

July 3, 2023

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

Re: Remediation Work Plan Revised Deferral Request ConocoPhillips Heritage Concho Graham Cracker 16 State #002H Tinhorn Release Unit Letters N and O, Section 9, Township 26 South, Range 28 East Eddy County, New Mexico Incident ID# nAB1806438251

Ms. Hall,

Tetra Tech, Inc. (Tetra Tech) was contacted by ConocoPhillips to assess a historic release and subsequent remedial actions completed at the Graham Cracker 16 State #002H Tinhorn Release, which occurred approximately 500 feet northwest of an associated well pad (Graham Cracker 16 State #003H/API No. 30-015-41533). The release footprint is located in Public Land Survey System (PLSS) Unit Letters N and O, Section 9, Township 26 South, Range 28 East, in Eddy County, New Mexico (Site). The approximate release point occurred at coordinates 32.05012°, -104.09246°, 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 was discovered on February 24, 2018. The C-141 reports that the release was caused by a hole that formed in a check valve due to internal corrosion. Approximately 25 barrels (bbls) of produced water were released and approximately 23 bbls of produced water were recovered with a vacuum truck. The C-141 reports that the release was contained inside of the tinhorn surrounding the valve. The NMOCD approved the initial C-141 on March 5, 2018, and subsequently assigned the release the Incident ID nAB1806438251. 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.

### INITIAL SITE ASSESSMENT SUMMARY AND DEFERRAL REQUEST

On June 25, 2018, TRC Environmental Corporation (TRC) conducted an initial soil assessment at the Site on behalf of Concho. The release extent provided by TRC includes an overspill area adjacent to the tinhorn that was not described in the initial C-141, as shown on Figure 3.

During the initial soil assessment, one (1) soil boring (HA-1) was installed using a hand auger to a depth of approximately 10 feet below ground surface (bgs) within the tinhorn. Three (3) soil samples (HA-1 @ 6', HA-1 @ 8', and HA-1 @ 10') were collected from the boring and field screened for chloride concentrations.

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Although field screening results from HA-1 were not reported by TRC, all three soil screening results indicated chloride concentrations that exceeded the proposed NMOCD Closure Criteria of 10,000 mg/kg. On August 17, 2018 a Geoprobe was utilized to install a soil boring (SB-1) in the overspill area adjacent to the tinhorn in an effort to determine the vertical extent of soil impact. Three (3) soil samples (SB-1 @ 6', SB-1 @12', and SB-1 @14') were collected and submitted to Cardinal Laboratories in Hobbs, New Mexico to be analyzed for chlorides via EPA Method 300.0. Additional hand auger samples were collected from the overspill area on October 25 (HA-1B @ Surface and HA-1C @ Surface) and submitted to Cardinal Laboratories to be analyzed for BTEX via EPA Method 8021B, TPH via EPA Method 8015M, and chloride via EPA Method 300.0. TRC returned to the Site on November 14, 2018 to collect additional soil samples (HA-1B @ 1' and HA-1C @ 1') to complete vertical delineation of TPH impact. The initial assessment sampling locations are indicated on Figure 3. The initial assessment results are summarized in Table 1.

On July 1, 2019 TRC conducted release remediation activities at the Site. Hand tools were utilized to excavate the impacted overspill area to a depth of approximately 1 foot bgs. Two (2) soil samples (FL-1-1 and FL-2-1) were collected from the base of the excavation in the areas representative of HA-1B @ Surface and HA-1C @ Surface. The excavated area was recontoured to prevent pooling and 100 gallons of Micro-Blaze was applied to the affected area within the tinhorn. The remediation extent and confirmation sample locations are presented in Figure 4. The 2019 soil analytical results are summarized in Table 2.

A Site Assessment Summary and Deferral Request (Deferral Request) describing the Site assessment and remedial activities was submitted to the NMOCD on July 18, 2019. The deferral request was rejected by Brittany Hall via email on Monday, November 28, 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. No samples were collected in the four cardinal directions of the release to determine the horizontal extents of the release.
- Vertical delineation needs to be completed to 600ppm chloride, 100ppm TPH, 50 BTEX, and 10ppm Benzene.
- Deferral request was denied by NMSLO on January 17, 2019. The email correspondence was uploaded and can be viewed in the incident files.
- 2RP-4645 closed. Refer to #NAB1806438251 in all future communication.
- Please submit a complete report through the OCD Permitting website by 3/3/2023."

An extension request for a due date of June 3, 2023 was approved via email on Tuesday, February 28, 2023. Regulatory correspondence is included in Appendix B.

### 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 medium karst potential.

There are no water wells listed in the New Mexico Office of the State Engineer (NMOSE) database located within approximately ½ mile (800 meters) of the site. According to data from three (3) water wells listed in the NMOSE database within approximately 1.6 miles (2,600 meters) of the site, the minimum depth to groundwater is 120 feet bgs.

To comply with the NMOCD directive presented in the November 28, 2022 email rejection, a licensed well drilling subcontractor was onsite on March 1, 2023 to drill a groundwater determination borehole (DTW-1) to 55 feet bgs at the northern edge of the Graham Cracker 16 State #003H lease pad, located approximately 760 feet east of the release Site. 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 C.

#### **REGULATORY FRAMEWORK**

Based upon the release footprint, the depth to water boring, 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 conducted by TRC and verified by Tetra Tech (via DTW determination) 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

Additionally, in accordance with the NMOCD guidance *Procedures for Implementation of the Spill Rule* (19.15.29 NMAC) (September 6, 2019), the following reclamation requirements for surface soils (0-4 ft bgs) outside of active oil and gas operations are as follows:

Constituent	<b>Reclamation Requirements</b>
Chloride	600 mg/kg
TPH	100 mg/kg
BTEX	50 mg/kg

#### ADDITIONAL SITE ASSESSMENT

Tetra Tech personnel visited the site on February 6, 2023, to document current site conditions. At the time of the site visit, no surface staining or odor was observed in the vicinity of the tinhorn. Photographic documentation of the visual inspection is presented in Appendix D.

Based on the directive provided by NMOCD, Tetra Tech was onsite on March 1, 2023 to conduct assessment activities on behalf of ConocoPhillips. One additional assessment boring (BH-23-1) was installed using an air rotary drill rig within the release footprint in the pasture to 25 feet bgs to complete vertical delineation of the release extent. Sampling inside of the tinhorn was not feasible at the time of the additional assessment sampling activities, due to safety concerns for personnel working in the immediate vicinity of an active pipeline. Four additional hand auger borings (AH-23-1 through AH-23-4) were installed to 3 feet bgs to the north, east, south, and west of the release footprint to achieve horizontal delineation of the release extent. The sample locations are shown on Figure 4.

A total of fifteen (15) samples were collected from the five assessment borings and submitted to Cardinal Laboratories in Hobbs, New Mexico to be analyzed for TPH by EPA method 8015 modified, BTEX by EPA Method 8021B, and chloride by method SM4500CI-B. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix E.

#### SUMMARY OF RESULTS

The laboratory analytical results from the March 2023 assessment are summarized in Table 3. Analytical results associated with the 0-1 foot and 2-3 ft sample intervals at BH-23-1 exceeded the reclamation requirements for chloride (600 mg/kg). These areas are directly adjacent to the tinhorn. There were no other analytical results which exceeded the Site RRALs or reclamation requirements for any of the analyzed constituents. Horizontal and vertical delineation of the release was achieved as a result of the March 2023 additional assessment activities.

#### 2023 DEFERRAL REQUEST AND NMOCD REJECTION

A Release Characterization and Revised Deferral Request (2023 Deferral Request) describing the additional Site assessment was submitted to the NMOCD on March 28, 2023. The deferral request was rejected by Brittany Hall via email on Monday, June 5, 2023, with the following comments:

- "Deferral denied. Per 19.15.29.12 C.(3) "The responsible party shall remediate the impacted surface area of a release not occurring on a lined, bermed or otherwise contained exploration, development, production or storage site to meet the standards of Table I of 19.15.29.12 NMAC or other applicable remediation standards and restore and reclaim the area pursuant to 19.15.29.13 NMAC."
- Deferrals can be approved for a release occurring on a developed well pad, central tank battery, drilling site, compressor site or other exploration, development, production or storage sites. Deferrals are for areas that if remediation/reclamation is immediately under or around production equipment such as production tanks, wellheads and pipelines where remediation could cause a major facility deconstruction per 19.15.29.12 C.(2) NMAC.
- Submit a complete report though the OCD Permitting website by 9/5/2023."

Regulatory correspondence is included in Appendix B.

### **REMEDIATION WORK PLAN**

Based on the analytical results and the NMOCD rejection of the 2023 deferral request, ConocoPhillips proposes to remove the remaining impacted material as shown in Figure 6. Release footprint soils in the area of BH-1-23 impacted with chloride above the reclamation limit of 600 mg/kg will be excavated using heavy equipment (backhoes, hoe rams, and track hoes) to a maximum depth of 4 feet below the surrounding surface or until a representative sample from the walls and bottom of the excavation is below the RRALs. Select areas containing pressurized lines will be hand-dug to a depth of 4 feet or the maximum extent practicable and heavy equipment will come no more than 3 ft from any pressurized lines.

Excavated soils will be transported offsite and disposed of at an NMOCD-approved or permitted facility. In accordance with subsection D of 19.15.29.12 NMAC, the responsible party will notify the appropriate division district office prior to conducting confirmation sampling. Confirmation bottom and sidewall samples representative of no more than 200 square feet will be collected for verification of remedial activities, and analyzed for TPH, BTEX, and chlorides. Once results are received, the excavation will then be backfilled with clean material to surface grade. The estimated volume of material to be remediated is approximately 30 cubic yards.

#### 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. As described in the NMOCD rejection, the existing historical impacts

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above Site RRALs or reclamation requirements identified during the site delineation and characterization (and subsequent remedial action) have now been vertically defined.

Based on the results of the additional Site delineation and characterization, and in accordance with the comments provided by NMOCD, ConocoPhillips will remediate soils in the release extent (outside of the tinhorn) impacted with chlorides above the reclamation limit of 600 mg/kg. ConocoPhillips respectfully requests deferral of any chloride impacts present within and beneath the tinhorn until the equipment is removed during other operations. These subsurface release impacts occur in a developed pipeline right-of-way and are immediately under or around production pipelines where remediation would cause a major facility deconstruction (per 19.15.29.12 C(2) NMAC). The remaining impacts do not cause an imminent risk to human health, the environment, or groundwater. Remediation and final reclamation of this area 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 proposed remediation activities will be conducted within 90 days of acceptance of the proposed plan. If you have any questions concerning the additional assessment activities for the Site or the proposed remediation work plan, please call me at (512) 739-7874 or Christian at (512) 338-2861.

Sincerely, **Tetra Tech, Inc.** 

Samantha K. Abbott, P.G. Project Geologist

Christian M. Llull, P.G. Program Manager

cc: Mr. Moises Cantu, PBU – ConocoPhillips

ConocoPhillips

## LIST OF ATTACHMENTS

### Figures:

- Figure 1 Overview Map
- Figure 2 Topographic Map
- Figure 3 Approximate Release Extent and Site Assessment (TRC)
- Figure 4 Remediation Activities and Confirmation Sampling (TRC)
- Figure 5 Approximate Release Extent and Additional Assessment (Tetra Tech)
- Figure 6 Proposed Remediation Extent

### Tables:

- Table 1 Summary of Analytical Results 2018 TRC Initial Soil Assessment
- Table 2 Summary of Analytical Results 2019 TRC Soil Assessment and Confirmation Sampling
- Table 3 Summary of Analytical Results 2023 Additional Soil Assessment

### Appendices:

Appendix A – C-141 Forms

Appendix B – Regulatory Correspondence

Appendix C – Site Characterization Data

Appendix D – Photographic Documentation

Appendix E – Laboratory Analytical Data

# FIGURES



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# TABLES

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			ft. bgs	mg/kg	α	mg/kg	σ	mg/kg	σ	mg/kg	Ø	mg/kg	ď	mg/kg	ď	mg/kg	ď	mg/kg	ď	mg/kg	ď	mg/kg	_
	07 V 10	10/25/2018	SURFACE	368	S-06	<0.050		<0.050		<0.050		<0.150		<0.300		<50.0		8,370		1,950		10,320	_
	DT-MU	11/14/2018	1	NA		NA		NA		NA		NA		NA		<10.0		<10.0		<10.0			_
	10-10	10/25/2018	SURFACE	1,570	S-04	<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		3,470		780		4,250	_
		11/14/2018	1	NA		NA		NA		NA		NA		NA		<10.0		<10.0		<10.0		,	_
NOTES:																							
ft. F	eet					Bold and italic	ized value	ss indicate exc	eedance o	of proposed Rem	nediation	RRALs and Re	clamation	n Requirement									
bgs E	Jelow ground su	ırface				Shaded rows in	dicate int	ervals propos	ed for exca	avation.													
mg/kg N	Ailligrams per ki	ilogram																					
L H T	otal Petroleum	Hydrocarbons				QUALIFIERS:	S-06	The recovery c	of this surr	ogae is ouride c	ontrol limi	its due to sam	ple dilutic	on required fro	n high ana	yte concetrat	o/puance	matrix interf	erence's.				
GRO 6	Sasoline range c	rganics					S-04	The surragate	recovery f	or this sample is	s outside c	of established	control lir	nits due to a si	mple matr	x effect.							
DRO L	Diesel range org	anics																					
1 N	Viethod SM4500	JCI-B																					
2 P.	Method 8021B																						
3	Aethod 8015M																						

SUMMARY OF ANALYTICAL RESULTS 2018 TRC INITIAL SOIL ASSESSMENT- nAB1806438251

TABLE 1

CONOCOPHILLIPS GRAHAME CRACKER 16 STATE #002H

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TABLE 2	SUMMARY OF ANALYTICAL RESULTS	019 TRC SOIL ASSESSMENT AND CONFIRMATION SAMPLING - nAB1806438251	CONOCOPHILLIPS	GRAHAM CRACKER 16 STATE #002H	EDDY COUNTY, NM	
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BTEK <sup>2</sup> TPH <sup>2</sup>	Berzee Toluere Ethylbenzene m <sub>2</sub> p-Xylenes o-Xylene Total Xylenes Total BTEX GRO DRO MRO Total TPH	mgNg a	NA N	NA N	NA N	- 400201 U ~ 400201 U ~ 400402 U ~ 400402 U ~ 400201 U ~ 400201 U ~ 400201 U ~ 450 U ~ 450 U ~ 450 U	-0.00200 U ⊲0.00200 U ⊲0.00200 U ⊲0.00200 U ⊲0.00200 U <0.0022 U ⊲150 U 117 U ⊲150 U 117		dicate exceedance of proposed RAALs and Reclamation Requirements.		Analyte was not detected									
BTEX <sup>2</sup>	Toluene Ethylbenzene m,p-Xylenes o-X	ng/kg Q mg/kg Q mg/kg Q mg/k	NA NA NA NA NA	NA NA NA NA	NA NA NA NA	.00201 U <0.00201 U <0.00402 U <0.002	.00200 U <0.00200 U <0.00399 U <0.002		oosed RRALs and Reclamation Requirements.		ted									
Consulta Danath	Sample Depui	ft. bgs mg/kg Q mg/kg Q	6 21,500 NA	12 <b>4,910</b> NA	14 146 NA	1 871 <0.00201 U	1 2,930 <0.00200 U		Bold and italicized values indicate exceedance of p		QUALIFIERS: U Analyte was not det									p.
	Sample ID Sample Date			SB-1 8/17/2018		FL-1-1 7/1/2019	FL-2-1 7/1/2019	OTES:	. Feet	gs Below ground surface	g/kg Milligrams per kilogram	PH Total Petroleum Hydrocarbons	RO Gasoline range organics	0RO Diesel range organics	ARO Motor Oil range organics	IS Sample not analyzed for paramete	EPA Method 300.0	EPA Method 8021B	Method SW8015 Mod	Analytic set analytical for encounts

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TABLE 3	SUMMARY OF ANALYTICAL RESULTS	2023 SOIL ASSESSMENT- nAB1806438251	CONOCOPHILLIPS	GRAHAM CRACKER 16 STATE #002H	EDDY COUNTY, NM
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Field

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	Total TPH	(GRO+DRO+EXT DRO)	mg/kg			,		,		,						,	-		
	ß	c <sub>36</sub>	ď																
ън <sup>3</sup>	EXT DI	> C <sub>28</sub> -	mg/kg	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	
Τ		C <sub>28</sub>	σ																
	DRO	> C <sub>10</sub> - (	mg/kg	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	
		0	σ																
	GRO	C <sub>6</sub> - C <sub>1</sub>	mg/kg	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	
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	Totol DT		mg/kg	<0.300	<0.300	<0.300	<0.300	<0.300	<0.300	<0.300	<0.300	<0.300	<0.300	<0.300	<0.300	<0.300	<0.300	<0.300	
			σ																
	Total Vide		mg/kg	<0.150	<0.150	<0.150	<0.150	<0.150	<0.150	<0.150	<0.150	<0.150	<0.150	<0.150	<0.150	<0.150	<0.150	<0.150	
			ď																
BTEX <sup>2</sup>	Ethidhoor	E UI ÀI DEI 17	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
		U	ď																
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	9	<u>p</u>	σ																
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	Chlorid		mg/kg	32.0	16.0	32.0	16.0	16.0	<16.0	16.0	48.0	3,080	1,090	1,070	528	240	192	80.0	
Field Screening	Results	Chloride	mdq	120	162	469	412	381	507	346	299								
	Sample Depth		ft. bgs	0-1	2-3	0-1	2-3	0-1	2-3	0-1	2-3	0-1	2-3	4-5	7-8	9-10	14-15	19-20	
	Composition Dates	authic nate		2006/1/2	6707 /T /C	CCOC/ 1/ C	6707 /T /C	CCOC/ 1/ C	6707 /T /C	CCOC/ 1/ C	6707 /T /C				3/1/2023			L	
	Commo D			2 CC H 4	т-ст-ши	C CC HV	7-67-UM	C CC HV	C-C7-UM	V CC TV	₩-67-UH				BH-1-23				

Feet ÷

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

Below ground surface bgs

mg/kg Milligrams per kilogram TPH Total Petroleum Hydrocarbons GRO Gasoline range organics

Diesel range organics DRO

Method SM4500Cl-B Method 8021B Method 8015M 1

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# APPENDIX A C-141 Forms

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					NM	i olt	CONSE	anstro.		
District I 1625 N. French Dr. Hobbs, NM 88240		Sta	ate of	New Mex	ico	ART	esta dist	R:07	F	Form C-141
District II 811 S. First St. Artesia NM 88210		Energy Min	nerals	and Natura	l Resources	MΔ	R 022	310	Revised	April 3, 2017
District III 1000 Rio Brazos Road, Aztec, NM 87410		Oil C	Conser	vation Div	vision	Sub	mit 1 Copy	to appropri	ate Dist	rict Office in 5.29 NMAC.
District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505		1220	South	1 St. Franc	is Dr.	1	ECEIVE			
	Rela	Sa ase Notific	nta re	a and $C$	vractiva A	ction				
NABISOLO J28251	KUK		auvi		FOR	cuon	🕅 Initia	Deport		Final Panort
Name of Company: COG Operati	ing, LLC	C (OGRID# 229	137)	Contact: Ro	bert McNeill			arreport		T mar Keport
Address: 600 West Illinois Avenu	e, Midla	nd TX 79701		Telephone N	No.: 432-683-74	43				
Facility Name: Graham Cracker	16 State	#002H		Facility Typ	e: Battery					
Surface Owner: State		Mineral C	wner:	State			API No	.: 30-015-4	41533	
		LOCA	TIO	N OF REI	LEASE					
Unit Letter Section Township N 9 26S	Range 28E	Feet from the	North	South Line	Feet from the	East/V	Vest Line	County	Eddv	
		atitude <sup>,</sup> 32.050	129 Lo	ngitude: -1(	)4 092465 NA D	183		I		
		NAT		OF DEL	FASE	.05				
Type of Release: Produced Water		INAL	UKE	Volume of	Release:		Volume F	Recovered:		
				25bbls			23bbls			
Source of Release: Check Valve				Date and H 2/24/2018	lour of Occurrenc	e:	Date and 2/24/2018	Hour of Dis 3 2:00pm	covery:	
Was Immediate Notice Given?				If YES, To	Whom?					
	Yes _		equired	Tammy Ho	aver-NMOCD					
By Whom? Sheldon Hitchcock				Date and H	lour: 2/24/2018 1	0:16pm				
Was a Watercourse Reached?	Vac N	1 No		If YES, Vo	olume Impacting t	the Wate	ercourse.			
If a Watercourse was Impacted, Descri	be Fully.*	ĸ								
Describe Cause of Problem and Reme	dial Actio	n Taken.*			<u></u>	70		<u> </u>		
A hale formed in a check value due to	intornal a	armonian Tha aba	ole volev		1					
Describe Area Affected and Cleanup A	Action Tak	en.*	CK Valve							
The fluid was contained inside of the "	'tin horn''	surrounding the v	alve A	vacuum truck	was dispatched t	to recov	er all freest	anding fluid	ds Conc	ho will have
the spill area evaluated for any possible	e impact f	rom the release a	nd we w	vill present a r	emediation work	plan to	the NMOC	D for appro	val prio	r to any
significant remediation activities.										
I hereby certify that the information gi	ven above	is true and comp	lete to t	he best of my	knowledge and u	indersta	nd that purs	suant to NM	OCD ru	iles and
public health or the environment. The	o report ar acceptance	nd/or file certain r xe of a C-141 repo	elease n ort by th	otifications a e NMOCD m	nd perform correc arked as "Final R	eport" d	ions for rel	eases which ieve the ope	may en rator of	danger liability
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bility p 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.

	OIL CONSERVAT	TON DIVISION
Signature: Sheldon Jutan Printed Name: Sheldon L. Hitchcock	- Approved by Environmental Specialist	the Esternice
Title: HSE Coordinator	Approval Date: 3518 Expi	iration Date: NIA
E-mail Address: slhitchcock@concho.com Date: 3/2/2018 Phone: 575-746-2010	Conditions of Approval: SEE OHACHEO	Attached D-4645

\* Attach Additional Sheets If Necessary

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 3/2/2018 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number 2RP4645 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 <u>division-approved corrective action</u> 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 <u>2</u> office in <u>ARTESIA</u> on or before <u>4/2/2018</u>. 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<sub>6</sub> thru C<sub>36</sub>), 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<sub>6</sub> thru C<sub>36</sub>), 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

# Bratcher, Mike, EMNRD

From:	Sheldon Hitchcock <slhitchcock@concho.com></slhitchcock@concho.com>
Sent:	Friday, March 2, 2018 12:56 PM
То:	Weaver, Crystal, EMNRD; Bratcher, Mike, EMNRD; Honea, Tammy
Cc:	Rebecca Haskell; Robert McNeill; Dakota Neel; Christopher Gray; DeAnn Grant
Subject:	(C-141 Initial) Graham Cracker 16 State #002H (30-015-41533) 2-24-2018
Attachments:	(C-141 Initial) Graham Cracker 16 State #002H (30-015-41533) 2-24-2018.pdf

Ms. Weaver/Ms. Honea,

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

Thank you,

Sheldon L. Hitchcock HSE Coordinator COG Operating LLC 2407 Pecos Avenue | Artesia, NM 88210 Cell: 575-703-6475 | Office: 575-746-2010 slhitchcock@concho.com



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NOTICE: The information in this email may be confidential and/or privileged. If you are not the intended recipient or an authorized representative of the intended recipient, you are hereby notified that any review, dissemination or copying of this email and its attachments, if any, or the information contained herein, is prohibited. If you have received this email in error, please immediately notify the sender by return email and delete this email from your system. Further, any contract terms proposed or purportedly accepted in this email are not binding and are subject to management's final approval as memorialized in a separate written instrument, excluding electronic correspondence, executed by an authorized representative of COG Operating LLC or its affiliates.

# Bratcher, Mike, EMNRD

From:	Sheldon Hitchcock <slhitchcock@concho.com></slhitchcock@concho.com>
Sent:	Saturday, February 24, 2018 10:16 PM
То:	Weaver, Crystal, EMNRD; Bratcher, Mike, EMNRD; Honea, Tammy
Cc:	Rebecca Haskell; Robert McNeill; Dakota Neel; Christopher Gray
Subject:	(Notification) Graham Cracker 16 State #002H (30-015-41533) 2/24/2018

Ms. Weaver/Ms. Honea,

COG Operating, LLC (OGRID # 229137) had a release occur on a flow line associated with the Graham Cracker 16 State #002H battery.

Release location: Sec 16 Township 26S Range 28E Lat/long: 32.0502,-104.0925

Estimated Volume Released: >25bbls Estimated Volume Recovered: 25bbls

COG is having the area evaluated and will submit an initial C-141.

Thank you,

Sheldon Hitchcock HSE Coordinator

## Sent from my IPhone

NOTICE: The information in this email may be confidential and/or privileged. If you are not the intended recipient or an authorized representative of the intended recipient, you are hereby notified that any review, dissemination or copying of this email and its attachments, if any, or the information contained herein, is prohibited. If you have received this email in error, please immediately notify the sender by return email and delete this email from your system. Further, any contract terms proposed or purportedly accepted in this email are not binding and are subject to management's final approval as memorialized in a separate written instrument, excluding electronic correspondence, executed by an authorized representative of COG Operating LLC or its affiliates.

**Received by OCD: 7/5/2023 9:33:31 PM** Form C-141 State of New Mexico

Oil Conservation Division

	Page 24 of 6
Incident ID	nAB1806438251
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?	<u>&gt;50</u> (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 <b>not</b> 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
- $\checkmark$  Depth to water determination
- Determination of water sources and significant watercourses within <sup>1</sup>/<sub>2</sub>-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.

eceived by OCD: 7/5/2023	9:33:31 PM	<b>`</b>		Page 25 of
Jiii C-141			Incident ID	nAB1806438251
ge 4	Oil Conservation Divisi	ion	District RP	
			Facility ID	
			Application ID	
regulations all operators are re public health or the environmed failed to adequately investigat addition, OCD acceptance of a and/or regulations. Printed Name: <u>Moises H</u> Signature: <u>Moises H Can</u> email: <u>Moises.H.CantuG</u>	equired to report and/or file certain release ent. The acceptance of a C-141 report by e and remediate contamination that pose a C-141 report does not relieve the operat <b>Cantu Garcia</b> <i>tw Garcia</i> <b>arcia@conocophillips.com</b>	e notifications and perform of the OCD does not relieve th a threat to groundwater, sur- tor of responsibility for com 	corrective actions for re he operator of liability s face water, human healt pliance with any other f mental Engineer 18) 461-5581	leases which may endanger hould their operations have h or the environment. In ederal, state, or local laws
OCD Only				

Page 5

Oil Conservation Division

Incident	ID	nAB1806438251
District	RP	
Facility	ID	
Applica	tion 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.

 $\checkmark$  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.

 $\checkmark$  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

Signature: Moises H Cantu Garcia

email: Moises.H.CantuGarcia@conocophillips.com

Telephone: +1 (318) 461-5581

Date: 7/3/2023

Title: Sr. Environmental Engineer

OCD Only				
Received by: Shelly Well	S	Date: 7/6/2	.023	
Approved V	Approved with Attached Conditions of A	Approval	Denied	Deferral Approved
Signature: Jutta	z Hall	Date:7/28/2(	)23	_

# APPENDIX B Regulatory Correspondence

From:	OCDOnline@state.nm.us
То:	Beauvais, Charles R
Subject:	[EXTERNAL]The Oil Conservation Division (OCD) has rejected the application, Application ID: 161556
Date:	Monday, November 28, 2022 12:14:30 PM

**CAUTION**: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

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#) nAB1806438251, 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. No samples were collected in the four cardinal directions of the release to determine the horizontal extents of the release.
- Vertical delineation needs to be completed to 600ppm chloride, 100ppm TPH, 50 BTEX, and 10ppm Benzene.
- Deferral request was denied by NMSLO on January 17, 2019. The email correspondence was uploaded and can be viewed in the incident files.
- 2RP-4645 closed. Refer to #NAB1806438251 in all future communication.
- 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: 161556.

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

From:	Hall, Brittany, EMNRD
To:	Abbott, Sam
Cc:	Beauvais, Charles R; Llull, Christian; Chavira, Lisbeth
Subject:	RE: [EXTERNAL] Extension Request - Application ID 161556 (Incident ID nAB1806438251)
Date:	Tuesday, February 28, 2023 9:44:20 AM
Attachments:	image001.png image002.png image003.png image004.png image005.png

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

Sam,

Your extension request for **nAB1806438251** 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 | <u>Brittany.Hall@emnrd.nm.gov</u> http://www.emnrd.nm.gov/ocd/

From: Abbott, Sam <Sam.Abbott@tetratech.com>
Sent: Tuesday, February 28, 2023 7:54 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 161556 (Incident ID nAB1806438251)

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 Graham Cracker 16 State #002H Release site (**nAB1806438251)**.

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

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From:	OCDOnline@state.nm.us
To:	Llull, Christian
Subject:	The Oil Conservation Division (OCD) has rejected the application, Application ID: 201907
Date:	Monday, June 5, 2023 4:03:44 PM

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

To whom it may concern (c/o Christian Llull for COG OPERATING LLC),

The OCD has rejected the submitted *Application for administrative approval of a release notification and corrective action* (C-141), for incident ID (n#) nAB1806438251, for the following reasons:

- Deferral denied. Per 19.15.29.12 C.(3) "The responsible party shall remediate the impacted surface area of a release not occurring on a lined, bermed or otherwise contained exploration, development, production or storage site to meet the standards of Table I of 19.15.29.12 NMAC or other applicable remediation standards and restore and reclaim the area pursuant to 19.15.29.13 NMAC."
- Deferrals can be approved for a release release occurring on a developed well pad, central tank battery, drilling site, compressor site or other exploration, development, production or storage sites. Deferrals are for areas that if remediation/reclamation is immediately under or around production equipment such as production tanks, wellheads and pipelines where remediation could cause a major facility deconstruction per 19.15.29.12 C.(2) NMAC.
- Submit a complete report though the OCD Permitting website by 9/5/2023.

The rejected C-141 can be found in the OCD Online: Permitting - Action Status, under the Application ID: 201907.

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 C-141.

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

# APPENDIX C Site Characterization Data



Released to Imaging: 7/28/2023 10:02:17 AM



# 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)	d,	(qua (qua	rter rter	rs a rs a	ire 1: ire si	=NW : malles	2=NE 3 st to lar	3=SW 4= gest)	SE) (NAD83 L	JTM in me	eters)	(1	n feet)	
POD Number	POD Sub- Code basin (	Count	Q y 64	Q 16	Q 4	Sec	Tws	Rng		x	Y	Distance	Depth Well	Depth Water	Water Column
C 02479	CUB	ED		4	4	10	26S	28E	58790	09 3546	534* 🌍	2240	200		
<u>C 02480</u>	CUB	ED		4	4	10	26S	28E	58790	09 3546	534* 🌍	2240	150		
C 04022 POD1	CUB	ED	4	4	2	15	26S	28E	58808	32 354	5647 🌍	2508	220	175	45
C 02160 S7	CUB	ED	3	3	1	22	26S	28E	58663	38 3543	998* 🌍	2546	300	120	180
C 02160 S5	CUB	ED	1	1	1	14	26S	28E	58822	25 3546	237* 🌍	2552	300	120	180
											Avera	ge Depth to	Water:	138	feet
												Minimum	Depth:	120	feet
												Maximum	Depth:	175	feet
Record Count: 5															

UTMNAD83 Radius Search (in meters):

Easting (X): 585675.62

Northing (Y): 3546356.17

Radius: 2600

\*UTM location was derived from PLSS - see Help

Released to Imaging: 7/28/2023 10:02:17 AM

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

212	C-M	D-02	2989	T	Ŀ	ETR	ΑΤΕΟ	сн				LOG OF BORING DTW	Page 1 of 1
Proje	ct N	lame	e: Gra	ham Cr	ack	er 16	Sta	te #0	02H				1
Borel	nole	Loc	ation:	GPS Coo	rdinat	e: 32	.04976	63°, -1	04.090	0109°		Surface Elevation: 3058'	
Borel	nole	Nur	nber:	DTW						E	Boreh	le Date Started: 3/1/2023 Date Finis	
	S		(mqq) NO	ON (ppm)	RY (%)	ENT (%)			DEX			WATER LEVEL OBSERVATIONS While Drilling <u>↓ DRY</u> 24 Hours After Completion of Drill Remarks:	ing <u>¥</u> DRY
DEPTH (ft)	OPERATION TYPE	SAMPLE	CHLORIDE CONCENTRATI	VOC CONCENTRATI	SAMPLE RECOVE	MOISTURE CONTI	DRY DENSITY (pcf		PLASTICITY IN	MINUS NO. 200 (%	GRAPHIC LOG	MATERIAL DESCRIPTION	
												-SC- CLAYEY SAND: Dark brown, loose, dry, fine grained, partially weakly cemented, with trace Caliche -SM- SAND: Light brown, loose, dry, fine grained, with gravel-sized Caliche - Transitions to with partially weakly cemented Sand pockets -SC- SAND: Light brown to brown, medium dense, dry, fine to medium grained, with loose coarse Sand pockets -SM- SAND: Light brown to brown, loose, dry, fine grained, with partially cemented Clayey Sand pockets 	
<u>45</u>  50	$\left\langle \right\rangle$										× × × × × ×	-ML- SAND: Light brown, medium dense, dry, very fine to fine grained, with Clayey Sand pockets 	)
	$\left\langle \right\rangle$											fine to fine grained, partially cemented, with occasional Clayey Sand seams	
55	\\											Bottom of borebole at 55.0 feet	;
3amı ⊺ype	oler s:		Split Spoon Shelby Bulk Sampl		Acetat /ane S Califor	e Line Shear nia	r T		Holle Holle Aug	ow Ste er tinuou nt Aug	em	Auger     Notes:       Air Rotary     Surface elevation is an estimated value from data.       Direct Push     Air Rotary	Google Earth

# APPENDIX D Photographic Documentation





COP - Graham Cracker 16 St #002H Feb 06 2023, 09:29:11 MST

TETRA TECH, INC.	DESCRIPTION	View east/southeast of surface polylines and overhead power lines.	4
212C-MD-02989	SITE NAME	Graham Cracker 16 St #002H	2/6/2023

Site Assessment

Tetra Tech



.

# APPENDIX E Laboratory Analytical Data



March 08, 2023

CHRISTIAN LLULL TETRA TECH 901 WEST WALL STREET , STE 100 MIDLAND, TX 79701

RE: GRAHAM CRACKER 16 STATE #002H

Enclosed are the results of analyses for samples received by the laboratory on 03/06/23 8:00.

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 <a href="https://www.tceq.texas.gov/field/ga/lab\_accred\_certif.html">www.tceq.texas.gov/field/ga/lab\_accred\_certif.html</a>.

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. Keine

Celey D. Keene Lab Director/Quality Manager



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

Received:	03/06/2023	Sampling Date:	03/01/2023
Reported:	03/08/2023	Sampling Type:	Soil
Project Name:	GRAHAM CRACKER 16 STATE #002H	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02989	Sample Received By:	Shalyn Rodriguez
Project Location:	COP - EDDY CO., NM		

#### Sample ID: AH - 23 - 1 (0-1') (H230996-01)

BTEX 8021B	mg/	'kg	Analyze	d By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/06/2023	ND	1.99	99.4	2.00	0.789	
Toluene*	<0.050	0.050	03/06/2023	ND	2.04	102	2.00	3.33	
Ethylbenzene*	<0.050	0.050	03/06/2023	ND	2.05	103	2.00	3.62	
Total Xylenes*	<0.150	0.150	03/06/2023	ND	6.19	103	6.00	2.67	
Total BTEX	<0.300	0.300	03/06/2023	ND					
Surrogate: 4-Bromofluorobenzene (PID	103 9	% 71.5-13	4						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	03/06/2023	ND	400	100	400	7.69	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/07/2023	ND	200	99.8	200	4.83	
DRO >C10-C28*	<10.0	10.0	03/07/2023	ND	200	100	200	8.96	
EXT DRO >C28-C36	<10.0	10.0	03/07/2023	ND					
Surrogate: 1-Chlorooctane	99.7	% 48.2-13	4						
Surrogate: 1-Chlorooctadecane	107 9	49.1-14	8						

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Celez D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	03/06/2023	Sampling Date:	03/01/2023
Reported:	03/08/2023	Sampling Type:	Soil
Project Name:	GRAHAM CRACKER 16 STATE #002H	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02989	Sample Received By:	Shalyn Rodriguez
Project Location:	COP - EDDY CO., NM		

#### Sample ID: AH - 23 - 1 (2'-3') (H230996-02)

BTEX 8021B	mg/	'kg	Analyze	d By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/06/2023	ND	2.02	101	2.00	7.40	
Toluene*	<0.050	0.050	03/06/2023	ND	1.99	99.6	2.00	5.61	
Ethylbenzene*	<0.050	0.050	03/06/2023	ND	1.98	98.8	2.00	1.90	
Total Xylenes*	<0.150	0.150	03/06/2023	ND	6.21	104	6.00	4.95	
Total BTEX	<0.300	0.300	03/06/2023	ND					
Surrogate: 4-Bromofluorobenzene (PID	87.1	% 71.5-13	4						
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	03/06/2023	ND	400	100	400	7.69	
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	03/07/2023	ND	200	99.8	200	4.83	
DRO >C10-C28*	<10.0	10.0	03/07/2023	ND	200	100	200	8.96	
EXT DRO >C28-C36	<10.0	10.0	03/07/2023	ND					
Surrogate: 1-Chlorooctane	91.4	% 48.2-13	4						
Surrogate: 1-Chlorooctadecane	97.0	% 49.1-14	8						

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

Received:	03/06/2023	Sampling Date:	03/01/2023
Reported:	03/08/2023	Sampling Type:	Soil
Project Name:	GRAHAM CRACKER 16 STATE #002H	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02989	Sample Received By:	Shalyn Rodriguez
Project Location:	COP - EDDY CO., NM		

#### Sample ID: AH - 23 - 2 (0-1') (H230996-03)

BTEX 8021B	mg/	kg	Analyze	d By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/06/2023	ND	2.02	101	2.00	7.40	
Toluene*	<0.050	0.050	03/06/2023	ND	1.99	99.6	2.00	5.61	
Ethylbenzene*	<0.050	0.050	03/06/2023	ND	1.98	98.8	2.00	1.90	
Total Xylenes*	<0.150	0.150	03/06/2023	ND	6.21	104	6.00	4.95	
Total BTEX	<0.300	0.300	03/06/2023	ND					
Surrogate: 4-Bromofluorobenzene (PID	92.0 9	% 71.5-13	4						
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	03/06/2023	ND	400	100	400	7.69	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/07/2023	ND	200	99.8	200	4.83	
DRO >C10-C28*	<10.0	10.0	03/07/2023	ND	200	100	200	8.96	
EXT DRO >C28-C36	<10.0	10.0	03/07/2023	ND					
Surrogate: 1-Chlorooctane	78.9 %	48.2-13	4						
Surrogate: 1-Chlorooctadecane	83.7 9	49.1-14	8						

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

Received:	03/06/2023	Sampling Date:	03/01/2023
Reported:	03/08/2023	Sampling Type:	Soil
Project Name:	GRAHAM CRACKER 16 STATE #002H	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02989	Sample Received By:	Shalyn Rodriguez
Project Location:	COP - EDDY CO., NM		

#### Sample ID: AH - 23 - 2 (2'-3') (H230996-04)

BTEX 8021B	mg/	kg	Analyze	d By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/06/2023	ND	2.02	101	2.00	7.40	
Toluene*	<0.050	0.050	03/06/2023	ND	1.99	99.6	2.00	5.61	
Ethylbenzene*	<0.050	0.050	03/06/2023	ND	1.98	98.8	2.00	1.90	
Total Xylenes*	<0.150	0.150	03/06/2023	ND	6.21	104	6.00	4.95	
Total BTEX	<0.300	0.300	03/06/2023	ND					
Surrogate: 4-Bromofluorobenzene (PID	118 9	6 71.5-13	4						
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	03/06/2023	ND	400	100	400	7.69	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/07/2023	ND	200	99.8	200	4.83	
DRO >C10-C28*	<10.0	10.0	03/07/2023	ND	200	100	200	8.96	
EXT DRO >C28-C36	<10.0	10.0	03/07/2023	ND					
Surrogate: 1-Chlorooctane	81.4	% 48.2-13	4						
Surrogate: 1-Chlorooctadecane	85.1	% 49.1-14	8						

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

Received:	03/06/2023	Sampling Date:	03/01/2023
Reported:	03/08/2023	Sampling Type:	Soil
Project Name:	GRAHAM CRACKER 16 STATE #002H	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02989	Sample Received By:	Shalyn Rodriguez
Project Location:	COP - EDDY CO., NM		

#### Sample ID: AH - 23 - 3 (0-1') (H230996-05)

BTEX 8021B	mg/	kg	Analyze	d By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/06/2023	ND	2.02	101	2.00	7.40	
Toluene*	<0.050	0.050	03/06/2023	ND	1.99	99.6	2.00	5.61	
Ethylbenzene*	<0.050	0.050	03/06/2023	ND	1.98	98.8	2.00	1.90	
Total Xylenes*	<0.150	0.150	03/06/2023	ND	6.21	104	6.00	4.95	
Total BTEX	<0.300	0.300	03/06/2023	ND					
Surrogate: 4-Bromofluorobenzene (PID	117 %	6 71.5-13	4						
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	03/06/2023	ND	400	100	400	3.92	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/07/2023	ND	200	99.8	200	4.83	
DRO >C10-C28*	<10.0	10.0	03/07/2023	ND	200	100	200	8.96	
EXT DRO >C28-C36	<10.0	10.0	03/07/2023	ND					
Surrogate: 1-Chlorooctane	75.8 9	48.2-13	4						
Surrogate: 1-Chlorooctadecane	78.69	49.1-14	8						

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Received:	03/06/2023	Sampling Date:	03/01/2023
Reported:	03/08/2023	Sampling Type:	Soil
Project Name:	GRAHAM CRACKER 16 STATE #002H	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02989	Sample Received By:	Shalyn Rodriguez
Project Location:	COP - EDDY CO., NM		

#### Sample ID: AH - 23 - 3 (2'-3') (H230996-06)

BTEX 8021B	mg/	'kg	Analyze	d By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/06/2023	ND	2.02	101	2.00	7.40	
Toluene*	<0.050	0.050	03/06/2023	ND	1.99	99.6	2.00	5.61	
Ethylbenzene*	<0.050	0.050	03/06/2023	ND	1.98	98.8	2.00	1.90	
Total Xylenes*	<0.150	0.150	03/06/2023	ND	6.21	104	6.00	4.95	
Total BTEX	<0.300	0.300	03/06/2023	ND					
Surrogate: 4-Bromofluorobenzene (PID	117 9	% 71.5-13	4						
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	03/06/2023	ND	400	100	400	3.92	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/07/2023	ND	200	99.8	200	4.83	
DRO >C10-C28*	<10.0	10.0	03/07/2023	ND	200	100	200	8.96	
EXT DRO >C28-C36	<10.0	10.0	03/07/2023	ND					
Surrogate: 1-Chlorooctane	75.7	% 48.2-13	4						
Surrogate: 1-Chlorooctadecane	78.2	% 49.1-14	8						

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Received:	03/06/2023	Sampling Date:	03/01/2023
Reported:	03/08/2023	Sampling Type:	Soil
Project Name:	GRAHAM CRACKER 16 STATE #002H	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02989	Sample Received By:	Shalyn Rodriguez
Project Location:	COP - EDDY CO., NM		

#### Sample ID: AH - 23 - 4 (0-1') (H230996-07)

BTEX 8021B	mg/	kg	Analyze	d By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/06/2023	ND	2.02	101	2.00	7.40	
Toluene*	<0.050	0.050	03/06/2023	ND	1.99	99.6	2.00	5.61	
Ethylbenzene*	<0.050	0.050	03/06/2023	ND	1.98	98.8	2.00	1.90	
Total Xylenes*	<0.150	0.150	03/06/2023	ND	6.21	104	6.00	4.95	
Total BTEX	<0.300	0.300	03/06/2023	ND					
Surrogate: 4-Bromofluorobenzene (PID	119 %	6 71.5-13	4						
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	03/06/2023	ND	400	100	400	3.92	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/07/2023	ND	200	99.8	200	4.83	
DRO >C10-C28*	<10.0	10.0	03/07/2023	ND	200	100	200	8.96	
EXT DRO >C28-C36	<10.0	10.0	03/07/2023	ND					
Surrogate: 1-Chlorooctane	81.5 %	48.2-13	4						
Surrogate: 1-Chlorooctadecane	85.1 %	49.1-14	8						

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

Received:	03/06/2023	Sampling Date:	03/01/2023
Reported:	03/08/2023	Sampling Type:	Soil
Project Name:	GRAHAM CRACKER 16 STATE #002H	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02989	Sample Received By:	Shalyn Rodriguez
Project Location:	COP - EDDY CO., NM		

#### Sample ID: AH - 23 - 4 (2'-3') (H230996-08)

BTEX 8021B	mg/	kg	Analyze	d By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/06/2023	ND	2.02	101	2.00	7.40	
Toluene*	<0.050	0.050	03/06/2023	ND	1.99	99.6	2.00	5.61	
Ethylbenzene*	<0.050	0.050	03/06/2023	ND	1.98	98.8	2.00	1.90	
Total Xylenes*	<0.150	0.150	03/06/2023	ND	6.21	104	6.00	4.95	
Total BTEX	<0.300	0.300	03/06/2023	ND					
Surrogate: 4-Bromofluorobenzene (PID	117 %	6 71.5-13	4						
Chloride, SM4500Cl-B	mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	03/06/2023	ND	400	100	400	3.92	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/06/2023	ND	180	90.0	200	0.373	
DRO >C10-C28*	<10.0	10.0	03/06/2023	ND	206	103	200	8.65	
EXT DRO >C28-C36	<10.0	10.0	03/06/2023	ND					
Surrogate: 1-Chlorooctane	86.8 9	48.2-13	4						
Surrogate: 1-Chlorooctadecane	101 %	<i>49.1-14</i>	8						

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Received:	03/06/2023	Sampling Date:	03/01/2023
Reported:	03/08/2023	Sampling Type:	Soil
Project Name:	GRAHAM CRACKER 16 STATE #002H	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02989	Sample Received By:	Shalyn Rodriguez
Project Location:	COP - EDDY CO., NM		

#### Sample ID: BH - 1 - 23 (0-1') (H230996-09)

BTEX 8021B	mg/	kg	Analyze	d By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/06/2023	ND	2.02	101	2.00	7.40	
Toluene*	<0.050	0.050	03/06/2023	ND	1.99	99.6	2.00	5.61	
Ethylbenzene*	<0.050	0.050	03/06/2023	ND	1.98	98.8	2.00	1.90	
Total Xylenes*	<0.150	0.150	03/06/2023	ND	6.21	104	6.00	4.95	
Total BTEX	<0.300	0.300	03/06/2023	ND					
Surrogate: 4-Bromofluorobenzene (PID	116 %	6 71.5-13	4						
Chloride, SM4500Cl-B	mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3080	16.0	03/06/2023	ND	400	100	400	3.92	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/06/2023	ND	180	90.0	200	0.373	
DRO >C10-C28*	<10.0	10.0	03/06/2023	ND	206	103	200	8.65	
EXT DRO >C28-C36	<10.0	10.0	03/06/2023	ND					
Surrogate: 1-Chlorooctane	85.0 \$	48.2-13	4						
Surrogate: 1-Chlorooctadecane	98.3 9	% 49.1-14	8						

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Received:	03/06/2023	Sampling Date:	03/01/2023
Reported:	03/08/2023	Sampling Type:	Soil
Project Name:	GRAHAM CRACKER 16 STATE #002H	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02989	Sample Received By:	Shalyn Rodriguez
Project Location:	COP - EDDY CO., NM		

#### Sample ID: BH - 1 - 23 (2'-3') (H230996-10)

BTEX 8021B	mg/	'kg	Analyze	d By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/06/2023	ND	2.02	101	2.00	7.40	
Toluene*	<0.050	0.050	03/06/2023	ND	1.99	99.6	2.00	5.61	
Ethylbenzene*	<0.050	0.050	03/06/2023	ND	1.98	98.8	2.00	1.90	
Total Xylenes*	<0.150	0.150	03/06/2023	ND	6.21	104	6.00	4.95	
Total BTEX	<0.300	0.300	03/06/2023	ND					
Surrogate: 4-Bromofluorobenzene (PID	114 9	% 71.5-13	4						
Chloride, SM4500Cl-B	mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1090	16.0	03/06/2023	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	03/06/2023	ND	180	90.0	200	0.373	
DRO >C10-C28*	<10.0	10.0	03/06/2023	ND	206	103	200	8.65	
EXT DRO >C28-C36	<10.0	10.0	03/06/2023	ND					
Surrogate: 1-Chlorooctane	88.4	% 48.2-13	4						
Surrogate: 1-Chlorooctadecane	101 9	49.1-14	8						

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Celey D. Keene, Lab Director/Quality Manager



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

Received:	03/06/2023	Sampling Date:	03/01/2023
Reported:	03/08/2023	Sampling Type:	Soil
Project Name:	GRAHAM CRACKER 16 STATE #002H	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02989	Sample Received By:	Shalyn Rodriguez
Project Location:	COP - EDDY CO., NM		

#### Sample ID: BH - 1 - 23 (4'-5') (H230996-11)

BTEX 8021B	mg,	′kg	Analyze	d By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/06/2023	ND	2.02	101	2.00	7.40	
Toluene*	<0.050	0.050	03/06/2023	ND	1.99	99.6	2.00	5.61	
Ethylbenzene*	<0.050	0.050	03/06/2023	ND	1.98	98.8	2.00	1.90	
Total Xylenes*	<0.150	0.150	03/06/2023	ND	6.21	104	6.00	4.95	
Total BTEX	<0.300	0.300	03/06/2023	ND					
Surrogate: 4-Bromofluorobenzene (PID	118 9	% 71.5-13	4						
Chloride, SM4500Cl-B	mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1070	16.0	03/06/2023	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	03/06/2023	ND	180	90.0	200	0.373	
DRO >C10-C28*	<10.0	10.0	03/06/2023	ND	206	103	200	8.65	
EXT DRO >C28-C36	<10.0	10.0	03/06/2023	ND					
Surrogate: 1-Chlorooctane	86.6	% 48.2-13	4						
Surrogate: 1-Chlorooctadecane	98.6	% 49.1-14	8						

#### Cardinal Laboratories

#### \*=Accredited Analyte

Celez D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	03/06/2023	Sampling Date:	03/01/2023
Reported:	03/08/2023	Sampling Type:	Soil
Project Name:	GRAHAM CRACKER 16 STATE #002H	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02989	Sample Received By:	Shalyn Rodriguez
Project Location:	COP - EDDY CO., NM		

#### Sample ID: BH - 1 - 23 (7'-8') (H230996-12)

BTEX 8021B	mg,	′kg	Analyze	d By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/06/2023	ND	2.02	101	2.00	7.40	
Toluene*	<0.050	0.050	03/06/2023	ND	1.99	99.6	2.00	5.61	
Ethylbenzene*	<0.050	0.050	03/06/2023	ND	1.98	98.8	2.00	1.90	
Total Xylenes*	<0.150	0.150	03/06/2023	ND	6.21	104	6.00	4.95	
Total BTEX	<0.300	0.300	03/06/2023	ND					
Surrogate: 4-Bromofluorobenzene (PID	117 9	% 71.5-13	4						
Chloride, SM4500Cl-B	mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	528	16.0	03/06/2023	ND	400	100	400	3.92	
TPH 8015M	mg/	′kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/06/2023	ND	180	90.0	200	0.373	
DRO >C10-C28*	<10.0	10.0	03/06/2023	ND	206	103	200	8.65	
EXT DRO >C28-C36	<10.0	10.0	03/06/2023	ND					
Surrogate: 1-Chlorooctane	82.4	% 48.2-13	4						
Surrogate: 1-Chlorooctadecane	94.3	% 49.1-14	8						

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#### \*=Accredited Analyte

Celez D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	03/06/2023	Sampling Date:	03/01/2023
Reported:	03/08/2023	Sampling Type:	Soil
Project Name:	GRAHAM CRACKER 16 STATE #002H	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02989	Sample Received By:	Shalyn Rodriguez
Project Location:	COP - EDDY CO., NM		

#### Sample ID: BH - 1 - 23 (9'-10') (H230996-13)

BTEX 8021B	mg/	kg	Analyze	d By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/06/2023	ND	2.02	101	2.00	7.40	
Toluene*	<0.050	0.050	03/06/2023	ND	1.99	99.6	2.00	5.61	
Ethylbenzene*	<0.050	0.050	03/06/2023	ND	1.98	98.8	2.00	1.90	
Total Xylenes*	<0.150	0.150	03/06/2023	ND	6.21	104	6.00	4.95	
Total BTEX	<0.300	0.300	03/06/2023	ND					
Surrogate: 4-Bromofluorobenzene (PID	118 %	6 71.5-13	4						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	240	16.0	03/06/2023	ND	400	100	400	3.92	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/06/2023	ND	180	90.0	200	0.373	
DRO >C10-C28*	<10.0	10.0	03/06/2023	ND	206	103	200	8.65	
EXT DRO >C28-C36	<10.0	10.0	03/06/2023	ND					
Surrogate: 1-Chlorooctane	82.0 9	48.2-13	4						
Surrogate: 1-Chlorooctadecane	93.4 9	% 49.1-14	8						

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Celey D. Keene, Lab Director/Quality Manager



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

Received:	03/06/2023	Sampling Date:	03/01/2023
Reported:	03/08/2023	Sampling Type:	Soil
Project Name:	GRAHAM CRACKER 16 STATE #002H	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02989	Sample Received By:	Shalyn Rodriguez
Project Location:	COP - EDDY CO., NM		

#### Sample ID: BH - 1 - 23 (14'-15') (H230996-14)

BTEX 8021B	mg/	kg	Analyze	d By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/06/2023	ND	2.02	101	2.00	7.40	
Toluene*	<0.050	0.050	03/06/2023	ND	1.99	99.6	2.00	5.61	
Ethylbenzene*	<0.050	0.050	03/06/2023	ND	1.98	98.8	2.00	1.90	
Total Xylenes*	<0.150	0.150	03/06/2023	ND	6.21	104	6.00	4.95	
Total BTEX	<0.300	0.300	03/06/2023	ND					
Surrogate: 4-Bromofluorobenzene (PID	119 %	6 71.5-13	4						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	192	16.0	03/06/2023	ND	400	100	400	3.92	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/06/2023	ND	180	90.0	200	0.373	
DRO >C10-C28*	<10.0	10.0	03/06/2023	ND	206	103	200	8.65	
EXT DRO >C28-C36	<10.0	10.0	03/06/2023	ND					
Surrogate: 1-Chlorooctane	80.3 9	48.2-13	4						
Surrogate: 1-Chlorooctadecane	90.0 9	49.1-14	8						

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Celey D. Keene, Lab Director/Quality Manager



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

Received:	03/06/2023	Sampling Date:	03/01/2023
Reported:	03/08/2023	Sampling Type:	Soil
Project Name:	GRAHAM CRACKER 16 STATE #002H	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02989	Sample Received By:	Shalyn Rodriguez
Project Location:	COP - EDDY CO., NM		

#### Sample ID: BH - 1 - 23 (19'-20') (H230996-15)

BTEX 8021B	mg/	kg	Analyze	d By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/06/2023	ND	2.02	101	2.00	7.40	
Toluene*	<0.050	0.050	03/06/2023	ND	1.99	99.6	2.00	5.61	
Ethylbenzene*	<0.050	0.050	03/06/2023	ND	1.98	98.8	2.00	1.90	
Total Xylenes*	<0.150	0.150	03/06/2023	ND	6.21	104	6.00	4.95	
Total BTEX	<0.300	0.300	03/06/2023	ND					
Surrogate: 4-Bromofluorobenzene (PID	117 %	6 71.5-13	4						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	03/06/2023	ND	400	100	400	3.92	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/06/2023	ND	180	90.0	200	0.373	
DRO >C10-C28*	<10.0	10.0	03/06/2023	ND	206	103	200	8.65	
EXT DRO >C28-C36	<10.0	10.0	03/06/2023	ND					
Surrogate: 1-Chlorooctane	82.7 9	48.2-13	4						
Surrogate: 1-Chlorooctadecane	93.7 9	% 49.1-14	8						

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Celey D. Keene, Lab Director/Quality Manager



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

Received:	03/06/2023	Sampling Date:	03/01/2023
Reported:	03/08/2023	Sampling Type:	Soil
Project Name:	GRAHAM CRACKER 16 STATE #002H	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02989	Sample Received By:	Shalyn Rodriguez
Project Location:	COP - EDDY CO., NM		

#### Sample ID: BH - 1 - 23 (24'-25') (H230996-16)

BTEX 8021B	mg/	kg	Analyze	d By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/06/2023	ND	2.02	101	2.00	7.40	
Toluene*	<0.050	0.050	03/06/2023	ND	1.99	99.6	2.00	5.61	
Ethylbenzene*	<0.050	0.050	03/06/2023	ND	1.98	98.8	2.00	1.90	
Total Xylenes*	<0.150	0.150	03/06/2023	ND	6.21	104	6.00	4.95	
Total BTEX	<0.300	0.300	03/06/2023	ND					
Surrogate: 4-Bromofluorobenzene (PID	119 %	6 71.5-13	4						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	208	16.0	03/06/2023	ND	400	100	400	3.92	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/07/2023	ND	180	90.0	200	0.373	
DRO >C10-C28*	<10.0	10.0	03/07/2023	ND	206	103	200	8.65	
EXT DRO >C28-C36	<10.0	10.0	03/07/2023	ND					
Surrogate: 1-Chlorooctane	84.2	48.2-13	4						
Surrogate: 1-Chlorooctadecane	94.1	49.1-14	8						

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Celez D. Keine

Celey D. Keene, Lab Director/Quality Manager



### **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

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager

	101 East Maria	nd, Hobbs, NM 88:	40								ar ar ar ar																	1
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Droiect Manager: C	hristian Llull								P.0	.#																	-	
Address: 8911 Cap	ital o Texas Hwy, Suite	310							Cor	npai	ny: Te	etra Tech																
City: Austin		State: TX	Zip:						Attr	1: Cf	nristia	In Llull												-				
Phone #: (	512)565-0190 Fax	<b>#</b>							Add	fres	S: EM	AIL			4													
Project #: 2	212C-MD-02989 Pro	ject Owner:			Cor	1000	Phil	ips	City	1																		-
Project Name: Gral	ham Cracker 16 State #0	02H							Sta	te:		Zib:				·B								2				
Project Location: E	Eddy County, New Mexic	ö							Pho	one	*					CI												
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Qe	BH-1-23 (0-1')		G	-		-	×	+			(X	3/1/2023		< ×	< ×				T	+			1	+			+	
6	BH-1-23 (2'-3')		G	-		F	×	F			X	3/1/2023	s including those for n	A	and any other	Cause wh	atsoever sha	I be deen	ned waives	d unless	made in	writing a	ind recei	ved by C	ardinal w	ithin 30	days aft	er comp
PLEASE NOTE: Liability and Dar event shall Cardinal be liable for affiliates or successors arising	mages. Cardina's liability and client's exclusiv or incidental or consequental damages, in 1 out of or related to the performance of se	e remedy for any claim arising whethe cluding without limitation, business rvices hereunder by Cardinal, rega	interrup rdless of	n contrac tions, lo f wheth	at or tont, ass of us	shall be se, or lo claim is	based i	fits inci	y of the	above:	its subsi	diaries, asons or otherwise.		1.1														J
Relinquished By:	Colton Bickerstaff	Date: 3/6/23	Rec	ceive	d By								Verbal Result:	emai	Yes 🛛	No	de Email	Add'l addre	Phone ss: Ch	hristia	n.Llul	li@tet	ratech	1.com				
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FORM-006 R 3.2 10/07/21

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

**CARDINAL** Laboratories

	Delivered By: (Circ Sampler - UPS - B		Relinguished By:		Relinquished By:	event shall Cardinal be liable t affiliates or successors arising	PLEASE NOTE: Liability and Da		2		(10	J.	14	N.	e e		0 IDONSCH	Lab I.D.	FOR LAB USE ONLY	Sampler Name: Co	Project Location:	Project Name: Gra	Project #:	Phone #:	City: Austin	Address: 8911 Cap	Project Manager: C	Company Name: T	
	le One) us - Other:				Colton Bickerstaff	for incidental or consequental damages, g out of or related to the performance of a	mages. Cardinal's liability and client's exclusion				BH-1-23 (24'-25')	BH-1-23 (19'-20')	BH-1-23 (14'-15')	BH-1-23 (9'-10')	BH-1-23 (7'-8')	BH-1-23 (4'-5')	Sample			olton Bickerstaff	Eddy County, New Mex	ham Cracker 16 State #	212C-MD-02989 Pi	(512)565-0190 Fa		oital o Texas Hwy, Suite	Christian Llull	etra Tech	(575) 393-23
0.0	Observed Temp. °C Corrected Temp. °C	Time:	Date:	Time	Date: 3/6/23	including without limitation, business in services hereunder by Cardinal, regard	ive remedy for any claim arising whether										.p				ico	002H	roject Owner:	ıx #:	State: TX	2310			26 FAX (575) 393-24
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Received by OCD: 7/5/2023 9:33:31 PM

FORM-006 R 3.2 10/07/21

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Page 20 of 20

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Released to Imaging: 7/28/2023 10:02:17 AM

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

Operator:	OGRID:
COG OPERATING LLC	229137
600 W Illinois Ave	Action Number:
Midland, TX 79701	236248
	Action Type:
	[C-141] Release Corrective Action (C-141)

#### CONDITIONS

Created By	Condition	Condition Date
bhall	Deferral is DENIED but the remediation plan has been approved with the following conditions: The locations of SB-1, FL-1-1 and FL-2-1 must be addressed during excavation activities. Analytical results from 2018 show that chloride contamination extends to atleast 6 feet. FL-1-1 and FL-2-1 were above the recalamation requirements for chlorides and TPH at FL-2-1. Chloride contamination at BG-1-23 also must be remediated to the reclamation requirements during remediation activities.	7/28/2023
bhall	A deferral for the tin horn will not be approved as the OCD does not agree that remediation of this area would result in a major facility deconstruction. Use of a hydrovacuum can be used to facilitate the remediation of this area if warranted. Per 19.15.29.12 C. (3) "The responsible party shall remediate the impacted surface area of a release not occurring on a lined, bermed or otherwise contained exploration, development, production or storage site to meet the standards of Table I of 19.15.29.12 NMAC or other applicable remediation standards and restore and reclaim the area pursuant to 19.15.29.13 NMAC."	7/28/2023
bhall	Submit a complete report through the OCD Permitting website by 10/28/2023.	7/28/2023

CONDITIONS

Action 236248

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