



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.

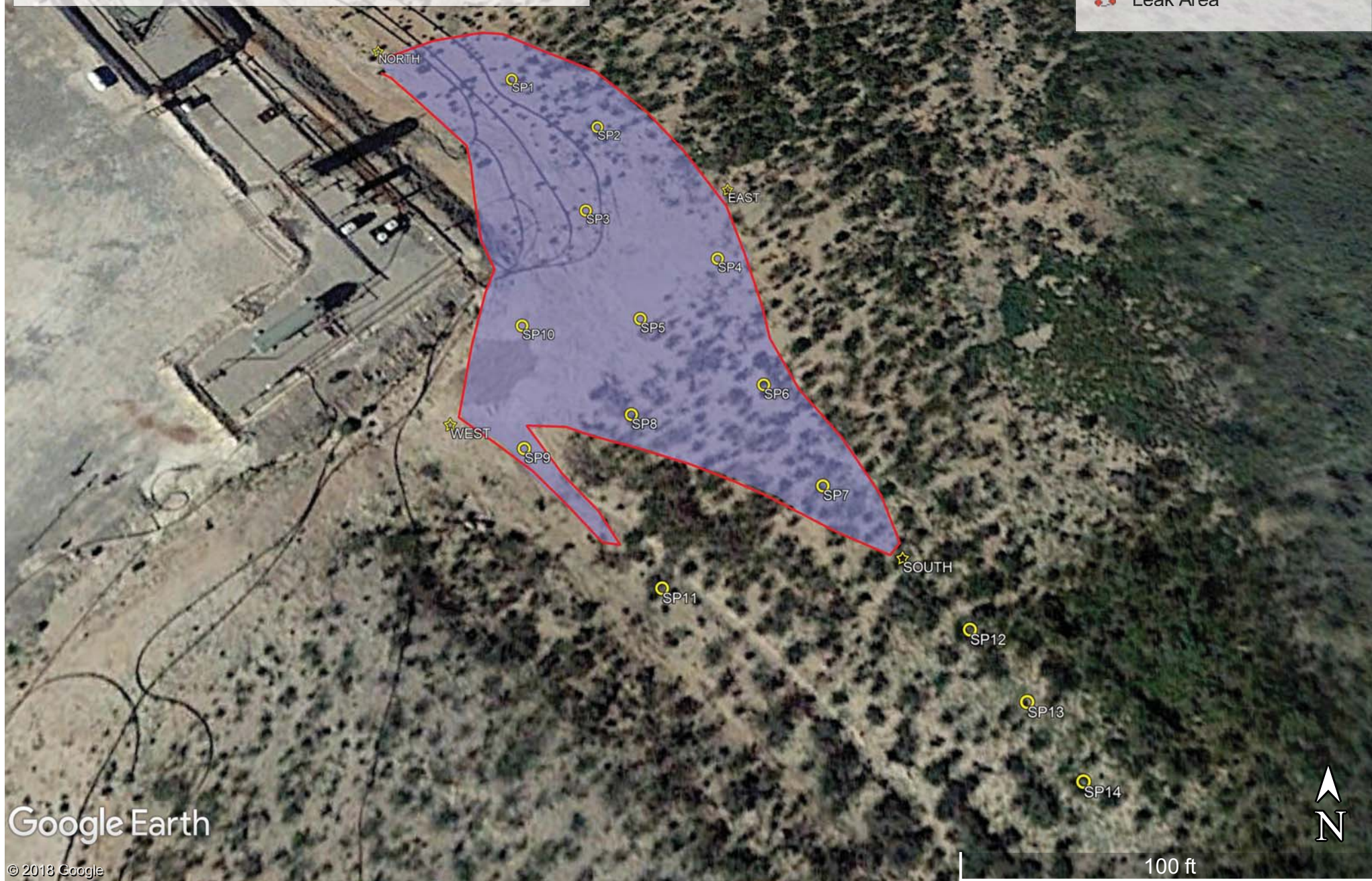
All excavated materials will be disposed of at an NMOCD-approved disposal facility.

COG, Copperhead 31 Fed Com #1H

Leak date: 05/20/2018
Eddy County, NM
AP# 30-015-38532
2RP-4763

Legend

-  4 ft Excavation with Liner
-  Cardinal sample points
-  Sample points
-  Leak Area



Google Earth

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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

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 (5/22/18)

		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	SM4500Cl-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

		Sample ID	SP2 @ 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	SM4500Cl-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	SM4500Cl-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

		Sample ID	SP4 @ 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	SM4500Cl-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

Laboratory Analytical Results Summary
Copperhead 31 Fed Com #001H (5/22/18)

		Sample ID	SP5 @ 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	SM4500Cl-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	SM4500Cl-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	SM4500Cl-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

		Sample ID	SP8 @ 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	SM4500Cl-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

Laboratory Analytical Results Summary
Copperhead 31 Fed Com #001H (5/22/18)

		Sample ID	SP9 @ 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	SM4500Cl-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

		Sample ID	SP10 @ 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	SM4500Cl-B		7000	6300	6500	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	SM4500Cl-B		<16.0

		Sample ID	SP12 @ SURFACE	SP12 @ 1'
Analyte	Method	Date	7/18/18	7/18/18
			mg/kg	mg/kg
Chloride	SM4500Cl-B		<16.0	<16.0

		Sample ID	SP13 @ SURFACE	SP13 @ 1'
Analyte	Method	Date	7/18/18	7/18/18
			mg/kg	mg/kg
Chloride	SM4500Cl-B		<16.0	<16.0

		Sample ID	SP14 @ SURFACE	SP14 @ 1'
Analyte	Method	Date	7/18/18	7/18/18
			mg/kg	mg/kg
Chloride	SM4500Cl-B		<16.0	32

Cardinal		Sample ID	NORTH @ SURFACE	EAST @ SURFACE	WEST @ SURFACE	SOUTH @ 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	SM4500Cl-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/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:	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 @ SURFACE (H802014-01)

BTX 8021B		mg/kg		Analyzed 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 BTX	<0.300	0.300	07/24/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 113 % 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	32400	16.0	07/26/2018	ND	432	108	400	0.00	

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	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 % 41-142

Surrogate: 1-Chlorooctadecane 107 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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 client for 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 thirty (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 the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



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:	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)

BTEx 8021B		mg/kg		Analyzed 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 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	7860	16.0	07/26/2018	ND	432	108	400	0.00		

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	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 110 % 41-142

Surrogate: 1-Chlorooctadecane 109 % 37.6-147

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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:	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		Analyzed 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' (H802014-04)

Chloride, SM4500Cl-B		mg/kg		Analyzed 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' (H802014-05)

Chloride, SM4500Cl-B		mg/kg		Analyzed 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' (H802014-06)

Chloride, SM4500Cl-B		mg/kg		Analyzed 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' (H802014-07)

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	07/26/2018	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
Project Number:	(5/20/18)	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

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

BTX 8021B		mg/kg		Analyzed 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 BTX	<0.300	0.300	07/24/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 112 % 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	44800	16.0	07/26/2018	ND	432	108	400	0.00		

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	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

Surrogate: 1-Chlorooctadecane 112 % 37.6-147

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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 @ 1' (H802014-09)

BTEx 8021B		mg/kg		Analyzed 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 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed 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		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	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 % 41-142

Surrogate: 1-Chlorooctadecane 105 % 37.6-147

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Received: 07/24/2018
Reported: 07/27/2018
Project Name: COPPERHEAD 31 FED COM #001H
Project Number: (5/20/18)
Project Location: COG - EDDY CO NM

Sampling Date: 07/12/2018
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	8660	16.0	07/26/2018	ND	432	108	400	0.00	QM-07	

Sample ID: SP 2 @ 4' (H802014-11)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	5730	16.0	07/26/2018	ND	432	108	400	0.00	

Sample ID: SP 2 @ 6' (H802014-12)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3440	16.0	07/26/2018	ND	432	108	400	0.00	

Sample ID: SP 2 @ 8' (H802014-13)

Chloride, SM4500Cl-B		mg/kg		Analyzed 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 2 @ 9' (H802014-14)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	448	16.0	07/26/2018	ND	432	108	400	0.00		

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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 @ SURFACE (H802014-15)

BTX 8021B		mg/kg		Analyzed 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 BTX	<0.300	0.300	07/24/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 112 % 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	30400	16.0	07/26/2018	ND	432	108	400	0.00		

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	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 % 41-142

Surrogate: 1-Chlorooctadecane 99.0 % 37.6-147

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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		Analyzed 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 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed 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		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	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 % 37.6-147

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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)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	7860	16.0	07/26/2018	ND	432	108	400	0.00		

Sample ID: SP 3 @ 4' (H802014-18)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6260	16.0	07/26/2018	ND	432	108	400	0.00	

Sample ID: SP 3 @ 6' (H802014-19)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3280	16.0	07/26/2018	ND	432	108	400	0.00		

Sample ID: SP 3 @ 8' (H802014-20)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2600	16.0	07/26/2018	ND	432	108	400	0.00		

Sample ID: SP 3 @ 9' (H802014-21)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	496	16.0	07/26/2018	ND	432	108	400	0.00		

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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 @ SURFACE (H802014-22)

BTEx 8021B		mg/kg		Analyzed 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 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed 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		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	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 % 41-142

Surrogate: 1-Chlorooctadecane 108 % 37.6-147

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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		Analyzed 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 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed 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		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	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 % 37.6-147

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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:	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, SM4500Cl-B		mg/kg		Analyzed 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' (H802014-25)

Chloride, SM4500Cl-B		mg/kg		Analyzed 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' (H802014-26)

Chloride, SM4500CI-B		mg/kg		Analyzed 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' (H802014-27)

Chloride, SM4500Cl-B		mg/kg		Analyzed 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' (H802014-28)

Chloride, SM4500Cl-B		mg/kg		Analyzed 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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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 5 @ SURFACE (H802014-29)

BTEx 8021B		mg/kg		Analyzed 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 % 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	33600	16.0	07/26/2018	ND	432	108	400	0.00	

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	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 % 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 5 @ 1' (H802014-30)

BTEx 8021B		mg/kg		Analyzed 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 % 69.8-142

Chloride, SM4500Cl-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		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*	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 % 37.6-147

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Cliff Brunson
P.O. Box 805
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Fax To: (575) 397-0397

Received: 07/24/2018
Reported: 07/27/2018
Project Name: COPPERHEAD 31 FED COM #001H
Project Number: (5/20/18)
Project Location: COG - EDDY CO NM

Sampling Date: 07/13/2018
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

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

Chloride, SM4500Cl-B		mg/kg		Analyzed 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' (H802014-32)

Chloride, SM4500CI-B		mg/kg		Analyzed 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' (H802014-33)

Chloride, SM4500Cl-B		mg/kg		Analyzed 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' (H802014-34)

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	07/26/2018	ND	416	104	400	0.00	

Sample ID: SP 5 @ 9' (H802014-35)

Chloride, SM4500Cl-B		mg/kg		Analyzed 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		Analyzed 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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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 @ SURFACE (H802014-37)

BTX 8021B		mg/kg		Analyzed 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 BTX	<0.300	0.300	07/25/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 111 % 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	26800	16.0	07/26/2018	ND	416	104	400	0.00		

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	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 % 41-142

Surrogate: 1-Chlorooctadecane 90.9 % 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 6 @ 1' (H802014-38)

BTEx 8021B		mg/kg		Analyzed 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 % 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	3920	16.0	07/26/2018	ND	416	104	400	0.00		

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	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 % 37.6-147

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P.O. Box 805
Hobbs NM, 88241
Fax To: (575) 397-0397

Received: 07/24/2018
Reported: 07/27/2018
Project Name: COPPERHEAD 31 FED COM #001H
Project Number: (5/20/18)
Project Location: COG - EDDY CO NM

Sampling Date: 07/13/2018
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

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

Chloride, SM4500Cl-B		mg/kg		Analyzed 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' (H802014-40)

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' (H802014-41)

Chloride, SM4500Cl-B		mg/kg		Analyzed 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' (H802014-42)

Chloride, SM4500Cl-B		mg/kg		Analyzed 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' (H802014-43)

Chloride, SM4500Cl-B		mg/kg		Analyzed 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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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 @ 12' (H802014-44)

Chloride, SM4500Cl-B		mg/kg		Analyzed 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' (H802014-45)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	480	16.0	07/26/2018	ND	416	104	400	0.00	

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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:	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 @ SURFACE (H802014-46)

BTEx 8021B		mg/kg		Analyzed 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 % 69.8-142

Chloride, SM4500Cl-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		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 96.9 % 41-142

Surrogate: 1-Chlorooctadecane 101 % 37.6-147

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Cliff Brunson
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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 @ 1' (H802014-47)

BTEx 8021B		mg/kg		Analyzed 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 % 69.8-142

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	07/26/2018	ND	416	104	400	0.00		

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	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 % 41-142

Surrogate: 1-Chlorooctadecane 96.2 % 37.6-147

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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 7 @ 2' (H802014-48)

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	07/26/2018	ND	416	104	400	0.00	

Sample ID: SP 7 @ 4' (H802014-49)

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	07/26/2018	ND	416	104	400	0.00	

Sample ID: SP 7 @ 5' (H802014-50)

Chloride, SM4500Cl-B		mg/kg		Analyzed 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' (H802014-51)

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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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 @ SURFACE (H802014-52)

BTEx 8021B		mg/kg		Analyzed 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 % 69.8-142

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		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 101 % 41-142

Surrogate: 1-Chlorooctadecane 107 % 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
Project Number:	(5/20/18)	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

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

BTEx 8021B		mg/kg		Analyzed 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 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
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	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 98.9 % 41-142

Surrogate: 1-Chlorooctadecane 101 % 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 @ 2' (H802014-54)

Chloride, SM4500Cl-B		mg/kg		Analyzed 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' (H802014-55)

Chloride, SM4500Cl-B		mg/kg		Analyzed 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' (H802014-56)

Chloride, SM4500Cl-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' (H802014-57)

Chloride, SM4500Cl-B		mg/kg		Analyzed 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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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 9 @ SURFACE (H802014-58)

BTX 8021B		mg/kg		Analyzed 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 BTX	<0.300	0.300	07/25/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 114 % 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	11400	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	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 % 41-142

Surrogate: 1-Chlorooctadecane 85.4 % 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 9 @ 1' (H802014-59)

BTEx 8021B		mg/kg		Analyzed 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 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed 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		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 % 37.6-147

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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 9 @ 2' (H802014-60)

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

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	16.0	07/27/2018	ND	416	104	400	3.77	

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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
Project Number:	(5/20/18)	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

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

BTEx 8021B		mg/kg		Analyzed 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 % 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	7000	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	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 % 41-142

Surrogate: 1-Chlorooctadecane 83.2 % 37.6-147

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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:	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)

BTEx 8021B		mg/kg		Analyzed 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 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	6300	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	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 80.4 % 41-142

Surrogate: 1-Chlorooctadecane 80.8 % 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:	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		Analyzed 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' (H802014-66)

Chloride, SM4500Cl-B		mg/kg		Analyzed 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' (H802014-67)

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' (H802014-68)

Chloride, SM4500Cl-B		mg/kg		Analyzed 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' (H802014-69)

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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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:	07/17/2018
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, 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 @ 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		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 @ 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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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)

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 14 @ 1' (H802014-76)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	07/27/2018	ND	416	104	400	3.77	

Sample ID: NORTH @ SURFACE (H802014-77)

Chloride, SM4500CI-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		

Sample ID: EAST @ SURFACE (H802014-78)

Chloride, SM4500CI-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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Analytical Results For:

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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 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

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**CARDINAL LABORATORIES**

101 East Marland, Hobbs, NM 88240

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

1 of 8

Company Name: BBC International, Inc.				BILL TO				ANALYSIS REQUEST											
Project Manager: Cliff Brunson				P.O. #:				<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">CL</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">BTEX</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TPH EXT</div> </div>											
Address: P.O. Box 805				Company: <i>COG</i>															
City: Hobbs State: NM Zip: 88241				Attn: <i>Haskell</i>															
Phone #: 575-397-6388 Fax #: 575-397-0397				Address:															
Project #: Project Owner: <i>COG</i>				City:															
Project Name: Copperhead 31 Fed Com #001H (5/20/18)				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					
<i>H802014</i>																			
<i>1</i>	SP1 @ SURFACE	<i>G</i>	<i>1</i>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>			7/12/18	9:11 AM	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
<i>2</i>	SP1 @ 1'	<i>G</i>	<i>1</i>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>			7/12/18	9:15 AM	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
<i>3</i>	SP1 @ 2'	<i>G</i>	<i>1</i>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>			7/12/18	9:30 AM	<input checked="" type="checkbox"/>				
<i>4</i>	SP1 @ 4'	<i>G</i>	<i>1</i>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>			7/12/18	10:11 AM	<input checked="" type="checkbox"/>				
<i>5</i>	SP1 @ 6'	<i>G</i>	<i>1</i>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>			7/12/18	10:37 AM	<input checked="" type="checkbox"/>				
<i>6</i>	SP1 @ 8'	<i>G</i>	<i>1</i>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>			7/12/18	11:05 AM	<input checked="" type="checkbox"/>				
<i>7</i>	SP1 @ 9'	<i>G</i>	<i>1</i>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>			7/12/18	11:11 AM	<input checked="" type="checkbox"/>				
<i>8</i>	SP2 @ SURFACE	<i>G</i>	<i>1</i>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>			7/12/18	11:12 AM	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
<i>9</i>	SP2 @ 1'	<i>G</i>	<i>1</i>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>			7/12/18	11:15 AM	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
<i>10</i>	SP2 @ 2'	<i>G</i>	<i>1</i>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>			7/12/18	11:22 AM	<input checked="" type="checkbox"/>				

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Relinquished By: <i>Jeff Ornelas</i>	Date: <i>7/18/18</i>	Received By: <i>VOS</i>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
Relinquished By: <i>[Signature]</i>	Date: <i>7-24-18</i>	Received By: <i>Jamara [Signature]</i>	Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Delivered By: (Circle One) <i>-5.8c</i>	Sample Condition	CHECKED BY: (Initials) <i>TJ-#15</i>	REMARKS: <i>* - Rocks with head space.</i>	
Sampler - UPS - Bus - Other: <i>Corrected - 5.85c</i>	Cool <input type="checkbox"/> Intact <input checked="" type="checkbox"/>			
	<input type="checkbox"/> Yes <input type="checkbox"/> No			

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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[illegible]

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Relinquished By: <i>Jefferson</i>		Date: <i>7/18/18</i>		Received By: <i>[Signature]</i>		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Add'l Phone #:	
		Time: <i>5:30pm</i>				Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Add'l Fax #:	
Relinquished By: <i>[Signature]</i>		Date: <i>7-24-18</i>		Received By: <i>[Signature]</i>		REMARKS: <i>* Rocks with head space.</i>	
		Time: <i>12:40</i>					
Delivered By: (Circle One)		Sample Condition		CHECKED BY:			
Sampler - UPS - Bus - Other: <i>-5.8°C</i>		Cool Intact		(Initials)			
<i>Corrected -5.8°C</i>		<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No		<i>T.O. #15</i>			

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

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101 East Marland, Hobbs, NM 88240

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

5 of 8

Company Name: BBC International, Inc.				BILL TO		ANALYSIS REQUEST											
Project Manager: Cliff Brunson				P.O. #:		<div style="display: flex; flex-direction: column; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">C1</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">BTX</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TPH EXT</div> </div>											
Address: P.O. Box 805				Company: COG													
City: Hobbs		State: NM		Zip: 88241													
Phone #: 575-397-6388		Fax #: 575-397-0397		Address:													
Project #:		Project Owner: COG		City:													
Project Name: Copperhead 31 Fed Com #001H (5/20/18)				State: Zip:													
Project Location: Eddy County, NM				Phone #:													
Sampler Name: Jeff Ornelas				Fax #:													
FOR LAB USE ONLY																	
Lab I.D.	Sample I.D.	GRAB OR (C)OMP.	# CONTAINERS	MATRIX				PRESERV.			SAMPLING						
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE/COOL	OTHER:	DATE	TIME			
H802014																	
41	SP6 @ 6'	G	1			✓				✓			7/13/18	2:01 PM	✓		
42	SP6 @ 8'	G	1			✓				✓			7/13/18	2:30 PM	✓		
43	SP6 @ 10'	G	1			✓				✓			7/13/18	3:01 PM	✓		
44	SP6 @ 12'	G	1			✓				✓			7/13/18	3:33 PM	✓		
45	SP6 @ 13'	G	1			✓				✓			7/13/18	3:45 PM	✓		
46	SP7 @ SURFACE	G	1			✓				✓			7/16/18	8:51 AM	✓		
47	SP7 @ 1'	G	1			✓				✓			7/16/18	8:59 AM	✓		
48	SP7 @ 2'	G	1			✓				✓			7/16/18	9:11 AM	✓		
49	SP7 @ 4'	G	1			✓				✓			7/16/18	9:33 AM	✓		
50	SP7 @ 5'	G	1			✓				✓			7/16/18	9:45 AM	✓		

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Relinquished By:	Date: 7/18/18 Time: 5:30pm	Received By:	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
Relinquished By:	Date: 7-24-18 Time: 12:40	Received By:	Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Delivered By: (Circle One) -5.8°C			REMARKS: * Rocks with mud space.	
Sampler - UPS - Bus - Other: Corrected -5.8°C		Sample Condition Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No	CHECKED BY: (Initials) TO #15	

† 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

6 of 8

Company Name: BBC International, Inc.				BILL TO				ANALYSIS REQUEST											
Project Manager: Cliff Brunson				P.O. #:				<div style="display: flex; flex-direction: column; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">C1</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">BTX</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TPH EXT</div> </div>											
Address: P.O. Box 805				Company: COG															
City: Hobbs State: NM Zip: 88241				Attn: Haskell															
Phone #: 575-397-6388 Fax #: 575-397-0397				Address:															
Project #: Project Owner: COG				City:															
Project Name: Copperhead 31 Fed Com #001H (5/20/18)				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					
H802014																			
51	SP7 @ 6'	G	1			✓				✓			7/16/18	10:15 AM	✓				
52	SP8 @ SURFACE	G	1			✓				✓			7/16/18	10:33 AM	✓ ✓ ✓ *				
53	SP8 @ 1'	G	1			✓				✓			7/16/18	10:40 AM	✓ ✓ ✓				
54	SP8 @ 2'	G	1			✓				✓			7/16/18	10:50 AM	✓				
55	SP8 @ 4'	G	1			✓				✓			7/16/18	11:22 AM	✓				
56	SP8 @ 5'	G	1			✓				✓			7/16/18	11:33 AM	✓				
57	SP8 @ 6'	G	1			✓				✓			7/16/18	11:55 AM	✓				
58	SP9 @ SURFACE	G	1			✓				✓			7/16/18	12:12 PM	✓ ✓ ✓ *				
59	SP9 @ 1'	G	1			✓				✓			7/16/18	1:11 PM	✓ ✓ ✓				
60	SP9 @ 2'	G	1			✓				✓			7/16/18	1:38 PM	✓				

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Relinquished By:	Date: 7/18/18	Received By:	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
	Time: 5:30pm		Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Relinquished By:	Date: 7-24-18	Received By:	REMARKS: * - Rocks with head space	
	Time: 12:40			
Delivered By: (Circle One)	Sample Condition	CHECKED BY: (Initials)		
Sampler - UPS - Bus - Other: - 5.8°C	Cool Intact			
Corrected - 5.85°C	<input type="checkbox"/> Yes <input type="checkbox"/> No	TO: #15		

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Relinquished By: <i>V. J. Omlag</i> Date: <i>7/18/88</i> Time: <i>5:30pm</i>		Received By: <i>[Signature]</i> Date: <i>7-24-18</i> Time: <i>12:40</i>		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #: _____ Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Fax #: _____ REMARKS: <i>* Rocks with head space</i>	
Relinquished By: <i>[Signature]</i> Date: <i>7-24-18</i> Time: <i>12:40</i>		Received By: <i>[Signature]</i> Date: <i>7-24-18</i> Time: <i>12:40</i>		REMARKS: <i>* Rocks with head space</i>	
Delivered By: (Circle One) <i>-5.82</i> Sampler - UPS - Bus - Other: <i>Connected - 5.852</i>		Sample Condition Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> No		CHECKED BY: (Initials) <i>T.O. #15</i>	

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**CARDINAL LABORATORIES**

101 East Marland, Hobbs, NM 88240

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

8088

Company Name: BBC International, Inc.				BILL TO		ANALYSIS REQUEST													
Project Manager: Cliff Brunson				P.O. #:															
Address: P.O. Box 805				Company: COE															
City: Hobbs		State: NM		Zip: 88241														Attn: Haskell	
Phone #: 575-397-6388		Fax #: 575-397-0397		Address:														City:	
Project #:		Project Owner: COE		State:														Zip:	
Project Name: Copperhead 31 Fed Com #001H (5/20/18)				Phone #:														Fax #:	
Project Location: Eddy County, NM																			
Sampler Name: Jeff Ornelas																			
FOR LAB USE ONLY																			
Lab I.D.	Sample I.D.	GRAB OR (C)OMP.	# CONTAINERS	MATRIX			PRESERV.			SAMPLING									
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME					
H802014																			
71	SP12 @ SURFACE	G	1			✓				✓			7/18/18	9:11 AM					
72	SP12 @ 1'	G	1			✓				✓			7/18/18	9:22 AM					
73	SP13 @ SURFACE	G	1			✓				✓			7/18/18	9:33 AM					
74	SP13 @ 1'	G	1			✓				✓			7/18/18	9:44 AM					
75	SP14 @ SURFACE	G	1			✓				✓			7/18/18	10:01 AM					
76	SP14 @ 1'	G	1			✓				✓			7/18/18	10:15 AM					
77	NORTH @ SURFACE	G	1			✓				✓			7/17/18	11:11 AM					
78	EAST @ SURFACE	G	1			✓				✓			7/17/18	11:15 AM					
79	WEST @ SURFACE	G	1			✓				✓			7/17/18	11:25 AM					
80	SOUTH @ SURFACE	G	1			✓				✓			7/17/18	11:40 AM					

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: <i>Jeff Ornelas</i>	Date: 8/8/18	Received By: <i>[Signature]</i>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
	Time: 5:30		Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Relinquished By: <i>[Signature]</i>	Date: 7-24-18	Received By: <i>[Signature]</i>	REMARKS: * Rocks with head space	
	Time: 12:44			
Delivered By: (Circle One) -5.82	Sample Condition	CHECKED BY: (Initials)		
Sampler - UPS - Bus - Other: Corrected -5.82	Cool <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
		T.S. #15		

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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 21 2018

Form C-141
Revised April 3, 2017

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

DISTRICT II-ARTESIA O.C.D.
Submit a Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

NAB1814258390

OPERATOR

☒ Initial Report ☐ 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 H	Section 31	Township 26S	Range 29E	Feet from the 480	North/South Line South	Feet from the 480	East/West Line East	County Eddy
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Latitude: 32.0014305 Longitude: -104.0168457 NAD83

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: 240bbbls	Volume Recovered: 9bbbls
Source of Release: Flowline	Date and Hour of Occurrence: 5/20/2018	Date and Hour of Discovery: 5/20/2018 9:15am
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Mike Bratcher-NMOCD Shelly Tucker-BLM	
By Whom? Sheldon Hitchcock	Date and Hour: 5/20/2018 6:15pm	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting 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 damaged 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 the area evaluated for any possible impact from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation activities.

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

OIL CONSERVATION DIVISION

Signature: <u>Sheldon Hitchcock</u>	Approved by Environmental Specialist: <u>Mike Bratcher</u>	
Printed Name: Sheldon L. Hitchcock		
Title: HSE Coordinator	Approval Date: <u>5/22/18</u>	Expiration Date: <u>N/A</u>
E-mail Address: slhitchcock@concho.com	Conditions of Approval: <u>See attached</u>	Attached: <input type="checkbox"/> <u>28P-4763</u>
Date: 5/21/2018	Phone: 575-746-2010	

* 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-47123 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 6/21/2018.** 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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