTERIZATION

A site characterization was performed and no sinkholes, residences, schools, hospitals, institutions, churches, springs, private domestic water wells, playa lakes, stream bodies, wetlands, incorporated municipal boundaries, subsurface mines, or floodplains are located within the distances specified in 19.15.29 New Mexico Administrative Code (NMAC). The Site is in an area of low karst potential. A pipeline right-of-way identified as a New Mexico Office of the State Engineer (NMOSE) stream is located approximately 700 feet southeast of the release Site.

Tetra Tech
901 West Wall St., Suite 100, Midland, TX 79701
Tel 432.682.4559 Fax 432.682.3946 www.tetratech.com

There are no water wells listed in the NMOSE database located within approximately ½ mile (800 meters) of the site. According to data from one (1) water well listed in the NMOSE database within approximately 3.6 miles (5,789 meters) of the Site, the depth to groundwater is 102 feet below ground surface (bgs).

To comply with the NMOCD directive presented in the November 30, 2022 email rejection, a licensed well drilling subcontractor was onsite on March 8, 2023 to drill a groundwater determination borehole (DTW) to 55 feet bgs at the northwestern edge of the Corsair State #002H lease pad, located approximately 250 feet west of the tank battery. The borehole location is indicated on Figure 4. The borehole was temporarily set and screened using 2-inch PVC well materials: 20 feet of blank casing and 35 feet of 0.010" slotted screen. The borehole was left for 72 hours and checked for the presence of groundwater. The borehole was dry upon drilling, and no water was present in the well after 72 hours. The well screen and casing were removed, and the borehole was plugged with 3/8-inch bentonite chips. The site characterization data, boring log, and temporary well diagram are presented in Appendix B.

REGULATORY FRAMEWORK

Based upon the release footprint and in accordance with Subsection E of 19.15.29.12 NMAC, per 19.15.29.11 NMAC, the site characterization data was used to determine recommended remedial action levels (RRALs) for benzene, toluene, ethylbenzene, and xylene (collectively referred to as BTEX), total petroleum hydrocarbons (TPH), and chlorides in soil.

Based on the site characterization and in accordance with Table I of 19.15.29.12 NMAC, the RRALs for the Site are as follows:

Constituent	RRAL
Chloride	10,000 mg/kg
TPH	2,500 mg/kg
BTEX	50 mg/kg

2018 INITIAL SITE ASSESSMENT AND DEFERRAL REQUEST

Concho conducted initial Site assessment activities in August 2018. One (1) sample trench (T-1) to 6 feet bgs and six (6) boreholes to 3 feet bgs were installed in the release extent. Boreholes BH-1 through BH-3 were installed within the tank battery berm, boreholes BH-4 through BH- were installed on the lease pad west of the berm, and sample trench T-1 was installed on the edge of the lease pad east of the berm. Initial assessment sampling locations are shown in Figure 3.

A total of thirty (30) soil samples were collected from the six (6) boreholes and one (1) trench and sent to Xenco Laboratories in Midland, Texas to be analyzed for chloride via EPA Method 300.0, TPH via EPA Method 8015M and BTEX via EPA Method 8261B.

Analytical results from the August 2018 initial assessment activities are summarized in Table 1. Soil analytical results associated with sample locations BH-1 and BH-3 exceeded the RRAL for BTEX (50 mg/kg) in the 0-1 foot bgs interval. The analytical results associated with the 0-1 foot bgs interval at BH-1 also exceeded the RRAL for TPH (2,500 mg/kg).

Concho summarized the 2018 assessment activities in a Closure Report dated November 8, 2018. A copy of the 2018 Closure Report is available in the NMOCD online incident files.

The NMOCD rejected the 2018 Closure Report in an email from Brittany Hall dated November 30, 2022 with the following comments:

- *"The depth to groundwater has not been adequately determined. When nearby wells are used to determine depth to groundwater, the wells should be no further than ½ mile away from the site, and data should be no more than 25 years old, and well construction information should be provided in*

the submission. The responsible party may choose to remediate to the most stringent levels listed in Table 1 of 19.15.29 NMAC in lieu of drilling to determine the depth to groundwater.

- *Horizontal delineation submitted was incomplete and did not meet the requirements of 19.15.29.11 NMAC. The values for determination of horizontal impact are derived by either approved "background" values or Table I Closure Criteria for releases where groundwater is at a depth of 50 feet or less. This is especially important for "on-pad" releases to ensure the release did not extend to the "off-pad"/pasture area. A visual footprint on the surface is not sufficient to assess the horizontal extent of the release. Laboratory data must be provided as evidence of delineation efforts. Any sample exceeding approved "background" values or Table I Closure Criteria for releases where groundwater is at a depth of 50 feet or less requires additional samples for horizontal delineation.*
- *2RP-4889 closed. Please refer to incident #nAB1821442233 in all future communications.*
- *Please submit a complete report through the OCD Permitting website by 3/3/2023."*

A request for an extension to June 3, 2023 was approved by Brittany Hall via email dated February 28, 2023. A copy of the regulatory correspondence is included in Appendix C.

2023 ADDITIONAL SITE ASSESSMENT AND SAMPLING RESULTS

Following receipt of the NMOCD rejection of the 2018 Closure Report, Tetra Tech conducted additional assessment sampling at the Site on behalf of ConocoPhillips in order to determine the depth to groundwater and the Site and complete horizontal delineation of the release. On March 8, 2023 Tetra Tech installed six (6) hand auger borings (AH-23-1 through AH-23-6) along the perimeter of the reported release extent to complete horizontal delineation. The 2023 boring locations are shown on Figure 4. Photographic documentation of the release Site is presented in Appendix D.

A total of six (6) soil samples were collected from the six (6) borings and sent to Cardinal Laboratories in Midland, Texas to be analyzed for chloride via EPA Method 300.0, TPH via EPA Method 8015M, and BTEX via EPA Method 8261B. A copy of the laboratory analytical report and chain-of-custody documentation are included in Appendix E.

Analytical results from the 2023 additional assessment activities are summarized in Table 2. All analytical results were below the applicable Site RRALs for all constituents.

CONCLUSION

All analytical results associated with the horizontal delineation to the east, south, and west of the release area were below applicable Site RRALs and/or reclamation requirements. Horizontal delineation was achieved, per NMOCD request. A depth to groundwater boring installed on the lease pad verified that groundwater is not present at 50 feet bgs or less.

Based on the results of the additional release delineation and characterization, ConocoPhillips respectfully requests deferral of the remaining BTEX and TPH impacts present beneath the operating tank battery facility. Remediation and final reclamation of the well pad shall take place in accordance with 19.15.29.13 NMAC once the site is no longer being used for oil and gas operations. The final C-141 forms are enclosed in Appendix A.

If you have any questions concerning the soil assessment activities for the Site, please call me at (512) 739-7874.

Sincerely,
Tetra Tech, Inc.

Samantha Abbott, P.G.
Project Manager

Christian M. Llull, P.G.
Program Manager

cc:
Mr. Moises H. Cantu Garcia, BU – ConocoPhillips

LIST OF ATTACHMENTS

Figures:

Figure 1 – Overview Map
Figure 2 – Topographic Map
Figure 3 – Approximate Release Extent and Site Assessment (Concho)
Figure 4 – Approximate Release Extent and Additional Assessment (Tetra Tech)

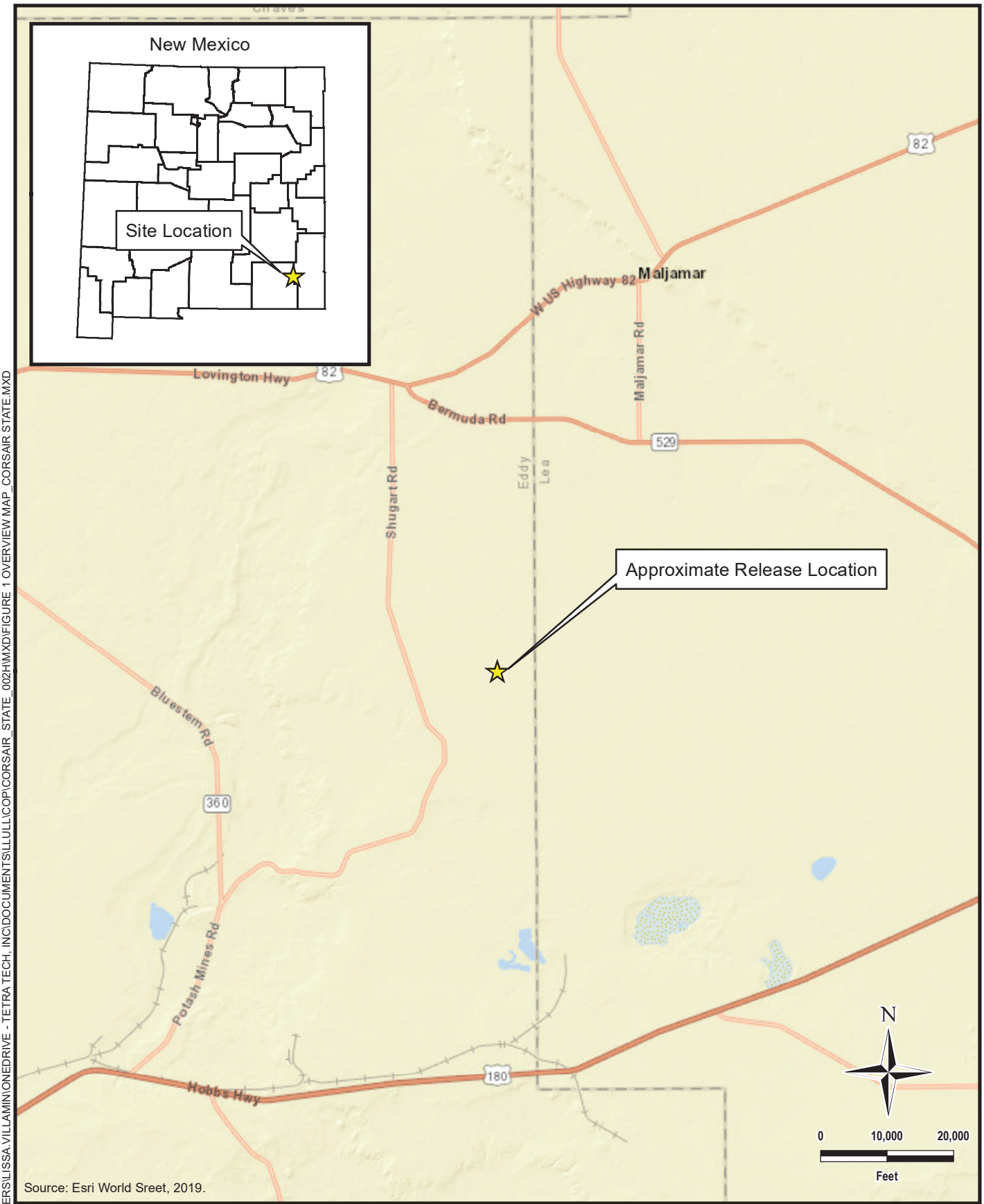
Tables:

Table 1 – Summary of Analytical Results – 2018 Soil Assessment
Table 2 – Summary of Analytical Results – 2023 Additional Soil Assessment

Appendices:

Appendix A – C-141 Forms
Appendix B – Site Characterization Data
Appendix C – NMOCD Correspondence
Appendix D – Photographic Documentation
Appendix E – Laboratory Analytical Data

FIGURES



DOCUMENT PATH: C:\USERS\LISSA.VILLAMIN\ONEDRIVE - TETRA TECH, INC\DOCUMENTS\LLULL\COP\CORSAIR_STATE_002H\MXD\FIGURE 1 OVERVIEW MAP_CORSAIR STATE.MXD

TETRA TECH

www.tetratech.com

901 West Wall Street, Suite 100
Midland, Texas 79701
Phone: (432) 682-4559
Fax: (432) 682-3946

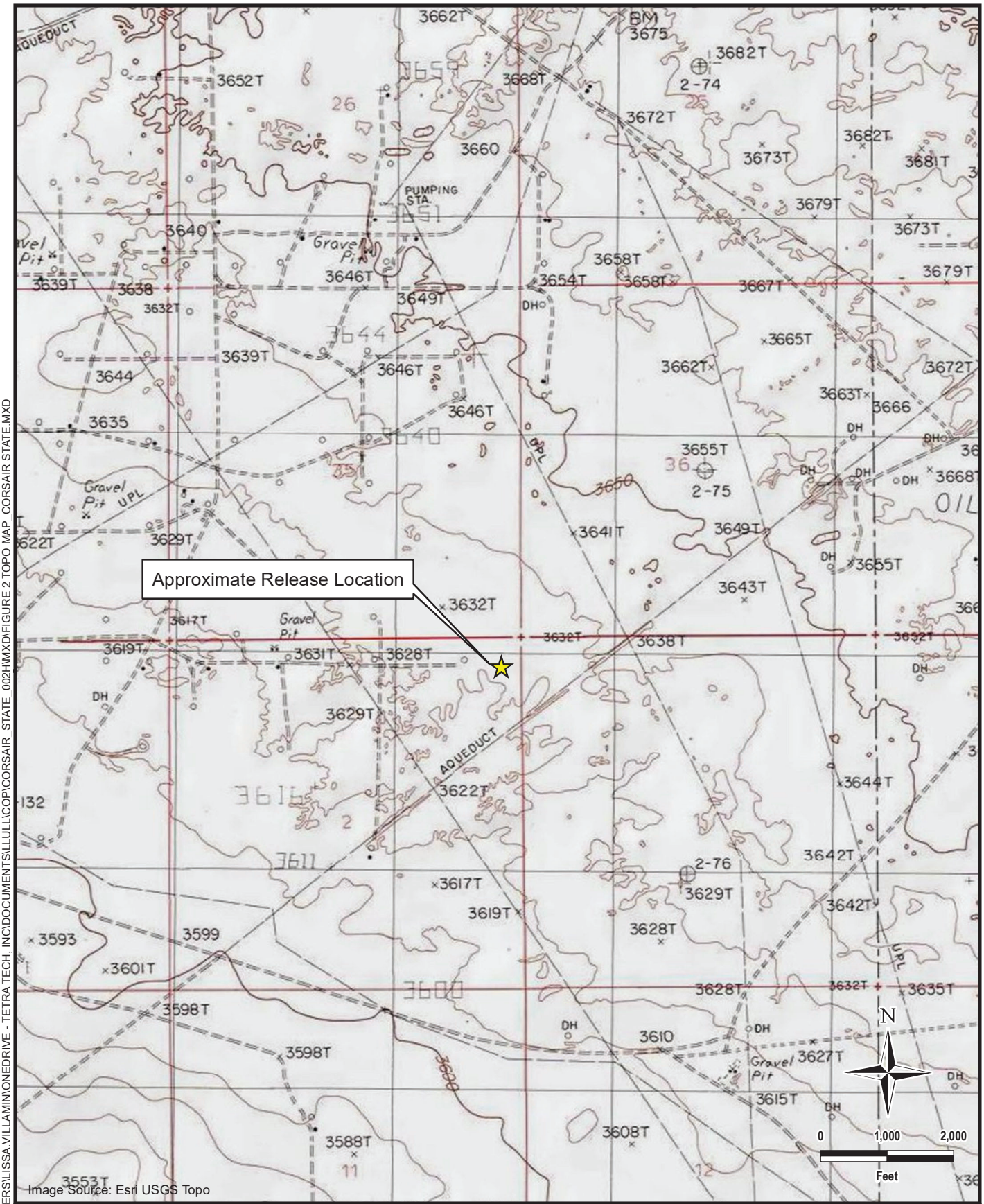
CONOCOPHILLIPS

NAB1821442233
(32.5002861°, -103.5625153°)
EDDY COUNTY, NEW MEXICO

CORSAIR STATE #002H
OVERVIEW MAP

PROJECT NO.:	212C-MD-02990
DATE:	MARCH 22, 2023
DESIGNED BY:	LMV

Figure No.
1



DOCUMENT PATH: C:\USERS\LISSA.VILLAMIN\ONEDRIVE - TETRA TECH, INC\DOCUMENTS\LLULL\COP\CORSAIR_STATE_002H\MXD\FIGURE 2 TOPO MAP_CORSAIR STATE.MXD

TETRA TECH

www.tetratech.com
901 West Wall Street, Suite 100
Midland, Texas 79701
Phone: (432) 682-4559
Fax: (432) 682-3946

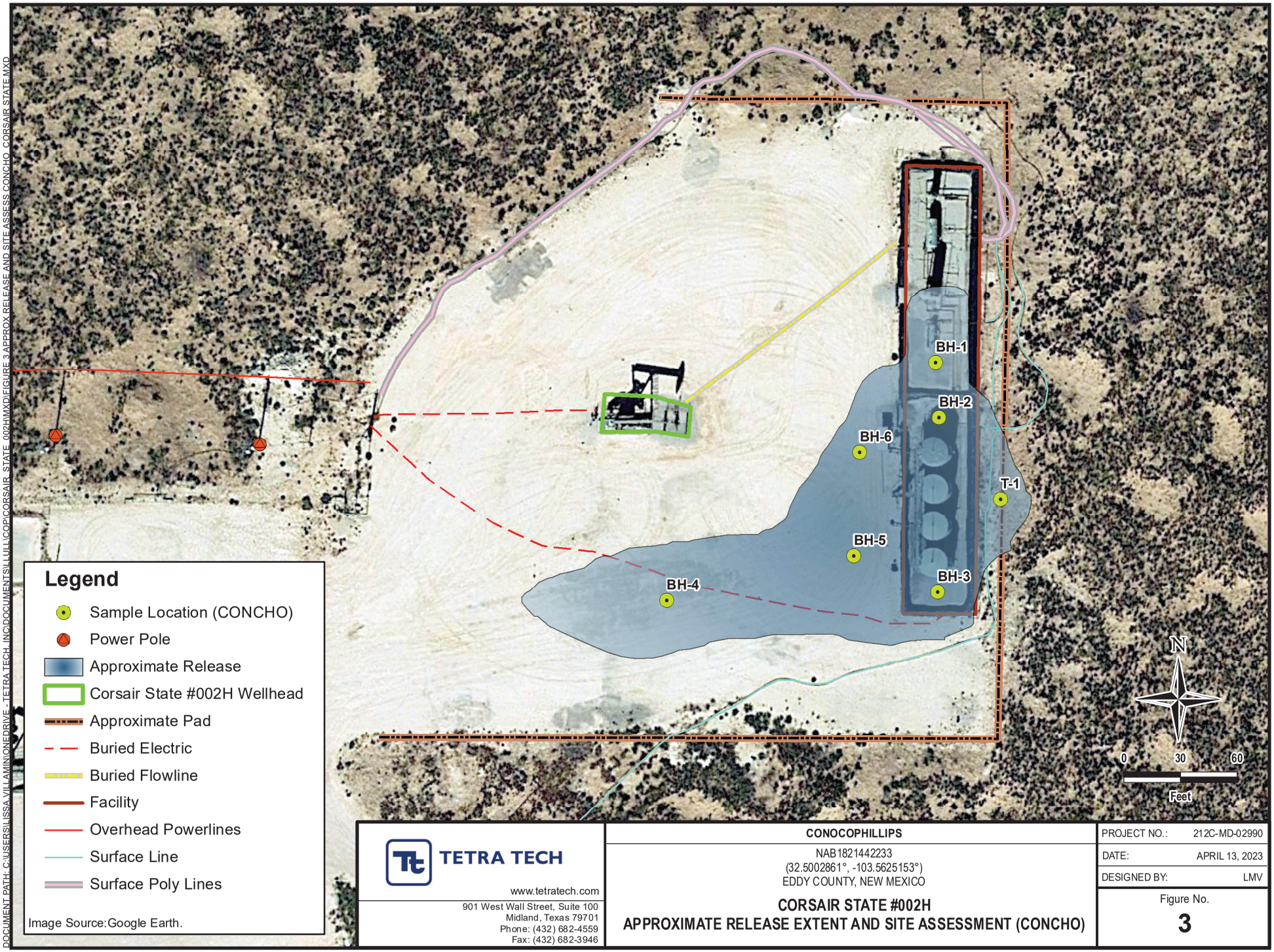
CONOCOPHILLIPS

NAB1821442233
(32.5002861°, -103.5625153°)
EDDY COUNTY, NEW MEXICO

CORSAIR STATE #002H
TOPOGRAPHIC MAP

PROJECT NO.:	212C-MD-02990
DATE:	MARCH 22, 2023
DESIGNED BY:	LMV

Figure No.
2



DOCUMENT PATH: C:\USERS\LISSA.VILLAMINONEDRIVE - TETRA TECH, INC\DOCUMENTS\LULU\COP\CORSAIR_STATE_002H\MXD\FIGURE 3 APPROX RELEASE AND SITE ASSESS CONCHO_CORSAIR STATE.MXD

TETRA TECH

www.tetratech.com

901 West Wall Street, Suite 100
Midland, Texas 79701
Phone: (432) 682-4559
Fax: (432) 682-3946

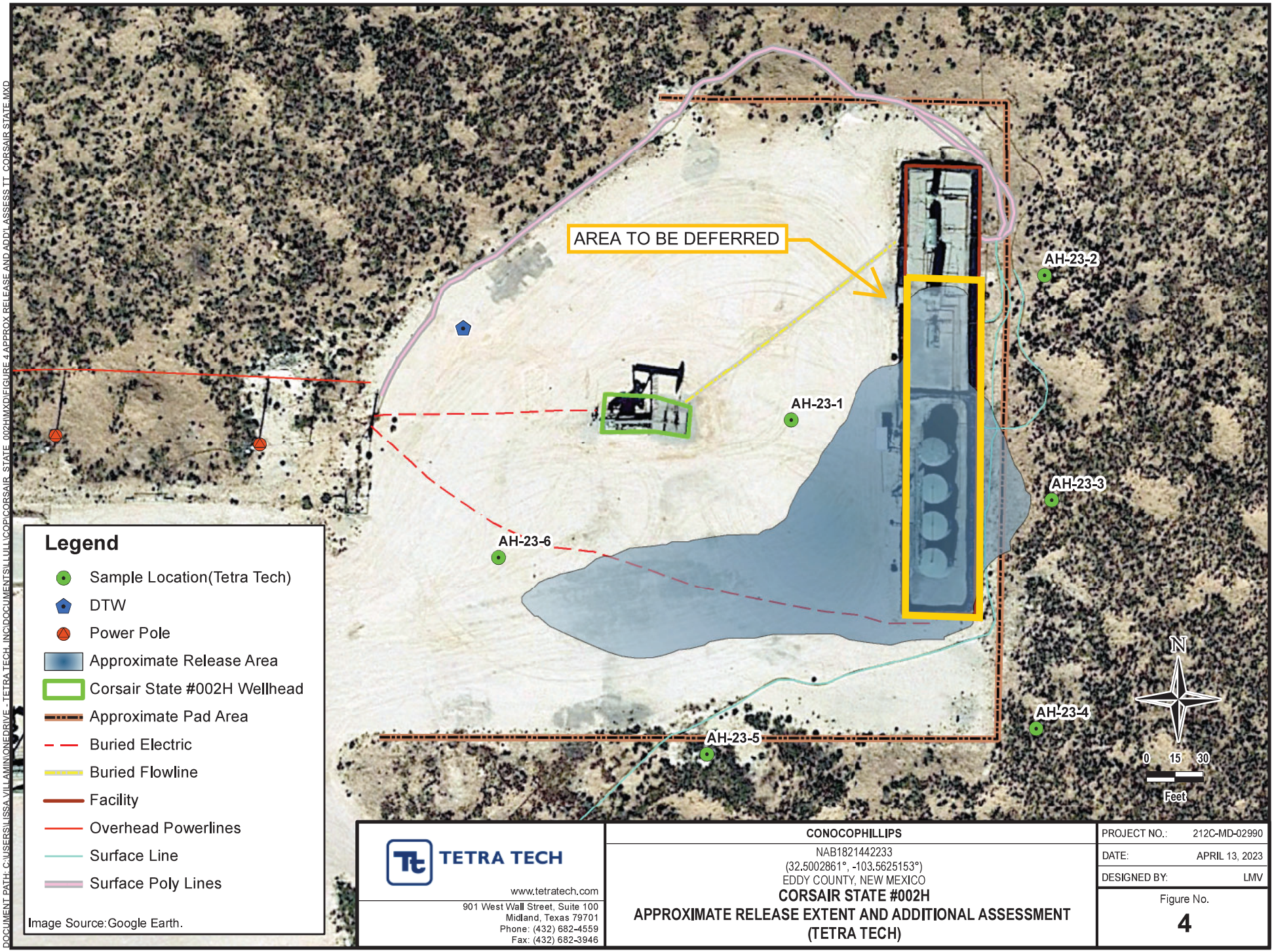
CONOCOPHILLIPS

NAB1821442233
(32.5002861°, -103.5625153°)
EDDY COUNTY, NEW MEXICO

CORSAIR STATE #002H
APPROXIMATE RELEASE EXTENT AND SITE ASSESSMENT (CONCHO)

PROJECT NO.:	212C-MD-02990
DATE:	APRIL 13, 2023
DESIGNED BY:	LMV

Figure No.
3



TETRA TECH
www.tetratech.com
901 West Wall Street, Suite 100
Midland, Texas 79701
Phone: (432) 682-4559
Fax: (432) 682-3946

CONOCOPHILLIPS

NAB1821442233
(32.5002861°, -103.5625153°)
EDDY COUNTY, NEW MEXICO

CORSAIR STATE #002H
APPROXIMATE RELEASE EXTENT AND ADDITIONAL ASSESSMENT (TETRA TECH)

PROJECT NO.:	212C-MD-02990
DATE:	APRIL 13, 2023
DESIGNED BY:	LMV

Figure No.
4

TABLES

TABLE 1
SUMMARY OF ANALYTICAL RESULTS
2018 SOIL ASSESSMENT - nAB1821442233
CONOCOPHILLIPS
CORSAIR STATE #002H
EDDY COUNTY, NM

Sample ID	Sample Date	Sample Depth	Chloride[1]		BTEX[2]														TPH[3]									
					Benzene		Toluene		Ethylbenzene		m,p-Xylenes		o-Xylene		Total Xylenes		Total BTEX		GRO		DRO		MRO		Total TPH	
		ft. bgs	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q
T-1	8/16/2018	0	84.9		<0.00200	U	<0.00200	U	<0.00200	U	<0.00401	U	<0.00200	U	<0.00200	U	<0.00200	U	<15.0	U	379		<15.0	U	379			
		1	NA		<0.00201	U	<0.00201	U	<0.00201	U	<0.00402	U	<0.00201	U	<0.00201	U	<0.00201	U	<15.0	U	<15.0	U	<15.0	U	<15.0	U		
		2	NA		<0.00199	U	<0.00199	U	<0.00199	U	<0.00398	U	<0.00199	U	<0.00199	U	<0.00199	U	<15.0	U	<15.0	U	<15.0	U	<15.0	U		
		3	NA		<0.00200	U	<0.00200	U	<0.00200	U	<0.00399	U	<0.00200	U	<0.00200	U	<0.00200	U	<15.0	U	<15.0	U	<15.0	U	<15.0	U		
		4	NA		<0.00202	U	<0.00202	U	<0.00202	U	<0.00403	U	<0.00202	U	<0.00202	U	<0.00202	U	<15.0	U	<15.0	U	<15.0	U	<15.0	U		
		6	NA		<0.00200	U	<0.00200	U	<0.00200	U	<0.00401	U	<0.00200	U	<0.00200	U	<0.00200	U	<15.0	U	<15.0	U	<15.0	U	<15.0	U		
BH-1	8/16/2018	0	1,130		3.05		161		245		218		88.6		307		**716**		1680		8130		<75.0	U	***9,810***			
		1	63.5		<0.0100	U	<0.0100	U	<0.0100	U	<0.0200	U	<0.0100	U	<0.0100	U	<0.0100	U	<15.0	U	<15.0	U	<15.0	U	<15.0	U		
		2	NA		<0.00200	U	<0.00200	U	<0.00200	U	<0.00399	U	<0.00200	U	<0.00200	U	<0.00200	U	<15.0	U	<15.0	U	<15.0	U	<15.0	U		
		3	NA		<0.00200	U	<0.00200	U	<0.00200	U	<0.00401	U	<0.00200	U	<0.00200	U	<0.00200	U	<14.9	U	<14.9	U	<14.9	U	<14.9	U		
BH-2	8/16/2018	0	6,410		0.0501		0.369		0.212		0.263		0.121		0.384		1.02		129		857		<15.0	U	986			
		1	2,420		<0.00202	U	<0.00202	U	0.00244		<0.00403	U	<0.00202	U	<0.00202	U	<0.00244		<14.9	U	<14.9	U	<14.9	U	<14.9	U		
		2	1,890		<0.00198	U	<0.00198	U	<0.00198	U	<0.00397	U	<0.00198	U	<0.00198	U	<0.00198	U	<15.0	U	<15.0	U	<15.0	U	<15.0	U		
		3	142		<0.00199	U	<0.00199	U	<0.00199	U	<0.00398	U	<0.00199	U	<0.00199	U	<0.00199	U	<15.0	U	<15.0	U	<15.0	U	<15.0	U		
BH-3	8/16/2018	0	882		4.60		58.5		46.2		40.2		16.9		57.1		***166***		108		457		<15.0	U	565			
		1	<4.97	U	<0.0100	U	<0.0100	U	<0.0100	U	<0.0200	U	0.0109		0.0109		0.0109		<15.0	U	<15.0	U	<15.0	U	<15.0	U		
		2	NA		<0.00199	U	0.00545		<0.00199	U	<0.00398	U	<0.00199	U	<0.00199	U	0.00545	U	<15.0	U	<15.0	U	<15.0	U	<15.0	U		
		3	NA		<0.00199	U	0.00257		<0.00199	U	<0.00398	U	<0.00199	U	<0.00199	U	0.00257		<15.0	U	<15.0	U	<15.0	U	<15.0			
BH-4	8/16/2018	0	<4.99	U	<0.00202	U	0.0049		<0.00202	U	<0.00403	U	<0.00202	U	<0.00202	U	0.00490		<15.0	U	73		<15.0	U	73			
		1	NA		0.00490	U	0.00598		<0.00200	U	<0.00401	U	<0.00200	U	<0.00200	U	0.0109		<15.0	U	24.2		<15.0	U	24.2			
		2	NA		<0.00201	U	<0.00201	U	<0.00201	U	<0.00402	U	<0.00201	U	<0.00201	U	<0.00201	U	<15.0	U	<15.0	U	<15.0	U	<15.0	U		
		3	NA		<0.00200	U	<0.00200	U	<0.00200	U	<0.00399	U	<0.00200	U	<0.00200	U	<0.00200	U	<15.0	U	<15.0	U	<15.0	U	<15.0	U		
BH-5	8/16/2018	0	1,270		<0.00201	U	<0.00201	U	<0.00201	U	<0.00402	U	<0.00201	U	<0.00201	U	<0.00201	U	<15.0	U	<15.0	U	<15.0	U	<15.0	U		
		1	<4.98		<0.00199	U	<0.00199	U	<0.00199	U	<0.00398	U	<0.00199		<0.00199	U	<0.00199	U	<15.0	U	<15.0	U	<15.0	U	<15.0	U		
		2	NA		<0.00200	U	<0.00200	U	<0.00200	U	<0.00400	U	<0.00200		<0.00200	U	<0.00200	U	<14.9	U	<14.9	U	<14.9	U	<14.9	U		
		3	NA		<0.00200	U	<0.00200	U	<0.00200	U	<0.00401	U	<0.00200		<0.00200	U	<0.00200	U	<15.0	U	<15.0	U	<15.0	U	<15.0	U		
BH-6	8/16/2018	0	1,400		<0.00199	U	<0.00199	U	<0.00199	U	<0.00398	U	<0.00199	U	<0.00199	U	<0.00199	U	<15.0	U	169		<15.0	U	169			
		1	167		<0.00200	U	<0.00200	U	<0.00200	U	<0.00401	U	<0.00200	U	<0.00200	U	<0.00200	U	<15.0	U	<15.0	U	<15.0	U	<15.0	U		
		2	NA		<0.00200	U	<0.00200	U	<0.00200	U	<0.00399	U	<0.00200	U	<0.00200	U	<0.00200	U	<15.0	U	<15.0	U	<15.0	U	<15.0	U		
		3	NA		<0.00199	U	<0.00199	U	<0.00199	U	<0.00398	U	<0.00199	U	<0.00199	U	<0.00199	U	<15.0	U	<15.0	U	<15.0	U	<15.0	U		

NOTES:

ft. Feet
bgs Below ground surface
mg/kg Milligrams per kilogram
TPH Total Petroleum Hydrocarbons
GRO Gasoline range organics
DRO Diesel range organics
MRO Motor Oil range organics
NS Sample not analyzed for parameter
1 EPA Method 300.0
2 EPA Method 8021B
3 Method SW8015 Mod
NA

Bold and italicized values indicate exceedance of proposed RRALs.

QUALIFIERS: U Analyte was not detected.

TABLE 2
SUMMARY OF ANALYTICAL RESULTS
2023 ADDITIONAL SOIL ASSESSMENT- nAB1821442233
CONOCOPHILLIPS
CORSAIR STATE #002H
EDDY COUNTY, NM

Sample ID	Sample Date	Sample Depth	Field Screening Results	Chloride[1]		BTEX[2]										TPH[3]							
						Benzene		Toluene		Ethylbenzene		Total Xylenes		Total BTEX		GRO		DRO		EXT DRO		Total TPH
			Chloride													C_6 - C_{10}		> C_{10} - C_{28}		> C_{28} - C_{36}		(GRO+DRO+EXT DRO)
		ft. bgs	ppm	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg
AH-23-1	3/8/2023	0-1	360	320		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-
AH-23-2	3/8/2023	0-1	29.5	32.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-
AH-23-3	3/8/2023	0-1	13.7	32.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-
AH-23-4	3/8/2023	0-1	15.8	32.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-
AH-23-5	3/8/2023	0-1	17.5	16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-
AH-23-6	3/8/2023	0-1	125	160		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-

NOTES:

ft. Feet

bgs Below ground surface

mg/kg Milligrams per kilogram

TPH Total Petroleum Hydrocarbons

GRO Gasoline range organics

DRO Diesel range organics

1 Method SM4500Cl-B

2 Method 8021B

3 Method 8015M

Bold and italicized values indicate exceedance of proposed RRALs and Reclamation Requirements.

QUALIFIERS:

APPENDIX A
C-141 Forms

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

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

OCD Rec'd 07/30/18

Form C-141
Revised April 3, 2017

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

nAB1821442233

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: COG Operating, LLC (OGRID #229137)	Contact: Robert McNeill
Address: 600 West Illinois Avenue, Midland, TX 79701	Telephone No. 432-683-7443
Facility Name: **Corsair State #002H**	Facility Type: Tank Battery

Surface Owner: State	Mineral Owner: State	API No. 30-015-38062

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
A	02	19S	31E	480	North	330	East	Eddy

Latitude 32.6954956 **Longitude** -103.8326187 NAD83

NATURE OF RELEASE

Type of Release Oil & Produced Water	Volume of Release 30 bbl. Oil 250 bbl. Produced Water	Volume Recovered 28 bbl. Oil 220 bbl. Produced Water
Source of Release Lightning Strike	Date and Hour of Occurrence July 26, 2018 8:30am	Date and Hour of Discovery July 26, 2018 8:30am
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher – NMOCD Ryan Mann – SLO Maria Pruett – NMOCD	
By Whom? Rebecca Haskell	Date and Hour July 26, 2018 2:16pm	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

The release was caused by a lightning strike.

Describe Area Affected and Cleanup Action Taken.*

The release was in the containment and on location. A vacuum truck was dispatched to remove all freestanding fluids. Concho will have the spill area evaluated for any possible impact from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation activities.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD 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.

Signature: DeAnn Grant	OIL CONSERVATION DIVISION
Printed Name: DeAnn Grant	Approved by Environmental Specialist: Maria Pruett
Title: HSE Administrative Assistant	Approval Date: 8/2/18 Expiration Date: N/A
E-mail Address: agrant@concho.com	Conditions of Approval: See attached Attached ☒ 2RP-4889
Date: July 30, 2018 Phone: (432) 253-4513	

* Attach Additional Sheets If Necessary

Operator/Responsible Party,

The OCD has received the form C-141 you provided on _07/30/18_____ regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number 2RP-4889 has been assigned. **Please refer to this case number in all future correspondence.**

It is the Division's obligation under both the Oil & Gas Act and Water Quality Act to provide for the protection of public health and the environment. Our regulations (19.15.29.11 NMAC) state the following,

> *The responsible person shall complete division-approved corrective action for releases that endanger public health or the environment. The responsible person shall address releases in accordance with a remediation plan submitted to and approved by the division or with an abatement plan submitted in accordance with 19.15.30 NMAC.* [emphasis added]

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District _2__ office in Artesia_ on or before __08/26/18_____. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.**

The goals of a characterization effort are: 1) determination of the lateral and vertical extents along with the magnitude of soil contamination. 2) determine if groundwater or surface waters have been impacted. 3) If groundwater or surface waters have been impacted, what are the extents and magnitude of that impact. 4) The characterization of any other adverse impacts that may have occurred (examples: impacts on vegetation, impacts on wildlife, air quality, loss of use of property, etc.). To meet these goals as quickly as possible, the following items must, at a minimum, be addressed in the release characterization workplan and subsequent reporting:

- Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C_6 thru C_{36}), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.

- Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C_6 thru C_{36}), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.

- Nominal detection limits for field and laboratory analyses must be provided.

- Composite sampling is not generally allowed.

- Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted

for laboratory analysis from each borehole or test pit (highest observed contamination and deepest depth investigated). Copies of the actual laboratory results must be provided including chain of custody documentation.

●Probable depth to shallowest protectable groundwater and lateral distance to nearest surface water. If there is an estimate of groundwater depth, the information used to arrive at that estimate must be provided. If there is a reasonable assumption that the depth to protectable water is 50 feet or less, the responsible party should anticipate the need for at least one groundwater monitoring well to be installed in the area of likely maximum contamination.

● If groundwater contamination is encountered, an additional investigation workplan may be required to determine the extents of that contamination. Groundwater and/or surface water samples, if any, must be analyzed by a competent laboratory for volatile organic hydrocarbons (typically Method 8260 full list), total dissolved solids, pH, major anions and cations including chloride and sulfate, dissolved iron, and dissolved manganese. The investigation workplan must provide the groundwater sampling method(s) and sample handling protocols. To the fullest extent possible, aqueous analyses must be undertaken using nominal method detection limits. As with the soil analyses, copies of the actual laboratory results must be provided including chain of custody documentation.

● Accurately scaled and well-drafted site maps must be provided providing the location of borings, test pits, monitoring wells, potentially impacted areas, and significant surface features including roads and site infrastructure that might limit either the release characterization or remedial efforts. Field sketches may be included in subsequent reporting, but should not be considered stand-alone documentation of the site's layout. Digital photographic documentation of the location and fieldwork is recommended, especially if unusual circumstances are encountered.

Nothing herein should be interpreted to preclude emergency response actions or to imply immediate remediation by removal cannot proceed as warranted. Nonetheless, characterization of impacts and confirmation of the effectiveness *of remedial efforts must still be provided to the OCD before any release incident will be closed.*

Jim Griswold
OCD Environmental Bureau Chief
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
505-476-3465
jim.griswold@state.nm.us

Bustamante, Amalia, EMNRD

From: Pruett, Maria, EMNRD
Sent: Wednesday, August 1, 2018 6:34 AM
To: Bustamante, Amalia, EMNRD
Subject: FW: (C-141 Initial) Corsair State #002H (30-015-38062) 07-26-2018
Attachments: revised C-141 directive of 11-4-16.pdf; OCD Received Signed (C-141 Initial) Corsair State #002H (30-015-38062) 07-26-2018.pdf

Good Morning Amalia,

Please find attached the dated/signed C-141 and directive. Again, if Mike gave this too you already please disregard.

Best Regards,

Maria Pruett

Environmental Specialist
N.M. Oil Conservation Division
District 2
811 S. 1st Street
Artesia, NM 88210
Desk: 575 748-1283 X 101
Cell: 575 840-5963
Fax: 575748-9720

From: DeAnn Grant <agrant@concho.com>
Sent: Monday, July 30, 2018 3:58 PM
To: Pruett, Maria, EMNRD <Maria.Pruett@state.nm.us>; Mann, Ryan <rmann@slo.state.nm.us>
Cc: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Ike Tavarez <itavarez@concho.com>; Robert McNeill <RMcNeill@concho.com>; Sheldon Hitchcock <SLHitchcock@concho.com>; Dakota Neel <DNeel2@concho.com>; Rebecca Haskell <RHaskell@concho.com>; DeAnn Grant <agrant@concho.com>
Subject: (C-141 Initial) Corsair State #002H (30-015-38062) 07-26-2018

Ms. Pruett/Mr. Mann,

Please find the attached Initial C-141 for your consideration. If you have any questions or concerns please contact me.

Thank you,

DeAnn Grant
HSE Administrative Assistant
agrant@concho.com
COG Operating LLC
600 W Illinois Avenue | Midland, TX 79701
Direct: 432-253-4513 | Main: 432.683.7443
CONCHO

State of New Mexico
Oil Conservation Division

Incident ID	nAB1821442233
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?	>50 (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	nAB1821442233
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: Moises H. Cantu Garcia Title: Sr. Environmental Engineer

Signature: Moises H Cantu Garcia Date: 4/24/2023

email: Moises.H.CantuGarcia@conocophillips.com Telephone: 432-688-6090

OCD Only

Received by: Jocelyn Harimon Date: 04/24/2023

State of New Mexico
Oil Conservation Division

Incident ID	nAB1821442233
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: Moises H. Cantu Garcia Title: Sr. Environmental Engineer

Signature: Moises H Cantu Garcia Date: 4/24/2023

email: Moises.H.CantuGarcia@conocophillips.com Telephone: 432-688-6090

OCD Only

Received by: Jocelyn Harimon Date: 04/24/2023

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

Signature: Brittany Hall Date: 4/27/2023

APPENDIX B
Site Characterization Data

OCD Waterbodies Map

2/8/2023, 2:24:12 PM

OSE Streams

1:4,514

0 0.05 0.1 0.19 mi

0 0.07 0.15 0.3 km

Esri, HERE, Garmin, iPC, Maxar, NM OSE

OCD Karst Potential Map

2/8/2023, 2:21:18 PM

Karst Occurrence Potential

Low

1:9,028

0 0.07 0.15 0.3 mi

0 0.15 0.3 0.6 km

BLM, OCD, New Mexico Tech, 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

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

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

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

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	POD Sub-basin Code	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
CP 00849 POD1	CP	LE	3	1	3	35	18S	31E	608012	3618757*	1586	300		
CP 01938 POD1	CP	LE	1	4	1	32	18S	32E	613277	3619332	3987	51		
CP 00829 POD1	CP	LE		2	4	16	19S	31E	606165	3614009*	5290	120		
CP 01554 POD1	CP	LE	2	2	1	22	19S	31E	607166	3613354	5310	400		
CP 01554 POD2	CP	LE	2	2	1	22	19S	31E	607165	3613322	5339	400		
CP 00563 POD1	CP	LE	1	1	2	19	19S	32E	612118	3613376*	5447	300		
CP 00640 POD1	CP	LE		2	2	19	19S	32E	612621	3613280*	5789	260	102	158

Average Depth to Water: **102 feet**

Minimum Depth: **102 feet**

Maximum Depth: **102 feet**

Record Count: 7

UTMNAD83 Radius Search (in meters):

Easting (X): 609472.33 **Northing (Y):** 3618138.17 **Radius:** 5800

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

212C-MD-02990 | TETRA TECH | **LOG OF BORING Corsair State #002H DTW** | Page 1 of 1

Project Name: Corsair State #002H

Borehole Location GPS Coordinates: 32.695595°, -103.832960° | Surface Elevation: 3633 ft

Borehole Number: Corsair State #002H DTW | Borehole Diameter (in.): 8 | Date Started: | Date Finished: 3/8/2023

WATER LEVEL OBSERVATIONS

While Drilling ▽ DRY ft Upon Completion of Drilling ▼ DRY ft

Remarks:

DEPTH (ft)	OPERATION TYPE	SAMPLE	CHLORIDE FIELD SCREENING (ppm) ExStik	VOC FIELD SCREENING (ppm) PID	SAMPLE RECOVERY (%)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT LL	PLASTICITY INDEX PI	MINUS NO. 200 (%)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	REMARKS
0												**-SC-** CLAYEY SAND: Light brown, fine-grained, dry, partially cemented, with gravel-sized caliche	2	
5												**-SP-** SAND: Light brown, loose, dry, fine- to coarse-grained, partially cemented	4	
												-SP-SC- SAND: Light brown, loose, fine- to coarse-grained, dry, with cemented fragments and clayey sand pockets	9	
10												**-SP-SC-** SAND: Pale brown to light brown, loose, fine- to coarse-grained, dry, intermixed with clayey sand, with caliche	14	
15												**-SP-** SAND: Pale brown, fine- to coarse-grained, dry, with rounded pebble-sized caliche	19	
20												**-SP-** SAND: Light reddish brown, fine- to coarse-grained, dry, with caliche fragments and pebble-sized rounded gravel	29	
25														
30												**-CL-** CLAY: Reddish brown, intermixed with coarse-grained sand, dry, with caliche fragments	34	
35												**-SM-** SAND: Reddish brown, loose, uncemented to weakly cemented, fine-grained, dry, trace clay, with caliche fragments	39	
40												**-SP-** SAND: Reddish brown, loose, fine- to coarse-grained, dry, some gravel, trace caliche	44	
45												**-CL-** CLAY: Brown, hard, intermixed with sand and subangular gravel, trace caliche	49	
50												**-SM-** SAND: Brown, fine- to coarse-grained, dry, with clay fragments	54	
55												**-CL-** CLAY: Brown, hard, dry, trace sand	55	

Bottom of borehole at 55.0 feet.

Sampler Types: Split Spoon, Acetate Liner, Shelby, Vane Shear, Bulk Sample, Discrete Sample, Grab Sample, Test Pit

Operation Types: Hand Auger, Mud Rotary, Air Rotary, Continuous Flight Auger, Direct Push, Wash Rotary, Core Barrel

Notes:
Surface elevation is an approximate value obtained from Google Earth data.

Logger: Colton Bickerstaff | Drilling Equipment: Air Rotary | Driller: Scarborough Drilling

APPENDIX C
Regulatory Correspondence

From: OCDOnline@state.nm.us
To: Beauvais, Charles R
Subject: [EXTERNAL]The Oil Conservation Division (OCD) has rejected the application, Application ID: 162745
Date: Wednesday, November 30, 2022 3:44:08 PM

To whom it may concern (c/o Charles Beauvais for COG OPERATING LLC),

The OCD has rejected the submitted *Internal Manual Incident File Supporting Documentation (ENV)* (IM-BNF), for incident ID (n#) nAB1821442233,
for the following reasons:

- **The depth to groundwater has not been adequately determined. When nearby wells are used to determine depth to groundwater, the wells should be no further than ½ mile away from the site, and data should be no more than 25 years old, and well construction information should be provided in the submission. The responsible party may choose to remediate to the most stringent levels listed in Table 1 of 19.15.29 NMAC in lieu of drilling to determine the depth to groundwater.**
- **Horizontal delineation submitted was incomplete and did not meet the requirements of 19.15.29.11 NMAC. The values for determination of horizontal impact are derived by either approved "background" values or Table I Closure Criteria for releases where groundwater is at a depth of 50 feet or less. This is especially important for "on-pad" releases to ensure the release did not extend to the "off-pad"/pasture area. A visual footprint on the surface is not sufficient to assess the horizontal extent of the release. Laboratory data must be provided as evidence of delineation efforts. Any sample exceeding approved "background" values or Table I Closure Criteria for releases where groundwater is at a depth of 50 feet or less requires additional samples for horizontal delineation.**
- **2RP-4889 closed. Please refer to incident #nAB1821442233 in all future communications.**
- **Please submit a complete report through the OCD Permitting website by 3/3/2023.**

The rejected IM-BNF can be found in the OCD Online: Permitting - Action Status, under the Application ID: 162745.
Please review and make the required correction(s) prior to resubmitting.
If you have any questions why this application was rejected or believe it was rejected in error, please contact me prior to submitting an additional IM-BNF.

Thank you,
Brittany Hall
Projects Environmental Specialist - A
505-517-5333
Brittany.Hall@emnrd.nm.gov

New Mexico Energy, Minerals and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, NM 87505

Abbott, Sam

From: Hall, Brittany, EMNRD <Brittany.Hall@emnrd.nm.gov>
Sent: Tuesday, February 28, 2023 9:46 AM
To: Abbott, Sam
Cc: Beauvais, Charles R; Llull, Christian; Chavira, Lisbeth
Subject: RE: [EXTERNAL] Extension Request - Application ID 162745 (Incident ID nAB1821442233)

⚠ **CAUTION:** This email originated from an external sender. Verify the source before opening links or attachments. ⚠

Sam,
Your extension request for **nAB1821442233** is approved. The new due date is June 3, 2023.

Please include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

Thank you,
Brittany Hall • Environmental Specialist
Environmental Bureau Projects Group
EMNRD - Oil Conservation Division
1000 Rio Brazos Road | Aztec, NM 87110
505.517.5333 | Brittany.Hall@emnrd.nm.gov
http://www.emnrd.nm.gov/ocd/

From: Abbott, Sam <Sam.Abbott@tetratech.com>
Sent: Tuesday, February 28, 2023 7:56 AM
To: Hall, Brittany, EMNRD <Brittany.Hall@emnrd.nm.gov>
Cc: Beauvais, Charles R <Charles.R.Beauvais@conocophillips.com>; Llull, Christian <Christian.Llull@tetratech.com>; Chavira, Lisbeth <LISBETH.CHAVIRA@tetratech.com>
Subject: [EXTERNAL] Extension Request - Application ID 162745 (Incident ID nAB1821442233)

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

Ms. Hall:

On behalf of ConocoPhillips, Tetra Tech is requesting a 90-day extension (until June 3, 2023) to complete additional assessment activities and associated reporting for the Corsair State #002H Release site (**nAB1821442233**).

ConocoPhillips recently received a large volume of NMOCD determinations related to unresolved releases from ConocoPhillips' predecessor-in-interest ("COG") via the *Internal Manual Incident File Supporting Documentation (ENV)* (IM-BNF) process.

Given the difficulties inherent with available resource allocation for several projects with similar deadlines within a short period of time, this extension is required to safely complete the additional assessment. ConocoPhillips plans to conduct the additional assessment in the coming month however, and once the sampling data is collected, tabulated, and evaluated, a revised report will be submitted to the OCD.

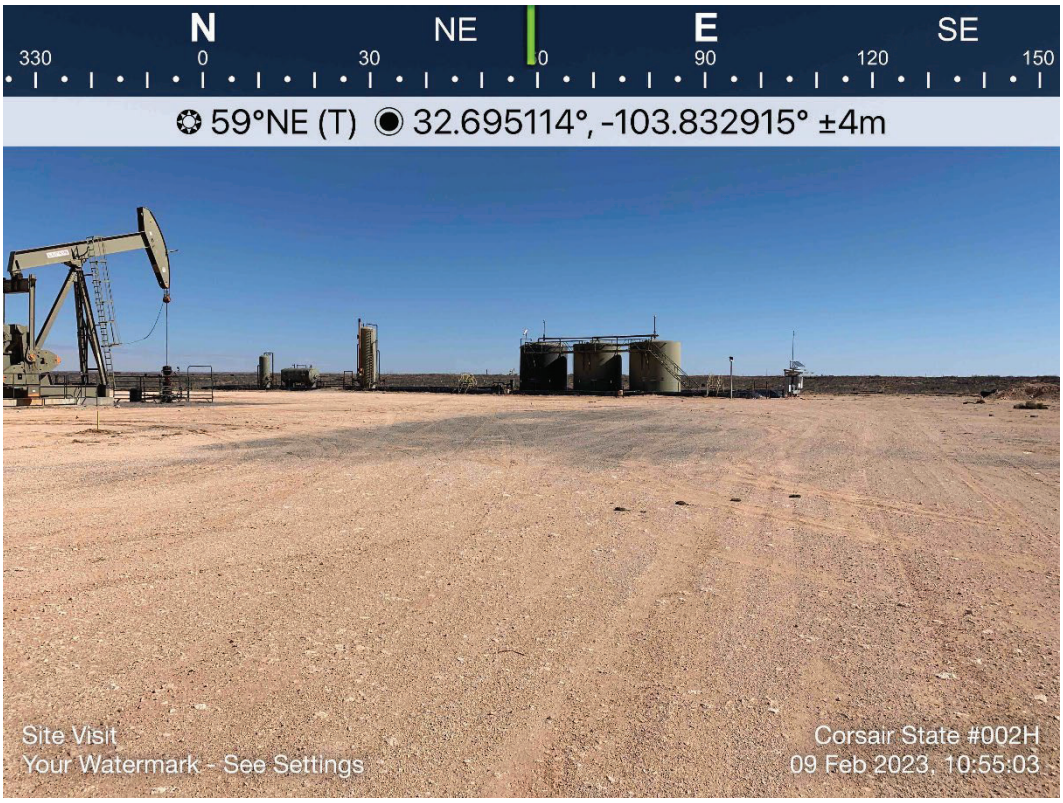
Please let me know if you have any questions or concerns.

Sam

Samantha Abbott, PG | Project Manager
Direct Mobile **+1 (512) 739-7874** | Business **+1 (512) 338-1667** | Sam.Abbott@tetratech.com

Tetra Tech, Inc. | *Leading with Science*® | OGA
8911 N Capital of Texas Hwy #2310 | Austin, TX 78759 | tetratech.com

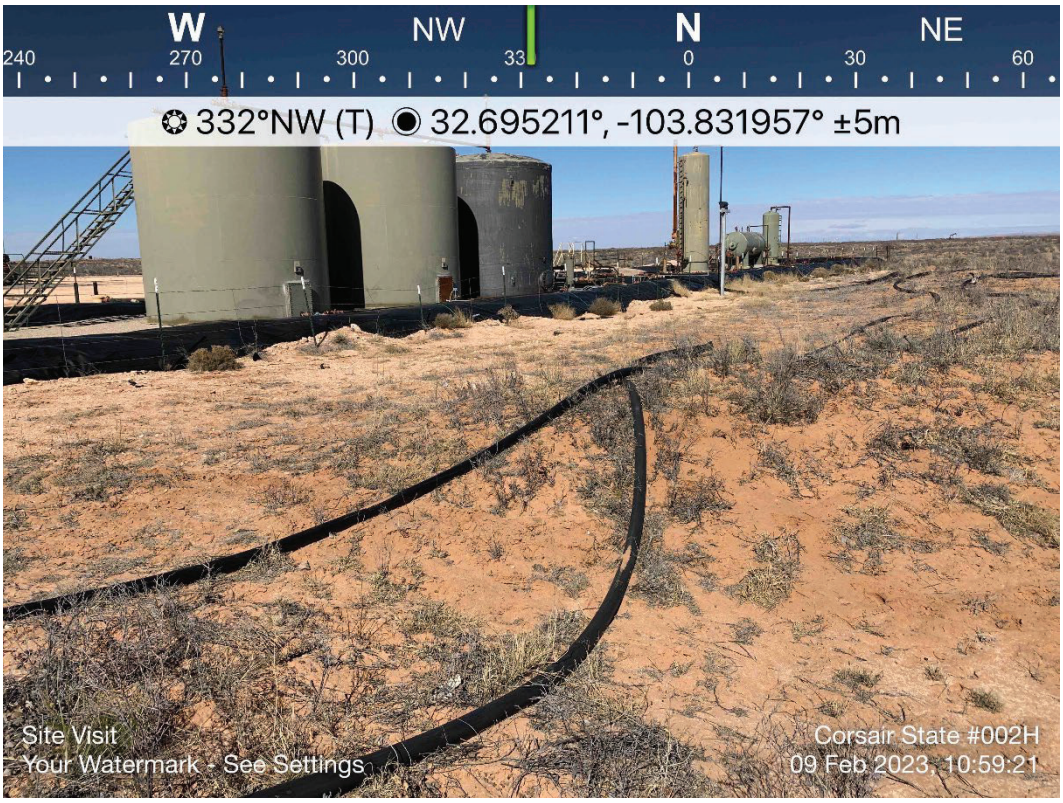
APPENDIX D
Photographic Documentation



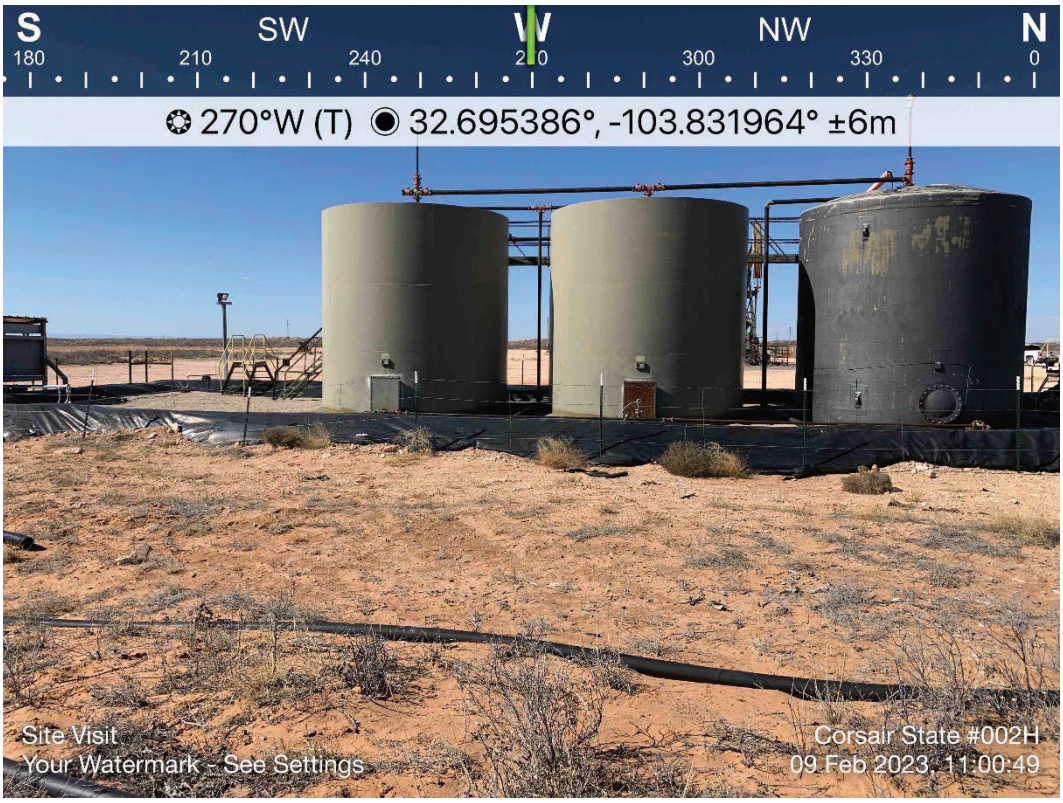
TETRA TECH, INC. PROJECT NO. 212C-MD-02990	DESCRIPTION	View northeast/east of Site pad conditions. Staining shown.	1
	SITE NAME	Corsair State #002H	2/9/2023

TETRA TECH, INC. PROJECT NO. 212C-MD-02990	DESCRIPTION	View northeast of stained Site pad area adjacent to tank batteries.	2
	SITE NAME	Corsair State #002H	2/9/2023

TETRA TECH, INC. PROJECT NO. 212C-MD-02990	DESCRIPTION	View north/northwest of stained Site pad area adjacent to tank batteries.	3
	SITE NAME	Corsair State #002H	2/9/2023



TETRA TECH, INC. PROJECT NO. 212C-MD-02990	DESCRIPTION	View north of pastureland on east perimeter of Site pad. Surface polylines shown.	4
	SITE NAME	Corsair State #002H	2/9/2023



TETRA TECH, INC. PROJECT NO. 212C-MD-02990	DESCRIPTION	View south/southwest of pastureland. Surface polylines shown.	5
	SITE NAME	Corsair State #002H	2/9/2023

TETRA TECH, INC. PROJECT NO. 212C-MD-02990	DESCRIPTION	View north/northeast of tank battery. Staining visible in gravel within liner.	6
	SITE NAME	Corsair State #002H	2/9/2023

TETRA TECH, INC. PROJECT NO. 212C-MD-02990	DESCRIPTION	View southwest of tank battery. Staining visible in gravel within liner.	7
	SITE NAME	Corsair State #002H	2/9/2023

TETRA TECH, INC. PROJECT NO. 212C-MD-02990	DESCRIPTION	View south of lease pad east of tank battery.	8
	SITE NAME	Corsair State #002H	2/9/2023

APPENDIX E
Laboratory Analytical Data

CARDINAL Laboratories

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

March 15, 2023

SAM ABBOTT

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: CORSAIR STATE #002H

Enclosed are the results of analyses for samples received by the laboratory on 03/09/23 14:10.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. 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

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TETRA TECH
SAM ABBOTT
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	03/09/2023	Sampling Date:	03/08/2023
Reported:	03/15/2023	Sampling Type:	Soil
Project Name:	CORSAIR STATE #002H	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02990	Sample Received By:	Shalyn Rodriguez
Project Location:	COP - EDDY COUNTY, NEW MEXICO		

Sample ID: AH-23-1 (0-1') (H231095-01)

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	03/10/2023	ND	2.04	102	2.00	3.78	
Toluene*	<0.050	0.050	03/10/2023	ND	2.05	103	2.00	3.68	
Ethylbenzene*	<0.050	0.050	03/10/2023	ND	2.03	101	2.00	2.87	
Total Xylenes*	<0.150	0.150	03/10/2023	ND	6.23	104	6.00	2.93	
Total BTEX	<0.300	0.300	03/10/2023	ND					

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

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**320**	16.0	03/10/2023	ND	400	100	400	3.92	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/10/2023	ND	232	116	200	10.0	
DRO >C10-C28*	<10.0	10.0	03/10/2023	ND	221	110	200	11.9	
EXT DRO >C28-C36	<10.0	10.0	03/10/2023	ND					

Surrogate: 1-Chlorooctane *82.8 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *91.6 %* *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:

TETRA TECH
SAM ABBOTT
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	03/09/2023	Sampling Date:	03/08/2023
Reported:	03/15/2023	Sampling Type:	Soil
Project Name:	CORSAIR STATE #002H	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02990	Sample Received By:	Shalyn Rodriguez
Project Location:	COP - EDDY COUNTY, NEW MEXICO		

Sample ID: AH-23-2 (0-1') (H231095-02)

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	03/10/2023	ND	2.04	102	2.00	3.78	
Toluene*	<0.050	0.050	03/10/2023	ND	2.05	103	2.00	3.68	
Ethylbenzene*	<0.050	0.050	03/10/2023	ND	2.03	101	2.00	2.87	
Total Xylenes*	<0.150	0.150	03/10/2023	ND	6.23	104	6.00	2.93	
Total BTEX	<0.300	0.300	03/10/2023	ND					

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

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	03/10/2023	ND	400	100	400	3.92	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/10/2023	ND	232	116	200	10.0	
DRO >C10-C28*	<10.0	10.0	03/10/2023	ND	221	110	200	11.9	
EXT DRO >C28-C36	<10.0	10.0	03/10/2023	ND					

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

Surrogate: 1-Chlorooctadecane *93.8 %* *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:

TETRA TECH
SAM ABBOTT
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	03/09/2023	Sampling Date:	03/08/2023
Reported:	03/15/2023	Sampling Type:	Soil
Project Name:	CORSAIR STATE #002H	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02990	Sample Received By:	Shalyn Rodriguez
Project Location:	COP - EDDY COUNTY, NEW MEXICO		

Sample ID: AH-23-3 (0-1') (H231095-03)

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	03/10/2023	ND	2.04	102	2.00	3.78	
Toluene*	<0.050	0.050	03/10/2023	ND	2.05	103	2.00	3.68	
Ethylbenzene*	<0.050	0.050	03/10/2023	ND	2.03	101	2.00	2.87	
Total Xylenes*	<0.150	0.150	03/10/2023	ND	6.23	104	6.00	2.93	
Total BTEX	<0.300	0.300	03/10/2023	ND					

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

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	03/10/2023	ND	400	100	400	3.92	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/10/2023	ND	200	99.9	200	3.93	
DRO >C10-C28*	<10.0	10.0	03/10/2023	ND	215	108	200	1.64	
EXT DRO >C28-C36	<10.0	10.0	03/10/2023	ND					

Surrogate: 1-Chlorooctane *98.5 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *118 %* *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:

TETRA TECH
SAM ABBOTT
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	03/09/2023	Sampling Date:	03/08/2023
Reported:	03/15/2023	Sampling Type:	Soil
Project Name:	CORSAIR STATE #002H	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02990	Sample Received By:	Shalyn Rodriguez
Project Location:	COP - EDDY COUNTY, NEW MEXICO		

Sample ID: AH-23-4 (0-1') (H231095-04)

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	03/10/2023	ND	2.04	102	2.00	3.78	
Toluene*	<0.050	0.050	03/10/2023	ND	2.05	103	2.00	3.68	
Ethylbenzene*	<0.050	0.050	03/10/2023	ND	2.03	101	2.00	2.87	
Total Xylenes*	<0.150	0.150	03/10/2023	ND	6.23	104	6.00	2.93	
Total BTEX	<0.300	0.300	03/10/2023	ND					

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

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	03/10/2023	ND	400	100	400	3.92	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/10/2023	ND	200	99.9	200	3.93	
DRO >C10-C28*	<10.0	10.0	03/10/2023	ND	215	108	200	1.64	
EXT DRO >C28-C36	<10.0	10.0	03/10/2023	ND					

Surrogate: 1-Chlorooctane *92.1 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *107 %* *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:

TETRA TECH
SAM ABBOTT
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	03/09/2023	Sampling Date:	03/08/2023
Reported:	03/15/2023	Sampling Type:	Soil
Project Name:	CORSAIR STATE #002H	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02990	Sample Received By:	Shalyn Rodriguez
Project Location:	COP - EDDY COUNTY, NEW MEXICO		

Sample ID: AH-23-5 (0-1') (H231095-05)

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	03/10/2023	ND	2.04	102	2.00	3.78	
Toluene*	<0.050	0.050	03/10/2023	ND	2.05	103	2.00	3.68	
Ethylbenzene*	<0.050	0.050	03/10/2023	ND	2.03	101	2.00	2.87	
Total Xylenes*	<0.150	0.150	03/10/2023	ND	6.23	104	6.00	2.93	
Total BTEX	<0.300	0.300	03/10/2023	ND					

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

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**16.0**	16.0	03/10/2023	ND	400	100	400	3.92	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/10/2023	ND	200	99.9	200	3.93	
DRO >C10-C28*	<10.0	10.0	03/10/2023	ND	215	108	200	1.64	
EXT DRO >C28-C36	<10.0	10.0	03/10/2023	ND					

Surrogate: 1-Chlorooctane *92.3 %* *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:

TETRA TECH
SAM ABBOTT
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	03/09/2023	Sampling Date:	03/08/2023
Reported:	03/15/2023	Sampling Type:	Soil
Project Name:	CORSAIR STATE #002H	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02990	Sample Received By:	Shalyn Rodriguez
Project Location:	COP - EDDY COUNTY, NEW MEXICO		

Sample ID: AH-23-6 (0-1') (H231095-06)

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	03/10/2023	ND	2.04	102	2.00	3.78	
Toluene*	<0.050	0.050	03/10/2023	ND	2.05	103	2.00	3.68	
Ethylbenzene*	<0.050	0.050	03/10/2023	ND	2.03	101	2.00	2.87	
Total Xylenes*	<0.150	0.150	03/10/2023	ND	6.23	104	6.00	2.93	
Total BTEX	<0.300	0.300	03/10/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *101 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**160**	16.0	03/10/2023	ND	400	100	400	3.92	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/10/2023	ND	200	99.9	200	3.93	
DRO >C10-C28*	<10.0	10.0	03/10/2023	ND	215	108	200	1.64	
EXT DRO >C28-C36	<10.0	10.0	03/10/2023	ND					

Surrogate: 1-Chlorooctane *92.2 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *107 %* *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

Notes and Definitions

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

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: Tetra Tech		**BILL TO**	
Project Manager: Sam Abbott		P.O. #:	
Address: 8911 Capital o Texas Hwy, Suite 2310		Company: Tetra Tech	
City: Austin	State: TX Zip:	Attn: Sam Abbott	
Phone #: (512)565-0190	Fax #:	Address: EMAIL	
Project #: 212C-MD-02990	Project Owner: ConocoPhillips	City:	
Project Name: Corsair State #002H		State: Zip:	
Project Location: Eddy County, New Mexico		Phone #:	
Sampler Name: Colton Bickerstaff		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 8015M	BTEX 8021B	Chloride SM4500CI-B
H231095																	
1	AH-23-1 (0-1')	G	1			X					X		3/8/2023		X	X	X
2	AH-23-2 (0-1')	G	1			X					X		3/8/2023		X	X	X
3	AH-23-3 (0-1')	G	1			X					X		3/8/2023		X	X	X
4	AH-23-4 (0-1')	G	1			X					X		3/8/2023		X	X	X
5	AH-23-5 (0-1')	G	1			X					X		3/8/2023		X	X	X
6	AH-23-6 (0-1')	G	1			X					X		3/8/2023		X	X	X

Relinquished By: Colton Bickerstaff	Date: 3/9/23 Time: 1410	Received By: S Rodriguez	Verbal Result: ☐ Yes ☐ No Add'l Phone #:
			All Results are emailed. Please provide Email address: Sam.Abbott@tetratech.com
Relinquished By:	Date: Time:	Received By:	REMARKS:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Observed Temp. °C 4.9 Corrected Temp. °C 4.3	Sample Condition Cool ☑ Yes Intact ☑ Yes ☐ No ☐ No	CHECKED BY: (Initials) SR

Turnaround Time: Standard ✖ Bacteria (only) Sample Condition
Rush: N/A, Standard TAT ☐ Cool Intact Observed Temp. °C
Thermometer ID #113
Correction Factor -0.5°C
☐ Yes ☐ Yes
☐ No ☐ No Corrected Temp. °C

FORM-006 R 3.2 10/07/21

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

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 210251

CONDITIONS

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 210251
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
bhall	Deferral approved. Remediation will need to be completed when the equipment is removed during other operations, or when the well or facility is plugged or abandoned, whichever comes first.	4/27/2023
bhall	Incident number will remain in "closure not approved" status until remediation is completed and closure is requested and subsequently approved.	4/27/2023
bhall	if the site is not reasonably needed for production operations or for subsequent drilling operations at time of remediation, the site will also need to meet 19.15.29.13 NMAC.	4/27/2023