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January 23, 2018

Mike Bratcher
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division, District 2
811 S. First Street
Artesia, NM 88210

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

Re: Soil Investigation Summary and Proposed Remediation Workplan
Polaris B Federal #005 (2RP-4418)
GPS: N 32.84274° W 103.96952°
Unit Letter "P", Section 09, Township 17 South, Range 30 East
Eddy County, New Mexico

Dear Mr. Bratcher and Ms. Tucker,

TRC Environmental Corporation (TRC), on behalf of COG Operating, LLC (COG) has prepared this Soil Investigation Summary and Proposed Remediation Workplan (Workplan) for the Polaris B Federal #005 Release Site (Release Site). The purpose of this Workplan is to propose remediation activities designed to advance the Release Site toward a New Mexico Oil Conservation Division (NMOCD) approved Site Closure Status. The legal description of the Release Site is Unit Letter "P", Section 09, Township 17 South, Range 30 East, in Eddy County, New Mexico. The GPS coordinates for the site are N 32.84274° W 103.96952°. The subject property is owned by the United States Department of the Interior and administered by the Bureau of Land Management (BLM). A "Site Location Map" and "Site & Sample Location Map" are provided as Figure 1 and Figure 2, respectively.

On September 26, 2017, COG discovered a release had occurred at the Polaris B Federal #005. The release was attributed to the failure of a transducer causing the water tank to overflow, resulting in the release of approximately forty (40) barrels (bbls) of produced water and ten (10) bbls of crude oil, affecting an area measuring approximately three thousand (3,000) square feet (sq. ft.). During initial response activities, vacuum trucks were utilized to recover approximately thirty-eight (38) bbls of produced water and nine (9)

bbls of crude oil. Upon discovering the release, the NMOCD and BLM were notified. Please reference the attached Release Notification and Corrective Action (Form C-141) for additional details.

A groundwater database maintained by The New Mexico Office of the State Engineer (NMOSE) did not identify any registered water wells in Section 9, Township 17 South, Range 30 East. A reference map utilized by the NMOCD Carlsbad District Office indicates groundwater should be encountered at approximately three hundred twenty-five (325) feet 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 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.

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 600 mg/kg.

On December 21, 2017, TRC conducted an initial investigation at the site. During the initial investigation, a series of hand-augered soil bores (SP #1 through SP #3) were advanced within the release margins in an effort to determine the vertical extent of soil impact. During the advancement of the soil bores, nine (9) soil sample (SP #1 @ Surf., SP #1 @ 1', SP #1 @ 2', SP #2 @ Surf., SP #2 @ 1', SP #2 @ 2', SP #3 @ Surf., SP #3 @ 1' and SP #3 @ 2') were collected and submitted to Xenco Laboratories in Midland, Texas for determination of chloride using Method 300/300.1. (See attached Figure 2 and Table 1 for sample locations and a summary of laboratory analytical results). Laboratory analytical results indicated chloride concentrations ranged from 5,590 mg/kg for soil sample SP #3 @ Surf. to less than the applicable laboratory reporting limit (RL) in soil samples SP #2 @ 1' and SP #2 @ 2'. Chloride concentrations were less than the NMOCD RRAL in each of the submitted soil samples with the exception of soil samples SP #1 @ Surf. (4,620 mg/kg), SP #1 @ 1' (753 mg/kg), SP #3 @ Surf. (5,590 mg/kg) and SP #3 @ 1' (903 mg/kg).

Soil samples SP #1 @ Surf., SP #1 @ 2', SP #2 @ Surf., SP #2 @ 1', SP #3 @ Surf. and SP #3 @ 2' were also analyzed for concentrations of TPH using Method SW 846-8015M. Laboratory analytical results indicated TPH concentrations ranged from 4,293 mg/kg in soil sample SP #2 @ Surf. to less than the applicable laboratory RL in soil samples SP #1 @ Surf., SP #1 @ 2' and SP #3 @ 2'. TPH concentrations were less than the NMOCD RRAL in each of the submitted soil samples. It should be noted that soil sample SP #2 @ Surf. was analyzed outside of recommended hold time for TPH.

Soil samples SP #1 @ Surf., SP #2 @ Surf. and SP #3 @ Surf. were also analyzed for concentrations of BTEX using Method SW 846-8021B. Laboratory analytical results indicated benzene concentrations were less than the applicable laboratory RL in each of the submitted soil samples with the exception of soil sample SP #3 @ Surf., which exhibited a concentration of 0.00707 mg/kg. Total BTEX

concentrations ranged from less than the laboratory RL in soil sample SP #1 @ Surf. to 4.3 mg/kg in soil sample SP #2 @ Surf. Benzene and total BTEX concentrations were less than the NMOCD RRAL in each of the submitted soil samples.

In addition, TRC collected four (4) soil sample (North B @ 1', South @ 1', East @ 1' and West @ 1') from the edges of the inferred release margins and submitted them to the laboratory for analysis of BTEX, TPH and chloride. Laboratory analytical results indicated benzene, BTEX, and TPH concentrations were less than the applicable laboratory RL in each of the submitted soil samples with the exception of soil samples South #1 and West #1, which exhibited TPH concentrations of 16.0 mg/kg and 26.4 mg/kg respectively. Laboratory analytical results indicated chloride concentrations ranged from 29.9 mg/kg for soil sample East @ 1' to 1,210 mg/kg for soil sample North B @ 1'. A review of laboratory analytical results indicated benzene, BTEX, TPH, and chloride concentrations for the submitted soil samples were below NMOCD regulatory guidelines. Analytical results indicated benzene, BTEX, TPH and chloride concentrations were less than the NMOCD RRAL in each of the submitted delineation samples with the exception of soil samples North B @ 1' and South @ 1' which exhibited chloride concentrations of 1,210 mg/kg and 879 mg/kg, respectively.

Based on the analytical results from soil samples collected during the initial release assessment on December 21, 2017, COG proposes the following field activities designed to advance the Polaris B Federal #005 Release Site toward and NMOCD-and BLM-approved closure:

- Utilizing a backhoe and/or shovels, excavate impacted soil within the release margins in the areas represented by soil samples SP #1 @ Surf., SP #1 @ 1', SP #3 @ Surf., and SP #3 @ 1' to a depth of approximately two (2) feet (ft.) bgs, or until field test results indicated impacted soil affected above the NMOCD RRAL for chloride has been removed.
- Resample the affected area represented by sample point SP #2 @ Surf. in an effort to determine if soil is affected above the NMOCD RRAL for TPH. Upon receiving laboratory analytical results, excavate the affected area to a depth of approximately one (1) ft. bgs, if necessary. In the event it is determined that soil is not affected above the NMOCD RRAL for TPH, the area will be aesthetically addressed.
- Advance the sidewalls of the excavation in the areas characterized by soil samples North B @ 1' and South @ 1' until laboratory analytical results from confirmation soil samples indicate impacted soil affected above the NMOCD RRAL for chloride has been removed.
- Affected soil adjacent to and/or beneath active oil and gas equipment impacted above the NMOCD RRAL will be excavated to the maximum extent practicable, as necessary, in an effort to mitigate risks to human health and property.
- Excavated soil will be temporarily stockpiled on-site, atop an impermeable liner, pending final disposition at an NMOCD-approved disposal facility.
- Upon receiving laboratory analytical results from confirmation soil samples, transport impacted soil to an NMOCD-approved disposal facility and backfill the excavated area with locally-sourced, non-impacted caliche.
- Upon completion of remediation activities and receipt of laboratory analytical result from confirmation soil samples, TRC will prepare and submit a "Remediation Summary and Site Closure Request" to the NMOCD and BLM detailing remediation activities and laboratory analytical result from confirmation soil samples.

If you have any questions, or need any additional information, please feel free to contact Becky Haskell or myself by phone or email.

Respectfully,

Joel Lowry
Senior Project Manager
TRC Environmental Corporation

Curt Stanley for
Senior Project Manager
TRC Environmental Corporation

Attachments:

Figure 1 - Site Location Map
Figure 2 - Site & Sample Location Map
Table 1 - Concentrations of Benzene, BTEX, TPH and Chloride in Soil
Laboratory Analytical Results
Release Notification and Corrective Action (Form C-141)

cc: File

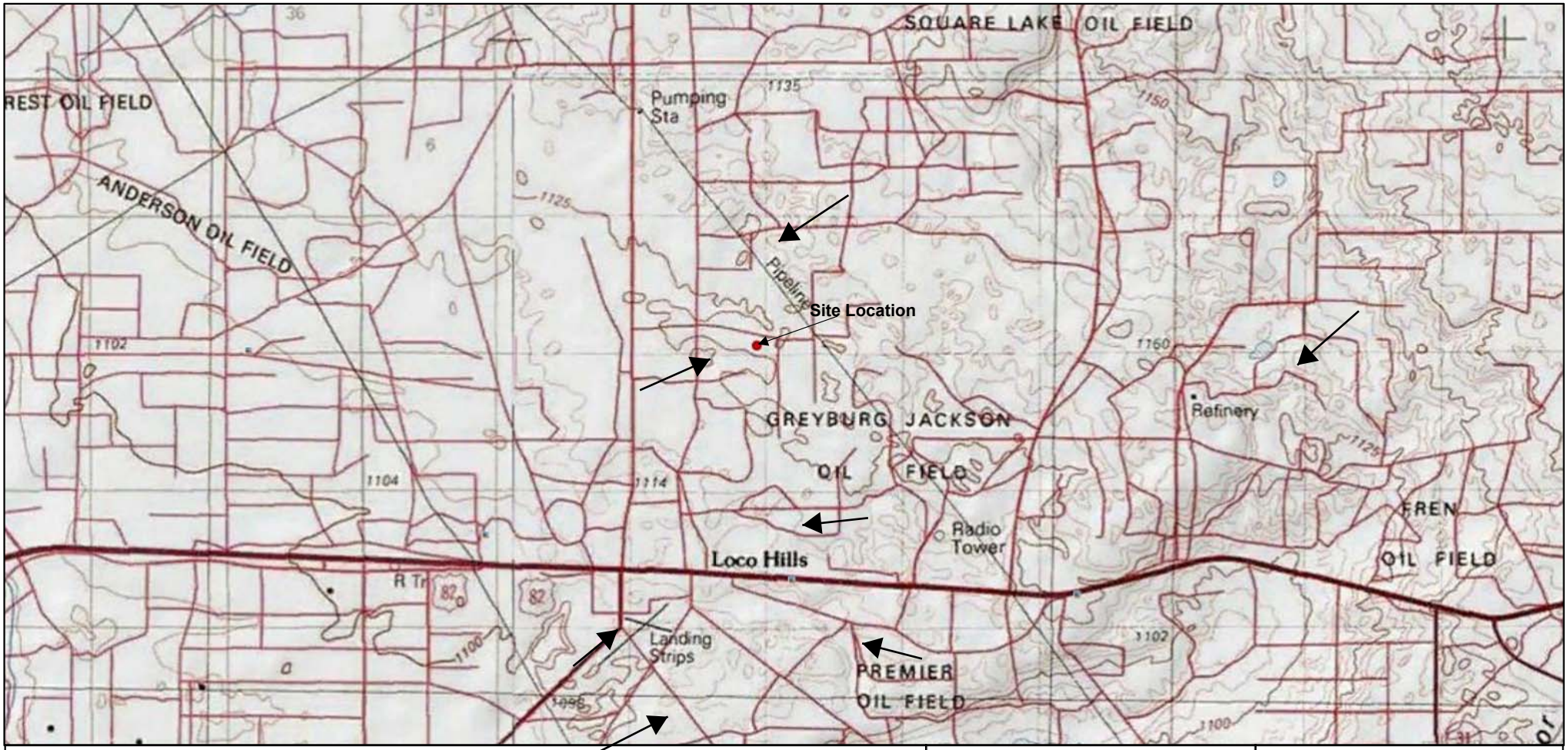


Figure 1

Site Location Map

COG Operating, LLC

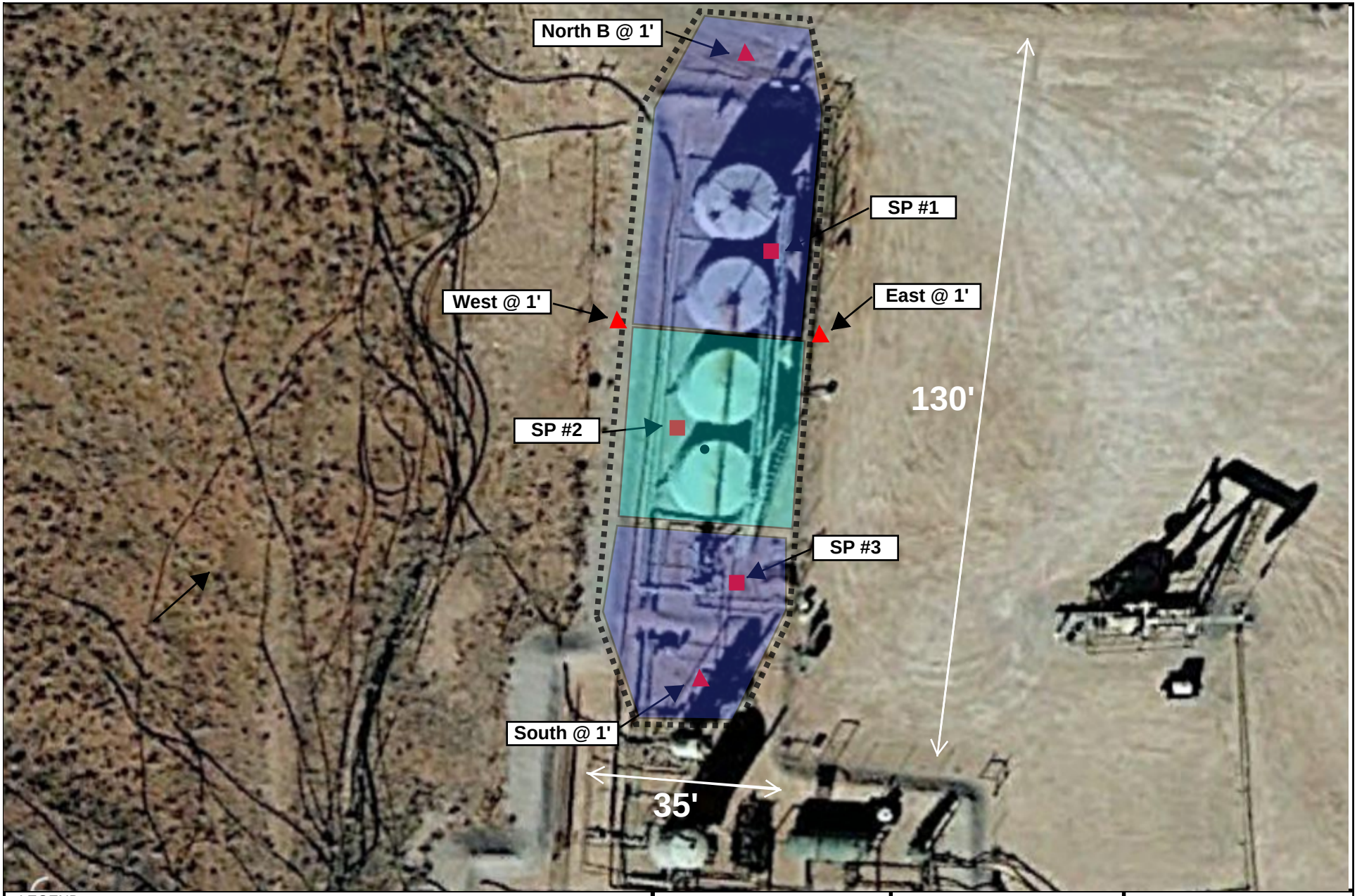
Polaris B Federal #005

Eddy County, New Mexico

Scale 1" = ~3,000'	
Drafted by: ZC	Checked by: JL
Draft: January 18, 2018	
Lat. N 32.842740 Long. W 103.969520	
UL "P", Sec. 09, T17S, R30E	
TRC Proj. No.: 293169	

TRC
Results you can rely on

2057 Commerce Drive
Midland, Texas 79703
432.520.7720



LEGEND:

- Vertical Delineation Sample Location
- Horizontal Delineation Sample Location
- Excavate to 2' bgs
- Aesthetically Address Visual Impacts or Excavate to 1' bgs

Figure 2

Site & Sample Location Map
COG Operating, LLC
Polaris B Federal #005

Eddy County, NM

Scale 1" = ~30'	
Drafted By: JL	Checked By: CS
Draft: January 10, 2018	
Lat. N 32.84274 Long. W103.96952	
UL "P", Sec. 9, T17S, R30E	
TRC Proj. No.: 293169	

TRC
2057 Commerce Drive
Midland, Texas 79703
432.520.7720

TABLE 1

CONCENTRATIONS OF BENZENE, BTEX, TPH AND CHLORIDE IN SOIL

COG OPERATING, LLC
POLARIS B FEDERAL #005
EDDY COUNTY, NEW MEXICO
NMOCD REF. # 2RP-4418

All concentrations are reported in mg/kg

SAMPLE LOCATION	SAMPLE DATE	SOIL STATUS	METHODS: SW 846-8021b							METHOD: SW 8015M				E 300.1
			BENZENE	TOLUENE	ETHYL-BENZENE	m, p - XYLENES	o - XYLENE	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
SP #1 @ Surf.	12/21/17	In-Situ	<0.000992	<0.000992	<0.000992	<0.00198	<0.000992	<0.000992	<0.000992	<14.9	<14.9	<14.9	<14.9	**4,620**
SP #1 @ 1'	12/21/17	In-Situ	-	-	-	-	-	-	-	-	-	-	-	**753**
SP #1 @ 2'	12/21/17	In-Situ	-	-	-	-	-	-	-	<14.9	<14.9	<14.9	<14.9	46.6
SP #2 @ Surf.	12/21/17	In-Situ	<0.0250	<0.0250	1.18	1.95	1.17	3.12	4.3	392[K]	3,260[K]	641[K]	4,293[K]	228
SP #2 @ 1'	12/21/17	In-Situ	-	-	-	-	-	-	-	33.6	75.4	<14.9	109	<10.0
SP #2 @ 2'	12/21/17	In-Situ	-	-	-	-	-	-	-	-	-	-	-	<9.65
SP #3 @ Surf.	12/21/17	In-Situ	0.00707	0.224	0.00369	0.00390	0.00099	0.00489	0.038054	37.5	3,030	786	3,854	**5,590**
SP #3 @ 1'	12/21/17	In-Situ	-	-	-	-	-	-	-	-	-	-	-	**903**
SP #3 @ 2'	12/21/17	In-Situ	-	-	-	-	-	-	-	<14.9	<14.9	<14.9	<14.9	127
North B @ 1'	12/21/17	In-Situ	<0.000990	<0.000990	<0.000990	<0.00198	<0.000990	<0.00099	<0.00099	<14.9	<14.9	<14.9	<14.9	**1,210**
South @ 1'	12/21/17	In-Situ	<0.000992	<0.000992	<0.000992	<0.00198	<0.000992	<0.000992	<0.000992	<15.0	16.0	<15.0	16.0	**879**
East @ 1'	12/21/17	In-Situ	<0.00101	<0.00101	<0.00101	<0.00202	<0.00101	<0.00101	<0.00101	<14.9	<14.9	<14.9	<14.9	29.9
West @ 1'	12/21/17	In-Situ	<0.000994	<0.000994	<0.000994	<0.00199	<0.000994	<0.000994	<0.000994	<14.9	26.4	<14.9	26.4	198
NMOCD Recommended Remediation Action Level			**10**	**-**	**-**	**-**	**-**		**50**	**-**	**-**	**-**	**5,000**	**600**

Bold denotes concentraions above NMOCD Regulatory Guidelines

- = Sample not analyzed for constituent.

[K] = Sample analyzed outside of recommended hold time.

Analytical Report 572194

for

TRC Solutions, Inc

Project Manager: Joel Lowry

Polaris B Federal #005

19-JAN-18

Collected By: Client

6701 Aberdeen, Suite 9 Lubbock, TX 79424

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)

19-JAN-18

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

Reference: XENCO Report No(s): **572194**
Polaris B Federal #005
Project Address: Eddy County , New Mexico

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) 572194. 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. 572194 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 572194

TRC Solutions, Inc, Midland, TX

Polaris B Federal #005

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SP #1 @ SUR.	S	12-21-17 08:00		572194-001
SP #1 @ 1'	S	12-21-17 08:05		572194-002
SP #1 @ 2'	S	12-21-17 08:10		572194-003
SP #2 @ SUR.	S	12-21-17 08:15	0	572194-004
SP #2 @ 1'	S	12-21-17 08:20	1 ft	572194-005
SP #2 @ 2'	S	12-21-17 08:25	2 ft	572194-006
SP #3 @ SUR.	S	12-21-17 08:30	0	572194-007
SP #3 @ 1'	S	12-21-17 08:35	1 ft	572194-008
SP #3 @ 2'	S	12-21-17 08:40	2 ft	572194-009
North B @ 1'	S	12-21-17 08:45	1 ft	572194-010
South @ 1'	S	12-21-17 08:50	1 ft	572194-011
East @ 1'	S	12-21-17 08:55	1 ft	572194-012
West @ 1'	S	12-21-17 09:00	1 ft	572194-013

Client Name: TRC Solutions, Inc

Project Name: Polaris B Federal #005

Project ID:
Work Order Number(s): *572194*

Report Date: *19-JAN-18*
Date Received: *12/27/2017*

Sample receipt non conformances and comments:

572194-004 added per Joal Lowry e-mail 01/10/18-- KB

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3037321 BTEX by SW 8260B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3037396 BTEX by SW 8260B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3037542 BTEX by SW 8260B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analysis Summary 572194

TRC Solutions, Inc, Midland, TX

Project Name: Polaris B Federal #005

Project Id:

Contact: Joel Lowry

Project Location: Eddy County , New Mexico

Date Received in Lab: Wed Dec-27-17 05:12 pm

Report Date: 19-JAN-18

Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	572194-001		572194-002		572194-003		572194-004		572194-005		572194-006	
	Field Id:	SP #1 @ SUR.		SP #1 @ 1'		SP #1 @ 2'		SP #2 @ SUR.		SP #2 @ 1'		SP #2 @ 2'	
	Depth:							0-		1- ft		2- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Dec-21-17 08:00		Dec-21-17 08:05		Dec-21-17 08:10		Dec-21-17 08:15		Dec-21-17 08:20		Dec-21-17 08:25	
BTEX by SW 8260B SUB: TX104704215-17-23	***Extracted:***	Jan-03-18 14:20						Jan-04-18 13:00					
	Analyzed:	Jan-03-18 14:55						Jan-04-18 14:19					
	Units/RL:	mg/kg	RL					mg/kg	RL				
Benzene		<0.000992	0.000992					<0.0250	0.0250				
Toluene		<0.000992	0.000992					<0.0250	0.0250				
Ethylbenzene		<0.000992	0.000992					1.18	0.0250				
m,p-Xylenes		<0.00198	0.00198					1.95	0.0500				
o-Xylene		<0.000992	0.000992					1.17	0.0250				
Total Xylenes		<0.000992	0.000992					3.12	0.025				
Total BTEX		<0.000992	0.000992					4.3	0.025				
Chloride by EPA 300 SUB: TX104704215-17-23	***Extracted:***	Jan-03-18 14:00		Jan-03-18 14:00		Jan-03-18 14:00		Jan-03-18 14:00		Jan-03-18 14:00		Jan-03-18 14:00	
	Analyzed:	Jan-04-18 02:14		Jan-04-18 03:10		Jan-04-18 03:21		Jan-04-18 03:32		Jan-04-18 03:43		Jan-04-18 03:54	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		4620	48.9	753	9.77	46.6	9.84	228	10.0	<10.0	10.0	<9.65	9.65
DRO-ORO By SW8015B SUB: TX104704215-17-23	***Extracted:***	Dec-29-17 09:51				Dec-29-17 09:54		Jan-18-18 12:00		Dec-29-17 09:57			
	Analyzed:	Dec-29-17 19:29				Dec-29-17 19:49		Jan-19-18 09:02		Dec-29-17 20:10			
	Units/RL:	mg/kg	RL			mg/kg	RL	mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)		<14.9	14.9			<14.9	14.9	392 K	74.9	33.6	14.9		
Diesel Range Organics (DRO)		<14.9	14.9			<14.9	14.9	3260 K	74.9	75.4	14.9		
Oil Range Hydrocarbons (ORO)		<14.9	14.9			<14.9	14.9	641 K	74.9	<14.9	14.9		

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 572194

TRC Solutions, Inc, Midland, TX

Project Name: Polaris B Federal #005

Project Id:

Contact: Joel Lowry

Project Location: Eddy County , New Mexico

Date Received in Lab: Wed Dec-27-17 05:12 pm

Report Date: 19-JAN-18

Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	572194-007		572194-008		572194-009		572194-010		572194-011		572194-012	
	Field Id:	SP #3 @ SUR.		SP #3 @ 1'		SP #3 @ 2'		North B @ 1'		South @ 1'		East @ 1'	
	Depth:	0-		1- ft		2- ft		1- ft		1- ft		1- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Dec-21-17 08:30		Dec-21-17 08:35		Dec-21-17 08:40		Dec-21-17 08:45		Dec-21-17 08:50		Dec-21-17 08:55	
BTEX by SW 8260B SUB: TX104704215-17-23	***Extracted:***	Jan-03-18 14:20						Jan-02-18 18:00		Jan-02-18 18:00		Jan-02-18 18:00	
	Analyzed:	Jan-03-18 14:38						Jan-02-18 21:56		Jan-02-18 22:13		Jan-02-18 22:46	
	Units/RL:	mg/kg	RL					mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		0.00707	0.000994					<0.000990	0.000990	<0.000992	0.000992	<0.00101	0.00101
Toluene		0.0224	0.000994					<0.000990	0.000990	<0.000992	0.000992	<0.00101	0.00101
Ethylbenzene		0.00369	0.000994					<0.000990	0.000990	<0.000992	0.000992	<0.00101	0.00101
m,p-Xylenes		0.00390	0.00199					<0.00198	0.00198	<0.00198	0.00198	<0.00202	0.00202
o-Xylene		0.000994	0.000994					<0.000990	0.000990	<0.000992	0.000992	<0.00101	0.00101
Total Xylenes		0.004894	0.000994					<0.00099	0.00099	<0.000992	0.000992	<0.00101	0.00101
Total BTEX		0.038054	0.000994					<0.00099	0.00099	<0.000992	0.000992	<0.00101	0.00101
Chloride by EPA 300 SUB: TX104704215-17-23	***Extracted:***	Jan-03-18 14:00		Jan-03-18 14:00		Jan-03-18 15:00		Jan-03-18 15:00		Jan-03-18 15:00		Jan-03-18 15:00	
	Analyzed:	Jan-04-18 04:05		Jan-04-18 04:17		Jan-04-18 05:24		Jan-04-18 05:35		Jan-04-18 06:08		Jan-04-18 06:20	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		5590	47.6	903	9.38	127	9.71	1210	9.71	879	10.0	29.9	10.0
DRO-ORO By SW8015B SUB: TX104704215-17-23	***Extracted:***	Dec-29-17 10:00				Dec-29-17 09:42		Dec-29-17 10:03		Dec-29-17 10:06		Dec-29-17 10:09	
	Analyzed:	Jan-02-18 23:16				Dec-29-17 16:02		Dec-29-17 20:30		Dec-29-17 20:52		Dec-29-17 21:13	
	Units/RL:	mg/kg	RL			mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		37.5	14.9			<14.9	14.9	<14.9	14.9	<15.0	15.0	<14.9	14.9
Diesel Range Organics (DRO)		3030	14.9			<14.9	14.9	<14.9	14.9	16.0	15.0	<14.9	14.9
Oil Range Hydrocarbons (ORO)		786	14.9			<14.9	14.9	<14.9	14.9	<15.0	15.0	<14.9	14.9

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 572194

TRC Solutions, Inc, Midland, TX

Project Name: Polaris B Federal #005

Project Id:

Contact: Joel Lowry

Project Location: Eddy County , New Mexico

Date Received in Lab: Wed Dec-27-17 05:12 pm

Report Date: 19-JAN-18

Project Manager: Kelsey Brooks

Analysis Requested							
	Lab Id:	572194-013					
	Field Id:	West @ 1'					
	Depth:	1- ft					
	Matrix:	SOIL					
	Sampled:	Dec-21-17 09:00					
BTEX by SW 8260B SUB: TX104704215-17-23	***Extracted:***	Jan-02-18 18:00					
	Analyzed:	Jan-02-18 22:29					
	Units/RL:	mg/kg RL					
Benzene		<0.000994 0.000994					
Toluene		<0.000994 0.000994					
Ethylbenzene		<0.000994 0.000994					
m,p-Xylenes		<0.00199 0.00199					
o-Xylene		<0.000994 0.000994					
Total Xylenes		<0.000994 0.000994					
Total BTEX		<0.000994 0.000994					
Chloride by EPA 300 SUB: TX104704215-17-23	***Extracted:***	Jan-03-18 15:00					
	Analyzed:	Jan-04-18 06:31					
	Units/RL:	mg/kg RL					
Chloride		198 9.90					
DRO-ORO By SW8015B SUB: TX104704215-17-23	***Extracted:***	Dec-29-17 10:12					
	Analyzed:	Dec-29-17 21:33					
	Units/RL:	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<14.9 14.9					
Diesel Range Organics (DRO)		26.4 14.9					
Oil Range Hydrocarbons (ORO)		<14.9 14.9					

Kelsey Brooks
Project Manager

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

Form 2 - Surrogate Recoveries

Project Name: Polaris B Federal #005

Work Orders : 572194,

Project ID:

Lab Batch #: 3037271 **Sample:** 572194-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/29/17 16:02

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	179	198	90	70-135	
o-Terphenyl	94.2	99.2	95	70-135	

Lab Batch #: 3037271 **Sample:** 572194-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/29/17 19:29

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.9	99.0	92	70-135	
o-Terphenyl	48.8	49.5	99	70-135	

Lab Batch #: 3037271 **Sample:** 572194-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/29/17 19:49

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.8	99.4	89	70-135	
o-Terphenyl	46.3	49.7	93	70-135	

Lab Batch #: 3037271 **Sample:** 572194-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/29/17 20:10

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.1	99.0	91	70-135	
o-Terphenyl	49.5	49.5	100	70-135	

Lab Batch #: 3037271 **Sample:** 572194-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/29/17 20:30

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.7	99.0	89	70-135	
o-Terphenyl	44.4	49.5	90	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Polaris B Federal #005

Work Orders : 572194,

Project ID:

Lab Batch #: 3037271 **Sample:** 572194-011 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/29/17 20:52

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	79.3	99.9	79	70-135	
o-Terphenyl	43.1	50.0	86	70-135	

Lab Batch #: 3037271 **Sample:** 572194-012 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/29/17 21:13

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.4	99.0	88	70-135	
o-Terphenyl	44.1	49.5	89	70-135	

Lab Batch #: 3037271 **Sample:** 572194-013 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/29/17 21:33

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	79.3	99.0	80	70-135	
o-Terphenyl	43.8	49.5	88	70-135	

Lab Batch #: 3037321 **Sample:** 572194-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/02/18 21:56

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0515	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0477	0.0500	95	80-120	
Toluene-D8	0.0487	0.0500	97	73-132	

* 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: Polaris B Federal #005

Work Orders : 572194,

Project ID:

Lab Batch #: 3037321 **Sample:** 572194-011 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/02/18 22:13

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0513	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0470	0.0500	94	80-120	
Toluene-D8	0.0505	0.0500	101	73-132	

Lab Batch #: 3037321 **Sample:** 572194-013 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/02/18 22:29

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0509	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0464	0.0500	93	80-120	
Toluene-D8	0.0519	0.0500	104	73-132	

Lab Batch #: 3037321 **Sample:** 572194-012 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/02/18 22:46

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0507	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0485	0.0500	97	80-120	
Toluene-D8	0.0507	0.0500	101	73-132	

Lab Batch #: 3037271 **Sample:** 572194-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/02/18 23:16

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.1	99.6	85	70-135	
o-Terphenyl	48.3	49.8	97	70-135	

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

Form 2 - Surrogate Recoveries

Project Name: Polaris B Federal #005

Work Orders : 572194,

Project ID:

Lab Batch #: 3037396 **Sample:** 572194-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/03/18 14:38

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0535	0.0500	107	74-126	
1,2-Dichloroethane-D4	0.0514	0.0500	103	80-120	
Toluene-D8	0.0512	0.0500	102	73-132	

Lab Batch #: 3037396 **Sample:** 572194-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/03/18 14:55

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0531	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0495	0.0500	99	80-120	
Toluene-D8	0.0497	0.0500	99	73-132	

Lab Batch #: 3037542 **Sample:** 572194-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/04/18 14:19

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0524	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0487	0.0500	97	80-120	
Toluene-D8	0.0511	0.0500	102	73-132	

Lab Batch #: 3038649 **Sample:** 572194-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/19/18 09:02

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.4	99.8	84	70-135	
o-Terphenyl	43.2	49.9	87	70-135	

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

Form 2 - Surrogate Recoveries

Project Name: Polaris B Federal #005

Work Orders : 572194,

Project ID:

Lab Batch #: 3037271 **Sample:** 7636744-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/29/17 12:52

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	72.6	100	73	70-135	
o-Terphenyl	39.9	50.0	80	70-135	

Lab Batch #: 3037321 **Sample:** 7636872-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/02/18 15:37

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0516	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0465	0.0500	93	80-120	
Toluene-D8	0.0482	0.0500	96	73-132	

Lab Batch #: 3037396 **Sample:** 7636943-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/03/18 12:09

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0509	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0482	0.0500	96	80-120	
Toluene-D8	0.0497	0.0500	99	73-132	

Lab Batch #: 3037542 **Sample:** 7637024-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/04/18 12:32

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0520	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0496	0.0500	99	80-120	
Toluene-D8	0.0495	0.0500	99	73-132	

* 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: Polaris B Federal #005

Work Orders : 572194,

Project ID:

Lab Batch #: 3038649 **Sample:** 7637669-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

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

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	70.2	100	70	70-135	
o-Terphenyl	37.7	50.0	75	70-135	

Lab Batch #: 3037271 **Sample:** 7636744-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/29/17 12:10

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.5	100	83	70-135	
o-Terphenyl	43.5	50.0	87	70-135	

Lab Batch #: 3037321 **Sample:** 7636872-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/02/18 13:48

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0479	0.0500	96	74-126	
1,2-Dichloroethane-D4	0.0474	0.0500	95	80-120	
Toluene-D8	0.0540	0.0500	108	73-132	

Lab Batch #: 3037396 **Sample:** 7636943-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/03/18 09:39

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0502	0.0500	100	74-126	
1,2-Dichloroethane-D4	0.0538	0.0500	108	80-120	
Toluene-D8	0.0504	0.0500	101	73-132	

* 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: Polaris B Federal #005

Work Orders : 572194,

Project ID:

Lab Batch #: 3037542 **Sample:** 7637024-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/04/18 10:07

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0515	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0494	0.0500	99	80-120	
Toluene-D8	0.0503	0.0500	101	73-132	

Lab Batch #: 3038649 **Sample:** 7637669-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/18/18 16:15

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	81.6	100	82	70-135	
o-Terphenyl	43.4	50.0	87	70-135	

Lab Batch #: 3037271 **Sample:** 7636744-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/29/17 12:31

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.6	100	90	70-135	
o-Terphenyl	44.4	50.0	89	70-135	

Lab Batch #: 3037321 **Sample:** 7636872-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/02/18 13:20

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0482	0.0500	96	74-126	
1,2-Dichloroethane-D4	0.0479	0.0500	96	80-120	
Toluene-D8	0.0536	0.0500	107	73-132	

* 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: Polaris B Federal #005

Work Orders : 572194,

Project ID:

Lab Batch #: 3037396 **Sample:** 7636943-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/03/18 10:56

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0469	0.0500	94	74-126	
1,2-Dichloroethane-D4	0.0470	0.0500	94	80-120	
Toluene-D8	0.0545	0.0500	109	73-132	

Lab Batch #: 3037542 **Sample:** 7637024-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/04/18 11:28

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0498	0.0500	100	74-126	
1,2-Dichloroethane-D4	0.0503	0.0500	101	80-120	
Toluene-D8	0.0520	0.0500	104	73-132	

Lab Batch #: 3038649 **Sample:** 7637669-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/18/18 16:36

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	76.2	100	76	70-135	
o-Terphenyl	39.7	50.0	79	70-135	

Lab Batch #: 3037271 **Sample:** 572194-009 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/29/17 16:22

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	178	199	89	70-135	
o-Terphenyl	88.4	99.5	89	70-135	

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

Form 2 - Surrogate Recoveries

Project Name: Polaris B Federal #005

Work Orders : 572194,

Project ID:

Lab Batch #: 3037321 **Sample:** 572190-004 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/02/18 14:05

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0510	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0557	0.0500	111	80-120	
Toluene-D8	0.0513	0.0500	103	73-132	

Lab Batch #: 3037396 **Sample:** 572221-007 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/03/18 10:23

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0517	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0552	0.0500	110	80-120	
Toluene-D8	0.0508	0.0500	102	73-132	

Lab Batch #: 3037542 **Sample:** 572221-024 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/04/18 11:08

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0541	0.0500	108	74-126	
1,2-Dichloroethane-D4	0.0563	0.0500	113	80-120	
Toluene-D8	0.0459	0.0500	92	73-132	

Lab Batch #: 3037271 **Sample:** 572194-009 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/29/17 16:42

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	174	198	88	70-135	
o-Terphenyl	90.6	99.0	92	70-135	

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

Form 2 - Surrogate Recoveries

Project Name: Polaris B Federal #005

Work Orders : 572194,

Project ID:

Lab Batch #: 3037321 **Sample:** 572190-004 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/02/18 14:21

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0506	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0524	0.0500	105	80-120	
Toluene-D8	0.0538	0.0500	108	73-132	

Lab Batch #: 3037396 **Sample:** 572221-007 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/03/18 10:40

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0517	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0558	0.0500	112	80-120	
Toluene-D8	0.0501	0.0500	100	73-132	

Lab Batch #: 3037542 **Sample:** 572221-024 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/04/18 16:49

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0538	0.0500	108	74-126	
1,2-Dichloroethane-D4	0.0576	0.0500	115	80-120	
Toluene-D8	0.0460	0.0500	92	73-132	

* 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: Polaris B Federal #005

Work Order #: 572194 **Project ID:**

Analyst: JTR **Date Prepared:** 01/02/2018 **Date Analyzed:** 01/02/2018

Lab Batch ID: 3037321 **Sample:** 7636872-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B 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	<0.00100	0.100	0.0969	97	0.100	0.0982	98	1	62-132	25	
Toluene	<0.00100	0.100	0.106	106	0.100	0.104	104	2	66-124	25	
Ethylbenzene	<0.00100	0.100	0.109	109	0.100	0.104	104	5	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.208	104	0.200	0.208	104	0	69-128	25	
o-Xylene	<0.00100	0.100	0.107	107	0.100	0.108	108	1	72-131	25	

Analyst: JTR **Date Prepared:** 01/03/2018 **Date Analyzed:** 01/03/2018

Lab Batch ID: 3037396 **Sample:** 7636943-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B 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	<0.00100	0.100	0.0965	97	0.100	0.102	102	6	62-132	25	
Toluene	<0.00100	0.100	0.0983	98	0.100	0.110	110	11	66-124	25	
Ethylbenzene	<0.00100	0.100	0.0981	98	0.100	0.109	109	11	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.198	99	0.200	0.215	108	8	69-128	25	
o-Xylene	<0.00100	0.100	0.101	101	0.100	0.111	111	9	72-131	25	

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: Polaris B Federal #005

Work Order #: 572194 **Project ID:**

Analyst: JTR **Date Prepared:** 01/04/2018 **Date Analyzed:** 01/04/2018

Lab Batch ID: 3037542 **Sample:** 7637024-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B 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	<0.00100	0.100	0.102	102	0.100	0.114	114	11	62-132	25	
Toluene	<0.00100	0.100	0.0920	92	0.100	0.0987	99	7	66-124	25	
Ethylbenzene	<0.00100	0.100	0.0871	87	0.100	0.0998	100	14	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.181	91	0.200	0.204	102	12	69-128	25	
o-Xylene	<0.00100	0.100	0.0869	87	0.100	0.101	101	15	72-131	25	

Analyst: DHE **Date Prepared:** 01/03/2018 **Date Analyzed:** 01/03/2018

Lab Batch ID: 3037378 **Sample:** 7636897-1-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	<1.00	10.0	9.77	98	10.0	9.75	98	0	80-120	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: Polaris B Federal #005

Work Order #: 572194 **Project ID:**

Analyst: DHE **Date Prepared:** 01/03/2018 **Date Analyzed:** 01/04/2018

Lab Batch ID: 3037379 **Sample:** 7636898-1-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	<1.00	10.0	9.73	97	10.0	9.68	97	1	80-120	20	

Analyst: ARL **Date Prepared:** 12/29/2017 **Date Analyzed:** 12/29/2017

Lab Batch ID: 3037271 **Sample:** 7636744-1-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
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	857	86	1000	846	85	1	70-135	35	
Diesel Range Organics (DRO)	<15.0	1000	917	92	1000	918	92	0	70-135	35	

Analyst: ARL **Date Prepared:** 01/18/2018 **Date Analyzed:** 01/18/2018

Lab Batch ID: 3038649 **Sample:** 7637669-1-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
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	986	99	1000	931	93	6	70-135	35	
Diesel Range Organics (DRO)	<15.0	1000	1130	113	1000	1070	107	5	70-135	35	

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

Form 3 - MS / MSD Recoveries

Project Name: Polaris B Federal #005

Work Order # : 572194 **Project ID:**

Lab Batch ID: 3037321 **QC- Sample ID:** 572190-004 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/02/2018 **Date Prepared:** 01/02/2018 **Analyst:** JTR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B 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	<0.000998	0.0998	0.0797	80	0.0998	0.0882	88	10	62-132	25	
Toluene	<0.000998	0.0998	0.0850	85	0.0998	0.0948	95	11	66-124	25	
Ethylbenzene	<0.000998	0.0998	0.0824	83	0.0998	0.0928	93	12	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.165	83	0.200	0.182	91	10	69-128	25	
o-Xylene	<0.000998	0.0998	0.0857	86	0.0998	0.0975	98	13	72-131	25	

Lab Batch ID: 3037396 **QC- Sample ID:** 572221-007 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/03/2018 **Date Prepared:** 01/03/2018 **Analyst:** JTR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B 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	<0.000998	0.0998	0.0876	88	0.0996	0.0889	89	1	62-132	25	
Toluene	<0.000998	0.0998	0.0922	92	0.0996	0.0926	93	0	66-124	25	
Ethylbenzene	<0.000998	0.0998	0.0890	89	0.0996	0.0900	90	1	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.180	90	0.199	0.180	90	0	69-128	25	
o-Xylene	<0.000998	0.0998	0.0900	90	0.0996	0.0923	93	3	72-131	25	

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: Polaris B Federal #005

Work Order # : 572194 **Project ID:**

Lab Batch ID: 3037542 **QC- Sample ID:** 572221-024 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/04/2018 **Date Prepared:** 01/04/2018 **Analyst:** JTR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B 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	<0.000992	0.0992	0.125	126	0.0998	0.129	129	3	62-132	25	
Toluene	<0.000992	0.0992	0.0829	84	0.0998	0.0851	85	3	66-124	25	
Ethylbenzene	<0.000992	0.0992	0.0911	92	0.0998	0.0951	95	4	71-134	25	
m,p-Xylenes	<0.00198	0.198	0.196	99	0.200	0.198	99	1	69-128	25	
o-Xylene	<0.000992	0.0992	0.0984	99	0.0998	0.0992	99	1	72-131	25	

Lab Batch ID: 3037378 **QC- Sample ID:** 572194-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/04/2018 **Date Prepared:** 01/03/2018 **Analyst:** DHE

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	4620	489	5130	104	489	5100	98	1	80-120	20	

Lab Batch ID: 3037378 **QC- Sample ID:** 572225-002 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/03/2018 **Date Prepared:** 01/03/2018 **Analyst:** DHE

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	687	489	1180	101	489	1180	101	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: Polaris B Federal #005

Work Order # : 572194 **Project ID:**

Lab Batch ID: 3037379 **QC- Sample ID:** 572194-010 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/04/2018 **Date Prepared:** 01/03/2018 **Analyst:** DHE

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	1210	97.1	1290	82	97.1	1290	82	0	80-120	20	

Lab Batch ID: 3037271 **QC- Sample ID:** 572194-009 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 12/29/2017 **Date Prepared:** 12/29/2017 **Analyst:** ARL

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
Gasoline Range Hydrocarbons (GRO)	<14.9	1990	1590	80	1980	1730	87	8	70-135	35	
Diesel Range Organics (DRO)	<14.9	1990	1910	96	1980	2030	103	6	70-135	35	

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

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

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

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

572194

Xenco Quote #

Xenco Job # 572194

Client / Reporting Information

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

Project Information

Project Name/Number: Polaris B Federal #005
Project Location: Eddy County, New M
Invoice To: COG % Becky Haskell
Invoice: SRS No. Pending

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	TPH8015 M	CLORIDE E300	BTEX 8021	Field Comments
1	SP #1 @ SUR.	0	12/21/2017	8:00	S	1									X	X	X	
2	SP #1 @ 1'	1'	12/21/2017	8:05	S	1										X		
3	SP #1 @ 2'	2'	12/21/2017	8:10	S	1									X	X		
4	SP #2 @ SUR.	0	12/21/2017	8:15	S	1										X	X	
5	SP #2 @ 1'.	1'	12/21/2017	8:20	S	1									X	X		
6	SP #2 @ 2'	2'	12/21/2017	8:25	S	1										X		
7	SP #3 @ SUR.	0	12/21/2017	8:30	S	1									X	X	X	
8	SP #3 @ 1'	1'	12/21/2017	8:35	S	1										X		
9	SP #3 @ 2'	2'	12/21/2017	8:40	S	1									X	X		
10	North B @ 1'	1'	12/21/2017	8:45	S	1									X	X	X	

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:

email: RHaskell@concho.com Jlowry@trcsolutions.com

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		12/27 3:00	1	2		2
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
			3	4		4
5	Relinquished by:	Date Time: 12/27 5:12	Received By: 5 Brenda Ward	Custody Seal #	Preserved where applicable	On Ice: ✓ Cooler Temp. 1.8/1.1 Thermo. Corr. Factor FR 3 -0.1
				12/27/17 17:12		

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.

CHAIN OF CUSTODY

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Page 1 Of 2 2

Stafford,Texas (281-240-4200)

Dallas Texas (214-902-0300)

572194

San Antonio, Texas (210-509-3334)

Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

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Xenco Quote #

Xenco Job # 572194

Client / Reporting Information

Company Name / Branch: TRC Environmental

Company Address: 2057 Commerce Drive, Midland, TX 79703

Email: jlowry@trcsolutions.com

Phone No:

Project Contact: Joel Lowry

Samplers's Name Joel Lowry

Project Information

Project Name/Number: Polaris B Federal #005

Project Location: Eddy County, New M

Invoice To: COG C/O Becky Haskell

Invoice: SRS No. Pending

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	TPH8015 M	CLORIDE E300	BTEX 8021	Field Comments
1	South @ 1'	1'	12/21/2017	8:50	S	1									X	X	X	
2	East @ 1'	1'	12/21/2017	8:55	S	1									X	X	X	
3	West @ 1'	1'	12/21/2017	9:00	S	1									X	X	X	
4																		
5																		
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:

email: RHaskell@concho.com Jlowry@trcsolutions.com

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	Joel Lowry	12/27 3:00	Patricia Haskell	2		
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
5	Patricia Haskell	12/27 5:13	Brenda Ward	Custody Seal #	12/27/17 17:12	

Preserved where applicable

On Ice

Cooler Temp. 1.2 1.1

Thermo. Corr. Factor IR-3 -0.1

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.

Inter-Office Shipment

IOS Number **1053904**

Date/Time: 12/28/17 18:02
Lab# From: **Lubbock**
Lab# To: **Houston**

Created by: Brenda Ward
Delivery Priority:
Air Bill No.: 771105606137

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
572194-001	S	SP #1 @ SUR.	12/21/17 08:00	E300_CL	Chloride by EPA 300	01/03/18	01/18/18	KEB	CL	
572194-002	S	SP #1 @ 1'	12/21/17 08:05	E300_CL	Chloride by EPA 300	01/03/18	01/18/18	KEB	CL	
572194-003	S	SP #1 @ 2'	12/21/17 08:10	E300_CL	Chloride by EPA 300	01/03/18	01/18/18	KEB	CL	
572194-004	S	SP #2 @ SUR.	12/21/17 08:15	E300_CL	Chloride by EPA 300	01/03/18	01/18/18	KEB	CL	
572194-005	S	SP #2 @ 1'	12/21/17 08:20	E300_CL	Chloride by EPA 300	01/03/18	01/18/18	KEB	CL	
572194-006	S	SP #2 @ 2'	12/21/17 08:25	E300_CL	Chloride by EPA 300	01/03/18	01/18/18	KEB	CL	
572194-007	S	SP #2 @ SUR.	12/21/17 08:30	E300_CL	Chloride by EPA 300	01/03/18	01/18/18	KEB	CL	
572194-008	S	SP #3 @ 1'	12/21/17 08:35	E300_CL	Chloride by EPA 300	01/03/18	01/18/18	KEB	CL	
572194-009	S	SP #3 @ 2'	12/21/17 08:40	E300_CL	Chloride by EPA 300	01/03/18	01/18/18	KEB	CL	
572194-009	S	SP #3 @ 2'	12/21/17 08:40	SW8015B_DROORO	DRO-ORO By SW8015B	01/03/18	01/04/18	KEB	PHCC10C28 PHCC28C35	
572194-009	S	SP #3 @ 2'	12/21/17 08:40	SW8015GRO	TPH GRO by EPA 8015 Mod.	01/03/18	01/04/18	KEB	PHCG	
572194-010	S	North B @ 1'	12/21/17 08:45	SW8015B_DROORO	DRO-ORO By SW8015B	01/03/18	01/04/18	KEB	PHCC10C28 PHCC28C35	
572194-010	S	North B @ 1'	12/21/17 08:45	SW8015GRO	TPH GRO by EPA 8015 Mod.	01/03/18	01/04/18	KEB	PHCG	
572194-010	S	North B @ 1'	12/21/17 08:45	SW8021B	BTEX by EPA 8021B	01/03/18	01/04/18	KEB	BR4FBZ BZ BZME EBZ X	
572194-010	S	North B @ 1'	12/21/17 08:45	E300_CL	Chloride by EPA 300	01/03/18	01/18/18	KEB	CL	
572194-011	S	South @ 1'	12/21/17 08:50	SW8021B	BTEX by EPA 8021B	01/03/18	01/04/18	KEB	BR4FBZ BZ BZME EBZ X	
572194-011	S	South @ 1'	12/21/17 08:50	SW8015GRO	TPH GRO by EPA 8015 Mod.	01/03/18	01/04/18	KEB	PHCG	
572194-011	S	South @ 1'	12/21/17 08:50	SW8015B_DROORO	DRO-ORO By SW8015B	01/03/18	01/04/18	KEB	PHCC10C28 PHCC28C35	
572194-011	S	South @ 1'	12/21/17 08:50	E300_CL	Chloride by EPA 300	01/03/18	01/18/18	KEB	CL	
572194-012	S	East @ 1'	12/21/17 08:55	SW8015GRO	TPH GRO by EPA 8015 Mod.	01/03/18	01/04/18	KEB	PHCG	
572194-012	S	East @ 1'	12/21/17 08:55	SW8015B_DROORO	DRO-ORO By SW8015B	01/03/18	01/04/18	KEB	PHCC10C28 PHCC28C35	
572194-012	S	East @ 1'	12/21/17 08:55	SW8021B	BTEX by EPA 8021B	01/03/18	01/04/18	KEB	BR4FBZ BZ BZME EBZ X	
572194-012	S	East @ 1'	12/21/17 08:55	E300_CL	Chloride by EPA 300	01/03/18	01/18/18	KEB	CL	
572194-013	S	West @ 1'	12/21/17 09:00	SW8015B_DROORO	DRO-ORO By SW8015B	01/03/18	01/04/18	KEB	PHCC10C28 PHCC28C35	
572194-013	S	West @ 1'	12/21/17 09:00	E300_CL	Chloride by EPA 300	01/03/18	01/18/18	KEB	CL	

Inter-Office Shipment

IOS Number **1053904**

Date/Time: 12/28/17 18:02
Created by: Brenda Ward
Please send report to: Kelsey Brooks

Lab# From: **Lubbock**
Delivery Priority:
Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424

Lab# To: **Houston**
Air Bill No.: 771105606137
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
572194-013	S	West @ 1'	12/21/17 09:00	SW8021B	BTEX by EPA 8021B	01/03/18	01/04/18	KEB	BR4FBZ BZ BZME EBZ X	
572194-013	S	West @ 1'	12/21/17 09:00	SW8015GRO	TPH GRO by EPA 8015 Mod.	01/03/18	01/04/18	KEB	PHCG	

Inter Office Shipment or Sample Comments:

Relinquished By Brenda Ward
Brenda Ward

Received By: R. C. Vandenberghe
Rene Vandenberghe

Date Relinquished: 12/28/2017

Date Received: 12/29/2017 10:00

Cooler Temperature: 3.6

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 1053904

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : hou-068

Sent By: Brenda Ward **Date Sent:** 12/28/2017 06:02 PM

Received By: Rene Vandenberghe **Date Received:** 12/29/2017 10:00 AM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	3.6	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received with appropriate temperature?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**No**	
#5 *Custody Seals Signed and dated for Containers/coolers	**N/A**	
#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: R. C. Vandenberghe Date: 12/29/2017

Rene Vandenberghe

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: TRC Solutions, Inc

Date/ Time Received: 12/27/2017 05:12:00 PM

Work Order #: 572194

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)?	1.1
#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: 12/28/2017
Brenda Ward

Checklist reviewed by: Kelsey Brooks Date: 12/31/2017
Kelsey Brooks

NM OIL CONSERVATION
ARTESIA DISTRICT
SEP 29 2017
RECEIVED

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised August 8, 2011

Submit 2 copies to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

nAB1727251523

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: POLARIS B FEDERAL #005	Facility Type: Battery

Surface Owner: Federal	Mineral Owner: Federal	API No. 30-015-34707

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	09	17S	30E	330	South	330	East	Eddy

Latitude 32.8427429 **Longitude** - 103.9695206

NATURE OF RELEASE

Type of Release: Produced Water & Oil	Volume of Release: 40 bbls PW; 10 bbls Oil	Volume Recovered: 38 bbls PW; 9 bbls Oil
Source of Release: Tank Overflow	Date and Hour of Occurrence: 9-26-2017 9:00 am	Date and Hour of Discovery: 9-26-2017 9:00 am
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Crystal Weaver/Shelly Tucker	
By Whom? Becky Haskell	Date and Hour: 9/26/2017 03:43 PM	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

The release occurred when the transducer failed causing the water tank to overflow. The transducer was replaced.

Describe Area Affected and Cleanup Action Taken.*

The release occurred within the lined facility. Vacuum trucks were 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

Printed Name: Dakota Neel

Title: HSE Coordinator

E-mail Address: dneel2@concho.com

Date: September 29, 2017 Phone: 575-746-2010

OIL CONSERVATION DIVISION

Signed By Mike Bratcher

Approved by Environmental Specialist:

Approval Date: 9/29/17 Expiration Date: N/A

Conditions of Approval: See attached Attached ☐ JRP-4418

* Attach Additional Sheets If Necessary

Please refer to the New Mexico Oil Conservation Division Website for updated form(s) at: http://www.emnrd.state.nm.us/OCD/forms.html Thank you