		SITE	INFORMA	TION			
	-	Report T	ype: Adde	ndum			
General Site Information:		•					
Site & Lease No:		Copperhea	d 31 Federal C	om #001H			
Company:		COG Opera	ating LLC				
Section, Township and Ra	ange	Unit H	Sec. 31	T 26S	R 29E		
Lease Number:		API No. 30-					
County:		Eddy Coun					
GPS:			32.0014305			-104.0	168457
Surface Owner:		BLM				. 0.41.1	5.1.4.005.11
Directions:						st on Cattish	Rd. for 0.85 miles, turn
		iert (north) ar	nd go 400 feet and	arrive at ioca	illori.		
		1					
		L					
Release Data:	_						
RP Number	2RP- 4763						
Date Released:	5/20/2018						
Type Release:	Produced Water						
Source of Contamination:	Flowline Rupture						
Fluid Released:	249 bbl						
Fluids Recovered:	9 bbls						
Official Communication:							
Name:	Ike Tavarez				Clair Gonza	ales	
Сотрапу:	COG Operating, LL	С			Tetra Tech		
Address:	One Concho Cente	r			901 West Wall Street		
	600 W. Illinois Ave.				Suite 100		
City:	Midland Texas, 797	01			Midland, Te	exas	
Phone number:	(432) 686-3023				(432) 687-8	3110	
Fax:	(432) 684-7137						
Email:	itavarez@concho	00.00			0	zales@tetra	

Site Characterization	
Depth to Groundwater:	50' +
Karst Potential:	Medium

Recommended Remedial Action Levels (RRALs)								
Benzene	Total BTEX	TPH (GRO+DRO+MRO)	Chlorides					
10 ma/ka	50 ma/ka	100 ma/ka	600 mg/kg					



June 18, 2019

Mr. Mike Bratcher Oil Conservation Division, District 2 811 S. First Street Artesia, New Mexico 88210

Work Plan for the COG Operating, LLC, Copperhead 31 Federal Com #001H, Unit H, Re: Section 31, Township 26 South, Range 29 East, Eddy County, New Mexico. 2RP-4763

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating, LLC (COG) to evaluate a release that occurred at the Copperhead 31 Federal #001H, Unit H, Section 31, Township 26 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are 32.00143°, -104.01684°. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the leak was discovered on May 20, 2018, and released approximately 240 barrels of produced water due to a flowline rupture. The release impacted an overall area measuring approximately 220' x 110'. The C-141 Form is included in Appendix A.

BBC International (BBC) previously submitted a workplan which was denied by the NMOCD. The BBC work plan is shown in Appendix C.

Site Characterization

A site characterization was performed for the site and no watercourses, lakebeds, sinkholes, playa lakes, residences, schools, hospitals, institutions, churches, springs, private domestic water wells, springs, wetlands, incorporated municipal boundaries, subsurface mines, or floodplains are located within the specified distances.

However, the site is located in a medium karst potential area. No water wells were listed within Section 31 on the New Mexico Office of the State Engineer's (NMOSE) database, the Geology and Groundwater Resources of Eddy County (Report 3), or the USGS National Water Information database. The nearest well is listed in Section 26 on the USGS database, approximately 3.35 miles northeast of the site, and has a reported depth to groundwater of 54.30' below surface.

Tetra Tech personnel were onsite on February 14-15 2019, to re-assess overlapping releases (2RP-4796 and 2RP-5034) that occurred adjacent to the site. A total of four (4) boreholes (BH-1, BH-2, BH-3, and BH-4) were installed in the area to total depths ranging from 19'-20- to 49'-50' below surface in order to vertically define the chloride concentrations. Also, the boreholes (BH-1 through BH-4) showed no moisture or groundwater at any of the borehole locations with the



deepest depth at (BH-1) 49'-50' below surface. The groundwater data and borehole logs are shown in Appendix B.

Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, updated August 14, 2018. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the site characterization the proposed RRAL for TPH is 100 mg/kg (GRO+DRO+MRO). Additionally, the proposed RRAL for chlorides is 600 mg/kg.

Work Plan

Based on the laboratory results, as presented by BBC, and the boreholes installed by Tetra Tech at the adjacent site which indicate depth to ground water is greater than 50', COG proposes to remove the chloride impacted soils as shown on BBC's Figure 1 in Appendix C. Due to access issues and safely concerns, the proposed excavation will be performed to remove the impacted soil to the maximum extent practicable. The areas of sample points (SP-1, SP-2, SP-3, SP-4, SP-5, SP-6, SP-7, SP-8, and SP-9) will be excavated to approximately 4.0' below surface.

Variance

Per rule 19.15.29.14, COG requests a variance to install a 20-mil liner at 4.0' below surface in the areas of sample points (SP-1, SP-2, SP-3, SP-4, SP-5, SP-6, SP-7, SP-8, and SP-9), to prevent vertical migration of the deeper chloride concentrations detected. Prior to the liner installation, composite sidewall samples will be collected every 600 square feet, to be representative of the release area, for documentation purposes.

All the excavated material will be transported offsite for proper disposal. COG estimates approximately 1,265 cubic yards will be excavated and will be implemented within ninety (90) days of the work plan being approved.

Sampling Plan

Five-point composite sidewall confirmation samples will be collected every 600 square feet in order to ensure proper removal of the impacted areas. The proposed excavation depths may not be reached due to wall cave-ins and safety concerns for onsite personnel. Also, impacted soil around oil and gas equipment, structures or lines may not be viable or practicable to be removed due to safely concerns for on-site personnel. As such, COG will excavate the impacted soils to the maximum extent practicable.



Conclusion

Upon completion, a final report detailing the remediation activities will be submitted to the NMOCD. If you have any questions or comments concerning the assessment or the proposed remediation activities for this site, please call at (432) 682-4559.

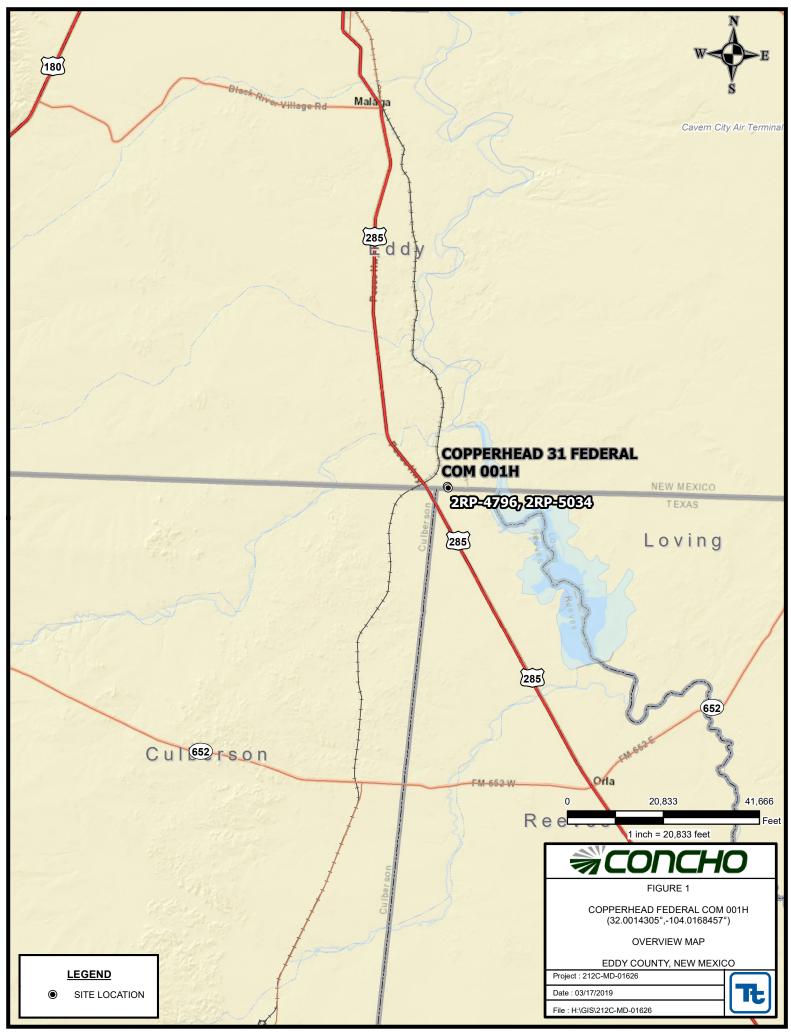
Respectfully submitted,

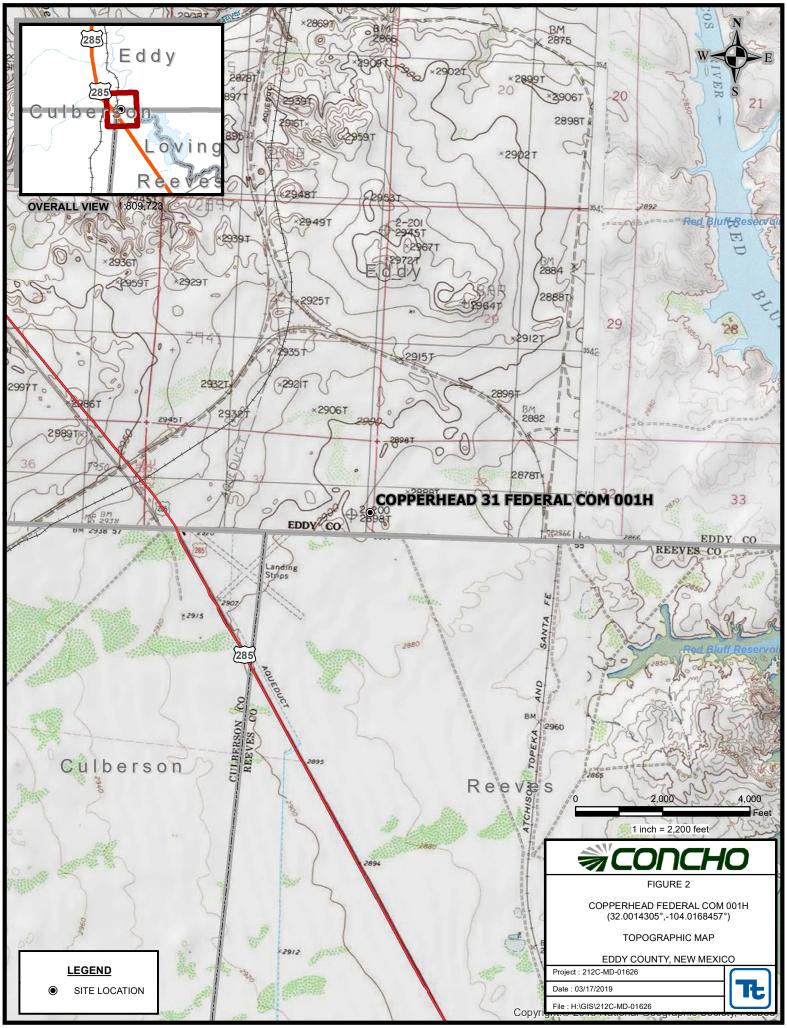
TETRA TECH

Clair Gonzales, PG Project Manager Johnathon Kell, Geologist

cc: Ike Tavarez - COG Dakota Neel - COG Rebecca Haskell - COG Sheldon Hitchcock - COG DeAnn Grant - COG

Figures





Appendix A

<u>District I</u> 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

MAY 21 2018

Form C-141 Revised April 3, 2017

Oil Conservation Division DISTRICT || ARTESIA O.C. Depropriate District Office in accordance with 19.15.29 NMAC. 1220 South St. Francis Dr.

Santa Fe NM 87505

				Da	iita i c	, 14141 073	0.5					
Release Notification and Corrective Action												
NAB18	1425	8390				OPERA	OR			al Report		Final Report
Name of Co	mpany: C	OG Produc	tion, LL	C (OGRID 2179	(55)	Contact: Ro	bert McNeill			1		
				nd TX 79701			lo.: 432-683-74					
Facility Nar	ne: Coppe	erhead 31 F	ederal C	om #001H]	Facility Typ	e: Tank Batter	у				
Surface Ow	ner: BLM			Mineral O	wner: I	Federal			API No	.: 30-015-3	88532	
				LOCA	TION	OF REI	LEASE					
Unit Letter	Section	Township	Range	Feet from the		South Line	Feet from the		West Line	County		
Н	31	26S	29E	480		South	480		East		Edd	У
	Latitude: 32.0014305 Longitude: -104.0168457 NAD83											
				NAT	URE	OF RELI	EASE					
Type of Rele	ase: Produc	ed Water		IVAI	UKE	Volume of			Volume R	Recovered:		
						240bbls			9bbls			
Source of Re	lease: Flow	line				Date and H 5/20/2018	our of Occurrence	e:	Date and 5/20/2018	Hour of Dis	covery	:
Was Immedia	ate Notice (Given?				If YES, To	Whom?		3/20/2010	7.13am		
		\boxtimes	Yes	No Not Re	quired		her-NMOCD					
By Whom? S	heldon Hite	cheock				Shelly Tuc	ker-BLM lour: 5/20/2018 6	·15nm				
Was a Water							lume Impacting t		ercourse.			
			Yes 🗵	No		,						
If a Watercou	irse was Im	pacted, Descr	ibe Fully.	*								
												1
Describe Cau	ise of Probl	em and Reme	dial Actio	n Taken.*								
												1
A 4-inch poly	line ruptu	red due to a su	ispected h	igh line pressure.	The dan	naged section	of line will be re	placed.				
Describe Are	a Affected	and Cleanup	Action Tal	ken.*								
The release is	mpooted the	a mastura aast	of the tank	hottom: Concho	will how	a tha area ave	lunted for any no	ecible i	nnact from	the release	and we	will precent
				battery. Conchoroval prior to any				issible ii	праст пош	the release	and we	will present
			- 11	1	C							1
I hereby certi	fy that the	information of	iven above	e is true and comp	lete to th	ne hest of my	knowledge and u	ındereta	nd that nurs	suant to NM	OCD r	rules and
				nd/or file certain re								
				ce of a C-141 repo								
or the environ	operations h	nave failed to	adequately OCD accer	investigate and restance of a C-141	emediate	e contaminati	on that pose a thr	eat to g	round water ibility for co	r, surface wa	ater, hu with an	man health
		ws and/or regi		stance of a C 1111	report d	oes not renev	e the operator of	гевропв	ionity for c	omphanee	, , , , , , , , , , , , , , , , , , ,	, other
							OIL CON	SERV	ATION	DIVISIO	<u>NC</u>	
	21 -11		,						11			
Signature:	meio	on Hito	m			Approved by	Environmental S	pecialis	Silo 2	Sugar des	cta	
Printed Name	e: Sheldon	L. Hitchcock				71	organeu i	3 y	1777	11-14-50162	-	-
11110011111	or offerdorr	D. Tittelleook					Flant	0		A /	11	
Title: HSE C	oordinator					Approval Da	te: 0/22/12		Expiration	Date: /\/	H	
E-mail Addre	ess: slhitche	cock@concho	.com			Conditions of	f Approval:			/ AH 1		
Date: 5/21/20	018		Ph	one: 575-746-2010			See	at	ached	Attached	RP-1	+1103

Phone: 575-746-2010

Date: 5/21/2018

^{*} Attach Additional Sheets If Necessary

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 5/21/2018 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number 2RP-47/63 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 $\underline{2}$ office in $\underline{ARTESIA}$ on or before $\underline{6/21/2018}$. 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; C₆ thru C₃₆), 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; C₆ thru C₃₆), 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>

Sent: Monday, May 21, 2018 10:27 AM

To: Bratcher, Mike, EMNRD; Weaver, Crystal, EMNRD; stucker@blm.gov

Cc: Robert McNeill; Rebecca Haskell; Dakota Neel; Christopher Gray; DeAnn Grant

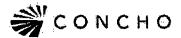
Subject: (C-141 Initial) Copperhead 31 Federal Com #001H (30-015-38532) 5/20/2018 **Attachments:** (C-141 Initial) Copperhead 31 Federal Com #001H (30-015-38532) 5-20-2018.pdf

Mr. Bratcher/Ms. Tucker,

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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Form C-141 Page 3

State of New Mexico Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	(ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☐ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☐ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☐ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☐ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☐ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☐ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☐ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☐ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☐ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☐ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☐ No
Did the release impact areas not on an exploration, development, production, or storage site?	☐ Yes ☐ No
Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and ver contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.	tical extents of soil
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 well 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	ls.

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

Form C-141 Page 4

State of New Mexico Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

I hereby certify that the information given above is true and complete to the regulations all operators are required to report and/or file certain release not public health or the environment. The acceptance of a C-141 report by the Gailed to adequately investigate and remediate contamination that pose a threaddition, OCD acceptance of a C-141 report does not relieve the operator of and/or regulations.	fications and perform corrective actions for releases which may endanger DCD does not relieve the operator of liability should their operations have eat to groundwater, surface water, human health or the environment. In
Printed Name:	Title:
Signature:	Date:
email:	Telephone:
OCD Only	
Received by:	Date:

Form C-141 Page 5

State of New Mexico Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: Each of the following items must be	e included in the plan.
☐ Detailed description of proposed remediation technique ☐ Scaled sitemap with GPS coordinates showing delineation point ☐ Estimated volume of material to be remediated ☐ Closure criteria is to Table 1 specifications subject to 19.15.29.1 ☐ Proposed schedule for remediation (note if remediation plan times)	2(C)(4) NMAC
<u>Deferral Requests Only</u> : Each of the following items must be con	firmed as part of any request for deferral of remediation.
Contamination must be in areas immediately under or around predeconstruction.	oduction equipment where remediation could cause a major facility
Extents of contamination must be fully delineated.	
Contamination does not cause an imminent risk to human health	, the environment, or groundwater.
	e and remediate contamination that pose a threat to groundwater, acceptance of a C-141 report does not relieve the operator of
Printed Name:	Title:
Signature:	Date:
email:	Telephone:
OCD Only	
Received by:	Date:
☐ Approved ☐ Approved with Attached Conditions of	Approval
Signature:	Date:

Appendix B

Water Well Data Average Depth to Groundwater (ft) COG Copperhead 31 Fed Com #1H Eddy County, New Mexico

	25 Sc	uth	28	East	
6	5	4 35	3 32	2	1
	59				Site
7	8	9	10	11	12
18	17	16	15 48	14	13
67			49		
19	20	21	22	23	24
	96				
30	29	28	27	26 40	25
	15	90			5
31	32	33	34	35	36
					40

	25 Sc	outh	29		
6	5	4	3	2	1
40	8	9	10 40	11	12
18	17	16	15 60	14	13
19	20	21	22	23	24
30 30	29	28	27	26	25
31	32 115	33	34	35	36

	25 S	outh	30	East	
6	5	4	3	2 295	1
7 26	8	9 295	10	11	12 390
18	17	16	15	14	13
19	20	21 265 268	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

	26 So	uth	28	East	
6	5	4	3	2 120	1
				21	
7	8	9	10	11	12
					100
18	17	16	15	14	13
				120	56
19	20	21	22	23	24
			120		
30	29	28	27	26	25
31	32	33	34	35	36

	26 Sc	outh	29	East	
6	5 78	4	3	2	1
7	8	9	10	11	12
18	17	16 125	15	14	13
19	20	21	22 57 57 69	23	24
30 🔽	29	28	27	26 54.30	25
31 Site	32	33	34	35	36

	26 Sc	uth	30	East	
6	5 179	4	3	2	1
	180				
7	8	9	10	11	12
	172				
18	17	16	15	14	13
19	20	21	22	23	24
					180
30	29	28	27	26	25
31	32	33	34	35	36

- 88 New Mexico State Engineers Well Reports
- 105 USGS Well Reports
- 90 Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6) Geology and Groundwater Resources of Eddy County, NM (Report 3)
- 34 NMOCD Groundwater Data
- 123 Tetra Tech installed temporary wells and field water level
- 143 NMOCD Groundwater map well location



USGS Home Contact USGS Search USGS

National Water Information System: Web Interface

USGS Water Resources

Data Category:	Geographic Area:	
Groundwater >	New Mexico	✓ GO

Click to hideNews Bulletins

- Introducing The Next Generation of USGS Water Data for the Nation
- Full News

Groundwater levels for New Mexico

Click to hide state-specific text

Search Results -- 1 sites found

site_no list =

• 320106103555301

Minimum number of levels = 1

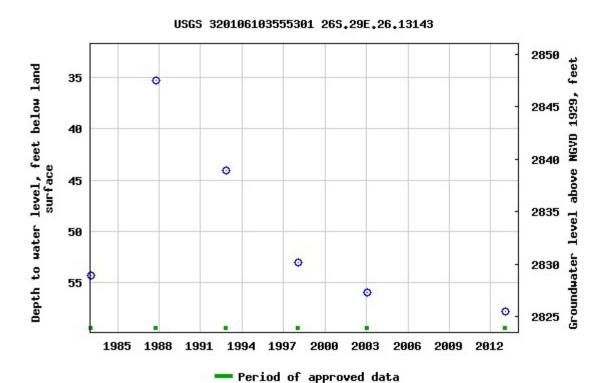
Save file of selected sites to local disk for future upload

USGS 320106103555301 26S.29E.26.13143

Available data for this site	Groundwater:	Field measurements	~	GO	
Eddy County, New Mexico			-		
Hydrologic Unit Code 1307(0001				
Latitude 32°00'51.3", Long	jitude 103°	57'42.0" NAD83			
Land-surface elevation 2,88	33.00 feet a	bove NGVD29			
The depth of the well is 140) feet below	<i>i</i> land surface.			
This well is completed in th	e Rustler Fo	ormation (312RS	SLR) lo	ocal a	quifer.

Output formats

able of data	
ab-separated data	
Graph of data	
eselect period	



Breaks in the plot represent a gap of at least one year between field measurements.

Download a presentation-quality graph

Questions about sites/data?
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U.S. Department of the Interior | U.S. Geological Survey

Title: Groundwater for New Mexico: Water Levels URL: https://nwis.waterdata.usgs.gov/nm/nwis/gwlevels?

Page Contact Information: New Mexico Water Data Maintainer

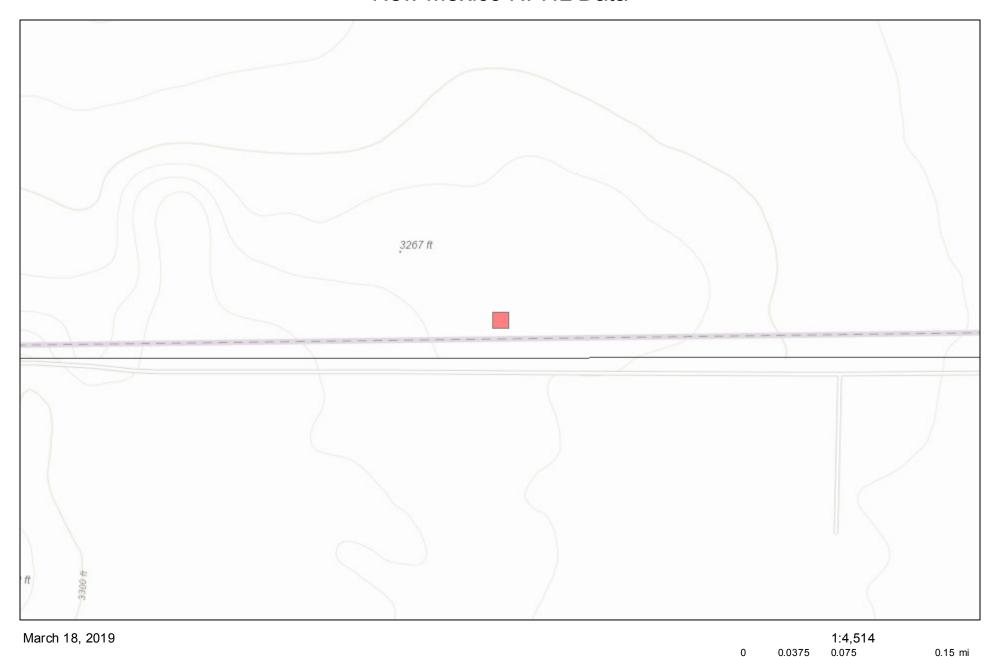
Page Last Modified: 2019-06-18 12:30:03 EDT

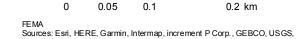
0.96 0.87 nadww02





New Mexico NFHL Data





0.2 km

0.05

Client:	COG			
Site Name	Copperhead 31 Fed Com #001H			
Boring/Well:	BH-1			
GPS	32.000342° -104.016309°			
Project #:	212C-MD-01589			
Total Depth	50'			
Date Installed:	2/15/2019			
DEPTH (Ft)	Lithology/Sample Description	NOTES	Chloride(PPM)	Titration (ppr
0-1	Red Silty Sand	No odor or Odor	4.48 PPT	-
2-3	Red Silty Sand	No Stain or odor	6.39 PPT	-
4-5	Red Silty Sand	No Stain or odor	5.52 PPT	-
6-7	Red Silty Sand	No Stain or odor	3.50 PPT	-
9-10	Red Silty Sand w/minor rock fragments, Dry	No Stain or odor	1.64 PPT	-
14-15	Red Clayey Sand , Dry	No Stain or odor	2.46 PPT	-
19-20	Red Silt Sand Clay w/gypsum fragments, Dry	No Stain or odor	1.93 PPT	1,040
24-25	Red Silt Sand Clay w/gypsum fragments, Dry	No Stain or odor	1.67 PPT	1,120
29-30	Red Silt Sand Clay w/gypsum fragments, Dry	No Stain or odor	1.51 PPT	960
34-35	Red Silt Sand Clay w/gypsum fragments, Dry	No Stain or odor	969 PPT	920
39-40	Red Silt Sand Clay w/gypsum fragments, Dry	No Stain or odor	1.12 PPT	800
44-45	Red Silt Sand Clay w/gypsum fragments,Dry	No Stain or odor	1.34 PPT	600
49-50	Red Silt Sand Clay w/gypsum fragments/Dry	No Stain or odor	1.29 PPT	520

COG			
Copperhead 31 Fed Com #001H			
BH-2			
32.000500° -104.016200°			
212C-MD-01589			
20'			
2/15/2019			
Lithology/Sample Description	NOTES	Chloride(PPM)	Titration (ppm
	No odor or Odor		
	No Stain or odor	942 PPM	-
	No Stain or odor	2.81 PPT	-
	No Stain or odor	3.14 PPT	-
	No Stain or odor	3.44 PPT	-
	No Stain or odor	595 PPM	360
	No Stain or odor	598 PPM	320
	Copperhead 31 Fed Com #001H BH-2 32.000500° -104.016200° 212C-MD-01589 20'	Copperhead 31 Fed Com #001H BH-2 32.000500° -104.016200° 212C-MD-01589 20' 2/15/2019 Lithology/Sample Description NOTES Brown Silty Sandy Clay/Dry No odor or Odor Brown Silty Sandy Clay/Dry No Stain or odor Red Silty Sandy Clay/Dry No Stain or odor	Copperhead 31 Fed Com #001H BH-2 32.000500° -104.016200° 212C-MD-01589 20' 2/15/2019 Lithology/Sample Description NOTES Chloride(PPM) Brown Silty Sandy Clay/Dry No odor or Odor 1.92 PPT Brown Silty Sandy Clay/Dry No Stain or odor 942 PPM Red Silty Sandy Clay/Dry No Stain or odor 2.81 PPT Red Silty Sandy Clay/Dry No Stain or odor 3.14 PPT Red Silty Sandy Clay/Dry No Stain or odor 3.44 PPT Red Silty Sandy Clay/Dry No Stain or odor 595 PPM

Client:	COG			
Site Name	Copperhead 31 Fed Com #001H			
Boring/Well:	BH-3			
GPS	32.000320° -104.015900°			
Project #:	212C-MD-01589			
Total Depth	20'			
Date Installed:	2/15/2019			
DEPTH (Ft)	Lithology/Sample Description	NOTES	Chloride(PPM)	Titration (ppm
0-1	Brown Sandy Silt w/gravel fragments/Dry	No odor or Odor	1.70 PPT	-
2-3	Red Sand Clayey Silt/Dry	No Stain or odor	1.39 PPT	-
4-5	Red Sandy Silty Clay/Dry	No Stain or odor	2.24 PPT	-
6-7	Red Sandy Silty Clay/Dry	No Stain or odor	3.10 PPT	-
9-10	Red Sandy Silty Clay/Dry	No Stain or odor	3.95 PPT	-
14-15	White Chalkey Gypsum/Dry	No Stain or odor	1.23 PPT	480
19-20	White Chalkey Gypsum/Dry	No Stain or odor	1.11 PPT	320

Client:	cog			
Site Name	Copperhead 31 Fed Com #001H			
Boring/Well:	BH-4			
GPS	32.000330° -104.016100°			
Project #:	212C-MD-01589			
Total Depth	20'			
Date Installed:	2/15/2019			
		•		
DEPTH (Ft)	Lithology/Sample Description	NOTES	Chloride(PPM)	Titration (ppm)
0-1	Brown Sandy Silt w/gravel fragments/Dry	No odor or Odor	1.92 PPT	-
2-3	Red Sandy Silty Clay/Dry	No Stain or odor	2.04 PPT	-
4-5	Red Sandy Silty Clay/Dry	No Stain or odor	2.25 PPT	-
6-7	Red Sandy Silty Clay/Dry	No Stain or odor	4.22 PPT	-
9-10	Red Sandy Silty Clay/Dry	No Stain or odor	4.38 PPT	-
14-15	Red Sandy Silty Clay w/gypsum/Dry	No Stain or odor	1.35 PPT	520
19-20	Red Sandy Silty Clay w/gypsum/Dry	No Stain or odor	1.29 PPT	520

Appendix C



PHONE (575) 397-6388 • FAX (575) 397- 0397 • 1324 W. MARLAND • P.O. BOX 805 • HOBBS, NM 88241-0805 E-MAIL: cbrunson@bbcinternational.com

DELINEATION WORKPLAN

COG – COPPERHEAD 31 FED COM #001H (Leak Date: 5/20/18)

RP # 2RP-4763

This delineation workplan and remediation proposal addresses the release associated with RP # 2RP-4763.

The following information includes:

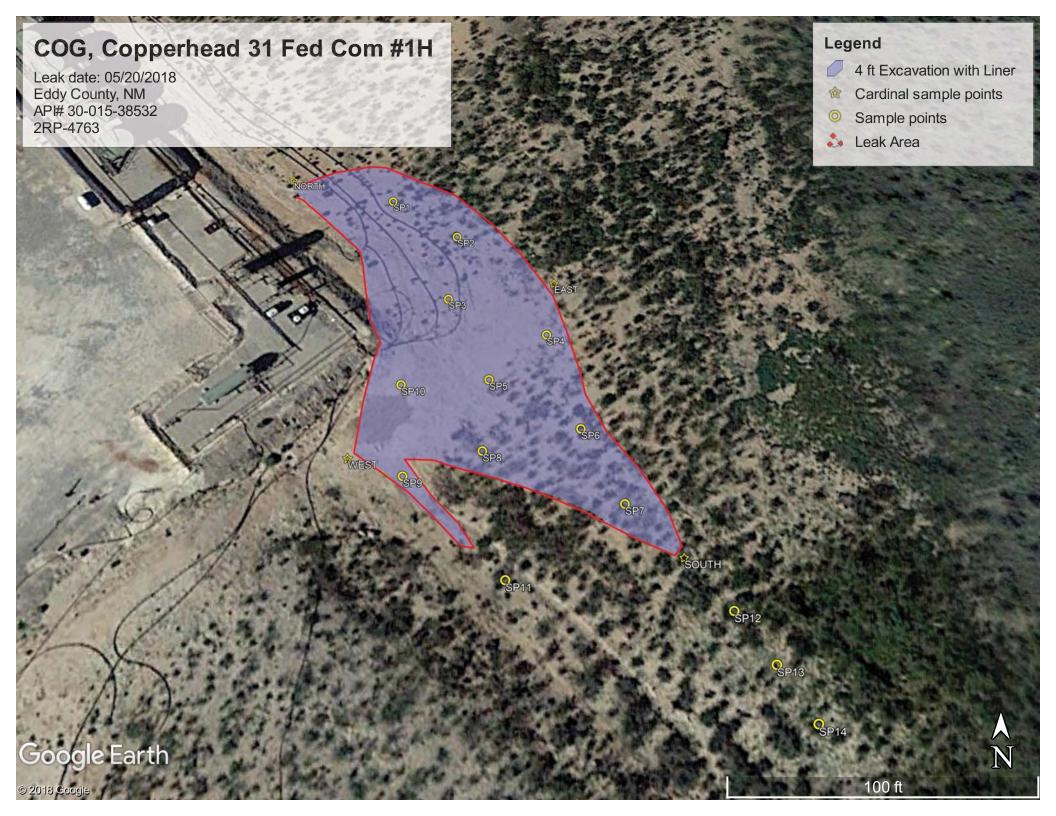
- 1. Scaled digital site map with spill area demarcated and leak point identified along with sample point locations and areas of remediation at appropriate depths.
- 2. GPS information for sample points and sample methodology
- 3. Depth to groundwater information (i.e., pdf of OSE search results and/or copy of Chevron groundwater trend map).
- 4. Laboratory analysis results summary table and original laboratory analysis reports
- 5. A copy of the initial C-141
- 6. Potentially other pertinent information as necessary for site specific purposes.

Based on the information included in this package and the NMOCD guidelines, the following remediation is proposed:

COG will excavate the spill area as depicted on the following site diagram. The entire leak area will be excavated to a depth of 4 feet with an impermeable liner placed in the bottom of the excavation.

The entire site will then be backfilled with clean soil and revegetated (if warranted) to the standards of the appropriate regulatory agency or private surface owner.

All excavated materials will be disposed of at an NMOCD-approved disposal facility.



COG, Copperhead 31 Fed Com #1H

Sample points

SP1, N 32.00163 W-104.01612

SP2, N 32.00158 W-104.01603

SP3, N 32.00149 W-104.01604

SP4, N 32.00145 W-104.01591

SP5, N 32.00139 W-104.01598

SP6, N 32.00133 W-104.01587

SP7, N 32.00125 W-104.01582

SP8, N 32.00131 W-104.01599

SP9, N 32.00128 W-104.01608

SP10, N 32.00138 W-104.01609

SP11, N 32.00117 W-104.01596

SP12, N 32.00114 W-104.01571

SP13, N 32.00109 W-104.01567

SP14, N 32.00103 W-104.01563

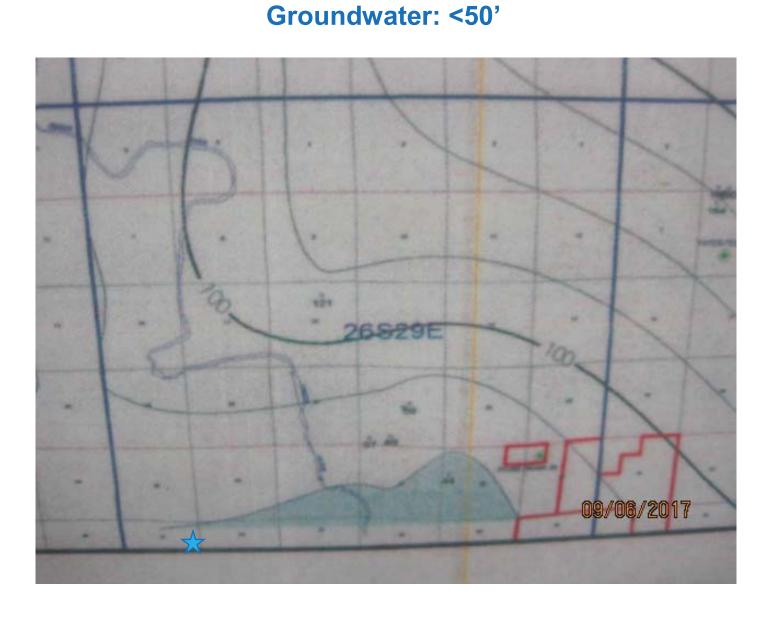
NORTH, N 32.00166 W-104.01626

SOUTH, N 32.00119 W-104.01576

EAST, N 32.00152 W-104.01590

WEST, N 32.00130 W-104.01615

COG, Copperhead 31 Fed Com #001H U/L H, Section 31, T26S, R29E





6/1/18 11:50 AM

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

			•	
NIO	recor	ne.	†∩ı ı	ทด
INU	16601	uo	IUU	ııu.

UTMNAD83 Radius Search (in meters):

Easting (X): 592205 **Northing (Y):** 3541658 **Radius:** 1700

UTM Conversion Tool Page 1 of 1

	Public Land Survey System (PLSS)										
•	Q64: 💙	Q16: 💙	Q4: 💙	Sec: 31 ✓ Tws	26S ∨	Rng: 29E ✓					
		State F	Plane Coordi	nate System - N	AD27						
)	X : 0	Y : 0	ft	Zone:		~					
		State F	Plane Coordi	nate System - N	AD83						
С	x: 0	t Y : 0	ft	Zone:		~					
	Degrees/Minutes/Seconds										
\bigcirc	Longitude (X):	Deg	grees: 0 °	Minutes: 0	•	Seconds: 0 "					
	Latitude (Y):	Deg	grees: 0 °	Minutes: 0	•	Seconds: 0 "					
			UTM ·	- NAD27							
<u> </u>	Easting (X	0	mtrs	Northing (Y):	0	mtrs Zone					
			s	ИВМІТ							
	All Con	version Res	ults are disp	olayed as <u>NAD 1</u>	983 UTM	Zone 13					
	Easting (X):	592205.0	mtrs	Northing (Y):	3541658.0	mtrs					
	~~	Please keep s	screen open to	copy UTM values	for Reports	5. ~~					

		Sample ID	SP1 @ SURFACE	SP1 @ 1'	SP1 @ 2'	SP1 @ 4'	SP1 @ 6'	SP1 @ 8'	SP1 @ 9'
Analyte	Method	Date	7/12/18	7/12/18	7/12/18	7/12/18	7/12/18	7/12/18	7/12/18
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	<0.050	n/a	n/a	n/a	n/a	n/a
Toluene	BTEX 8021B		<0.050	<0.050	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	BTEX 8021B		<0.050	<0.050	n/a	n/a	n/a	n/a	n/a
Total Xylenes	BTEX 8021B		<0.150	<0.150	n/a	n/a	n/a	n/a	n/a
Total BTEX	BTEX 8021B		<0.300	<0.300	n/a	n/a	n/a	n/a	n/a
Chloride	SM4500CI-B		32400	7860	8000	5040	5600	2400	544
GRO	TPH 8015M		<10.0	<10.0	n/a	n/a	n/a	n/a	n/a
DRO	TPH 8015M		<10.0	<10.0	n/a	n/a	n/a	n/a	n/a
EXT DRO	TPH 8015M		<10.0	<10.0	n/a	n/a	n/a	n/a	n/a

			SP2 @						
		Sample ID	SURFACE	SP2 @ 1'	SP2 @ 2'	SP2 @ 4'	SP2 @ 6'	SP2 @ 8'	SP2 @ 9'
Analyte	Method	Date	7/12/18	7/12/18	7/12/18	7/12/18	7/12/18	7/12/18	7/12/18
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	<0.050	n/a	n/a	n/a	n/a	n/a
Toluene	BTEX 8021B		<0.050	<0.050	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	BTEX 8021B		<0.050	<0.050	n/a	n/a	n/a	n/a	n/a
Total Xylenes	BTEX 8021B		<0.150	<0.150	n/a	n/a	n/a	n/a	n/a
Total BTEX	BTEX 8021B		<0.300	<0.300	n/a	n/a	n/a	n/a	n/a
Chloride	SM4500CI-B		44800	8130	8660	5730	3440	2400	448
GRO	TPH 8015M		<10.0	<10.0	n/a	n/a	n/a	n/a	n/a
DRO	TPH 8015M		14.4	<10.0	n/a	n/a	n/a	n/a	n/a
EXT DRO	TPH 8015M		<10.0	<10.0	n/a	n/a	n/a	n/a	n/a

		Sample ID	SP3 @ SURFACE	SP3 @ 1'	SP3 @ 2'	SP3 @ 4'	SP3 @ 6'	SP3 @ 8'	SP3 @ 9'
Analyte	Method	Date	7/12/18	7/12/18	7/12/18	7/12/18	7/12/18	7/12/18	7/12/18
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	<0.050	n/a	n/a	n/a	n/a	n/a
Toluene	BTEX 8021B		<0.050	<0.050	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	BTEX 8021B		<0.050	<0.050	n/a	n/a	n/a	n/a	n/a
Total Xylenes	BTEX 8021B		<0.150	<0.150	n/a	n/a	n/a	n/a	n/a
Total BTEX	BTEX 8021B		<0.300	<0.300	n/a	n/a	n/a	n/a	n/a
Chloride	SM4500CI-B		30400	7730	7860	6260	3280	2600	496
GRO	TPH 8015M		<10.0	<10.0	n/a	n/a	n/a	n/a	n/a
DRO	TPH 8015M		<10.0	<10.0	n/a	n/a	n/a	n/a	n/a
EXT DRO	TPH 8015M		<10.0	<10.0	n/a	n/a	n/a	n/a	n/a

			SP4 @						
		Sample ID	SURFACE	SP4 @ 1'	SP4 @ 2'	SP4 @ 4'	SP4 @ 6'	SP4 @ 8'	SP4 @ 9'
Analyte	Method	Date	7/12/18	7/12/18	7/13/18	7/13/18	7/13/18	7/13/18	7/13/18
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	<0.050	n/a	n/a	n/a	n/a	n/a
Toluene	BTEX 8021B		<0.050	<0.050	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	BTEX 8021B		<0.050	<0.050	n/a	n/a	n/a	n/a	n/a
Total Xylenes	BTEX 8021B		<0.150	<0.150	n/a	n/a	n/a	n/a	n/a
Total BTEX	BTEX 8021B		< 0.300	<0.300	n/a	n/a	n/a	n/a	n/a
Chloride	SM4500CI-B		34800	28400	7330	3240	1560	608	608
GRO	TPH 8015M		<10.0	<10.0	n/a	n/a	n/a	n/a	n/a
DRO	TPH 8015M		<10.0	<10.0	n/a	n/a	n/a	n/a	n/a
EXT DRO	TPH 8015M		<10.0	<10.0	n/a	n/a	n/a	n/a	n/a

			SP5@							
		Sample ID	SURFACE	SP5 @ 1'	SP5 @ 2'	SP5 @ 4'	SP5 @ 6'	SP5 @ 8'	SP5 @ 9'	SP5 @ 10'
Analyte	Method	Date	7/13/18	7/13/18	7/13/18	7/13/18	7/13/18	7/13/18	7/13/18	7/13/18
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	<0.050	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	BTEX 8021B		<0.050	<0.050	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	BTEX 8021B		<0.050	<0.050	n/a	n/a	n/a	n/a	n/a	n/a
Total Xylenes	BTEX 8021B		<0.150	<0.150	n/a	n/a	n/a	n/a	n/a	n/a
Total BTEX	BTEX 8021B		<0.300	<0.300	n/a	n/a	n/a	n/a	n/a	n/a
Chloride	SM4500CI-B		33600	19400	6880	6720	3520	720	688	720
GRO	TPH 8015M		<10.0	<10.0	n/a	n/a	n/a	n/a	n/a	n/a
DRO	TPH 8015M		16.5	25.7	n/a	n/a	n/a	n/a	n/a	n/a
EXT DRO	TPH 8015M		<10.0	10.2	n/a	n/a	n/a	n/a	n/a	n/a

		Sample ID	SP6 @ SURFACE	SP6 @ 1'	SP6 @ 2'	SP6 @ 4'	SP6 @ 6'	SP6 @ 8'	SP6 @ 10'	SP6 @ 12'	SP6 @ 13'
Analyte	Method	Date	7/13/18	7/13/18	7/13/18	7/13/18	7/13/18	7/13/18	7/13/18	7/13/18	7/13/18
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	<0.050	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	BTEX 8021B		<0.050	<0.050	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	BTEX 8021B		<0.050	<0.050	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total Xylenes	BTEX 8021B		<0.150	<0.150	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total BTEX	BTEX 8021B		<0.300	<0.300	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Chloride	SM4500CI-B		26800	3920	1170	2440	5280	6800	1040	608	480
GRO	TPH 8015M		<10.0	<10.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a
DRO	TPH 8015M		14.3	<10.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EXT DRO	TPH 8015M		<10.0	<10.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a

		Sample ID	SP7 @ SURFACE	SP7 @ 1'	SP7 @ 2'	SP7 @ 4'	SP7 @ 5'	SP7 @ 6'
Analyte	Method	Date	7/16/18	7/16/18	7/16/18	7/16/18	7/16/18	7/16/18
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	<0.050	n/a	n/a	n/a	n/a
Toluene	BTEX 8021B		<0.050	<0.050	n/a	n/a	n/a	n/a
Ethylbenzene	BTEX 8021B		<0.050	<0.050	n/a	n/a	n/a	n/a
Total Xylenes	BTEX 8021B		<0.150	<0.150	n/a	n/a	n/a	n/a
Total BTEX	BTEX 8021B		< 0.300	<0.300	n/a	n/a	n/a	n/a
Chloride	SM4500CI-B		2480	352	3800	720	848	368
GRO	TPH 8015M		<10.0	<10.0	n/a	n/a	n/a	n/a
DRO	TPH 8015M		<10.0	<10.0	n/a	n/a	n/a	n/a
EXT DRO	TPH 8015M		<10.0	<10.0	n/a	n/a	n/a	n/a

			SP8 @					
		Sample ID	SURFACE	SP8 @ 1'	SP8 @ 2'	SP8 @ 4'	SP8 @ 5'	SP8 @ 6'
Analyte	Method	Date	7/16/18	7/16/18	7/16/18	7/16/18	7/16/18	7/16/18
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	<0.050	n/a	n/a	n/a	n/a
Toluene	BTEX 8021B		<0.050	<0.050	n/a	n/a	n/a	n/a
Ethylbenzene	BTEX 8021B		< 0.050	<0.050	n/a	n/a	n/a	n/a
Total Xylenes	BTEX 8021B		<0.150	<0.150	n/a	n/a	n/a	n/a
Total BTEX	BTEX 8021B		< 0.300	<0.300	n/a	n/a	n/a	n/a
Chloride	SM4500CI-B		4560	5200	1800	1580	816	336
GRO	TPH 8015M		<10.0	<10.0	n/a	n/a	n/a	n/a
DRO	TPH 8015M		<10.0	<10.0	n/a	n/a	n/a	n/a
EXT DRO	TPH 8015M		<10.0	<10.0	n/a	n/a	n/a	n/a

			SP9 @				
		Sample ID	SURFACE	SP9 @ 1'	SP9 @ 2'	SP9 @ 4'	SP9 @ 5'
Analyte	Method	Date	7/16/18	7/16/18	7/16/18	7/16/18	7/16/18
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	<0.050	n/a	n/a	n/a
Toluene	BTEX 8021B		<0.050	<0.050	n/a	n/a	n/a
Ethylbenzene	BTEX 8021B		<0.050	<0.050	n/a	n/a	n/a
Total Xylenes	BTEX 8021B		<0.150	<0.150	n/a	n/a	n/a
Total BTEX	BTEX 8021B		<0.300	<0.300	n/a	n/a	n/a
Chloride	SM4500CI-B		11400	4480	5440	1840	272
GRO	TPH 8015M		<10.0	<10.0	n/a	n/a	n/a
DRO	TPH 8015M		<10.0	<10.0	n/a	n/a	n/a
EXT DRO	TPH 8015M		<10.0	<10.0	n/a	n/a	n/a

			SP10 @						
		Sample ID	SURFACE	SP10 @ 1'	SP10 @ 2'	SP10 @ 4'	SP10 @ 6'	SP10 @ 7'	SP10 @ 8'
Analyte	Method	Date	7/16/18	7/16/18	7/17/18	7/17/18	7/17/18	7/17/18	7/17/18
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	<0.050	n/a	n/a	n/a	n/a	n/a
Toluene	BTEX 8021B		<0.050	<0.050	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	BTEX 8021B		<0.050	<0.050	n/a	n/a	n/a	n/a	n/a
Total Xylenes	BTEX 8021B		<0.150	<0.150	n/a	n/a	n/a	n/a	n/a
Total BTEX	BTEX 8021B		<0.300	<0.300	n/a	n/a	n/a	n/a	n/a
Chloride	SM4500CI-B		7000	6300	6500	6100	544	512	368
GRO	TPH 8015M		<10.0	<10.0	n/a	n/a	n/a	n/a	n/a
DRO	TPH 8015M		<10.0	<10.0	n/a	n/a	n/a	n/a	n/a
EXT DRO	TPH 8015M		<10.0	<10.0	n/a	n/a	n/a	n/a	n/a

		Sample ID	SP11 @ SURFACE
Analyte	Method	Date	7/17/18
			mg/kg
Chloride	SM4500CI-B		<16.0

			SP12 @	
		Sample ID	SURFACE	SP12 @ 1'
Analyte	Method	Date	7/18/18	7/18/18
			mg/kg	mg/kg
Chloride	SM4500CI-B		<16.0	<16.0

			SP13 @	
		Sample ID	SURFACE	SP13 @ 1'
Analyte	Method	Date	7/18/18	7/18/18
			mg/kg	mg/kg
Chloride	SM4500CI-B		<16.0	<16.0

			SP14 @	
		Sample ID	SURFACE	SP14 @ 1'
Analyte	Method	Date	7/18/18	7/18/18
			mg/kg	mg/kg
Chloride	SM4500CI-B		<16.0	32

			NORTH @	EAST @	WEST @	SOUTH @
Cardinal		Sample ID	SURFACE	SURFACE	SURFACE	SURFACE
Analyte	Method	Date	7/18/18	7/18/18	7/18/18	7/18/18
			mg/kg	mg/kg	mg/kg	mg/kg
Chloride	SM4500CI-B		368	304	384	368



July 27, 2018

Cliff Brunson

BBC International, Inc.

P.O. Box 805

Hobbs, NM 88241

RE: COPPERHEAD 31 FED COM #001H

Enclosed are the results of analyses for samples received by the laboratory on 07/24/18 12:40.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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/ga/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.

Celeg D. Keens

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 07/24/2018 Sampling Date: 07/12/2018

Reported: 07/27/2018 Sampling Type: Soil

Project Name: COPPERHEAD 31 FED COM #001H Sampling Condition: Cool & Intact
Project Number: (5/20/18) Sample Received By: Tamara Oldaker

4 l. d D. ... DE

Project Location: COG - EDDY CO NM

Sample ID: SP 1 @ SURFACE (H802014-01)

BTEX 8021B	mg/	kg	Analyze	d By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/24/2018	ND	1.88	93.9	2.00	0.243	
Toluene*	<0.050	0.050	07/24/2018	ND	1.87	93.7	2.00	0.614	
Ethylbenzene*	<0.050	0.050	07/24/2018	ND	1.87	93.6	2.00	0.724	
Total Xylenes*	<0.150	0.150	07/24/2018	ND	5.83	97.1	6.00	1.19	
Total BTEX	<0.300	0.300	07/24/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	113 %	69.8-14.	2						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32400	16.0	07/26/2018	ND	432	108	400	0.00	
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	07/25/2018	ND	213	106	200	0.359	
DRO >C10-C28*	<10.0	10.0	07/25/2018	ND	221	110	200	0.563	
EXT DRO >C28-C36	<10.0	10.0	07/25/2018	ND					
Surrogate: 1-Chlorooctane	103 %	6 41-142							
Surrogate: 1-Chlorooctadecane	107 %	6 37.6-14	7						

Cardinal Laboratories *=Accredited Analyte

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Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 07/24/2018 Sampling Date: 07/12/2018

Reported: 07/27/2018 Sampling Type: Soil

Project Name: COPPERHEAD 31 FED COM #001H Sampling Condition: Cool & Intact
Project Number: (5/20/18) Sample Received By: Tamara Oldaker

Project Location: COG - EDDY CO NM

Sample ID: SP 1 @ 1' (H802014-02)

,	RPD Qualifier
3.9 2.00 0	
	243
93.7 2.00 0.	614
93.6 2.00 0.7	724
97.1 6.00 1.	.19
ecovery True Value QC R	RPD Qualifier
108 400 0.	.00
ecovery True Value QC R	RPD Qualifier
106 200 0.3	359
110 200 0.5	563
1	ecovery True Value QC R

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Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 07/24/2018 Sampling Date: 07/12/2018

Reported: 07/27/2018 Sampling Type: Soil

Project Name: COPPERHEAD 31 FED COM #001H Sampling Condition: Cool & Intact
Project Number: (5/20/18) Sample Received By: Tamara Oldaker

Project Location: COG - EDDY CO NM

Sample ID: SP 1 @ 2' (H802014-03)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	8000	16.0	07/26/2018	ND	432	108	400	0.00	
Sample ID: SP 1 @ 4' (H8	802014-04)								
Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	5040	16.0	07/26/2018	ND	432	108	400	0.00	
Sample ID: SP 1 @ 6' (H8	802014-05)								
Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	5600	16.0	07/26/2018	ND	432	108	400	0.00	
Sample ID: SP 1 @ 8' (H8	802014-06)								
Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2400	16.0	07/26/2018	ND	432	108	400	0.00	
Sample ID: SP 1 @ 9' (H8	802014-07)								
Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	544	16.0	07/26/2018	ND	432	108	400	0.00	

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Fax To: (575) 397-0397

Received: 07/24/2018 Sampling Date: 07/12/2018

Reported: 07/27/2018 Sampling Type: Soil

Project Name: COPPERHEAD 31 FED COM #001H Sampling Condition: Cool & Intact Sample Received By: Project Number: (5/20/18)Tamara Oldaker

Project Location: COG - EDDY CO NM

Sample ID: SP 2 @ SURFACE (H802014-08)

BTEX 8021B	mg/	kg	Analyze	d By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/24/2018	ND	1.88	93.9	2.00	0.243	
Toluene*	<0.050	0.050	07/24/2018	ND	1.87	93.7	2.00	0.614	
Ethylbenzene*	<0.050	0.050	07/24/2018	ND	1.87	93.6	2.00	0.724	
Total Xylenes*	<0.150	0.150	07/24/2018	ND	5.83	97.1	6.00	1.19	
Total BTEX	<0.300	0.300	07/24/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	112 %	% 69.8-14	12						
Chloride, SM4500CI-B	mg/	kg	Analyze	ed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	44800	16.0	07/26/2018	ND	432	108	400	0.00	
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	07/25/2018	ND	213	106	200	0.359	
DRO >C10-C28*	14.4	10.0	07/25/2018	ND	221	110	200	0.563	
EXT DRO >C28-C36	<10.0	10.0	07/25/2018	ND					
Surrogate: 1-Chlorooctane	114 %	% 41-142	2						
Surrogate: 1-Chlorooctadecane	112 9	% 37.6-14	17						

Surrogate: 1-Chlorooctadecane 112 %

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Fax To: (575) 397-0397

Received: 07/24/2018 Sampling Date: 07/12/2018

Reported: 07/27/2018 Sampling Type: Soil

Project Name: COPPERHEAD 31 FED COM #001H Sampling Condition: Cool & Intact Sample Received By: Tamara Oldaker Project Number: (5/20/18)

COG - EDDY CO NM Project Location:

Sample ID: SP 2 @ 1' (H802014-09)

BTEX 8021B	mg/	/kg	Analyze	d By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/24/2018	ND	1.88	93.9	2.00	0.243	
Toluene*	<0.050	0.050	07/24/2018	ND	1.87	93.7	2.00	0.614	
Ethylbenzene*	<0.050	0.050	07/24/2018	ND	1.87	93.6	2.00	0.724	
Total Xylenes*	<0.150	0.150	07/24/2018	ND	5.83	97.1	6.00	1.19	
Total BTEX	<0.300	0.300	07/24/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	112 9	% 69.8-14	12						
Chloride, SM4500CI-B	mg/	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	8130	16.0	07/26/2018	ND	432	108	400	0.00	
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	07/25/2018	ND	213	106	200	0.359	
DRO >C10-C28*	<10.0	10.0	07/25/2018	ND	221	110	200	0.563	
EXT DRO >C28-C36	<10.0	10.0	07/25/2018	ND					
Surrogate: 1-Chlorooctane	107 9	% 41-142	?						
Surrogate: 1-Chlorooctadecane	105 9	% 37.6-14	!7						

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Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 07/24/2018 Sampling Date: 07/12/2018

Reported: 07/27/2018 Sampling Type: Soil

Project Name: COPPERHEAD 31 FED COM #001H Sampling Condition: Cool & Intact
Project Number: (5/20/18) Sample Received By: Tamara Oldaker

Project Location: COG - EDDY CO NM

Sample ID: SP 2 @ 2' (H802014-10)

BS				
55	% Recovery	True Value QC	RPD	Qualifier
432	108	400	0.00	QM-07
BS	% Recovery	True Value QC	RPD	Qualifier
432	108	400	0.00	
BS	% Recovery	True Value QC	RPD	Qualifier
432	108	400	0.00	
BS	% Recovery	True Value QC	RPD	Qualifier
432	108	400	0.00	
BS	% Recovery	True Value QC	RPD	Qualifier
	BS 432 BS 432	BS % Recovery 432 108 BS % Recovery 432 108 BS % Recovery	BS % Recovery True Value QC 432 108 400 BS % Recovery True Value QC 432 108 400 BS % Recovery True Value QC	BS % Recovery True Value QC RPD 432 108 400 0.00 BS % Recovery True Value QC RPD 432 108 400 0.00 BS % Recovery True Value QC RPD 0.00

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Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 07/24/2018 Sampling Date: 07/12/2018

Reported: 07/27/2018 Sampling Type: Soil

Project Name: COPPERHEAD 31 FED COM #001H Sampling Condition: Cool & Intact Sample Received By: Project Number: (5/20/18)Tamara Oldaker

COG - EDDY CO NM Project Location:

Sample ID: SP 3 @ SURFACE (H802014-15)

BTEX 8021B	mg/	'kg	Analyze	d By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/24/2018	ND	1.88	93.9	2.00	0.243	
Toluene*	<0.050	0.050	07/24/2018	ND	1.87	93.7	2.00	0.614	
Ethylbenzene*	<0.050	0.050	07/24/2018	ND	1.87	93.6	2.00	0.724	
Total Xylenes*	<0.150	0.150	07/24/2018	ND	5.83	97.1	6.00	1.19	
Total BTEX	<0.300	0.300	07/24/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	112 9	% 69.8-14	22						
Chloride, SM4500CI-B	mg/	'kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	30400	16.0	07/26/2018	ND	432	108	400	0.00	
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	07/25/2018	ND	213	106	200	0.359	
DRO >C10-C28*	<10.0	10.0	07/25/2018	ND	221	110	200	0.563	
EXT DRO >C28-C36	<10.0	10.0	07/25/2018	ND					
Surrogate: 1-Chlorooctane	103 9	% 41-142	?						
Summagata: 1 Chlomogatadagana	00.0	0/ 27.6.14	17						

Surrogate: 1-Chlorooctadecane 99.0 % 37.6-147

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BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 07/24/2018 Sampling Date: 07/12/2018

Reported: 07/27/2018 Sampling Type: Soil

Project Name: COPPERHEAD 31 FED COM #001H Sampling Condition: Cool & Intact
Project Number: (5/20/18) Sample Received By: Tamara Oldaker

Project Location: COG - EDDY CO NM

Sample ID: SP 3 @ 1' (H802014-16)

BTEX 8021B	mg	/kg	Analyze	d By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/24/2018	ND	1.88	93.9	2.00	0.243	
Toluene*	<0.050	0.050	07/24/2018	ND	1.87	93.7	2.00	0.614	
Ethylbenzene*	<0.050	0.050	07/24/2018	ND	1.87	93.6	2.00	0.724	
Total Xylenes*	<0.150	0.150	07/24/2018	ND	5.83	97.1	6.00	1.19	
Total BTEX	<0.300	0.300	07/24/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	111	% 69.8-14	12						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	7730	16.0	07/26/2018	ND	432	108	400	0.00	
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	07/25/2018	ND	213	106	200	0.359	
DRO >C10-C28*	<10.0	10.0	07/25/2018	ND	221	110	200	0.563	
EXT DRO >C28-C36	<10.0	10.0	07/25/2018	ND					
Surrogate: 1-Chlorooctane	109	% 41-142	?						
Surrogate: 1-Chlorooctadecane	108	% 37.6-14	7						

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Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 07/24/2018 Sampling Date: 07/12/2018

Reported: 07/27/2018 Sampling Type: Soil

Project Name: COPPERHEAD 31 FED COM #001H Sampling Condition: Cool & Intact
Project Number: (5/20/18) Sample Received By: Tamara Oldaker

Project Location: COG - EDDY CO NM

Sample ID: SP 3 @ 2' (H802014-17)

Result 7860 4-18)	Reporting Limit	Analyzed 07/26/2018	Method Blank	BS 432	% Recovery	True Value QC	RPD	Qualifier
4-18)	16.0	07/26/2018	ND	432	100			
•					108	400	0.00	
mg	/kg	Analyze	d By: AC					
Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
6260	16.0	07/26/2018	ND	432	108	400	0.00	
4-19)								
mg,	/kg	Analyze	d By: AC					
Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
3280	16.0	07/26/2018	ND	432	108	400	0.00	
1-20)								
mg	/kg	Analyze	d By: AC					
Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
2600	16.0	07/26/2018	ND	432	108	400	0.00	
4-21)								
mg	/kg	Analyze	d By: AC					
Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
496	16.0	07/26/2018	ND	432	108	400	0.00	
	Result 3280 4-20) mg/ Result 2600 4-21) mg/ Result 2601	6260 16.0 4-19) mg/kg Result Reporting Limit 3280 16.0 4-20) mg/kg Result Reporting Limit 2600 16.0 4-21) mg/kg Result Reporting Limit	6260 16.0 07/26/2018 4-19) mg/kg Result Reporting Limit Analyzed 3280 16.0 07/26/2018 4-20) mg/kg Result Reporting Limit Analyzed 2600 16.0 07/26/2018 4-21) mg/kg Analyzed Analyzed Analyzed Analyzed Analyzed Analyzed Analyzed Analyzed	6260 16.0 07/26/2018 ND 4-19) mg/kg Analyzed By: AC Result Reporting Limit Analyzed Method Blank 3280 16.0 07/26/2018 ND 4-20) mg/kg Analyzed By: AC Result Reporting Limit Analyzed Method Blank 2600 16.0 07/26/2018 ND 4-21) mg/kg Analyzed By: AC Result Reporting Limit Analyzed Method Blank Analyzed By: AC Result Reporting Limit Analyzed Method Blank	6260 16.0 07/26/2018 ND 432 4-19) Meg/kg Analyzed By: AC Result Reporting Limit Analyzed By: AC Result Reporting Limit Analyzed Method Blank BS 2600 16.0 07/26/2018 ND 432 4-21) mg/kg Analyzed By: AC Result Reporting Limit Analyzed Method Blank BS	6260 16.0 07/26/2018 ND 432 108 4-19) mg/kg Analyzed By: AC Result Reporting Limit Analyzed By: AC Result Reporting Limit Analyzed Method Blank BS % Recovery 2600 16.0 07/26/2018 ND 432 108 4-21) mg/kg Analyzed By: AC Result Reporting Limit Analyzed Method Blank BS % Recovery	6260 16.0 07/26/2018 ND 432 108 400 4-19) mg/kg Analyzed By: AC Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC 3280 16.0 07/26/2018 ND 432 108 400 4-20) mg/kg Analyzed By: AC Result Reporting Limit Analyzed By: AC Result Reporting Limit Analyzed By: AC Result Reporting Limit Analyzed By: AC	6260 16.0 07/26/2018 ND 432 108 400 0.00 4-19) mg/kg Analyzed By: AC Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC RPD 3280 16.0 07/26/2018 ND 432 108 400 0.00 4-20) mg/kg Analyzed By: AC BS % Recovery True Value QC RPD 2600 16.0 07/26/2018 ND 432 108 400 0.00 4-21) mg/kg Analyzed By: AC Result Reporting Limit Analyzed By: AC

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Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 07/24/2018 Sampling Date: 07/12/2018

Reported: 07/27/2018 Sampling Type: Soil

Project Name: COPPERHEAD 31 FED COM #001H Sampling Condition: Cool & Intact Sample Received By: Project Number: (5/20/18)Tamara Oldaker

Project Location: COG - EDDY CO NM

Sample ID: SP 4 @ SURFACE (H802014-22)

BTEX 8021B	mg,	/kg	Analyze	d By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/24/2018	ND	1.88	93.9	2.00	0.243	
Toluene*	<0.050	0.050	07/24/2018	ND	1.87	93.7	2.00	0.614	
Ethylbenzene*	<0.050	0.050	07/24/2018	ND	1.87	93.6	2.00	0.724	
Total Xylenes*	<0.150	0.150	07/24/2018	ND	5.83	97.1	6.00	1.19	
Total BTEX	<0.300	0.300	07/24/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	113 9	% 69.8-14	12						
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	34800	16.0	07/26/2018	ND	432	108	400	0.00	
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	07/25/2018	ND	213	106	200	0.359	
DRO >C10-C28*	<10.0	10.0	07/25/2018	ND	221	110	200	0.563	
EXT DRO >C28-C36	<10.0	10.0	07/25/2018	ND					
Surrogate: 1-Chlorooctane	108 5	% 41-142	?						
Surrogate: 1-Chlorooctadecane	108	% 37.6-14	!7						

Surrogate: 1-Chlorooctadecane 108 %

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Fax To: (575) 397-0397

Received: 07/24/2018 Sampling Date: 07/12/2018

Reported: 07/27/2018 Sampling Type: Soil

Project Name: COPPERHEAD 31 FED COM #001H Sampling Condition: Cool & Intact
Project Number: (5/20/18) Sample Received By: Tamara Oldaker

Project Location: COG - EDDY CO NM

Sample ID: SP 4 @ 1' (H802014-23)

BTEX 8021B	mg,	/kg	Analyze	d By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/24/2018	ND	1.88	93.9	2.00	0.243	
Toluene*	<0.050	0.050	07/24/2018	ND	1.87	93.7	2.00	0.614	
Ethylbenzene*	<0.050	0.050	07/24/2018	ND	1.87	93.6	2.00	0.724	
Total Xylenes*	<0.150	0.150	07/24/2018	ND	5.83	97.1	6.00	1.19	
Total BTEX	<0.300	0.300	07/24/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	111 9	% 69.8-14	22						
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	28400	16.0	07/26/2018	ND	432	108	400	0.00	
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	07/25/2018	ND	213	106	200	0.359	
DRO >C10-C28*	<10.0	10.0	07/25/2018	ND	221	110	200	0.563	
EXT DRO >C28-C36	<10.0	10.0	07/25/2018	ND					
Surrogate: 1-Chlorooctane	109	% 41-142	?						
Surrogate: 1-Chlorooctadecane	109	% 37.6-14	7						

Surrogate: 1-Chlorooctadecane 109 % 37.6-147

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Fax To: (575) 397-0397

Received: 07/24/2018 Sampling Date: 07/13/2018

Reported: 07/27/2018 Sampling Type: Soil

Project Name: COPPERHEAD 31 FED COM #001H Sampling Condition: Cool & Intact
Project Number: (5/20/18) Sample Received By: Tamara Oldaker

Project Location: COG - EDDY CO NM

Sample ID: SP 4 @ 2' (H802014-24)

Chloride, SM4500CI-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	7330	16.0	07/26/2018	ND	432	108	400	0.00	
Sample ID: SP 4 @ 4' (H8	802014-25)								
Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3240	16.0	07/26/2018	ND	432	108	400	0.00	
Sample ID: SP 4 @ 6' (H8	802014-26)								
Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1560	16.0	07/26/2018	ND	432	108	400	0.00	
Sample ID: SP 4 @ 8' (H8	802014-27)								
Chloride, SM4500CI-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	608	16.0	07/26/2018	ND	432	108	400	0.00	
Sample ID: SP 4 @ 9' (H8	302014-28)								
Chloride, SM4500CI-B	-	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	608	16.0	07/26/2018	ND	432	108	400	0.00	

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Fax To: (575) 397-0397

Received: 07/24/2018 Sampling Date: 07/13/2018

Reported: 07/27/2018 Sampling Type: Soil

Project Name: COPPERHEAD 31 FED COM #001H Sampling Condition: Cool & Intact Sample Received By: Project Number: (5/20/18)Tamara Oldaker

COG - EDDY CO NM Project Location:

Sample ID: SP 5 @ SURFACE (H802014-29)

BTEX 8021B	mg/	kg	Analyze	d By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/24/2018	ND	1.88	93.9	2.00	0.243	
Toluene*	<0.050	0.050	07/24/2018	ND	1.87	93.7	2.00	0.614	
Ethylbenzene*	<0.050	0.050	07/24/2018	ND	1.87	93.6	2.00	0.724	
Total Xylenes*	<0.150	0.150	07/24/2018	ND	5.83	97.1	6.00	1.19	
Total BTEX	<0.300	0.300	07/24/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	114 9	69.8-14	12						
Chloride, SM4500CI-B	mg/	'kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	33600	16.0	07/26/2018	ND	432	108	400	0.00	
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	07/24/2018	ND	203	102	200	10.7	
DRO >C10-C28*	16.5	10.0	07/24/2018	ND	226	113	200	8.11	
EXT DRO >C28-C36	<10.0	10.0	07/24/2018	ND					
Surrogate: 1-Chlorooctane	96.4	% 41-142	?						
Surrogate: 1-Chlorooctadecane	110 9	% 37.6-14	!7						

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Received: 07/24/2018 Sampling Date: 07/13/2018

Reported: 07/27/2018 Sampling Type: Soil

Project Name: COPPERHEAD 31 FED COM #001H Sampling Condition: Cool & Intact Project Number: Sample Received By: (5/20/18)Tamara Oldaker

COG - EDDY CO NM Project Location:

Sample ID: SP 5 @ 1' (H802014-30)

BTEX 8021B	mg/	'kg	Analyze	d By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/25/2018	ND	1.88	93.9	2.00	0.243	
Toluene*	<0.050	0.050	07/25/2018	ND	1.87	93.7	2.00	0.614	
Ethylbenzene*	<0.050	0.050	07/25/2018	ND	1.87	93.6	2.00	0.724	
Total Xylenes*	<0.150	0.150	07/25/2018	ND	5.83	97.1	6.00	1.19	
Total BTEX	<0.300	0.300	07/25/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	112 9	% 69.8-14	2						
Chloride, SM4500CI-B	mg/	/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	19400	16.0	07/26/2018	ND	416	104	400	0.00	QM-07
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	07/25/2018	ND	203	102	200	10.7	
DRO >C10-C28*	25.7	10.0	07/25/2018	ND	226	113	200	8.11	
EXT DRO >C28-C36	10.2	10.0	07/25/2018	ND					
Surrogate: 1-Chlorooctane	93.0	% 41-142	?						
Surrogate: 1-Chlorooctadecane	108 9	% 37.6-14	7						

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Fax To: (575) 397-0397

Received: 07/24/2018 Sampling Date: 07/13/2018

Reported: 07/27/2018 Sampling Type: Soil

Project Name: COPPERHEAD 31 FED COM #001H Sampling Condition: Cool & Intact
Project Number: (5/20/18) Sample Received By: Tamara Oldaker

Project Location: COG - EDDY CO NM

Sample ID: SP 5 @ 2' (H802014-31)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6880	16.0	07/26/2018	ND	416	104	400	0.00	
Sample ID: SP 5 @ 4' (H8	802014-32)								
Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6720	16.0	07/26/2018	ND	416	104	400	0.00	
Sample ID: SP 5 @ 6' (H8	802014-33)								
Chloride, SM4500CI-B	mg	/kg	Analyze	ed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3520	16.0	07/26/2018	ND	416	104	400	0.00	
Sample ID: SP 5 @ 8' (H8	802014-34)								
Chloride, SM4500CI-B	mg	/kg	Analyze	ed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	720	16.0	07/26/2018	ND	416	104	400	0.00	
Sample ID: SP 5 @ 9' (H8	802014-35)								
Chloride, SM4500CI-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	688	16.0	07/26/2018	ND	416	104	400	0.00	

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Received: 07/24/2018 Sampling Date: 07/13/2018

Reported: 07/27/2018 Sampling Type: Soil

Project Name: COPPERHEAD 31 FED COM #001H Sampling Condition: Cool & Intact
Project Number: (5/20/18) Sample Received By: Tamara Oldaker

Project Location: COG - EDDY CO NM

Sample ID: SP 5 @ 10' (H802014-36)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	720	16.0	07/26/2018	ND	416	104	400	0.00	

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Fax To: (575) 397-0397

Received: 07/24/2018 Sampling Date: 07/13/2018

Reported: 07/27/2018 Sampling Type: Soil

Project Name: COPPERHEAD 31 FED COM #001H Sampling Condition: Cool & Intact Project Number: Sample Received By: (5/20/18)Tamara Oldaker

COG - EDDY CO NM Project Location:

Sample ID: SP 6 @ SURFACE (H802014-37)

BTEX 8021B	mg/	kg	Analyze	d By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/25/2018	ND	1.88	93.9	2.00	0.243	
Toluene*	<0.050	0.050	07/25/2018	ND	1.87	93.7	2.00	0.614	
Ethylbenzene*	<0.050	0.050	07/25/2018	ND	1.87	93.6	2.00	0.724	
Total Xylenes*	<0.150	0.150	07/25/2018	ND	5.83	97.1	6.00	1.19	
Total BTEX	<0.300	0.300	07/25/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	111 %	69.8-14	12						
Chloride, SM4500CI-B	mg/	kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	26800	16.0	07/26/2018	ND	416	104	400	0.00	
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	07/25/2018	ND	203	102	200	10.7	
DRO >C10-C28*	14.3	10.0	07/25/2018	ND	226	113	200	8.11	
EXT DRO >C28-C36	<10.0	10.0	07/25/2018	ND					
Surrogate: 1-Chlorooctane	86.2 9	% 41-142	?						
Surrogate: 1-Chlorooctadecane	90.99	% 37.6-14	!7						

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Fax To: (575) 397-0397

Received: 07/24/2018 Sampling Date: 07/13/2018

Reported: 07/27/2018 Sampling Type: Soil

Project Name: COPPERHEAD 31 FED COM #001H Sampling Condition: Cool & Intact Sample Received By: Project Number: (5/20/18)Tamara Oldaker

COG - EDDY CO NM Project Location:

Sample ID: SP 6 @ 1' (H802014-38)

BTEX 8021B	mg,	/kg	Analyze	ed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/25/2018	ND	1.88	93.9	2.00	0.243	
Toluene*	<0.050	0.050	07/25/2018	ND	1.87	93.7	2.00	0.614	
Ethylbenzene*	<0.050	0.050	07/25/2018	ND	1.87	93.6	2.00	0.724	
Total Xylenes*	<0.150	0.150	07/25/2018	ND	5.83	97.1	6.00	1.19	
Total BTEX	<0.300	0.300	07/25/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	110 9	% 69.8-14	!2						
Chloride, SM4500CI-B	mg,	/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3920	16.0	07/26/2018	ND	416	104	400	0.00	
TPH 8015M	mg,	/kg	Analyze	ed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/25/2018	ND	203	102	200	10.7	
DRO >C10-C28*	<10.0	10.0	07/25/2018	ND	226	113	200	8.11	
EXT DRO >C28-C36	<10.0	10.0	07/25/2018	ND					
Surrogate: 1-Chlorooctane	94.7	% 41-142	?						
Surrogate: 1-Chlorooctadecane	98.7	% 37.6-14	!7						

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Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 07/24/2018 Sampling Date: 07/13/2018

Reported: 07/27/2018 Sampling Type: Soil

Project Name: COPPERHEAD 31 FED COM #001H Sampling Condition: Cool & Intact
Project Number: (5/20/18) Sample Received By: Tamara Oldaker

Project Location: COG - EDDY CO NM

Sample ID: SP 6 @ 2' (H802014-39)

Chloride, SM4500CI-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1170	16.0	07/26/2018	ND	416	104	400	0.00	
Sample ID: SP 6 @ 4' (H8020	014-40)								
Chloride, SM4500Cl-B	mg	/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2440	16.0	07/26/2018	ND	416	104	400	0.00	
Sample ID: SP 6 @ 6' (H8020	014-41)								
Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	5280	16.0	07/26/2018	ND	416	104	400	0.00	
Sample ID: SP 6 @ 8' (H8020	014-42)								
Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6800	16.0	07/26/2018	ND	416	104	400	0.00	
Sample ID: SP 6 @ 10' (H802	2014-43)								
Chloride, SM4500Cl-B	•	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1040	16.0	07/26/2018	ND	416	104	400	0.00	

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Received: 07/24/2018 Sampling Date: 07/13/2018

Reported: 07/27/2018 Sampling Type: Soil

Reporting Limit

16.0

Result

480

Project Name: COPPERHEAD 31 FED COM #001H Sampling Condition: Cool & Intact
Project Number: (5/20/18) Sample Received By: Tamara Oldaker

Project Location: COG - EDDY CO NM

Sample ID: SP 6 @ 12' (H802014-44)

Analyte

Chloride

Chioride, SM4500CI-B	mg	/кд	Anaiyze	a By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	608	16.0	07/26/2018	ND	416	104	400	0.00	
Sample ID: SP 6 @ 13' (H8	302014-45)								
Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					

Method Blank

ND

BS

416

% Recovery

104

Analyzed

07/26/2018

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Celey D. Keine

RPD

0.00

True Value QC

400

Qualifier



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Received: 07/24/2018 Sampling Date: 07/16/2018

Reported: 07/27/2018 Sampling Type: Soil

Project Name: COPPERHEAD 31 FED COM #001H Sampling Condition: Cool & Intact Sample Received By: Tamara Oldaker Project Number: (5/20/18)

Analyzed By: BE

COG - EDDY CO NM Project Location:

ma/ka

Sample ID: SP 7 @ SURFACE (H802014-46)

RTFY 8021R

BIEX 8021B	mg	/кд	Anaiyze	a By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/25/2018	ND	1.88	93.9	2.00	0.243	
Toluene*	<0.050	0.050	07/25/2018	ND	1.87	93.7	2.00	0.614	
Ethylbenzene*	<0.050	0.050	07/25/2018	ND	1.87	93.6	2.00	0.724	
Total Xylenes*	<0.150	0.150	07/25/2018	ND	5.83	97.1	6.00	1.19	
Total BTEX	<0.300	0.300	07/25/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	112	% 69.8-14	12						
Chloride, SM4500CI-B	mg,	/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2480	16.0	07/26/2018	ND	416	104	400	0.00	
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	07/25/2018	ND	203	102	200	10.7	
DRO >C10-C28*	<10.0	10.0	07/25/2018	ND	226	113	200	8.11	
EXT DRO >C28-C36	<10.0	10.0	07/25/2018	ND					
Surrogate: 1-Chlorooctane	96.9	% 41-142	?						
Surrogate: 1-Chlorooctadecane	101	% 376-14	!7						

Surrogate: 1-Chlorooctadecane 101 % 37.6-147

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Received: 07/24/2018 Sampling Date: 07/16/2018

Reported: 07/27/2018 Sampling Type: Soil

Project Name: COPPERHEAD 31 FED COM #001H Sampling Condition: Cool & Intact Sample Received By: Project Number: (5/20/18)Tamara Oldaker

COG - EDDY CO NM Project Location:

Sample ID: SP 7 @ 1' (H802014-47)

BTEX 8021B	mg/	kg	Analyze	d By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/25/2018	ND	1.88	93.9	2.00	0.243	
Toluene*	<0.050	0.050	07/25/2018	ND	1.87	93.7	2.00	0.614	
Ethylbenzene*	<0.050	0.050	07/25/2018	ND	1.87	93.6	2.00	0.724	
Total Xylenes*	<0.150	0.150	07/25/2018	ND	5.83	97.1	6.00	1.19	
Total BTEX	<0.300	0.300	07/25/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	111 %	69.8-14	2						
Chloride, SM4500CI-B	mg/l	kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	352	16.0	07/26/2018	ND	416	104	400	0.00	
TPH 8015M	mg/l	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	07/25/2018	ND	203	102	200	10.7	
DRO >C10-C28*	<10.0	10.0	07/25/2018	ND	226	113	200	8.11	
EXT DRO >C28-C36	<10.0	10.0	07/25/2018	ND					
Surrogate: 1-Chlorooctane	93.5 %	6 41-142	!						
Surrogate: 1-Chlorooctadecane	96.2 %	6 37.6-14	7						

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Fax To: (575) 397-0397

Received: 07/24/2018 Sampling Date: 07/16/2018

Reported: 07/27/2018 Sampling Type: Soil

Project Name: COPPERHEAD 31 FED COM #001H Sampling Condition: Cool & Intact
Project Number: (5/20/18) Sample Received By: Tamara Oldaker

Project Location: COG - EDDY CO NM

Sample ID: SP 7 @ 2' (H802014-48)

Chloride, SM4500Cl-B	mg/kg		Analyze	Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3800	16.0	07/26/2018	ND	416	104	400	0.00	
Sample ID: SP 7 @ 4' (H8	802014-49)								
Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	720	16.0	07/26/2018	ND	416	104	400	0.00	
Sample ID: SP 7 @ 5' (H8	802014-50)								
Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride									
	848	16.0	07/27/2018	ND	416	104	400	3.77	
Sample ID: SP 7 @ 6' (H8		16.0	07/27/2018	ND	416	104	400	3.77	
Sample ID: SP 7 @ 6' (H8 Chloride, SM4500Cl-B				ND d By: AC	416	104	400	3.77	
•	302014-51)				416 BS	104 % Recovery	400 True Value QC	3.77 RPD	Qualifier

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Fax To: (575) 397-0397

Received: 07/24/2018 Sampling Date: 07/16/2018

Reported: 07/27/2018 Sampling Type: Soil

Project Name: COPPERHEAD 31 FED COM #001H Sampling Condition: Cool & Intact Sample Received By: Project Number: (5/20/18)Tamara Oldaker

COG - EDDY CO NM Project Location:

Sample ID: SP 8 @ SURFACE (H802014-52)

BTEX 8021B	mg/	kg	Analyze	d By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/25/2018	ND	1.88	93.9	2.00	0.243	
Toluene*	<0.050	0.050	07/25/2018	ND	1.87	93.7	2.00	0.614	
Ethylbenzene*	<0.050	0.050	07/25/2018	ND	1.87	93.6	2.00	0.724	
Total Xylenes*	<0.150	0.150	07/25/2018	ND	5.83	97.1	6.00	1.19	
Total BTEX	<0.300	0.300	07/25/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	113 %	69.8-14	2						
Chloride, SM4500Cl-B	mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4560	16.0	07/27/2018	ND	416	104	400	3.77	
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	07/25/2018	ND	203	102	200	10.7	
DRO >C10-C28*	<10.0	10.0	07/25/2018	ND	226	113	200	8.11	
EXT DRO >C28-C36	<10.0	10.0	07/25/2018	ND					
Surrogate: 1-Chlorooctane	101 %	6 41-142	•						
Surrogate: 1-Chlorooctadecane	107 9	6 37 6-1 <i>4</i>	7						

107 % Surrogate: 1-Chlorooctadecane 37.6-147

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Fax To: (575) 397-0397

Received: 07/24/2018 Sampling Date: 07/16/2018

Reported: 07/27/2018 Sampling Type: Soil

Project Name: COPPERHEAD 31 FED COM #001H Sampling Condition: Cool & Intact
Project Number: (5/20/18) Sample Received By: Tamara Oldaker

Project Location: COG - EDDY CO NM

Sample ID: SP 8 @ 1' (H802014-53)

Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC RPD	BTEX 8021B	mg/	/kg	Analyze	ed By: BF					
Toluene* < 0.050	Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Ethylbenzene* < 0.050 0.050 07/25/2018 ND 1.87 93.6 2.00 0.724 Total Xylenes* < 0.150 0.150 07/25/2018 ND 5.83 97.1 6.00 1.19 Total BTEX < 0.300 0.300 07/25/2018 ND Surrogate: 4-Bromofluorobenzene (PID 112 % 69.8-142 Chloride, SM4500Cl-B mg/ky Analyzed By: AC Analyte Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC RPD Chloride 5200 16.0 07/27/2018 ND 416 104 400 3.77 TH 8015M mg/ky Analyzed By: MS Analyte Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC RPD GRO C6-C10* < 10.0 10.0 07/25/2018 ND 203 102 200 10.7 DRO >C10-C28* < 10.0 10.0 07/25/2018 ND 226 113 200 8.11 EXT DRO >C28-C36 < 10.0 10.0 07/25/2018 ND Surrogate: 1-Chlorooctane 98.9 % 41-142	Benzene*	<0.050	0.050	07/25/2018	ND	1.88	93.9	2.00	0.243	
Total Xylenes* <0.150 0.150 07/25/2018 ND 5.83 97.1 6.00 1.19 Total BTEX <0.300	Toluene*	<0.050	0.050	07/25/2018	ND	1.87	93.7	2.00	0.614	
Total BTEX <0.300 0.300 07/25/2018 ND Surrogate: 4-Bromofluorobenzene (PID 112 % 69.8-142 Chloride, SM4500Cl-B mg/ky Analyzed By: AC Analyte Result Reporting Limit Analyzed By: MS Chloride 5200 16.0 07/27/2018 ND 416 104 400 3.77 TPH 8015M mg/ky Analyzed By: MS Method Blank BS % Recovery True Value QC RPD GRO C6-C10* <10.0	Ethylbenzene*	<0.050	0.050	07/25/2018	ND	1.87	93.6	2.00	0.724	
Surrogate: 4-Bromofluorobenzene (PID 112 % 69.8-142 Chloride, SM4500Cl-B mg/ky Analyzed By: AC Method Blank BS % Recovery True Value QC RPD Chloride 5200 16.0 07/27/2018 ND 416 104 400 3.77 TPH 8015M mg/ky Analyzed By: MS Analyte Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC RPD GRO C6-C10* < 10.0	Total Xylenes*	<0.150	0.150	07/25/2018	ND	5.83	97.1	6.00	1.19	
Chloride, SM4500Cl-B mg/kg Analyzed By: AC Analyte Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC RPD Chloride 5200 16.0 07/27/2018 ND 416 104 400 3.77 TPH 8015M mg/kg Analyzed By: MS Analyte Result Reporting Limit Reporting Limit Analyzed Method Blank BS % Recovery True Value QC RPD GRO C6-C10* <10.0	Total BTEX	<0.300	0.300	07/25/2018	ND					
Analyte Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC RPD Chloride 5200 16.0 07/27/2018 ND 416 104 400 3.77 TPH 8015M mg/kg Analyzed By: MS Analyte Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC RPD GRO C6-C10* <10.0 10.0 07/25/2018 ND 203 102 200 10.7 DRO >C10-C28* <10.0 10.0 07/25/2018 ND 226 113 200 8.11 EXT DRO >C28-C36 <10.0 10.0 07/25/2018 ND Surrogate: 1-Chlorooctane 98.9 % 41-142	Surrogate: 4-Bromofluorobenzene (PID	112 9	% 69.8-14	22						
Chloride 5200 16.0 07/27/2018 ND 416 104 400 3.77 TPH 8015M mg/kg Analyzed By: MS WS MS Recovery True Value QC RPD Analyte Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC RPD GRO C6-C10* <10.0	Chloride, SM4500CI-B	mg/	/kg	Analyze	ed By: AC					
TPH 8015M mg/kg Analyzed By: MS Analyte Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC RPD GRO C6-C10* <10.0	Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Analyte Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC RPD GRO C6-C10* <10.0 10.0 07/25/2018 ND 203 102 200 10.7 DRO >C10-C28* <10.0 10.0 07/25/2018 ND 226 113 200 8.11 EXT DRO >C28-C36 <10.0 10.0 07/25/2018 ND Surrogate: 1-Chlorooctane 98.9 % 41-142	Chloride	5200	16.0	07/27/2018	ND	416	104	400	3.77	
GRO C6-C10* <10.0 10.0 07/25/2018 ND 203 102 200 10.7 DRO >C10-C28* <10.0 10.0 07/25/2018 ND 226 113 200 8.11 EXT DRO >C28-C36 <10.0 10.0 07/25/2018 ND Surrogate: 1-Chlorooctane 98.9 % 41-142	TPH 8015M	mg/	/kg	Analyze	ed By: MS					
DRO >C10-C28*	Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
EXT DRO >C28-C36 <10.0 10.0 07/25/2018 ND Surrogate: 1-Chlorooctane 98.9 % 41-142	GRO C6-C10*	<10.0	10.0	07/25/2018	ND	203	102	200	10.7	
Surrogate: 1-Chlorooctane 98.9 % 41-142	DRO >C10-C28*	<10.0	10.0	07/25/2018	ND	226	113	200	8.11	
	EXT DRO >C28-C36	<10.0	10.0	07/25/2018	ND					
Surrogate: 1-Chlorooctadecane 101 % 37.6-147	Surrogate: 1-Chlorooctane	98.9	% 41-142	?						
	Surrogate: 1-Chlorooctadecane	101 9	% 37.6-14	7						

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Fax To: (575) 397-0397

Received: 07/24/2018 Sampling Date: 07/16/2018

Reported: 07/27/2018 Sampling Type: Soil

Project Name: COPPERHEAD 31 FED COM #001H Sampling Condition: Cool & Intact
Project Number: (5/20/18) Sample Received By: Tamara Oldaker

Project Location: COG - EDDY CO NM

Sample ID: SP 8 @ 2' (H802014-54)

Chloride, SM4500CI-B	mg/kg		Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1800	16.0	07/27/2018	ND	416	104	400	3.77	
Sample ID: SP 8 @ 4' (H8	802014-55)								
Chloride, SM4500Cl-B	mg	mg/kg		d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1580	16.0	07/27/2018	ND	416	104	400	3.77	
Sample ID: SP 8 @ 5' (H8	802014-56)								
Chloride, SM4500CI-B	mg,	/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	816	16.0	07/27/2018	ND	416	104	400	3.77	
Sample ID: SP 8 @ 6' (H8	802014-57)								
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	336	16.0	07/27/2018	ND	416	104	400	3.77	

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BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 07/24/2018 Sampling Date: 07/16/2018

Reported: 07/27/2018 Sampling Type: Soil

Project Name: COPPERHEAD 31 FED COM #001H Sampling Condition: Cool & Intact Project Number: Sample Received By: (5/20/18)Tamara Oldaker

COG - EDDY CO NM Project Location:

Sample ID: SP 9 @ SURFACE (H802014-58)

BTEX 8021B	mg/	kg	Analyze	d By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/25/2018	ND	1.88	93.9	2.00	0.243	
Toluene*	<0.050	0.050	07/25/2018	ND	1.87	93.7	2.00	0.614	
Ethylbenzene*	<0.050	0.050	07/25/2018	ND	1.87	93.6	2.00	0.724	
Total Xylenes*	<0.150	0.150	07/25/2018	ND	5.83	97.1	6.00	1.19	
Total BTEX	<0.300	0.300	07/25/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	114 %	69.8-14	12						
Chloride, SM4500CI-B	mg/	kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	11400	16.0	07/27/2018	ND	416	104	400	3.77	
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	07/25/2018	ND	203	102	200	10.7	
DRO >C10-C28*	<10.0	10.0	07/25/2018	ND	226	113	200	8.11	
EXT DRO >C28-C36	<10.0	10.0	07/25/2018	ND					
Surrogate: 1-Chlorooctane	85.7 9	% 41-142	?						
Surrogate: 1-Chlorooctadecane	85.4 9	% 37.6-14	!7						

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Fax To: (575) 397-0397

Received: 07/24/2018 Sampling Date: 07/16/2018

Reported: 07/27/2018 Sampling Type: Soil

Project Name: COPPERHEAD 31 FED COM #001H Sampling Condition: Cool & Intact
Project Number: (5/20/18) Sample Received By: Tamara Oldaker

Project Location: COG - EDDY CO NM

Sample ID: SP 9 @ 1' (H802014-59)

BTEX 8021B	mg,	/kg	Analyze	d By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/25/2018	ND	1.88	93.9	2.00	0.243	
Toluene*	<0.050	0.050	07/25/2018	ND	1.87	93.7	2.00	0.614	
Ethylbenzene*	<0.050	0.050	07/25/2018	ND	1.87	93.6	2.00	0.724	
Total Xylenes*	<0.150	0.150	07/25/2018	ND	5.83	97.1	6.00	1.19	
Total BTEX	<0.300	0.300	07/25/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	111 9	% 69.8-14	2						
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4480	16.0	07/27/2018	ND	416	104	400	3.77	
TPH 8015M	mg,	/kg	Analyze	Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/25/2018	ND	203	102	200	10.7	
DRO >C10-C28*	<10.0	10.0	07/25/2018	ND	226	113	200	8.11	
EXT DRO >C28-C36	<10.0	10.0	07/25/2018	ND					
Surrogate: 1-Chlorooctane	98.6	% 41-142	,						
Surrogate: 1-Chlorooctadecane	101	% 37.6-14	7						

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Fax To: (575) 397-0397

Received: 07/24/2018 Sampling Date: 07/16/2018

Reported: 07/27/2018 Sampling Type: Soil

Project Name: COPPERHEAD 31 FED COM #001H Sampling Condition: Cool & Intact
Project Number: (5/20/18) Sample Received By: Tamara Oldaker

Project Location: COG - EDDY CO NM

Sample ID: SP 9 @ 2' (H802014-60)

Chloride, SM4500CI-B mg/kg Analyzed By: AC

Analyte Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC RPD Qualifier

Chloride 5440 16.0 07/27/2018 ND 416 104 400 3.77

Sample ID: SP 9 @ 4' (H802014-61)

Chloride, SM4500Cl-B mg/kg Analyzed By: AC Reporting Limit Analyzed BS True Value QC RPD Analyte Result Method Blank % Recovery Qualifier Chloride 1840 16.0 07/27/2018 416 400 3.77 ND 104

Sample ID: SP 9 @ 5' (H802014-62)

Chloride, SM4500Cl-B mg/kg Analyzed By: AC Analyte Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC RPD Qualifier Chloride 272 07/27/2018 ND 400 16.0 416 104 3.77

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Fax To: (575) 397-0397

Received: 07/24/2018 Sampling Date: 07/16/2018

Reported: 07/27/2018 Sampling Type: Soil

Project Name: COPPERHEAD 31 FED COM #001H Sampling Condition: Cool & Intact
Project Number: (5/20/18) Sample Received By: Tamara Oldaker

Analyzed By: BE

Project Location: COG - EDDY CO NM

ma/ka

Sample ID: SP 10 @ SURFACE (H802014-63)

RTFY 8021R

B1EX 8021B	mg/I	(g	Anaiyze	а ву: вғ					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/25/2018	ND	1.88	93.9	2.00	0.243	
Toluene*	<0.050	0.050	07/25/2018	ND	1.87	93.7	2.00	0.614	
Ethylbenzene*	<0.050	0.050	07/25/2018	ND	1.87	93.6	2.00	0.724	
Total Xylenes*	<0.150	0.150	07/25/2018	ND	5.83	97.1	6.00	1.19	
Total BTEX	<0.300	0.300	07/25/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	110 %	69.8-14	2						
Chloride, SM4500CI-B	mg/l	кg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	7000	16.0	07/27/2018	ND	416	104	400	3.77	
TPH 8015M	mg/l	кg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/25/2018	ND	203	102	200	10.7	
DRO >C10-C28*	<10.0	10.0	07/25/2018	ND	226	113	200	8.11	
EXT DRO >C28-C36	<10.0	10.0	07/25/2018	ND					
Surrogate: 1-Chlorooctane	83.9 %	6 41-142)						
Surrogate: 1-Chlorooctadecane	83.2 %	6 37.6-14	7						

53.70 T//

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Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 07/24/2018 Sampling Date: 07/16/2018

Reported: 07/27/2018 Sampling Type: Soil

Project Name: COPPERHEAD 31 FED COM #001H Sampling Condition: Cool & Intact
Project Number: (5/20/18) Sample Received By: Tamara Oldaker

Project Location: COG - EDDY CO NM

Sample ID: SP 10 @ 1' (H802014-64)

2.00 Page 2.00 P	QC RPD 0.243	Qualifier
	0.243	
3 7 2 00		
2.00	0.614	
3.6 2.00	0.724	
97.1 6.00	1.19	
ecovery True Value Q	QC RPD	Qualifier
104 400	3.77	
ecovery True Value Q	QC RPD	Qualifier
102 200	10.7	
113 200	8.11	
1	104 400 ecovery True Value Q 102 200	104 400 3.77 ecovery True Value QC RPD 102 200 10.7

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Fax To: (575) 397-0397

Received: 07/24/2018 Sampling Date: 07/17/2018

Reported: 07/27/2018 Sampling Type: Soil

Project Name: COPPERHEAD 31 FED COM #001H Sampling Condition: Cool & Intact
Project Number: (5/20/18) Sample Received By: Tamara Oldaker

Project Location: COG - EDDY CO NM

Sample ID: SP 10 @ 2' (H802014-65)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6500	16.0	07/27/2018	ND	416	104	400	3.77	
Sample ID: SP 10 @ 4' (H	1802014-66)								
Chloride, SM4500CI-B	mg/kg		Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6100	16.0	07/27/2018	ND	416	104	400	3.77	
Sample ID: SP 10 @ 6' (H	1802014-67)								
Chloride, SM4500Cl-B	mg	/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	544	16.0	07/27/2018	ND	416	104	400	3.77	
Sample ID: SP 10 @ 7' (H	1802014-68)								
Chloride, SM4500CI-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	512	16.0	07/27/2018	ND	416	104	400	3.77	
Sample ID: SP 10 @ 8' (H	1802014-69)								
Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	368	16.0	07/27/2018	ND	416	104	400	3.77	

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Fax To: (575) 397-0397

Received: 07/24/2018 Sampling Date: 07/17/2018

Reported: 07/27/2018 Sampling Type: Soil

Project Name: COPPERHEAD 31 FED COM #001H Sampling Condition: Cool & Intact
Project Number: (5/20/18) Sample Received By: Tamara Oldaker

Project Location: COG - EDDY CO NM

Sample ID: SP 11 @ SURFACE (H802014-70)

Chloride, SM4500CI-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	07/27/2018	ND	416	104	400	3.77	

Sample ID: SP 12 @ SURFACE (H802014-71)

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	07/27/2018	ND	416	104	400	3.77		

Sample ID: SP 12 @ 1' (H802014-72)

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	07/27/2018	ND	416	104	400	3.77	

Sample ID: SP 13 @ SURFACE (H802014-73)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	07/27/2018	ND	416	104	400	3.77	

Sample ID: SP 13 @ 1' (H802014-74)

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	07/27/2018	ND	416	104	400	3.77	

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400

3.77



Analytical Results For:

BBC International, Inc.

Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 07/24/2018 Sampling Date: 07/18/2018

Reported: 07/27/2018 Sampling Type: Soil

Project Name: COPPERHEAD 31 FED COM #001H Sampling Condition: Cool & Intact
Project Number: (5/20/18) Sample Received By: Tamara Oldaker

Project Location: COG - EDDY CO NM

Sample ID: SP 14 @ SURFACE (H802014-75)

Sumple ID: Si IT @ Solki	ACE (110020)	L+ /J/							
Chloride, SM4500Cl-B	mg	mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	07/27/2018	ND	416	104	400	3.77	
Sample ID: SP 14 @ 1' (H	802014-76)								
Chloride, SM4500Cl-B	mg	/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier

Sample ID: NORTH @ SURFACE (H802014-77)

32.0

16.0

Chloride

Chloride, SM4500CI-B	OCI-B mg/kg			d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	368	16.0	07/27/2018	ND	416	104	400	3.77	

ND

416

104

07/27/2018

Sample ID: EAST @ SURFACE (H802014-78)

Chloride, SM4500Cl-B mg/kg		Analyzed By: AC							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	304	16.0	07/27/2018	ND	416	104	400	3.77	

Sample ID: WEST @ SURFACE (H802014-79)

Chloride, SM4500Cl-B mg/kg		Analyzed By: AC								
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	384	16.0	07/27/2018	ND	416	104	400	3.77		

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Cliff Brunson P.O. Box 805 Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 07/24/2018 Sampling Date: 07/17/2018

Reported: 07/27/2018 Sampling Type: Soil

Project Name: COPPERHEAD 31 FED COM #001H Sampling Condition: Cool & Intact
Project Number: (5/20/18) Sample Received By: Tamara Oldaker

Project Location: COG - EDDY CO NM

Sample ID: SOUTH @ SURFACE (H802014-80)

Chloride, SM4500Cl-B	mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	368	16.0	07/27/2018	ND	416	104	400	3.77	

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Notes and Definitions

S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or

matrix interference's.

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS

ecovery.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

** Samples not received at proper temperature of 6°C or below.

*** Insufficient time to reach temperature.

- Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

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ARDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240 (505) 393-2326 FAX (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

70/

	oany Name: BBC International, Inc.									3/LL	TO						ANA	LYSIS	RE	QUE	ST			
Project Manage	er: Cliff Brunson						P.	0. #																
Address: P.O	. Box 805						C	omp	any:	Ci	06													
city: Hobbs	State: NM	Zip	: {	382	41		At	tn:	F	lasi	(000	,												
Phone #: 575-	397-6388 Fax #: 575	-39	7-0	397			A	ddre	ss:															3
Project #:	Project Owne	r: (00	6	20		Ci	ty:															- 1	
Project Name:	Copperhead 31 Fed Com #001H (5/20	0/18	3)			St	ate:		Zip):									9				
Project Locatio	n: Eddy County, NM							none																
Sampler Name:	Jeff Ornelas						Fa	x #:																
FOR LAB USE ONLY					MATI	RIX		PR	ESER	V.	SAMPL	ING												
		OR (C)OMP	co.	۳.											\ \ \ \									
Lab I.D.	Sample I.D.	(C)	# CONTAINERS	GROUNDWATER	WASTEWATER			ni.						×	D									
Lab I.D.	Sample I.D.		IA	N N	EW/	Į,	R F	BAS	000	~				1	#									
H802014		O(G)RAB	CO	P. P.	WAST	OIL	OTHER:	ACID/BASE	ICE / COOL	OTHER.	DATE	TIME	C(87	1									
1	SP1 @ SURFACE	Š	# /	9	S 0	0 0	0	Ř	2	0.000,000,000	DATE 12/18	9:11 AM	_						_					
2	SP1 @ 1'	Ğ	T		1		+	H	1	_	12/18	9:15 AM	1	1	/								VIII TO LOO	
3	SP1 @ 2'	Ğ	1		17	+	+	H	1		12/18	9:30 AM	1	•	-									
4	SP1 @ 4'	G	1		1	\top			1	_	12/18	10:11 AM	1										\rightarrow	
5	SP1 @ 6'	G	1		1				1	7/1	2/18	10:37 AM	1									-	-	
6	SP1 @ 8'	G	1						1	7/1	12/18	11:05 AM	1											
7	SP1 @ 9'	G	1		1				1	7/1	2/18	11:11 AM	1											
8	SP2 @ SURFACE	Š	1		1				-	7/1	12/18	11:12 AM	1	1	1									
9	SP2 @ 1'	Ģ	1		~				1	7/1	2/18	11:15 AM	1	1	1									
PLEASE NOTE: Liability a	SP2 @ 2' and Damages. Cardinal's liability and client's exclusive remedy for a	O Clair	n adei	no who	ber based in	COOK	of or to				2/18	11:22 AM	1											
arraiyses. Air claims includi	ng those for negligence and any other cause whatsoever shall be a ardinal be liable for incidental or consequental damages, including	eemec	1 waive	ad unle	e made in w	miting a	nd race	in and bu	Cardia	of midble of	20 dain -6-		d. Colours at those a	ole										
Relinquished B	ng out of or related to the performance of services hereunder by C	ardinal	, regar	dless o	whether su	ch clair	n is bas	ed upo	n any of	f the abov	e stated re	isons or otherwise	ð											
L. NOT	7/18/18	ite	1/	M	19.							Phone Res Fax Result	t:	☐ Ye			Add'l F	Phone # Fax #:	#:					-
VEFIL	11 5 30 pm	t	P	0	5							REMARKS	:	200	11-		1		h.			000	_	
Relinquished B	Date: 24-18	Re	ceiv	ed I	Зу:			1	11	1	10	X	- /	NUC	75	u	ידונ	n -	nu	201	3/) We	2 -	
TU	Time: 4 Jamara Ada										X													
Delivered By	ivered By: (Circle One) Sample Condition										BY:													
Sampler - UPS	UPS - Bus - Other: Carrected - 5.85 Pres Yes										25													

[†] Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

Page 39 of 45

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Nos &

ARDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240 (505) 393-2326 FAX (505) 393-2476

Company Name: BBC International, Inc.		BI	LL TO					AN	ALYSI	S REC	QUES	Т		
Project Manager: Cliff Brunson		P.O. #:									T			
Address: P.O. Box 805		Company: ,	COG											1 1
City: Hobbs State: NM Zip: 8824	11	Attn: Ho	1Skell											
Phone #: 575-397-6388 Fax #: 575-397-0397		Address:												
Project #: Project Owner:		City:							1					
Project Name: Copperhead 31 Fed Com #001H (5/20/18)		State:	Zip:											
Project Location: Eddy County, NM		Phone #:												
Sampler Name: Jeff Ornelas		Fax #:												
CONTAINERS OF A SECONTAINERS CONTAINERS CONTAINERS CONTAINERS CONTAINERS CANADAM C	WASTEWATER SOIL XIAL OIL SLUDGE	ACID/BASE:	SAMPLING	TIME	((BTEX	TYHEKT							
I) SP2 @ 4' G J	1		7/12/18 11	1:44 AM	1		-					_		$\neg \neg$
12 SP2 @ 6'			7/12/18 12	2:12 PM	1									
3 SP2 @ 8' G		1	7/12/18 1:	11 PM	1									1 1
14 SP2 @ 9'			7/12/18 1:	28 PM	1									+
JS SP3 @ SURFACE G J	V		7/12/18 1:	:30 PM	1	1	1							
16 SP3 @ 1' G 1	1		7/12/18 1:	40 PM	1	1	1							
16 SP3 @ 1'	1	V	7/12/18 1:	:50 PM	1									
SP3 @ 4' G 1			7/12/18 2:	15 PM	1									
19 SP3 @ 6' G I			7/12/18 2:	40 PM	1									
SP3 (0, 8				09 PM	1									
PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whet analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unles service. In no event shall Cardinal be liable for incidental or consequental damages, including without limitation, bu affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of	s made in writing and siness interruptions. I	freceived by Cardinal w	within 30 days after con	mpletion of the	e applicable	e				·				
Relinquished By: Date: 8 18 Received F	elinquished By: Date: 8 18 Received By:										200	300	i,	
elivered By: (Circle One) Date: 1/8 Received By: Time: 72 : 40 Sample Condition CHECKED BY: Cool Intact (Initiats)														
Sampler - UPS - Bus - Other: Corrected - 5.85	Yes Yes No No	10	ITIS											

[†] Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

Page 40 of 45

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

308

ARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240
(505) 393-2326 FAX (505) 393-2476

Company Name	npany Name: BBC International, Inc.										ILL TO	0						ANA	LYSIS	S RE	QUE	ST		
Project Manage	r: Cliff Brunson							P.C). #:										П					
Address: P.O	. Box 805							Co	mpa	ıny:	COG	5	W. Thu will see the											
city: Hobbs	State: NM	Zip	: 8	8824	11			Att	n:	Ha	Stoll	_												
Phone #: 575-	397-6388 Fax #: 575	-397	7-0	397				Ad	dres	ss:														
Project #:	Project Owner	r: ()	0	5				City	y:													1		
Project Name:	Copperhead 31 Fed Com #001H (Sta			Zip:													
Project Location	n: Eddy County, NM							Pho	one	#:														
Sampler Name:	Jeff Ornelas						-	Fax	W 1	M. II.														
FOR LAB USE ONLY			Г		MA	TRIX		_		SER	/. SAMI	PLIN	IG											
Lab I.D.	Sample I.D.	G(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	DAT	E	ТІМЕ	(1	BTEX	THYEXT								
21	SP3 @ 9'	G	1		~	7				1	7/12/18	3 :	3:33 PM	1										
22	SP4 @ SURFACE	G	1		1					1	7/12/18	3 :	3:40 PM	1	1	1								
23	SP4 @ 1'	G	1		-	1				1	7/12/18	3 :	3:50 PM	1	1	1								
24	SP4 @ 2'	G	1			1				1	7/13/18	3 8	3:51 AM	1										
25	SP4 @ 4'	Q	1							1	7/13/18	3 6	9:22 AM	1										
26	SP4 @ 6'	6	1		-					1	7/13/18	3 8	9:45 AM	1										
31	SP4 @ 8'	Ģ	1	Щ	٧	1_				1	7/13/18	3 1	10:30 AM	1										
28	SP4 @ 9'	G	1		<u>ر</u>					/	7/13/18	3 1	10:45 AM	1										
30	SP5 @ SURFACE	Ģ	1	\sqcup		1_				1	7/13/18		10:57 AM	1	1	1								
	SP5 @ 1' ad Damages. Cardinal's liability and client's exclusive remedy for a	G	n ariei	na wha	her base	d in co	otro et a	v 10.1	chall!	V	7/13/18		11:01 AM	✓	✓	1								
analyses. All claims includi	ng those for negligence and any other cause whatsoever shall be ardinal be liable for incidental or consequental damages, including	deemed	waive	ed unle	s made i	n writin	ng and	raceiv	ed hy	Cardina	within 30 days	ofter	complation of th	a analiant	ole									
affiliates or successors arisi	ng out of or related to the performance of services hereunder by C	ardinal	regar	dless o	whether	such o	daim is	base	d upon	any of	the above state	ed reas	ons or otherwis	е.										
Kelliquistied B	71818	Re	cei	red I	3y:/			_					Phone Res Fax Result		☐ Ye		No No	Add'l	Phone	#:				
1295	Time												DELLABIO							1	1		000	
Relinquished By: Date: 7-2 4-18 Time: 12: 40 Delivered By: (Circle One) Sample Con									led	CHEC	KED/BY:		* -	120	ock	クラ	w	eti	<u>د</u> د	nec	lel	30		
	opler - UPS - Bus - Other: Corrected -5.8 = 1 No								7		itials)	-												
	connot cocont workel charges. Disease	-	-	200	7.1																			

[†] Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

Page 41 of 45

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

ANALYSIS REQUEST

4088

ARDINAL LABORATORIES
101 East Marland, Hobbs, NM 88240
(505) 393-2326 FAX (505) 393-2476

Company Name: BBC International, Inc.

Project Manage	r: Cliff Brunson	P.	0. #	:																	
Address: P.O.	Box 805				С	omp	any:	COG													
city: Hobbs	State: NM	Zip	: 8	8241	A	ttn:	1	askell													
Phone #: 575-	397-6388 Fax #: 575	-397	7-00	397	А	ddre	ess:														
Project #:	Project Owner	: ()	06	5	С	ity:															
Project Name: (Copperhead 31 Fed Com #001H (5/20)/18)	Si	tate:		Zip:													
Project Location	n: Eddy County, NM				PI	hone	e #:														
Sampler Name:	Jeff Ornelas				Fa	ax #:															
FOR LAB USE ONLY			П	MATR	X	PR	ESERV	SAMPL	ING		λ	,									
Lab I.D. H802014	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER WASTEWATER SOIL	SLUDGE	ACID/BASE:	ICE / COOL OTHER:	DATE	TIME	10	BTEK	TPHCKT									a a
31	SP5 @ 2'	G	1				1	7/13/18	11:11 AM	1											
32	SP5 @ 4'	G	1					7/13/18	11:27 AM	1											
33	SP5 @ 6'	G	1				1	7/13/18	11:52 AM	1											
34	SP5 @ 8'	G	1				1	7/13/18	12:52 PM	1										\neg	
35	SP5 @ 9'	G	1				1	7/13/18	12:58 PM	1											
36 37	SP5 @ 10'	G	1					7/13/18	1:11 PM	1											
37	SP6 @ SURFACE	6	1		i i		-	7/13/18	1:12 PM	1	1	1									
38	SP6 @ 1'	G	1				1	7/13/18	1:15 PM	1	1	1									
39	SP6 @ 2'	G)	1		g.	1	7/13/18	1:22 PM	1							\neg				
40	SP6 @ 4'	6	1			Т	1	7/13/18	1:45 PM	1											
analyses. All claims includir service. In no event shall C affiliates or successors arisi	nd Damages. Cardinal's liability and client's exclusive remedy for a ng those for negligence and any other cause whatsoever shall be c ardinal be liable for incidental or consequental damages, including ng out of or related to the performance of services hereunder by C	eemed without	Waive	d unless made in wri	ing and rec	eived b	y Cardinal v	within 30 days after	er completion of the	e applicat	ole										
Relinquished By	Date:/18/18	Re	ceiv	ed By:	/				Phone Res		☐ Yes			Add'l P Add'l F		# :					
1 VEST	Times 130 un	grx					PEMARKS					-			^						
Relinquished By	Date: 7-24-18 Time: 2:40	a l	U	dat	sel .	*	HE	CP)5	wı	th	Ch	ua	e l	光 代	٤.					
Delivered By:	(Circle One) -5.82	Sample Co				ED BY:	_														
Sampler - UPS	- Bus - Other: Corrected	Yes No	Yes	1	1.0	#15			ii .												
+ Cardinal	Cardinal cannot accent verbal changes. Please fax written changes to 505 202 2470																				

BILL TO

[†] Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

5 of 8

ARDINAL LABORATORIES

	any Name: BBC International, Inc. t Manager: Cliff Brunson									LL TO		11				ANAL	YSIS	RE	QUE	ST			
Project Manage	r: Cliff Brunson						P.C	O. #:															
Address: P.O	. Box 805						Co	mpa	iny:, (200					l.								- 1
city: Hobbs	State: NM	Zip	: 8	824	41		Att	tn:	tto	iskell	ノ												
Phone #: 575-	397-6388 Fax #: 575						Ad	dres	ss:														
Project #:	Project Owner			96	1		Cit	y:															
	Copperhead 31 Fed Com #001H (5/20)/18	3)			Sta	ate:		Zip:													
Project Location	n: Eddy County, NM						Ph	one	#:														
Sampler Name:	Jeff Ornelas						Fax	x #:															- 1
FOR LAB USE ONLY			П		MATR	IX		PRE	SERV	SAMPL	ING	1											
Lab I.D.	Sample I.D.	OR (C)OMP	INERS	WATER	ATER			ij	7				X	4									
H802014		(G)RAB C	# CONTAINERS	GROUNDWATER	WASTEW	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL OTHER:	DATE	TIME	0	BTB	HUL									
41	SP6 @ 6'	G	1		1				1	7/13/18	2:01 PM	1											
42	SP6 @ 8'	000	1		-				1	7/13/18	2:30 PM	1											
43	SP6 @ 10'	G	1	ĵ.	1			П	1	7/13/18	3:01 PM	1											
44	SP6 @ 12'	6	1		1				1	7/13/18	3:33 PM	1											
45	SP6 @ 13'	6	1		~				/	7/13/18	3:45 PM	1											
46	SP7 @ SURFACE	G	1		1				1	7/16/18	8:51 AM	1	1	1									
47	SP7 @ 1'	G	1							7/16/18	8:59 AM	1	1	1									
48	SP7 @ 2'	6	1		-				1	7/16/18	9:11 AM	1											
49	SP7 @ 4'	6	1						1	7/16/18	9:33 AM	1											
50	SP7 @ 5'	6	,		/					7/16/18	9:45 AM	1											
analyses. All claims includi	nd Damages. Cardinal's liability and client's exclusive remedy for a ng those for negligence and any other cause whatsoever shall be or	eemed	waive	d unle	ss made in wri	ting and	recei	ived by	Cardinal	vithin 30 days aff	er completion of t	he apolica	ble										
affiliates or successors arisi	ardinal be liable for incidental or consequental damages, including ng out of or related to the performance of services hereunder by C	ardinal	regar	dless o	f whether such	ptions, le claim is	oss of s base	f use, o ed upor	r loss of p	rofits incurred by e above stated re	client, its subsidi easons or otherwi	aries, se.											
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	- Bus - Other:	on			ED BY:	1																	

[†] Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

6 of 8

ARDINAL LABORATORIES

Company Name	pany Name: BBC International, Inc.									LL TO					-	ANAL	YSIS	RE	QUES	ST.			
Project Manage	r: Cliff Brunson						P.O	. #:															
Address: P.O	. Box 805						Cor	npa	ny:	COG													
city: Hobbs	State: NM	Zip	: 8	8241			Attr	ո։	He	is/cell													
Phone #: 575-	397-6388 Fax #: 575	-397	7-03	397			Add	dres	s:														
Project #:	Project Owner	: (<u> 20(</u>	3			City	/ :															
Project Name:	Copperhead 31 Fed Com #001H (5/20)/18	3)			Sta	te:		Zip:													
Project Location	n: Eddy County, NM						Pho	ne i	#:)										
Sampler Name:	Jeff Ornelas						Fax	#:															
FOR LAB USE ONLY		١.	П		MATRI	X	\exists	PRE	SERV	SAMPL	ING	1		v.							I		
		(C)OMP	w	<u>بر</u>										C									
Lab I.D.	Commis I D	(C)	ÉR	VATE				iii .						W									
Lab I.D.	Sample I.D.	BOR	ITAII	INDV EW		GE	2	BASE	S S			~	10	女									
H802014		(G)RAB	# CONTAINERS	GROUNDWATER	SOIL	SLUDGE	OTHER:	ACID/BASE	ICE / COOL OTHER:	DATE	TIME	2	8	7							ı		
51	SP7 @ 6'	Ğ	#	0 5	00	S	9	4	20	7/16/18	10:15 AM	1									-+	\dashv	
5% 5% 54 55 55	SP8 @ SURFACE	Ğ	1				1	0		7/16/18	10:33 AM	1	1	1								\neg	X
53	SP8 @ 1'	G	T		1		1			7/16/18	10:40 AM	1	1	1									
54	SP8 @ 2'	6	1		1				1	7/16/18	10:50 AM	1											
55	SP8 @ 4'	6	1		1				/	7/16/18	11:22 AM	1											
36	SP8 @ 5'	6	1		1				1	7/16/18	11:33 AM	1											
57 58	SP8 @ 6'	Ģ	1		1					7/16/18	11:55 AM	1											
	SP9 @ SURFACE	6	1		1			- 1	1	7/16/18	12:12 PM	1	1	1									X
59	SP9 @ 1'	9	4						1	7/16/18	1:11 PM	V	1	1									
PLEASE NOTE: Liability a	SP9 @ 2' nd Damages. Cardinal's liability and client's exclusive remedy for a	ny clair	n arisi	ng whethe	r based in c	ontract	or tort.	shall b	e limite	7/16/18	1:38 PM	the											
analyses. All claims include	ing those for negligence and any other cause whatsoever shall be cardinal be liable for incidental or consequental damages, including	deemed	d waive	ed unless i	made in writ	ting and	receiv	ed by	Cardinal	within 30 days aft	er completion of th	ne applica	ble										
	ing out of or related to the performance of services hereunder by C	ardinal	regar		hether such							se.	□ Ye	s 🗆	No	Add'l I	Phone	#:					
1660	7 / 18 /8	150,000		XI	/						Fax Resul	t:	☐ Ye	s 🗆	No	Add'l I	Fax #:						
VUIT	UINUS "5:30pm	_		40	0			_			V	- P	Spe	KS	w	ith	h	ead	1 cm	pac	0		
Relinquished B	7-24-18	Ke	cei	red/By	/ :		/	1	1/	110									0				
40	Time: '40			Mel	uer	a	Re	11	les.														- 1
	: (Circle One)				nple Co		on	(KED BY:													
Sampler - UPS	- Bus - Other: Princeted -	5.	83	000	Yes No	Yes		Y	D,	45													

[†] Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

7 of 8

ARDINAL LABORATORIES

	any Name: BBC International, Inc. t Manager: Cliff Brunson									ILL TO		1			-	ANAL	YSIS	RE	QUE	ST		
Project Manage	r: Cliff Brunson						P.	O. #	:													
Address: P.O	. Box 805						Co	omp	any:	COG												
City: Hobbs	State: NM	Zip	: 8	8241			At	tn:	7	as cell	/											
Phone #: 575-	397-6388 Fax #: 575	-397	7-03	397			Ad	idre	ss:													1
Project #:	Project Owner	r: (\mathbb{C}	8			Ci	ty:				1										
Project Name:	Copperhead 31 Fed Com #001H (5/20)/18	3)			St	ate:		Zip:												1
Project Location	n: Eddy County, NM	y 17. 10. (0.00)	LULLA PROTOCO		//		Př	one	#:			1										
Sampler Name:	Jeff Ornelas						Fa	x #:				1										
FOR LAB USE ONLY		١.			MATE	XIX	_	PR	ESER	/. SAMPL	ING			+								
		(C)OMP	(O	R.				1		1				×								
Lab I.D.	Sample I D	(C)	VER	VATE				úi	اند	1			×	$ \mathcal{A} $								
Lab I.D.	Sample I.D.	B OR	ITAII	NDV EW/		병		BASE	000			_	79	H)								
H802014		3)RA	# CONTAINERS	GROUNDWATER	SOIL	SLUDGE	OTHER:	ACID/BASE	ICE / COOL	DATE	TIME	$ \sim$	3	F	li							
	SP9 @ 4'	(D)(G)RAB	#	0 5	000	2 0	0	⋖	7	7/16/18	2:19 PM	1					_	$\overline{}$		\vdash		-
the state of the s	SP9 @ 5'	Ğ	1		1			1	1	7/16/18	2:33 PM	1										
63	SP10 @ SURFACE	6	ī		1		T	Ť	1	7/16/18	3:01 PM	1	1	1								
64	SP10 @ 1'	6	1		1			Π	-	7/16/18	3:10 PM	1	1	1								
65	SP10 @ 2'	6							1	7/17/18	8:59 AM	1										
	SP10 @ 4'	G	1						1	7/17/18	9:25 AM	1										
67	SP10 @ 6'	G			1		_		1	7/17/18	10:05 AM	1										
-	SP10 @ 7'	6	Ш		1		-		1	7/17/18	10:30 AM	1										
49	SP10 @ 8'	6	4		1	-	-	1	_	7/17/18	10:58 AM	1										
PLEASE NOTE: Liability a	SP11 @ SURFACE nd Damages. Cardinal's liability and client's exclusive remedy for a	ny clain	n arisir	ng whethe	r based in	contra	ct or to	nt, sha	be limite	7/17/18	11:50 AM	the										
analyses. All claims includi	ng those for negligence and any other cause whatsoever shall be ardinal be liable for incidental or consequental damages, including	deemed	waive	d unless	nade in w	riting ar	nd rece	eived b	y Cardina	within 30 days af	ter completion of th	ne applicat	ole									
Relinquished B	ing out of or related to the performance of services hereunder by C	ardinal,	regar	ed By	hether suc	th claim	is bas	sed upo	on any of	the above stated r	Phone Re	10.	☐ Ye	s 🗆	No	Add'l F	Phone :	# ·				
Late	TIME:	-		K		_	_				Fax Resul	t:	☐ Ye	s 🗆	No	Add'l F	ax #:					
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40	Timez: 40 MMM									KK												
	elivered By: (Circle One) _5.82 Sample									KED BY:	1											
Sampler - UPS	- Bus - Other: Corrected -	5.8	35		Yes [s	7	10.	#75												

[†] Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

Page 45 of 45

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

8088

ARDINAL LABORATORIES

	pany Name: BBC International, Inc. ect Manager: Cliff Brunson								E	3 <i>1L</i>	L TO		_				ANA	LYSI	S R	EQUE	ST		
Project Manage	r: Cliff Brunson						P.	O. #	:											T	T		
Address: P.O	. Box 805						C	omp	any:	. (COS,												
city: Hobbs	State: NM	Zip	: 8	824	1		At	tn:	-	Ha	Skell	<u>ر</u>			1			1					
Phone #: 575-	397-6388 Fax #: 575	-397	7-0	397			A	ddre	ss:	.,								1					
Project #:	Project Owner	_	C()(C			Ci	ty:							- 1								
Project Name:	Copperhead 31 Fed Com #001H (5/20)/18	3)		(1)	St	ate:		2	Zip:				- 1								
Project Locatio	n: Eddy County, NM						Pł	one	#:														
Sampler Name:	Jeff Ornelas						Fa	x #:								- 1							
FOR LAB USE ONLY		٠.		-	MAT	RIX	_	PR	ESER	₹V.	SAMPL	NG						1					
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service. In no event shall C	ing those for negligence and any other cause whatsoever shall be of ardinal be liable for incidental or consequental damages, including	withou	t limita	tion, bu	siness inte	muption:	s, loss	of use,	or loss o	of prof	fits incurred by	lient, its subsidiar	ries.	ble									
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[†] Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

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 MAY 2 1 2018

Energy Minerals and Natural Resources

Form C-141 Revised April 3, 2017

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

Oil Conservation Division DISTRICT II SUBMET SIA OCD appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action **OPERATOR** Final Report Name of Company: COG Production, LLC (OGRID 217955) Contact: Robert McNeill Address: 600 West Illinois Avenue, Midland TX 79701 Telephone No.: 432-683-7443 Facility Name: Copperhead 31 Federal Com #001H Facility Type: Tank Battery Surface Owner: BLM Mineral Owner: Federal API No.: 30-015-38532 LOCATION OF RELEASE Unit Letter Section Township Range Feet from the North/South Line Feet from the East/West Line County H 31 **26S** 29E 480 South 480 East Eddy Latitude: 32.0014305 Longitude: -104.0168457 NAD83 NATURE OF RELEASE Type of Release: Produced Water Volume of Release: Volume Recovered: 240bbls 9bbls Source of Release: Flowline Date and Hour of Occurrence: Date and Hour of Discovery:

	5/20/2018	5/20/2018 9:15am
Was Immediate Notice Given? ☑ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher-NMOCD Shelly Tucker-BLM	·
By Whom? Sheldon Hitchcock	Date and Hour: 5/20/201	8 6:15pm
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impactin	ng the Watercourse.
If a Watercourse was Impacted, Describe Fully.*		
Describe Cause of Problem and Remedial Action Taken.* A 4-inch poly line ruptured due to a suspected high line pressure. The dam	naged section of line will be	replaced.
Describe Area Affected and Cleanup Action Taken.* The release impacted the pasture east of the tank battery. Concho will have a remediation work plan to the NMOCD for approval prior to any significant to the NMOCD for approval prior to any significant to the NMOCD for approval prior to any significant to the NMOCD for approval prior to any significant to the NMOCD for approval prior to any significant to the NMOCD for approval prior to any significant to the NMOCD for approval prior to any significant to the NMOCD for approval prior to any significant to the NMOCD for approval prior to any significant to the NMOCD for approval prior to any significant to the NMOCD for approval prior to any significant to the NMOCD for approval prior to any significant to the NMOCD for approval prior to any significant to the NMOCD for approval prior to any significant to the NMOCD for approval prior to any significant to the NMOCD for approval prior to any significant to the NMOCD for approval prior to any significant to the NMOCD for approval prior to any significant to the NMOCD for approval prior to any significant to the NMOCD for approval prior to any significant to the NMOCD for approval prior to any significant to the NMOCD for approval prior to any significant to the NMOCD for approval prior to any significant to the NMOCD for approval prior to any significant to the NMOCD for approval prior to any significant to the NMOCD for approval prior to any significant to the NMOCD for approval prior to any significant to the NMOCD for approval prior to any significant to the NMOCD for approval prior to any significant to the NMOCD for approval prior to any significant to the NMOCD for approval prior to any significant to the NMOCD for approval prior to any significant to the NMOCD for approval prior to any significant to the NMOCD for approval prior to any significant to the NMOCD for approval prior to any significant to the NMOCD for approval prior to the NMOCD for approval prior to the NMOCD for approval prior to the NMOCD f		possible impact from the release and we will present
I hereby certify that the information given above is true and complete to tregulations all operators are required to report and/or file certain release numblic health or the environment. The acceptance of a C-141 report by the should their operations have failed to adequately investigate and remediate or the environment. In addition, NMOCD acceptance of a C-141 report of federal, state, or local laws and/or regulations.	notifications and perform content NMOCD marked as "Final te contamination that pose a	rrective actions for releases which may endanger il Report" does not relieve the operator of liability threat to ground water, surface water, human health
-	OIL CC	INSERVATION DIVISION
Signature: Sheldon quiton	-	y specialted, he Dennese

Approval Date:

Phone: 575-746-2010

Conditions of Approval:

Expiration Date:

Attached

* Attach Additional Sheets If Necessary

E-mail Address: slhitchcock@concho.com

Printed Name: Sheldon L. Hitchcock

Title: HSE Coordinator

Date: 5/21/2018

Operator/Responsible Party,

The OCD has received the form C-141 you provided on <u>5/21/2018</u> regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number <u>369-4763</u> 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 $\underline{2}$ office in $\underline{ARTESIA}$ on or before $\underline{6/21/2018}$. 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; C₆ thru C₃₆), 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; C₆ thru C₃₆), 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>

Sent: Monday, May 21, 2018 10:27 AM

To: Bratcher, Mike, EMNRD; Weaver, Crystal, EMNRD; stucker@blm.gov

Cc: Robert McNeill; Rebecca Haskell; Dakota Neel; Christopher Gray; DeAnn Grant Subject: (C-141 Initial) Copperhead 31 Federal Com #001H (30-015-38532) 5/20/2018

Attachments: (C-141 Initial) Copperhead 31 Federal Com #001H (30-015-38532) 5-20-2018.pdf

Mr. Bratcher/Ms. Tucker,

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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