SITE INFORMATION

Report Type: Work Plan

General Site Information:				
Site & Lease No.:	**King Tut Federal #001H**			**API No. 30-025-41542**
	King Tut Federal #3H Battery			**API No. 30-025-41559**
	Windward Federal #1H			**API No. 30-025-41414**
Company:	**COG Operating LLC**			
Section, Township and Range	**Unit D**	**Sec. 30**	**T 24S**	**R 32E**
County:	**Lea County**			
GPS:	**32.19448° N**			**103.71974° W**
Surface Owner:	Federal			
Directions:	From NM 128 & Buck Johnson Rd in Lea County, travel SOUTHWEST on Buck Johnson for 0.40 mi, turn SOUTH onto lease road for 2.5 mi, turn EAST onto lease road for 0.25 mi to location.			

Release Data:			
RP Number:	**1RP-4485**	**1RP-4696**	**1RP-4772**
Date Released:	10/15/2016	05/06/17	07/25/17
Type Release:	Produced Water	Produced Water	Produced Water
Source of Contamination:	Flowline	Flowline	Flowline
Fluid Released:	20 bbls	30 bbls	70 bbls
Fluids Recovered:	15 bbls	25 bbls	60 bbls

Official Communication:			
Name:	Robert McNeil		Ike Tavarez
Company:	COG Operating, LLC		Tetra Tech
Address:	One Concho Center		4000 N. Big Spring
	600 W. Illinois Ave.		Ste 401
City:	Midland Texas, 79701		Midland, Texas
Phone number:	(432) 686-3023		(432) 687-8110
Fax:	(432) 684-7137		
Email:	rmcneil@conchoresources.com		Ike.Tavarez@tetratech.com

Ranking Criteria

Depth to Groundwater:	***Ranking Score***	***Site Data***
<50 ft	20	
50-99 ft	10	
>100 ft.	***0***	*325'-350'*
WellHead Protection:	***Ranking Score***	***Site Data***
Water Source <1,000 ft., Private <200 ft.	*20*	
Water Source >1,000 ft., Private >200 ft.	***0***	*0*
Surface Body of Water:	***Ranking Score***	***Site Data***
<200 ft.	*20*	
200 ft - 1,000 ft.	10	
>1,000 ft.	***0***	0

Total Ranking Score:	***0***

Acceptable Soil RRAL (mg/kg)		
Benzene	***Total BTEX***	***TPH***
10	50	5,000

TETRA TECH

September 21, 2017

Ms. Olivia Yu
Environmental Engineer Specialist
Oil Conservation Division, District 1
1625 North French Drive
Hobbs, New Mexico 88240

Re: Work Plan for COG Operating LLC
Unit D, Section 30, Township 24 South, Range 32 East
Lea County, New Mexico.
King Tut Federal #001H, 1RP-4485
King Tut Federal 3H Battery, 1RP-4696
Windward Federal #001H, 1RP-4772

Ms. Yu:

On behalf of COG Operating LLC. (COG), Tetra Tech submits the following Work Plan for three spills that occurred in the same area located in Unit D, Section 30, Township 24 South, Range 32 East, Lea County, New Mexico (Site). The spill site coordinates are N 32.19448º, W 103.71974º. The site location is shown on Figures 1 and 2.

Background

Tetra Tech was contacted by COG to evaluate the release area of three (3) flowline releases that occurred at the site, impacting the same area in the pasture measuring approximately 50' x 300'. Summaries of the releases are listed below. The initial C-141 forms are enclosed in Appendix A.

1RP-4485: On October 15, 2016, a flowline ruptured, releasing twenty (20) barrels of produced water. Approximately fifteen (15) barrels were recovered, leaving five (5) barrels unrecovered.

1RP-4696: On May 6, 2017, a hole developed in the fiberspar flowline, releasing thirty (30) barrels of produced water. A vacuum truck was used to remove the standing fluids, recovering twenty five (25) barrels of produced water.

1RP-4772: On July 25, 2017, a flowline ruptured, releasing seventy (70) barrels of produced water. Approximately sixty (60) barrels were recovered.

Tetra Tech
4000 North Big Spring, Suite 401, Midland, TX 79705
Tel 432.682.4559 Fax 432.682.3946 www.tetratech.com

Groundwater

No water wells were listed within Section 30 on the New Mexico Office of the State Engineer's database. According to the Chevron Texaco Groundwater Trend map, the average depth to groundwater in this area is between 325' and 350' below surface. The groundwater data is shown in Appendix B.

Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 5,000 mg/kg.

Soil Assessment and Analytical Results

On August 15, 2017, Tetra Tech personnel were onsite to evaluate and sample the release area. A total of eight (8) boreholes (BH-1 through BH-8) were installed using an air rotary rig to total depths between 10.0' and 25.0' below surface. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. The bore hole locations are shown on Figure 3.

Referring to Table 1, all of the samples collected were below the laboratory reporting limits for total TPH, benzene, and total BTEX.

Due to the recent rains in the area, the chloride residue in the shallow soils appears to have leached down to approximately 4.0' below surface into the deeper subsurface soils. The areas of boreholes (BH-2, BH-4, and BH-5) showed minimal chloride impact to the soils with concentrations ranging between 24.6 mg/kg and 1,110 mg/kg.

Elevated chloride concentrations were detected in the areas of boreholes (BH-1, BH-3, BH-6, BH-7, and BH-8). The area of borehole (BH-1) showed a chloride high of 2,520 mg/kg at 6'-7', which declined with depth to 199 mg/kg at 14'-15' and showed a bottom hole concentration of 121 mg/kg at 24'-25' below surface. The area of borehole (BH-7) showed chloride concentrations that increased with depth to 3,100 mg/kg at 4'-5' before declining to 154 mg/kg at 6'-7' below surface. A bottom hole concentration of 82.5 mg/kg was detected at 14'-15' below surface. Borehole (BH-8) showed a chloride high of 7,110 mg/kg at 4'-5', which declined with depth to 440 mg/kg at 14'-15' below surface. However, the bottom hole sample collected at 24'-25' showed a chloride concentration of 782 mg/kg, which appears to be caused by cross contamination from the upper soils.

The areas of boreholes (BH-3 and BH-6) showed minimal chloride concentrations in the shallow soils to depths of 4'-5' below surface. However, elevated chloride concentrations were detected with chloride highs of 7,960 mg/kg at 4'-5' (BH-3) and 2,440 mg/kg at 6'-7' (BH-6). The chloride concentrations then declined with depth with bottom hole concentrations of 143 mg/kg at 14'-15' and 69.2 mg/kg at 19'-20' below surface, respectively.

Work Plan

Based on the laboratory results, COG proposes to remove the impacted material as highlighted (green) in Table 1 and shown on Figure 4. The proposed excavation may be limited in these areas due to access and /or safety issues around the multiple flow lines and an active Plains pipeline in the area.

The areas of bore holes (BH-2, BH-4 and BH-5) did not show a significant chloride impact to the subsurface soils. Based on the depth to groundwater (>300') reported in the area, the areas of boreholes (BH-2, BH-4 and BH-5) do appear to be an environmental concern.

Based on the laboratory data, the areas of boreholes (BH-1, BH-7 and BH-8) will be excavated to approximately of 3'-4' below surface and capped with a 40 mil liner. The excavated material from these areas will be transported to proper disposal. If accessible, the area of borehole (BH-8) will be excavated to a depth of 6' below surface to remove the elevated chlorides.

Additionally, the areas of boreholes (BH-3 and BH-6) will be excavated to 3'-4' below surface and capped with a 40 mil liner. The excavated material from boreholes (BH-3 and BH-6) will be segregated and sampled for chlorides by EPA method 300 to confirm and determine if the concentrations are below 600 mg/kg. If the segregated and stockpiled material shows chloride concentrations below 600 mg/kg, the soils will be used to backfill the excavation areas. If samples exceed threshold, the stockpile will be transported to proper disposal. Once completed, the excavated areas will be backfilled with clean material to surface grade.

The proposed excavation depths may not be reached due to wall cave ins and safety concerns for onsite personnel. In addition, impacted soil around oil and gas equipment, structures or lines may not be feasible or practicable to be removed due to safely concerns for onsite personnel. As such, Tetra Tech will excavate the impacted soils to the maximum extent practicable.

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

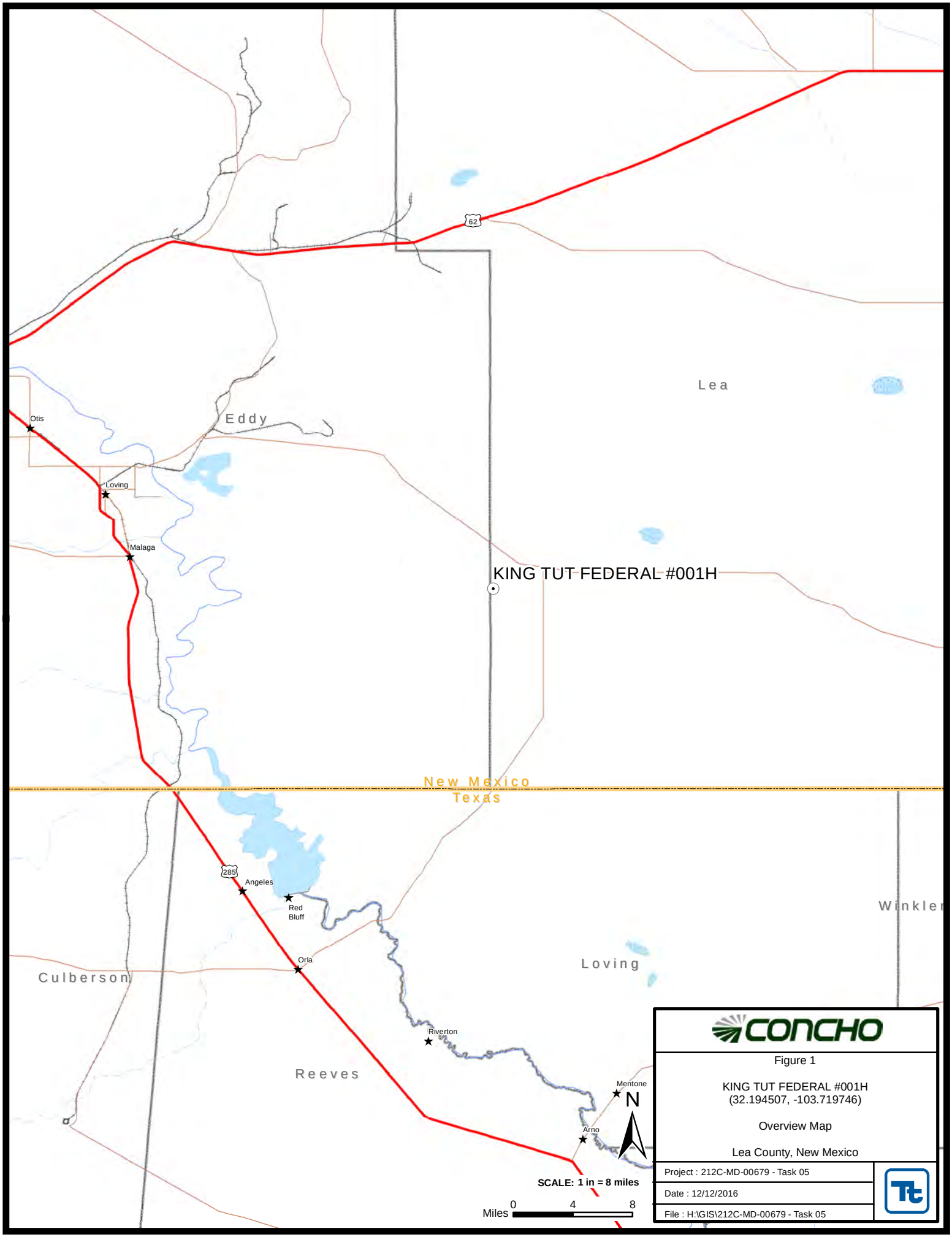
Respectfully submitted,
TETRA TECH

Clair Gonzales,
Geologist I

Ike Tavarez,
Senior Project Manager, P.G.

cc: Robert McNeill – COG
Dakota Neel – COG
Shelly Tucker - BLM

Figures



CONCHO

Figure 1

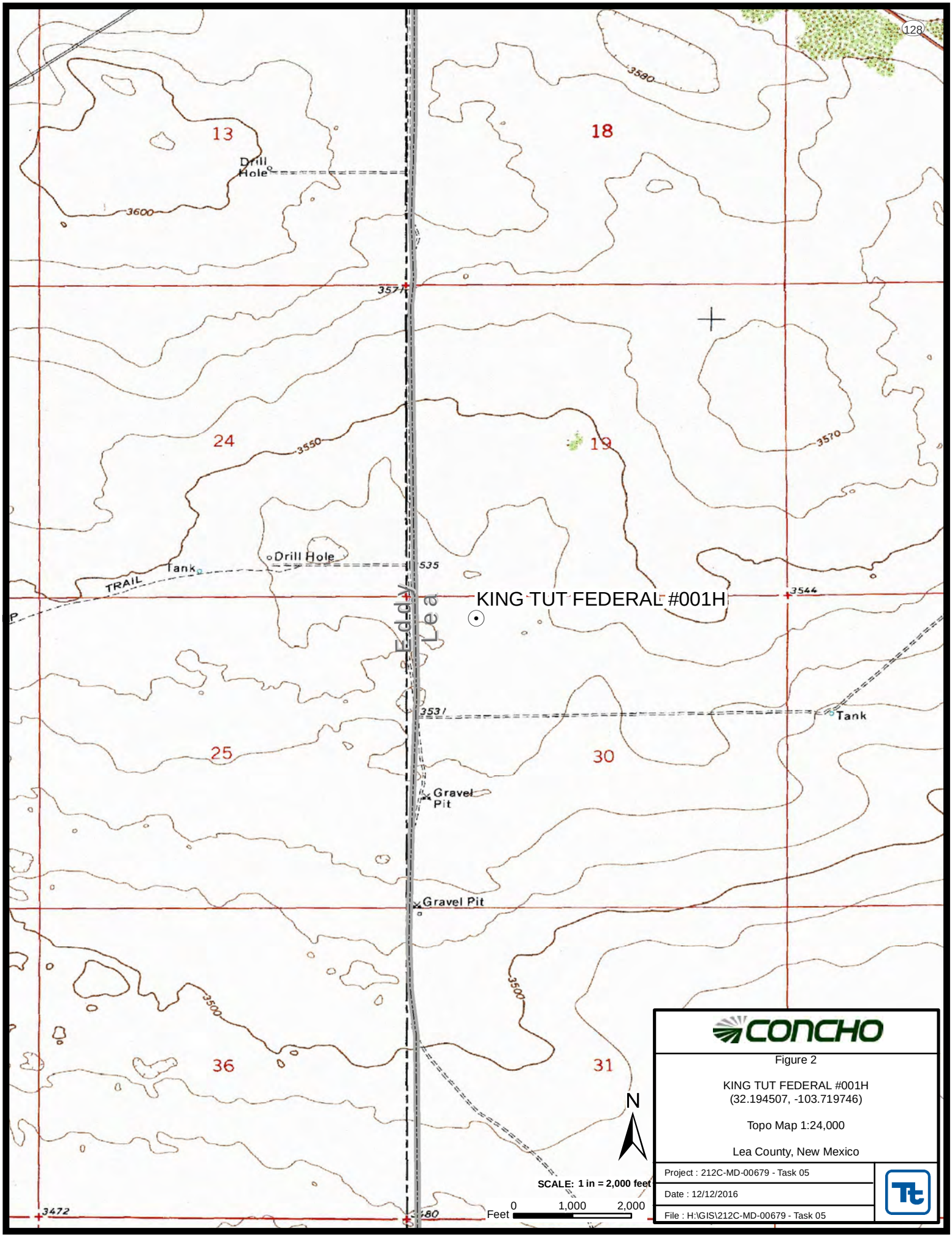
KING TUT FEDERAL #001H
(32.194507, -103.719746)

Overview Map

Lea County, New Mexico

Project : 212C-MD-00679 - Task 05	
Date : 12/12/2016	
File : H:\GIS\212C-MD-00679 - Task 05	

Mapped By: Isabel Marmolejo



CONCHO

Figure 2

KING TUT FEDERAL #001H
(32.194507, -103.719746)

Topo Map 1:24,000

Lea County, New Mexico

Project : 212C-MD-00679 - Task 05	
Date : 12/12/2016	
File : H:\GIS\212C-MD-00679 - Task 05	

Mapped By: Isabel Marmolejo

CONCHO

Figure 3

King Tut Federal #001H
King Tut Federal #3H
Windward Federal #1H
(32.194507, -103.719746)

Spill Assessment Map

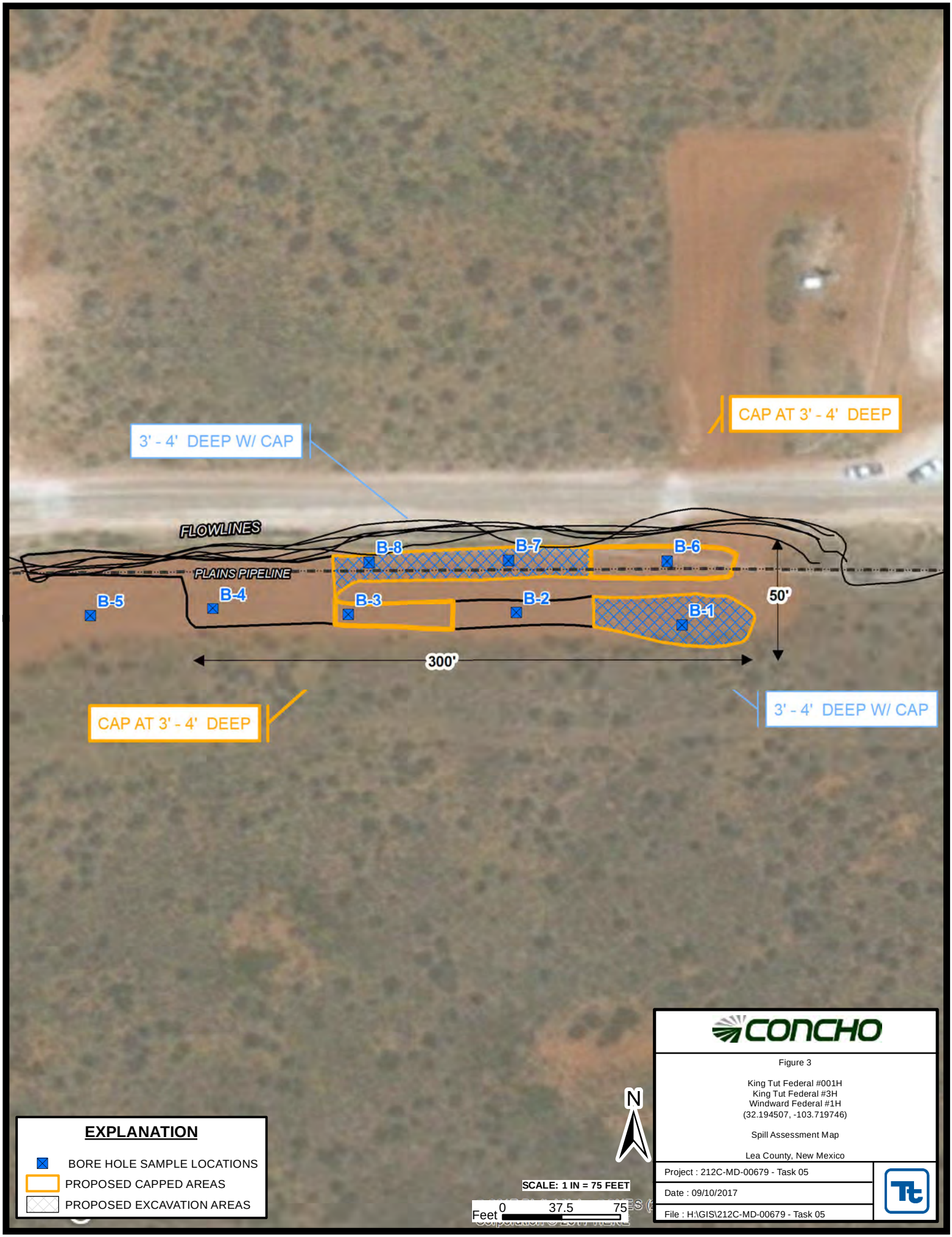
Lea County, New Mexico

Project : 212C-MD-00679 - Task 05

Date : 09/10/2017

File : H:\GIS\212C-MD-00679 - Task 05

Mapped By: Isabel Marmolejo



Mapped By: Isabel Marmolejo

Tables

Table 1
COG Operating LLC.
King Tut Federal #1H and #3H
Windward Federal #1H
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	Total						
BH-1	8/15/2017	0-1	X		<15.0	143	143	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	1,840
	"	2-3	X		-	-	-	-	-	-	-	-	2,020
	"	4-5	X		-	-	-	-	-	-	-	-	1,790
	"	6-7	X		-	-	-	-	-	-	-	-	2,520
	"	9-10	X		-	-	-	-	-	-	-	-	1,090
	"	14-15	X		-	-	-	-	-	-	-	-	199
	"	19-20	X		-	-	-	-	-	-	-	-	116
	"	24-25	X		<15.0	<15.0	<15.0	<0.00200	<0.00201	<0.00201	<0.00201	<0.00201	121
BH-2	8/15/2017	0-1	X		<15.0	<15.0	<15.0	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	24.8
	"	2-3	X		-	-	-	-	-	-	-	-	25.6
	"	4-5	X		-	-	-	-	-	-	-	-	1,110
	"	6-7	X		-	-	-	-	-	-	-	-	920
	"	9-10	X		-	-	-	-	-	-	-	-	213
	"	14-15	X		-	-	-	-	-	-	-	-	175
	"	19-20	X		<14.9	<14.9	<14.9	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	126
BH-3	8/15/2017	0-1	X		<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	23.9
	"	2-3	X		-	-	-	-	-	-	-	-	28.5
	"	4-5	X		-	-	-	-	-	-	-	-	7,960
	"	6-7	X		-	-	-	-	-	-	-	-	796
	"	9-10	X		-	-	-	-	-	-	-	-	40.5
	"	14-15	X		<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	143

Table 1
COG Operating LLC.
King Tut Federal #1H and #3H
Windward Federal #1H
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	Total						
BH-4	8/15/2017	0-1	X		<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	613
	"	2-3	X		-	-	-	-	-	-	-	-	469
	"	4-5	X		-	-	-	-	-	-	-	-	737
	"	6-7	X		-	-	-	-	-	-	-	-	58.8
	"	9-10	X		-	-	-	-	-	-	-	-	41.8
	"	14-15	X		<15.0	<15.0	<15.0	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	331
BH-5	8/15/2017	0-1	X		<14.9	<14.9	<14.9	<0.00341	<0.00341	<0.00341	<0.00341	<0.00341	31.0
	"	2-3	X		-	-	-	-	-	-	-	-	47.8
	"	4-5	X		-	-	-	-	-	-	-	-	28.0
	"	6-7	X		-	-	-	-	-	-	-	-	24.6
	"	9-10	X		-	-	-	-	-	-	-	-	24.8
	"	14-15	X		<15.0	<15.0	<15.0	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	37.0
BH-6	8/15/2017	0-1	X		<15.0	<15.0	<15.0	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	183
	"	2-3	X		-	-	-	-	-	-	-	-	232
	"	4-5	X		-	-	-	-	-	-	-	-	859
	"	6-7	X		-	-	-	-	-	-	-	-	2,440
	"	9-10	X		-	-	-	-	-	-	-	-	562
	"	14-15	X		-	-	-	-	-	-	-	-	295
	"	19-20	X		-	-	-	-	-	-	-	-	69.2
BH-7	8/15/2017	0-1	X		<15.0	41.7	41.7	<0.00347	<0.00347	<0.00347	<0.00347	<0.00347	535
	"	2-3	X		-	-	-	-	-	-	-	-	1,370
	"	4-5	X		-	-	-	-	-	-	-	-	3,100
	"	6-7	X		-	-	-	-	-	-	-	-	154
	"	9-10	X		-	-	-	-	-	-	-	-	46.2
	"	14-15	X		<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	82.5

Table 1
COG Operating LLC.
King Tut Federal #1H and #3H
Windward Federal #1H
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	Total						
BH-8	8/15/2017	0-1	X		<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	302
	"	2-3	X		-	-	-	-	-	-	-	-	1,860
	"	4-5	X		-	-	-	-	-	-	-	-	7,110
	"	6-7	X		-	-	-	-	-	-	-	-	5,400
	"	9-10	X		-	-	-	-	-	-	-	-	1,250
	"	14-15	X		-	-	-	-	-	-	-	-	440
	"	19-20	X		-	-	-	-	-	-	-	-	504
	"	24-25	X		<15.0	<15.0	<15.0	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	782

Proposed Excavation Depth

Proposed to Segregate and Sample

Proposed Liner

(-) Not Analyzed

Photos

COG Operating LLC
King Tut Fed #1H, King Tut Fed #3H, and
Windward Fed #1H
Lea County, New Mexico

View West – Area of BH-1

View West – Area of BH-2

COG Operating LLC
King Tut Fed #1H, King Tut Fed #3H, and
Windward Fed #1H
Lea County, New Mexico

View West – Area of BH-3

View South – Area of BH-4

COG Operating LLC
King Tut Fed #1H, King Tut Fed #3H, and
Windward Fed #1H
Lea County, New Mexico

View East – Area of BH-5

View West – Area of BH-6

COG Operating LLC
King Tut Fed #1H, King Tut Fed #3H, and
Windward Fed #1H
Lea County, New Mexico

View West – Area of BH-7

View West – Area of BH-8

Appendix A

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

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

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: COG Operating LLC	Contact: Robert McNeill
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No. 432-230-0077
Facility Name: KING TUT FEDERAL #001H	Facility Type: Battery

Surface Owner: Federal	Mineral Owner: Federal	API No. 30-025-41542

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	30	24S	32E	190	North	330	West	Lea

Latitude Longitude

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: 20 bbls of PW	Volume Recovered: 15 bbls of PW
Source of Release: Flowline	Date and Hour of Occurrence: 10/15/2016 2:00 PM	Date and Hour of Discovery: 10/15/2016 2:30 PM
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour:	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
This release was caused by a ruptured flowline. The line was isolated and the damaged section of line was removed and replaced. Vacuum trucks were immediately dispatched to recover all standing fluids.

Describe Area Affected and Cleanup Action Taken.*
This release occurred in the pasture on a pipeline ROW. Concho will have the spill site sampled to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation work.

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.

Signature: Dakota Neel	OIL CONSERVATION DIVISION	
Printed Name: Dakota Neel	Approved by Environmental Specialist:	
Title: Environmental Coordinator	Approval Date:	Expiration Date:
E-mail Address: dneel2@concho.com	Conditions of Approval:	Attached ☐
Date: October 24, 2016 Phone: 575-748-6933		

* Attach Additional Sheets If Necessary

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
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State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: COG Operating LLC OGRID # 229137	Contact: Robert McNeill
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No. 432-683-7443
Facility Name: King Tut Federal 3H Battery	Facility Type: Flowline

Surface Owner: Federal	Mineral Owner:	API No. 30-025-41559

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
B	30	24S	32E	190	North	2200	East	Lea

Latitude 32.19457 **Longitude** -103.72105

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: 30 bbls	Volume Recovered: 25 bbls
Source of Release: Flowline	Date and Hour of Occurrence: May 6, 2017 5:00 pm	Date and Hour of Discovery: May 6, 2017 5:00 pm
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Ms. Yu – NMOCD / Ms. Tucker - BLM	
By Whom? Dakota Neel	Date and Hour: May 6, 2017 9:26 pm	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

The release was caused when a hole developed in the fiberspar flowline. The flowline was repaired.

Describe Area Affected and Cleanup Action Taken.*

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

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

Signature: Rebecca Haskell

Printed Name: Rebecca Haskell

Title: Senior HSE Coordinator

E-mail Address: rhaskell@concho.com

Date: May 10, 2017 Phone: 432-683-7443

OIL CONSERVATION DIVISION

Approved by Environmental Specialist:

Approval Date: Expiration Date:

Conditions of Approval: Attached ☐

* Attach Additional Sheets If Necessary

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State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: COG Operating LLC OGRID # 229137		Contact:	Robert McNeill
Address: 600 West Illinois Avenue, Midland TX 79701		Telephone No.	432-683-7443
Facility Name: Windward Federal #001H		Facility Type:	Flowline
Surface Owner: Federal	Mineral Owner: Federal		API No. 30-025-41414

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	30	24S	32E	190	North	430	West	Lea

Latitude 32.194551 **Longitude** -103.720252

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: 70 bbls.	Volume Recovered: 60 bbls.
Source of Release: Flowline	Date and Hour of Occurrence: July 25, 2017 3:00 pm	Date and Hour of Discovery: July 25, 2017 3:00 pm
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Ms. Yu – NMOCD / Ms. Tucker – BLM	
By Whom? Rebecca Haskell	Date and Hour: July 26, 2017 8:31 am	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

The release was caused by a rupture in a flowline. The flowline was repaired.

Describe Area Affected and Cleanup Action Taken.*

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

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

Signature: Rebecca Haskell		OIL CONSERVATION DIVISION	
Printed Name:	Rebecca Haskell	Approved by Environmental Specialist:	
Title:	Senior HSE Coordinator	Approval Date:	Expiration Date:
E-mail Address:	rhaskell@concho.com	Conditions of Approval:	Attached ☐
Date: July 28, 2017	Phone: 432-683-7443		

* Attach Additional Sheets If Necessary

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
COG - King Tut Federal #001
Lea County, New Mexico

23 South 31 East

6 85	5 354	4 168	3	2	1
7 140	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

23 South 32 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21 400	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

23 South 33 East

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

24 South 31 East

6	5	4	3	2 192	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

24 South 32 East

6	5	4	3	2	1
7	8	9	10 20	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30 SITE	29	28	27	26	25
31	32	33 290	34	35	36

24 South 33 East

6	5	4	3	2	1
7	8	9	10 24.6	11	12
18	17	16	15	14	13
19	20	21	22	23 208	24 16.9
30	29	28	27	26	25
31	32	33 93.2	34	35	36

25 South 31 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21 390 290	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

25 South 32 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32 290	33	34	35	36

25 South 33 East

6	5	4	3 172	2	1
7	8	9	10	11 140	12 200
18	17	16	15	14	13
19	20 200	21 120	22	23	24
30	29	28	27 125	26	25
31 257	32	33	34	35	36

88 New Mexico State Engineers Well Reports

105 USGS Well Reports

90 Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6)

Geology and Groundwater Resources of Eddy County, NM (Report 3)

34 NMOCD - Groundwater Data

123 Tetra Tech installed temporary wells and field water level

143 NMOCD Groundwater map well location

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)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	POD Sub-basin Code	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
C 01932	C	ED	3	1	12	24S	32E		628633	3567188*	492		
C 02350		ED	4	3	10	24S	32E		625826	3566333*	60		
C 03527 POD1	C	LE	1	2	3	03	24S	32E	625770	3568487	500		
C 03528 POD1	C	LE	1	1	2	15	24S	32E	626040	3566129	541		
C 03530 POD1	C	LE	3	4	3	07	24S	32E	620886	3566156	550		
C 03555 POD1	C	LE	2	2	1	05	24S	32E	622709	3569231	600	380	220

Average Depth to Water: **380 feet**

Minimum Depth: **380 feet**

Maximum Depth: **380 feet**

Record Count: 6

PLSS Search:

Township: 24S **Range:** 32E

***UTM location was derived from PLSS - see Help**

Appendix C

Analytical Report 560401

for

Tetra Tech- Midland

Project Manager: Ike Tavarez

COG- King Tut Federal #1H

212C-MD-00679

28-AUG-17

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)
Xenco-San Antonio: Texas (T104704534)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

28-AUG-17

Project Manager: **Ike Tavarez**
Tetra Tech- Midland
4000 N. Big Spring Suite 401
Midland, TX 79705

Reference: XENCO Report No(s): **560401**
COG- King Tut Federal #1H
Project Address: Lea County,New Mexico

Ike Tavarez:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 560401. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 560401 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Kelsey Brooks
Project Manager

Sample Cross Reference 560401

Tetra Tech- Midland, Midland, TX

COG- King Tut Federal #1H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH #1 (0-1')	S	08-15-17 00:00		560401-001
BH #1 (2-3')	S	08-15-17 00:00		560401-002
BH #1 (4-5')	S	08-15-17 00:00		560401-003
BH #1 (6-7')	S	08-15-17 00:00		560401-004
BH #1 (9-10')	S	08-15-17 00:00		560401-005
BH #1 (14-15')	S	08-15-17 00:00		560401-006
BH #1 (19-20')	S	08-15-17 00:00		560401-007
BH #1 (24-25')	S	08-15-17 00:00		560401-008
BH #2 (0-1')	S	08-15-17 00:00		560401-009
BH #2 (2-3')	S	08-15-17 00:00		560401-010
BH #2 (4-5')	S	08-15-17 00:00		560401-011
BH #2 (6-7')	S	08-15-17 00:00		560401-012
BH #2 (9-10')	S	08-15-17 00:00		560401-013
BH #2 (14-15')	S	08-15-17 00:00		560401-014
BH #2 (19-20')	S	08-15-17 00:00		560401-015
BH #3 (0-1')	S	08-15-17 00:00		560401-016
BH #3 (2-3')	S	08-15-17 00:00		560401-017
BH #3 (4-5')	S	08-15-17 00:00		560401-018
BH #3 (6-7')	S	08-15-17 00:00		560401-019
BH #3 (9-10')	S	08-15-17 00:00		560401-020
BH #3 (14-15')	S	08-15-17 00:00		560401-021
BH #4 (0-1')	S	08-15-17 00:00		560401-022
BH #4 (2-3')	S	08-15-17 00:00		560401-023
BH #4 (4-5')	S	08-15-17 00:00		560401-024
BH #4 (6-7')	S	08-15-17 00:00		560401-025
BH #4 (9-10')	S	08-15-17 00:00		560401-026
BH #4 (14-15')	S	08-15-17 00:00		560401-027
BH #5 (0-1')	S	08-15-17 00:00		560401-028
BH #5 (2-3')	S	08-15-17 00:00		560401-029
BH #5 (4-5')	S	08-15-17 00:00		560401-030
BH #5 (6-7')	S	08-15-17 00:00		560401-031
BH #5 (9-10')	S	08-15-17 00:00		560401-032
BH #5 (14-15')	S	08-15-17 00:00		560401-033
BH #6 (0-1')	S	08-15-17 00:00		560401-034
BH #6 (2-3')	S	08-15-17 00:00		560401-035
BH #6 (4-5')	S	08-15-17 00:00		560401-036
BH #6 (6-7')	S	08-15-17 00:00		560401-037
BH #6 (9-10')	S	08-15-17 00:00		560401-038
BH #6 (14-15')	S	08-15-17 00:00		560401-039
BH #6 (19-20')	S	08-15-17 00:00		560401-040
BH #7 (0-1')	S	08-15-17 00:00		560401-041
BH #7 (2-3')	S	08-15-17 00:00		560401-042
BH #7 (4-5')	S	08-15-17 00:00		560401-043

Sample Cross Reference 560401

Tetra Tech- Midland, Midland, TX

COG- King Tut Federal #1H

BH #7 (6-7')	S	08-15-17 00:00	560401-044
BH #7 (9-10')	S	08-15-17 00:00	560401-045
BH #7 (14-15')	S	08-15-17 00:00	560401-046
BH #8 (0-1')	S	08-15-17 00:00	560401-047
BH #8 (2-3')	S	08-15-17 00:00	560401-048
BH #8 (4-5')	S	08-15-17 00:00	560401-049
BH #8 (6-7')	S	08-15-17 00:00	560401-050
BH #8 (9-10')	S	08-15-17 00:00	560401-051
BH #8 (14-15')	S	08-15-17 00:00	560401-052
BH #8 (19-20')	S	08-15-17 00:00	560401-053
BH #8 (24-25')	S	08-15-17 00:00	560401-054

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3025753 BTEX by EPA 8021B
Lab Sample ID 560401-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Ethylbenzene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 560401-001, -008, -009, -015, -016, -021, -022, -027, -033, -034, -040, -046, -047, -054.
The Laboratory Control Sample for m,p-Xylenes, Ethylbenzene, o-Xylene is within laboratory Control Limits, therefore the data was accepted.
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3025773 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3025858 Inorganic Anions by EPA 300/300.1
Lab Sample ID 560401-011 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 560401-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -019, -020.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3026130 Inorganic Anions by EPA 300/300.1
Lab Sample ID 560401-051 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 560401-046, -047, -048, -049, -050, -051, -052, -053, -054.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Certificate of Analysis Summary 560401

Tetra Tech- Midland, Midland, TX

Project Name: COG- King Tut Federal #1H

Project Id: 212C-MD-00679
Contact: Ike Tavarez
Project Location: Lea County,New Mexico

Date Received in Lab: Wed Aug-16-17 01:05 pm
Report Date: 28-AUG-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	560401-001		560401-002		560401-003		560401-004		560401-005		560401-006	
	Field Id:	BH #1 (0-1')		BH #1 (2-3')		BH #1 (4-5')		BH #1 (6-7')		BH #1 (9-10')		BH #1 (14-15')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-15-17 00:00		Aug-15-17 00:00		Aug-15-17 00:00		Aug-15-17 00:00		Aug-15-17 00:00		Aug-15-17 00:00	
BTEX by EPA 8021B	***Extracted:***	Aug-22-17 08:00											
	Analyzed:	Aug-22-17 10:45											
	Units/RL:	mg/kg	RL										
Benzene		<0.00200	0.00200										
Toluene		<0.00200	0.00200										
Ethylbenzene		<0.00200	0.00200										
m,p-Xylenes		<0.00399	0.00399										
o-Xylene		<0.00200	0.00200										
Total Xylenes		<0.00200	0.00200										
Total BTEX		<0.00200	0.00200										
Inorganic Anions by EPA 300/300.1	***Extracted:***	Aug-23-17 14:00		Aug-23-17 14:00		Aug-23-17 14:00		Aug-23-17 14:00		Aug-23-17 14:00		Aug-23-17 14:00	
	Analyzed:	Aug-23-17 19:50		Aug-23-17 20:21		Aug-23-17 20:31		Aug-23-17 20:41		Aug-23-17 20:52		Aug-23-17 21:23	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1840	24.8	2020	24.9	1790	24.6	2520	24.8	1090	4.91	199	4.97
TPH By SW8015 Mod	***Extracted:***	Aug-17-17 14:00											
	Analyzed:	Aug-17-17 22:10											
	Units/RL:	mg/kg	RL										
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0										
Diesel Range Organics (DRO)		143	15.0										
Oil Range Hydrocarbons (ORO)		<15.0	15.0										
Total TPH		143	15.0										

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 560401

Tetra Tech- Midland, Midland, TX

Project Name: COG- King Tut Federal #1H

Project Id: 212C-MD-00679
Contact: Ike Tavarez
Project Location: Lea County,New Mexico

Date Received in Lab: Wed Aug-16-17 01:05 pm
Report Date: 28-AUG-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	560401-007		560401-008		560401-009		560401-010		560401-011		560401-012	
	Field Id:	BH #1 (19-20')		BH #1 (24-25')		BH #2 (0-1')		BH #2 (2-3')		BH #2 (4-5')		BH #2 (6-7')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-15-17 00:00		Aug-15-17 00:00		Aug-15-17 00:00		Aug-15-17 00:00		Aug-15-17 00:00		Aug-15-17 00:00	
BTEX by EPA 8021B	***Extracted:***			Aug-22-17 08:00		Aug-22-17 08:00							
	Analyzed:			Aug-22-17 11:04		Aug-22-17 11:23							
	Units/RL:			mg/kg	RL	mg/kg	RL						
Benzene				<0.00201	0.00201	<0.00202	0.00202						
Toluene				<0.00201	0.00201	<0.00202	0.00202						
Ethylbenzene				<0.00201	0.00201	<0.00202	0.00202						
m,p-Xylenes				<0.00402	0.00402	<0.00404	0.00404						
o-Xylene				<0.00201	0.00201	<0.00202	0.00202						
Total Xylenes				<0.00201	0.00201	<0.00202	0.00202						
Total BTEX				<0.00201	0.00201	<0.00202	0.00202						
Inorganic Anions by EPA 300/300.1	***Extracted:***	Aug-23-17 14:00		Aug-23-17 14:00		Aug-23-17 14:00		Aug-23-17 14:00		Aug-23-17 14:00		Aug-23-17 14:00	
	Analyzed:	Aug-23-17 21:33		Aug-23-17 21:43		Aug-23-17 21:54		Aug-23-17 22:04		Aug-23-17 22:15		Aug-23-17 22:46	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		116	4.98	121	4.90	24.8	4.93	25.6	4.98	1110	24.6	920	4.97
TPH By SW8015 Mod	***Extracted:***			Aug-17-17 14:00		Aug-17-17 14:00							
	Analyzed:			Aug-17-17 23:09		Aug-17-17 23:29							
	Units/RL:			mg/kg	RL	mg/kg	RL						
Gasoline Range Hydrocarbons (GRO)				<15.0	15.0	<15.0	15.0						
Diesel Range Organics (DRO)				<15.0	15.0	<15.0	15.0						
Oil Range Hydrocarbons (ORO)				<15.0	15.0	<15.0	15.0						
Total TPH				<15.0	15.0	<15.0	15.0						

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 560401

Tetra Tech- Midland, Midland, TX

Project Name: COG- King Tut Federal #1H

Project Id: 212C-MD-00679
Contact: Ike Tavarez
Project Location: Lea County,New Mexico

Date Received in Lab: Wed Aug-16-17 01:05 pm
Report Date: 28-AUG-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	560401-013		560401-014		560401-015		560401-016		560401-017		560401-018	
	Field Id:	BH #2 (9-10')		BH #2 (14-15')		BH #2 (19-20')		BH #3 (0-1')		BH #3 (2-3')		BH #3 (4-5')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-15-17 00:00		Aug-15-17 00:00		Aug-15-17 00:00		Aug-15-17 00:00		Aug-15-17 00:00		Aug-15-17 00:00	
BTEX by EPA 8021B	***Extracted:***					Aug-22-17 08:00		Aug-22-17 08:00					
	Analyzed:					Aug-22-17 11:40		Aug-22-17 12:10					
	Units/RL:					mg/kg	RL	mg/kg	RL				
Benzene						<0.00201	0.00201	<0.00199	0.00199				
Toluene						<0.00201	0.00201	<0.00199	0.00199				
Ethylbenzene						<0.00201	0.00201	<0.00199	0.00199				
m,p-Xylenes						<0.00402	0.00402	<0.00398	0.00398				
o-Xylene						<0.00201	0.00201	<0.00199	0.00199				
Total Xylenes						<0.00201	0.00201	<0.00199	0.00199				
Total BTEX						<0.00201	0.00201	<0.00199	0.00199				
Inorganic Anions by EPA 300/300.1	***Extracted:***	Aug-23-17 14:00		Aug-23-17 14:00		Aug-23-17 14:00		Aug-23-17 14:00		Aug-23-17 14:00		Aug-23-17 14:00	
	Analyzed:	Aug-23-17 22:56		Aug-23-17 23:27		Aug-23-17 23:37		Aug-23-17 23:48		Aug-23-17 23:58		Aug-24-17 00:08	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		213	4.91	175	4.98	126	4.90	23.9	4.98	28.5	4.99	7960	49.9
TPH By SW8015 Mod	***Extracted:***					Aug-17-17 14:00		Aug-17-17 14:00					
	Analyzed:					Aug-17-17 23:49		Aug-18-17 00:10					
	Units/RL:					mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)						<14.9	14.9	<15.0	15.0				
Diesel Range Organics (DRO)						<14.9	14.9	<15.0	15.0				
Oil Range Hydrocarbons (ORO)						<14.9	14.9	<15.0	15.0				
Total TPH						<14.9	14.9	<15.0	15.0				

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 560401

Tetra Tech- Midland, Midland, TX

Project Name: COG- King Tut Federal #1H

Project Id: 212C-MD-00679
Contact: Ike Tavarez
Project Location: Lea County,New Mexico

Date Received in Lab: Wed Aug-16-17 01:05 pm
Report Date: 28-AUG-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	560401-019		560401-020		560401-021		560401-022		560401-023		560401-024	
	Field Id:	BH #3 (6-7')		BH #3 (9-10')		BH #3 (14-15')		BH #4 (0-1')		BH #4 (2-3')		BH #4 (4-5')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-15-17 00:00		Aug-15-17 00:00		Aug-15-17 00:00		Aug-15-17 00:00		Aug-15-17 00:00		Aug-15-17 00:00	
BTEX by EPA 8021B	***Extracted:***					Aug-22-17 08:00		Aug-22-17 08:00					
	Analyzed:					Aug-22-17 12:29		Aug-22-17 12:46					
	Units/RL:					mg/kg	RL	mg/kg	RL				
Benzene						<0.00202	0.00202	<0.00200	0.00200				
Toluene						<0.00202	0.00202	<0.00200	0.00200				
Ethylbenzene						<0.00202	0.00202	<0.00200	0.00200				
m,p-Xylenes						<0.00404	0.00404	<0.00401	0.00401				
o-Xylene						<0.00202	0.00202	<0.00200	0.00200				
Total Xylenes						<0.00202	0.00202	<0.00200	0.00200				
Total BTEX						<0.00202	0.00202	<0.00200	0.00200				
Inorganic Anions by EPA 300/300.1	***Extracted:***	Aug-23-17 14:00		Aug-23-17 14:00		Aug-24-17 08:20		Aug-24-17 08:20		Aug-24-17 08:20		Aug-24-17 08:20	
	Analyzed:	Aug-24-17 00:19		Aug-24-17 00:29		Aug-24-17 15:05		Aug-24-17 15:36		Aug-24-17 15:46		Aug-24-17 15:57	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		796	4.91	40.5	4.93	143	4.95	613	4.95	469	4.97	737	4.99
TPH By SW8015 Mod	***Extracted:***					Aug-17-17 14:00		Aug-17-17 14:00					
	Analyzed:					Aug-18-17 00:31		Aug-18-17 00:51					
	Units/RL:					mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)						<15.0	15.0	<15.0	15.0				
Diesel Range Organics (DRO)						<15.0	15.0	<15.0	15.0				
Oil Range Hydrocarbons (ORO)						<15.0	15.0	<15.0	15.0				
Total TPH						<15.0	15.0	<15.0	15.0				

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 560401

Tetra Tech- Midland, Midland, TX

Project Name: COG- King Tut Federal #1H

Project Id: 212C-MD-00679
Contact: Ike Tavarez
Project Location: Lea County,New Mexico

Date Received in Lab: Wed Aug-16-17 01:05 pm
Report Date: 28-AUG-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	560401-025		560401-026		560401-027		560401-028		560401-029		560401-030	
	Field Id:	BH #4 (6-7')		BH #4 (9-10')		BH #4 (14-15')		BH #5 (0-1')		BH #5 (2-3')		BH #5 (4-5')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-15-17 00:00		Aug-15-17 00:00		Aug-15-17 00:00		Aug-15-17 00:00		Aug-15-17 00:00		Aug-15-17 00:00	
BTEX by EPA 8021B	***Extracted:***					Aug-22-17 08:00		Aug-23-17 08:15					
	Analyzed:					Aug-22-17 13:05		Aug-23-17 11:55					
	Units/RL:					mg/kg	RL	mg/kg	RL				
Benzene						<0.00202	0.00202	<0.00341	0.00341				
Toluene						<0.00202	0.00202	<0.00341	0.00341				
Ethylbenzene						<0.00202	0.00202	<0.00341	0.00341				
m,p-Xylenes						<0.00403	0.00403	<0.00683	0.00683				
o-Xylene						<0.00202	0.00202	<0.00341	0.00341				
Total Xylenes						<0.00202	0.00202	<0.00341	0.00341				
Total BTEX						<0.00202	0.00202	<0.00341	0.00341				
Inorganic Anions by EPA 300/300.1	***Extracted:***	Aug-24-17 08:20		Aug-24-17 08:20		Aug-24-17 08:20		Aug-24-17 08:20		Aug-24-17 08:20		Aug-24-17 08:20	
	Analyzed:	Aug-24-17 16:07		Aug-24-17 16:38		Aug-24-17 16:48		Aug-24-17 16:59		Aug-24-17 17:09		Aug-24-17 17:19	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		58.8	4.99	41.8	4.91	331	4.95	31.0	5.00	47.8	4.93	28.0	4.97
TPH By SW8015 Mod	***Extracted:***					Aug-17-17 14:00		Aug-17-17 14:00					
	Analyzed:					Aug-18-17 01:12		Aug-18-17 01:33					
	Units/RL:					mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)						<15.0	15.0	<14.9	14.9				
Diesel Range Organics (DRO)						<15.0	15.0	<14.9	14.9				
Oil Range Hydrocarbons (ORO)						<15.0	15.0	<14.9	14.9				
Total TPH						<15.0	15.0	<14.9	14.9				

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 560401

Tetra Tech- Midland, Midland, TX

Project Name: COG- King Tut Federal #1H

Project Id: 212C-MD-00679
Contact: Ike Tavarez
Project Location: Lea County,New Mexico

Date Received in Lab: Wed Aug-16-17 01:05 pm
Report Date: 28-AUG-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	560401-031		560401-032		560401-033		560401-034		560401-035		560401-036	
	Field Id:	BH #5 (6-7')		BH #5 (9-10')		BH #5 (14-15')		BH #6 (0-1')		BH #6 (2-3')		BH #6 (4-5')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-15-17 00:00		Aug-15-17 00:00		Aug-15-17 00:00		Aug-15-17 00:00		Aug-15-17 00:00		Aug-15-17 00:00	
BTEX by EPA 8021B	***Extracted:***					Aug-22-17 08:00		Aug-22-17 08:00					
	Analyzed:					Aug-22-17 14:10		Aug-22-17 15:08					
	Units/RL:					mg/kg	RL	mg/kg	RL				
Benzene						<0.00199	0.00199	<0.00201	0.00201				
Toluene						<0.00199	0.00199	<0.00201	0.00201				
Ethylbenzene						<0.00199	0.00199	<0.00201	0.00201				
m,p-Xylenes						<0.00398	0.00398	<0.00402	0.00402				
o-Xylene						<0.00199	0.00199	<0.00201	0.00201				
Total Xylenes						<0.00199	0.00199	<0.00201	0.00201				
Total BTEX						<0.00199	0.00199	<0.00201	0.00201				
Inorganic Anions by EPA 300/300.1	***Extracted:***	Aug-24-17 08:20		Aug-24-17 08:20		Aug-24-17 08:20		Aug-24-17 08:20		Aug-24-17 08:20		Aug-24-17 08:20	
	Analyzed:	Aug-24-17 17:30		Aug-24-17 18:01		Aug-24-17 18:11		Aug-24-17 18:42		Aug-24-17 18:52		Aug-24-17 19:03	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		24.6	4.97	24.8	4.98	37.0	4.97	183	4.95	232	4.96	859	4.99
TPH By SW8015 Mod	***Extracted:***					Aug-17-17 14:00		Aug-17-17 14:00					
	Analyzed:					Aug-18-17 01:53		Aug-18-17 02:57					
	Units/RL:					mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)						<15.0	15.0	<15.0	15.0				
Diesel Range Organics (DRO)						<15.0	15.0	<15.0	15.0				
Oil Range Hydrocarbons (ORO)						<15.0	15.0	<15.0	15.0				
Total TPH						<15.0	15.0	<15.0	15.0				

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 560401

Tetra Tech- Midland, Midland, TX

Project Name: COG- King Tut Federal #1H

Project Id: 212C-MD-00679
Contact: Ike Tavarez
Project Location: Lea County,New Mexico

Date Received in Lab: Wed Aug-16-17 01:05 pm
Report Date: 28-AUG-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	560401-037		560401-038		560401-039		560401-040		560401-041		560401-042	
	Field Id:	BH #6 (6-7')		BH #6 (9-10')		BH #6 (14-15')		BH #6 (19-20')		BH #7 (0-1')		BH #7 (2-3')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-15-17 00:00		Aug-15-17 00:00		Aug-15-17 00:00		Aug-15-17 00:00		Aug-15-17 00:00		Aug-15-17 00:00	
BTEX by EPA 8021B	***Extracted:***							Aug-22-17 08:00		Aug-23-17 08:15			
	Analyzed:							Aug-22-17 15:27		Aug-23-17 12:14			
	Units/RL:							mg/kg	RL	mg/kg	RL		
Benzene								<0.00202	0.00202	<0.00347	0.00347		
Toluene								<0.00202	0.00202	<0.00347	0.00347		
Ethylbenzene								<0.00202	0.00202	<0.00347	0.00347		
m,p-Xylenes								<0.00403	0.00403	<0.00694	0.00694		
o-Xylene								<0.00202	0.00202	<0.00347	0.00347		
Total Xylenes								<0.00202	0.00202	<0.00347	0.00347		
Total BTEX								<0.00202	0.00202	<0.00347	0.00347		
Inorganic Anions by EPA 300/300.1	***Extracted:***	Aug-24-17 08:20		Aug-24-17 08:20		Aug-24-17 08:20		Aug-24-17 08:20		Aug-24-17 12:05		Aug-24-17 12:05	
	Analyzed:	Aug-24-17 19:13		Aug-24-17 19:23		Aug-24-17 19:34		Aug-24-17 19:44		Aug-24-17 20:46		Aug-24-17 21:17	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		2440	25.0	562	4.94	295	5.00	69.2	4.93	535	4.94	1370	24.8
TPH By SW8015 Mod	***Extracted:***							Aug-17-17 14:00		Aug-17-17 14:00			
	Analyzed:							Aug-18-17 03:18		Aug-18-17 03:39			
	Units/RL:							mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)								<15.0	15.0	<15.0	15.0		
Diesel Range Organics (DRO)								<15.0	15.0	41.7	15.0		
Oil Range Hydrocarbons (ORO)								<15.0	15.0	<15.0	15.0		
Total TPH								<15.0	15.0	41.7	15.0		

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 560401

Tetra Tech- Midland, Midland, TX

Project Name: COG- King Tut Federal #1H

Project Id: 212C-MD-00679
Contact: Ike Tavarez
Project Location: Lea County,New Mexico

Date Received in Lab: Wed Aug-16-17 01:05 pm
Report Date: 28-AUG-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	560401-043		560401-044		560401-045		560401-046		560401-047		560401-048	
	Field Id:	BH #7 (4-5')		BH #7 (6-7')		BH #7 (9-10')		BH #7 (14-15')		BH #8 (0-1')		BH #8 (2-3')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-15-17 00:00		Aug-15-17 00:00		Aug-15-17 00:00		Aug-15-17 00:00		Aug-15-17 00:00		Aug-15-17 00:00	
BTEX by EPA 8021B	***Extracted:***							Aug-22-17 08:00		Aug-22-17 08:00			
	Analyzed:							Aug-22-17 16:06		Aug-22-17 16:25			
	Units/RL:							mg/kg	RL	mg/kg	RL		
Benzene								<0.00199	0.00199	<0.00200	0.00200		
Toluene								<0.00199	0.00199	<0.00200	0.00200		
Ethylbenzene								<0.00199	0.00199	<0.00200	0.00200		
m,p-Xylenes								<0.00398	0.00398	<0.00399	0.00399		
o-Xylene								<0.00199	0.00199	<0.00200	0.00200		
Total Xylenes								<0.00199	0.00199	<0.00200	0.00200		
Total BTEX								<0.00199	0.00199	<0.00200	0.00200		
Inorganic Anions by EPA 300/300.1	***Extracted:***	Aug-24-17 12:05		Aug-24-17 12:05		Aug-24-17 12:05		Aug-24-17 15:35		Aug-24-17 15:35		Aug-24-17 15:35	
	Analyzed:	Aug-24-17 21:28		Aug-24-17 21:38		Aug-24-17 21:48		Aug-25-17 12:57		Aug-25-17 13:28		Aug-25-17 13:39	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		3100	24.9	154	4.96	46.2	4.95	82.5	5.00	302	4.93	1860	25.0
TPH By SW8015 Mod	***Extracted:***							Aug-17-17 14:00		Aug-17-17 14:00			
	Analyzed:							Aug-18-17 04:01		Aug-18-17 08:20			
	Units/RL:							mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)								<15.0	15.0	<15.0	15.0		
Diesel Range Organics (DRO)								<15.0	15.0	<15.0	15.0		
Oil Range Hydrocarbons (ORO)								<15.0	15.0	<15.0	15.0		
Total TPH								<15.0	15.0	<15.0	15.0		

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 560401

Tetra Tech- Midland, Midland, TX

Project Name: COG- King Tut Federal #1H

Project Id: 212C-MD-00679
Contact: Ike Tavarez
Project Location: Lea County,New Mexico

Date Received in Lab: Wed Aug-16-17 01:05 pm
Report Date: 28-AUG-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	560401-049		560401-050		560401-051		560401-052		560401-053		560401-054	
	Field Id:	BH #8 (4-5')		BH #8 (6-7')		BH #8 (9-10')		BH #8 (14-15')		BH #8 (19-20')		BH #8 (24-25')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-15-17 00:00		Aug-15-17 00:00		Aug-15-17 00:00		Aug-15-17 00:00		Aug-15-17 00:00		Aug-15-17 00:00	
BTEX by EPA 8021B	***Extracted:***											Aug-22-17 08:00	
	Analyzed:											Aug-22-17 16:44	
	Units/RL:											mg/kg	RL
Benzene												<0.00201	0.00201
Toluene												<0.00201	0.00201
Ethylbenzene												<0.00201	0.00201
m,p-Xylenes												<0.00402	0.00402
o-Xylene												<0.00201	0.00201
Total Xylenes												<0.00201	0.00201
Total BTEX												<0.00201	0.00201
Inorganic Anions by EPA 300/300.1	***Extracted:***	Aug-24-17 15:35		Aug-24-17 15:35		Aug-24-17 15:35		Aug-24-17 15:35		Aug-24-17 15:35		Aug-24-17 15:35	
	Analyzed:	Aug-25-17 13:49		Aug-25-17 14:59		Aug-25-17 16:22		Aug-25-17 15:30		Aug-25-17 15:41		Aug-25-17 15:51	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		7110	50.0	5400	49.5	1250	4.90	440	4.92	504	4.95	782	4.95
TPH By SW8015 Mod	***Extracted:***											Aug-17-17 14:00	
	Analyzed:											Aug-18-17 04:42	
	Units/RL:											mg/kg	RL
Gasoline Range Hydrocarbons (GRO)												<15.0	15.0
Diesel Range Organics (DRO)												<15.0	15.0
Oil Range Hydrocarbons (ORO)												<15.0	15.0
Total TPH												<15.0	15.0

Kelsey Brooks
Project Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

Form 2 - Surrogate Recoveries

Project Name: COG- King Tut Federal #1H

Work Orders : 560401,

Project ID: 212C-MD-00679

Lab Batch #: 3025302 **Sample:** 560401-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/17/17 22:10

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.3	99.7	88	70-135	
o-Terphenyl	44.1	49.9	88	70-135	

Lab Batch #: 3025302 **Sample:** 560401-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/17/17 23:09

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.9	99.8	87	70-135	
o-Terphenyl	43.4	49.9	87	70-135	

Lab Batch #: 3025302 **Sample:** 560401-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/17/17 23:29

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.2	99.9	86	70-135	
o-Terphenyl	42.6	50.0	85	70-135	

Lab Batch #: 3025302 **Sample:** 560401-015 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/17/17 23:49

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.6	99.6	87	70-135	
o-Terphenyl	42.6	49.8	86	70-135	

Lab Batch #: 3025302 **Sample:** 560401-016 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/18/17 00:10

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.8	99.9	84	70-135	
o-Terphenyl	40.7	50.0	81	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: COG- King Tut Federal #1H

Work Orders : 560401,

Project ID: 212C-MD-00679

Lab Batch #: 3025302 **Sample:** 560401-021 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/18/17 00:31

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.9	99.8	81	70-135	
o-Terphenyl	38.6	49.9	77	70-135	

Lab Batch #: 3025302 **Sample:** 560401-022 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/18/17 00:51

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.0	99.8	80	70-135	
o-Terphenyl	39.4	49.9	79	70-135	

Lab Batch #: 3025302 **Sample:** 560401-027 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/18/17 01:12

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.2	99.8	84	70-135	
o-Terphenyl	40.9	49.9	82	70-135	

Lab Batch #: 3025302 **Sample:** 560401-028 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/18/17 01:33

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.4	99.6	84	70-135	
o-Terphenyl	40.3	49.8	81	70-135	

Lab Batch #: 3025302 **Sample:** 560401-033 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/18/17 01:53

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.2	99.9	86	70-135	
o-Terphenyl	43.3	50.0	87	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: COG- King Tut Federal #1H

Work Orders : 560401,

Project ID: 212C-MD-00679

Lab Batch #: 3025302 **Sample:** 560401-034 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/18/17 02:57

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.7	100	83	70-135	
o-Terphenyl	40.9	50.0	82	70-135	

Lab Batch #: 3025302 **Sample:** 560401-040 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/18/17 03:18

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.7	99.9	84	70-135	
o-Terphenyl	40.3	50.0	81	70-135	

Lab Batch #: 3025302 **Sample:** 560401-041 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/18/17 03:39

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.7	99.9	87	70-135	
o-Terphenyl	41.8	50.0	84	70-135	

Lab Batch #: 3025302 **Sample:** 560401-046 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/18/17 04:01

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	79.3	99.7	80	70-135	
o-Terphenyl	37.9	49.9	76	70-135	

Lab Batch #: 3025302 **Sample:** 560401-054 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/18/17 04:42

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.8	99.7	84	70-135	
o-Terphenyl	40.1	49.9	80	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: COG- King Tut Federal #1H

Work Orders : 560401,

Project ID: 212C-MD-00679

Lab Batch #: 3025302 **Sample:** 560401-047 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/18/17 08:20

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.8	103	70-135	
o-Terphenyl	50.1	49.9	100	70-135	

Lab Batch #: 3025753 **Sample:** 560401-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/22/17 10:45

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0282	0.0300	94	80-120	
4-Bromofluorobenzene	0.0262	0.0300	87	80-120	

Lab Batch #: 3025753 **Sample:** 560401-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/22/17 11:04

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0279	0.0300	93	80-120	
4-Bromofluorobenzene	0.0256	0.0300	85	80-120	

Lab Batch #: 3025753 **Sample:** 560401-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/22/17 11:23

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0280	0.0300	93	80-120	
4-Bromofluorobenzene	0.0257	0.0300	86	80-120	

Lab Batch #: 3025753 **Sample:** 560401-015 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/22/17 11:40

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0273	0.0300	91	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: COG- King Tut Federal #1H

Work Orders : 560401,

Project ID: 212C-MD-00679

Lab Batch #: 3025753 **Sample:** 560401-016 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/22/17 12:10

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0291	0.0300	97	80-120	
4-Bromofluorobenzene	0.0251	0.0300	84	80-120	

Lab Batch #: 3025753 **Sample:** 560401-021 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/22/17 12:29

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0281	0.0300	94	80-120	
4-Bromofluorobenzene	0.0259	0.0300	86	80-120	

Lab Batch #: 3025753 **Sample:** 560401-022 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/22/17 12:46

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0289	0.0300	96	80-120	
4-Bromofluorobenzene	0.0270	0.0300	90	80-120	

Lab Batch #: 3025753 **Sample:** 560401-027 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/22/17 13:05

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0264	0.0300	88	80-120	

Lab Batch #: 3025753 **Sample:** 560401-033 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/22/17 14:10

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0291	0.0300	97	80-120	
4-Bromofluorobenzene	0.0244	0.0300	81	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: COG- King Tut Federal #1H

Work Orders : 560401,

Project ID: 212C-MD-00679

Lab Batch #: 3025753 **Sample:** 560401-034 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/22/17 15:08

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0293	0.0300	98	80-120	
4-Bromofluorobenzene	0.0262	0.0300	87	80-120	

Lab Batch #: 3025753 **Sample:** 560401-040 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/22/17 15:27

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0286	0.0300	95	80-120	
4-Bromofluorobenzene	0.0273	0.0300	91	80-120	

Lab Batch #: 3025753 **Sample:** 560401-046 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/22/17 16:06

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0289	0.0300	96	80-120	
4-Bromofluorobenzene	0.0268	0.0300	89	80-120	

Lab Batch #: 3025753 **Sample:** 560401-047 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/22/17 16:25

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0285	0.0300	95	80-120	
4-Bromofluorobenzene	0.0258	0.0300	86	80-120	

Lab Batch #: 3025753 **Sample:** 560401-054 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/22/17 16:44

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene	0.0271	0.0300	90	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: COG- King Tut Federal #1H

Work Orders : 560401,

Project ID: 212C-MD-00679

Lab Batch #: 3025773 **Sample:** 560401-028 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/23/17 11:55

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0253	0.0300	84	80-120	

Lab Batch #: 3025773 **Sample:** 560401-041 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/23/17 12:14

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0261	0.0300	87	80-120	

Lab Batch #: 3025302 **Sample:** 729528-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/17/17 21:11

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.9	100	96	70-135	
o-Terphenyl	48.9	50.0	98	70-135	

Lab Batch #: 3025753 **Sample:** 729804-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/22/17 10:26

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0285	0.0300	95	80-120	
4-Bromofluorobenzene	0.0258	0.0300	86	80-120	

Lab Batch #: 3025773 **Sample:** 729811-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/23/17 09:23

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0258	0.0300	86	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: COG- King Tut Federal #1H

Work Orders : 560401, **Project ID:** 212C-MD-00679

Lab Batch #: 3025302 **Sample:** 729528-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/17/17 21:30

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.1	100	96	70-135	
o-Terphenyl	46.5	50.0	93	70-135	

Lab Batch #: 3025753 **Sample:** 729804-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/22/17 08:28

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0284	0.0300	95	80-120	
4-Bromofluorobenzene	0.0280	0.0300	93	80-120	

Lab Batch #: 3025773 **Sample:** 729811-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/23/17 07:48

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0267	0.0300	89	80-120	
4-Bromofluorobenzene	0.0241	0.0300	80	80-120	

Lab Batch #: 3025302 **Sample:** 729528-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/17/17 21:50

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.8	100	90	70-135	
o-Terphenyl	42.9	50.0	86	70-135	

Lab Batch #: 3025753 **Sample:** 729804-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/22/17 08:47

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0278	0.0300	93	80-120	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: COG- King Tut Federal #1H

Work Orders : 560401,

Project ID: 212C-MD-00679

Lab Batch #: 3025773 **Sample:** 729811-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/23/17 08:07

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0325	0.0300	108	80-120	
4-Bromofluorobenzene	0.0257	0.0300	86	80-120	

Lab Batch #: 3025302 **Sample:** 560401-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/17/17 22:29

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.6	99.9	92	70-135	
o-Terphenyl	53.5	50.0	107	70-135	

Lab Batch #: 3025753 **Sample:** 560401-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/22/17 09:24

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0299	0.0300	100	80-120	
4-Bromofluorobenzene	0.0275	0.0300	92	80-120	

Lab Batch #: 3025773 **Sample:** 560698-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/23/17 08:26

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0300	0.0300	100	80-120	
4-Bromofluorobenzene	0.0279	0.0300	93	80-120	

Lab Batch #: 3025302 **Sample:** 560401-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/17/17 22:49

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.6	99.9	90	70-135	
o-Terphenyl	51.8	50.0	104	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: COG- King Tut Federal #1H

Work Orders : 560401,

Project ID: 212C-MD-00679

Lab Batch #: 3025753 **Sample:** 560401-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/22/17 09:47

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0287	0.0300	96	80-120	

Lab Batch #: 3025773 **Sample:** 560698-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/23/17 08:45

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0277	0.0300	92	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: COG- King Tut Federal #1H

Work Order #: 560401 **Project ID:** 212C-MD-00679

Analyst: ALJ **Date Prepared:** 08/22/2017 **Date Analyzed:** 08/22/2017

Lab Batch ID: 3025753 **Sample:** 729804-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00200	0.0998	0.101	101	0.100	0.0966	97	4	70-130	35	
Toluene	<0.00200	0.0998	0.102	102	0.100	0.0975	98	5	70-130	35	
Ethylbenzene	<0.00200	0.0998	0.105	105	0.100	0.101	101	4	71-129	35	
m,p-Xylenes	<0.00399	0.200	0.204	102	0.201	0.196	98	4	70-135	35	
o-Xylene	<0.00200	0.0998	0.101	101	0.100	0.0971	97	4	71-133	35	

Analyst: ALJ **Date Prepared:** 08/23/2017 **Date Analyzed:** 08/23/2017

Lab Batch ID: 3025773 **Sample:** 729811-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00199	0.0996	0.121	121	0.100	0.121	121	0	70-130	35	
Toluene	<0.00199	0.0996	0.117	117	0.100	0.113	113	3	70-130	35	
Ethylbenzene	<0.00199	0.0996	0.116	116	0.100	0.112	112	4	71-129	35	
m,p-Xylenes	<0.00398	0.199	0.228	115	0.200	0.221	111	3	70-135	35	
o-Xylene	<0.00199	0.0996	0.109	109	0.100	0.106	106	3	71-133	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: COG- King Tut Federal #1H

Work Order #: 560401 **Project ID:** 212C-MD-00679

Analyst: MGO **Date Prepared:** 08/23/2017 **Date Analyzed:** 08/23/2017

Lab Batch ID: 3025858 **Sample:** 729808-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	256	102	250	259	104	1	90-110	20	

Analyst: MGO **Date Prepared:** 08/24/2017 **Date Analyzed:** 08/24/2017

Lab Batch ID: 3026004 **Sample:** 729858-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	258	103	250	252	101	2	90-110	20	

Analyst: MGO **Date Prepared:** 08/24/2017 **Date Analyzed:** 08/24/2017

Lab Batch ID: 3026018 **Sample:** 729891-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	255	102	250	254	102	0	90-110	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: COG- King Tut Federal #1H

Work Order #: 560401 **Project ID:** 212C-MD-00679

Analyst: MGO **Date Prepared:** 08/24/2017 **Date Analyzed:** 08/25/2017

Lab Batch ID: 3026130 **Sample:** 729917-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	247	99	250	247	99	0	90-110	20	

Analyst: ARM **Date Prepared:** 08/17/2017 **Date Analyzed:** 08/17/2017

Lab Batch ID: 3025302 **Sample:** 729528-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	933	93	1000	862	86	8	70-135	35	
Diesel Range Organics (DRO)	<15.0	1000	1070	107	1000	1020	102	5	70-135	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS / MSD Recoveries

Project Name: COG- King Tut Federal #1H

Work Order # : 560401 **Project ID:** 212C-MD-00679

Lab Batch ID: 3025753 **QC- Sample ID:** 560401-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/22/2017 **Date Prepared:** 08/22/2017 **Analyst:** ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00202	0.101	0.0823	81	0.100	0.0746	75	10	70-130	35	
Toluene	<0.00202	0.101	0.0790	78	0.100	0.0723	72	9	70-130	35	
Ethylbenzene	<0.00202	0.101	0.0753	75	0.100	0.0704	70	7	71-129	35	X
m,p-Xylenes	<0.00403	0.202	0.145	72	0.200	0.135	68	7	70-135	35	X
o-Xylene	<0.00202	0.101	0.0733	73	0.100	0.0688	69	6	71-133	35	X

Lab Batch ID: 3025773 **QC- Sample ID:** 560698-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/23/2017 **Date Prepared:** 08/23/2017 **Analyst:** ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00200	0.0998	0.116	116	0.101	0.0931	92	22	70-130	35	
Toluene	<0.00200	0.0998	0.111	111	0.101	0.0884	88	23	70-130	35	
Ethylbenzene	<0.00200	0.0998	0.106	106	0.101	0.0830	82	24	71-129	35	
m,p-Xylenes	<0.00399	0.200	0.210	105	0.202	0.163	81	25	70-135	35	
o-Xylene	<0.00200	0.0998	0.102	102	0.101	0.0796	79	25	71-133	35	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: COG- King Tut Federal #1H

Work Order # : 560401 **Project ID:** 212C-MD-00679

Lab Batch ID: 3025858 **QC- Sample ID:** 560401-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/23/2017 **Date Prepared:** 08/23/2017 **Analyst:** MGO

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	1840	4960	11200	189	4960	11200	189	0	90-110	20	X

Lab Batch ID: 3025858 **QC- Sample ID:** 560401-011 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/23/2017 **Date Prepared:** 08/23/2017 **Analyst:** MGO

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	1110	4920	7250	125	4920	7250	125	0	90-110	20	X

Lab Batch ID: 3026004 **QC- Sample ID:** 560401-021 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/24/2017 **Date Prepared:** 08/24/2017 **Analyst:** MGO

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	143	248	405	106	248	405	106	0	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: COG- King Tut Federal #1H

Work Order # : 560401 **Project ID:** 212C-MD-00679

Lab Batch ID: 3026004 **QC- Sample ID:** 560401-031 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/24/2017 **Date Prepared:** 08/24/2017 **Analyst:** MGO

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	24.6	249	257	93	249	257	93	0	90-110	20	

Lab Batch ID: 3026018 **QC- Sample ID:** 560401-041 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/24/2017 **Date Prepared:** 08/24/2017 **Analyst:** MGO

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	535	247	795	105	247	794	105	0	90-110	20	

Lab Batch ID: 3026130 **QC- Sample ID:** 560401-046 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/25/2017 **Date Prepared:** 08/24/2017 **Analyst:** MGO

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	82.5	250	332	100	250	333	100	0	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: COG- King Tut Federal #1H

Work Order # : 560401 **Project ID:** 212C-MD-00679

Lab Batch ID: 3026130 **QC- Sample ID:** 560401-051 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/25/2017 **Date Prepared:** 08/24/2017 **Analyst:** MGO

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	1250	245	1370	49	245	1370	49	0	90-110	20	X

Lab Batch ID: 3025302 **QC- Sample ID:** 560401-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/17/2017 **Date Prepared:** 08/17/2017 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	999	846	85	999	881	88	4	70-135	35	
Diesel Range Organics (DRO)	143	999	1050	91	999	1030	89	2	70-135	35	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste
401 Midland, Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

560401

Client Name: COG	**Site Manager:** Ike Tavarez
Project Name: King Tut Federal #1H	
Project Location: (county, state) Lea County, New Mexico	**Project #:** 212C-MD-00679
Invoice to:	
Receiving Laboratory: Xenco Midland Tx	**Sampler Signature:**
Comments:	

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2017 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None	PRESERVATIVE METHOD	# CONTAINERS	FILTERED (Y/N)	BTEX 8260B	BTEX 8021B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance				
	BH#1 (0-1')	8/15/2017			X					X		1	N	X		X													X							
	BH#1 (2-3')	8/15/2017			X					X		1	N																X							
	BH#1 (4-5')	8/15/2017			X					X		1	N																X							
	BH#1 (6-7')	8/15/2017			X					X		1	N																X							
	BH#1 (9-10')	8/15/2017			X					X		1	N																X							
	BH#1 (14-15')	8/15/2017			X					X		1	N																X							
	BH#1 (19-20')	8/15/2017			X					X		1	N																X							
	BH#1 (24-25')	8/15/2017			X					X		1	N	X		X													X							
	BH#2 (0-1')	8/15/2017			X					X		1	N	X		X													X							
	BH#2 (2-3')	8/15/2017			X					X		1	N																X							

Relinquished by:	Date: 8-16-17	Time: 1305	Received by: Date: 8/16/17 Time: 13:05
Relinquished by:	Date:	Time:	Received by: Date: Time:
Relinquished by:	Date:	Time:	Received by: Date: Time:

LAB USE ONLY

Sample Temperature

REMARKS:

STANDARD

☐ RUSH: Same Day 24 hr 48 hr 72 hr

☐ Rush Charges Authorized

☐ Special Report Limits or TRRP Report

DELIVERED FEDEX UPS Tracking #:

ORIGINAL COPY

Temp: 0.7 IR ID:R-8

CF:(0-6: -0.2°C)
(6-23: +0.2°C)

Corrected Temp: 0.5

Final 1.000

Hold

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste
401 Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

560401

Client Name: COG	**Site Manager:** Ike Tavarez
Project Name: King Tut Federal #1H	
Project Location: (county, state) Lea County, New Mexico	**Project #:** 212C-MD-00679
Invoice to:	
Receiving Laboratory: Xenco Midland Tx	**Sampler Signature:**
Comments:	

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None	PRESERVATIVE METHOD	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B	BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance				
	BH#2 (4-5')	8/15/2017			X					X		1	N															X							
	BH#2 (6-7')	8/15/2017			X					X		1	N															X							
	BH#2 (9-10')	8/15/2017			X					X		1	N															X							
	BH#2 (14-15')	8/15/2017			X					X		1	N															X							
	BH#2 (19-20')	8/15/2017			X					X		1	N	X		X												X							
	BH#3 (0-1')	8/15/2017			X					X		1	N	X		X												X							
	BH#3 (2-3')	8/15/2017			X					X		1	N															X							
	BH#3 (4-5')	8/15/2017			X					X		1	N															X							
	BH#3 (6-7')	8/15/2017			X					X		1	N															X							
	BH#3 (9-10')	8/15/2017			X					X		1	N															X							

Relinquished by:	Date: 8-16-17	Time: 1305	Received by: Date: 8-16-17 Time: 13:05
Relinquished by:	Date:	Time:	Received by: Date: Time:
Relinquished by:	Date:	Time:	Received by: Date: Time:

LAB USE ONLY

Sample Temperature

REMARKS: STANDARD

- ☐ RUSH: Same Day 24 hr 48 hr 72 hr
- ☐ Rush Charges Authorized
- ☐ Special Report Limits or TRRP Report

ND DELIVERED FEDEX UPS Tracking #:

ORIGINAL COPY

Temp: 0.7 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 0.5

Final 1.000

Hold

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste
401 Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

560401

Client Name: COG	**Site Manager:** Ike Tavarez
Project Name: King Tut Federal #1H	
Project Location: (county, state) Lea County, New Mexico	**Project #:** 212C-MD-00679
Invoice to:	
Receiving Laboratory: Xenco Midland Tx	**Sampler Signature:**
Comments:	

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None	PRESERVATIVE METHOD	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B	BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance					Hold
	BH#3 (14-15')	8/15/2017			X					X		1	N	X		X												X								
	BH#4 (0-1')	8/15/2017			X					X		1	N	X		X												X								
	BH#4 (2-3')	8/15/2017			X					X		1	N															X								
	BH#4 (4-5')	8/15/2017			X					X		1	N															X								
	BH#4 (6-7')	8/15/2017			X					X		1	N															X								
	BH#4 (9-10')	8/15/2017			X					X		1	N															X								
	BH#4 (14-15')	8/15/2017			X					X		1	N	X		X												X								
	BH#5 (0-1')	8/15/2017			X					X		1	N	X		X												X								
	BH#5 (2-3')	8/15/2017			X					X		1	N															X								
	BH#5 (4-5')	8/15/2017			X					X		1	N															X								

Relinquished by:	Date: 8-16-17	Time: 1305	Received by: Date: 8/16/17 Time: 13:05
Relinquished by:	Date:	Time:	Received by: Date: Time:
Relinquished by:	Date:	Time:	Received by: Date: Time:

LAB USE ONLY

Sample Temperature

REMARKS: STANDARD

☐ RUSH: Same Day 24 hr 48 hr 72 hr

☐ Rush Charges Authorized

☐ Special Report Limits or TRRP Report

_IVERED FEDEX UPS Tracking #: _____

ORIGINAL COPY

Temp: 0.7 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 0.5

Final 1.000

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste
401 Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

560401

Client Name: COG	Site Manager: Ike Tavarez
Project Name: King Tut Federal #1H	
Project Location: (county, state) Lea County, New Mexico	Project #: 212C-MD-00679
Invoice to:	
Receiving Laboratory: Xenco Midland Tx	Sampler Signature:
Comments:	

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None	PRESERVATIVE METHOD	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B	BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance			Hold
	BH#5 (6-7')	8/15/2017			X					X		1	N															X						
	BH#5 (9-10')	8/15/2017			X					X		1	N															X						
	BH#5 (14-15')	8/15/2017			X					X		1	N	X		X												X						
	BH#6 (0-1')	8/15/2017			X					X		1	N	X		X												X						
	BH#6 (2-3')	8/15/2017			X					X		1	N															X						
	BH#6 (4-5')	8/15/2017			X					X		1	N															X						
	BH#6 (6-7')	8/15/2017			X					X		1	N															X						
	BH#6 (9-10')	8/15/2017			X					X		1	N															X						
	BH#6 (14-15')	8/15/2017			X					X		1	N															X						
	BH#6 (19-20')	8/15/2017			X					X		1	N	X		X												X						

Final 1.000

Page 36 of 39

Relinquished by:	Date: 8-16-17	Time: 1305
Received by:	Date: 8-16-17	Time: 15:05
Relinquished by:	Date:	Time:
Received by:	Date:	Time:
Relinquished by:	Date:	Time:
Received by:	Date:	Time:

LAB USE ONLY

Sample Temperature

REMARKS:

STANDARD

☐ RUSH: Same Day 24 hr 48 hr 72 hr

☐ Rush Charges Authorized

☐ Special Report Limits or TRRP Report

ID DELIVERED FEDEX UPS Tracking #:

ORIGINAL COPY

Temp: 0.7 IR ID:R-8

CF:(0-6: -0.2°C)
(6-23: +0.2°C)

Corrected Temp: 0.5

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste
401 Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

560401

Client Name: COG

Site Manager: Ike Tavarez

Project Name: King Tut Federal #1H

Project Location: (county, state) Lea County, New Mexico

Project #: 212C-MD-00679

Invoice to:

Receiving Laboratory: Xenco Midland Tx

Sampler Signature:

Comments:

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None	PRESERVATIVE METHOD	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B	BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Sulfate	TDS	General Water Chemistry (see attached list)	Anion/Cation Balance				
	BH#8 (9-10')	8/15/2017			X					X		1	N															X								
	BH#8 (14-15')	8/15/2017			X					X		1	N															X								
	BH#8 (19-20')	8/15/2017			X					X		1	N															X								
	BH#8 (24-25')	8/15/2017			X					X		1	N	X		X												X								

Final 1.000

Hold

Page 37 of 39

Relinquished by: Date: 8-16-17 Time: 1305

Received by: Date: 8-16-17 Time: 13:05

Relinquished by: Date: Time:

Received by: Date: Time:

Relinquished by: Date: Time:

Received by: Date: Time:

LAB USE ONLY

Sample Temperature

REMARKS: STANDARD

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	BH#7 (0-1')	8/15/2017			X					X		1	N	X		X												X							
	BH#7 (2-3')	8/15/2017			X					X		1	N															X							
	BH#7 (4-5')	8/15/2017			X					X		1	N															X							
	BH#7 (6-7')	8/15/2017			X					X		1	N															X							
	BH#7 (9-10')	8/15/2017			X					X		1	N															X							
	BH#7 (14-15')	8/15/2017			X					X		1	N	X		X												X							
	BH#8 (0-1')	8/15/2017			X					X		1	N	X		X												X							
	BH#8 (2-3')	8/15/2017			X					X		1	N															X							
	BH#8 (4-5')	8/15/2017			X					X		1	N															X							
	BH#8 (6-7')	8/15/2017			X					X		1	N															X							

Relinquished by: Date: 8-16-17 Time: 1305

Received by: Date: 8-16-17 Time: 13:05

Relinquished by: Date: Time:

Received by: Date: Time:

Relinquished by: Date: Time:

Received by: Date: Time:

LAB USE ONLY

Sample Temperature

REMARKS:

STANDARD

RUSH: Same Day 24 hr 48 hr 72 hr

Rush Charges Authorized

Special Report Limits or TRRP Report

AND DELIVERED FEDEX UPS Tracking #:

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CF:(0-6: -0.2°C)
(6-23: +0.2°C)

Corrected Temp: 0.5

Final 1.000

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 08/16/2017 01:05:00 PM

Work Order #: 560401

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	.5
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seal present on shipping container/ cooler?	**N/A**
#5 *Custody Seals intact on shipping container/ cooler?	**N/A**
#6 Custody Seals intact on sample bottles?	**N/A**
#7 *Custody Seals Signed and dated?	**N/A**
#8 *Chain of Custody present?	**Yes**
#9 Sample instructions complete on Chain of Custody?	**Yes**
#10 Any missing/extra samples?	**No**
#11 Chain of Custody signed when relinquished/ received?	**Yes**
#12 Chain of Custody agrees with sample label(s)?	**Yes**
#13 Container label(s) legible and intact?	**Yes**
#14 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#15 Samples in proper container/ bottle?	**Yes**
#16 Samples properly preserved?	**Yes**
#17 Sample container(s) intact?	**Yes**
#18 Sufficient sample amount for indicated test(s)?	**Yes**
#19 All samples received within hold time?	**Yes**
#20 Subcontract of sample(s)?	**No**
#21 VOC samples have zero headspace?	**N/A**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#:

Checklist completed by: Shawnee Smith Date: 08/17/2017

Shawnee Smith

Checklist reviewed by: Kelsey Brooks Date: 08/17/2017

Kelsey Brooks