



DELINEATION WORKPLAN

COG – COPPERHEAD 31 FED COM #001H (Leak Date: 5/27/18)

RP # 2RP-4796

This delineation workplan and remediation proposal addresses the release associated with RP # 2RP-4796.

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 #001H

Leak date: 05/27/2018
Eddy County, NM
SPI# 30-015-38532
2RP-4796

Legend

-  4 ft excavation with liner
-  Sample points
-  Leak area



COG, Copperhead 31 Fed Com #001H

Sample points

SP1, N 32.00031 W-104.01629

SP2, N 32.00032 W-104.01637

SP3, N 32.00027 W-104.01634

SP4, N 32.00034 W-104.01622

SP5, N 32.00031 W-104.01618

NORTH, N 32.00037 W-104.01629

SOUTH, N 32.00023 W-104.01632

EAST, N 32.00032 W-104.01613

WEST, N 32.00031 W-104.01641

COG, Copperhead 31 Fed Com #001H

U/L H, Section 31, T26S, R29E

Groundwater: <50'





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

No records found.

UTMNAD83 Radius Search (in meters):

Easting (X): 592205

Northing (Y): 3541658

Radius: 1700

Public Land Survey System (PLSS)

☒ Q64: Q16: Q4: Sec: 31 Tws: 26S Rng: 29E

State Plane Coordinate System - NAD27

☐ X: 0 ft Y: 0 ft Zone:

State Plane Coordinate System - NAD83

☐ X: 0 ft Y: 0 ft Zone:

Degrees/Minutes/Seconds

☐ Longitude (X): Degrees: 0 ° Minutes: 0 ' Seconds: 0 "

Latitude (Y): Degrees: 0 ° Minutes: 0 ' Seconds: 0 "

UTM - NAD27

☐ Easting (X): 0 mtrs Northing (Y): 0 mtrs Zone:

SUBMIT**All Conversion Results are displayed as NAD 1983 UTM Zone 13**Easting (X): 592205.0 mtrsNorthing (Y): 3541658.0 mtrs**~~ Please keep screen open to copy UTM values for Reports. ~~**

Laboratory Analytical Results Summary
Copperhead 31 Fed Com #001H (5/27/18)

		Sample ID	SP1 @ SURFACE	SP1 @ 1'	SP1 @ 2'	SP1 @ 4'	SP1 @ 7'	SP1 @ 10'	SP1 @ 14'	SP1 @ 17'	SP1 @ 18'
Analyte	Method	Date	7/30/18	7/30/18	7/30/18	7/30/18	7/30/18	7/30/18	7/30/18	7/31/18	7/31/18
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Chloride	SM4500Cl-B		16000	3000	9760	4400	3400	3800	4660	880	64

		Sample ID	SP2 @ SURFACE	SP2 @ 1'	SP2 @ 2'	SP2 @ 3'	SP2 @ 4'
Analyte	Method	Date	7/30/18	7/30/18	7/30/18	7/30/18	7/31/18
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		n/a	<0.050	n/a	n/a	n/a
Toluene	BTEX 8021B		n/a	<0.050	n/a	n/a	n/a
Ethylbenzene	BTEX 8021B		n/a	<0.050	n/a	n/a	n/a
Total Xylenes	BTEX 8021B		n/a	<0.150	n/a	n/a	n/a
Total BTEX	BTEX 8021B		n/a	<0.300	n/a	n/a	n/a
Chloride	SM4500Cl-B		23200	2960	2800	752	64
GRO	TPH 8015M		n/a	<10.0	n/a	n/a	n/a
DRO	TPH 8015M		n/a	<10.0	n/a	n/a	n/a
EXT DRO	TPH 8015M		n/a	<10.0	n/a	n/a	n/a

		Sample ID	SP3 @ SURFACE	SP3 @ 1'	SP3 @ 2'	SP3 @ 3'	SP3 @ 4'	SP3 @ 5'
Analyte	Method	Date	7/31/18	7/31/18	7/31/18	7/31/18	7/31/18	7/31/18
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Chloride	SM4500Cl-B		10300	736	720	1280	720	336

		Sample ID	SP4 @ SURFACE	SP4 @ 1'	SP4 @ 2'	SP4 @ 6'	SP4 @ 9'	SP4 @ 10'
Analyte	Method	Date	7/31/18	7/31/18	7/31/18	8/1/18	8/1/18	8/1/18
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Chloride	SM4500Cl-B		29600	12000	6800	2200	528	352

		Sample ID	SP5 @ SURFACE	SP5 @ 1'	SP5 @ 2'	SP5 @ 4'	SP5 @ 6'	SP5 @ 10'	SP5 @ 11'
Analyte	Method	Date	8/1/18	8/1/18	8/1/18	8/1/18	8/1/18	8/1/18	8/1/18
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		n/a	<0.050	n/a	n/a	n/a	n/a	n/a
Toluene	BTEX 8021B		n/a	<0.050	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	BTEX 8021B		n/a	<0.050	n/a	n/a	n/a	n/a	n/a
Total Xylenes	BTEX 8021B		n/a	<0.150	n/a	n/a	n/a	n/a	n/a
Total BTEX	BTEX 8021B		n/a	<0.300	n/a	n/a	n/a	n/a	n/a
Chloride	SM4500Cl-B		1680	6660	8930	4930	1520	416	400
GRO	TPH 8015M		n/a	<10.0	n/a	n/a	n/a	n/a	n/a
DRO	TPH 8015M		n/a	<10.0	n/a	n/a	n/a	n/a	n/a
EXT DRO	TPH 8015M		n/a	<10.0	n/a	n/a	n/a	n/a	n/a

Cardinal		Sample ID	NORTH @ SURFACE	EAST @ SURFACE	WEST @ SURFACE	SOUTH @ SURFACE
Analyte	Method	Date	8/1/18	8/1/18	8/1/18	8/1/18
			mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	n/a	n/a	<0.050
Toluene	BTEX 8021B		<0.050	n/a	n/a	<0.050
Ethylbenzene	BTEX 8021B		<0.050	n/a	n/a	<0.050
Total Xylenes	BTEX 8021B		<0.150	n/a	n/a	<0.150
Total BTEX	BTEX 8021B		<0.300	n/a	n/a	<0.300
Chloride	SM4500Cl-B		<16.0	64	<16.0	48
GRO	TPH 8015M		<10.0	n/a	n/a	<10.0
DRO	TPH 8015M		<10.0	n/a	n/a	<10.0
EXT DRO	TPH 8015M		<10.0	n/a	n/a	<10.0

August 06, 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 08/03/18 8:11.

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/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

BBC International, Inc.
Cliff Brunson
P.O. Box 805
Hobbs NM, 88241
Fax To: (575) 397-0397

Received:	08/03/2018	Sampling Date:	07/30/2018
Reported:	08/06/2018	Sampling Type:	Soil
Project Name:	COPPERHEAD 31 FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	SOUTH (5/27/18)	Sample Received By:	Jodi Henson
Project Location:	COG - EDDY CO NM		

Sample ID: SP 1 @ SURFACE (H802114-01)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16000	16.0	08/03/2018	ND	400	100	400	14.8	

Sample ID: SP 1 @ 1' (H802114-02)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3000	16.0	08/03/2018	ND	400	100	400	14.8	

Sample ID: SP 1 @ 2' (H802114-03)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	9760	16.0	08/03/2018	ND	400	100	400	14.8	

Sample ID: SP 1 @ 4' (H802114-04)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4400	16.0	08/03/2018	ND	400	100	400	14.8	

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Received:	08/03/2018	Sampling Date:	07/30/2018
Reported:	08/06/2018	Sampling Type:	Soil
Project Name:	COPPERHEAD 31 FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	SOUTH (5/27/18)	Sample Received By:	Jodi Henson
Project Location:	COG - EDDY CO NM		

Sample ID: SP 1 @ 7' (H802114-05)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3400	16.0	08/03/2018	ND	400	100	400	14.8		

Sample ID: SP 1 @ 10' (H802114-06)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3800	16.0	08/03/2018	ND	400	100	400	14.8		

Sample ID: SP 1 @ 14' (H802114-07)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4660	16.0	08/03/2018	ND	400	100	400	14.8	

Sample ID: SP 1 @ 17' (H802114-08)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	880	16.0	08/03/2018	ND	384	96.0	400	4.08	QM-07	

Sample ID: SP 1 @ 18' (H802114-09)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	08/03/2018	ND	384	96.0	400	4.08		

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Received:	08/03/2018	Sampling Date:	07/30/2018
Reported:	08/06/2018	Sampling Type:	Soil
Project Name:	COPPERHEAD 31 FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	SOUTH (5/27/18)	Sample Received By:	Jodi Henson
Project Location:	COG - EDDY CO NM		

Sample ID: SP 2 @ SURFACE (H802114-10)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	23200	16.0	08/03/2018	ND	384	96.0	400	4.08		

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Hobbs NM, 88241
Fax To: (575) 397-0397

Received:	08/03/2018	Sampling Date:	07/30/2018
Reported:	08/06/2018	Sampling Type:	Soil
Project Name:	COPPERHEAD 31 FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	SOUTH (5/27/18)	Sample Received By:	Jodi Henson
Project Location:	COG - EDDY CO NM		

Sample ID: SP 2 @ 1' (H802114-11)

BTX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/03/2018	ND	1.89	94.3	2.00	17.1		
Toluene*	<0.050	0.050	08/03/2018	ND	1.92	95.9	2.00	18.5		
Ethylbenzene*	<0.050	0.050	08/03/2018	ND	1.92	96.0	2.00	19.1		
Total Xylenes*	<0.150	0.150	08/03/2018	ND	5.58	92.9	6.00	21.6		
Total BTX	<0.300	0.300	08/03/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2960	16.0	08/03/2018	ND	384	96.0	400	4.08		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/03/2018	ND	189	94.5	200	5.17	
DRO >C10-C28*	<10.0	10.0	08/03/2018	ND	184	92.0	200	7.12	
EXT DRO >C28-C36	<10.0	10.0	08/03/2018	ND					

Surrogate: 1-Chlorooctane 90.5 % 41-142

Surrogate: 1-Chlorooctadecane 84.3 % 37.6-147

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Received:	08/03/2018	Sampling Date:	07/30/2018
Reported:	08/06/2018	Sampling Type:	Soil
Project Name:	COPPERHEAD 31 FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	SOUTH (5/27/18)	Sample Received By:	Jodi Henson
Project Location:	COG - EDDY CO NM		

Sample ID: SP 2 @ 2' (H802114-12)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2800	16.0	08/03/2018	ND	384	96.0	400	4.08	

Sample ID: SP 2 @ 3' (H802114-13)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	752	16.0	08/03/2018	ND	384	96.0	400	4.08	

Sample ID: SP 2 @ 4' (H802114-14)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	08/03/2018	ND	384	96.0	400	4.08	

Sample ID: SP 3 @ SURFACE (H802114-15)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	10300	16.0	08/03/2018	ND	384	96.0	400	4.08	

Sample ID: SP 3 @ 1' (H802114-16)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	736	16.0	08/03/2018	ND	384	96.0	400	4.08	

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Fax To: (575) 397-0397

Received:	08/03/2018	Sampling Date:	07/31/2018
Reported:	08/06/2018	Sampling Type:	Soil
Project Name:	COPPERHEAD 31 FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	SOUTH (5/27/18)	Sample Received By:	Jodi Henson
Project Location:	COG - EDDY CO NM		

Sample ID: SP 3 @ 2' (H802114-17)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	720	16.0	08/03/2018	ND	384	96.0	400	4.08	

Sample ID: SP 3 @ 3' (H802114-18)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1280	16.0	08/03/2018	ND	384	96.0	400	4.08	

Sample ID: SP 3 @ 4' (H802114-19)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	720	16.0	08/03/2018	ND	384	96.0	400	4.08	

Sample ID: SP 3 @ 5' (H802114-20)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	336	16.0	08/03/2018	ND	384	96.0	400	4.08	

Sample ID: SP 4 @ SURFACE (H802114-21)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	29600	16.0	08/03/2018	ND	384	96.0	400	4.08	

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Received:	08/03/2018	Sampling Date:	07/31/2018
Reported:	08/06/2018	Sampling Type:	Soil
Project Name:	COPPERHEAD 31 FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	SOUTH (5/27/18)	Sample Received By:	Jodi Henson
Project Location:	COG - EDDY CO NM		

Sample ID: SP 4 @ 1' (H802114-22)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	12000	16.0	08/03/2018	ND	384	96.0	400	4.08	

Sample ID: SP 4 @ 2' (H802114-23)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6800	16.0	08/03/2018	ND	384	96.0	400	4.08	

Sample ID: SP 4 @ 6' (H802114-24)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2200	16.0	08/03/2018	ND	384	96.0	400	4.08	

Sample ID: SP 4 @ 9' (H802114-25)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	528	16.0	08/03/2018	ND	384	96.0	400	4.08	

Sample ID: SP 4 @ 10' (H802114-26)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	352	16.0	08/03/2018	ND	384	96.0	400	4.08	

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

BBC International, Inc.
Cliff Brunson
P.O. Box 805
Hobbs NM, 88241
Fax To: (575) 397-0397

Received:	08/03/2018	Sampling Date:	08/01/2018
Reported:	08/06/2018	Sampling Type:	Soil
Project Name:	COPPERHEAD 31 FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	SOUTH (5/27/18)	Sample Received By:	Jodi Henson
Project Location:	COG - EDDY CO NM		

Sample ID: SP 5 @ SURFACE (H802114-27)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1680	16.0	08/03/2018	ND	384	96.0	400	4.08		

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Analytical Results For:

BBC International, Inc.
Cliff Brunson
P.O. Box 805
Hobbs NM, 88241
Fax To: (575) 397-0397

Received:	08/03/2018	Sampling Date:	08/01/2018
Reported:	08/06/2018	Sampling Type:	Soil
Project Name:	COPPERHEAD 31 FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	SOUTH (5/27/18)	Sample Received By:	Jodi Henson
Project Location:	COG - EDDY CO NM		

Sample ID: SP 5 @ 1' (H802114-28)

BTX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/03/2018	ND	1.89	94.3	2.00	17.1		
Toluene*	<0.050	0.050	08/03/2018	ND	1.92	95.9	2.00	18.5		
Ethylbenzene*	<0.050	0.050	08/03/2018	ND	1.92	96.0	2.00	19.1		
Total Xylenes*	<0.150	0.150	08/03/2018	ND	5.58	92.9	6.00	21.6		
Total BTX	<0.300	0.300	08/03/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 69.8-142

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	6660	16.0	08/03/2018	ND	448	112	400	7.41	QM-07	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/03/2018	ND	189	94.5	200	5.17	
DRO >C10-C28*	<10.0	10.0	08/03/2018	ND	184	92.0	200	7.12	
EXT DRO >C28-C36	<10.0	10.0	08/03/2018	ND					

Surrogate: 1-Chlorooctane 91.1 % 41-142

Surrogate: 1-Chlorooctadecane 81.6 % 37.6-147

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Analytical Results For:

BBC International, Inc.
Cliff Brunson
P.O. Box 805
Hobbs NM, 88241
Fax To: (575) 397-0397

Received:	08/03/2018	Sampling Date:	08/01/2018
Reported:	08/06/2018	Sampling Type:	Soil
Project Name:	COPPERHEAD 31 FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	SOUTH (5/27/18)	Sample Received By:	Jodi Henson
Project Location:	COG - EDDY CO NM		

Sample ID: SP 5 @ 2' (H802114-29)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	8930	16.0	08/03/2018	ND	448	112	400	7.41		

Sample ID: SP 5 @ 4' (H802114-30)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4930	16.0	08/03/2018	ND	448	112	400	7.41	

Sample ID: SP 5 @ 6' (H802114-31)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1520	16.0	08/03/2018	ND	448	112	400	7.41		

Sample ID: SP 5 @ 10' (H802114-32)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	416	16.0	08/03/2018	ND	448	112	400	7.41	

Sample ID: SP 5 @ 11' (H802114-33)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	400	16.0	08/03/2018	ND	448	112	400	7.41	

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Analytical Results For:

BBC International, Inc.
Cliff Brunson
P.O. Box 805
Hobbs NM, 88241
Fax To: (575) 397-0397

Received:	08/03/2018	Sampling Date:	08/01/2018
Reported:	08/06/2018	Sampling Type:	Soil
Project Name:	COPPERHEAD 31 FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	SOUTH (5/27/18)	Sample Received By:	Jodi Henson
Project Location:	COG - EDDY CO NM		

Sample ID: NORTH @ SURFACE (H802114-34)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/03/2018	ND	1.89	94.3	2.00	17.1	
Toluene*	<0.050	0.050	08/03/2018	ND	1.92	95.9	2.00	18.5	
Ethylbenzene*	<0.050	0.050	08/03/2018	ND	1.92	96.0	2.00	19.1	
Total Xylenes*	<0.150	0.150	08/03/2018	ND	5.58	92.9	6.00	21.6	
Total BTX	<0.300	0.300	08/03/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 107 % 69.8-142

Chloride, SM4500CI-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	08/03/2018	ND	448	112	400	7.41		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/03/2018	ND	189	94.5	200	5.17	
DRO >C10-C28*	<10.0	10.0	08/03/2018	ND	184	92.0	200	7.12	
EXT DRO >C28-C36	<10.0	10.0	08/03/2018	ND					

Surrogate: 1-Chlorooctane 103 % 41-142

Surrogate: 1-Chlorooctadecane 91.6 % 37.6-147

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Analytical Results For:

BBC International, Inc.
Cliff Brunson
P.O. Box 805
Hobbs NM, 88241
Fax To: (575) 397-0397

Received:	08/03/2018	Sampling Date:	08/01/2018
Reported:	08/06/2018	Sampling Type:	Soil
Project Name:	COPPERHEAD 31 FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	SOUTH (5/27/18)	Sample Received By:	Jodi Henson
Project Location:	COG - EDDY CO NM		

Sample ID: EAST @ SURFACE (H802114-35)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	08/03/2018	ND	448	112	400	7.41		

Sample ID: WEST @ SURFACE (H802114-36)

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	08/03/2018	ND	448	112	400	7.41	

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Analytical Results For:

BBC International, Inc.
Cliff Brunson
P.O. Box 805
Hobbs NM, 88241
Fax To: (575) 397-0397

Received:	08/03/2018	Sampling Date:	08/01/2018
Reported:	08/06/2018	Sampling Type:	Soil
Project Name:	COPPERHEAD 31 FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	SOUTH (5/27/18)	Sample Received By:	Jodi Henson
Project Location:	COG - EDDY CO NM		

Sample ID: SOUTH @ SURFACE (H802114-37)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/03/2018	ND	1.89	94.3	2.00	17.1	
Toluene*	<0.050	0.050	08/03/2018	ND	1.92	95.9	2.00	18.5	
Ethylbenzene*	<0.050	0.050	08/03/2018	ND	1.92	96.0	2.00	19.1	
Total Xylenes*	<0.150	0.150	08/03/2018	ND	5.58	92.9	6.00	21.6	
Total BTX	<0.300	0.300	08/03/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 107 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	08/03/2018	ND	448	112	400	7.41	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/03/2018	ND	189	94.5	200	5.17	
DRO >C10-C28*	<10.0	10.0	08/03/2018	ND	184	92.0	200	7.12	
EXT DRO >C28-C36	<10.0	10.0	08/03/2018	ND					

Surrogate: 1-Chlorooctane 107 % 41-142

Surrogate: 1-Chlorooctadecane 96.8 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
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



Celey D. Keene, Lab Director/Quality Manager

(505) 393-2326 FAX (505) 393-2476

1084

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101 East Marland, Hobbs, NM 88240

(505) 393-2326 FAX (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

2084

Company Name: BBC International, Inc.				BILL TO				ANALYSIS REQUEST											
Project Manager: Cliff Brunson				P.O. #:				CI BTX TPH/EXT											
Address: P.O. Box 805				Company: <u>COG</u>															
City: Hobbs State: NM Zip: 88241				Attn: <u>Hastall</u>															
Phone #: 575-397-6388 Fax #: 575-397-0397				Address:															
Project #: <u>Copperhead</u> Project Owner: <u>COG</u>				City:															
Project Name: <u>Copperhead</u> 31 Fed Com #001H, South, (5-27-18)				State: Zip:															
Project Location: Eddy County, NM				Phone #:															
Sampler Name: Jeff Ornelas				Fax #:															
FOR LAB USE ONLY																			
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX				PRESERV.		SAMPLING									
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME					
<u>H802114</u>																			
<u>11</u>	SP2 @ 1'	<u>G</u>	<u>1</u>			<u>/</u>					<u>/</u>		7/30/18	2:45 PM	<u>✓</u>	<u>✓</u>			
<u>12</u>	SP2 @ 2'	<u>G</u>	<u>1</u>			<u>/</u>					<u>/</u>		7/30/18	3:03 PM	<u>✓</u>	<u>✓</u>			
<u>13</u>	SP2 @ 3'	<u>G</u>	<u>1</u>			<u>/</u>					<u>/</u>		7/31/18	10:38 AM	<u>✓</u>	<u>✓</u>			
<u>14</u>	SP2 @ 4'	<u>G</u>	<u>1</u>			<u>/</u>					<u>/</u>		7/31/18	10:45 AM	<u>✓</u>	<u>✓</u>			
<u>15</u>	SP3 @ SURFACE	<u>G</u>	<u>1</u>			<u>/</u>					<u>/</u>		7/31/18	11:20 AM	<u>✓</u>	<u>✓</u>			
<u>16</u>	SP3 @ 1'	<u>G</u>	<u>1</u>			<u>/</u>					<u>/</u>		7/31/18	11:22 AM	<u>✓</u>	<u>✓</u>			
<u>17</u>	SP3 @ 2'	<u>G</u>	<u>1</u>			<u>/</u>					<u>/</u>		7/31/18	11:39 AM	<u>✓</u>	<u>✓</u>			
<u>18</u>	SP3 @ 3'	<u>G</u>	<u>1</u>			<u>/</u>					<u>/</u>		7/31/18	11:55 AM	<u>✓</u>	<u>✓</u>			
<u>19</u>	SP3 @ 4'	<u>G</u>	<u>1</u>			<u>/</u>					<u>/</u>		7/31/18	12:44 PM	<u>✓</u>	<u>✓</u>			
<u>20</u>	SP3 @ 5'	<u>G</u>	<u>1</u>			<u>/</u>					<u>/</u>		7/31/18	1:11 PM	<u>✓</u>	<u>✓</u>			

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Relinquished By: <u>Jeff Ornelas</u>	Date: <u>8/1/18</u> Time: <u>5:30pm</u>	Received By: <u>[Signature]</u>	Phone Result: ☐ Yes ☐ No	Add'l Phone #:
Relinquished By: <u>[Signature]</u>	Date: <u>8/3/18</u> Time: <u>8:11</u>	Received By: <u>Jodi Benson</u>	Fax Result: ☐ Yes ☐ No	Add'l Fax #:
Delivered By: (Circle One) <u>#15</u>	Sample Condition Cool Intact ☒ Yes ☐ No	CHECKED BY: (Initials) <u>[Signature]</u>	REMARKS: <u>RUSH!</u>	
Sampler - UPS - Bus - Other: <u>-11.6°/-11.65</u>				

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

3084

Company Name: BBC International, Inc.				BILL TO				ANALYSIS REQUEST																				
Project Manager: Cliff Brunson				P.O. #:				CI BTX TATX																				
Address: P.O. Box 805				Company: COE																								
City: Hobbs State: NM Zip: 88241				Attn: Haskell																								
Phone #: 575-397-6388 Fax #: 575-397-0397				Address:																								
Project #: Copperhead Project Owner: COE				City:																								
Project Name: Cooperhead 31 Fed Com #001H, South, (5-27-18)				State: Zip:																								
Project Location: Eddy County, NM				Phone #:																								
Sampler Name: Jeff Ornelas				Fax #:																								
FOR LAB USE ONLY	Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX				PRESERV.			SAMPLING																
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME													
	H802114																											
	21	SP4 @ SURFACE	G	1			✓					✓		7/31/18	1:30 PM	✓												
	22	SP4 @ 1'	G	1			✓					✓		7/31/18	1:45 PM	✓												
	23	SP4 @ 2'	G	1			✓					✓		7/31/18	2:07 PM	✓												
	24	SP4 @ 6'	G	1			✓					✓		8/1/18	9:19 AM	✓												
	25	SP4 @ 9'	G	1			✓					✓		8/1/18	10:47 AM	✓												
	26	SP4 @ 10'	G	1			✓					✓		8/1/18	11:15 AM	✓												
	27	SP5 @ SURFACE	G	1			✓					✓		8/1/18	11:33 AM	✓												
	28	SP5 @ 1'	G	1			✓					✓		8/1/18	11:52 AM	✓	✓	✓										
	29	SP5 @ 2'	G	1			✓					✓		8/1/18	12:12 PM	✓												
	30	SP5 @ 4'	G	1			✓					✓		8/1/18	1:11 PM	✓												

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	Date: 8/1/18 Time: 5:30	Received By:	Phone Result: ☐ Yes ☐ No	Add'l Phone #:
Relinquished By:	Date: 8/3/18 Time: 8:11	Received By:	Fax Result: ☐ Yes ☐ No	Add'l Fax #:
Delivered By: (Circle One) #75	Sample Condition Cool ☐ Intact ☐ Yes ☐ No ☐	CHECKED BY:	REMARKS:	
Sampler - UPS - Bus - Other: -11.6°C / -11.65°C				

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

**CARDINAL LABORATORIES**

101 East Marland, Hobbs, NM 88240

(505) 393-2326 FAX (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

4 of 4

Company Name: BBC International, Inc.				BILL TO				ANALYSIS REQUEST											
Project Manager: Cliff Brunson				P.O. #:				CL BTEX THAT											
Address: P.O. Box 805				Company: COG															
City: Hobbs State: NM Zip: 88241				Attn: Hasell															
Phone #: 575-397-6388 Fax #: 575-397-0397				Address:															
Project #: Copperhead Project Owner: COG				City:															
Project Name: Copperhead 31 Fed Com #001H, South, (5-27-18)				State: Zip:															
Project Location: Eddy County, NM				Phone #:															
Sampler Name: Jeff Ornelas				Fax #:															
FOR LAB USE ONLY																			
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME					
H802114																			
31	SP5 @ 6'	6	1			/				/			8/1/18	1:25 PM	✓				
32	SP5 @ 10'	6	1			/				/			8/1/18	2:22 PM	✓				
33	SP5 @ 11'	6	1			/				/			8/1/18	2:33 PM	✓				
34	NORTH @ SURFACE	6	1			/				/			8/1/18	2:45 PM	✓	✓			
35	EAST @ SURFACE	6	1			/				/			8/1/18	2:50 PM	✓				
36	WEST @ SURFACE	6	1			/				/			8/1/18	2:55 PM	✓				
37	SOUTH @ SURFACE	6	1			/				/			8/1/18	3:01 PM	✓	✓			
KAP 8/1/18																			

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: Jeff Ornelas	Date: 8/1/18 Time: 5:30pm	Received By:	Phone Result: ☐ Yes ☐ No Add'l Phone #:
Relinquished By:	Date: 8/3/18 Time: 8:11	Received By: Jodi Benson	Fax Result: ☐ Yes ☐ No Add'l Fax #:
Delivered By: (Circle One) #75	Sample Condition	CHECKED BY: (Initials)	REMARKS: RUSH!
Sampler - UPS - Bus - Other: -11.6°C/-11.65°C	Cool Intact ☒ Yes ☐ No	☒ Yes ☐ No	

† 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
Energy Minerals and Natural Resources

MAY 29 2018

Form C-141
Revised April 3, 2017

Oil Conservation Division DISTRICT II-ARTESIA O.C.D.
1220 South St. Francis Dr.
Santa Fe, NM 87505

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

Release Notification and Corrective Action

NAB1816336922

217955

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: COG Operating, LLC (OGRID #229137)	Contact: Robert McNeill
Address: 600 West Illinois Avenue, Midland, TX 79701	Telephone No. 432-683-7443
Facility Name: Copperhead 31 Federal Com #001H	Facility Type: Flowline
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 35 bbl.	Volume Recovered 0 bbl.
Source of Release Flowline Rupture	Date and Hour of Occurrence May 27, 2018 7:30am	Date and Hour of Discovery May 27, 2018 7:30am
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher – NMOCD Shelley Tucker – BLM	
By Whom? Dakota Neel	Date and Hour May 27, 2018 12:52pm	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

The release was caused by a pressure rupture in the poly flowline. The flowline is being replaced.

Describe Area Affected and Cleanup Action Taken.*

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

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

OIL CONSERVATION DIVISION

Signature: <i>DeAnn Grant</i>	Approved by Environmental Specialist: <i>Mike Bratcher</i>	
Printed Name: DeAnn Grant	Approval Date: 6/7/18	Expiration Date: N/A
Title: HSE Administrative Assistant	Conditions of Approval: <i>See Attached</i>	
E-mail Address: agrant@concho.com	Attached ☐ <i>2RP-4796</i>	
Date: May 29, 2018	Phone: (432) 253-4513	

* Attach Additional Sheets If Necessary

6/11/18 AB

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 5/29/2018 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number ARP-4796 has been assigned. **Please refer to this case number in all future correspondence.**

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

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

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District 2 office in ARTESIA on or before 6/29/2018. 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: DeAnn Grant <agrant@concho.com>
Sent: Tuesday, May 29, 2018 9:12 AM
To: Bratcher, Mike, EMNRD; stucker@blm.gov
Cc: Weaver, Crystal, EMNRD; jamos@blm.gov; Sheldon Hitchcock; Dakota Neel; Rebecca Haskell; DeAnn Grant
Subject: (Initial C-141) Copperhead 31 Federal Com #001H (30-015-38532) 05-27-2018
Attachments: (Initial C-141) Copperhead 31 Federal Com #001H (30-015-38532) 05-27-2018.pdf

Mr. Bratcher/Ms. Tucker,

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

Thank you,

DeAnn Grant

HSE Administrative Assistant

agrant@concho.com

COG Operating LLC

600 W Illinois Avenue | Midland, TX 79701

Direct: 432-253-4513 | Main: 432.683.7443



CONCHO

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Bratcher, Mike, EMNRD

From: Dakota Neel <DNeel2@concho.com>
Sent: Sunday, May 27, 2018 12:52 PM
To: Bratcher, Mike, EMNRD; Shelly Tucker
Cc: DeAnn Grant; James_Amos; Robert McNeill; Sheldon Hitchcock; Christopher Gray; Rebecca Haskell
Subject: (Notification) Copperhead 31 Federal Com #001H 5-27-18

Mr. Bratcher/Ms. Tucker,

COG Production, LLC (OGRID# 217955) is reporting a release at the Copperhead 31 Federal Com #001H Battery.

Release Location:

ULSTR: H-32-26S-29E

Lat/Long: 32.0014305 -104.0168457

Estimated Release Volume: 35bbls of produced water

Estimated Recovery Volume: On going

COG will have the release area evaluated and will submit an Initial C-141. If you have any questions or concerns please do not hesitate to contact me.

Thank you,

Dakota Neel

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