

**APPROVED** By CHernandez at 8:44 am, Jul 20, 2018

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## **DELINEATION WORKPLAN**

COG – TYRELL FEE #002H (Leak Date: 5/15/18)

## RP # 1RP-5063

NMOCD approves of the delineation completed for 1RP-5063 and the proposed remediation plan with these clarifications: 1) Bottom and sidewall confirmation samples no greater than 50 ft apart. 2) Mark confirmation sample locations on a scaled map with GPS coordinates. 3) Include photo documentation of delineation and remediation in subsequent report.

This delineation workplan and remediation proposal addresses the release associated with RP # 1RP-5063.

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 (pink shade on diagram) will be excavated to a depth of 1 foot.

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, Tyrell Fee #002H

Sample points

- SP1, N 32.22386 W-103.53784
- SP2, N 32.22387 W-103.53795
- SP3, N 32.22396 W-103.53793
- SP4, N 22403 W-103.53791
- SP5, N 32.22412 W-103.53790
- NORTH, N 32.22418 W-103.53790
- SOUTH, N 32.22382 W-103.53790
- EAST, N 32.22386 W-103.53780
- WEST, N 32.22387 W-103.53804

# COG, Tyrell Fee #002H U/L A, Section 14, T24S, R33E Groundwater: 75'-100'





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

(A CLW###### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)	(R=POD has been replaced O=orphaned, C=the file is closed)	(						2=NE 3 st to lar	3=SW 4: gest)		) AD83 UTM in me	ters)	(	In feet)	
POD Number	POD Sub- Code basin C	County		Q 16			Tws	Rng		x	Y	Distance	•	•	Water Column
C 03917 POD1	С	LE	4	1	3	13	24S	33E	6383	874	3565212 🌍	1010	600	420	180
C 03666 POD1	С	LE	2	3	4	13	24S	33E	6391	32	3565078 🌍	1610	650	390	260
											Avera	ge Depth to	Water:	405	feet
												Minimum	Depth:	390	feet
												Maximum	Depth:	420	feet
Record Count: 2															

### UTMNAD83 Radius Search (in meters):

Easting (X): 637884

Northing (Y): 3566096

Radius: 1700

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

	Public Land Survey System (PLSS)									
۲	Q64: 🗸	Q16: NE 🗸		Sec: 14 🗸		Rng: 33E 🗸				
	State Plane Coordinate System - NAD27									
0	<b>X:</b> 0 1	ft Y: 0	ft	Zone:		~				
	State Plane Coordinate System - NAD83									
0	<b>X:</b> 0	ft Y: 0	ft	Zone:		~				
	Degrees/Minutes/Seconds									
0	Longitude (X):	Deg	r <b>ees:</b> 0 °	Minutes	s: 0 '	Seconds: 0 "				
	Latitude (Y):	Deg	rees: 0 °	Minute	s: 0 '	Seconds: 0 "				
			UTM ·	NAD27						
0	Easting (X	(): 0 V	mtrs	Northing	(Y): 0	mtrs Zone:				
			( si	ЈВМІТ						
	All Conversion Results are displayed as <u>NAD 1983 UTM Zone 13</u>									
	Easting (X):	637884.0	mtrs	Northi	ng (Y): 3566096.0	mtrs				
	~~ Please keep screen open to copy UTM values for Reports. ~~									

#### Laboratory Analytical Results Summary Tyrell Fee #002H

			SP1 @			
		Sample ID	SURFACE	SP1 @ 1'	SP1 @ 2'	SP1 @ 3'
Analyte	Method	Date	6/8/18	6/8/18	6/19/18	6/19/18
			mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.200	<0.050	<0.050	<0.050
Toluene	BTEX 8021B		2.5	0.135	<0.050	<0.050
Ethylbenzene	BTEX 8021B		5.33	<0.050	0.235	<0.050
Total Xylenes	BTEX 8021B		23.7	1.64	1	<0.150
Total BTEX	BTEX 8021B		31.6	1.78	1.27	<0.300
Chloride	SM4500CI-B		80	32	240	144
GRO	TPH 8015M		736	72.9	17.2	<10.0
DRO	TPH 8015M		31400	1970	835	<10.0
EXT DRO	TPH 8015M		598	322	89.9	<10.0
Total TPH	TPH 8015M		3 <mark>2100</mark>	n/a	n/a	n/a

			SP5 @			
		Sample ID	SURFACE	SP5 @ 1'	SP5 @ 2'	SP5 @ 3'
Analyte	Method	Date	6/8/18	6/8/18	6/20/18	6/20/18
			mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050
Toluene	BTEX 8021B		0.286	0.308	<0.050	<0.050
Ethylbenzene	BTEX 8021B		0.958	<0.050	<0.050	<0.050
Total Xylenes	BTEX 8021B		4.41	2.63	0.209	<0.150
Total BTEX	BTEX 8021B		5.66	2.95	<0.300	<0.300
Chloride	SM4500CI-B		<mark>1580</mark>	288	240	160
GRO	TPH 8015M		129	118	<10.0	<10.0
DRO	TPH 8015M		11400	2460	487	<10.0
EXT DRO	TPH 8015M		1700	407	103	<10.0

		Sample ID	SP2 @ SURFACE	SP2 @ 1'	SP2 @ 2'	SP2 @ 3'
Analyte	Method	Date	6/8/18	6/8/18	6/19/18	6/19/18
			mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.200	<0.050	<0.050	<0.050
Toluene	BTEX 8021B		7.45	0.292	<0.050	<0.050
Ethylbenzene	BTEX 8021B		10.6	<0.050	<0.050	<0.050
Total Xylenes	BTEX 8021B		44.7	2.96	0.892	<0.150
Total BTEX	BTEX 8021B		62.9	3.26	0.913	<0.300
Chloride	SM4500CI-B		96	144	208	160
GRO	TPH 8015M		681	153	15.5	<10.0
DRO	TPH 8015M		22300	2900	603	<10.0
EXT DRO	TPH 8015M		669	455	92.5	<10.0
Total TPH	TPH 8015M		23000	n/a	n/a	n/a

		Sample ID	NORTH @ SURFACE	EAST @ SURFACE	WEST @ SURFACE	SOUTH @ SURFACE
Analyte	Method	Date	6/8/18	6/8/18	6/8/18	6/8/18
			mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050
Toluene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050
Ethylbenzene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050
Total Xylenes	BTEX 8021B		<0.150	<0.150	<0.150	<0.150
Total BTEX	BTEX 8021B		<0.300	<0.300	<0.300	<0.300
Chloride	SM4500CI-B		320	448	432	448
GRO	TPH 8015M		<10.0	<10.0	<10.0	<10.0
DRO	TPH 8015M		<10.0	<10.0	<10.0	<10.0
EXT DRO	TPH 8015M		<10.0	<10.0	<10.0	<10.0

			SP3 @			
		Sample ID	SURFACE	SP3 @ 1'	SP3 @ 2'	SP3 @ 3'
Analyte	Method	Date	6/8/18	6/8/18	6/19/18	6/19/18
			mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.200	<0.050	<0.050	<0.050
Toluene	BTEX 8021B		2.65	0.285	<0.050	<0.050
Ethylbenzene	BTEX 8021B		5.07	<0.050	0.146	<0.050
Total Xylenes	BTEX 8021B		22.2	2.63	0.651	<0.150
Total BTEX	BTEX 8021B		30	2.92	0.813	<0.300
Chloride	SM4500CI-B		<mark>976</mark>	304	224	176
GRO	TPH 8015M		673	96.5	14.2	<10.0
DRO	TPH 8015M		28600	2500	547	<10.0
EXT DRO	TPH 8015M		3740	391	60.4	<10.0

		Sample ID	SP4@ SURFACE	SP4 @ 1'	SP4 @ 2'	SP4 @ 3'
Analyte	Method	Date	6/8/18	6/8/18	6/20/18	6/20/18
			mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.200	<0.050	<0.050	<0.050
Toluene	BTEX 8021B		2.24	0.163	<0.050	<0.050
Ethylbenzene	BTEX 8021B		5.12	<0.050	0.091	<0.050
Total Xylenes	BTEX 8021B		23.3	1.55	0.448	<0.150
Total BTEX	BTEX 8021B		30.6	1.71	0.563	<0.300
Chloride	SM4500CI-B		1600	224	224	144
GRO	TPH 8015M		769	57.3	<10.0	<10.0
DRO	TPH 8015M		23900	2260	449	<10.0
EXT DRO	TPH 8015M		3070	390	89.7	<10.0



June 25, 2018

Cliff Brunson BBC International, Inc. P.O. Box 805 Hobbs, NM 88241

RE: TYRELL FEE #002H

Enclosed are the results of analyses for samples received by the laboratory on 06/21/18 17:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at <a href="https://www.tceq.texas.gov/field/ga/lab\_accred\_certif.html">www.tceq.texas.gov/field/ga/lab\_accred\_certif.html</a>.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Whe Singh

Mike Snyder For Celey D. Keene Lab Director/Quality Manager



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

Received:	06/21/2018	Sampling Date:	06/08/2018
Reported:	06/25/2018	Sampling Type:	Soil
Project Name:	TYRELL FEE #002H	Sampling Condition:	Cool & Intact
Project Number:	(5/15/18)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

#### Sample ID: SP 1 @ SURFACE (H801708-01)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	06/22/2018	ND	1.83	91.6	2.00	4.05	
Toluene*	2.50	0.200	06/22/2018	ND	1.83	91.3	2.00	3.38	
Ethylbenzene*	5.33	0.200	06/22/2018	ND	1.81	90.6	2.00	3.64	
Total Xylenes*	23.7	0.600	06/22/2018	ND	5.66	94.3	6.00	3.06	
Total BTEX	31.6	1.20	06/22/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	142 % 69.8-14		2						
Chloride, SM4500Cl-B	mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	06/22/2018	ND	432	108	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*	736	10.0	06/22/2018	ND	160	80.1	200	17.9	
DRO >C10-C28*	31400	10.0	06/22/2018	ND	182	90.9	200	14.9	
EXT DRO >C28-C36	598	10.0	06/22/2018	ND					
Total TPH C6-C28	32100	10.0	06/22/2018	ND	342	85.5	400	16.3	
Surrogate: 1-Chlorooctane	206 9	% 41-142	2						
Surrogate: 1-Chlorooctadecane	1080	% 37.6-14	7						

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#### \*=Accredited Analyte

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Reported:	06/25/2018	Sampling Type:	Soil
Project Name:	TYRELL FEE #002H	Sampling Condition:	Cool & Intact
Project Number:	(5/15/18)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

#### Sample ID: SP 1 @ 1' (H801708-02)

BTEX 8021B	mg,	/kg	Analyze	d By: MS					S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/22/2018	ND	1.83	91.6	2.00	4.05	
Toluene*	0.135	0.050	06/22/2018	ND	1.83	91.3	2.00	3.38	
Ethylbenzene*	<0.050	0.050	06/22/2018	ND	1.81	90.6	2.00	3.64	
Total Xylenes*	1.64	0.150	06/22/2018	ND	5.66	94.3	6.00	3.06	
Total BTEX	1.78	0.300	06/22/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	152	% 69.8-14	2						
Chloride, SM4500Cl-B	mg/	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	06/22/2018	ND	432	108	400	3.77	
TPH 8015M	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	72.9	10.0	06/22/2018	ND	160	80.1	200	17.9	
DRO >C10-C28*	1970	10.0	06/22/2018	ND	182	90.9	200	14.9	
EXT DRO >C28-C36	322	10.0	06/22/2018	ND					
Surrogate: 1-Chlorooctane	88.5	% 41-142	2						
Surrogate: 1-Chlorooctadecane	207 9	% 37.6-14	7						

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

Received:	06/21/2018	Sampling Date:	06/19/2018
Reported:	06/25/2018	Sampling Type:	Soil
Project Name:	TYRELL FEE #002H	Sampling Condition:	Cool & Intact
Project Number:	(5/15/18)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

#### Sample ID: SP 1 @ 2' (H801708-03)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/22/2018	ND	1.79	89.4	2.00	12.3	
Toluene*	<0.050	0.050	06/22/2018	ND	1.80	89.8	2.00	13.2	
Ethylbenzene*	0.235	0.050	06/22/2018	ND	1.79	89.4	2.00	13.6	
Total Xylenes*	1.00	0.150	06/22/2018	ND	5.21	86.8	6.00	13.3	
Total BTEX	1.27	0.300	06/22/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	133 9	69.8-14	2						
Chloride, SM4500Cl-B	mg/	'kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	240	16.0	06/22/2018	ND	416	104	400	0.00	
TPH 8015M	mg/	'kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	17.2	10.0	06/22/2018	ND	173	86.7	200	4.52	
DRO >C10-C28*	835	10.0	06/22/2018	ND	177	88.6	200	10.1	
EXT DRO >C28-C36	89.9	10.0	06/22/2018	ND					
Surrogate: 1-Chlorooctane	84.5	% 41-142	2						
Surrogate: 1-Chlorooctadecane	120 9	% 37.6-14	7						

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Reported:	06/25/2018	Sampling Type:	Soil
Project Name:	TYRELL FEE #002H	Sampling Condition:	Cool & Intact
Project Number:	(5/15/18)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

#### Sample ID: SP 1 @ 3' (H801708-04)

BTEX 8021B	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/22/2018	ND	1.79	89.4	2.00	12.3	
Toluene*	<0.050	0.050	06/22/2018	ND	1.80	89.8	2.00	13.2	
Ethylbenzene*	<0.050	0.050	06/22/2018	ND	1.79	89.4	2.00	13.6	
Total Xylenes*	<0.150	0.150	06/22/2018	ND	5.21	86.8	6.00	13.3	
Total BTEX	<0.300	0.300	06/22/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	112 9	% 69.8-14	2						
Chloride, SM4500Cl-B	mg/	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	06/22/2018	ND	416	104	400	0.00	
TPH 8015M	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/22/2018	ND	173	86.7	200	4.52	
DRO >C10-C28*	<10.0	10.0	06/22/2018	ND	177	88.6	200	10.1	
EXT DRO >C28-C36	<10.0	10.0	06/22/2018	ND					
Surrogate: 1-Chlorooctane	75.2	% 41-142	2						
Surrogate: 1-Chlorooctadecane	66.0	% 37.6-14	7						

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Reported:	06/25/2018	Sampling Type:	Soil
Project Name:	TYRELL FEE #002H	Sampling Condition:	Cool & Intact
Project Number:	(5/15/18)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

#### Sample ID: SP 2 @ SURFACE (H801708-05)

BTEX 8021B	mg/	kg	Analyze	d By: MS					S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifie
Benzene*	<0.200	0.200	06/22/2018	ND	1.83	91.6	2.00	4.05	
Toluene*	7.45	0.200	06/22/2018	ND	1.83	91.3	2.00	3.38	
Ethylbenzene*	10.6	0.200	06/22/2018	ND	1.81	90.6	2.00	3.64	
Total Xylenes*	44.7	0.600	06/22/2018	ND	5.66	94.3	6.00	3.06	
Total BTEX	62.9	1.20	06/22/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	147 9	69.8-14	2						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifie
Chloride	96.0	16.0	06/22/2018	ND	416	104	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					S-04, E
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifie
GRO C6-C10*	681	10.0	06/22/2018	ND	160	80.1	200	17.9	
DRO >C10-C28*	22300	10.0	06/22/2018	ND	182	90.9	200	14.9	
EXT DRO >C28-C36	669	10.0	06/22/2018	ND					
Total TPH C6-C28	23000	10.0	06/22/2018	ND	342	85.5	400	16.3	
Surrogate: 1-Chlorooctane	154 9	% 41-142	2						
Surrogate: 1-Chlorooctadecane	2030	% 37.6-14	7						

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Received:	06/21/2018	Sampling Date:	06/08/2018
Reported:	06/25/2018	Sampling Type:	Soil
Project Name:	TYRELL FEE #002H	Sampling Condition:	Cool & Intact
Project Number:	(5/15/18)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

#### Sample ID: SP 2 @ 1' (H801708-06)

BTEX 8021B	mg	/kg	Analyze	d By: MS					S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/22/2018	ND	1.83	91.6	2.00	4.05	
Toluene*	0.292	0.050	06/22/2018	ND	1.83	91.3	2.00	3.38	
Ethylbenzene*	<0.050	0.050	06/22/2018	ND	1.81	90.6	2.00	3.64	
Total Xylenes*	2.96	0.150	06/22/2018	ND	5.66	94.3	6.00	3.06	
Total BTEX	3.26	0.300	06/22/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	187	% 69.8-14	2						
Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	06/22/2018	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	153	10.0	06/22/2018	ND	160	80.1	200	17.9	
DRO >C10-C28*	2900	10.0	06/22/2018	ND	182	90.9	200	14.9	
EXT DRO >C28-C36	455	10.0	06/22/2018	ND					
Surrogate: 1-Chlorooctane	102	% 41-142	2						
Surrogate: 1-Chlorooctadecane	144	% 37.6-14	7						

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Received:	06/21/2018	Sampling Date:	06/19/2018
Reported:	06/25/2018	Sampling Type:	Soil
Project Name:	TYRELL FEE #002H	Sampling Condition:	Cool & Intact
Project Number:	(5/15/18)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

#### Sample ID: SP 2 @ 2' (H801708-07)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/22/2018	ND	1.79	89.4	2.00	12.3	
Toluene*	<0.050	0.050	06/22/2018	ND	1.80	89.8	2.00	13.2	
Ethylbenzene*	<0.050	0.050	06/22/2018	ND	1.79	89.4	2.00	13.6	
Total Xylenes*	0.892	0.150	06/22/2018	ND	5.21	86.8	6.00	13.3	
Total BTEX	0.913	0.300	06/22/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	130 9	69.8-14	2						
Chloride, SM4500Cl-B	mg/	'kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	208	16.0	06/22/2018	ND	416	104	400	0.00	
TPH 8015M	mg/	'kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	15.5	10.0	06/22/2018	ND	173	86.7	200	4.52	
DRO >C10-C28*	603	10.0	06/22/2018	ND	177	88.6	200	10.1	
EXT DRO >C28-C36	92.5	10.0	06/22/2018	ND					
Surrogate: 1-Chlorooctane	78.9	% 41-142	2						
Surrogate: 1-Chlorooctadecane	104 9	% 37.6-14	7						

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Received:	06/21/2018	Sampling Date:	06/19/2018
Reported:	06/25/2018	Sampling Type:	Soil
Project Name:	TYRELL FEE #002H	Sampling Condition:	Cool & Intact
Project Number:	(5/15/18)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

#### Sample ID: SP 2 @ 3' (H801708-08)

BTEX 8021B	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/22/2018	ND	1.79	89.4	2.00	12.3	
Toluene*	<0.050	0.050	06/22/2018	ND	1.80	89.8	2.00	13.2	
Ethylbenzene*	<0.050	0.050	06/22/2018	ND	1.79	89.4	2.00	13.6	
Total Xylenes*	<0.150	0.150	06/22/2018	ND	5.21	86.8	6.00	13.3	
Total BTEX	<0.300	0.300	06/22/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	112 9	% 69.8-14	2						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	06/22/2018	ND	416	104	400	0.00	
TPH 8015M	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/22/2018	ND	173	86.7	200	4.52	
DRO >C10-C28*	<10.0	10.0	06/22/2018	ND	177	88.6	200	10.1	
EXT DRO >C28-C36	<10.0	10.0	06/22/2018	ND					
Surrogate: 1-Chlorooctane	57.2	% 41-142	2						
Surrogate: 1-Chlorooctadecane	52.0	% 37.6-14	7						

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Received:	06/21/2018	Sampling Date:	06/08/2018
Reported:	06/25/2018	Sampling Type:	Soil
Project Name:	TYRELL FEE #002H	Sampling Condition:	Cool & Intact
Project Number:	(5/15/18)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

#### Sample ID: SP 3 @ SURFACE (H801708-09)

BTEX 8021B	mg/	/kg	Analyze	d By: MS					S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	06/22/2018	ND	1.83	91.6	2.00	4.05	
Toluene*	2.65	0.200	06/22/2018	ND	1.83	91.3	2.00	3.38	
Ethylbenzene*	5.07	0.200	06/22/2018	ND	1.81	90.6	2.00	3.64	
Total Xylenes*	22.2	0.600	06/22/2018	ND	5.66	94.3	6.00	3.06	
Total BTEX	30.0	1.20	06/22/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	143 9	% 69.8-14	2						
Chloride, SM4500Cl-B	mg/	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	976	16.0	06/22/2018	ND	416	104	400	0.00	
TPH 8015M	mg/	/kg	Analyze	d By: MS					S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	673	50.0	06/22/2018	ND	160	80.1	200	17.9	
DRO >C10-C28*	28600	50.0	06/22/2018	ND	182	90.9	200	14.9	
EXT DRO >C28-C36	3740	50.0	06/22/2018	ND					
Surrogate: 1-Chlorooctane	205 9	% 41-142	2						
Surrogate: 1-Chlorooctadecane	1580	% 37.6-14	7						

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Received:	06/21/2018	Sampling Date:	06/08/2018
Reported:	06/25/2018	Sampling Type:	Soil
Project Name:	TYRELL FEE #002H	Sampling Condition:	Cool & Intact
Project Number:	(5/15/18)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

#### Sample ID: SP 3 @ 1' (H801708-10)

BTEX 8021B	mg,	/kg	Analyze	d By: MS					S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/22/2018	ND	1.83	91.6	2.00	4.05	
Toluene*	0.285	0.050	06/22/2018	ND	1.83	91.3	2.00	3.38	
Ethylbenzene*	<0.050	0.050	06/22/2018	ND	1.81	90.6	2.00	3.64	
Total Xylenes*	2.63	0.150	06/22/2018	ND	5.66	94.3	6.00	3.06	
Total BTEX	2.92	0.300	06/22/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	175	% 69.8-14	2						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	304	16.0	06/22/2018	ND	416	104	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	96.5	10.0	06/22/2018	ND	160	80.1	200	17.9	
DRO >C10-C28*	2500	10.0	06/22/2018	ND	182	90.9	200	14.9	
EXT DRO >C28-C36	391	10.0	06/22/2018	ND					
Surrogate: 1-Chlorooctane	93.6	% 41-142	2						
Surrogate: 1-Chlorooctadecane	135	% 37.6-14	7						

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Received:	06/21/2018	Sampling Date:	06/19/2018
Reported:	06/25/2018	Sampling Type:	Soil
Project Name:	TYRELL FEE #002H	Sampling Condition:	Cool & Intact
Project Number:	(5/15/18)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

#### Sample ID: SP 3 @ 2' (H801708-11)

BTEX 8021B	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/22/2018	ND	1.79	89.4	2.00	12.3	
Toluene*	<0.050	0.050	06/22/2018	ND	1.80	89.8	2.00	13.2	
Ethylbenzene*	0.146	0.050	06/22/2018	ND	1.79	89.4	2.00	13.6	
Total Xylenes*	0.651	0.150	06/22/2018	ND	5.21	86.8	6.00	13.3	
Total BTEX	0.813	0.300	06/22/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	130	% 69.8-14	2						
Chloride, SM4500Cl-B	mg/	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	224	16.0	06/22/2018	ND	416	104	400	0.00	
TPH 8015M	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	14.2	10.0	06/22/2018	ND	173	86.7	200	4.52	
DRO >C10-C28*	547	10.0	06/22/2018	ND	177	88.6	200	10.1	
EXT DRO >C28-C36	60.4	10.0	06/22/2018	ND					
Surrogate: 1-Chlorooctane	77.9	% 41-142	2						
Surrogate: 1-Chlorooctadecane	100 5	% 37.6-14	7						

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Received:	06/21/2018	Sampling Date:	06/19/2018
Reported:	06/25/2018	Sampling Type:	Soil
Project Name:	TYRELL FEE #002H	Sampling Condition:	Cool & Intact
Project Number:	(5/15/18)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

#### Sample ID: SP 3 @ 3' (H801708-12)

BTEX 8021B	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/22/2018	ND	1.79	89.4	2.00	12.3	
Toluene*	<0.050	0.050	06/22/2018	ND	1.80	89.8	2.00	13.2	
Ethylbenzene*	<0.050	0.050	06/22/2018	ND	1.79	89.4	2.00	13.6	
Total Xylenes*	<0.150	0.150	06/22/2018	ND	5.21	86.8	6.00	13.3	
Total BTEX	<0.300	0.300	06/22/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	113 9	% 69.8-14	2						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	06/22/2018	ND	416	104	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/22/2018	ND	173	86.7	200	4.52	
DRO >C10-C28*	<10.0	10.0	06/22/2018	ND	177	88.6	200	10.1	
EXT DRO >C28-C36	<10.0	10.0	06/22/2018	ND					
Surrogate: 1-Chlorooctane	65.6	% 41-142	2						
Surrogate: 1-Chlorooctadecane	60.2	% 37.6-14	7						

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Received:	06/21/2018	Sampling Date:	06/08/2018
Reported:	06/25/2018	Sampling Type:	Soil
Project Name:	TYRELL FEE #002H	Sampling Condition:	Cool & Intact
Project Number:	(5/15/18)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

#### Sample ID: SP 4 @ SURFACE (H801708-13)

BTEX 8021B	mg/	′kg	Analyze	d By: MS					S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	06/22/2018	ND	1.83	91.6	2.00	4.05	
Toluene*	2.24	0.200	06/22/2018	ND	1.83	91.3	2.00	3.38	
Ethylbenzene*	5.12	0.200	06/22/2018	ND	1.81	90.6	2.00	3.64	
Total Xylenes*	23.3	0.600	06/22/2018	ND	5.66	94.3	6.00	3.06	
Total BTEX	30.6	1.20	06/22/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	151	% 69.8-14	2						
Chloride, SM4500Cl-B	mg/	′kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1600	16.0	06/22/2018	ND	416	104	400	0.00	
TPH 8015M	mg/	′kg	Analyze	d By: MS					S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	769	50.0	06/22/2018	ND	160	80.1	200	17.9	
DRO >C10-C28*	23900	50.0	06/22/2018	ND	182	90.9	200	14.9	
EXT DRO >C28-C36	3070	50.0	06/22/2018	ND					
Surrogate: 1-Chlorooctane	235	% 41-142	2						
Surrogate: 1-Chlorooctadecane	1660	% 37.6-14	7						

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Received:	06/21/2018	Sampling Date:	06/08/2018
Reported:	06/25/2018	Sampling Type:	Soil
Project Name:	TYRELL FEE #002H	Sampling Condition:	Cool & Intact
Project Number:	(5/15/18)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

#### Sample ID: SP 4 @ 1' (H801708-14)

BTEX 8021B	mg/	/kg	Analyze	d By: MS					S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/22/2018	ND	1.83	91.6	2.00	4.05	
Toluene*	0.163	0.050	06/22/2018	ND	1.83	91.3	2.00	3.38	
Ethylbenzene*	<0.050	0.050	06/22/2018	ND	1.81	90.6	2.00	3.64	
Total Xylenes*	1.55	0.150	06/22/2018	ND	5.66	94.3	6.00	3.06	
Total BTEX	1.71	0.300	06/22/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	162 9	% 69.8-14	2						
Chloride, SM4500Cl-B	mg/	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	224	16.0	06/22/2018	ND	416	104	400	0.00	
TPH 8015M	mg/	/kg	Analyze	d By: MS					S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	57.3	10.0	06/22/2018	ND	160	80.1	200	17.9	
DRO >C10-C28*	2260	10.0	06/22/2018	ND	182	90.9	200	14.9	
EXT DRO >C28-C36	390	10.0	06/22/2018	ND					
Surrogate: 1-Chlorooctane	99.1	% 41-142	2						
Surrogate: 1-Chlorooctadecane	249 9	% 37.6-14	7						

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Received:	06/21/2018	Sampling Date:	06/20/2018
Reported:	06/25/2018	Sampling Type:	Soil
Project Name:	TYRELL FEE #002H	Sampling Condition:	Cool & Intact
Project Number:	(5/15/18)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

#### Sample ID: SP 4 @ 2' (H801708-15)

BTEX 8021B	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/22/2018	ND	1.79	89.4	2.00	12.3	
Toluene*	<0.050	0.050	06/22/2018	ND	1.80	89.8	2.00	13.2	
Ethylbenzene*	0.091	0.050	06/22/2018	ND	1.79	89.4	2.00	13.6	
Total Xylenes*	0.448	0.150	06/22/2018	ND	5.21	86.8	6.00	13.3	
Total BTEX	0.563	0.300	06/22/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	120	% 69.8-14	2						
Chloride, SM4500Cl-B	mg/	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	224	16.0	06/22/2018	ND	416	104	400	0.00	
TPH 8015M	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/22/2018	ND	173	86.7	200	4.52	
DRO >C10-C28*	449	10.0	06/22/2018	ND	177	88.6	200	10.1	
EXT DRO >C28-C36	89.7	10.0	06/22/2018	ND					
Surrogate: 1-Chlorooctane	77.5	% 41-142	2						
Surrogate: 1-Chlorooctadecane	99.0	% 37.6-14	7						

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Received:	06/21/2018	Sampling Date:	06/20/2018
Reported:	06/25/2018	Sampling Type:	Soil
Project Name:	TYRELL FEE #002H	Sampling Condition:	Cool & Intact
Project Number:	(5/15/18)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

#### Sample ID: SP 4 @ 3' (H801708-16)

BTEX 8021B	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/22/2018	ND	1.79	89.4	2.00	12.3	
Toluene*	<0.050	0.050	06/22/2018	ND	1.80	89.8	2.00	13.2	
Ethylbenzene*	<0.050	0.050	06/22/2018	ND	1.79	89.4	2.00	13.6	
Total Xylenes*	<0.150	0.150	06/22/2018	ND	5.21	86.8	6.00	13.3	
Total BTEX	<0.300	0.300	06/22/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	113 9	% 69.8-14	2						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	06/22/2018	ND	416	104	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/22/2018	ND	173	86.7	200	4.52	
DRO >C10-C28*	<10.0	10.0	06/22/2018	ND	177	88.6	200	10.1	
EXT DRO >C28-C36	<10.0	10.0	06/22/2018	ND					
Surrogate: 1-Chlorooctane	68.7	% 41-142	2						
Surrogate: 1-Chlorooctadecane	62.6	% 37.6-14	7						

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Received:	06/21/2018	Sampling Date:	06/08/2018
Reported:	06/25/2018	Sampling Type:	Soil
Project Name:	TYRELL FEE #002H	Sampling Condition:	Cool & Intact
Project Number:	(5/15/18)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

#### Sample ID: SP 5 @ SURFACE (H801708-17)

BTEX 8021B	mg/	′kg	Analyze	d By: MS					S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/22/2018	ND	1.83	91.6	2.00	4.05	
Toluene*	0.286	0.050	06/22/2018	ND	1.83	91.3	2.00	3.38	
Ethylbenzene*	0.958	0.050	06/22/2018	ND	1.81	90.6	2.00	3.64	
Total Xylenes*	4.41	0.150	06/22/2018	ND	5.66	94.3	6.00	3.06	
Total BTEX	5.66	0.300	06/22/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	164 9	% 69.8-14	2						
Chloride, SM4500Cl-B	mg/	′kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1580	16.0	06/22/2018	ND	416	104	400	0.00	
TPH 8015M	mg/	′kg	Analyze	d By: MS					S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	129	50.0	06/22/2018	ND	160	80.1	200	17.9	
DRO >C10-C28*	11400	50.0	06/22/2018	ND	182	90.9	200	14.9	
EXT DRO >C28-C36	1700	50.0	06/22/2018	ND					
Surrogate: 1-Chlorooctane	114 9	% 41-142	2						
Surrogate: 1-Chlorooctadecane	579 9	% 37.6-14	7						

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Received:	06/21/2018	Sampling Date:	06/08/2018
Reported:	06/25/2018	Sampling Type:	Soil
Project Name:	TYRELL FEE #002H	Sampling Condition:	Cool & Intact
Project Number:	(5/15/18)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

#### Sample ID: SP 5 @ 1' (H801708-18)

BTEX 8021B	mg	/kg	Analyze	d By: MS					S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/22/2018	ND	1.83	91.6	2.00	4.05	
Toluene*	0.308	0.050	06/22/2018	ND	1.83	91.3	2.00	3.38	
Ethylbenzene*	<0.050	0.050	06/22/2018	ND	1.81	90.6	2.00	3.64	
Total Xylenes*	2.63	0.150	06/22/2018	ND	5.66	94.3	6.00	3.06	
Total BTEX	2.95	0.300	06/22/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	173	% 69.8-14	2						
Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	288	16.0	06/22/2018	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	118	10.0	06/22/2018	ND	160	80.1	200	17.9	
DRO >C10-C28*	2460	10.0	06/22/2018	ND	182	90.9	200	14.9	
EXT DRO >C28-C36	407	10.0	06/22/2018	ND					
Surrogate: 1-Chlorooctane	104	% 41-142	2						
Surrogate: 1-Chlorooctadecane	145	% 37.6-14	7						

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Received:	06/21/2018	Sampling Date:	06/20/2018
Reported:	06/25/2018	Sampling Type:	Soil
Project Name:	TYRELL FEE #002H	Sampling Condition:	Cool & Intact
Project Number:	(5/15/18)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

#### Sample ID: SP 5 @ 2' (H801708-19)

BTEX 8021B	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/22/2018	ND	1.79	89.4	2.00	12.3	
Toluene*	<0.050	0.050	06/22/2018	ND	1.80	89.8	2.00	13.2	
Ethylbenzene*	<0.050	0.050	06/22/2018	ND	1.79	89.4	2.00	13.6	
Total Xylenes*	0.209	0.150	06/22/2018	ND	5.21	86.8	6.00	13.3	
Total BTEX	<0.300	0.300	06/22/2018	ND					
Surrogate: 4-Bromofluorobenzene (PID	113	% 69.8-14	2						
Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	240	16.0	06/22/2018	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/22/2018	ND	173	86.7	200	4.52	
DRO >C10-C28*	487	10.0	06/22/2018	ND	177	88.6	200	10.1	
EXT DRO >C28-C36	103	10.0	06/22/2018	ND					
Surrogate: 1-Chlorooctane	85.2	% 41-142	2						
Surrogate: 1-Chlorooctadecane	111 9	% 37.6-14	7						

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Received:	06/21/2018	Sampling Date:	06/20/2018
Reported:	06/25/2018	Sampling Type:	Soil
Project Name:	TYRELL FEE #002H	Sampling Condition:	Cool & Intact
Project Number:	(5/15/18)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

#### Sample ID: SP 5 @ 3' (H801708-20)

BTEX 8021B	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/22/2018	ND	1.79	89.4	2.00	12.3	
oluene* <0.050		0.050	06/22/2018	ND	1.80	89.8	2.00	13.2	
Ethylbenzene*	<0.050	0.050	06/22/2018	ND	1.79	89.4	2.00	13.6	
Total Xylenes*	<0.150	0.150	06/22/2018	ND	5.21	86.8	6.00	13.3	
Total BTEX	<0.300	0.300	06/22/2018 ND						
Surrogate: 4-Bromofluorobenzene (PID	112 9	% 69.8-14	2						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	06/22/2018	ND	416	104	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/22/2018	ND	173	86.7	200	4.52	
DRO >C10-C28*	<10.0	10.0	06/22/2018	ND	177	88.6	200	10.1	
EXT DRO >C28-C36	<10.0	10.0	06/22/2018	ND					
Surrogate: 1-Chlorooctane	67.7	% 41-142	2						
Surrogate: 1-Chlorooctadecane	61.9	% 37.6-14	7						

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Received:	06/21/2018	Sampling Date:	06/08/2018
Reported:	06/25/2018	Sampling Type:	Soil
Project Name:	TYRELL FEE #002H	Sampling Condition:	Cool & Intact
Project Number:	(5/15/18)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

#### Sample ID: NORTH @ SURFACE (H801708-21)

BTEX 8021B	mg,	/kg	Analyze	d By: MS					S-04		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
Benzene*	<0.050	0.050	06/22/2018	ND	1.83	91.6	2.00	4.05			
Toluene*	<0.050	0.050	06/22/2018	ND	1.83	91.3	2.00	3.38			
Ethylbenzene*	<0.050	0.050	06/22/2018	ND	ND 1.81		2.00	3.64			
Total Xylenes*	<0.150	0.150	06/22/2018	ND	5.66	94.3	6.00	3.06			
Total BTEX	<0.300	0.300	06/22/2018	ND							
Surrogate: 4-Bromofluorobenzene (PID	136	% 69.8-14	2								
Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
Chloride	<b>320</b> 16.0		06/22/2018 ND		416	104	400	0.00			
TPH 8015M	mg,	/kg	Analyze	d By: MS							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
GRO C6-C10*	<50.0	50.0	06/22/2018	ND	160	80.1	200	17.9			
DRO >C10-C28*	<50.0	50.0	06/22/2018	ND	182	90.9	200	14.9			
EXT DRO >C28-C36	<50.0	50.0	06/22/2018	ND							
Surrogate: 1-Chlorooctane	91.0	% 41-142	2								
Surrogate: 1-Chlorooctadecane	94.2	% 37.6-14	7								

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Received:	06/21/2018	Sampling Date:	06/08/2018
Reported:	06/25/2018	Sampling Type:	Soil
Project Name:	TYRELL FEE #002H	Sampling Condition:	Cool & Intact
Project Number:	(5/15/18)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

#### Sample ID: EAST @ SURFACE (H801708-22)

BTEX 8021B	mg/	kg	Analyze	d By: MS					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/22/2018	ND	1.83	91.6	2.00	4.05		
Toluene*	<0.050 0.050		06/22/2018	ND	1.83	91.3	2.00	3.38		
Ethylbenzene*	<0.050 0.050		06/22/2018	ND	1.81	90.6	2.00	3.64		
Total Xylenes*	<0.150 0.150		06/22/2018	ND	5.66 94.3		6.00	3.06		
Total BTEX	<0.300	0.300	06/22/2018	ND						
Surrogate: 4-Bromofluorobenzene (PID	133 % 69.8-14		2							
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<b>448</b> 16.0		06/22/2018 ND		416	104	400	0.00		
TPH 8015M	mg/	kg	Analyze	d By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	06/22/2018	ND	160	80.1	200	17.9		
DRO >C10-C28*	<10.0	10.0	06/22/2018	ND	182	90.9	200	14.9		
EXT DRO >C28-C36	<10.0	10.0	06/22/2018	ND						
Surrogate: 1-Chlorooctane	80.0 \$	% 41-142	,							
Surrogate: 1-Chlorooctadecane	82.3	37.6-14	7							

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Received:	06/21/2018	Sampling Date:	06/08/2018
Reported:	06/25/2018	Sampling Type:	Soil
Project Name:	TYRELL FEE #002H	Sampling Condition:	Cool & Intact
Project Number:	(5/15/18)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

#### Sample ID: WEST @ SURFACE (H801708-23)

BTEX 8021B	mg/	kg	Analyze	d By: MS					S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/22/2018	ND	1.83	91.6	2.00	4.05	
Toluene*	* <0.050 0.050		06/22/2018	ND	1.83	91.3	2.00	3.38	
Ethylbenzene*	<0.050 0.050		06/22/2018	ND	1.81	90.6	2.00	3.64	
Total Xylenes*	<0.150 0.150		06/22/2018	ND	5.66	94.3	6.00	3.06	
Total BTEX	<0.300	0.300	06/22/2018 ND						
Surrogate: 4-Bromofluorobenzene (PID	134 % 69.8		2						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<b>432</b> 16.0		06/22/2018 ND		416	104	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/22/2018	ND	160	80.1	200	17.9	
DRO >C10-C28*	<10.0	10.0	06/22/2018	ND	182	90.9	200	14.9	
EXT DRO >C28-C36	<10.0	10.0	06/22/2018	ND					
Surrogate: 1-Chlorooctane	80.9	% 41-142	,						
Surrogate: 1-Chlorooctadecane	83.4	37.6-14	7						

#### **Cardinal Laboratories**

#### \*=Accredited Analyte

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- Winder Angela



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

Received:	06/21/2018	Sampling Date:	06/08/2018
Reported:	06/25/2018	Sampling Type:	Soil
Project Name:	TYRELL FEE #002H	Sampling Condition:	Cool & Intact
Project Number:	(5/15/18)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

#### Sample ID: SOUTH @ SURFACE (H801708-24)

BTEX 8021B	mg/	kg	Analyze	d By: MS					S-04		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
Benzene*	<0.050	0.050	06/22/2018	ND	1.83	91.6	2.00	4.05			
Toluene*	<0.050	0.050	06/22/2018	ND	1.83	91.3	2.00	3.38			
Ethylbenzene*	<0.050 0.050		06/22/2018	ND	1.81	90.6	2.00	3.64			
Total Xylenes*	<0.150 0.150		06/22/2018	ND	5.66	94.3	6.00	3.06			
Total BTEX	<0.300	0.300	06/22/2018	ND							
Surrogate: 4-Bromofluorobenzene (PID	144 %	69.8-14	2								
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
Chloride	<b>448</b> 16.0		06/22/2018	ND	416	104	400	3.77			
TPH 8015M	mg/	kg	Analyze	d By: MS							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
GRO C6-C10*	<10.0	10.0	06/22/2018	ND	160	80.1	200	17.9			
DRO >C10-C28*	<10.0	10.0	06/22/2018	ND	182	90.9	200	14.9			
EXT DRO >C28-C36	<10.0	10.0	06/22/2018	ND							
Surrogate: 1-Chlorooctane	82.6 9	% 41-142	2								
Surrogate: 1-Chlorooctadecane	86.3 9	37.6-14	7								

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\*=Accredited Analyte

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- Winder Angela



#### **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.
S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate (CLP E-flag).
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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## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

03

ARDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240

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

Company Name: BBC International, Inc.							BILL TO ANALYSIS REQUEST																
	er: Cliff Brunson							P.C	). #:		42							1	1	T	1		
Address: P.O	. Box 805			200				Co	mpa	iny:	C	.0G	-										
City: Hobbs	State: NM	Zip	o: 8	8824	41			Att	n:	Be	du	4 Has	Kells									÷	
Phone #: 575-	397-6388 Fax #: 575	-39	7-0	397				Add	dres	s:	1	1		1									
Project #:		Project Owner: COG						City:						1									
	TYRELL FEE #002H (5/15/18)							Sta	te:		Zip	p:		1									
Project Locatio	Project Location: LEA COUNTY, NM							Pho	one	#:				1									
Sampler Name:	JEFF ORNELAS							Fax	(#:					1									
FOR LAB USE ONLY					MA	TRI	(		PRE	SER	V.	SAMPL	ING	1									
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP. # CONTAINERS GROUNDWATER WASTEWATER SOIL OIL				SLUDGE	OTHER :	ACID/BASE:	ICE / COOL		DATE	TIME	CI	BTEX	TPHEXT								
1	SP1 @ SURFACE	G	1		1	1				1	6/8	8/18	8:59 AM	1	1	1	-						
2	SP1 @ 1'	G	1		1	1			- 12	1	6/8	8/18	9:15 AM	1	$\checkmark$	1							- 147
	SP1 @ 2'	Ģ	1		~	1				1	_	19/18	10:09 AM	1	1	1							
- 4	SP1 @ 3'	Ģ	1		1	1				-	-	19/18	12:01 PM	1	$\checkmark$	$\checkmark$							
S	SP2 @ SURFACE	6	1		1	1			_	4		8/18	9:33 AM	1	1	1							
6	SP2 @ 1'	G	1	_		1			_	1	-	8/18	9:51 AM	1	1	1							
7	SP2 @ 2'	0	!		+			_	_	4		19/18	10:09 AM	1	1	1							
1	SP2 @ 3'	Ģ	1						$\rightarrow$	4	-	19/18	11:11 AM	1	1	1	 						
	SP3 @ SURFACE SP3 @ 1'	G	1		-			_	-	4	-	B/18	10:15 AM	1	1	1		_				_	-
10	353 @ 1	6	1		1	× .	_	_	,		6/8	3/18	10:31 AM	1	V	1							

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service. In no event shall Cardinal be liable for incidental or consequental 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. Relinguished By: Date Received By: Phone Result: □ Yes D No Add'l Phone #: Fax Result: Yes O No Add'I Fax #: Time REMARKS: V Relinguished By: Date: Received By: 6 Time: DO 1U Delivered By: (Circle One) Sample Condition CHECKED BY: 8 2 2 Cool Intact (Initials), Sampler - UPS - Bus - Other: 0 V

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

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ARDINAL LABORATORIES

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST



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

Company Name	ompany Name: BBC International, Inc.							BILL TO								ANALYSIS REQUEST							
	r: Cliff Brunson						P	.0. #	:														
Address: P.O	. Box 805						c	omp	any:	COG	1	1											
City: Hobbs	State: NM	Zip	: 8	3824	41		A	ttn:	Bed	cy Has	cell												
Phone #: 575-	397-6388 Fax #: 575-	-39	7-0	397			Address:					1											
Project #:	Project Owner	: (	$\hat{0}$	C	_		c	ity:															
Project Name:	Project Name: TYRELL FEE #002H (5/15/18)							State: Zip:															
Project Location: LEA COUNTY, NM							P	Phone #:															
Sampler Name: JEFF ORNELAS							F	ax #:															
FOR LAB USE ONLY					MAT	RIX		PR	ESERV	. SAMPL	ING								8				
Lab I.D. <i>H801708</i>	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER SOIL	OIL	OTHER -	ACID/BASE:	ICE / COOL OTHER :	DATE	TIME	CI	BTEX	THEXT									
11	SP3 @ 2'	G	1		1				1	6/19/18	2:45 PM	$\checkmark$	1	1									
12	SP3 @ 3'	G	1		1				1	6/19/18	4:08 PM	1	$\checkmark$	1	·								
13	SP4 @ SURFACE	G	1		1				1	6/8/18	11:11 AM	1	1	1									
14	SP4 @ 1'	G	1		~				~	6/8/18	11:29 AM	1	1	1									
15	SP4 @ 2'	G	1		~				1	6/20/18	9:19 AM	1	1	1									
16	SP4 @ 3'	G	1		~				1	6/20/18	10:50 AM	1	1	1									
17	SP5 @ SURFACE	G	1		-				1	6/8/18	11:59 AM	1	$\checkmark$	1									
18	SP5 @ 1'	Ģ	1		1				1	6/8/18	12:50 PM	1	1	1									
19	SP5 @ 2'	G	1		~				~	6/20/18	11:38 AM	1	$\checkmark$	1									
10	10 SP5 @ 3'								-	6/20/18	1:45 PM	1	1	1		-						_	

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aminates or successors arising out or or related to the performance	the second se	inal, regardless of whether such claim is base	ed upon any of the above stated re			201	
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Lied A	6/5/10	11 //		Fax Result:	□ Yes	No	Add'I Fax #:
VESTANE	Time: 30pm	Madt-	bell	REMARKS:			
Relinguished By:	Date:	Received By:	NI				
Draeffe	C-21-18 Time:-00	Januara i	AdaKin	2			LUSN.
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Page 29 of 29



ARDINAL LABORATORIES

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

Company Name: BBC International, Inc.						11.11	BILL TO ANALYSIS REQUEST															
Project Manage	r: Cliff Brunson						F	P.O. #:											1			
Address: P.O. Box 805						c	Company: COG															
city: Hobbs	State: NM	Zip	: 8	8241			A	ttn:	P	800	in Hask	ell										
Phone #: 575-3	397-6388 Fax #: 575-	39	7-03	397			A	ddre	ess:		3											
Project #:	Project Owner	: (	)0(	5			c	ity:														
	TYRELL FEE #002H (5/15/18)						s	tate	:		Zip:											
Project Location	n: LEA COUNTY, NM						F	hon	e #:									j.				
Sampler Name:							F	Fax #:														
FOR LAB USE ONLY					MAT	RIX	r	PF	RESE	RV.	SAMPLI	NG			1							
Lab I.D. <i>H801 708</i>	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER WASTEWATER	SolL	ÒIL	SLUDGE	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	CC	BTEX	TPH EXT							
al	NORTH @ SURFACE	G	1		~				V	1	6/8/18	1:11 PM	$\checkmark$	1	1							
22	EAST @ SURFACE	G	1		~				~		6/8/18	1:22 PM	1	$\checkmark$	1							
23	WEST @ SURFACE	Ģ	1		~	$ \perp$			V		6/8/18	1:33 PM	1	1	1							
34	SOUTH @ SURFACE	6	۱		V	_			V		6/8/18	1:55 PM	1	$\checkmark$	1				 			
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PLEASE NOTE: Liability and Damages. Cardina'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 consequental damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries. adar by Cardinal recordings of ubother s

affiliates or successors ansing out of or related to the performance	or services nereunder by (	Jardinal, regardless of whether such claim is bas	ted upon any of the above stated rea	isons of otherwise.			
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VETTILLes	Time: 30pm		Jena	REMARKS:			$\bigcirc$ $\land$ $\land$
Relinquished By:	Date: 21-18	Received By:	nnn				
Sam feno	Timet:00	Jamara	Aldafte	2			VISA-
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2	oc	Cool Intact	(Initials)	0			
Sampler - UPS - Bus - Other:	rected	3.15 Dres Dres	40. #15	Son	u &	un	plis have head space
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† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST



Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

## **Release Notification and Corrective Action**

		<b>OPERATO</b>	R		Initial Report		Final Report
Name of Company: COG Operating, LLC. (OG	Contact:	Robert McNeill					
Address: 600 West Illinois Avenue, Midland	Telephone No.	432-683-7443					
Facility Name: Tyrell Fee #002H	Facility Type:	Well					
Surface Owner: Private	Mineral Owner	: Private		AP	I No. 30-025-4	2789	

## LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
А	14	24S	33E	190	North	990	East	Lea

Latitude 32.22433799 Longitude -103.5378044 NAD83

## NATURE OF RELEASE

Type of Release:		Volume of Release:	Volume Recovered:								
	Oil & Produced Water	3 bbl. Oil	1 bbl. Oil								
		10 bbl. Produced Water	5 bbl. Produced Water								
Source of Release:		Date and Hour of Occurrence:	Date and Hour of Discovery:								
	Closed Valve	May 15, 2018 11:30am	May 15, 2018 11:30am								
Was Immediate Notice		If YES, To Whom?									
	🗌 Yes 🖾 No 🖾 Not Required										
By Whom?		Date and Hour:									
Was a Watercourse Re		If YES, Volume Impacting the Wa	tercourse.								
	🗌 Yes 🖾 No										
If a Watercourse was Impacted, Describe Fully.* <b>RECEIVED</b> By Olivia Yu at 2:29 pm, May 21, 2018											
Describe Cause of Pro	blem and Remedial Action Taken.*										
The release was caused	The release was caused by the ball valve from the separator being closed and causing the sump tank to spill over.										
	d and Cleanup Action Taken.*	and causing the sump tank to spin ove									
The release was on loc possible impact from the	ation. A vacuum truck was dispatched to remove a he release and we will present a remediation work	ll freestanding fluids. Concho will hav plan to the NMOCD for approval prio	ve the spill area sampled to delineate any r to any significant remediation activities.								
I hereby certify that the	e information given above is true and complete to t rs are required to report and/or file certain release r	he best of my knowledge and understa	and that pursuant to NMOCD rules and								
	vironment. The acceptance of a C-141 report by th										
	have failed to adequately investigate and remediat										
	addition, NMOCD acceptance of a C-141 report of	loes not relieve the operator of respon	sibility for compliance with any other								
federal, state, or local l	aws and/or regulations.										
		OIL CONSER	VATION DIVISION								
Signature:	Dann Oppant.		174-								
Printed Name:	DeAnn Grant	Approved by Environmental Specialist:									
Title:	HSE Administrative Assistant	Approval Date: 5/21/2018	Expiration Date:								
E-mail Address:	agrant@concho.com	Conditions of Approval:									
	<u> </u>	see attached directive	Attached 🚺								
Date: May 16, 2018	Phone: 432-253-4513										
Attach Additional Sh	leets If Necessary										

1RP-5063

nOY1814154301

pOY1814154471

Operator/Responsible Party,

The OCD has received the form C-141 you provided on \_5/16/2018\_ regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number \_1RP-5063\_ has been assigned. Please refer to this case number in all future correspondence.

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

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

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District \_1\_ office in \_\_Hobbs\_\_\_\_ 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; C<sub>6</sub> thru C<sub>36</sub>), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.

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

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

• Composite sampling is not generally allowed.

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

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

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

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

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

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

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

From:	Hernandez, Christina, EMNRD
To:	<u>"Cliff Brunson"; Yu, Olivia, EMNRD</u>
Cc:	"Becky Haskell"; "Dakota Neel"; "Sheldon Hitchcock"; DeAnn Grant; "Ken Swinney"; "Jennifer Gilkey"; "Kathy
	Purvis"
Subject:	RE: COG Tyrell Fee #002H (1RP-5063) - Delineation Workplan
Date:	Friday, July 20, 2018 8:53:00 AM
Attachments:	Delineation Workplan Tyrell Fee #002H (5-15-18).pdf

Dear Mr. Brunson:

NMOCD approves of the delineation completed for 1RP-4894 and the proposed remediation with these clarifications:

- 1. Sidewall AND bottom confirmation samples taken in the impacted pasture area and must be no greater than 50 ft apart.
- 2. On an appropriately scaled map, demarcate confirmation sample locations with GPS coordinates.
- 3. Include dated photo documentation of delineation and remediation in the subsequent report.

Thanks,

Christina Hernandez EMNRD-OCD Environmental Specialist 1625 N. French Drive Hobbs, NM 88240 575-393-6161 x111 Christina.Hernandez@state.nm.us

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

From: Cliff Brunson <cbrunson@bbcinternational.com>

**Sent:** Monday, July 9, 2018 8:47 AM

To: Yu, Olivia, EMNRD < Olivia.Yu@state.nm.us>; Hernandez, Christina, EMNRD

<Christina.Hernandez@state.nm.us>

**Cc:** 'Becky Haskell' <rhaskell@concho.com>; 'Dakota Neel' <DNeel2@concho.com>; 'Sheldon Hitchcock' <SLHitchcock@concho.com>; DeAnn Grant <agrant@concho.com>; 'Ken Swinney' <kswinney@bbcinternational.com>; 'Jennifer Gilkey' <jgilkey@bbcinternational.com>; 'Kathy Purvis' <kathy@bbcinternational.com>

Subject: COG Tyrell Fee #002H (1RP-5063) - Delineation Workplan

Olivia,

Please find the attached Delineation Workplan and remediation proposal for the COG Tyrell Fee #002H (1RP-5063). COG is requesting that you review this plan and is looking forward to the OCD's approval.

If you have any questions, please let me know.

Thanks, Cliff

Cliff P. Brunson, CEI, CRS President BBC International, Inc. World-Wide Environmental Specialists Mailing Address: P. O. Box 805 Hobbs, NM 88241-0805 USA Shipping Address: 1324 W. Marland St. Hobbs, NM 88240 USA Phone: (575) 397-6388 Fax: (575) 397-0397 E-Mail: cbrunson@bbcinternational.com



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