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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company: COG Operating LLC [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 [sic]. 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.

The release occurred within an unlined facility. Remediation activities were conducted in accordance with and NMOCD and BLM-approved *Workplan.* Please reference the Workplan dated January 23, 2018, and the Remediation Summary and Closure Report dated July 2, 2018, for additional details regarding remediation activities.

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

Signature: Rebecca Haskell	OIL CONSERVATION DIVISION
Printed Name: Rebecca Haskell	Approved by Environmental Specialist: Buttam Hall
Title: HSE Coordinator	Approval Date: 5/2/2023 Expiration Date: N/A
E-mail Address: rhaskell@concho.com	Conditions of Approval: Approved under the old rules per approved workplan. Attached ☐
Date: July 2, 2018 Phone: 432-818-2372	

* Attach Additional Sheets If Necessary

2057 Commerce Drive
Midland, TX 79703

432.520.7720 PHONE
432.520.7701 FAX

www.trcsolutions.com

July 2, 2018

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

Henryetta Price
Carlsbad Field Office
United States Department of the Interior
Bureau of Land Management
620 E. Greene Street
Carlsbad, NM 88220

Re: **Remediation Summary and Closure Report**
Polaris B Federal #005
API No. 30-015-34707
GPS: 32.84274, -103.96952
UL "P", Sec. 09, T17S, R30E
Eddy Co, NM
NMOCD Ref. No. 2RP-4418

TRC Environmental Corporation (TRC), on behalf of COG Operating, LLC (COG), has prepared this *Remediation Summary and Closure Report* for the release site known as the Polaris B Federal #005. Details of the release are summarized below:

RELEASE DETAILS			
Type of Release: Crude Oil and Produced Water	**Volume of Release:** 10 bbls Oil, 40 bbls Produced Water		
	Volume Recovered: 9 bbls Oil, 38 bbls Produced Water		
Source of Release: Tank Overflow	**Date of Release:** 09/26/17	**Date of Discovery:**	09/26/17
Was Immediate Notice Given? Yes	**If YES, to Whom?** NMOCD District II/BLM		
Was a Watercourse Reached? No	**Volume Impacted the Watercourse:** Not Applicable		
Cause of Problem and Remedial Action Taken: The release was attributed to the failure of a transducer causing the water tank to overflow.			

A Site Location Map is provided as Attachment #1. A copy of the initial Release Notification and Corrective Action (NMOCD Form C-141) is provided as Attachment #6.

REGULATORY FRAMEWORK

Crude oil facilities in New Mexico are generally regulated by the New Mexico Oil Conservation Division (NMOCD). Impact of soil due to a surface release is addressed in the NMOCD guidance document titled *Guidelines for Remediation of Leaks, Spills and Releases* , dated August 13, 1993.

The guidance document provides direction for initial response actions, site assessment, sampling procedures and provides a total ranking score based on the depth to groundwater, distance to private and domestic water sources, and the distance to the nearest surface water body as follows:

RANKING SCORE CRITERIA		
General Site Characteristics		**Score**
Depth to Groundwater	< 50 Feet	**20**
	50-99 Feet	**10**
	> 100 Feet	**0**
Well Head Protection Area, <1,000 Feet from water source, or <200 Feet from private domestic water source	Yes	**20**
	No	**0**
Distance to Surface Water Body	< 200 Feet	**20**
	200 - 1,000 Feet	**10**
	> 1,000 Feet	**0**

A search of a groundwater database maintained by The New Mexico Office of the State Engineer (NMOSE) was conducted to determine the average depth to groundwater within the Section and identify any registered water wells within 1,000 ft. of the release site. If none were identified, the approximate depth to groundwater was extrapolated from a Depth to Groundwater Map utilized by the NMOCD. The results of the groundwater database search are provided as Attachment #3.

TOTAL RANKING SCORE FOR SITE		
Ranking Score Criteria		**Score**
Depth to Groundwater	325 Feet	**0**
Well Head Protection Area, <1,000 Feet from water source, or <200 Feet from private domestic water source	No	**0**
Distance to Surface Water Body	> 1,000 Feet	**0**
TOTAL RANKING SCORE FOR SITE		**0**

The NMOCD guidelines indicated the Site has an initial ranking score of 0 points. The NMOCD Recommended Remediation Action Levels (RRAL) for a Site with a ranking score of 0 points are as follows:

RECOMMENDED REMEDIATION ACTION LEVELS	
Benzene	**10 mg/kg**
Benzene, Toluene, Ethylbenzene and Total Xylenes (BTEX)	**50 mg/kg**
Total Petroleum Hydrocarbons (TPH)	**5,000 mg/kg**
Chloride	**600 mg/kg**

INITIAL INVESTIGATION

On December 21, 2017, TRC conducted an initial soil investigation at the Site. During the initial soil 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 samples (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).

In addition, soil samples SP #1 @ Surf., SP #1 @ 2', SP #2 @ Surf., SP #2 @ 1', SP #3 @ Surf., and SP #3 @ 2' were 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 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 samples 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 samples (North B @ 1', South @ 1', East @ 1' and West @ 1') from the edges of the inferred release margins and submitted the samples 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 the 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. A table summarizing laboratory analytical results from soil samples collected during the initial assessment is provided on the following page:

Table 1									
Sample ID	Depth	Soil Status	SW 846-8021b		SW-846 8015M				E300
			Benzene	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.	Surf.	Excavated	<0.000992	<0.000992	<14.9	<14.9	<14.9	<14.9	**4,620**
SP #1 @ 1'	1'	Excavated	-	-	-	-	-	-	**753**
SP #1 @ 2'	2'	In-Situ	-	-	<14.9	<14.9	<14.9	<14.9	46.6
SP #2 @ Surf.	Surf.	Excavated	<0.0250	4.3	392[k]	3,260[k]	641[k]	4,293[k]	228
SP #2 @ 1'	1'	Excavated	-	-	33.6	75.4	<14.9	109.0	<10.0
SP #2 @ 2'	2'	In-Situ	-	-	-	-	-	-	<9.65
SP #3 @ Surf.	Surf.	Excavated	0.00707	0.038054	37.5	3,030	786	3,854	**5,590**
SP #3 @ 1'	1'	Excavated	-	-	-	-	-	-	**903**
SP #3 @ 2'	2'	Excavated	-	-	<14.9	<14.9	<14.9	-	127
North B @ 1'	1'	Excavated	<0.000990	<0.00099	<14.9	<14.9	<14.9	<14.9	**1,210**
South @ 1'	1'	Excavated	<0.000992	<0.000992	<15.0	16.0	<15.0	16.0	**879**
East @ 1'	1'	In-Situ	<0.00101	<0.00101	<14.9	<14.9	<14.9	<14.9	29.9
West @ 1'	1'	In-Situ	<0.000994	<0.000994	<14.9	26.4	<14.9	26.4	198
NMOCD RRAL			**10**	**50**	**-**	**-**	**-**	**5,000**	**600**

Laboratory analytical reports are provided as Attachment #4. A "Site & Sample Location Map" is provided as Attachment #2.

PROPOSED REMEDIATION ACTIVITIES AND REMEDIATION WORKPLAN

Based on laboratory analytical results, site conditions and field observations made during the initial release assessment, COG proposed the following remediation activities designed to advance the Release Site toward an 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. In the event it is determined the 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, 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 results from confirmation soil samples.

The *Workplan* was subsequently approved.

SUMMARY OF FIELD ACTIVITIES

As per the approved workplan, impacted soil in the areas represented by soil samples SP #1 @ Surf. SP #1 @ 1', SP #3 @ Surf., and SP #3 @ 1' was excavated to a depth of approximately two (2) ft. bgs, or until field test results indicated impacted soil affected above the NMOCD RRAL for chloride had been removed. In addition, the affected area represented by soil sample SP#2 was excavated to approximately one (1) ft. bgs. Excavation sidewalls were advanced toward the North and South until laboratory analytical results indicated impacted soil affected above the NMOCD RRAL for chloride had been removed. Upon excavating impacted soil from within the release margins, two (2) confirmation soil samples were collected from the excavation sidewalls and submitted to the laboratory for analysis of concentrations of chloride. Laboratory analytical results indicated chloride concentrations were less than the NMOCD RRAL in each of the submitted soil samples. A table summarizing laboratory analytical results from confirmation soil samples is provided below:

Sample ID	Depth	Soil Status	SW 846-8021b		SW-846 8015M				E300
			Benzene	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
North B @ 1' A	1'	In-Situ	-	-	-	-	-	-	169
South @ 1' A	1'	In-Situ	-	-	-	-	-	-	309
NMOCD RRAL			**10**	**50**	**-**	**-**	**-**	**5,000**	**600**

Upon receiving laboratory analytical results from confirmation soil samples, the excavated area was backfilled with locally sourced, non-impacted "like" material. A Photographic Log is provided as Attachment #5.

EXCAVATION/REMEDIATION DETAIL SUMMARY			
Type of Remediation:	Dig and Haul		
Date Remediation Activities Began:	May 21, 2018		
Excavation Dimensions:	**Length:** 112.5 ft.	**Width:** 25 to 35 ft.	**Depth:** 0 to 2 ft.
Soil Transportation Start Date:	May 25, 2018	**Backfill Date:**	June 7, 2018
Total Yards Transported to Disposal:	224	**Disposal Facility:**	R360 Halfway Facility

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.

SITE CLOSURE REQUEST

Remediation activities were conducted in accordance with the NMOCD- and BLM-approved *Workplan* . Excavated impacted material was transported to an NMOCD-approved disposal facility and the site was backfilled with locally sourced, non-impacted "like" material. TRC on behalf of COG Operating, LLC respectfully requests the NMOCD and BLM grant closure approval for the Polaris B Federal #005 release, which occurred on September 26, 2017.

If you have any questions, or if additional is required, please feel free to contact Becky Haskell or either of the undersigned by phone or email.

Respectfully,

Joel Lowry
Senior Project Manager
TRC Environmental Corp.

Curt Stanley
Senior Project Manager
TRC Environmental Corp.

Attachments:

Attachment #1-	Figure 1 - Site Location Map
Attachment #2-	Figure 2 - Site & Sample Location Map
Attachment #3-	Groundwater Database Search
Attachment #4-	Laboratory Analytical Reports
Attachment #5-	Photographic Log
Attachment #6-	Release Notification and Corrective Action (FORM C-141)

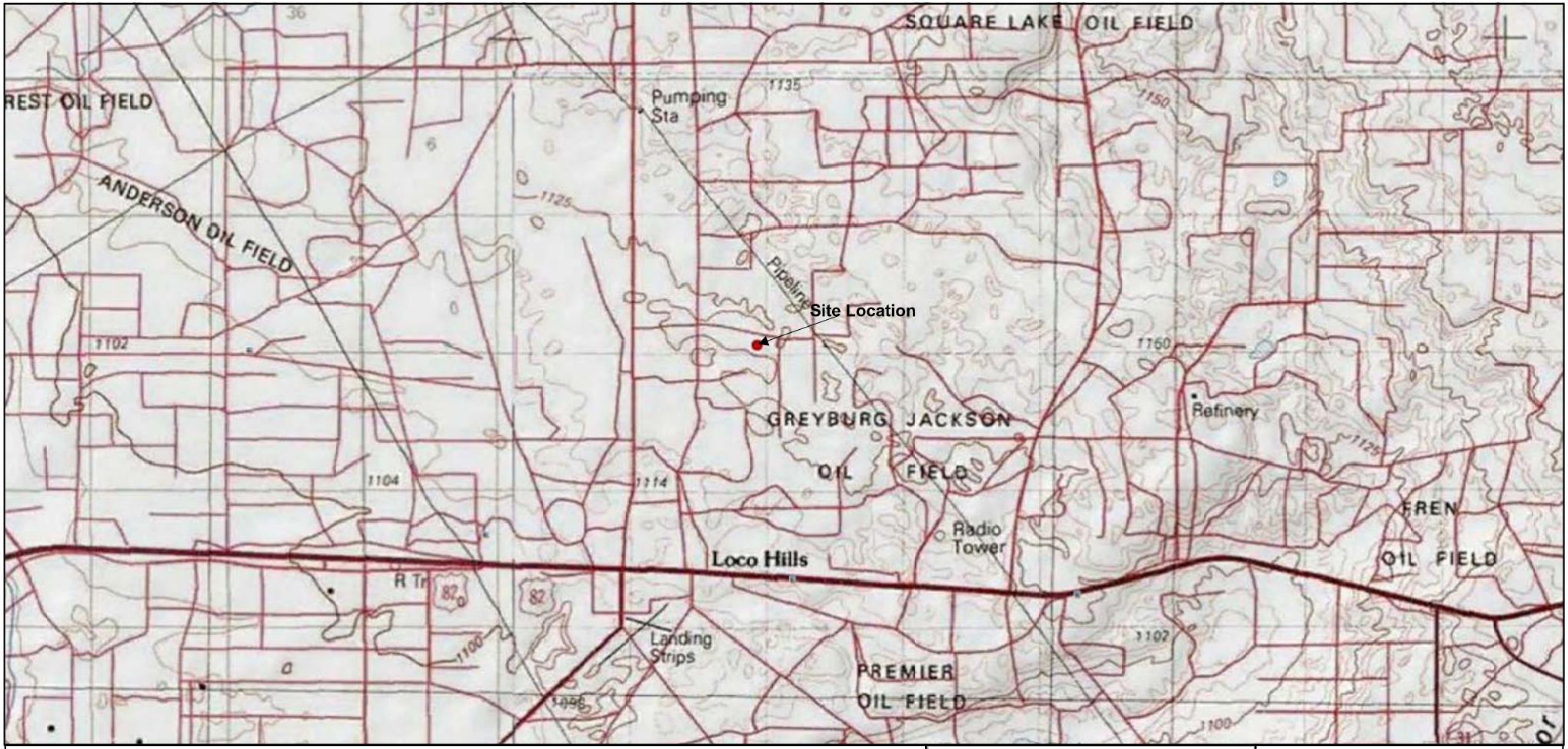


Figure 1

Site Location Map

COG Operating, LLC

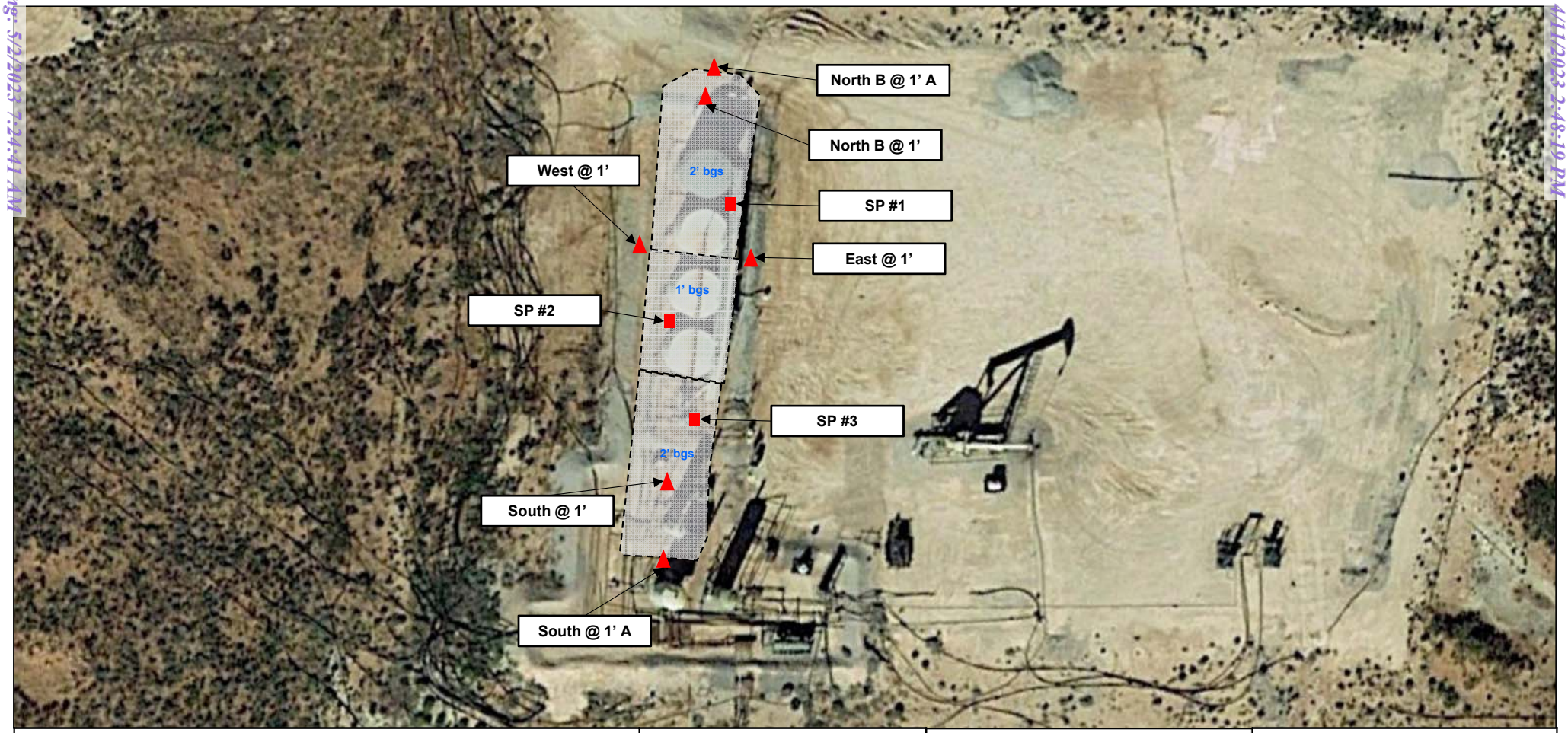
Polaris B Federal #005

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
- Excavated Area

Figure 2
Site & Sample Location Map
COG Operating, LLC
Polaris B Feral #005
Eddy County, New Mexico

Scale 1" = ~50'	
Drafted by: BC	Checked by: JL
Draft: June 26, 2018	
Lat. N 32.84274 Long. W -103.96952	
UL "P", Sec. 9, T17S, R30E	
TRC Proj. No.: 293196	

TRC
Results you can rely on
2057 Commerce Drive
Midland, Texas 79703
432.520.7720

New Mexico Office of the State Engineer

Water Column/Average Depth to Water

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

No records found.

UTMNAD83 Radius Search (in meters):

Easting (X): 596435 **Northing (Y):** 3634323 **Radius:** 1610

6/28/18 12:54 PM

WATER COLUMN/ AVERAGE DEPTH TO WATER

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

CASE NARRATIVE

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		

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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

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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					

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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

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9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
1211 W Florida Ave, Midland, TX 79701	(432) 563-1800	(432) 563-1713
2525 W. Huntington Dr. - Suite 102, Tempe AZ 85282	(602) 437-0330	

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.

CHAIN OF CUSTODY

XENCO LABORATORIES

Setting the Standard since 1990

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)

www.xenco.com

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

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: 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: 3	Relinquished By: 4	Date Time:	Received By: 4
5	Relinquished by:	Date Time: 12/27 5:12	Received By: 5 Brenda Ward	Custody Seal #	Preserved where applicable	On Ice: Y Cooler Temp. 1.8/1.1 Thermo. Corr. Factor FR3 -0.1

Custody Seal # 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.

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CHAIN OF CUSTODY

Page 1 Of 2 2

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	4

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
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
572194-013	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

Date Relinquished: 12/28/2017

Received By: Rene Vandenberghe

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: _____ 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

Certificate of Analysis Summary 587540

TRC Solutions, Inc, Midland, TX

Project Name: Polaris B Federal #005

Project Id:

Contact: Joel Lowry

Project Location: Eddy, Co. NM

Date Received in Lab: Tue May-29-18 04:40 pm

Report Date: 05-JUN-18

Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	587540-001		587540-002									
	Field Id:	North B @ 1' A		South @ 1' A									
	Depth:												
	Matrix:	SOIL		SOIL									
	Sampled:	May-24-18 11:00		May-24-18 11:05									
Chloride by EPA 300	***Extracted:***	Jun-01-18 15:00		Jun-01-18 15:00									
	Analyzed:	Jun-04-18 12:17		Jun-04-18 12:54									
	Units/RL:	mg/kg	RL	mg/kg	RL								
Chloride		169	25.0	309	50.0								

Kelsey Brooks
Project Manager

Analytical Report 587540

for

TRC Solutions, Inc

Project Manager: Joel Lowry

Polaris B Federal #005

05-JUN-18

Collected By: Client

6701 Aberdeen, Suite 9 Lubbock, TX 79424

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-26), 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)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

05-JUN-18

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

Reference: XENCO Report No(s): **587540**
Polaris B Federal #005
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) 587540. 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. 587540 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 587540

TRC Solutions, Inc, Midland, TX

Polaris B Federal #005

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
North B @ 1' A	S	05-24-18 11:00		587540-001
South @ 1' A	S	05-24-18 11:05		587540-002

CASE NARRATIVE

Client Name: TRC Solutions, Inc

Project Name: Polaris B Federal #005

Project ID:
Work Order Number(s): *587540*

Report Date: *05-JUN-18*
Date Received: *05/29/2018*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analytical Results 587540

TRC Solutions, Inc, Midland, TX

Polaris B Federal #005

Sample Id:	**North B @ 1' A**	Matrix:	Soil	Date Received:	05.29.18 16.40
Lab Sample Id:	587540-001	Date Collected:	05.24.18 11.00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	RNL			% Moisture:	
Analyst:	RNL	Date Prep:	06.01.18 15.00	Basis:	Wet Weight
Seq Number:	3052218				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**169**	25.0	mg/kg	06.04.18 12.17		1

Certificate of Analytical Results 587540

TRC Solutions, Inc, Midland, TX

Polaris B Federal #005

Sample Id:	**South @ 1' A**	Matrix:	Soil	Date Received:	05.29.18 16.40
Lab Sample Id:	587540-002	Date Collected:	05.24.18 11.05		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	RNL			% Moisture:	
Analyst:	RNL	Date Prep:	06.01.18 15.00	Basis:	Wet Weight
Seq Number:	3052218				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**309**	50.0	mg/kg	06.04.18 12.54		2

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 587540

TRC Solutions, Inc

Polaris B Federal #005

Analytical Method: **Chloride by EPA 300** Prep Method: E300P

Seq Number: 3052218 Matrix: Solid Date Prep: 06.01.18

MB Sample Id: 7655965-1-BLK LCS Sample Id: 7655965-1-BKS LCSD Sample Id: 7655965-1-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	253	101	247	99	90-110	2	20	mg/kg	06.04.18 11:52	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P

Seq Number: 3052218 Matrix: Soil Date Prep: 06.01.18

Parent Sample Id: 587256-005 MS Sample Id: 587256-005 S MSD Sample Id: 587256-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	15500	250	18200	1080	17600	840	80-120	3	20	mg/kg	06.04.18 15:11	X

Analytical Method: **Chloride by EPA 300** Prep Method: E300P

Seq Number: 3052218 Matrix: Soil Date Prep: 06.01.18

Parent Sample Id: 587540-001 MS Sample Id: 587540-001 S MSD Sample Id: 587540-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	169	250	409	96	411	97	80-120	0	20	mg/kg	06.04.18 12:29	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

LABORATORIES

CHAIN OF CUSTODY

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

587540

Xenco Job # 587540

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: Polaris B Federal #005

Project Location: Eddy, Co NM

Invoice To: COG Operating 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 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	TPH 8015 M Ext	Chloride E 300	BTEX 8021B	Field Comments
1	North B @ 1' A	1'	5/24/2018	11:00	S	1										X		1
2	South @ 1' A	1'	5/24/2018	11:05	S	1										X		2
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Data Deliverable Information

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

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

Notes:

jlowry@trcsolutions.com
maskell@concho.com
zconder@trcsolutions.com
dneel2@concho.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				2		2
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
			3	4		4
5	Relinquished by:	Date Time: 5/29/18 9:40	Received By:	Custody Seal #	Preserved where applicable	On Ice: ☐ Cooler Temp. 3.4/3.4 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 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: TRC Solutions, Inc

Date/ Time Received: 05/29/2018 04:40:00 PM

Work Order #: 587540

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)?	3.4
#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: 05/30/2018

Checklist reviewed by: Kelsey Brooks Date: 06/01/2018

Figure 1 - View of affected area prior to excavation activities, facing South.

Figure 2 - View of affected prior to excavation activities, facing North.

Figure 3 - View of affected area after excavation activities, facing North.

Figure 4 - View of affected area after excavation activities, facing South.

Figure 5 - View of affected area after excavation activities, facing North.

Figure 6 - View of affected area after remediation activities, facing South.

Figure 7 - View of affected area after remediation activities, facing North.

Figure 8 - View of affected area after remediation activities, facing Southeast.

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 1 Copy 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

fRP-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

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 9/29/2017 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number 3RP-4418 has been assigned. **Please refer to this case number in all future correspondence.**

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

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

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District 2 office in ARTESIA on or before 10/29/2017. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.**

The goals of a characterization effort are: 1) determination of the lateral and vertical extents along with the magnitude of soil contamination. 2) determine if groundwater or surface waters have been impacted. 3) If groundwater or surface waters have been impacted, what are the extents and magnitude of that impact. 4) The characterization of any other adverse impacts that may have occurred (examples: impacts on vegetation, impacts on wildlife, air quality, loss of use of property, etc.). To meet these goals as quickly as possible, the following items must, at a minimum, be addressed in the release characterization workplan and subsequent reporting:

- Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C_6 thru C_{36}), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.

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

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

- Composite sampling is not generally allowed.

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

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

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

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

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

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

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

Bratcher, Mike, EMNRD

From: Dakota Neel <DNeel2@concho.com>
Sent: Friday, September 29, 2017 9:28 AM
To: Weaver, Crystal, EMNRD; Bratcher, Mike, EMNRD; stucker@blm.gov
Cc: James_Amos@blm.gov; Robert McNeill; Rebecca Haskell
Subject: (C-141 Initial) Polaris B Federal #005 9-26-2017 (30-015-34707)
Attachments: C-141 Initial Polaris B Federal #005 9-26-2017 (30-015-34707).pdf

Ms. Weaver / Ms. Tucker,

Please find the attached Initial C-141 for your consideration. If you have any questions or concerns please contact me.

Thank You,

Dakota Neel
HSE Coordinator
COG Operating LLC
Cell: 432-215-2783
dneel2@concho.com

2407 Pecos Ave.
Artesia , NM 88210

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 206462

CONDITIONS

Operator:	OGRID:
Spur Energy Partners LLC 9655 Katy Freeway Houston, TX 77024	328947
	Action Number: 206462
	Action Type: [IM-SD] Incident File Support Doc (ENV) (IM-BNF)

CONDITIONS

Created By	Condition	Condition Date
bhall	None	5/2/2023