APPROVED
By Olivia Yu at 3:05 pm, Sep 14, 2018

NMOCD grants closure to 1RP-4843.

REMEDIATION SUMMARY AND

SOIL CLOSURE REQUEST

COG Operating, LLC
KING TUT FEDERAL #001H
Eddy County, New Mexico
Unit Letter "I", Section 13, Township 24 South, Range 31 East
Latitude 32.21520° North, Longitude 103.72305° West
NMOCD Reference No. 1RP-4843

Prepared For:

COG Operating, LLC
600 W Illinois Avenue
Midland, Texas 79701

Prepared By:

TRC Environmental Corporation
10 Desta Drive, Suite 150E
Midland, Texas 79705

April 2018

Joel Lowry
Senior Project Manager

Curt Stanley
Senior Project Manager

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INTRODUCTION & BACKGROUND INFORMATION

TRC Environmental Corporation (TRC), on behalf of COG Operating, LLC (COG), has prepared this *Remediation Summary and Soil Closure Request* for the Site known as King Tut Federal #001H. The legal description of the Site is Unit Letter "I", Section 13, Township 24 South, Range 31 East, in Eddy County, New Mexico; the initial Release Notification and Corrective Action (Form C-141) incorrectly identified the release as having occurred in Unit Letter "D", Section 30, Township 24 South, Range 32 East in Lea County, New Mexico. The subject property is owned by the United State Department of the Interior and administered by the United States Bureau of Land Management (BLM). The GPS coordinates for the site are N 32.21520° W 103.72305°. A "Site Location Map" is provided as Figure 1.

On October 9, 2017, COG discovered a produced water release on the King Tut Federal #001H flowline. The initial Release Notification and Corrective Action (Form C-141) indicated the failure of a flowline resulted in the release of approximately thirty (30) barrels (bbls) of produced water. During initial response activities, the flowline was repaired and approximately three (3) bbls of produced water were recovered utilizing a vacuum truck. The release affected approximately one thousand five hundred (1,500) square feet (sq. ft.) of pasture land. A photographic log is provided is Appendix B. A copy of the Form C-141 is provided in Appendix C.

A groundwater database maintained by The New Mexico Office of the State Engineer (NMOSE) did not identify any registered water wells in Section 13, Township 24 South, Range 31 East. A reference map utilized by the NMOCD indicates groundwater should be encountered between approximately three hundred fifty (350) feet (ft.) and three hundred seventy-five (375) ft. below ground surface (bgs). Based on the NMOCD site classification system, zero (0) points will be assigned to the subject area ranking as a result of this criterion.

No water wells were observed within one-thousand (1,000) feet of the Release Site. Based on the NMOCD site classification system, zero (0) points will be assigned to the subject area ranking as a result of this criterion.

No surface water was observed within one-thousand (1,000) feet of the release. Based on the NMOCD site classification system, zero (0) points will be assigned to the subject area ranking as a result of this criterion. Based on the NMOCD Site Classification criteria, the Release Site soil remediation levels are 10 milligrams per kilogram (mg/kg) for benzene, 50 mg/kg for benzene, toluene, ethylbenzene and xylenes (BTEX), and five thousand (5,000) mg/kg for total petroleum hydrocarbons (TPH). Per NMOCD request, chloride remediation levels for the Release Site will be six hundred (600) mg/kg.

On February 6, 2018, an initial investigation was conducted at the site. During the initial investigation, a series of test trenches (T1 through T3) were advanced at the site in an effort to delineate the vertical extent of soil impact. During the advancement of the test trenches, seven (7) soil samples (T1 @ Surf., T1 @ 1', T1 @ 2', T2 @ Surf., T2 @ 1', T3 @ Surf. and T3 @ 1') were collected and submitted to Xenco Laboratories in Midland, Texas for determination of concentration of BTEX using EPA Method SW-846 8021b, TPH using EPA Method SW-846-8015M Ext. and chloride using Method 300/300.1. Laboratory analytical results indicated BTEX and TPH concentrations were less than the applicable laboratory reporting limit (RL) in each of

the submitted soil samples. Analytical results indicated chloride concentrations ranged from 645 mg/kg for soil sample T1 @ Surf. to less than the laboratory RL in soil sample T1 @ 1'. BTEX, TPH and chloride concentrations were below the NMOCD RRAL in each of the submitted soil samples, with the exception of soil sample T1 @ Surf., which exhibited a chloride concentration of 645 mg/kg. Laboratory analytical results are summarized in Table 1 - Concentrations of Benzene, BTEX, TPH and Chloride in Soil. Laboratory analytical reports are provided in Appendix A. A "Site & Sample Location Map" is provided as Figure 2.

On March 7, 2018, TRC revisited the site in an effort to further characterize the release. During the site visit, a series of investigated hand-augered soil bores were advanced within the release margins. During the advancement of the investigative hand-augered soil bores, soil samples were collected and field screened for concentrations of chloride. Chloride field screen results indicated soil samples collected from two soil bores (SP1 and SP2) exhibited chloride concentrations above the NMOCD RRAL. Based on chloride field screen results, five (5) soil samples (SP1 @ Surf., SP1 @ 1', SP1 @ 2', SP2 @ Surf. and SP2 @ 1') were submitted to the laboratory for analysis of BTEX, TPH and chloride concentrations. Laboratory analytical results indicated BTEX concentrations were less than the applicable laboratory RL in each of the submitted soil samples, with the exception of soil sample SP1 @ Surf., which exhibited a concentration of 0.1154 mg/kg. Analytical results indicated TPH concentrations were less than the applicable laboratory RL in each of the submitted soil samples, with the exception of soil samples SP1 @ Surf. and SP2 @ Surf., which exhibited concentrations of 25.9 mg/kg and 17.6 mg/kg, respectively. Chloride concentrations ranged from 8,890 mg/kg in soil samples SP1 @ Surf. to 53.6 mg/kg in soil sample SP1 @ 1'. BTEX, TPH and chloride concentrations were below the NMOCD RRAL in each of the submitted soil samples with the exception of the chloride concentrations in soil samples SP1 @ Surf. (8,890 mg/kg) and SP2 @ Surf. (685 mg/kg).

In addition, four (4) soil samples (N @ 6", E @ 6", S @ 6" and W @ 6") were collected from the inferred edges of the release margins and submitted to the laboratory for analysis of BTEX, TPH and chloride concentrations. Laboratory analytical results indicated BTEX, TPH and chloride concentrations were less than the applicable laboratory RL in each of the submitted soil samples, with the exception of soil sample W @ 6", which exhibited a chloride concentration of 86.2 mg/kg.

SUMMARY OF SOIL REMEDIATION ACTIVITIES

On April 3, 2018, remediation activities commenced at the Release Site. Impacted soil within the release margins in the areas represented by soil samples T1 @ Surf., SP1 @ Surf. and SP2 @ Surf. were excavated and transported to an NMOCD-permitted facility for disposal. The floor and sidewalls of the excavated area were advanced until chloride field test results indicated chloride concentrations were below the NMOCD RRAL.

On April 4, 2018, TRC collected five (5) excavation confirmation soil samples (FL @ 1', NSW, SSW, ESW and WSW) from the floor and sidewalls of the excavated area. The collected soil samples were submitted to the laboratory for analysis of BTEX, TPH and chloride concentrations. Laboratory analytical results indicted BTEX, TPH and chloride concentrations were below the applicable laboratory RL in each of the submitted soil samples, with the exception of soil sample SSW, which exhibited a chloride concentration of 31.5 mg/kg. BTEX, TPH and chloride concentrations were below the NMOCD RRAL in each of the submitted soil samples. Upon collecting the required confirmation soil samples, the excavated area was backfilled with locally-

sourced, non-impacted material. Prior to backfilling, the final dimensions of the excavated area were approximately sixty-five (65) ft. in length, fifteen (15) ft. in width and one (1) ft. in depth.

On April 9, 2018, approximately sixty (60) cubic yards (cy) of impacted soil was transported to R360's Halfway Bar Facility for disposal.

SITE CLOSURE REQUEST

Laboratory analytical results from confirmation soil samples collected from the floor and sidewalls of the excavated areas indicated benzene, BTEX, TPH and/or chloride concentrations were below the NMOCD RRAL in each of the submitted soil samples. Upon collecting the required excavation confirmation soil samples, the excavated area was backfilled with locally-sourced, non-impacted material. Based on laboratory analytical results and field activities conducted to date, TRC recommends COG provide copies of this *Remediation Summary and Soil Closure Request* to the NMOCD and BLM and request closure status to the King Tut Federal #001H Site.

LIMITATIONS

TRC has prepared this Remediation Summary and Soil Closure Request to the best of its ability. No other warranty, expressed or implied, is made or intended.

TRC has examined and relied upon documents referenced in the report and has relied on oral statements made by certain individuals. TRC has not conducted an independent examination of the facts contained in referenced materials and statements. We have presumed the genuineness of the documents and that the information provided in documents or statements is true and accurate. TRC has prepared this report, in a professional manner, using the degree of skill and care exercised by similar environmental consultants. TRC also notes that the facts and conditions referenced in this report may change over time and the conclusions and recommendations set forth herein are applicable only to the facts and conditions as described at the time of this report.

This report has been prepared for the benefit of COG Operating, LLC. The information contained in this report, including all exhibits and attachments, may not be used by any other party without the express consent of TRC and/or COG Operating, LLC.

DISTRIBUTION

Copy 1: Olivia Yu
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division, District 1
1625 French Drive
Hobbs, NM 88240

Copy 2: Shelly Tucker
Carlsbad Field Office
United States Department of the Interior
Bureau of Land Management
620 E. Greene Street
Carlsbad, New Mexico 88220

Copy 3: Rebecca Haskell
COG Operating, LLC
600 W. Illinois Avenue
Midland, Texas 79701

Copy 4: TRC Environmental Corporation
10 Desta Drive, Suite 150 E
Midland, Texas 79705

Figure 1

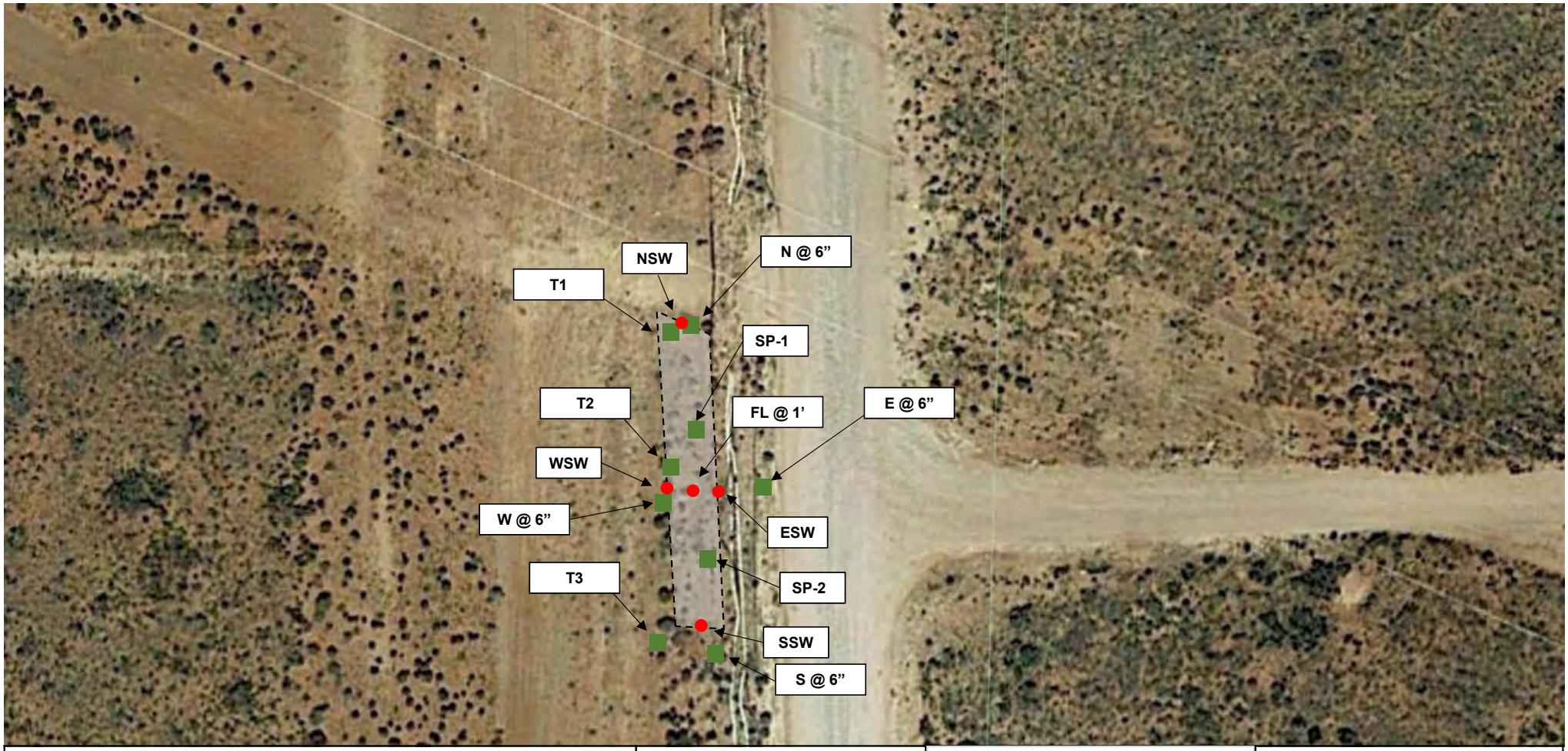
Site Location Map
COG Operating, LLC
King Tut Federal #001H

Eddy County, New Mexico

Scale 1" = ~5,000'	
Drafted by: ZC	Checked by: JL
Draft: April 5, 2018	
Lat. N 32.21520 Long. W 103.72305	
UL "I", Sec. 13, T24S, R31E	
TRC Proj. No.: 299912	

TRC
Results you can rely on

2057 Commerce Drive
Midland, Texas 79703
432.520.7720



LEGEND:

- Initial Investigation Sample Location
- Excavation Confirmation Sample Location
- Excavated Area

Figure 2

Site & Sample Location Map

COG Operating, LLC

King Tut Federal #001H

Eddy County, New Mexico

Scale = 40'	
Drafted by: ZC	Checked by: JL
Draft: March 7, 2018	
Lat. N 32.21520 Long. W 103.72305	
UL "I", Sec. 13, T24S, R31E	
TRC Proj. No.: 299912	

TRC
Results you can rely on

2057 Commerce Drive
Midland, Texas 79703
432.520.7720

TABLE 1

CONCENTRATIONS OF BENZENE, BTEX, TPH AND CHLORIDE IN SOIL

COG OPERATING, LLC
KING TUT FEDERAL #001H (1RP-4588)
EDDY COUNTY, NEW MEXICO

All concentrations are reported in mg/kg

SAMPLE LOCATION	DEPTH	SAMPLE DATE	SOIL STATUS	METHODS: SW 846-8021b					METHOD: SW 8015M				E 300.1
				BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	TOTAL BTEX	TPH GRO C_6-C_{10}	TPH DRO C_{10}-C_{28}	TPH ORO C_{28}-C_{35}	TOTAL TPH C_6-C_{35}	CHLORIDE
T1	Surf.	02/06/07	Excavated	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	**645**
T1	1'	02/06/18	In Situ	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<4.97
T1	2'	02/06/18	In Situ	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	57.8
T2	Surf.	02/06/18	In Situ	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	88.7
T2	1'	02/06/18	In Situ	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	53.7
T3	Surf.	02/06/18	In Situ	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	35.4
T3	1'	02/06/18	In Situ	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	85.7
SP1 @ Surf.	Surf.	03/07/18	Excavated	<0.0183	<0.0183	0.0293	0.0861	0.1154	<3.66	25.9	<15.0	25.9	**8,890**
SP1 @ 1'	1'	03/07/18	In-Situ	<0.0177	<0.0177	<0.0177	<0.0177	<0.0177	<3.54	<14.9	<14.9	<14.9	53.6
SP1 @ 2'	2'	03/07/18	In-Situ	<0.0177	<0.0177	<0.0177	<0.0177	<0.0177	<3.54	<15.0	<15.0	<15.0	68.5
SP2 @ Surf.	Surf.	03/07/18	Excavated	<0.0175	<0.0175	<0.0175	<0.0175	<0.0175	<3.50	17.6	<14.9	17.6	**685**
SP2 @ 1'	1'	03/07/18	In-Situ	<0.0195	<0.0195	<0.0195	<0.0195	<0.0195	<3.90	<14.9	<14.9	<14.9	292
N @ 6"	2'	03/07/18	In-Situ	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<4.00	<14.9	<14.9	<14.9	<25.0
E @ 6"	6"	03/07/18	In-Situ	<0.0177	<0.0177	<0.0177	<0.0177	<0.0177	<3.53	<14.9	<14.9	<14.9	<25.0
S @ 6"	6"	03/07/18	In-Situ	<0.0195	<0.0195	<0.0195	<0.0195	<0.0195	<3.89	<14.9	<14.9	<14.9	<25.0
W @ 6"	6"	03/07/18	In-Situ	<0.0182	<0.0182	<0.0182	<0.0182	<0.0182	<3.65	<15.0	<15.0	<15.0	86.2
FL @ 1'	1'	04/04/18	In-Situ	<0.0189	<0.0189	<0.0189	<0.0189	<0.0189	<3.78	<24.9	<24.9	<24.9	<25.0
NSW	6"	04/04/18	In-Situ	<0.0186	<0.0186	<0.0186	<0.0186	<0.0186	<3.72	<25.1	<25.1	<25.1	<25.0
SSW	6"	04/04/18	In-Situ	<0.0174	<0.0174	<0.0174	<0.0174	<0.0174	<3.47	<24.9	<24.9	<24.9	31.5
ESW	6"	04/04/18	In-Situ	<0.0194	<0.0194	<0.0194	<0.0194	<0.0194	<3.88	<25.2	<25.2	<25.2	<25.0
WSW	6"	04/04/18	In-Situ	<0.0198	<0.0198	<0.0198	<0.0198	<0.0198	<3.96	<24.9	<24.9	<24.9	<25.0
NMOCD Recommended Remediation Action Levels				**10**	**-**	**-**	**-**	**50**	**-**	**-**	**-**	**5,000**	**600**

Certificate of Analysis Summary 576107

COG Operating LLC, Artesia, NM

Project Name: King Tut Federal #1

Project Id:

Contact: Sheldon Hitchcock

Project Location:

Date Received in Lab: Mon Feb-12-18 07:50 am

Report Date: 21-FEB-18

Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	576107-001		576107-002		576107-003		576107-004		576107-005		576107-006	
	Field Id:	T1		T1		T1		T2		T2		T3	
	Depth:			1- ft		2- ft				1- ft			
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Feb-06-18 09:00		Feb-06-18 09:00		Feb-06-18 09:00		Feb-06-18 09:00		Feb-06-18 09:00		Feb-06-18 09:00	
BTEX by EPA 8021B	***Extracted:***	Feb-15-18 13:00		Feb-15-18 13:00		Feb-15-18 13:00		Feb-15-18 13:00		Feb-17-18 08:30		Feb-17-18 08:30	
	Analyzed:	Feb-15-18 20:30		Feb-15-18 20:50		Feb-15-18 21:09		Feb-15-18 21:28		Feb-17-18 21:03		Feb-17-18 21:22	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00199	0.00199	<0.00200	0.00200	<0.00198	0.00198	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200
Toluene		<0.00199	0.00199	<0.00200	0.00200	<0.00198	0.00198	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200
Ethylbenzene		<0.00199	0.00199	<0.00200	0.00200	<0.00198	0.00198	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200
m,p-Xylenes		<0.00398	0.00398	<0.00399	0.00399	<0.00397	0.00397	<0.00402	0.00402	<0.00398	0.00398	<0.00399	0.00399
o-Xylene		<0.00199	0.00199	<0.00200	0.00200	<0.00198	0.00198	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200
Total Xylenes		<0.00199	0.00199	<0.00200	0.00200	<0.00198	0.00198	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200
Total BTEX		<0.00199	0.00199	<0.00200	0.00200	<0.00198	0.00198	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200
Chloride by EPA 300	***Extracted:***	Feb-20-18 14:50		Feb-20-18 14:50		Feb-20-18 14:50		Feb-20-18 14:50		Feb-20-18 14:50		Feb-20-18 14:50	
	Analyzed:	Feb-20-18 22:26		Feb-20-18 22:31		Feb-20-18 22:47		Feb-20-18 22:52		Feb-20-18 23:08		Feb-20-18 23:14	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		645	4.92	<4.97	4.97	57.8	4.95	88.7	4.98	53.7	4.95	35.4	4.91
TPH By SW8015 Mod	***Extracted:***	Feb-14-18 07:00		Feb-14-18 07:00		Feb-14-18 07:00		Feb-14-18 07:00		Feb-14-18 15:00		Feb-14-18 15:00	
	Analyzed:	Feb-14-18 17:33		Feb-14-18 17:54		Feb-14-18 18:15		Feb-14-18 18:35		Feb-15-18 03:38		Feb-15-18 04:00	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Oil Range Hydrocarbons (ORO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0

Jessica Kramer
Odessa Laboratory Director

Certificate of Analysis Summary 576107

COG Operating LLC, Artesia, NM

Project Name: King Tut Federal #1

Project Id:
Contact: Sheldon Hitchcock
Project Location:

Date Received in Lab: Mon Feb-12-18 07:50 am
Report Date: 21-FEB-18
Project Manager: Jessica Kramer

Analysis Requested							
	Lab Id:	576107-007					
	Field Id:	T3					
	Depth:	1- ft					
	Matrix:	SOIL					
	Sampled:	Feb-06-18 09:00					
BTEX by EPA 8021B	***Extracted:***	Feb-15-18 13:00					
	Analyzed:	Feb-15-18 22:25					
	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				
Chloride by EPA 300	***Extracted:***	Feb-20-18 14:50					
	Analyzed:	Feb-20-18 23:19					
	Units/RL:	mg/kg	RL				
Chloride		85.7	4.93				
TPH By SW8015 Mod	***Extracted:***	Feb-14-18 15:00					
	Analyzed:	Feb-15-18 04:21					
	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				

Analytical Report 576107

for

COG Operating LLC

Project Manager: Sheldon Hitchcock

King Tut Federal #1

21-FEB-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-17-23), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab code: TX01468):
Texas (T104704295-17-15), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-17-13)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

21-FEB-18

Project Manager: **Sheldon Hitchcock**
COG Operating LLC
2407 Pecos Avenue
Artesia, NM 88210

Reference: XENCO Report No(s): **576107**
King Tut Federal #1
Project Address:

Sheldon Hitchcock:

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) 576107. 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. 576107 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,

Jessica Kramer

Jessica Kramer
Odessa Laboratory Director

Sample Cross Reference 576107

COG Operating LLC, Artesia, NM

King Tut Federal #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
T1	S	02-06-18 09:00	ft	576107-001
T1	S	02-06-18 09:00	1 ft	576107-002
T1	S	02-06-18 09:00	2 ft	576107-003
T2	S	02-06-18 09:00		576107-004
T2	S	02-06-18 09:00	1 ft	576107-005
T3	S	02-06-18 09:00		576107-006
T3	S	02-06-18 09:00	1 ft	576107-007

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3041241 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3041450 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analytical Results 576107

COG Operating LLC, Artesia, NM

King Tut Federal #1

Sample Id:	**T1**	Matrix:	Soil	Date Received:	02.12.18 07.50
Lab Sample Id:	576107-001	Date Collected:	02.06.18 09.00		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	LRI			% Moisture:	
Analyst:	OJS	Date Prep:	02.20.18 14.50	Basis:	Wet Weight
Seq Number:	3041693				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**645**	4.92	mg/kg	02.20.18 22.26		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.14.18 07.00	Basis:	Wet Weight
Seq Number:	3041130				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.14.18 17.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.14.18 17.33	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.14.18 17.33	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.14.18 17.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	02.14.18 17.33	
o-Terphenyl	84-15-1	103	%	70-135	02.14.18 17.33	

Certificate of Analytical Results 576107

COG Operating LLC, Artesia, NM

King Tut Federal #1

Sample Id:	**T1**	Matrix:	Soil	Date Received:	02.12.18 07.50
Lab Sample Id:	576107-001	Date Collected:	02.06.18 09.00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	02.15.18 13.00	Basis:	Wet Weight
Seq Number:	3041241				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.15.18 20.30	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.15.18 20.30	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.15.18 20.30	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.15.18 20.30	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.15.18 20.30	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.15.18 20.30	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.15.18 20.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	97	%	80-120	02.15.18 20.30	
1,4-Difluorobenzene	540-36-3	84	%	80-120	02.15.18 20.30	

Certificate of Analytical Results 576107

COG Operating LLC, Artesia, NM

King Tut Federal #1

Sample Id:	**T1**	Matrix:	Soil	Date Received:	02.12.18 07.50
Lab Sample Id:	576107-002	Date Collected:	02.06.18 09.00	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	LRI			% Moisture:	
Analyst:	OJS	Date Prep:	02.20.18 14.50	Basis:	Wet Weight
Seq Number:	3041693				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.97	4.97	mg/kg	02.20.18 22.31	U	1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.14.18 07.00	Basis:	Wet Weight
Seq Number:	3041130				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.14.18 17.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.14.18 17.54	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.14.18 17.54	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.14.18 17.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	02.14.18 17.54	
o-Terphenyl	84-15-1	94	%	70-135	02.14.18 17.54	

Certificate of Analytical Results 576107

COG Operating LLC, Artesia, NM

King Tut Federal #1

Sample Id:	**T1**	Matrix:	Soil	Date Received:	02.12.18 07.50
Lab Sample Id:	576107-002	Date Collected:	02.06.18 09.00	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	02.15.18 13.00	Basis:	Wet Weight
Seq Number:	3041241				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.15.18 20.50	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.15.18 20.50	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.15.18 20.50	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.15.18 20.50	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.15.18 20.50	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.15.18 20.50	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.15.18 20.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	94	%	80-120	02.15.18 20.50	
1,4-Difluorobenzene	540-36-3	83	%	80-120	02.15.18 20.50	

Certificate of Analytical Results 576107

COG Operating LLC, Artesia, NM

King Tut Federal #1

Sample Id:	**T1**	Matrix:	Soil	Date Received:	02.12.18 07.50
Lab Sample Id:	576107-003	Date Collected:	02.06.18 09.00	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	LRI			% Moisture:	
Analyst:	OJS	Date Prep:	02.20.18 14.50	Basis:	Wet Weight
Seq Number:	3041693				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**57.8**	4.95	mg/kg	02.20.18 22.47		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.14.18 07.00	Basis:	Wet Weight
Seq Number:	3041130				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.14.18 18.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.14.18 18.15	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.14.18 18.15	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.14.18 18.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	02.14.18 18.15	
o-Terphenyl	84-15-1	104	%	70-135	02.14.18 18.15	

Certificate of Analytical Results 576107

COG Operating LLC, Artesia, NM

King Tut Federal #1

Sample Id:	**T1**	Matrix:	Soil	Date Received:	02.12.18 07.50
Lab Sample Id:	576107-003	Date Collected:	02.06.18 09.00	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	02.15.18 13.00	Basis:	Wet Weight
Seq Number:	3041241				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	02.15.18 21.09	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	02.15.18 21.09	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	02.15.18 21.09	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	02.15.18 21.09	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	02.15.18 21.09	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	02.15.18 21.09	U	1
Total BTEX		<0.00198	0.00198	mg/kg	02.15.18 21.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	99	%	80-120	02.15.18 21.09	
1,4-Difluorobenzene	540-36-3	83	%	80-120	02.15.18 21.09	

Certificate of Analytical Results 576107

COG Operating LLC, Artesia, NM

King Tut Federal #1

Sample Id:	**T2**	Matrix:	Soil	Date Received:	02.12.18 07.50
Lab Sample Id:	576107-004	Date Collected:	02.06.18 09.00		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	LRI			% Moisture:	
Analyst:	OJS	Date Prep:	02.20.18 14.50	Basis:	Wet Weight
Seq Number:	3041693				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**88.7**	4.98	mg/kg	02.20.18 22.52		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.14.18 07.00	Basis:	Wet Weight
Seq Number:	3041130				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.14.18 18.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.14.18 18.35	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.14.18 18.35	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.14.18 18.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	02.14.18 18.35	
o-Terphenyl	84-15-1	104	%	70-135	02.14.18 18.35	

Certificate of Analytical Results 576107

COG Operating LLC, Artesia, NM

King Tut Federal #1

Sample Id:	**T2**	Matrix:	Soil	Date Received:	02.12.18 07.50
Lab Sample Id:	576107-004	Date Collected:	02.06.18 09.00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	02.15.18 13.00	Basis:	Wet Weight
Seq Number:	3041241				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.15.18 21.28	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.15.18 21.28	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.15.18 21.28	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.15.18 21.28	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.15.18 21.28	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.15.18 21.28	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.15.18 21.28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	97	%	80-120	02.15.18 21.28	
1,4-Difluorobenzene	540-36-3	85	%	80-120	02.15.18 21.28	

Certificate of Analytical Results 576107

COG Operating LLC, Artesia, NM

King Tut Federal #1

Sample Id:	**T2**	Matrix:	Soil	Date Received:	02.12.18 07.50
Lab Sample Id:	576107-005	Date Collected:	02.06.18 09.00	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	LRI			% Moisture:	
Analyst:	OJS	Date Prep:	02.20.18 14.50	Basis:	Wet Weight
Seq Number:	3041693				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**53.7**	4.95	mg/kg	02.20.18 23.08		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.14.18 15.00	Basis:	Wet Weight
Seq Number:	3041133				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.15.18 03.38	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.15.18 03.38	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.15.18 03.38	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.15.18 03.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	02.15.18 03.38	
o-Terphenyl	84-15-1	101	%	70-135	02.15.18 03.38	

Certificate of Analytical Results 576107

COG Operating LLC, Artesia, NM

King Tut Federal #1

Sample Id:	**T2**	Matrix:	Soil	Date Received:	02.12.18 07.50
Lab Sample Id:	576107-005	Date Collected:	02.06.18 09.00	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	02.17.18 08.30	Basis:	Wet Weight
Seq Number:	3041450				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.17.18 21.03	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.17.18 21.03	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.17.18 21.03	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.17.18 21.03	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.17.18 21.03	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.17.18 21.03	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.17.18 21.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	83	%	80-120	02.17.18 21.03	
4-Bromofluorobenzene	460-00-4	100	%	80-120	02.17.18 21.03	

Certificate of Analytical Results 576107

COG Operating LLC, Artesia, NM

King Tut Federal #1

Sample Id:	**T3**	Matrix:	Soil	Date Received:	02.12.18 07.50
Lab Sample Id:	576107-006	Date Collected:	02.06.18 09.00		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	LRI			% Moisture:	
Analyst:	OJS	Date Prep:	02.20.18 14.50	Basis:	Wet Weight
Seq Number:	3041693				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**35.4**	4.91	mg/kg	02.20.18 23.14		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.14.18 15.00	Basis:	Wet Weight
Seq Number:	3041133				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.15.18 04.00	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.15.18 04.00	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.15.18 04.00	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.15.18 04.00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	02.15.18 04.00	
o-Terphenyl	84-15-1	99	%	70-135	02.15.18 04.00	

Certificate of Analytical Results 576107

COG Operating LLC, Artesia, NM

King Tut Federal #1

Sample Id:	**T3**	Matrix:	Soil	Date Received:	02.12.18 07.50
Lab Sample Id:	576107-006	Date Collected:	02.06.18 09.00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	02.17.18 08.30	Basis:	Wet Weight
Seq Number:	3041450				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.17.18 21.22	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.17.18 21.22	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.17.18 21.22	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.17.18 21.22	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.17.18 21.22	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.17.18 21.22	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.17.18 21.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	80	%	80-120	02.17.18 21.22	
4-Bromofluorobenzene	460-00-4	114	%	80-120	02.17.18 21.22	

Certificate of Analytical Results 576107

COG Operating LLC, Artesia, NM

King Tut Federal #1

Sample Id:	**T3**	Matrix:	Soil	Date Received:	02.12.18 07.50
Lab Sample Id:	576107-007	Date Collected:	02.06.18 09.00	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	LRI			% Moisture:	
Analyst:	OJS	Date Prep:	02.20.18 14.50	Basis:	Wet Weight
Seq Number:	3041693				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**85.7**	4.93	mg/kg	02.20.18 23.19		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.14.18 15.00	Basis:	Wet Weight
Seq Number:	3041133				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.15.18 04.21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.15.18 04.21	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.15.18 04.21	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.15.18 04.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	121	%	70-135	02.15.18 04.21	
o-Terphenyl	84-15-1	122	%	70-135	02.15.18 04.21	

Certificate of Analytical Results 576107

COG Operating LLC, Artesia, NM

King Tut Federal #1

Sample Id:	**T3**	Matrix:	Soil	Date Received:	02.12.18 07.50
Lab Sample Id:	576107-007	Date Collected:	02.06.18 09.00	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	02.15.18 13.00	Basis:	Wet Weight
Seq Number:	3041241				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.15.18 22.25	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.15.18 22.25	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.15.18 22.25	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.15.18 22.25	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.15.18 22.25	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.15.18 22.25	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.15.18 22.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	98	%	80-120	02.15.18 22.25	
1,4-Difluorobenzene	540-36-3	88	%	80-120	02.15.18 22.25	

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

QC Summary 576107

COG Operating LLC

King Tut Federal #1

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3041693 Matrix: Solid Date Prep: 02.20.18
MB Sample Id: 7639484-1-BLK LCS Sample Id: 7639484-1-BKS LCSD Sample Id: 7639484-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	250	100	250	100	90-110	0	20	mg/kg	02.20.18 21:07	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3041693 Matrix: Soil Date Prep: 02.20.18
Parent Sample Id: 576107-002 MS Sample Id: 576107-002 S MSD Sample Id: 576107-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<4.97	249	265	106	263	106	90-110	1	20	mg/kg	02.20.18 22:37	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3041693 Matrix: Soil Date Prep: 02.20.18
Parent Sample Id: 576108-004 MS Sample Id: 576108-004 S MSD Sample Id: 576108-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	18.6	249	279	105	282	106	90-110	1	20	mg/kg	02.20.18 21:22	

Analytical Method: **TPH By SW8015 Mod** Prep Method: TX1005P
Seq Number: 3041130 Matrix: Solid Date Prep: 02.14.18
MB Sample Id: 7639168-1-BLK LCS Sample Id: 7639168-1-BKS LCSD Sample Id: 7639168-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1000	100	949	95	70-135	5	35	mg/kg	02.14.18 10:06	
Diesel Range Organics (DRO)	<15.0	1000	1130	113	1030	103	70-135	9	35	mg/kg	02.14.18 10:06	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	95		114		107		70-135	%	02.14.18 10:06
o-Terphenyl	95		113		107		70-135	%	02.14.18 10:06

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

QC Summary 576107

COG Operating LLC

King Tut Federal #1

Analytical Method: **TPH By SW8015 Mod** Prep Method: TX1005P
Seq Number: 3041133 Matrix: Solid Date Prep: 02.14.18
MB Sample Id: 7639169-1-BLK LCS Sample Id: 7639169-1-BKS LCSD Sample Id: 7639169-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1090	109	931	93	70-135	16	35	mg/kg	02.14.18 19:37	
Diesel Range Organics (DRO)	<15.0	1000	1150	115	1020	102	70-135	12	35	mg/kg	02.14.18 19:37	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	94		128		114		70-135	%	02.14.18 19:37
o-Terphenyl	95		129		107		70-135	%	02.14.18 19:37

Analytical Method: **TPH By SW8015 Mod** Prep Method: TX1005P
Seq Number: 3041130 Matrix: Soil Date Prep: 02.14.18
Parent Sample Id: 576102-001 MS Sample Id: 576102-001 S MSD Sample Id: 576102-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	999	989	99	1050	105	70-135	6	35	mg/kg	02.14.18 11:07	
Diesel Range Organics (DRO)	<15.0	999	1080	108	1180	118	70-135	9	35	mg/kg	02.14.18 11:07	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	106		108		70-135	%	02.14.18 11:07
o-Terphenyl	102		109		70-135	%	02.14.18 11:07

Analytical Method: **TPH By SW8015 Mod** Prep Method: TX1005P
Seq Number: 3041133 Matrix: Soil Date Prep: 02.14.18
Parent Sample Id: 576110-001 MS Sample Id: 576110-001 S MSD Sample Id: 576110-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	998	954	96	959	96	70-135	1	35	mg/kg	02.14.18 20:40	
Diesel Range Organics (DRO)	<15.0	998	1010	101	994	100	70-135	2	35	mg/kg	02.14.18 20:40	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	98		98		70-135	%	02.14.18 20:40
o-Terphenyl	92		89		70-135	%	02.14.18 20:40

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

QC Summary 576107

COG Operating LLC

King Tut Federal #1

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3041241 | Matrix: Solid | Date Prep: 02.15.18
MB Sample Id: 7639243-1-BLK | LCS Sample Id: 7639243-1-BKS | LCSD Sample Id: 7639243-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0891	88	0.0855	86	70-130	4	35	mg/kg	02.15.18 17:57	
Toluene	<0.00202	0.101	0.0937	93	0.0893	89	70-130	5	35	mg/kg	02.15.18 17:57	
Ethylbenzene	<0.00202	0.101	0.102	101	0.0996	100	71-129	2	35	mg/kg	02.15.18 17:57	
m,p-Xylenes	<0.00403	0.202	0.200	99	0.195	98	70-135	3	35	mg/kg	02.15.18 17:57	
o-Xylene	<0.00202	0.101	0.0991	98	0.0966	97	71-133	3	35	mg/kg	02.15.18 17:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	84		92		88		80-120	%	02.15.18 17:57
4-Bromofluorobenzene	97		108		107		80-120	%	02.15.18 17:57

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3041450 | Matrix: Solid | Date Prep: 02.17.18
MB Sample Id: 7639379-1-BLK | LCS Sample Id: 7639379-1-BKS | LCSD Sample Id: 7639379-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0838	84	0.0801	80	70-130	5	35	mg/kg	02.17.18 18:53	
Toluene	<0.00200	0.100	0.0881	88	0.0845	85	70-130	4	35	mg/kg	02.17.18 18:53	
Ethylbenzene	<0.00200	0.100	0.0969	97	0.0937	94	71-129	3	35	mg/kg	02.17.18 18:53	
m,p-Xylenes	<0.00401	0.200	0.192	96	0.185	93	70-135	4	35	mg/kg	02.17.18 18:53	
o-Xylene	<0.00200	0.100	0.0962	96	0.0924	93	71-133	4	35	mg/kg	02.17.18 18:53	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	84		87		92		80-120	%	02.17.18 18:53
4-Bromofluorobenzene	100		111		117		80-120	%	02.17.18 18:53

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3041241 | Matrix: Soil | Date Prep: 02.15.18
Parent Sample Id: 576108-001 | MS Sample Id: 576108-001 S | MSD Sample Id: 576108-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0801	80	0.0788	79	70-130	2	35	mg/kg	02.15.18 18:35	
Toluene	<0.00200	0.0998	0.0833	83	0.0810	81	70-130	3	35	mg/kg	02.15.18 18:35	
Ethylbenzene	<0.00200	0.0998	0.0876	88	0.0852	85	71-129	3	35	mg/kg	02.15.18 18:35	
m,p-Xylenes	<0.00399	0.200	0.171	86	0.166	83	70-135	3	35	mg/kg	02.15.18 18:35	
o-Xylene	<0.00200	0.0998	0.0850	85	0.0843	84	71-133	1	35	mg/kg	02.15.18 18:35	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	90		90		80-120	%	02.15.18 18:35
4-Bromofluorobenzene	106		107		80-120	%	02.15.18 18:35

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

QC Summary 576107

COG Operating LLC

King Tut Federal #1

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3041450 Matrix: Soil Date Prep: 02.17.18

Parent Sample Id: 576501-002 MS Sample Id: 576501-002 S

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	Limits	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0765	77	70-130	mg/kg	02.17.18 19:29	
Toluene	<0.00200	0.0998	0.0743	74	70-130	mg/kg	02.17.18 19:29	
Ethylbenzene	<0.00200	0.0998	0.0790	79	71-129	mg/kg	02.17.18 19:29	
m,p-Xylenes	<0.00399	0.200	0.153	77	70-135	mg/kg	02.17.18 19:29	
o-Xylene	<0.00200	0.0998	0.0802	80	71-133	mg/kg	02.17.18 19:29	

Surrogate	MS %Rec	MS Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	86		80-120	%	02.17.18 19:29
4-Bromofluorobenzene	115		80-120	%	02.17.18 19:29

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

CHAIN OF CUSTODY

Page 1 Of 1

XENCO LABORATORIES

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www.xenco.com

Xenco Quote #: | Xenco Job #: 576107

Client / Reporting Information

Company Name / Branch: COG Operating, LLC
Company Address: 2407 Pecos Ave. Artesia NM 88210
Email: slhitchcock@concho.com Phone No: 575-703-6475
dneel2@concho.com; cgray@concho.com; rhaskell@concho.com
Project Contact: Sheldon Hitchcock
Samplers's Name: Sheldon Hitchcock

Project Information

Project Name/Number: KING TUT FEDERAL #1
Project Location:
Invoice To: COG Operating, LLC
Attn: Robert McNeill
600 W. Illinois Ave.
Midland Tx, 79701
PO Number:

Analytical Information

Matrix Codes

W = Water
S = Soil/Sed/Solid
GW = Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW = Ocean/Sea Water
WI = Wipe
O = Oil
WW = Waste Water
A = Air

No.	Field ID / Point of Collection	Collection: Sample Depth	Date	Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	TPH EXTENDED (EPA8015M)	BTEX (EPA 8021B)	CHLORIDES (EPA 300)	Field Comments
1	T1	0'	2-6-16	9:00 AM	S	1									X	X	X	
2	T1	1'			S	1									X	X	X	
3	T1	2'			S	1									X	X	X	
4	T2	0'			S	1									X	X	X	
5	T2	1'			S	1									X	X	X	
6	T3	0'			S	1									X	X	X	
7	T3	1'			S	1									X	X	X	
8					S	1												
9					S	1												
10					S	1												

Turnaround Time (Business days)

Data Deliverable Information

- ☐ Same Day TAT
- ☐ 5 Day TAT
- ☐ Next Day EMERGENCY
- ☐ 7 Day TAT
- ☐ 2 Day EMERGENCY
- ☒ Contract TAT
- ☐ 3 Day EMERGENCY
- ☐ Level II Std QC
- ☐ Level III Std QC+ Forms
- ☐ Level 3 (CLP Forms)
- ☐ TRRP Checklist
- ☐ Level IV (Full Data Pkg /raw data)
- ☐ TRRP Level IV
- ☐ UST / RG -411

TAT Starts Day received by Lab, if received by 5:00 pm

Temp: 1.8 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 1.6

FED-EX / UPS: Tracking #

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1			1	2		2
3	Relinquished by: Dutton	Date Time: 2-9-16 1:00 PM	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4 KRAMER
5	Relinquished by:	Date Time:	Received By: 5	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. / Thermo. Corr. Factor

Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such loses are due to circumstances beyond the control of Xenco. A minimum charge of $75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at $5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating LLC

Date/ Time Received: 02/12/2018 07:50:00 AM

Work Order #: 576107

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)?	1.6
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**No**
#18 Water 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: Connie Hernandez Date: 02/12/2018

Checklist reviewed by: Jessica Kramer Date: 02/12/2018

Jessica Kramer

Certificate of Analysis Summary 578782

TRC Solutions, Inc, Midland, TX

Project Name: King TUT Federal #1H

Project Id:

Contact: Joel Lowry

Project Location: Eddy Co. NM

Date Received in Lab: Thu Mar-08-18 04:45 pm

Report Date: 12-MAR-18

Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	578782-001		578782-002		578782-003		578782-004		578782-005		578782-006	
	Field Id:	SP1 @ Surface		SP1 @ 1'		SP1 @ 2'		SP2 @ Surface		SP2 @ 1'		N @ 6"	
	Depth:	Surf-		1- ft		2- ft		Surf-		1-		6- In	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Mar-07-18 14:30		Mar-07-18 14:35		Mar-07-18 14:40		Mar-07-18 14:48		Mar-07-18 14:50		Mar-07-18 14:55	
BTEX by EPA 8021B	***Extracted:***	Mar-09-18 14:00		Mar-09-18 14:00		Mar-09-18 14:00		Mar-09-18 14:00		Mar-09-18 14:00		Mar-09-18 14:00	
	Analyzed:	Mar-10-18 02:49		Mar-10-18 00:07		Mar-10-18 20:54		Mar-10-18 03:16		Mar-10-18 03:43		Mar-10-18 04:10	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.0183	0.0183	<0.0177	0.0177	<0.0177	0.0177	<0.0175	0.0175	<0.0195	0.0195	<0.0200	0.0200
Toluene		<0.0183	0.0183	<0.0177	0.0177	<0.0177	0.0177	<0.0175	0.0175	<0.0195	0.0195	<0.0200	0.0200
Ethylbenzene		0.0293	0.0183	<0.0177	0.0177	<0.0177	0.0177	<0.0175	0.0175	<0.0195	0.0195	<0.0200	0.0200
m,p-Xylenes		0.0586	0.0366	<0.0354	0.0354	<0.0354	0.0354	<0.0350	0.0350	<0.0390	0.0390	<0.0400	0.0400
o-Xylene		0.0275	0.0183	<0.0177	0.0177	<0.0177	0.0177	<0.0175	0.0175	<0.0195	0.0195	<0.0200	0.0200
Total Xylenes		0.0861	0.0183	<0.0177	0.0177	<0.0177	0.0177	<0.0175	0.0175	<0.0195	0.0195	<0.02	0.02
Total BTEX		0.1154	0.0183	<0.0177	0.0177	<0.0177	0.0177	<0.0175	0.0175	<0.0195	0.0195	<0.02	0.02
Chloride by EPA 300	***Extracted:***	Mar-10-18 09:30		Mar-10-18 09:30		Mar-10-18 09:30		Mar-10-18 09:30		Mar-10-18 09:30		Mar-10-18 09:30	
	Analyzed:	Mar-10-18 12:13		Mar-10-18 16:38		Mar-10-18 16:50		Mar-10-18 12:51		Mar-10-18 13:03		Mar-10-18 17:02	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		8890	1250	53.6	25.0	68.5	25.0	685	125	292	50.0	<25.0	25.0
DRO-ORO By SW8015B SUB: TX104704215-18-24	***Extracted:***	Mar-10-18 11:09		Mar-10-18 11:18		Mar-10-18 11:21		Mar-10-18 11:24		Mar-10-18 11:27		Mar-10-18 11:30	
	Analyzed:	Mar-10-18 16:50		Mar-10-18 17:54		Mar-10-18 18:16		Mar-10-18 18:37		Mar-10-18 18:58		Mar-10-18 19:20	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Diesel Range Organics (DRO)		25.9	15.0	<14.9	14.9	<15.0	15.0	17.6	14.9	<14.9	14.9	<14.9	14.9
Oil Range Hydrocarbons (ORO)		<15.0	15.0	<14.9	14.9	<15.0	15.0	<14.9	14.9	<14.9	14.9	<14.9	14.9
TPH GRO by EPA 8015 Mod.	***Extracted:***	Mar-09-18 14:00		Mar-09-18 14:00		Mar-09-18 14:00		Mar-09-18 14:00		Mar-09-18 14:00		Mar-09-18 14:00	
	Analyzed:	Mar-10-18 02:49		Mar-10-18 00:07		Mar-10-18 20:54		Mar-10-18 03:16		Mar-10-18 03:43		Mar-10-18 04:10	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
TPH-GRO		<3.66	3.66	<3.54	3.54	<3.54	3.54	<3.50	3.50	<3.90	3.90	<4.00	4.00

Certificate of Analysis Summary 578782

TRC Solutions, Inc, Midland, TX

Project Name: King TUT Federal #1H

Project Id:

Contact: Joel Lowry

Project Location: Eddy Co. NM

Date Received in Lab: Thu Mar-08-18 04:45 pm

Report Date: 12-MAR-18

Project Manager: Kelsey Brooks

Analysis Requested									
	Lab Id:	578782-007		578782-008		578782-009			
	Field Id:	E @ 6"		S @ 6"		W @ 6"			
	Depth:	6- In		6- In		6- In			
	Matrix:	SOIL		SOIL		SOIL			
	Sampled:	Mar-07-18 15:00		Mar-07-18 15:03		Mar-07-18 15:05			
BTEX by EPA 8021B	***Extracted:***	Mar-09-18 14:00		Mar-09-18 14:00		Mar-09-18 14:00			
	Analyzed:	Mar-10-18 04:37		Mar-10-18 05:05		Mar-10-18 05:32			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Benzene		<0.0177	0.0177	<0.0195	0.0195	<0.0182	0.0182		
Toluene		<0.0177	0.0177	<0.0195	0.0195	<0.0182	0.0182		
Ethylbenzene		<0.0177	0.0177	<0.0195	0.0195	<0.0182	0.0182		
m,p-Xylenes		<0.0353	0.0353	<0.0389	0.0389	<0.0365	0.0365		
o-Xylene		<0.0177	0.0177	<0.0195	0.0195	<0.0182	0.0182		
Total Xylenes		<0.0177	0.0177	<0.0195	0.0195	<0.0182	0.0182		
Total BTEX		<0.0177	0.0177	<0.0195	0.0195	<0.0182	0.0182		
Chloride by EPA 300	***Extracted:***	Mar-10-18 09:30		Mar-10-18 09:30		Mar-10-18 09:30			
	Analyzed:	Mar-10-18 17:15		Mar-10-18 17:27		Mar-10-18 17:40			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		<25.0	25.0	<25.0	25.0	86.2	25.0		
DRO-ORO By SW8015B SUB: TX104704215-18-24	***Extracted:***	Mar-10-18 11:33		Mar-10-18 11:36		Mar-10-18 11:39			
	Analyzed:	Mar-10-18 19:41		Mar-10-18 20:02		Mar-10-18 20:23			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Diesel Range Organics (DRO)		<14.9	14.9	<14.9	14.9	<15.0	15.0		
Oil Range Hydrocarbons (ORO)		<14.9	14.9	<14.9	14.9	<15.0	15.0		
TPH GRO by EPA 8015 Mod.	***Extracted:***	Mar-09-18 14:00		Mar-09-18 14:00		Mar-09-18 14:00			
	Analyzed:	Mar-10-18 04:37		Mar-10-18 05:05		Mar-10-18 05:32			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
TPH-GRO		<3.53	3.53	<3.89	3.89	<3.65	3.65		

Analytical Report 578782

for

TRC Solutions, Inc

Project Manager: Joel Lowry

King TUT Federal #1H

12-MAR-18

Collected By: Client

6701 Aberdeen, Suite 9 Lubbock, TX 79424

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-18-24), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab code: TX01468):
Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-18-14)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)

12-MAR-18

Project Manager: **Joel Lowry**
TRC Solutions, Inc
2057 Commerce
Midland, TX 79703

Reference: XENCO Report No(s): **578782**
King TUT Federal #1H
Project Address: Eddy Co. NM

Joel Lowry:

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) 578782. 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. 578782 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 578782

TRC Solutions, Inc, Midland, TX

King TUT Federal #1H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SP1 @ Surface	S	03-07-18 14:30	Surf	578782-001
SP1 @ 1'	S	03-07-18 14:35	1 ft	578782-002
SP1 @ 2'	S	03-07-18 14:40	2 ft	578782-003
SP2 @ Surface	S	03-07-18 14:48	Surf	578782-004
SP2 @ 1'	S	03-07-18 14:50	1	578782-005
N @ 6"	S	03-07-18 14:55	6 In	578782-006
E @ 6"	S	03-07-18 15:00	6 In	578782-007
S @ 6"	S	03-07-18 15:03	6 In	578782-008
W @ 6"	S	03-07-18 15:05	6 In	578782-009

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3043314 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3043343 Chloride by EPA 300
Lab Sample ID 578782-001 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: 578782-001, -004, -005.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3043344 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analytical Results 578782

TRC Solutions, Inc, Midland, TX

King TUT Federal #1H

Sample Id:	**SP1 @ Surface**	Matrix:	Soil	Date Received:	03.08.18 16.45
Lab Sample Id:	578782-001	Date Collected:	03.07.18 14.30	Sample Depth:	Surf

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	RNL			% Moisture:	
Analyst:	RNL	Date Prep:	03.10.18 09.30	Basis:	Wet Weight
Seq Number:	3043343				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**8890**	1250	mg/kg	03.10.18 12.13		50

Analytical Method:	DRO-ORO By SW8015B			Prep Method:	SW8015P
Tech:	ISU			% Moisture:	
Analyst:	ISU	Date Prep:	03.10.18 11.09	Basis:	Wet Weight
Seq Number:	3043382			SUB:	TX104704215-18-24

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	**25.9**	15.0	mg/kg	03.10.18 16.50		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	03.10.18 16.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-135	03.10.18 16.50	
o-Terphenyl	84-15-1	89	%	70-135	03.10.18 16.50	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	03.09.18 14.00	Basis:	Wet Weight
Seq Number:	3043314				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0183	0.0183	mg/kg	03.10.18 02.49	U	1
Toluene	108-88-3	<0.0183	0.0183	mg/kg	03.10.18 02.49	U	1
Ethylbenzene	100-41-4	**0.0293**	0.0183	mg/kg	03.10.18 02.49		1
m,p-Xylenes	179601-23-1	**0.0586**	0.0366	mg/kg	03.10.18 02.49		1
o-Xylene	95-47-6	**0.0275**	0.0183	mg/kg	03.10.18 02.49		1
Total Xylenes	1330-20-7	**0.0861**	0.0183	mg/kg	03.10.18 02.49		1
Total BTEX		**0.1154**	0.0183	mg/kg	03.10.18 02.49		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	99	%	68-120	03.10.18 02.49	
a,a,a-Trifluorotoluene	98-08-8	95	%	71-121	03.10.18 02.49	

Certificate of Analytical Results 578782

TRC Solutions, Inc, Midland, TX

King TUT Federal #1H

Sample Id:	**SP1 @ Surface**	Matrix:	Soil	Date Received:	03.08.18 16.45
Lab Sample Id:	578782-001	Date Collected:	03.07.18 14.30	Sample Depth:	Surf
Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	03.09.18 14.00	Basis:	Wet Weight
Seq Number:	3043319				

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<3.66	3.66		mg/kg	03.10.18 02.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	112	%	76-123	03.10.18 02.49	
a,a,a-Trifluorotoluene	98-08-8	98	%	69-120	03.10.18 02.49	

Certificate of Analytical Results 578782

TRC Solutions, Inc, Midland, TX

King TUT Federal #1H

Sample Id:	**SP1 @ 1'**	Matrix:	Soil	Date Received:	03.08.18 16.45
Lab Sample Id:	578782-002	Date Collected:	03.07.18 14.35	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	RNL			% Moisture:	
Analyst:	RNL	Date Prep:	03.10.18 09.30	Basis:	Wet Weight
Seq Number:	3043346				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**53.6**	25.0	mg/kg	03.10.18 16.38		1

Analytical Method:	DRO-ORO By SW8015B			Prep Method:	SW8015P
Tech:	ISU			% Moisture:	
Analyst:	ISU	Date Prep:	03.10.18 11.18	Basis:	Wet Weight
Seq Number:	3043382			SUB:	TX104704215-18-24

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	03.10.18 17.54	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	03.10.18 17.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	03.10.18 17.54	
o-Terphenyl	84-15-1	97	%	70-135	03.10.18 17.54	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	03.09.18 14.00	Basis:	Wet Weight
Seq Number:	3043314				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0177	0.0177	mg/kg	03.10.18 00.07	U	1
Toluene	108-88-3	<0.0177	0.0177	mg/kg	03.10.18 00.07	U	1
Ethylbenzene	100-41-4	<0.0177	0.0177	mg/kg	03.10.18 00.07	U	1
m,p-Xylenes	179601-23-1	<0.0354	0.0354	mg/kg	03.10.18 00.07	U	1
o-Xylene	95-47-6	<0.0177	0.0177	mg/kg	03.10.18 00.07	U	1
Total Xylenes	1330-20-7	<0.0177	0.0177	mg/kg	03.10.18 00.07	U	1
Total BTEX		<0.0177	0.0177	mg/kg	03.10.18 00.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	100	%	68-120	03.10.18 00.07	
a,a,a-Trifluorotoluene	98-08-8	97	%	71-121	03.10.18 00.07	

Certificate of Analytical Results 578782

TRC Solutions, Inc, Midland, TX

King TUT Federal #1H

Sample Id:	**SP1 @ 1'**	Matrix:	Soil	Date Received:	03.08.18 16.45
Lab Sample Id:	578782-002	Date Collected:	03.07.18 14.35	Sample Depth:	1 ft
Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	03.09.18 14.00	Basis:	Wet Weight
Seq Number:	3043319				

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<3.54	3.54		mg/kg	03.10.18 00.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	102	%	76-123	03.10.18 00.07	
a,a,a-Trifluorotoluene	98-08-8	97	%	69-120	03.10.18 00.07	

Certificate of Analytical Results 578782

TRC Solutions, Inc, Midland, TX

King TUT Federal #1H

Sample Id:	**SP1 @ 2'**	Matrix:	Soil	Date Received:	03.08.18 16.45
Lab Sample Id:	578782-003	Date Collected:	03.07.18 14.40	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	RNL			% Moisture:	
Analyst:	RNL	Date Prep:	03.10.18 09.30	Basis:	Wet Weight
Seq Number:	3043346				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**68.5**	25.0	mg/kg	03.10.18 16.50		1

Analytical Method:	DRO-ORO By SW8015B			Prep Method:	SW8015P
Tech:	ISU			% Moisture:	
Analyst:	ISU	Date Prep:	03.10.18 11.21	Basis:	Wet Weight
Seq Number:	3043382			SUB:	TX104704215-18-24

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.10.18 18.16	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	03.10.18 18.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	83	%	70-135	03.10.18 18.16	
o-Terphenyl	84-15-1	87	%	70-135	03.10.18 18.16	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	03.09.18 14.00	Basis:	Wet Weight
Seq Number:	3043344				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0177	0.0177	mg/kg	03.10.18 20.54	U	1
Toluene	108-88-3	<0.0177	0.0177	mg/kg	03.10.18 20.54	U	1
Ethylbenzene	100-41-4	<0.0177	0.0177	mg/kg	03.10.18 20.54	U	1
m,p-Xylenes	179601-23-1	<0.0354	0.0354	mg/kg	03.10.18 20.54	U	1
o-Xylene	95-47-6	<0.0177	0.0177	mg/kg	03.10.18 20.54	U	1
Total Xylenes	1330-20-7	<0.0177	0.0177	mg/kg	03.10.18 20.54	U	1
Total BTEX		<0.0177	0.0177	mg/kg	03.10.18 20.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	96	%	68-120	03.10.18 20.54	
a,a,a-Trifluorotoluene	98-08-8	93	%	71-121	03.10.18 20.54	

Certificate of Analytical Results 578782

TRC Solutions, Inc, Midland, TX

King TUT Federal #1H

Sample Id:	**SP1 @ 2'**	Matrix:	Soil	Date Received:	03.08.18 16.45
Lab Sample Id:	578782-003	Date Collected:	03.07.18 14.40	Sample Depth:	2 ft
Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	03.09.18 14.00	Basis:	Wet Weight
Seq Number:	3043345				

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<3.54	3.54		mg/kg	03.10.18 20.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	99	%	76-123	03.10.18 20.54	
a,a,a-Trifluorotoluene	98-08-8	100	%	69-120	03.10.18 20.54	

Certificate of Analytical Results 578782

TRC Solutions, Inc, Midland, TX

King TUT Federal #1H

Sample Id:	**SP2 @ Surface**	Matrix:	Soil	Date Received:	03.08.18 16.45
Lab Sample Id:	578782-004	Date Collected:	03.07.18 14.48	Sample Depth:	Surf

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	RNL			% Moisture:	
Analyst:	RNL	Date Prep:	03.10.18 09.30	Basis:	Wet Weight
Seq Number:	3043343				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**685**	125	mg/kg	03.10.18 12.51		5

Analytical Method:	DRO-ORO By SW8015B			Prep Method:	SW8015P
Tech:	ISU			% Moisture:	
Analyst:	ISU	Date Prep:	03.10.18 11.24	Basis:	Wet Weight
Seq Number:	3043382			SUB:	TX104704215-18-24

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	**17.6**	14.9	mg/kg	03.10.18 18.37		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	03.10.18 18.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	03.10.18 18.37	
o-Terphenyl	84-15-1	101	%	70-135	03.10.18 18.37	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	03.09.18 14.00	Basis:	Wet Weight
Seq Number:	3043314				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0175	0.0175	mg/kg	03.10.18 03.16	U	1
Toluene	108-88-3	<0.0175	0.0175	mg/kg	03.10.18 03.16	U	1
Ethylbenzene	100-41-4	<0.0175	0.0175	mg/kg	03.10.18 03.16	U	1
m,p-Xylenes	179601-23-1	<0.0350	0.0350	mg/kg	03.10.18 03.16	U	1
o-Xylene	95-47-6	<0.0175	0.0175	mg/kg	03.10.18 03.16	U	1
Total Xylenes	1330-20-7	<0.0175	0.0175	mg/kg	03.10.18 03.16	U	1
Total BTEX		<0.0175	0.0175	mg/kg	03.10.18 03.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	93	%	68-120	03.10.18 03.16	
a,a,a-Trifluorotoluene	98-08-8	94	%	71-121	03.10.18 03.16	

Certificate of Analytical Results 578782

TRC Solutions, Inc, Midland, TX

King TUT Federal #1H

Sample Id:	**SP2 @ Surface**	Matrix:	Soil	Date Received:	03.08.18 16.45
Lab Sample Id:	578782-004	Date Collected:	03.07.18 14.48	Sample Depth:	Surf
Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	03.09.18 14.00	Basis:	Wet Weight
Seq Number:	3043319				

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<3.50	3.50		mg/kg	03.10.18 03.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	98	%	76-123	03.10.18 03.16	
a,a,a-Trifluorotoluene	98-08-8	99	%	69-120	03.10.18 03.16	

Certificate of Analytical Results 578782

TRC Solutions, Inc, Midland, TX

King TUT Federal #1H

Sample Id:	**SP2 @ 1'**	Matrix:	Soil	Date Received:	03.08.18 16.45
Lab Sample Id:	578782-005	Date Collected:	03.07.18 14.50	Sample Depth:	1

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	RNL			% Moisture:	
Analyst:	RNL	Date Prep:	03.10.18 09.30	Basis:	Wet Weight
Seq Number:	3043343				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**292**	50.0	mg/kg	03.10.18 13.03		2

Analytical Method:	DRO-ORO By SW8015B			Prep Method:	SW8015P
Tech:	ISU			% Moisture:	
Analyst:	ISU	Date Prep:	03.10.18 11.27	Basis:	Wet Weight
Seq Number:	3043382			SUB:	TX104704215-18-24

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	03.10.18 18.58	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	03.10.18 18.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	83	%	70-135	03.10.18 18.58	
o-Terphenyl	84-15-1	88	%	70-135	03.10.18 18.58	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	03.09.18 14.00	Basis:	Wet Weight
Seq Number:	3043314				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0195	0.0195	mg/kg	03.10.18 03.43	U	1
Toluene	108-88-3	<0.0195	0.0195	mg/kg	03.10.18 03.43	U	1
Ethylbenzene	100-41-4	<0.0195	0.0195	mg/kg	03.10.18 03.43	U	1
m,p-Xylenes	179601-23-1	<0.0390	0.0390	mg/kg	03.10.18 03.43	U	1
o-Xylene	95-47-6	<0.0195	0.0195	mg/kg	03.10.18 03.43	U	1
Total Xylenes	1330-20-7	<0.0195	0.0195	mg/kg	03.10.18 03.43	U	1
Total BTEX		<0.0195	0.0195	mg/kg	03.10.18 03.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	96	%	68-120	03.10.18 03.43	
a,a,a-Trifluorotoluene	98-08-8	94	%	71-121	03.10.18 03.43	

Certificate of Analytical Results 578782

TRC Solutions, Inc, Midland, TX

King TUT Federal #1H

Sample Id:	**SP2 @ 1'**	Matrix:	Soil	Date Received:	03.08.18 16.45
Lab Sample Id:	578782-005	Date Collected:	03.07.18 14.50	Sample Depth:	1
Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	03.09.18 14.00	Basis:	Wet Weight
Seq Number:	3043319				

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<3.90	3.90		mg/kg	03.10.18 03.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	97	%	76-123	03.10.18 03.43	
a,a,a-Trifluorotoluene	98-08-8	98	%	69-120	03.10.18 03.43	

Certificate of Analytical Results 578782

TRC Solutions, Inc, Midland, TX

King TUT Federal #1H

Sample Id:	**N @ 6''**	Matrix:	Soil	Date Received:	03.08.18 16.45
Lab Sample Id:	578782-006	Date Collected:	03.07.18 14.55	Sample Depth:	6 In

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	RNL			% Moisture:	
Analyst:	RNL	Date Prep:	03.10.18 09.30	Basis:	Wet Weight
Seq Number:	3043346				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<25.0	25.0	mg/kg	03.10.18 17.02	U	1

Analytical Method:	DRO-ORO By SW8015B			Prep Method:	SW8015P
Tech:	ISU			% Moisture:	
Analyst:	ISU	Date Prep:	03.10.18 11.30	Basis:	Wet Weight
Seq Number:	3043382			SUB:	TX104704215-18-24

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	03.10.18 19.20	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	03.10.18 19.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	03.10.18 19.20	
o-Terphenyl	84-15-1	100	%	70-135	03.10.18 19.20	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	03.09.18 14.00	Basis:	Wet Weight
Seq Number:	3043314				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0200	0.0200	mg/kg	03.10.18 04.10	U	1
Toluene	108-88-3	<0.0200	0.0200	mg/kg	03.10.18 04.10	U	1
Ethylbenzene	100-41-4	<0.0200	0.0200	mg/kg	03.10.18 04.10	U	1
m,p-Xylenes	179601-23-1	<0.0400	0.0400	mg/kg	03.10.18 04.10	U	1
o-Xylene	95-47-6	<0.0200	0.0200	mg/kg	03.10.18 04.10	U	1
Total Xylenes	1330-20-7	<0.02	0.02	mg/kg	03.10.18 04.10	U	1
Total BTEX		<0.02	0.02	mg/kg	03.10.18 04.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	96	%	68-120	03.10.18 04.10	
a,a,a-Trifluorotoluene	98-08-8	95	%	71-121	03.10.18 04.10	

Certificate of Analytical Results 578782

TRC Solutions, Inc, Midland, TX

King TUT Federal #1H

Sample Id:	**N @ 6''**	Matrix:	Soil	Date Received:	03.08.18 16.45
Lab Sample Id:	578782-006	Date Collected:	03.07.18 14.55	Sample Depth:	6 In
Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	03.09.18 14.00	Basis:	Wet Weight
Seq Number:	3043319				

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<4.00	4.00		mg/kg	03.10.18 04.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	98	%	76-123	03.10.18 04.10	
a,a,a-Trifluorotoluene	98-08-8	97	%	69-120	03.10.18 04.10	

Certificate of Analytical Results 578782

TRC Solutions, Inc, Midland, TX

King TUT Federal #1H

Sample Id:	**E @ 6''**	Matrix:	Soil	Date Received:	03.08.18 16.45
Lab Sample Id:	578782-007	Date Collected:	03.07.18 15.00	Sample Depth:	6 In

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	RNL			% Moisture:	
Analyst:	RNL	Date Prep:	03.10.18 09.30	Basis:	Wet Weight
Seq Number:	3043346				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<25.0	25.0	mg/kg	03.10.18 17.15	U	1

Analytical Method:	DRO-ORO By SW8015B			Prep Method:	SW8015P
Tech:	ISU			% Moisture:	
Analyst:	ISU	Date Prep:	03.10.18 11.33	Basis:	Wet Weight
Seq Number:	3043382			SUB:	TX104704215-18-24

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	03.10.18 19.41	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	03.10.18 19.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	03.10.18 19.41	
o-Terphenyl	84-15-1	97	%	70-135	03.10.18 19.41	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	03.09.18 14.00	Basis:	Wet Weight
Seq Number:	3043314				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0177	0.0177	mg/kg	03.10.18 04.37	U	1
Toluene	108-88-3	<0.0177	0.0177	mg/kg	03.10.18 04.37	U	1
Ethylbenzene	100-41-4	<0.0177	0.0177	mg/kg	03.10.18 04.37	U	1
m,p-Xylenes	179601-23-1	<0.0353	0.0353	mg/kg	03.10.18 04.37	U	1
o-Xylene	95-47-6	<0.0177	0.0177	mg/kg	03.10.18 04.37	U	1
Total Xylenes	1330-20-7	<0.0177	0.0177	mg/kg	03.10.18 04.37	U	1
Total BTEX		<0.0177	0.0177	mg/kg	03.10.18 04.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	98	%	68-120	03.10.18 04.37	
a,a,a-Trifluorotoluene	98-08-8	93	%	71-121	03.10.18 04.37	

Certificate of Analytical Results 578782

TRC Solutions, Inc, Midland, TX

King TUT Federal #1H

Sample Id:	**E @ 6''**	Matrix:	Soil	Date Received:	03.08.18 16.45
Lab Sample Id:	578782-007	Date Collected:	03.07.18 15.00	Sample Depth:	6 In
Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	03.09.18 14.00	Basis:	Wet Weight
Seq Number:	3043319				

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<3.53	3.53		mg/kg	03.10.18 04.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	99	%	76-123	03.10.18 04.37	
a,a,a-Trifluorotoluene	98-08-8	101	%	69-120	03.10.18 04.37	

Certificate of Analytical Results 578782

TRC Solutions, Inc, Midland, TX

King TUT Federal #1H

Sample Id:	**S @ 6"**	Matrix:	Soil	Date Received:	03.08.18 16.45
Lab Sample Id:	578782-008	Date Collected:	03.07.18 15.03	Sample Depth:	6 In

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	RNL			% Moisture:	
Analyst:	RNL	Date Prep:	03.10.18 09.30	Basis:	Wet Weight
Seq Number:	3043346				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<25.0	25.0	mg/kg	03.10.18 17.27	U	1

Analytical Method:	DRO-ORO By SW8015B			Prep Method:	SW8015P
Tech:	ISU			% Moisture:	
Analyst:	ISU	Date Prep:	03.10.18 11.36	Basis:	Wet Weight
Seq Number:	3043382			SUB:	TX104704215-18-24

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	03.10.18 20.02	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	03.10.18 20.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	03.10.18 20.02	
o-Terphenyl	84-15-1	99	%	70-135	03.10.18 20.02	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	03.09.18 14.00	Basis:	Wet Weight
Seq Number:	3043314				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0195	0.0195	mg/kg	03.10.18 05.05	U	1
Toluene	108-88-3	<0.0195	0.0195	mg/kg	03.10.18 05.05	U	1
Ethylbenzene	100-41-4	<0.0195	0.0195	mg/kg	03.10.18 05.05	U	1
m,p-Xylenes	179601-23-1	<0.0389	0.0389	mg/kg	03.10.18 05.05	U	1
o-Xylene	95-47-6	<0.0195	0.0195	mg/kg	03.10.18 05.05	U	1
Total Xylenes	1330-20-7	<0.0195	0.0195	mg/kg	03.10.18 05.05	U	1
Total BTEX		<0.0195	0.0195	mg/kg	03.10.18 05.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	98	%	68-120	03.10.18 05.05	
a,a,a-Trifluorotoluene	98-08-8	94	%	71-121	03.10.18 05.05	

Certificate of Analytical Results 578782

TRC Solutions, Inc, Midland, TX

King TUT Federal #1H

Sample Id:	**S @ 6''**	Matrix:	Soil	Date Received:	03.08.18 16.45
Lab Sample Id:	578782-008	Date Collected:	03.07.18 15.03	Sample Depth:	6 In
Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	03.09.18 14.00	Basis:	Wet Weight
Seq Number:	3043319				

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<3.89	3.89		mg/kg	03.10.18 05.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	100	%	76-123	03.10.18 05.05	
a,a,a-Trifluorotoluene	98-08-8	95	%	69-120	03.10.18 05.05	

Certificate of Analytical Results 578782

TRC Solutions, Inc, Midland, TX

King TUT Federal #1H

Sample Id:	**W @ 6''**	Matrix:	Soil	Date Received:	03.08.18 16.45
Lab Sample Id:	578782-009	Date Collected:	03.07.18 15.05	Sample Depth:	6 In

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	RNL			% Moisture:	
Analyst:	RNL	Date Prep:	03.10.18 09.30	Basis:	Wet Weight
Seq Number:	3043346				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**86.2**	25.0	mg/kg	03.10.18 17.40		1

Analytical Method:	DRO-ORO By SW8015B			Prep Method:	SW8015P
Tech:	ISU			% Moisture:	
Analyst:	ISU	Date Prep:	03.10.18 11.39	Basis:	Wet Weight
Seq Number:	3043382			SUB:	TX104704215-18-24

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.10.18 20.23	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	03.10.18 20.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	03.10.18 20.23	
o-Terphenyl	84-15-1	105	%	70-135	03.10.18 20.23	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	03.09.18 14.00	Basis:	Wet Weight
Seq Number:	3043314				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0182	0.0182	mg/kg	03.10.18 05.32	U	1
Toluene	108-88-3	<0.0182	0.0182	mg/kg	03.10.18 05.32	U	1
Ethylbenzene	100-41-4	<0.0182	0.0182	mg/kg	03.10.18 05.32	U	1
m,p-Xylenes	179601-23-1	<0.0365	0.0365	mg/kg	03.10.18 05.32	U	1
o-Xylene	95-47-6	<0.0182	0.0182	mg/kg	03.10.18 05.32	U	1
Total Xylenes	1330-20-7	<0.0182	0.0182	mg/kg	03.10.18 05.32	U	1
Total BTEX		<0.0182	0.0182	mg/kg	03.10.18 05.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	99	%	68-120	03.10.18 05.32	
a,a,a-Trifluorotoluene	98-08-8	95	%	71-121	03.10.18 05.32	

Certificate of Analytical Results 578782

TRC Solutions, Inc, Midland, TX

King TUT Federal #1H

Sample Id:	**W @ 6''**	Matrix:	Soil	Date Received:	03.08.18 16.45
Lab Sample Id:	578782-009	Date Collected:	03.07.18 15.05	Sample Depth:	6 In
Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	03.09.18 14.00	Basis:	Wet Weight
Seq Number:	3043319				

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<3.65	3.65		mg/kg	03.10.18 05.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	101	%	76-123	03.10.18 05.32	
a,a,a-Trifluorotoluene	98-08-8	101	%	69-120	03.10.18 05.32	

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

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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

QC Summary 578782

TRC Solutions, Inc

King TUT Federal #1H

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3043343 Matrix: Solid Date Prep: 03.10.18
MB Sample Id: 7640526-1-BLK LCS Sample Id: 7640526-1-BKS LCSD Sample Id: 7640526-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<25.0	250	262	105	262	105	90-110	0	20	mg/kg	03.10.18 11:49	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3043346 Matrix: Solid Date Prep: 03.10.18
MB Sample Id: 7640527-1-BLK LCS Sample Id: 7640527-1-BKS LCSD Sample Id: 7640527-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<25.0	250	258	103	262	105	90-110	2	20	mg/kg	03.10.18 15:23	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3043343 Matrix: Soil Date Prep: 03.10.18
Parent Sample Id: 578782-001 MS Sample Id: 578782-001 S MSD Sample Id: 578782-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	8890	250	9090	80	8770	0	80-120	4	20	mg/kg	03.10.18 12:26	X
Chloride	8890	250	8770	0	8770	0	80-120	4	20	mg/kg	03.10.18 12:38	X

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3043346 Matrix: Soil Date Prep: 03.10.18
Parent Sample Id: 578790-002 MS Sample Id: 578790-002 S MSD Sample Id: 578790-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1630	250	2290	264	2320	276	80-120	1	20	mg/kg	03.10.18 16:13	X

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3043346 Matrix: Soil Date Prep: 03.10.18
Parent Sample Id: 578790-004 MS Sample Id: 578790-004 S MSD Sample Id: 578790-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1160	250	1610	180	1610	180	80-120	0	20	mg/kg	03.10.18 18:54	X

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

QC Summary 578782

TRC Solutions, Inc

King TUT Federal #1H

Analytical Method: **DRO-ORO By SW8015B** Prep Method: SW8015P
Seq Number: 3043382 Matrix: Solid Date Prep: 03.10.18
MB Sample Id: 7640523-1-BLK LCS Sample Id: 7640523-1-BKS LCSD Sample Id: 7640523-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Diesel Range Organics (DRO)	<15.0	1000	1100	110	1170	117	70-135	6	35	mg/kg	03.10.18 12:27	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	93		108		117		70-135	%	03.10.18 12:27
o-Terphenyl	100		104		115		70-135	%	03.10.18 12:27

Analytical Method: **DRO-ORO By SW8015B** Prep Method: SW8015P
Seq Number: 3043382 Matrix: Soil Date Prep: 03.10.18
Parent Sample Id: 578782-001 MS Sample Id: 578782-001 S MSD Sample Id: 578782-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Diesel Range Organics (DRO)	25.9	996	1300	128	1240	122	70-135	5	35	mg/kg	03.10.18 17:12	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	108		105		70-135	%	03.10.18 17:12
o-Terphenyl	101		97		70-135	%	03.10.18 17:12

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3043314 Matrix: Solid Date Prep: 03.09.18
MB Sample Id: 7640482-1-BLK LCS Sample Id: 7640482-1-BKS LCSD Sample Id: 7640482-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0200	2.00	1.87	94	1.82	91	55-120	3	20	mg/kg	03.09.18 20:57	
Toluene	<0.0200	2.00	1.77	89	1.79	90	77-120	1	20	mg/kg	03.09.18 20:57	
Ethylbenzene	<0.0200	2.00	1.73	87	1.82	91	77-120	5	20	mg/kg	03.09.18 20:57	
m,p-Xylenes	<0.0400	4.00	3.46	87	3.64	91	78-120	5	20	mg/kg	03.09.18 20:57	
o-Xylene	<0.0200	2.00	1.75	88	1.82	91	78-120	4	20	mg/kg	03.09.18 20:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	88		84		89		68-120	%	03.09.18 20:57
a,a,a-Trifluorotoluene	86		77		77		71-121	%	03.09.18 20:57

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

QC Summary 578782

TRC Solutions, Inc

King TUT Federal #1H

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3043344 Matrix: Solid Date Prep: 03.09.18

MB Sample Id: 7640501-1-BLK LCS Sample Id: 7640501-1-BKS LCSD Sample Id: 7640501-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0200	2.00	1.76	88	1.82	91	55-120	3	20	mg/kg	03.10.18 17:45	
Toluene	<0.0200	2.00	1.79	90	1.74	87	77-120	3	20	mg/kg	03.10.18 17:45	
Ethylbenzene	<0.0200	2.00	1.78	89	1.74	87	77-120	2	20	mg/kg	03.10.18 17:45	
m,p-Xylenes	<0.0400	4.00	3.58	90	3.49	87	78-120	3	20	mg/kg	03.10.18 17:45	
o-Xylene	<0.0200	2.00	1.80	90	1.75	88	78-120	3	20	mg/kg	03.10.18 17:45	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	84		87		83		68-120	%	03.10.18 17:45
a,a,a-Trifluorotoluene	80		75		78		71-121	%	03.10.18 17:45

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3043314 Matrix: Soil Date Prep: 03.09.18

Parent Sample Id: 578782-002 MS Sample Id: 578782-002 S MSD Sample Id: 578782-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0177	1.77	1.48	84	1.44	82	54-120	3	25	mg/kg	03.10.18 00:34	
Toluene	<0.0177	1.77	1.53	86	1.51	86	57-120	1	25	mg/kg	03.10.18 00:34	
Ethylbenzene	<0.0177	1.77	1.55	88	1.60	91	58-131	3	25	mg/kg	03.10.18 00:34	
m,p-Xylenes	<0.0355	3.55	3.08	87	3.23	92	62-124	5	25	mg/kg	03.10.18 00:34	
o-Xylene	<0.0177	1.77	1.54	87	1.60	91	62-124	4	25	mg/kg	03.10.18 00:34	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	92		98		68-120	%	03.10.18 00:34
a,a,a-Trifluorotoluene	88		84		71-121	%	03.10.18 00:34

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3043344 Matrix: Soil Date Prep: 03.09.18

Parent Sample Id: 578782-003 MS Sample Id: 578782-003 S MSD Sample Id: 578782-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0181	1.81	1.55	86	1.57	84	54-120	1	25	mg/kg	03.10.18 21:20	
Toluene	<0.0181	1.81	1.57	87	1.61	87	57-120	3	25	mg/kg	03.10.18 21:20	
Ethylbenzene	<0.0181	1.81	1.66	92	1.70	91	58-131	2	25	mg/kg	03.10.18 21:20	
m,p-Xylenes	<0.0361	3.61	3.33	92	3.38	91	62-124	1	25	mg/kg	03.10.18 21:20	
o-Xylene	<0.0181	1.81	1.66	92	1.68	90	62-124	1	25	mg/kg	03.10.18 21:20	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	94		91		68-120	%	03.10.18 21:20
a,a,a-Trifluorotoluene	86		84		71-121	%	03.10.18 21:20

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

QC Summary 578782

TRC Solutions, Inc

King TUT Federal #1H

Analytical Method: **TPH GRO by EPA 8015 Mod.** Prep Method: SW5030B
Seq Number: 3043319 Matrix: Solid Date Prep: 03.09.18
MB Sample Id: 7640497-1-BLK LCS Sample Id: 7640497-1-BKS LCSD Sample Id: 7640497-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-GRO	<4.00	20.0	18.7	94	18.9	95	35-129	1	20	mg/kg	03.09.18 21:51	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	89		95		93		76-123	%	03.09.18 21:51
a,a,a-Trifluorotoluene	109		102		90		69-120	%	03.09.18 21:51

Analytical Method: **TPH GRO by EPA 8015 Mod.** Prep Method: SW5030B
Seq Number: 3043345 Matrix: Solid Date Prep: 03.09.18
MB Sample Id: 7640505-1-BLK LCS Sample Id: 7640505-1-BKS LCSD Sample Id: 7640505-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-GRO	<4.00	20.0	18.3	92	19.1	96	35-129	4	20	mg/kg	03.10.18 18:38	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	87		95		96		76-123	%	03.10.18 18:38
a,a,a-Trifluorotoluene	120		96		90		69-120	%	03.10.18 18:38

Analytical Method: **TPH GRO by EPA 8015 Mod.** Prep Method: SW5030B
Seq Number: 3043319 Matrix: Soil Date Prep: 03.09.18
Parent Sample Id: 578782-002 MS Sample Id: 578782-002 S MSD Sample Id: 578782-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-GRO	<3.87	19.3	14.6	76	14.4	76	35-129	1	20	mg/kg	03.10.18 01:27	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	105		102		76-123	%	03.10.18 01:27
a,a,a-Trifluorotoluene	83		83		69-120	%	03.10.18 01:27

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

Final 1.000

QC Summary 578782

TRC Solutions, Inc

King TUT Federal #1H

Analytical Method: **TPH GRO by EPA 8015 Mod.** Prep Method: SW5030B

Seq Number: 3043345 Matrix: Soil Date Prep: 03.09.18

Parent Sample Id: 578782-003 MS Sample Id: 578782-003 S MSD Sample Id: 578782-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-GRO	<3.45	17.2	12.7	74	14.3	76	35-129	12	20	mg/kg	03.10.18 22:15	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	102		103		76-123	%	03.10.18 22:15
a,a,a-Trifluorotoluene	78		80		69-120	%	03.10.18 22:15

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

CHAIN OF CUSTODY

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Midland, Texas (432-704-5251)
Phoenix, Arizona (480-355-0900)
www.xenco.com

578782

Xenco Job # 578782

Client / Reporting Information

Company Name / Branch: TRC Environmental Corporation
Company Address: 2057 Commerce Drive, Midland, TX 79703
Email: jlowry@trcsolutions.com
Phone No: 432-466-4450
Project Contact: Joel Lowry
Samplers's Name Joel Lowry

Project Information

Project Name/Number: KING TUT FEDERAL #1H
Project Location: Eddy Co, NM
Invoice To: COG Operating C/O Becky Haskell
Invoice:

Matrix Codes

W = Water
S = Soil/Sed/Solid
GW = Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW = Ocean/Sea Water
WI = Wipe
O = Oil
WW = Waste Water
A = Air

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Analytical Information: TPH 8015 M Ext	Chloride E 300	BTEX 8021B	Field Comments
1	SP1@Surface	Surf	3/7/18	2:30	S	1									X	X	X	
2	SP1@1'	1'	3/7/18	2:35	S													
3	SP1@2'	2'	3/7/18	2:40	S													
4	SP2@Surface	Surf	3/7/18	2:48	S													
5	SP2@1'	1'	3/7/18	2:50	S													
6	N@6"	6"	3/7/18	2:55	S													
7	E@6"	6"	3/7/18	3:00	S													
8	S@6"	6"	3/7/18	3:03	S													
9	W@6"	6"	3/7/18	3:05	S													
10																		

Turnaround Time (Business days)

- [ ] Same Day TAT
- [ ] 5 Day TAT
- [x] Next Day EMERGENCY
- [ ] 7 Day TAT
- [ ] 2 Day EMERGENCY
- [x] Contract TAT
- [ ] 3 Day EMERGENCY

TAT Starts Day received by Lab, if received by 5:00 pm

Data Deliverable Information

- [ ] Level II Std QC
- [ ] Level IV (Full Data Pkg /raw data)
- [ ] Level III Std QC+ Forms
- [ ] TRRP Level IV
- [ ] Level 3 (CLP Forms)
- [ ] UST / RG -411
- [ ] TRRP Checklist

Notes:

jlowry@trcsolutions.com
rhaskell@concho.com

FED-EX / UPS: Tracking #

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by Sampler / Relinquished by / Relinquished by	Date Time	Received By	Relinquished By	Date Time	Received By
1	Joel Lowry		1	2		2
3			3	4		4
5		3/8/18 5:45	Brenda Ward	Custody Seal #	Preserved where applicable	On Ice ✓ Cooler Temp. 1.3/1.3 Thermo. Corr. Factor .TR.3

Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such loses are due to circumstances beyond the control of Xenco. A minimum charge of $75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at $5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

Final 1.000

Inter-Office Shipment

IOS Number **1057353**

Date/Time: 03/09/18 15:43
Lab# From: **Lubbock**
Lab# To: **Houston**

Created by: Brenda Ward
Delivery Priority:
Air Bill No.: 771768273134

Please send report to: Kelsey Brooks
Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424
Phone:
E-Mail: kelsey.brooks@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
578782-001	S	SP1 @ Surface	03/07/18 14:30	SW8015B_DROORO	DRO-ORO By SW8015B	03/09/18	03/21/18	KEB	PHCC10C28 PHCC28C35	
578782-002	S	SP1 @ 1'	03/07/18 14:35	SW8015B_DROORO	DRO-ORO By SW8015B	03/09/18	03/21/18	KEB	PHCC10C28 PHCC28C35	
578782-003	S	SP1 @ 2'	03/07/18 14:40	SW8015B_DROORO	DRO-ORO By SW8015B	03/09/18	03/21/18	KEB	PHCC10C28 PHCC28C35	
578782-004	S	SP2 @ Surface	03/07/18 14:48	SW8015B_DROORO	DRO-ORO By SW8015B	03/09/18	03/21/18	KEB	PHCC10C28 PHCC28C35	
578782-005	S	SP2 @ 1'	03/07/18 14:50	SW8015B_DROORO	DRO-ORO By SW8015B	03/09/18	03/21/18	KEB	PHCC10C28 PHCC28C35	
578782-006	S	N @ 6"	03/07/18 14:55	SW8015B_DROORO	DRO-ORO By SW8015B	03/09/18	03/21/18	KEB	PHCC10C28 PHCC28C35	
578782-007	S	E @ 6"	03/07/18 15:00	SW8015B_DROORO	DRO-ORO By SW8015B	03/09/18	03/21/18	KEB	PHCC10C28 PHCC28C35	
578782-008	S	S @ 6"	03/07/18 15:03	SW8015B_DROORO	DRO-ORO By SW8015B	03/09/18	03/21/18	KEB	PHCC10C28 PHCC28C35	
578782-009	S	W @ 6"	03/07/18 15:05	SW8015B_DROORO	DRO-ORO By SW8015B	03/09/18	03/21/18	KEB	PHCC10C28 PHCC28C35	

Inter Office Shipment or Sample Comments:

Relinquished By: Brenda Ward
Brenda Ward

Received By:
Jean Quila

Date Relinquished: 03/09/2018

Date Received: 03/10/2018 09:00

Cooler Temperature: 1.5

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 1057353

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : hou068

Sent By: Brenda Ward **Date Sent:** 03/09/2018 03:43 PM

Received By: Jean Quila **Date Received:** 03/10/2018 09:00 AM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	1.5	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received with appropriate temperature?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**	
#5 *Custody Seals Signed and dated for Containers/coolers	**Yes**	
#6 *IOS present?	**Yes**	
#7 Any missing/extra samples?	**No**	
#8 IOS agrees with sample label(s)/matrix?	**Yes**	
#9 Sample matrix/ properties agree with IOS?	**Yes**	
#10 Samples in proper container/ bottle?	**Yes**	
#11 Samples properly preserved?	**Yes**	
#12 Sample container(s) intact?	**Yes**	
#13 Sufficient sample amount for indicated test(s)?	**Yes**	
#14 All samples received within hold time?	**Yes**	

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ **Contacted by :** _____ **Date:** _____

Checklist reviewed by: _____ Date: 03/10/2018

Jean Quila

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: TRC Solutions, Inc

Date/ Time Received: 03/08/2018 04:45:00 PM

Work Order #: 578782

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

Temperature Measuring device used : IR-3

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.3
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**No**
#18 Water 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: Brenda Ward Date: 03/09/2018
Brenda Ward

Checklist reviewed by: Kelsey Brooks Date: 03/09/2018
Kelsey Brooks

Analytical Report 581747

for

TRC Solutions, Inc

Project Manager: Joel Lowry

King Tut Federal

13-APR-18

Collected By: Client

6701 Aberdeen, Suite 9 Lubbock, TX 79424

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-18-24), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab code: TX01468):
Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-18-14)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)

13-APR-18

Project Manager: **Joel Lowry**
TRC Solutions, Inc
2057 Commerce
Midland, TX 79703

Reference: XENCO Report No(s): **581747**
King Tut Federal
Project Address: Eddy Co. N.M.

Joel Lowry:

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) 581747. 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. 581747 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 581747

TRC Solutions, Inc, Midland, TX

King Tut Federal

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FL @ 1'	S	04-04-18 13:00	1 ft	581747-001
NSW	S	04-04-18 13:10	6 In	581747-002
SSW	S	04-04-18 13:20	6 In	581747-003
ESW	S	04-04-18 13:30	6 In	581747-004
WSW	S	04-04-18 13:40	6 In	581747-005

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3046275 DRO-ORO By SW8015B
Surrogate Tricosane recovered above QC limits Data confirmed by re-analysis. Samples affected are: 7642346-1-BKS,7642346-1-BSD.

Batch: LBA-3046326 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analysis Summary 581747

TRC Solutions, Inc, Midland, TX

Project Name: King Tut Federal

Project Id:

Contact: Joel Lowry

Project Location: Eddy Co. N.M.

Date Received in Lab: Fri Apr-06-18 04:40 pm

Report Date: 13-APR-18

Project Manager: Kelsey Brooks

Analysis Requested											
	Lab Id:	581747-001		581747-002		581747-003		581747-004		581747-005	
	Field Id:	FL @ 1'		NSW		SSW		ESW		WSW	
	Depth:	1- ft		6- In		6- In		6- In		6- In	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Apr-04-18 13:00		Apr-04-18 13:10		Apr-04-18 13:20		Apr-04-18 13:30		Apr-04-18 13:40	
BTEX by EPA 8021B	***Extracted:***	Apr-09-18 12:00		Apr-09-18 12:00		Apr-09-18 12:00		Apr-09-18 12:00		Apr-09-18 12:00	
	Analyzed:	Apr-11-18 03:00		Apr-11-18 03:27		Apr-11-18 03:55		Apr-11-18 06:38		Apr-11-18 07:05	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.0189	0.0189	<0.0186	0.0186	<0.0174	0.0174	<0.0194	0.0194	<0.0198	0.0198
Toluene		<0.0189	0.0189	<0.0186	0.0186	<0.0174	0.0174	<0.0194	0.0194	<0.0198	0.0198
Ethylbenzene		<0.0189	0.0189	<0.0186	0.0186	<0.0174	0.0174	<0.0194	0.0194	<0.0198	0.0198
m,p-Xylenes		<0.0378	0.0378	<0.0372	0.0372	<0.0347	0.0347	<0.0388	0.0388	<0.0396	0.0396
o-Xylene		<0.0189	0.0189	<0.0186	0.0186	<0.0174	0.0174	<0.0194	0.0194	<0.0198	0.0198
Total Xylenes		<0.0189	0.0189	<0.0186	0.0186	<0.0174	0.0174	<0.0194	0.0194	<0.0198	0.0198
Total BTEX		<0.0189	0.0189	<0.0186	0.0186	<0.0174	0.0174	<0.0194	0.0194	<0.0198	0.0198
Chloride by EPA 300	***Extracted:***	Apr-10-18 10:30		Apr-10-18 10:30		Apr-10-18 10:30		Apr-10-18 10:30		Apr-10-18 10:30	
	Analyzed:	Apr-11-18 00:19		Apr-11-18 00:31		Apr-11-18 00:44		Apr-11-18 10:25		Apr-11-18 10:37	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		<25.0	25.0	<25.0	25.0	31.5	25.0	<25.0	25.0	<25.0	25.0
DRO-ORO By SW8015B	***Extracted:***	Apr-10-18 11:35		Apr-10-18 11:35		Apr-10-18 11:35		Apr-10-18 11:35		Apr-10-18 11:35	
	Analyzed:	Apr-10-18 20:26		Apr-10-18 21:03		Apr-10-18 21:38		Apr-10-18 22:12		Apr-10-18 22:49	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Diesel Range Organics (DRO)		<24.9	24.9	<25.1	25.1	<24.9	24.9	<25.2	25.2	<24.9	24.9
Oil Range Hydrocarbons (ORO)		<24.9	24.9	<25.1	25.1	<24.9	24.9	<25.2	25.2	<24.9	24.9
TPH GRO by EPA 8015 Mod.	***Extracted:***	Apr-09-18 12:00		Apr-09-18 12:00		Apr-09-18 12:00		Apr-09-18 12:00		Apr-09-18 12:00	
	Analyzed:	Apr-11-18 03:00		Apr-11-18 03:27		Apr-11-18 03:55		Apr-11-18 06:38		Apr-11-18 07:05	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
TPH-GRO		<3.78	3.78	<3.72	3.72	<3.47	3.47	<3.88	3.88	<3.96	3.96

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

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ 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: King Tut Federal

Work Orders : 581747,

Project ID:

Lab Batch #: 3046275 **Sample:** 581747-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/18 20:26

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	11.9	9.96	119	65-144	
n-Triacontane	10.4	9.96	104	46-152	

Lab Batch #: 3046275 **Sample:** 581747-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/18 21:03

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	11.2	10.0	112	65-144	
n-Triacontane	11.4	10.0	114	46-152	

Lab Batch #: 3046275 **Sample:** 581747-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/18 21:38

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	12.3	9.97	123	65-144	
n-Triacontane	11.1	9.97	111	46-152	

Lab Batch #: 3046275 **Sample:** 581747-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/18 22:12

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	10.8	10.1	107	65-144	
n-Triacontane	9.05	10.1	90	46-152	

Lab Batch #: 3046275 **Sample:** 581747-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/18 22:49

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	10.5	9.95	106	65-144	
n-Triacontane	8.93	9.95	90	46-152	

* 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: King Tut Federal

Work Orders : 581747,

Project ID:

Lab Batch #: 3046326 **Sample:** 581747-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/11/18 03:00

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.107	0.100	107	68-120	
a,a,a-Trifluorotoluene	1.95	1.89	103	71-121	

Lab Batch #: 3046330 **Sample:** 581747-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/11/18 03:00

SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.101	0.100	101	76-123	
a,a,a-Trifluorotoluene	1.74	1.89	92	69-120	

Lab Batch #: 3046326 **Sample:** 581747-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/11/18 03:27

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.106	0.100	106	68-120	
a,a,a-Trifluorotoluene	1.89	1.86	102	71-121	

Lab Batch #: 3046330 **Sample:** 581747-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/11/18 03:27

SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0978	0.100	98	76-123	
a,a,a-Trifluorotoluene	1.79	1.86	96	69-120	

Lab Batch #: 3046326 **Sample:** 581747-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/11/18 03:55

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.105	0.100	105	68-120	
a,a,a-Trifluorotoluene	1.82	1.74	105	71-121	

* 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: King Tut Federal

Work Orders : 581747,

Project ID:

Lab Batch #: 3046330 **Sample:** 581747-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/11/18 03:55

SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0994	0.100	99	76-123	
a,a,a-Trifluorotoluene	1.72	1.74	99	69-120	

Lab Batch #: 3046326 **Sample:** 581747-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/11/18 06:38

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.109	0.100	109	68-120	
a,a,a-Trifluorotoluene	2.00	1.94	103	71-121	

Lab Batch #: 3046330 **Sample:** 581747-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/11/18 06:38

SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.105	0.100	105	76-123	
a,a,a-Trifluorotoluene	1.74	1.94	90	69-120	

Lab Batch #: 3046326 **Sample:** 581747-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/11/18 07:05

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.107	0.100	107	68-120	
a,a,a-Trifluorotoluene	1.97	1.98	99	71-121	

Lab Batch #: 3046330 **Sample:** 581747-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/11/18 07:05

SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.102	0.100	102	76-123	
a,a,a-Trifluorotoluene	1.84	1.98	93	69-120	

* 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: King Tut Federal

Work Orders : 581747,

Project ID:

Lab Batch #: 3046275 **Sample:** 7642346-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/10/18 13:24

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	10.5	10.0	105	65-144	
n-Triacontane	12.8	10.0	128	46-152	

Lab Batch #: 3046326 **Sample:** 7642254-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/10/18 21:10

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0966	0.100	97	68-120	
a,a,a-Trifluorotoluene	1.94	2.00	97	71-121	

Lab Batch #: 3046330 **Sample:** 7642259-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/10/18 21:10

SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0933	0.100	93	76-123	
a,a,a-Trifluorotoluene	2.24	2.00	112	69-120	

Lab Batch #: 3046275 **Sample:** 7642346-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/10/18 14:00

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	16.7	10.0	167	65-144	**
n-Triacontane	11.6	10.0	116	46-152	

Lab Batch #: 3046326 **Sample:** 7642254-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/10/18 18:27

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0955	0.100	96	68-120	
a,a,a-Trifluorotoluene	1.69	2.00	85	71-121	

* 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: King Tut Federal

Work Orders : 581747,

Project ID:

Lab Batch #: 3046330 **Sample:** 7642259-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/10/18 19:22

SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod.

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0971	0.100	97	76-123	
a,a,a-Trifluorotoluene	1.98	2.00	99	69-120	

Lab Batch #: 3046275 **Sample:** 7642346-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/10/18 14:35

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	15.7	10.0	157	65-144	**
n-Triacontane	11.8	10.0	118	46-152	

Lab Batch #: 3046326 **Sample:** 7642254-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/10/18 18:54

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0953	0.100	95	68-120	
a,a,a-Trifluorotoluene	1.78	2.00	89	71-121	

Lab Batch #: 3046330 **Sample:** 7642259-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/10/18 19:49

SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod.

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0995	0.100	100	76-123	
a,a,a-Trifluorotoluene	1.57	2.00	79	69-120	

Lab Batch #: 3046275 **Sample:** 581742-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/18 15:45

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	12.6	10.1	125	65-144	
n-Triacontane	7.71	10.1	76	46-152	

* 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: King Tut Federal

Work Orders : 581747,

Project ID:

Lab Batch #: 3046326 **Sample:** 581742-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/18 22:04

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.103	0.100	103	68-120	
a,a,a-Trifluorotoluene	1.79	1.94	92	71-121	

Lab Batch #: 3046330 **Sample:** 581742-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/18 22:57

SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.104	0.100	104	76-123	
a,a,a-Trifluorotoluene	1.60	1.98	81	69-120	

Lab Batch #: 3046275 **Sample:** 581742-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/18 16:21

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	12.3	10.0	123	65-144	
n-Triacontane	8.97	10.0	90	46-152	

Lab Batch #: 3046326 **Sample:** 581742-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/18 22:31

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.104	0.100	104	68-120	
a,a,a-Trifluorotoluene	1.82	1.88	97	71-121	

Lab Batch #: 3046330 **Sample:** 581742-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/18 23:25

SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.105	0.100	105	76-123	
a,a,a-Trifluorotoluene	1.43	1.91	75	69-120	

* 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: King Tut Federal

Work Order #: 581747 **Project ID:**

Analyst: MIT **Date Prepared:** 04/09/2018 **Date Analyzed:** 04/10/2018

Lab Batch ID: 3046326 **Sample:** 7642254-1-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	<0.0200	2.00	1.92	96	2.00	1.93	97	1	55-120	20	
Toluene	<0.0200	2.00	1.93	97	2.00	1.96	98	2	77-120	20	
Ethylbenzene	<0.0200	2.00	1.95	98	2.00	2.00	100	3	77-120	20	
m,p-Xylenes	<0.0400	4.00	3.92	98	4.00	4.01	100	2	78-120	20	
o-Xylene	<0.0200	2.00	1.93	97	2.00	1.98	99	3	78-120	20	

Analyst: RNL **Date Prepared:** 04/10/2018 **Date Analyzed:** 04/10/2018

Lab Batch ID: 3046397 **Sample:** 7642452-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 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	<25.0	250	259	104	250	254	102	2	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: King Tut Federal

Work Order #: 581747 **Project ID:**

Analyst: RNL **Date Prepared:** 04/10/2018 **Date Analyzed:** 04/11/2018

Lab Batch ID: 3046463 **Sample:** 7642472-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 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	<25.0	250	251	100	250	252	101	0	90-110	20	

Analyst: PGM **Date Prepared:** 04/10/2018 **Date Analyzed:** 04/10/2018

Lab Batch ID: 3046275 **Sample:** 7642346-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

DRO-ORO By SW8015B 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
Diesel Range Organics (DRO)	<25.0	100	119	119	100	114	114	4	63-139	20	

Analyst: MIT **Date Prepared:** 04/09/2018 **Date Analyzed:** 04/10/2018

Lab Batch ID: 3046330 **Sample:** 7642259-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH GRO by EPA 8015 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
TPH-GRO	<4.00	20.0	19.2	96	20.0	20.7	104	8	35-129	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

Form 3 - MS / MSD Recoveries

Project Name: King Tut Federal

Work Order # : 581747 **Project ID:**

Lab Batch ID: 3046326 **QC- Sample ID:** 581742-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/10/2018 **Date Prepared:** 04/09/2018 **Analyst:** MIT

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	<0.0194	1.94	1.76	91	1.88	1.70	90	3	54-120	25	
Toluene	<0.0194	1.94	1.79	92	1.88	1.77	94	1	57-120	25	
Ethylbenzene	<0.0194	1.94	1.91	98	1.88	1.89	101	1	58-131	25	
m,p-Xylenes	<0.0388	3.88	3.83	99	3.75	3.78	101	1	62-124	25	
o-Xylene	<0.0194	1.94	1.89	97	1.88	1.87	99	1	62-124	25	

Lab Batch ID: 3046397 **QC- Sample ID:** 581742-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/10/2018 **Date Prepared:** 04/10/2018 **Analyst:** RNL

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 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	170	250	415	98	250	412	97	1	80-120	20	

Lab Batch ID: 3046463 **QC- Sample ID:** 581747-005 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/11/2018 **Date Prepared:** 04/10/2018 **Analyst:** RNL

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 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	<25.0	250	257	103	250	258	103	0	80-120	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: King Tut Federal

Work Order # : 581747 **Project ID:**

Lab Batch ID: 3046275 **QC- Sample ID:** 581742-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/10/2018 **Date Prepared:** 04/10/2018 **Analyst:** PGM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

DRO-ORO By SW8015B 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
Diesel Range Organics (DRO)	<25.1	101	86.4	86	100	85.9	86	1	63-139	20	

Lab Batch ID: 3046330 **QC- Sample ID:** 581742-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/10/2018 **Date Prepared:** 04/09/2018 **Analyst:** MIT

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH GRO by EPA 8015 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
TPH-GRO	<3.95	19.8	15.6	79	19.1	14.9	78	5	35-129	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.

581747

XENCO LABORATORIES

Setting the Standard since 1990

Stafford,Texas (281-240-4200)
Dallas Texas (214-902-0300)

San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

www.xenco.com

CHAIN OF CUSTODY

Xenco Job # 581747

Client / Reporting Information

Company Name / Branch:
TRC Environmental Corporation

Company Address:
2057 Commerce Drive
Midland, TX 79703

Email: jlowry@trcsolutions.com

Phone No: 432-466-4450

Project Contact:
Joel Lowry

Samplers's Name Becky Griffin

Project Information

Project Name/Number: King Tut Federal #001H

Number: 299912

Project Location:
Eddy Co, NM

Invoice To:
COG Operating, LLC C/O Becky Haskell

Invoice:

Analytical Information

Matrix Codes

W = Water
S = Soil/Sed/Solid
GW =Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW =Ocean/Sea Wate
WI = Wipe
O = Oil
WW= Waste Water
A = Air

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	TPH 8015 M Ext	Chloride E 300	BTEX 8021B	Field Comments
1	FL @ 1'	1'	4/4/2018	13:00	S	1									X	X	X	
2	NSW	6"	4/4/2018	13:10	S	1									X	X	X	
3	SSW	6"	4/4/2018	13:20	S	1									X	X	X	
4	ESW	6"	4/4/2018	13:30	S	1									X	X	X	
5	WSW	6"	4/4/2018	13:40	S	1									X	X	X	
6																		
7																		
8																		
9																		
10																		

Turnaround Time (Business days)

- [ ] Same Day TAT
- [ ] 5 Day TAT
- [ ] Next Day EMERGENCY
- [ ] 7 Day TAT
- [ ] 2 Day EMERGENCY
- [x] Contract TAT
- [ ] 3 Day EMERGENCY

TAT Starts Day received by Lab, if received by 5:00 pm

Data Deliverable Information

- [ ] Level II Std QC
- [ ] Level IV (Full Data Pkg /raw data)
- [ ] Level III Std QC+ Forms
- [ ] TRRP Level IV
- [ ] Level 3 (CLP Forms)
- [ ] UST / RG -411
- [ ] TRRP Checklist

Notes:

jlowry@trcsolutions.com
rhaskell@concho.com
zconder@trcsolution.com

FED-EX / UPS: Tracking #

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

Relinquished by Sampler: 1 Becky Griffin	Date Time:	Received By: 1	Relinquished By: 2	Date Time:	Received By: 2
Relinquished by: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time: 4/6/18 4:40 pm	Received By: 5 Brenda Ward	Custody Seal #	Preserved where applicable	On Ice: Cooler Temp. 4.5 Thermo. Corr. Factor IR-3

Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such losses

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: TRC Solutions, Inc

Date/ Time Received: 04/06/2018 04:40:00 PM

Work Order #: 581747

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

Temperature Measuring device used : IR-3

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	4.5
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**No**
#18 Water 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: Brenda Ward Date: 04/06/2018
Brenda Ward

Checklist reviewed by: Kelsey Brooks Date: 04/11/2018
Kelsey Brooks

Photographic Log

Client: COG Operating, LLC
Project Name: King Tut Federal #001H

Prepared by: TRC Environmental Corp.
Location: Eddy County, NM

Photograph No. 1 **Description:** **View of the affected area prior to remediation activities.** **Direction:** **East**	
Photograph No. 2 **Description:** **View of the affected area prior to remediation activities.** **Direction:** **North**	

Photographic Log

Client: COG Operating, LLC
Project Name: King Tut Federal #001H

Prepared by: TRC Environmental Corp.
Location: Eddy County, NM

Photograph No. 3 **Description:** **View of portion of the excavated area.** **Direction:** **South**	
Photograph No. 4 **Description:** **View of the affected area after remediation activities.** **Direction:** **North**	

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 April 3, 2017

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. 432-230-0077
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 32.1950493 **Longitude** -103.7219315 NAD83

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: 30 bbls pw	Volume Recovered: 3 bbls pw
Source of Release: Flowline/Pipeline	Date and Hour of Occurrence: 10-9-2017 2:00 pm	Date and Hour of Discovery: 10-9-2017 2:00 pm
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Olivia Yu NMOCD /Shelly Tucker BLM	
By Whom? Sheldon Hitchcock	Date and Hour: 10-10-2017 7:31 am	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

RECEIVED
By Olivia Yu at 1:55 pm, Oct 16, 2017

Describe Cause of Problem and Remedial Action Taken.*
The release occurred when a hole developed in the poly flowline. The damaged portion of the flowline has been removed and replaced.

Describe Area Affected and Cleanup Action Taken.*

The release occurred on location and in the adjacent pasture. Vacuum trucks were immediately dispatched to recover all standing fluid. Concho will have the spill area evaluated for any possible impact from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation activities.

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

Signature: Dakota Neel	OIL CONSERVATION DIVISION Approved by Environmental Specialist:	
Printed Name: Dakota Neel		
Title: HSE Coordinator	Approval Date: 10/16/2017	Expiration Date:
E-mail Address: dneel2@concho.com	Conditions of Approval: see attached directive	Attached ☑
Date: October 13, 2017 Phone: 575-746-2010		

* Attach Additional Sheets If Necessary

1RP-4843

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