
Spill Delineation Report & Remediation Plan

February 16, 2017

**Oilfield Water Logistics (OWL) Produced Water Pipeline Releases
Nearby OWL Red Hills SWD
Section 2, T26S, R36E, Lea County, New Mexico – Case No. 1RP 4497 and
Section 36, T25S, R36E, Lea County, New Mexico – Case No. 1RP 4498**

Prepared For:

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Table of Contents

- 1.0 Introduction**
- 2.0 Subsurface Investigation Activities**
- 3.0 Soil Sample Collection / Handling Procedures**
- 4.0 Summary of Analytical Results**
- 5.0 Risk Assessment**
- 6.0 Photographic Exhibit**
- 7.0 Conclusions / Recommendations**
- 8.0 Qualifications of Environmental Professionals**
- 9.0 Signature of Environmental Professional**

Appendix A

Fig A1 – General View of Spills

Fig A2 – Detailed View of Spills Showing Soil Boring Locations Installed for Delineation

Fig A3 – Proposed Soil Boring / Temporary Monitoring Well (SB/TMW-1) Location

Appendix B

Photographic Exhibit

Appendix C

Representative Soil Boring Logs

Table 1 - Soil Boring Lithology and Field Screening Values Recorded

Appendix D

Table 2 – Soil Borings Installed – Soil Sample Analytical Results

Appendix E

Environmental Professionals' Credentials

Appendix F

Workplan to Install One Soil Boring (SB) / Temporary Monitoring Well

1.0 Introduction

Oilfield Water Logistics (OWL) notified KJE of two spill occurrences over a relatively short time frame. KJE was notified of the first spill occurrence by Mr. Phillip Sanders, Safety Director with Oilfield Water Logistics, on October 28, 2016. Mr. Sanders notified the Oil Conservation Division (OCD) which is part of The New Mexico Energy, Minerals, and Natural Resources Department (EMNRD) of the spill at 2:00 p.m. on October 28. KJE was notified of the second spill occurrence on November 2, 2016. Mr. Sanders notified OCD of this spill occurrence at 8:11 a.m. on November 2, 2016. It was determined that 1,659 barrels of produced water was released during the first spill event, and it was determined that 418 barrels of produced water was released during the second spill event. KJE submitted Form C-141 Spill reports to OCD on November 2, 2016 for their review. The general view of both spills is illustrated in Appendix A on Figure A1.

KJE was retained by Oilfield Water Logistics (OWL) to complete delineations of the two produced water spill sites located approximately five miles southwest of Jal in Lea County, New Mexico. The delineation workplan was submitted by KJE and administratively approved by Mr. Tomas Oberding on November 30, 2016. This workplan was prepared at the request of OCD to collect soil samples for analysis to delineate the vertical and horizontal extent of the produced water affected soils.

2.0 Subsurface Investigation Activities

From December 5, 2016, through December 21, 2016, forty-seven (47) soil borings were advanced within Spill Area 1, and forty-eight (48) soil borings were advanced within Spill Area 2 utilizing either a geoprobe or hollow stem auger rig. Additionally one background sample boring was advanced outside of the affected soil areas nearby each spill area. Detailed views of each spill area are exhibited on Figure A2 in Appendix A. Field screening for chloride concentrations and soil conductivity was conducted using a calibrated Hanna HI993310 soil conductivity meter. Field screening for Volatile Organic Compounds (VOCs) was conducted using a calibrated Photoionization Detector (PID) (Model RAE MINIRAE Lite 0-5K ppm) to screen for the highest readings from each of the borings. Photo documentation of field activities is included in Appendix B. Soil Boring depths sampled and analyzed ranged from ground surface (0') to twenty-six feet (26'). The soil boring lithology and field screening data table (Table 1) is included in Appendix C for review. Due to the uniformity in lithology, representative boring logs are also provided in Appendix C.

3.0 Soil Sample Collection/Handling Procedures

Soil sampling procedures/activities included the collection of soil cores utilizing a geoprobe or hollow stem auger rig. A clean, decontaminated sampling trowel was used to sample from each

core section. Soil samples were placed in laboratory provided 4-ounce glass jars labeled with pertinent sampling information. To prevent contamination of the sample containers, each container remained laboratory-sealed until sample collection. The OCD requested we collect a statistically significant set of split samples and submit to the lab for confirmatory laboratory analysis. One set of samples for every twenty (20) samples collected were split for laboratory analysis, and these results are included on Table 2 in Appendix D for review. KJE personnel used dedicated nitrile gloves that were changed frequently during the sampling activities.

The soil samples were then placed in a cooling chest with adequate ice, providing a 4°C environment for sufficient preservation until delivery to Xenco Laboratory (a third-party, independent, and licensed environmental laboratory in Midland, Texas). The sample collection and handling activities were conducted in accordance with USEPA Standard Operating Procedures and strict chain-of-custody protocols. The drilling equipment, sampling equipment, and tools were decontaminated before and between each sampling location.

Chain-of-Custody forms were completed in the field at the time of sample collection. When custody of the samples changed, signatures of personnel handling the sample exchange were noted on the form along with the date and time. A copy of the form was retained prior to sample delivery, and stored in the project files. A signed and completed copy of the chain-of-custody form was returned from Xenco Laboratory with the laboratory report, and is included in Appendix D of this report.

The soil samples were analyzed for Benzene, BTEX (Benzene, Toluene, Ethylbenzene, and Xylenes) by EPA Method 8260, and TPH (Total Petroleum Hydrocarbons) by EPA Method 8015 modified with extended range, and Chlorides by EPA Method 300. These analytical methods are the EPA, OCD, and industry-approved standards used to determine the potential for soil contamination.

4.0 Summary of Analytical Results

Soil Action Limits

The OCD required delineation of Benzene, BTEX (Benzene, Toluene, Ethylbenzene, and Xylenes), TPH (Total Petroleum Hydrocarbons), and Chlorides for the spill areas. Published values for BTEX and TPH were obtained from the OCD document “Guidelines for Remediation of Leaks, Spills, and Releases, 1993”. Horizontal and vertical delineation values were determined to be 10 ppm Benzene, 50 ppm BTEX, and 5,000 ppm TPH since no groundwater or surface water is present in the site area. Verbal directives issued by OCD representatives Ms. Kristen Lynch and Mr. Tomáš Oberding were that horizontal delineation for chlorides is 600 ppm and vertical delineation is 250 ppm. Figure A2 in Appendix A illustrates areas which are fully delineated and areas with one or more constituent exceedance. Analytical results are

included on Table 2 in Appendix D for review. Laboratory reports are also included in Appendix D. Based on the laboratory analytical results, delineation of affected soils has been completed for the majority of both spill areas.

Soil Delineation – Analytical Results

For Spill Area 1, Benzene concentrations in soil samples ranged from BDL (Below Detection Limits) to 7.57 mg/kg (ppm) while BTEX concentrations ranged from BDL to 304 mg/kg (ppm). The TPH results ranged from BDL to 10,900 mg/kg (ppm) and Chloride concentrations ranged from BDL to 11,900 mg/kg (ppm).

For Spill Area 2, Benzene and BTEX concentrations were all BDL. The TPH results ranged from BDL to 818 mg/kg (ppm), and Chloride concentrations ranged from BDL to 8,790 mg/kg (ppm). The affected soil depths in Spill Area 1 range from verified depths of 0 to 26 feet, and the average depth of hydrocarbon and chloride affected soils is estimated to be 6.40 feet. The estimated area of affected soils is 1.21 acres (52,708 square feet), and the estimated area of contaminated soil contour line is illustrated on Figure A2 in Appendix A. Therefore, the estimated volume of affected soils in Spill Area 1 is 12,494 cubic yards.

The affected soil depths in Spill Area 2 range from verified depths of 0 to greater than 14 feet, and the average depth of hydrocarbon and chloride affected soils is estimated to be 5.64 feet. The estimated area of affected soils is 2.38 acres (103,673 square feet), and the estimated area of contaminated soil contour line is illustrated on Figure A2 in Appendix A. Therefore, the estimated volume of affected soils in Spill Area 2 is 21,656 cubic yards.

Groundwater

Groundwater was not encountered in any of the soil borings which were installed. According to records available from the New Mexico Office of the State Engineers database, a water well which is located approximately 4.75 miles southwest of the spill areas recorded the shallowest depth to water in the site vicinity at 214 feet.

KJE recommends the installation of a groundwater monitoring well to evaluate the depth to groundwater and presence of impacts. It is not anticipated that groundwater will be encountered during drilling; however, if groundwater is encountered, it will be sampled in accordance with the attached workplan (Appendix F).

5.0 Risk Screening

Analytical results from soil boring SB4 in Spill Area 1 are included on the table below and are compared to the OCD Action Limits, Pit and Recycling Containment Closures, and the New Mexico Environmental Department (NMED) Soil Screening Levels issued December 2014 and July 2015. These soil samples exhibited the highest Benzene, BTEX, and TPH concentrations. All Chloride levels for the analyzed samples are less than the OCD requirements for Pit Closures and Recycling Containment Closures as illustrated in the table below and in Table 2 in Appendix D. All constituents except for TPH levels are less than one or more OCD or NMED regulatory guidelines. The TPH soil screening levels are based solely on human health considerations related to direct soil exposure, not ecological risk considerations, protection of surface or groundwater, or potential soil vapor impacts from soil vapor. Since there is no noticeable impact to wildlife, no surface water in the site area, groundwater depth is believed to be greater than 100 feet, and there are no buildings on site, these TPH considerations should not be a factor.

SPILL AREA 1							
Sample ID	Benzene	Toluene	Ethylbenzene	Xylenes	BTEX	Chlorides	TPH
SB4 (0'-2')	<0.099	6.03	0.766	52.8	59.6	3,000	4,150
SB4 (2'-4')	<0.200	2.15	0.715	153	155	1,590	10,900
SB4 (4'-6')	0.731	6.72	<0.198	105	112	1,330	7,510
SB4 (6'-8')	7.51	97.9	8.20	190	304	1,780	10,400
SB4 (8'-10')	0.51	12.9	5.74	29.5	48.7	5,970	2,740
SB4 (10'-12')	6.27	99.2	30.9	156	292	3,670	8,540
SB4 (14'-16')	1.38	42.5	17.0	79.3	140	2,460	4,460
Split	0.247	13.8	9.63	49.3	73	2,050	3,910
SB4 (16'-18')	<0.001	<0.001	<0.001	0.00352	0.003	2430	22.2
OCD Action Limits 1993 Guideline	10	--	--	--	50	Horiz. – 600 Vert. - 250	5,000
OCD Rule 19.15.17.13 Pit Closures	10	--	--	--	50	20,000	1,000
OCD Rule 19.15.34.14 Recycling Containment Closures	10	--	--	--	50	20,000	1,000
NMED Soil Screening Levels, December 2014 and July 2015 Const. Worker	142	14,000	1,770	798	--	--	5,000
Action Limits and Closure Requirements Assumes Depth To Water is > 100 feet							

6.0 Photographs

Photographic documentation of the drilling and sampling activities is included in Appendix B.

7.0 Conclusions/Recommendations

KJE has concluded that the majority of each spill area has been delineated, and that there would be no beneficial outcome of installing five to ten additional soil borings in the spill areas. KJE feels that we would only replicate analytical results from other nearby soil borings.

According to the records acquired from the New Mexico Office of the State Engineers database, it appears that there is at least 185 feet between the zones of affected soils and groundwater. KJE feels that the chance of groundwater contamination from the affected soils is highly unlikely.

Based on the following reasoning, KJE requests that the affected soils be allowed to remain in place if groundwater is determined to be at a depth unlikely to be impacted by the releases:

- the majority of the impacted soils are located adjacent to, or below one of three operating pipelines (OWL produced water, City of Jal drinking water, and nearby ranch drinking water). Excavation in these areas could adversely affect the structural integrity of one or all of these pipelines.
- adverse environmental impacts are minimal,
 - land owner has approved the soil to remain in place
 - little vegetation was present in the area due to the sandy soils, and the right of way (ROW) is being used as the route for 24-hour OWL pipeline inspectors
 - there is no noticeable impact to wildlife
 - there are no residences in the site area
 - there are no buildings in the site area for vapor intrusion consideration
 - there is no ongoing air quality impact
 - construction worker exposure would be primarily chlorides
- the large total volume (34,150 cubic yards) of impacted soil in both spill areas would make remediation efforts economically infeasible.

A small area of TPH affected soils was identified within Spill Area 1 with analytical results above the OCD action levels for TPH. KJE proposes that quarterly soil sampling be completed in this area for soil monitoring, and soil samples will be submitted to the laboratory for TPH sample analysis. These areas with TPH exceedances in soil will be monitored quarterly and resampled until the levels decrease to below the action limits.

In order to confirm that shallow groundwater is not present in the site area, KJE is proposing to install one soil boring to a depth of 100 feet and allow it to remain open for 24 hours to determine if groundwater is present. If no groundwater is present after this time period, then the soil boring will be properly plugged as required. If groundwater is present, then the soil boring will be converted to a 2-inch monitoring well. The well would then be gauged, purged, and sampled for analysis of Volatile Organic Compounds (VOCs) Method 8260 full list, (TPH) by

Method 8015 extended range (GRO+DRO+MRO; C6 thru C36), Total Dissolved Solids (TDS) by Method 2540, pH by Method 9040, major anions and cations including chloride and sulfate by Method 9056, dissolved iron and manganese by Method 6010. The proposed location of the soil boring is shown on Figure A3 in Appendix A. The proposal and associated workplan is included in Appendix F for your review. If groundwater analytical results confirm that groundwater is impacted, a separate workplan will be submitted to conduct quarterly sampling for one year to monitor the affected groundwater.

If we can be of further assistance, please do not hesitate to contact us at 940-387-0805. Thank you for the opportunity to provide professional environmental consulting services. It has been a pleasure working with you.

8.0 Qualifications of Environmental Professional

This is to certify that the Environmental Investigation that was completed at the two produced water spill sites located approximately five miles southwest of Jal in Lea County, New Mexico were conducted using EPA, OCD, and industry-approved standards/protocols. This field work was conducted from December 5 through December 21, 2016 for OWL, and all field activities were completed under the supervision of Ms. Dena M. Vandenberg, REM, LEED AP. Mr. Ware's, Ms. Vandenberg's, Mr. Bessire's, and Mr. Fox's credentials are included in Appendix E for review.

9.0 Signature of Environmental Professional



2/16/2017

Dena M. Vandenberg, REM, LEED AP
Environmental Professional

Date



2/16/2017

Kevin J. Ware, QEP, REM
Principal

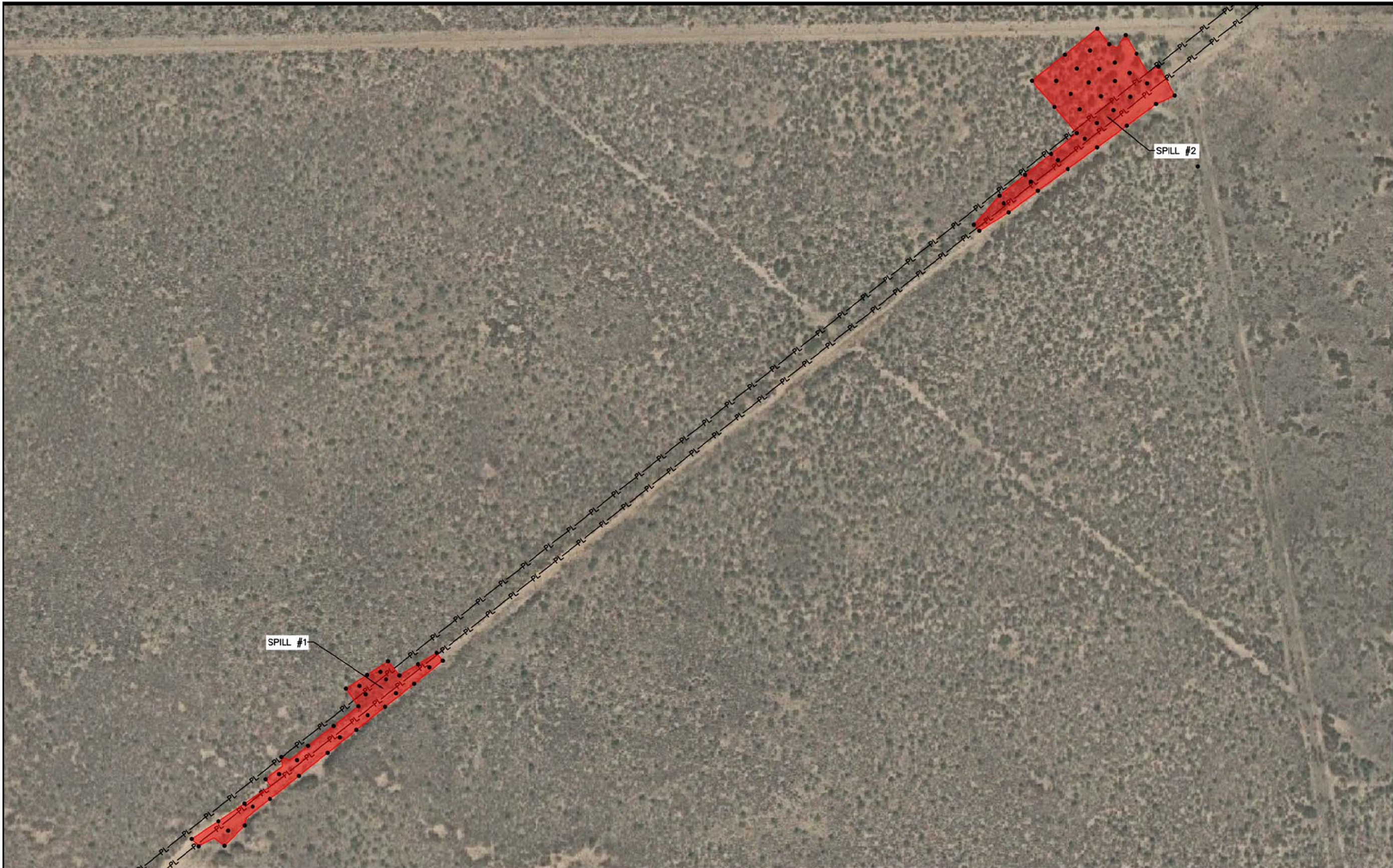
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APPENDIX A

Figure A1 – General View of Spill Areas

Figure A2 – Detailed View of Soil Borings Installed

Figure A3 – Proposed Soil Boring / Monitoring Well Location



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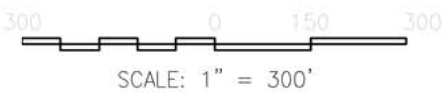
ENVIRONMENTAL & CIVIL ENGINEERING

GENERAL VIEW OF SPILLS
RED HILL SPILL
OILFIELD WATER LOGISTICS
JAL, NEW MEXICO

DATE:
12/2/2016

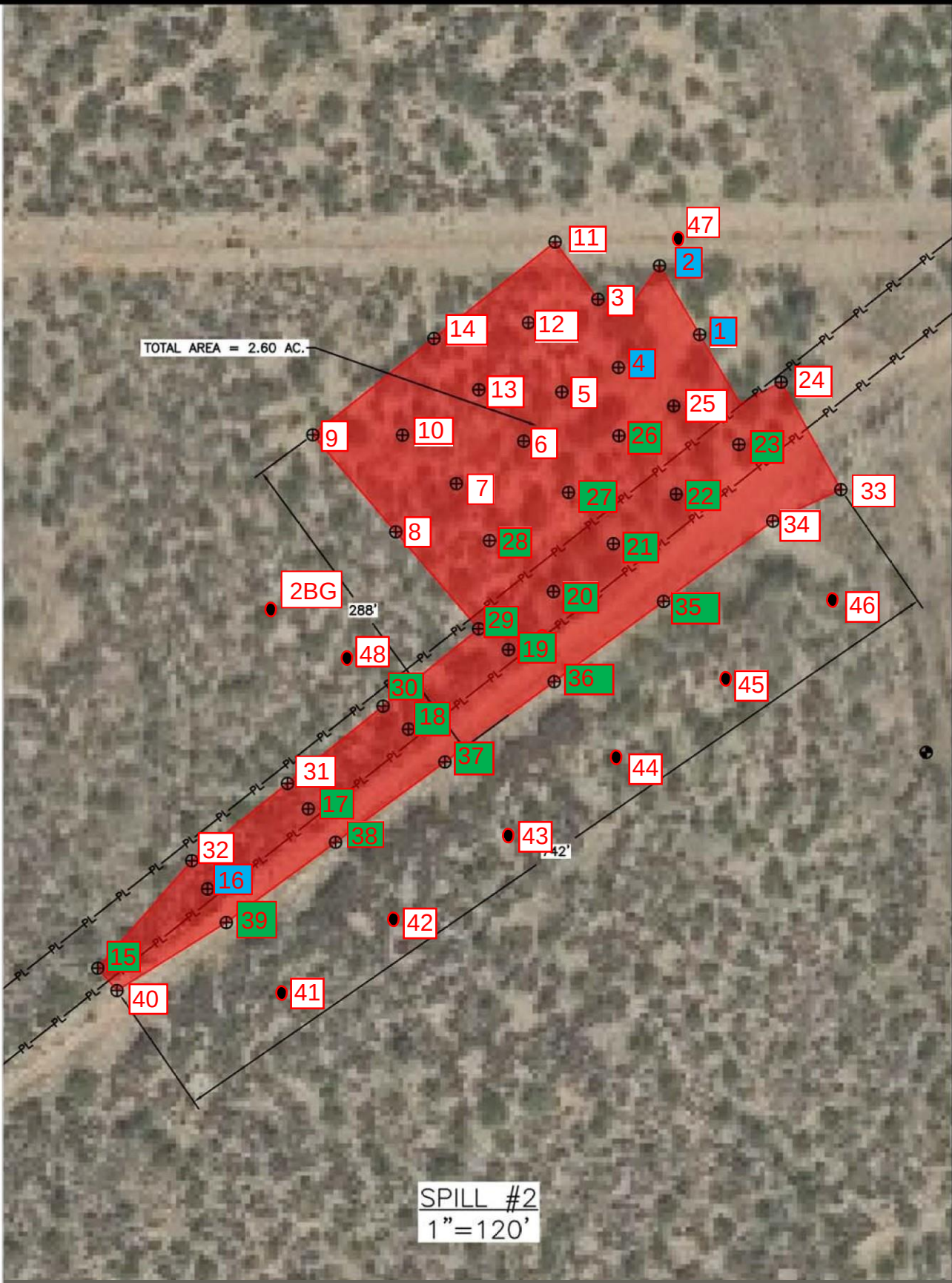
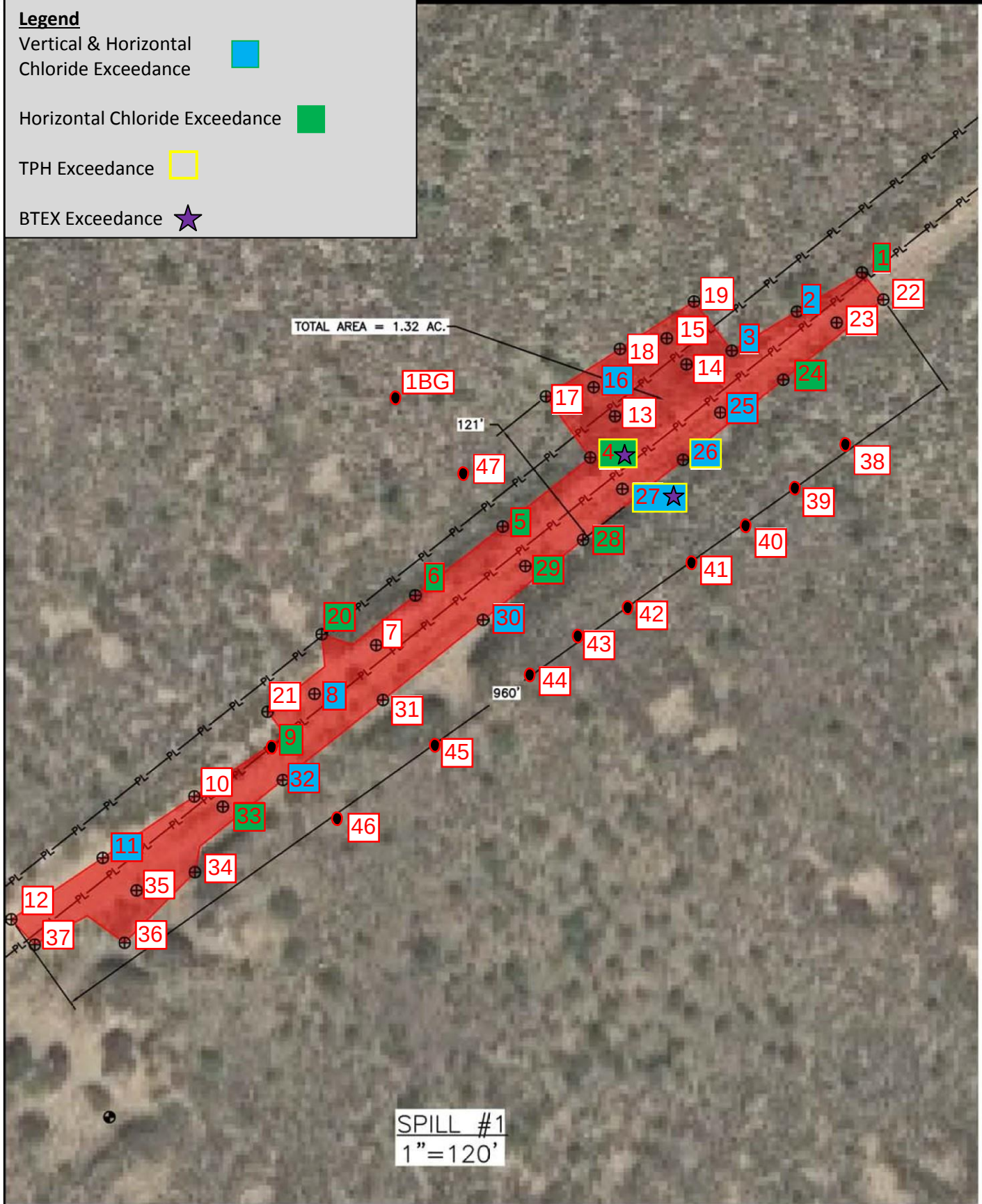
SHEET:
A1

- NOTES:
- 1. GOOGLE EARTH WAS USED AS AN UNDERLAY IMAGE FOR THIS MAP.
(<http://earth.google.com/>)
 - 2. SURVEY OF SPILL EXTENTS PROVIDED BY FIELD SURVEY DATED
11/08/2016 FROM JAMES E. TOMPKINS, N.M. P.L.S.



- LEGEND**
- ⊕ PROPOSED SOIL BORING (SPILL #1: 36; SPILL #2: 40; TOTAL: 76)
 - PROPOSED BACKGROUND SOIL BORING (TOTAL: 2)





NOTES:

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2. SURVEY OF SPILL EXTENTS PROVIDED BY FIELD SURVEY DATED 11/08/2016 FROM JAMES E. TOMPKINS, N.M. P.L.S.

SCALE: 1" = 120'

LEGEND

- ⊕ PROPOSED SOIL BORING (SPILL #1: 36; SPILL #2: 40; TOTAL: 76)
- PROPOSED BACKGROUND SOIL BORING (TOTAL: 2)



REVISIONS:

NO.	DESCRIPTION	DATE

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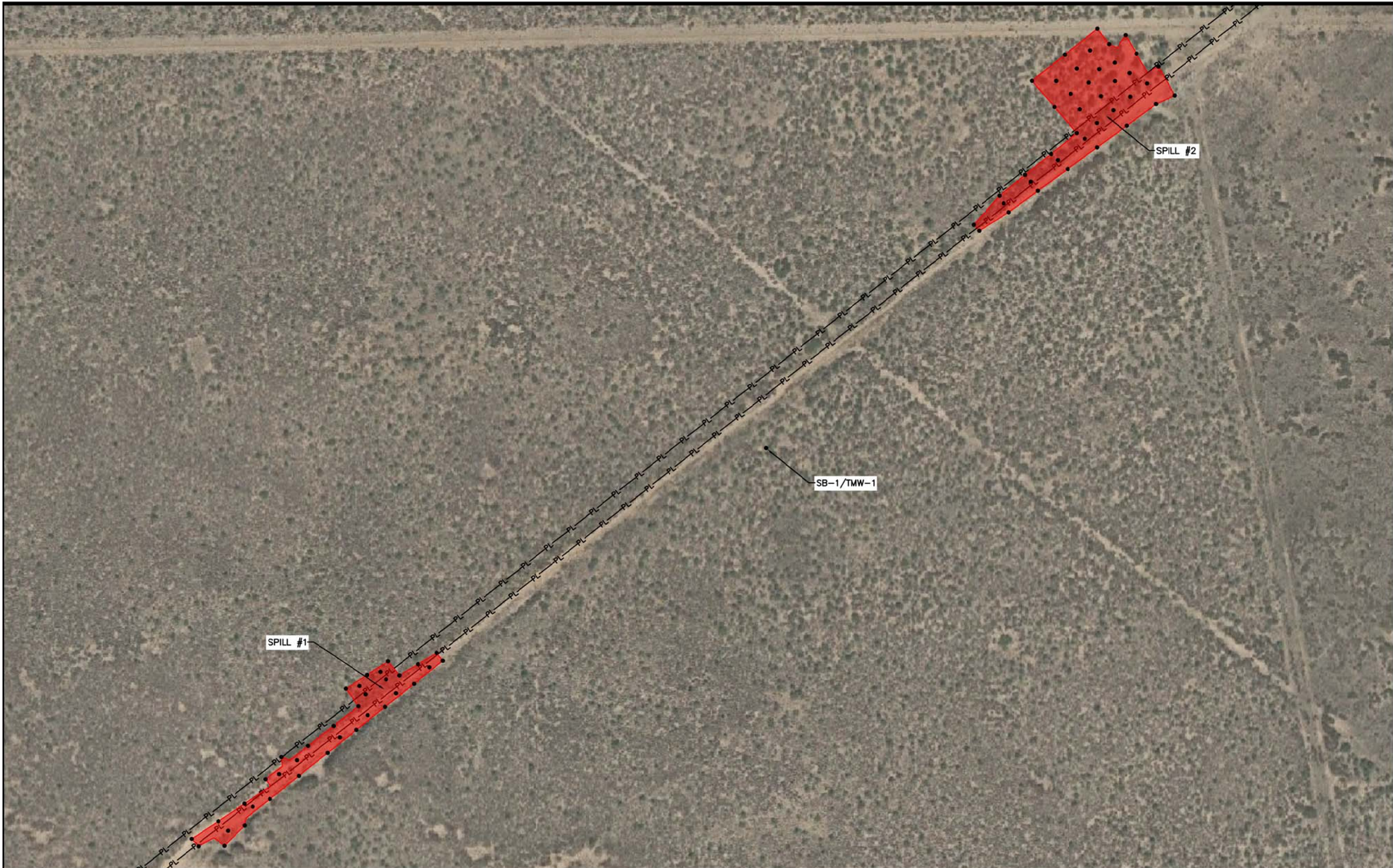
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DETAILED VIEW OF SPILLS
RED HILL SPILL
OILFIELD WATER LOGISTICS
JAL, NEW MEXICO

DATE:
12/2/2016

SHEET:
A2



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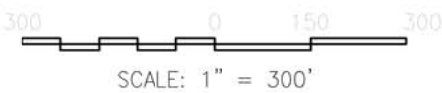
KJE
ENVIRONMENTAL & CIVIL ENGINEERING

PROPOSED SOIL BORING/
TEMPORARY MONITORING WELL
LOCATION
RED HILL SPILL
OILFIELD WATER LOGISTICS
JAL, NEW MEXICO

DATE:
2/1/2017

SHEET:
A3

- NOTES:
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11/08/2016 FROM JAMES E. TOMPKINS, N.M. P.L.S.



- LEGEND**
- ⊕ PROPOSED SOIL BORING (SPILL #1: 36; SPILL #2: 40; TOTAL: 76)
 - PROPOSED SOIL BORING/TEMPORARY MONITORING WELL



APPENDIX B

Photographic Exhibit



Photo 1: View of a typical boring installed via geoprobe.



Photo 2: View of a typical boring installed via hollow stem auger CME rig on the plastic sheeting.



Photo 3: View of hollow stem auger CME rig mobilizing to next sampling location.



Photo 4: View of sampling area with plastic sheeting removed.

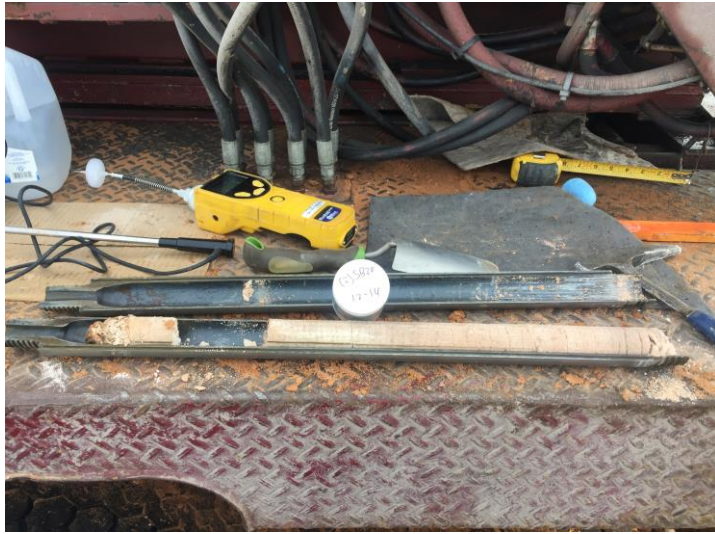


Photo 5: View of typical caliche rock soil sample.

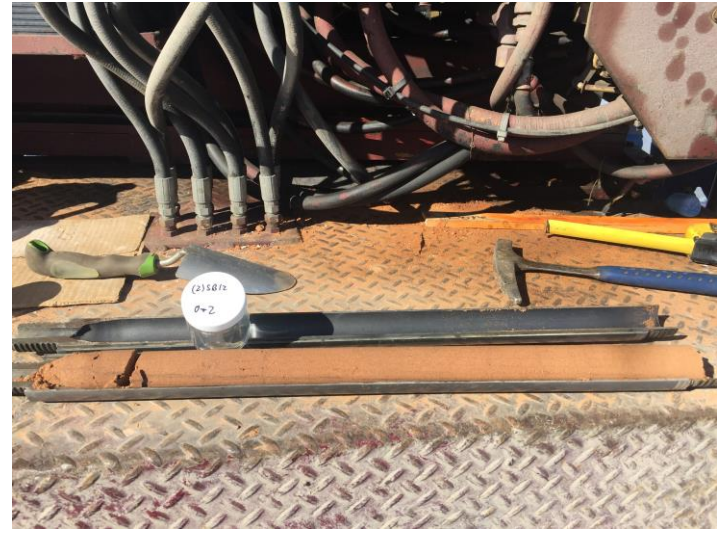


Photo 6: View of typical light red sand soil sample.



Photo 7: View of typical red sand soil sample.



Photo 8: View of typical soil sample transitioning to caliche rock.

APPENDIX C

Representative Logs – Spill 1 Area and Spill 2 Area

Table 1 – Soil Boring Lithology and Field Screening Values Recorded



RECORD OF SUBSURFACE EXPLORATION

KJ Environmental & Civil Engineering

500 Moseley Road • Cross Roads, Tx 76227
940-387-0805 • FAX 940-387-0830

Client Name:	Oilfield Water Logistics (OWL)	Well/Boring #	1-47	Date Drilled:	Dec. 5-21, 2016
Client Address:		Depth of Boring:	10	Diameter of Boring:	N/A
Project Name:	Produced Water Pipeline Releases Nearby Red Hills SWD	Depth of Well:	N/A	Diameter of Screen:	N/A
Project Address:	Section 36, T25S, R36E, Lea County, NM (Spill 1)	Length of Screen:	N/A	Diameter of Casing:	N/A
Driller:	Ed Cohagan	Length of Casing:	N/A	Slot Size:	N/A
Drilling Method:	Geoprobe/CME Rig	Sampling Method:	Split Spoon	Logged By:	James F.
				Well Material:	N/A

Description / Remarks (Color, Grain Size, Texture, Structure, Consistency, Moisture)	Depth (feet)	Sample Interval (feet)	PID (ppm)	Sample Core Zone	Well Completion (graphical representation only, not to scale)		
Surface Type: Topsoil, Light Red fine SAND, (SP), poorly graded, dry					Bentonite		
	-1-	0.0-2.0					
	-2-	2.0-4.0					
	-3-						
	-4-	4.0-6.0					
	-5-						
Red/light red SAND, (SP), poorly graded, dry	-6-	6.0-8.0					
	-7-						
Depth of average probe refusal	-8-	8.0-10.0					
Caliche Rock, Light Gray, dry	-9-						
Depth of average borings	-10-	10.0-12.0					
	-11-						
	-12-	12.0-14.0					
	-13-						
	-14-	14.0-16.0					
	-15-						
	-16-	16.0-18.0					
	-17-						
	-18-	18.0-20.0					
	-19-						
	-20-	20.0-22.0					
	-21-						
	-22-	22.0-24.0					
	-23-						
	-24-	24.0-26.0					
	-25-						
Depth of deepest boring	-26-	26.0-28.0					
	-27-						
	-28-	28.0-30.0					
	-29-						
	-30-						

These logs should not be used separately from the original report.



RECORD OF SUBSURFACE EXPLORATION

KJ Environmental & Civil Engineering

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940-387-0805 • FAX 940-387-0830

Client Name:	Oilfield Water Logistics (OWL)	Well/Boring #	(2) SB 1-48	Date Drilled:	Dec. 5-21, 2016
Client Address:	8214 Westchester Drive, Suite 850, Dallas, TX	Depth of Boring:	10	Diameter of Boring:	N/A
Project Name:	Produced Water Pipeline Releases Nearby Red Hills SWD	Depth of Well:	N/A	Diameter of Screen:	N/A
Project Address:	Section 2, T26S, R36E, Lea County, NM (Spill 2)	Length of Screen:	N/A	Diameter of Casing:	N/A
Driller:	Ed Cohagan	Length of Casing:	N/A	Slot Size:	N/A
Drilling Method:	Geoprobe/CME Rig	Sampling Method:	Split Spoon	Logged By:	James F.
				Well Material:	N/A

Description / Remarks (Color, Grain Size, Texture, Structure, Consistency, Moisture)	Depth (feet)	Sample Interval (feet)	PID (ppm)	Sample Core Zone	Well Completion (graphical representation only, not to scale)		
Surface Type: Topsoil, Light Red fine SAND, (SP), poorly graded, dry					Bentonite		
	-1-	0.0-2.0					
	-2-	2.0-4.0					
	-3-						
	-4-	4.0-6.0					
Red/light red SAND, (SP), poorly graded, dry	-5-						
	-6-	6.0-8.0					
	-7-						
Depth of average probe refusal	-8-	8.0-10.0					
Caliche Rock, Light Gray, dry	-9-						
	-10-	10.0-12.0					
Depth of average borings	-11-						
	-12-	12.0-14.0					
	-13-						
Depth of deepest boring	-14-	14.0-16.0					
	-15-						
	-16-	16.0-18.0					
	-17-						
	-18-	18.0-20.0					
NOTE: This boring log shows an approximate average of all borings in Spill Area 2 No water was encountered throughout installation of all borings	-19-						
	-20-	20.0-22.0					
	-21-						
	-22-	22.0-24.0					
	-23-						
	-24-	24.0-26.0					
	-25-						
	-26-	26.0-28.0					
	-27-						
	-28-	28.0-30.0					
	-29-						
These logs should not be used separately from the original report.	-30-						

TABLE 1
LITHOLOGY OF SOIL BORINGS

Area 1					
Sample ID	Date Collected	PID (PPM)	Chlorides (field screening)	Soil Type	Soil Color/Size
(1) SB1 (0'-2')	12/5/2016	8.0	265	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB1 (2'-4')	12/5/2016	14.6	50	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB1 (4'-6')	12/5/2016	11.0	15	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB1 (6'-7')	12/5/2016	8.3	0	Caliche rock	Light gray
(1) SB1 (7'-10')	12/5/2016	PR	PR	PR	PR
(1) SB2 (0'-2')	12/5/2016	393.0	205	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB2 (2'-4')	12/5/2016	17.0	415	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB2 (4'-6')	12/5/2016	11.8	375	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB2 (6'-8')	12/5/2016	9.8	105	Caliche rock	Light gray
(1) SB2 (8'-10')	12/5/2016	PR	PR	PR	PR
(1) SB3 (0'-2')	12/5/2016	542.0	655	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB3 (2'-4')	12/5/2016	28.1	715	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB3 (4'-6')	12/5/2016	32.3	645	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB3 (6'-8')	12/5/2016	22.5	210	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB3 (8'-10')	12/5/2016	25.8	126	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB4 (0'-2')	12/5/2016	904.7	450	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB4 (2'-4')	12/5/2016	678.3	235	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB4 (4'-6')	12/5/2016	383.3	205	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB4 (6'-8')	12/5/2016	528.7	425	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB4 (8'-10')	12/5/2016	817.2	280	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB4 (10'-12')	12/5/2016	302.0	435	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB4 (12'-14')	12/5/2016	NR	NR	NR	NR
(1) SB4 (14'-16')	12/5/2016	183.0	245	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB4 (14'-16') SPLIT	12/5/2016	183.0	245	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB4 (16'-18')	12/5/2016	1329.0	390	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB4 (18'-20')	12/6/2016	76.0	105	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB4 (20'-22')	12/6/2016	382.0	500	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB4 (22'-24')	12/6/2016	12.7	30	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB4 (24'-26')	12/6/2016	13.5	25	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB5 (0'-2')	12/6/2016	1030.0	335	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB5 (2'-4')	12/6/2016	857.0	140	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB5 (4'-6')	12/6/2016	802.0	595	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB5 (6'-8')	12/6/2016	46.2	615	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB5 (8'-10')	12/6/2016	58.7	600	Caliche rock	Light gray
(1) SB5 (10'-12')	12/6/2016	5.4	390	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red
(1) SB5 (12'-14')	12/6/2016	11.9	30	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB5 (14'-16')	12/6/2016	11.3	35	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB6 (0'-2')	12/6/2016	145.0	585	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB6 (2'-4')	12/6/2016	63.9	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB6 (4'-6')	12/6/2016	11.3	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB6 (6'-8')	12/6/2016	10.1	405	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB6 (8'-10')	12/6/2016	8.5	445	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB6 (10'-12')	12/6/2016	7.4	160	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB6 (12'-14')	12/6/2016	7.9	30	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB6 (12'-14') SPLIT	12/6/2016	7.9	30	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB7 (0'-2')	12/8/2016	133.0	330	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB7 (2'-4')	12/8/2016	11.4	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB7 (4'-6')	12/8/2016	71.0	20	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB7 (6'-8')	12/8/2016	4.5	20	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB7 (8'-10')	12/8/2016	NR	NR	NR	NR
(1) SB7 (10'-12')	12/8/2016	2.8	5	Caliche rock	Light gray
(1) SB8 (0'-2')	12/8/2016	489.0	570	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB8 (2'-4')	12/8/2016	40.0	60	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB8 (4'-6')	12/8/2016	17.8	365	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB8 (6'-8')	12/8/2016	35.8	400	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB8 (8'-10')	12/8/2016	3.9	250	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB8 (10'-12')	12/8/2016	5.9	250	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB9 (0'-2')	12/8/2016	76.4	400	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB9 (2'-4')	12/8/2016	12.8	10	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB9 (4'-6')	12/8/2016	8.6	60	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB9 (6'-8')	12/8/2016	5.6	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB9 (8'-10')	12/8/2016	5.9	10	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB9 (10'-12')	12/8/2016	3.7	0	Caliche rock	Light gray
(1) SB10 (0'-2')	12/8/2016	14.2	30	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB10 (2'-4')	12/8/2016	3.0	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB10 (4'-6')	12/8/2016	3.1	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB10 (4'-6') SPLIT	12/8/2016	3.1	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB10 (6'-8')	12/8/2016	2.9	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB10 (8'-10')	12/8/2016	2.0	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine

TABLE 1
LITHOLOGY OF SOIL BORINGS

Area 1					
Sample ID	Date Collected	PID (PPM)	Chlorides (field screening)	Soil Type	Soil Color/Size
(1) SB1 (0'-2')	12/5/2016	8.0	265	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB10 (10'-12')	12/8/2016	PR	PR	PR	PR
(1) SB11 (0'-2')	12/8/2016	4.3	80	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB11 (2'-4')	12/8/2016	4.7	120	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB11 (4'-6')	12/8/2016	3.0	470	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB11 (6'-8')	12/8/2016	3.1	290	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB11 (8'-10')	12/8/2016	2.3	60	Caliche rock	Light gray
(1) SB11 (10'-12')	12/8/2016	PR	PR	PR	PR
(1) SB12 (0'-2')	12/8/2016	5.8	35	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB12 (2'-4')	12/8/2016	2.8	15	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB12 (4'-6')	12/8/2016	4.1	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Light gray
(1) SB12 (6'-8')	12/8/2016	3.0	70	SP - Poorly - graded sands, gravelly sands, little or no fines	Dark red
(1) SB12 (8'-10')	12/8/2016	3.3	20	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB13 (0'-2')	12/8/2016	7.7	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB13 (2'-4')	12/8/2016	18.9	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB13 (4'-6')	12/8/2016	24.0	55	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB13 (6'-8')	12/8/2016	29.2	75	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB13 (8'-10')	12/8/2016	PR	PR	PR	PR
(1) SB14 (0'-2')	12/8/2016	4.6	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Light Brown/Fine
(1) SB14 (2'-4')	12/8/2016	5.0	15	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB14 (4'-6')	12/8/2016	4.8	45	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB14 (6'-8')	12/8/2016	3.7	40	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB14 (6'-8') SPLIT	12/8/2016	3.7	40	SP - Poorly - graded sands, gravelly sands, little or no fines	Red
(1) SB14 (8'-10')	12/8/2016	3.8	10	Caliche rock	Light gray
(1) SB15 (0'-2')	12/8/2016	2.8	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB15 (2'-4')	12/8/2016	1.5	10	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red
(1) SB15 (4'-6')	12/8/2016	2.5	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB15 (6'-8')	12/9/2016	1.2	5	Caliche rock	Light gray
(1) SB15 (8'-10')	12/9/2016	PR	PR	PR	PR
(1) SB16 (0'-2')	12/9/2016	1.0	300	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB16 (2'-4')	12/9/2016	1.5	335	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB16 (4'-6')	12/9/2016	1.4	630	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB16 (6'-8')	12/9/2016	1.3	765	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB16 (8'-10')	12/9/2016	2.9	590	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB16 (10'-12')	12/9/2016	10.8	280	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB16 (12'-14')	12/9/2016	4.0	460	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB16 (14'-16')	12/9/2016	NR	NR	NR	NR
(1) SB16 (16'-18')	12/9/2016	1.4	175	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red
(1) SB16 (18'-20')	12/9/2016	2.1	825	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red
(1) SB16 (20'-22')	12/9/2016	2.5	695	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB16 (22'-24')	12/9/2016	3.6	135	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB16 (24'-26')	12/9/2016	1.8	100	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB17 (0'-2')	12/9/2016	2.0	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB17 (2'-4')	12/9/2016	1.6	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB17 (4'-6')	12/9/2016	2.4	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB17 (4'-6') SPLIT	12/9/2016	2.4	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB17 (6'-8')	12/9/2016	1.4	10	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB18 (0'-2')	12/9/2016	3.2	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB18 (2'-4')	12/9/2016	3.2	10	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB18 (4'-6')	12/9/2016	2.8	15	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB18 (6'-8')	12/9/2016	3.1	10	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB18 (8'-10')	12/9/2016	2.4	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB19 (0'-2')	12/9/2016	3.3	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red
(1) SB19 (2'-4')	12/9/2016	5.8	25	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB19 (4'-6')	12/9/2016	8.4	10	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB19 (6'-8')	12/9/2016	4.6	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB20 (0'-2')	12/9/2016	2.4	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB20 (2'-4')	12/9/2016	2.5	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB20 (4'-6')	12/9/2016	3.6	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB20 (6'-8')	12/9/2016	3.8	325	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red
(1) SB20 (8'-10')	12/9/2016	3.8	10	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB20 (10'-12')	12/9/2016	3.7	15	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB21 (0'-2')	12/9/2016	2.9	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red
(1) SB21 (2'-4')	12/9/2016	3.6	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red
(1) SB21 (4'-6')	12/9/2016	3.8	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red
(1) SB21 (6'-8')	12/9/2016	3.1	25	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB21 (6'-8') SPLIT	12/9/2016	3.1	25	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB21 (8'-10')	12/9/2016	3.3	25	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB22 (0'-2')	12/15/2016	5.4	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine

TABLE 1
LITHOLOGY OF SOIL BORINGS

Area 1					
Sample ID	Date Collected	PID (PPM)	Chlorides (field screening)	Soil Type	Soil Color/Size
(1) SB1 (0'-2')	12/5/2016	8.0	265	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB22 (2'-4')	12/15/2016	5.4	20	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB22 (4'-6')	12/15/2016	4.9	20	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB22 (6'-8')	12/19/2016	0.9	115	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB23 (0'-2')	12/19/2016	1.9	265	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB23 (2'-4')	12/19/2016	2.3	25	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB23 (4'-6')	12/19/2016	3.0	20	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB23 (6'-8')	12/19/2016	0.8	10	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB24 (0'-2')	12/19/2016	2.6	440	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB24 (2'-4')	12/19/2016	2.4	540	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB24 (4'-6')	12/19/2016	2.6	1000	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB24 (6'-8')	12/19/2016	5.3	935	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB24 (8'-10')	12/19/2016	3.3	825	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB24 (10'-12')	12/19/2016	2.4	490	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB24 (12'-14')	12/19/2016	3.3	40	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB24 (14'-16')	12/19/2016	2.3	15	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB25 (0'-2')	12/19/2016	10.3	675	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB25 (2'-4')	12/19/2016	7.0	850	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB25 (4'-6')	12/19/2016	4.8	810	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB25 (4'-6') SPLIT	12/19/2016	4.8	810	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB25 (6'-8')	12/19/2016	4.0	615	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB25 (6'-8')	12/19/2016	PR	PR	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB26 (0'-2')	12/19/2016	435.0	400	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB26 (2'-4')	12/19/2016	14.5	695	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB26 (4'-6')	12/19/2016	17.7	850	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB26 (6'-8')	12/19/2016	6.8	515	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB26 (8'-10')	12/19/2016	10.7	395	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB26 (10'-12')	12/19/2016	10.3	285	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB26 (12'-14')	12/19/2016	PR	PR	PR	PR
(1) SB27 (0'-2')	12/19/2016	820.0	295	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB27 (2'-4')	12/19/2016	58.9	760	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB27 (4'-6')	12/19/2016	47.9	1125	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB27 (6'-8')	12/19/2016	PR	PR	PR	PR
(1) SB28 (0'-2')	12/20/2016	53.6	170	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB28 (2'-4')	12/20/2016	3.9	840	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB28 (4'-6')	12/20/2016	6.4	990	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB28 (6'-8')	12/20/2016	2.1	25	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB28 (8'-10')	12/20/2016	2.6	25	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB29 (0'-2')	12/20/2016	13.6	100	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB29 (2'-4')	12/20/2016	6.5	515	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB29 (4'-6')	12/20/2016	11.5	1060	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB29 (6'-8')	12/20/2016	9.4	195	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB29 (8'-10')	12/20/2016	3.4	15	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB29 (8'-10') SPLIT	12/20/2016	3.4	15	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB30 (0'-2')	12/20/2016	8.3	960	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB30 (2'-4')	12/20/2016	7.5	780	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB30 (4'-6')	12/20/2016	6.0	570	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB30 (6'-8')	12/20/2016	6.6	995	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB30 (6'-8')	12/20/2016	PR	PR	PR	PR
(1) SB31 (0'-2')	12/20/2016	4.3	110	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB31 (2'-4')	12/20/2016	3.9	10	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB31 (4'-6')	12/20/2016	4.2	10	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB31 (6'-8')	12/20/2016	4.7	1050	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB31 (8'-10')	12/20/2016	4.3	255	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB31 (10'-12')	12/20/2016	3.4	25	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB32 (0'-2')	12/20/2016	4.3	640	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB32 (2'-4')	12/20/2016	8.3	420	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB32 (4'-6')	12/20/2016	6.6	470	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB32 (6'-8')	12/20/2016	4.6	820	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB32 (8'-10')	12/20/2016	PR	PR	PR	PR
(1) SB33 (0'-2')	12/20/2016	18.4	415	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB33 (2'-4')	12/20/2016	20.8	370	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB33 (4'-6')	12/20/2016	8.7	150	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB33 (6'-8')	12/20/2016	8.8	30	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB33 (8'-10')	12/20/2016	PR	PR	PR	PR
(1) SB34 (0'-2')	12/20/2016	6.8	30	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB34 (2'-4')	12/20/2016	6.8	10	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB34 (2'-4') SPLIT	12/20/2016	6.8	10	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB34 (4'-6')	12/20/2016	6.2	10	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine

TABLE 1
LITHOLOGY OF SOIL BORINGS

Area 1					
Sample ID	Date Collected	PID (PPM)	Chlorides (field screening)	Soil Type	Soil Color/Size
(1) SB1 (0'-2')	12/5/2016	8.0	265	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB34 (6'-8')	12/20/2016	5.8	10	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB35 (0'-2')	12/20/2016	0.0	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB35 (2'-4')	12/20/2016	9.0	15	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB35 (4'-6')	12/20/2016	4.5	20	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB35 (6'-8')	12/20/2016	PR	PR	PR	PR
(1) SB36 (0'-2')	12/20/2016	5.0	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB36 (2'-4')	12/20/2016	4.8	10	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB36 (4'-6')	12/20/2016	1.1	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB36 (6'-8')	12/20/2016	PR	PR	PR	PR
(1) SB37 (0'-2')	12/20/2016	8.2	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB37 (2'-4')	12/20/2016	7.2	25	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB37 (4'-6')	12/20/2016	7.2	45	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB37 (6'-8')	12/20/2016	6.8	30	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB37 (8'-10')	12/20/2016	PR	PR	PR	PR
(1) SB38 (0'-2')	12/21/2016	7.0	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB38 (2'-4')	12/21/2016	4.3	30	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB38 (4'-6')	12/21/2016	25.2	20	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB38 (6'-8')	12/21/2016	16.8	20	Caliche rock	Light gray/Fine
(1) SB39 (0'-2')	12/21/2016	7.5	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB39 (2'-4')	12/21/2016	9.7	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB39 (4'-6')	12/21/2016	6.6	90	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB39 (6'-8')	12/21/2016	10.6	30	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB39 (6'-8') SPLIT	12/21/2016	10.6	30	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB40 (0'-2')	12/21/2016	9.1	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB40 (2'-4')	12/21/2016	10.4	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB40 (4'-6')	12/21/2016	10.1	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB40 (6'-8')	12/21/2016	5.3	25	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB41 (0'-2')	12/21/2016	5.5	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB41 (2'-4')	12/21/2016	7.7	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB41 (4'-6')	12/21/2016	8.2	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB41 (6'-8')	12/21/2016	8.6	30	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB42 (0'-2')	12/21/2016	4.6	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB42 (2'-4')	12/21/2016	5.6	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB42 (4'-6')	12/21/2016	4.5	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB42 (6'-8')	12/21/2016	4.0	60	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB43 (0'-2')	12/21/2016	6.4	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB43 (2'-4')	12/21/2016	7.1	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB43 (4'-6')	12/21/2016	7.8	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB43 (6'-8')	12/21/2016	6.7	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB44 (0'-2')	12/21/2016	4.9	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB44 (2'-4')	12/21/2016	5.6	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB44 (4'-6')	12/21/2016	5.7	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB44 (6'-8')	12/21/2016	7.0	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB44 (6'-8') SPLIT	12/21/2016	7.0	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB45 (0'-2')	12/21/2016	5.9	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB45 (2'-4')	12/21/2016	5.7	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB45 (4'-6')	12/21/2016	5.1	15	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB45 (6'-8')	12/21/2016	7.0	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB46 (0'-2')	12/21/2016	4.9	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB46 (2'-4')	12/21/2016	4.3	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB46 (4'-6')	12/21/2016	4.4	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB46 (6'-8')	12/21/2016	3.8	20	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB47 (0'-2')	12/21/2016	3.0	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB47 (2'-4')	12/21/2016	3.3	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB47 (4'-6')	12/21/2016	3.9	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) SB47 (6'-8')	12/21/2016	3.3	15	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) BG (0'-2')	12/21/2016	4.3	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) BG (2'-4')	12/21/2016	3.2	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) BG (4'-6')	12/21/2016	3.6	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) BG (6'-8')	12/21/2016	3.2	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(1) BG (8'-10')	12/21/2016	0.3	15	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine

NOTE: NR=NO RECOVERY, PR=PROBE REFUSAL, SPLIT=SPLIT SAMPLE

TABLE 1
LITHOLOGY OF SOIL BORINGS

Area 2					
Sample ID	Date Collected	PID (PPM)	Chlorides (field screening)	Soil Type	Soil Color
(2) SB1 (0'-2')	12/12/2016	10.2	165	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(2) SB1 (2'-4')	12/12/2016	8.6	460	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB1 (4'-6')	12/12/2016	8.7	440	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB1 (6'-8')	12/12/2016	10.0	360	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB1 (8'-10')	12/12/2016	PR	PR	PR	PR
(2) SB2 (0'-2')	12/12/2016	7.7	130	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB2 (2'-4')	12/12/2016	8.4	62	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB2 (4'-6')	12/12/2016	12.7	550	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(2) SB2 (6'-8')	12/12/2016	45.7	75	SP - Poorly - graded sands, gravelly sands, little or no fines	Light gray/Fine
(2) SB2 (8'-10')	12/12/2016	PR	PR	PR	PR
(2) SB3 (0'-2')	12/12/2016	8.0	85	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB3 (2'-4')	12/12/2016	5.8	65	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB3 (4'-6')	12/12/2016	7.3	10	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB3 (6'-8')	12/12/2016	7.3	10	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB4 (0'-2')	12/12/2016	48.4	270	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB4 (2'-4')	12/12/2016	4.9	515	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB4 (4'-6')	12/12/2016	6.1	540	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB4 (6'-8')	12/12/2016	6.9	425	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB4 (8'-10')	12/12/2016	4.7	335	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB4 (10'-12')	12/12/2016	PR	PR	PR	PR
(2) SB5 (0'-2')	12/12/2016	4.3	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB5 (2'-4')	12/12/2016	2.4	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB5 (4'-6')	12/12/2016	1.7	50	SP - Poorly - graded sands, gravelly sands, little or no fines	Light gray/Fine
(2) SB5 (4'-6') SPLIT	12/12/2016	1.7	50	SP - Poorly - graded sands, gravelly sands, little or no fines	Light gray/Fine
(2) SB5 (6'-8')	12/12/2016	4.4	65	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB5 (8'-9.5')	12/12/2016	3.4	10	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB5 (9.5'-10')	12/12/2016	PR	PR	PR	PR
(2) SB6 (0'-2')	12/12/2016	3.8	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB6 (2'-4')	12/12/2016	3.9	10	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB6 (4'-6')	12/12/2016	4.3	10	SP - Poorly - graded sands, gravelly sands, little or no fines	Light gray/Fine
(2) SB6 (6'-8')	12/13/2016	4.2	40	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB7 (0'-2')	12/13/2016	2.2	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB7 (2'-4')	12/13/2016	2.8	10	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB7 (4'-6')	12/13/2016	4.3	30	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB7 (6'-8')	12/13/2016	3.0	20	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB7 (8'-10')	12/13/2016	2.8	30	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB8 (0'-2')	12/13/2016	6.6	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB8 (2'-4')	12/13/2016	7.2	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB8 (4'-6')	12/13/2016	11.3	15	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB8 (6'-8')	12/13/2016	8.1	25	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB8 (8'-10')	12/13/2016	8.3	45	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB9 (0'-2')	12/13/2016	14.3	10	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB9 (2'-4')	12/13/2016	15.4	30	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB9 (4'-6')	12/13/2016	14.5	15	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB9 (6'-8')	12/13/2016	13.8	15	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB9 (8'-10')	12/13/2016	15.1	25	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB9 (8'-10') SPLIT	12/13/2016	15.1	25	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB10 (0'-2')	12/13/2016	10.8	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(2) SB10 (2'-4')	12/13/2016	9.5	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB10 (4'-6')	12/13/2016	10.6	10	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB10 (6'-8')	12/13/2016	15.8	40	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB10 (8'-10')	12/13/2016	7.5	55	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB11 (0'-2')	12/13/2016	6.8	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB11 (2'-4')	12/13/2016	6.2	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB11 (4'-6')	12/13/2016	5.8	15	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB11 (6'-8')	12/13/2016	6.2	15	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB12 (0'-2')	12/13/2016	7.6	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB12 (2'-4')	12/13/2016	6.1	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB12 (4'-6')	12/13/2016	5.7	10	SP - Poorly - graded sands, gravelly sands, little or no fines	Light gray/Fine
(2) SB12 (6'-8')	12/13/2016	5.3	30	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB13 (0'-2')	12/13/2016	6.8	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB13 (2'-4')	12/13/2016	7.6	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB13 (4'-6')	12/13/2016	5.5	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB13 (6'-8')	12/13/2016	7.6	45	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB14 (0'-2')	12/13/2016	9.1	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB14 (2'-4')	12/13/2016	7.0	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine

TABLE 1
LITHOLOGY OF SOIL BORINGS

Area 2					
Sample ID	Date Collected	PID (PPM)	Chlorides (field screening)	Soil Type	Soil Color
(2) SB14 (4'-6')	12/13/2016	8.7	25	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB14 (4'-6') SPLIT	12/13/2016	8.7	25	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB14 (6'-8')	12/13/2016	7.8	20	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB15 (0'-2')	12/13/2016	7.3	130	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB15 (2'-4')	12/13/2016	7.8	90	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB15 (4'-6')	12/13/2016	9.4	105	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB15 (6'-8')	12/13/2016	11.0	45	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB15 (8'-10')	12/13/2016	12.7	10	Caliche Rock	Light gray/Fine
(2) SB15 (10'-12')	12/13/2016	PR	PR	PR	PR
(2) SB16 (0'-2')	12/13/2016	36.0	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB16 (2'-4')	12/13/2016	46.9	540	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB16 (4'-6')	12/13/2016	17.0	680	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB16 (6'-8')	12/13/2016	46.3	480	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB16 (8'-10')	12/13/2016	27.9	180	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB16 (10'-12')	12/13/2016	PR	PR	PR	PR
(2) SB17 (0'-2')	12/13/2016	11.9	250	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB17 (2'-4')	12/13/2016	9.9	570	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB17 (4'-6')	12/13/2016	11.1	625	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB17 (6'-8')	12/13/2016	13.5	310	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB17 (8'-10')	12/13/2016	10.4	760	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB17 (10'-12')	12/13/2016	7.8	100	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB17 (12'-14')	12/13/2016	8.2	30	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB18 (0'-2')	12/13/2016	51.3	230	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB18 (2'-4')	12/13/2016	10.5	635	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB18 (2'-4') SPLIT	12/13/2016	10.5	635	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB18 (4'-6')	12/13/2016	8.7	740	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB18 (6'-8')	12/13/2016	9.5	550	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB18 (8'-10')	12/13/2016	9.9	600	SP - Poorly - graded sands, gravelly sands, little or no fines	Light gray/Fine
(2) SB18 (10'-12')	12/13/2016	8.9	15	SP - Poorly - graded sands, gravelly sands, little or no fines	Light gray/Fine
(2) SB18 (12'-14')	12/13/2016	7.5	30	SP - Poorly - graded sands, gravelly sands, little or no fines	Light gray/Fine
(2) SB19 (0'-2')	12/13/2016	NR	NR	NR	NR
(2) SB19 (2'-4')	12/13/2016	6.5	535	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(2) SB19 (4'-6')	12/13/2016	6.5	495	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB19 (6'-8')	12/13/2016	7.6	415	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB19 (8'-10')	12/13/2016	6.5	45	SP - Poorly - graded sands, gravelly sands, little or no fines	Light gray/Fine
(2) SB19 (10'-12')	12/13/2016	6.5	20	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB20 (0'-2')	12/14/2016	29.5	415	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB20 (2'-4')	12/14/2016	2.6	800	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB20 (4'-6')	12/14/2016	3.3	600	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB20 (6'-8')	12/14/2016	2.7	680	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB20 (8'-10')	12/14/2016	3.3	120	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB20 (10'-12')	12/14/2016	4.5	65	Caliche Rock	Light gray/Fine
(2) SB21 (0'-2')	12/14/2016	142.0	260	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB21 (2'-4')	12/14/2016	8.1	560	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB21 (4'-6')	12/14/2016	7.3	100	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB21 (6'-8')	12/14/2016	5.8	25	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB21 (6'-8') SPLIT	12/14/2016	4.9	40	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB21 (8'-10')	12/14/2016	4.9	40	SP - Poorly - graded sands, gravelly sands, little or no fines	Light gray/Fine
(2) SB21 (10'-11')	12/14/2016	4.8	15	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB21 (10'-11')	12/14/2016	PR	PR	PR	PR
(2) SB22 (0'-2')	12/14/2016	480.0	710	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB22 (2'-4')	12/14/2016	25.4	615	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB22 (4'-6')	12/14/2016	10.0	70	SP - Poorly - graded sands, gravelly sands, little or no fines	Light brown/Fine
(2) SB22 (6'-8')	12/14/2016	8.3	55	SP - Poorly - graded sands, gravelly sands, little or no fines	Dark red/Fine
(2) SB22 (8'-10')	12/14/2016	12.6	55	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB23 (0'-2')	12/14/2016	17.2	155	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB23 (2'-4')	12/14/2016	6.9	185	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB23 (4'-6')	12/14/2016	7.0	510	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB23 (6'-8')	12/14/2016	6.0	140	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB23 (8'-10')	12/14/2016	5.3	220	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB24 (0'-2')	12/14/2016	58.0	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB24 (2'-4')	12/14/2016	331.0	10	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB24 (4'-6')	12/14/2016	28.0	35	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB24 (6'-8')	12/14/2016	19.8	60	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB24 (8'-10')	12/14/2016	24.5	35	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB25 (0'-2')	12/14/2016	12.6	15	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine

TABLE 1
LITHOLOGY OF SOIL BORINGS

Area 2					
Sample ID	Date Collected	PID (PPM)	Chlorides (field screening)	Soil Type	Soil Color
(2) SB25 (2'-4')	12/14/2016	14.7	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB25 (4'-6')	12/14/2016	14.7	20	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB25 (6'-8')	12/14/2016	11.9	50	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB25 (8'-10')	12/14/2016	12.4	45	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB26 (0'-2')	12/14/2016	9.4	325	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB26 (0'-2') SPLIT	12/14/2016	9.4	325	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB26 (2'-4')	12/14/2016	11.6	365	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB26 (4'-6')	12/14/2016	11.8	40	SP - Poorly - graded sands, gravelly sands, little or no fines	Light brown/Fine
(2) SB26 (6'-8')	12/14/2016	12.7	50	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(2) SB26 (8'-10')	12/14/2016	10.4	40	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(2) SB26 (10'-12')	12/14/2016	PR	PR	PR	PR
(2) SB27 (0'-2')	12/14/2016	5.6	415	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(2) SB27 (2'-4')	12/14/2016	7.0	480	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB27 (4'-6')	12/14/2016	6.5	80	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(2) SB27 (6'-8')	12/14/2016	11.1	65	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(2) SB27 (8'-10')	12/14/2016	5.8	25	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(2) SB28 (0'-2')	12/14/2016	5.3	435	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB28 (2'-4')	12/14/2016	7.3	630	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB28 (4'-6')	12/14/2016	5.5	755	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB28 (6'-8')	12/14/2016	9.4	205	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB28 (8'-10')	12/14/2016	8.2	90	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB29 (0'-2')	12/14/2016	5.3	95	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB29 (2'-4')	12/14/2016	6.7	625	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB29 (4'-6')	12/14/2016	9.7	735	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB29 (6'-8')	12/14/2016	7.1	355	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB29 (8'-10')	12/14/2016	7.0	120	Caliche Rock	Light gray/Fine
(2) SB30 (0'-2')	12/14/2016	6.2	195	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB30 (0'-2') SPLIT	12/14/2016	6.2	195	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB30 (2'-4')	12/14/2016	6.1	745	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB30 (4'-6')	12/14/2016	7.2	520	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB30 (6'-8')	12/14/2016	7.0	725	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(2) SB30 (8'-10')	12/14/2016	7.2	500	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(2) SB30 (10'-12')	12/14/2016	5.6	335	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(2) SB30 (12'-14')	12/14/2016	5.0	130	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(2) SB31 (0'-2')	12/14/2016	4.7	50	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB31 (2'-4')	12/14/2016	6.6	30	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB31 (4'-6')	12/14/2016	5.7	75	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB31 (6'-8')	12/14/2016	6.1	35	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB31 (8'-10')	12/14/2016	PR	PR	PR	PR
(2) SB32 (0'-2')	12/14/2016	3.5	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB32 (2'-4')	12/14/2016	4.3	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB32 (4'-6')	12/14/2016	4.2	165	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB32 (6'-8')	12/14/2016	4.7	50	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB32 (8'-10')	12/14/2016	4.0	55	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB33 (0'-2')	12/15/2016	1.6	30	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB33 (2'-4')	12/15/2016	1.2	5	Caliche Rock	Light gray/Fine
(2) SB33 (4'-6')	12/15/2016	1.7	15	SP - Poorly - graded sands, gravelly sands, little or no fines	Light brown/Fine
(2) SB33 (6'-8')	12/15/2016	1.3	40	Caliche Rock	Light gray/Fine
(2) SB33 (8'-10')	12/15/2016	PR	PR	PR	PR
(2) SB34 (0'-2')	12/15/2016	404.0	370	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB34 (0'-2') SPLIT	12/15/2016	404.0	370	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB34(2'-4')	12/15/2016	11.6	950	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB34 (4'-6')	12/15/2016	4.0	775	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB34 (6'-8')	12/15/2016	4.5	885	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB34 (8'-10')	12/15/2016	2.9	895	Caliche Rock	Light gray/Fine
(2) SB34 (10'-12')	12/15/2016	2.5	375	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(2) SB34 (12'-14')	12/15/2016	2.5	185	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine
(2) SB35 (0'-2')	12/15/2016	3.8	75	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB35(2'-4')	12/15/2016	4.4	775	SP - Poorly - graded sands, gravelly sands, little or no fines	red/Fine
(2) SB35 (4'-6')	12/15/2016	3.6	115	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB35 (6'-8')	12/15/2016	4.5	840	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB35 (8'-10')	12/15/2016	6.4	1060	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB35 (10'-10.6')	12/15/2016	6.3	1205	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB35 (10.6'-12')	12/15/2016	PR	PR	PR	PR
(2) SB36 (0'-2')	12/15/2016	4.1	20	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB36 (2'-4')	12/15/2016	3.5	595	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine

TABLE 1
LITHOLOGY OF SOIL BORINGS

Area 2					
Sample ID	Date Collected	PID (PPM)	Chlorides (field screening)	Soil Type	Soil Color
(2) SB36 (4'-6')	12/15/2016	3.3	320	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB36 (6'-8')	12/15/2016	4.0	780	Caliche Rock	Light gray/Fine
(2) SB36 (8'-10')	12/15/2016	3.6	45	Caliche Rock	Light gray/Fine
(2) SB36 (10'-12')	12/15/2016	3.6	45	Caliche Rock	Light gray/Fine
(2) SB37 (0'-2')	12/15/2016	3.8	170	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB37 (2'-4')	12/15/2016	3.3	640	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB37 (2'-4') SPLIT	12/15/2016	3.3	640	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB37 (4'-6')	12/15/2016	4.0	680	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB37 (6'-8')	12/15/2016	4.1	1070	Caliche Rock	Light gray/Fine
(2) SB37 (8'-10')	12/15/2016	4.6	220	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB37 (10'-12')	12/15/2016	2.1	25	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB38 (0'-2')	12/15/2016	3.7	575	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB38 (2'-4')	12/15/2016	3.0	540	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB38 (4'-6')	12/15/2016	3.2	655	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB38 (6'-8')	12/15/2016	2.7	250	Caliche Rock	Light gray/Fine
(2) SB38 (8'-10')	12/15/2016	2.7	70	Caliche Rock	Light gray/Fine
(2) SB38 (10'-12')	12/15/2016	PR	PR	PR	PR
(2) SB39 (0'-2')	12/15/2016	5.0	900	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB39 (2'-4')	12/15/2016	2.7	785	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB39 (4'-6')	12/15/2016	5.1	500	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB39 (6'-8')	12/15/2016	5.0	975	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB39 (8'-10')	12/15/2016	4.4	625	Caliche Rock	Light gray/Fine
(2) SB39 (10'-12')	12/15/2016	3.2	520	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB39 (12'-14')	12/15/2016	3.0	65	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB40 (0'-2')	12/15/2016	4.2	10	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB40 (2'-4')	12/15/2016	4.3	35	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB40 (4'-6')	12/15/2016	5.5	35	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB40 (6'-7')	12/15/2016	4.2	100	Caliche Rock	Light gray/Fine
(2) SB40 (6'-7') SPLIT	12/15/2016	4.2	100	Caliche Rock	Light gray/Fine
(2) SB40 (7'-8')	12/15/2016	PR	PR	PR	PR
(2) SB41 (0'-2')	12/20/2016	12.2	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB41 (2'-4')	12/20/2016	6.2	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB41 (4'-6')	12/20/2016	7.8	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB41 (6'-8')	12/20/2016	15.8	10	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB42 (0'-2')	12/20/2016	7.0	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB42 (2'-4')	12/20/2016	5.4	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB42 (4'-6')	12/20/2016	5.1	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB42 (6'-8')	12/20/2016	4.5	95	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB43 (0'-2')	12/20/2016	5.0	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB43 (2'-4')	12/20/2016	5.2	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB43 (4'-6')	12/20/2016	5.1	25	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB43 (6'-8')	12/20/2016	6.6	130	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB44 (0'-2')	12/20/2016	3.0	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB44 (2'-4')	12/20/2016	2.9	15	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB44 (4'-6')	12/20/2016	1.8	50	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB44 (6'-8')	12/20/2016	2.9	30	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB45 (0'-2')	12/21/2016	2.5	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB45 (2'-4')	12/21/2016	3.2	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB45 (4'-6')	12/21/2016	2.8	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB45 (6'-8')	12/21/2016	2.3	10	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB46 (0'-2')	12/21/2016	2.8	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB46 (0'-2') SPLIT	12/21/2016	2.8	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB46 (2'-4')	12/21/2016	3.1	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB46 (4'-6')	12/21/2016	2.7	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB46 (6'-8')	12/21/2016	2.5	10	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB47 (0'-2')	12/21/2016	4.7	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB47 (2'-4')	12/21/2016	5.2	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB47 (4'-6')	12/21/2016	2.6	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB47 (6'-8')	12/21/2016	2.3	10	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB47 (8'-10')	12/21/2016	PR	PR	PR	PR
(2) SB48 (0'-2')	12/21/2016	5.1	5	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB48 (2'-4')	12/21/2016	8.7	15	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB48 (4'-6')	12/21/2016	6.5	15	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB48 (6'-8')	12/21/2016	6.9	20	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) SB48 (8'-10')	12/21/2016	PR	PR	PR	PR
(2) BG (0'-2')	12/21/2016	6.9	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine

TABLE 1
LITHOLOGY OF SOIL BORINGS

Area 2					
Sample ID	Date Collected	PID (PPM)	Chlorides (field screening)	Soil Type	Soil Color
(2) BG (2'-4')	12/21/2016	6.1	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) BG (4'-6')	12/21/2016	4.7	0	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) BG (6'-8')	12/21/2016	3.9	25	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine
(2) BG (8'-10')	12/21/2016	3.9	20	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine

NOTE: NR=NO RECOVERY, PR=PROBE REFUSAL, SPLIT=SPLIT SAMPLE

APPENDIX D

Table 2 – Soil Sample Analytical Results

TABLE 2
SOIL SAMPLE ANALYTICAL RESULTS

Area 1					
Sample ID	Date Collected	Benzene mg/kg	Total BTEX mg/kg	Chlorides mg/kg	Total TPH mg/kg
Action Limits		10 mg/kg	50 mg/kg	Horizontal: 600 mg/kg Vertical: 250 mg/kg	5000 mg/kg
SB1 (0'-2')	12/5/2016	0.001	0.001	1580	<15.0
SB1 (2'-4')	12/5/2016	< 0.001	<0.001	778	<15.0
SB1 (4'-6')	12/5/2016	0.003	0.005	7.92	<15.0
SB1 (6'-7')	12/5/2016	0.002	0.004	14.7	<15.0
SB2 (0'-2')	12/5/2016	0.001	0.695	1200	2340
SB2 (2'-4')	12/5/2016	0.002	0.002	5450	<15.0
SB2 (4'-6')	12/5/2016	<0.001	<0.001	3450	<15.0
SB2 (6'-8')	12/5/2016	0.001	0.001	3180	<15.0
SB3 (0'-2')	12/5/2016	<0.001	0.082	845	148
SB3 (2'-4')	12/5/2016	<0.001	<0.001	4830	<15.0
SB3 (4'-6')	12/5/2016	<0.001	<0.001	3480	<15.0
SB3 (6'-8')	12/5/2016	<0.001	<0.001	1350	<15.0
SB3 (8'-10')	12/5/2016	<0.001	<0.001	2700	15
SB4 (0'-2')	12/5/2016	<0.099	59.6	3000	4150
SB4 (2'-4')	12/5/2016	<0.200	155	1590	10900
SB4 (4'-6')	12/5/2016	0.731	112	1330	7510
SB4 (6'-8')	12/5/2016	7.57	304	1780	10400
SB4 (8'-10')	12/5/2016	0.51	48.7	5970	2740
SB4 (10'-12')	12/5/2016	6.27	292	3670	8540
SB4 (14'-16')	12/5/2016	1.38	140	2460	4460
SB4 (14'-16')	12/5/2016	0.247	73	2050	3910
SB4 (16'-18')	12/5/2016	<0.001	0.003	2430	22.2
SB4 (18'-20')	12/6/2016	<0.001	<0.001	982	85.2
SB4 (20'-22')	12/6/2016	<0.001	0.159	1140	76.1
SB4 (22'-24')	12/6/2016	<0.001	<0.001	114	<15.0
SB4 (24'-26')	12/6/2016	<0.001	<0.001	15.1	<15.0
SB5 (0'-2')	12/6/2016	<0.001	0.014	6640	225
SB5 (2'-4')	12/6/2016	<0.001	<0.001	53.2	22.6
SB5 (4'-6')	12/6/2016	<0.001	0.006	2600	97
SB5 (6'-8')	12/6/2016	<0.001	<0.001	5200	<15.0
SB5 (8'-10')	12/6/2016	<0.001	<0.001	7400	<15.0
SB5 (10'-12')	12/6/2016	<0.001	<0.001	2830	<15.0
SB5 (12'-14')	12/6/2016	<0.001	<0.001	96.1	<15.0
SB5 (14'-16')	12/6/2016	0.002	0.004	14.8	<15.0
SB6 (0'-2')	12/6/2016	<0.001	<0.001	2700	118
SB6 (2'-4')	12/6/2016	<0.001	<0.001	123	23.3
SB6 (4'-6')	12/6/2016	<0.001	<0.001	6.28	<15.0
SB6 (6'-8')	12/6/2016	<0.001	<0.001	4640	<15.0
SB6 (8'-10')	12/6/2016	<0.001	<0.001	1070	<15.0
SB6 (10'-12')	12/6/2016	<0.001	<0.001	1160	<15.0
SB6 (12'-14')	12/6/2016	<0.001	<0.001	156	<15.0
SB6 (12'-14')	12/6/2016	<0.001	<0.001	62.6	<15.0
SB7 (0'-2')	12/8/2016	<0.001	<0.001	474	68.8
SB7 (2'-4')	12/8/2016	<0.001	<0.001	6.46	<15.0

TABLE 2
SOIL SAMPLE ANALYTICAL RESULTS

Area 1					
Sample ID	Date Collected	Benzene mg/kg	Total BTEX mg/kg	Chlorides mg/kg	Total TPH mg/kg
Action Limits		10 mg/kg	50 mg/kg	Horizontal: 600 mg/kg Vertical: 250 mg/kg	5000 mg/kg
SB7 (4'-6')	12/8/2016	<0.001	<0.001	7.27	<15.0
SB7 (6'-8')	12/8/2016	<0.001	<0.001	15.2	<15.0
SB7 (10'-12')	12/8/2016	<0.001	<0.001	6.57	<15.0
SB8 (0'-2')	12/8/2016	<0.001	0.008	4330	504
SB8 (2'-4')	12/8/2016	<0.001	<0.001	605	<15.0
SB8 (4'-6')	12/8/2016	<0.001	<0.001	3770	<15.0
SB8 (6'-8')	12/8/2016	<0.001	<0.001	3670	<15.0
SB8 (8'-10')	12/8/2016	<0.001	<0.001	1940	<15.0
SB8 (10'-12')	12/8/2016	<0.001	<0.001	2140	<15.0
SB9 (0'-2')	12/8/2016	<0.001	<0.001	3080	156
SB9 (2'-4')	12/8/2016	<0.001	<0.001	8.85	<15.0
SB9 (4'-6')	12/8/2016	<0.001	<0.001	683	50.8
SB9 (6'-8')	12/8/2016	<0.001	<0.001	7.29	<15.0
SB9 (8'-10')	12/8/2016	<0.001	<0.001	6.4	<15.0
SB9 (10'-12')	12/8/2016	<0.001	<0.001	10.2	<15.0
SB10 (0'-2')	12/8/2016	<0.001	<0.001	354	<15.0
SB10 (2'-4')	12/8/2016	<0.001	<0.001	7.93	<15.0
SB10 (4'-6')	12/8/2016	<0.001	<0.001	8.51	<15.0
SB10 (4'-6')	12/8/2016	<0.001	<0.001	7.83	<15.0
SB10 (6'-8')	12/8/2016	<0.001	<0.001	6.6	<15.0
SB10 (8'-10')	12/8/2016	<0.001	<0.001	6.75	<15.0
SB11 (0'-2')	12/8/2016	<0.001	<0.001	394	<15.0
SB11 (2'-4')	12/8/2016	<0.001	<0.001	361	<15.0
SB11 (4'-6')	12/8/2016	<0.001	<0.001	5070	<15.0
SB11 (6'-8')	12/8/2016	<0.001	<0.001	1630	<15.0
SB11 (8'-10')	12/8/2016	<0.001	<0.001	322	<15.0
SB12 (0'-2')	12/8/2016	<0.001	<0.001	45.2	<15.0
SB12 (2'-4')	12/8/2016	<0.001	<0.001	184	<15.0
SB12 (4'-6')	12/8/2016	<0.001	<0.001	6.6	<15.0
SB12 (6'-8')	12/8/2016	<0.001	<0.001	6.11	<15.0
SB12 (8'-10')	12/8/2016	<0.001	<0.001	8.13	<14.9
SB13 (0'-2')	12/8/2016	<0.001	<0.001	8.1	<15.0
SB13 (2'-4')	12/8/2016	<0.001	<0.001	6.7	<15.0
SB13 (4'-6')	12/8/2016	<0.001	<0.001	7.57	<15.0
SB13 (6'-8')	12/8/2016	<0.001	<0.001	9.45	<15.0
SB14 (0'-2')	12/8/2016	<0.001	<0.001	7.24	<15.0
SB14 (2'-4')	12/8/2016	<0.001	<0.001	6.86	<15.0
SB14 (4'-6')	12/8/2016	<0.001	<0.001	6.93	<15.0
SB14 (6'-8')	12/8/2016	<0.001	<0.001	6.83	<15.0
SB14 (6'-8')	12/8/2016	<0.001	<0.001	6.57	<15.0
SB14 (8'-10')	12/8/2016	<0.001	<0.001	7	<15.0
SB15 (0'-2')	12/8/2016	<0.001	<0.001	10.4	<15.0
SB15 (2'-4')	12/8/2016	<0.001	<0.001	1	<15.0
SB15 (4'-6')	12/8/2016	<0.001	<0.001	6.6	<15.0

TABLE 2
SOIL SAMPLE ANALYTICAL RESULTS

Area 1					
Sample ID	Date Collected	Benzene mg/kg	Total BTEX mg/kg	Chlorides mg/kg	Total TPH mg/kg
Action Limits		10 mg/kg	50 mg/kg	Horizontal: 600 mg/kg Vertical: 250 mg/kg	5000 mg/kg
SB15 (6'-8')	12/9/2016	<0.001	<0.001	7.57	<15.0
SB16 (0'-2')	12/9/2016	<0.001	<0.001	1570	<15.0
SB16 (2'-4')	12/9/2016	<0.001	<0.001	2100	<15.0
SB16 (4'-6')	12/9/2016	<0.001	<0.001	2620	<15.0
SB16 (6'-8')	12/9/2016	<0.001	<0.001	6170	<15.0
SB16 (8'-10')	12/9/2016	<0.001	<0.001	5600	<15.0
SB16 (10'-12')	12/9/2016	<0.001	<0.001	3690	<15.0
SB16 (12'-14')	12/9/2016	<0.001	<0.001	3170	<15.0
SB16 (16'-18')	12/9/2016	<0.001	<0.001	1560	<15.0
SB16 (18'-20')	12/9/2016	<0.001	<0.001	2690	<15.0
SB16 (20'-22')	12/9/2016	<0.001	<0.001	2020	<15.0
SB16 (22'-24')	12/9/2016	<0.001	<0.001	387	<15.0
SB16 (24'-26')	12/9/2016	<0.001	<0.001	251	<15.0
SB17 (0'-2')	12/9/2016	<0.001	<0.001	8.36	<15.0
SB17 (2'-4')	12/9/2016	<0.001	<0.001	9.35	<15.0
SB17 (4'-6')	12/9/2016	<0.001	<0.001	7.18	<15.0
SB17 (4'-6')	12/9/2016	<0.001	<0.001	9.12	<15.0
SB17 (6'-8')	12/9/2016	<0.001	<0.001	10.2	<15.0
SB18 (0'-2')	12/9/2016	<0.001	<0.001	10.1	<15.0
SB18 (2'-4')	12/9/2016	<0.001	<0.001	5.33	<15.0
SB18 (4'-6')	12/9/2016	<0.001	<0.001	6.73	<15.0
SB18 (6'-8')	12/9/2016	<0.001	<0.001	6.27	<15.0
SB18 (8'-10')	12/9/2016	<0.001	<0.001	5.86	<15.0
SB19 (0'-2')	12/9/2016	<0.001	<0.001	5.47	<15.0
SB19 (2'-4')	12/9/2016	<0.001	<0.001	11.1	<15.0
SB19 (4'-6')	12/9/2016	<0.001	<0.001	5.86	50.6
SB19 (6'-8')	12/9/2016	<0.001	<0.001	5.86	<15.0
SB20 (0'-2')	12/9/2016	<0.001	<0.001	6.62	<15.0
SB20 (2'-4')	12/9/2016	<0.001	<0.001	7.87	<15.0
SB20 (4'-6')	12/9/2016	<0.001	<0.001	25.7	<15.0
SB20 (6'-8')	12/9/2016	<0.001	<0.001	7170	<15.0
SB20 (8'-10')	12/9/2016	<0.001	<0.001	10.2	<15.0
SB20 (10'-12')	12/9/2016	<0.001	<0.001	6.42	<15.0
SB21 (0'-2')	12/9/2016	<0.001	<0.001	6.08	<15.0
SB21 (2'-4')	12/9/2016	<0.001	<0.001	7.94	<15.0
SB21 (4'-6')	12/9/2016	<0.001	<0.001	6.02	<15.0
SB21 (6'-8')	12/9/2016	<0.001	<0.001	6.14	<15.0
SB21 (6'-8')	12/9/2016	<0.001	<0.001	6.3	<15.0
SB22 (0'-2')	12/15/2016	<0.001	<0.001	5.81	<15.0
SB22 (2'-4')	12/15/2016	<0.001	<0.001	5.06	<15.0
SB22 (4'-6')	12/15/2016	<0.001	<0.001	7.98	<15.0
SB22 (6'-8')	12/19/2016	<0.001	<0.001	<5.0	<15.0
SB23 (0'-2')	12/19/2016	<0.001	<0.001	39.5	<15.0
SB23 (2'-4')	12/19/2016	<0.001	<0.001	7.13	<15.0

TABLE 2
SOIL SAMPLE ANALYTICAL RESULTS

Area 1					
Sample ID	Date Collected	Benzene mg/kg	Total BTEX mg/kg	Chlorides mg/kg	Total TPH mg/kg
Action Limits		10 mg/kg	50 mg/kg	Horizontal: 600 mg/kg Vertical: 250 mg/kg	5000 mg/kg
SB23 (4'-6')	12/19/2016	<0.001	<0.001	6.92	<15.0
SB23 (6'-8')	12/19/2016	<0.001	<0.001	<5.0	<15.0
SB24 (0'-2')	12/19/2016	<0.001	<0.001	740	<15.0
SB24 (2'-4')	12/19/2016	<0.001	<0.001	872	<15.0
SB24 (4'-6')	12/19/2016	<0.001	<0.001	672	<15.0
SB24 (6'-8')	12/19/2016	<0.001	<0.001	840	<15.0
SB24 (8'-10')	12/19/2016	<0.001	<0.001	594	<15.0
SB24 (10'-12')	12/19/2016	<0.001	<0.001	676	<15.0
SB24 (12'-14')	12/19/2016	<0.001	<0.001	274	<15.0
SB24 (14'-16')	12/19/2016	<0.001	<0.001	5.69	<15.0
SB25 (0'-2')	12/19/2016	<0.001	<0.001	1140	<15.0
SB25 (2'-4')	12/19/2016	<0.001	<0.001	809	<15.0
SB25 (4'-6')	12/19/2016	<0.001	<0.001	570	<15.0
SB25 (4'-6')	12/19/2016	<0.001	<0.001	972	<15.0
SB25 (6'-8')	12/19/2016	<0.001	<0.001	563	<15.0
SB26 (0'-2')	12/19/2016	<0.001	4.74	519	5470
SB26 (2'-4')	12/19/2016	<0.001	<0.001	823	<15.0
SB26 (4'-6')	12/19/2016	<0.001	<0.001	6840	<15.0
SB26 (6'-8')	12/19/2016	<0.001	<0.001	2690	<15.0
SB26 (8'-10')	12/19/2016	<0.001	<0.001	2780	<15.0
SB26 (10'-12')	12/19/2016	<0.001	<0.001	1380	<15.0
SB27 (0'-2')	12/19/2016	<0.02	50.8	1270	6150
SB27 (2'-4')	12/19/2016	<0.001	<0.001	6310	<15.0
SB27 (4'-6')	12/19/2016	<0.001	<0.001	7500	<15.0
SB28 (0'-2')	12/20/2016	<0.001	<0.001	2700	21.1
SB28 (2'-4')	12/20/2016	<0.001	<0.001	6190	<15.0
SB28 (4'-6')	12/20/2016	<0.001	<0.001	9950	<15.0
SB28 (6'-8')	12/20/2016	<0.001	<0.001	1220	<15.0
SB28 (8'-10')	12/20/2016	<0.001	<0.001	<5.00	<15.0
SB29 (0'-2')	12/20/2016	<0.001	<0.001	309	<15.0
SB29 (2'-4')	12/20/2016	<0.001	<0.001	4680	<15.0
SB29 (4'-6')	12/20/2016	<0.001	0.0586	9830	<15.0
SB29 (6'-8')	12/20/2016	<0.001	<0.001	3920	<15.0
SB29 (8'-10')	12/20/2016	<0.001	<0.001	9.72	<15.0
SB29 (8'-10')	12/20/2016	<0.001	<0.001	9.48	<15.0
SB30 (0'-2')	12/20/2016	<0.001	<0.001	5700	<15.0
SB30 (2'-4')	12/20/2016	<0.001	<0.001	6040	<15.0
SB30 (4'-6')	12/20/2016	<0.001	<0.001	2150	<15.0
SB30 (6'-8')	12/20/2016	<0.001	<0.001	8580	<15.0
SB31 (0'-2')	12/20/2016	<0.001	<0.001	30.4	<15.0
SB31 (2'-4')	12/20/2016	<0.001	<0.001	118	50.8
SB31 (4'-6')	12/20/2016	<0.001	<0.001	<5.00	<15.0
SB31 (6'-8')	12/20/2016	<0.001	<0.001	7860	<15.0
SB31 (8'-10')	12/20/2016	<0.001	<0.001	7260	<15.0

TABLE 2
SOIL SAMPLE ANALYTICAL RESULTS

Area 1					
Sample ID	Date Collected	Benzene mg/kg	Total BTEX mg/kg	Chlorides mg/kg	Total TPH mg/kg
Action Limits		10 mg/kg	50 mg/kg	Horizontal: 600 mg/kg Vertical: 250 mg/kg	5000 mg/kg
SB31 (10'-12')	12/20/2016	<0.001	<0.001	16	<15.0
SB32 (0'-2')	12/20/2016	<0.001	<0.001	6010	<15.0
SB32 (2'-4')	12/20/2016	<0.001	<0.001	3650	<15.0
SB32 (4'-6')	12/20/2016	<0.001	<0.001	3020	<15.0
SB32 (6'-8')	12/20/2016	<0.001	<0.001	11900	<15.0
SB33 (0'-2')	12/20/2016	<0.001	<0.001	542	<15.0
SB33 (2'-4')	12/20/2016	<0.001	<0.001	4700	<15.0
SB33 (4'-6')	12/20/2016	<0.001	<0.001	816	<15.0
SB33 (6'-8')	12/20/2016	<0.001	<0.001	136	<15.0
SB34 (0'-2')	12/20/2016	<0.001	<0.001	6.37	<15.0
SB34 (2'-4')	12/20/2016	<0.001	<0.001	12.9	<15.0
SB34 (2'-4')	12/20/2016	<0.001	<0.001	7.76	<15.0
SB34 (4'-6')	12/20/2016	<0.001	<0.001	5.73	<15.0
SB34 (6'-8')	12/20/2016	<0.001	<0.001	6.45	<15.0
SB35 (0'-2')	12/20/2016	<0.001	<0.001	11.9	<15.0
SB35 (2'-4')	12/20/2016	<0.001	<0.001	6.64	<15.0
SB35 (4'-6')	12/20/2016	<0.001	<0.001	16.4	<15.0
SB36 (0'-2')	12/20/2016	<0.001	<0.001	157	<15.0
SB36 (2'-4')	12/20/2016	<0.001	<0.001	7.62	<15.0
SB36 (4'-6')	12/20/2016	<0.001	<0.001	7.7	<15.0
SB37 (0'-2')	12/20/2016	<0.001	<0.001	5.8	<15.0
SB37 (2'-4')	12/20/2016	<0.001	<0.001	6.47	<15.0
SB37 (4'-6')	12/20/2016	<0.001	<0.001	7.1	<15.0
SB37 (6'-8')	12/20/2016	<0.001	<0.001	<5.00	<15.0
SB38 (0'-2')	12/21/2016	<0.001	<0.001	6.12	<15.0
SB38 (2'-4')	12/21/2016	<0.001	<0.001	6.36	<15.0
SB38 (4'-6')	12/21/2016	<0.001	<0.001	5.87	<15.0
SB38 (6'-8')	12/21/2016	<0.001	<0.001	7.44	<15.0
SB39 (0'-2')	12/21/2016	<0.001	<0.001	5.8	<15.0
SB39 (2'-4')	12/21/2016	<0.001	<0.001	5.9	<15.0
SB39 (4'-6')	12/21/2016	<0.001	<0.001	6.19	<15.0
SB39 (6'-8')	12/21/2016	<0.001	<0.001	5.39	<15.0
SB39 (6'-8')	12/21/2016	<0.001	<0.001	5.76	<15.0
SB40 (0'-2')	12/21/2016	<0.001	<0.001	11.4	<15.0
SB40 (2'-4')	12/21/2016	<0.001	<0.001	<5.00	<15.0
SB40 (4'-6')	12/21/2016	<0.001	<0.001	<5.00	<15.0
SB40 (6'-8')	12/21/2016	<0.001	<0.001	<5.00	<15.0
SB41 (0'-2')	12/21/2016	<0.001	<0.001	<5.00	<15.0
SB41 (2'-4')	12/21/2016	<0.001	<0.001	5.8	<15.0
SB41 (4'-6')	12/21/2016	<0.001	<0.001	5.26	<15.0
SB41 (6'-8')	12/21/2016	<0.001	<0.001	6.37	<15.0
SB42 (0'-2')	12/21/2016	<0.001	<0.001	5.69	<15.0
SB42 (2'-4')	12/21/2016	<0.001	<0.001	5.1	<15.0
SB42 (4'-6')	12/21/2016	<0.001	<0.001	5.54	<15.0

TABLE 2
SOIL SAMPLE ANALYTICAL RESULTS

Area 1					
Sample ID	Date Collected	Benzene mg/kg	Total BTEX mg/kg	Chlorides mg/kg	Total TPH mg/kg
Action Limits		10 mg/kg	50 mg/kg	Horizontal: 600 mg/kg Vertical: 250 mg/kg	5000 mg/kg
SB42 (6'-8')	12/21/2016	<0.001	<0.001	6.57	<15.0
SB43 (0'-2')	12/21/2016	<0.001	<0.001	5.76	<15.0
SB43 (2'-4')	12/21/2016	<0.001	<0.001	5.37	<15.0
SB43 (4'-6')	12/21/2016	<0.001	<0.001	5.29	<15.0
SB43 (6'-8')	12/21/2016	<0.001	<0.001	5.3	<15.0
SB44 (0'-2')	12/21/2016	<0.001	<0.001	12.7	<15.0
SB44 (2'-4')	12/21/2016	<0.001	<0.001	6.19	<15.0
SB44 (4'-6')	12/21/2016	<0.001	<0.001	5.13	<15.0
SB44 (6'-8')	12/21/2016	<0.001	<0.001	5.06	<15.0
SB44 (6'-8')	12/21/2016	<0.001	<0.001	6.06	<15.0
SB45 (0'-2')	12/21/2016	<0.001	<0.001	8.51	<15.0
SB45 (2'-4')	12/21/2016	<0.001	<0.001	6.29	<15.0
SB45 (4'-6')	12/21/2016	<0.001	<0.001	6.13	<15.0
SB45 (6'-8')	12/21/2016	<0.001	<0.001	5.43	<15.0
SB46 (0'-2')	12/21/2016	<0.001	<0.001	7.32	<15.0
SB46 (2'-4')	12/21/2016	<0.001	<0.001	6	<15.0
SB46 (4'-6')	12/21/2016	<0.001	<0.001	5.86	21.2
SB46 (6'-8')	12/21/2016	<0.001	<0.001	7.46	<15.0
SB47 (0'-2')	12/21/2016	<0.001	<0.001	5.24	16.7
SB47 (2'-4')	12/21/2016	<0.001	<0.001	<5.00	<15.0
SB47 (4'-6')	12/21/2016	<0.001	<0.001	5.82	<15.0
SB47 (6'-8')	12/21/2016	<0.001	<0.001	5.94	<15.0
BG (0'-2')	12/21/2016	<0.001	<0.001	6.54	<15.0
BG (2'-4')	12/21/2016	<0.001	<0.001	6.02	<15.0
BG (4'-6')	12/21/2016	<0.001	<0.001	5.79	<15.0
BG (6'-8')	12/21/2016	<0.001	<0.001	5.52	18.8
BG (8'-10')	12/21/2016	<0.001	<0.001	5.75	<15.0

(<) Indicates the value was not detected above the laboratory detection limits

Red shaded cells indicate Horizontal Benzene, BTEX, Chlorides and TPH exceedance

Orange shaded cells indicate Horizontal and Vertical Chlorides exceedance.

Action Limits: Benzene - 10 ppm, BTEX - 50 ppm, TPH - 5,000 ppm,
Chlorides - 600 ppm (Horizontal), Chlorides - 250 ppm (Vertical)

TABLE 2
SOIL SAMPLE ANALYTICAL RESULTS

Area 2					
Sample ID	Date Collected	Benzene mg/kg	Total BTEX mg/kg	Chlorides mg/kg	Total TPH mg/kg
Action Limits		10 mg/kg	50 mg/kg	Horizontal: 600 mg/kg Vertical: 250 mg/kg	5000 mg/kg
SB1 (0'-2')	12/12/2016	<0.001	<0.001	353	<15.0
SB1 (2'-4')	12/12/2016	<0.001	<0.001	483	<15.0
SB1 (4'-6')	12/12/2016	<0.001	<0.001	800	<15.0
SB1 (6'-8')	12/12/2016	<0.001	<0.001	539	<15.0
SB2 (0'-2')	12/12/2016	<0.001	<0.001	7.45	<15.0
SB2 (2'-4')	12/12/2016	<0.001	<0.001	639	<15.0
SB2 (4'-6')	12/12/2016	<0.001	<0.001	592	<15.0
SB2 (6'-8')	12/12/2016	<0.001	<0.001	728	<15.0
SB3 (0'-2')	12/12/2016	<0.001	<0.001	414	<15.0
SB3 (2'-4')	12/12/2016	<0.001	<0.001	185	<15.0
SB3 (4'-6')	12/12/2016	<0.001	<0.001	8.85	<15.0
SB3 (6'-8')	12/12/2016	<0.001	<0.001	5.85	<15.0
SB4 (0'-2')	12/12/2016	<0.001	<0.001	1900	<15.0
SB4 (2'-4')	12/12/2016	<0.001	<0.001	3990	<15.0
SB4 (4'-6')	12/12/2016	<0.001	<0.001	5350	<15.0
SB4 (6'-8')	12/12/2016	<0.001	<0.001	6180	<15.0
SB4 (8'-10')	12/12/2016	<0.001	<0.001	4400	<15.0
SB5 (0'-2')	12/12/2016	<0.001	<0.001	15	<15.0
SB5 (2'-4')	12/12/2016	<0.001	<0.001	<5.00	<15.0
SB5 (4'-6')	12/12/2016	<0.001	<0.001	<5.00	<15.0
SB5 (6'-8')	12/12/2016	<0.001	<0.001	5.08	<15.0
SB5 (8'-9.5')	12/12/2016	<0.001	<0.001	<5.00	<15.0
SB6 (0'-2')	12/12/2016	<0.001	<0.001	11.9	<15.0
SB6 (2'-4')	12/12/2016	<0.001	<0.001	<5.00	<15.0
SB6 (4'-6')	12/12/2016	<0.001	<0.001	<5.00	<15.0
SB6 (6'-8')	12/13/2016	<0.001	<0.001	7.28	<15.0
SB7 (0'-2')	12/13/2016	<0.001	<0.001	6.22	<15.0
SB7 (2'-4')	12/13/2016	<0.001	<0.001	<5.00	<15.0
SB7 (4'-6')	12/13/2016	<0.001	<0.001	<5.00	<15.0
SB7 (6'-8')	12/13/2016	<0.001	<0.001	<5.00	<15.0
SB7 (8'-10')	12/13/2016	<0.001	<0.001	<5.00	<15.0
SB8 (0'-2')	12/13/2016	<0.001	<0.001	<5.00	36.2
SB8 (2'-4')	12/13/2016	<0.001	<0.001	<5.00	<15.0
SB8 (4'-6')	12/13/2016	<0.001	<0.001	<5.00	<15.0
SB8 (6'-8')	12/13/2016	<0.001	<0.001	6.08	<15.0
SB8 (8'-10')	12/13/2016	<0.001	<0.001	5.85	<15.0
SB9 (0'-2')	12/13/2016	<0.001	<0.001	11.2	<15.0
SB9 (2'-4')	12/13/2016	<0.001	<0.001	18	97.7
SB9 (4'-6')	12/13/2016	<0.001	<0.001	9.83	216
SB9 (6'-8')	12/13/2016	<0.001	<0.001	6.36	<15.0
SB9 (8'-10')	12/13/2016	<0.001	<0.001	7.45	<15.0
SB9 (8'-10')	12/13/2016	<0.001	<0.001	7.7	<15.0
SB10 (0'-2')	12/13/2016	<0.001	<0.001	6.87	<15.0
SB10 (2'-4')	12/13/2016	<0.001	<0.001	<5.00	<15.0

TABLE 2
SOIL SAMPLE ANALYTICAL RESULTS

Area 2					
Sample ID	Date Collected	Benzene mg/kg	Total BTEX mg/kg	Chlorides mg/kg	Total TPH mg/kg
Action Limits		10 mg/kg	50 mg/kg	Horizontal: 600 mg/kg Vertical: 250 mg/kg	5000 mg/kg
SB10 (4'-6')	12/13/2016	<0.001	<0.001	5.31	<15.0
SB10 (6'-8')	12/13/2016	<0.001	<0.001	<5.00	<15.0
SB10 (8'-10')	12/13/2016	<0.001	<0.001	<5.00	<15.0
SB11 (0'-2')	12/13/2016	<0.001	<0.001	<5.00	<15.0
SB11 (2'-4')	12/13/2016	<0.001	<0.001	<5.00	<15.0
SB11 (4'-6')	12/13/2016	<0.001	<0.001	<5.00	<15.0
SB11 (6'-8')	12/13/2016	<0.001	<0.001	<5.00	<15.0
SB12 (0'-2')	12/13/2016	<0.001	<0.001	25.3	<15.0
SB12 (2'-4')	12/13/2016	<0.001	<0.001	5.02	<15.0
SB12 (4'-6')	12/13/2016	<0.001	<0.001	<5.00	<15.0
SB12 (6'-8')	12/13/2016	<0.001	<0.001	<5.00	<15.0
SB13 (0'-2')	12/13/2016	<0.001	<0.001	<5.00	<15.0
SB13 (2'-4')	12/13/2016	<0.001	<0.001	<5.00	<15.0
SB13 (4'-6')	12/13/2016	<0.001	<0.001	5.15	<15.0
SB13 (6'-8')	12/13/2016	<0.001	<0.001	8.48	<15.0
SB14 (0'-2')	12/13/2016	<0.001	<0.001	6.12	<15.0
SB14 (2'-4')	12/13/2016	<0.001	<0.001	5.38	<15.0
SB14 (4'-6')	12/13/2016	<0.001	<0.001	5.83	<15.0
SB14 (4'-6')	12/13/2016	<0.001	<0.001	5.83	<15.0
SB14 (6'-8')	12/13/2016	<0.001	<0.001	5.47	<15.0
SB15 (0'-2')	12/13/2016	<0.001	<0.001	1840	<15.0
SB15 (2'-4')	12/13/2016	<0.001	<0.001	869	<15.0
SB15 (4'-6')	12/13/2016	<0.001	<0.001	1090	<15.0
SB15 (6'-8')	12/13/2016	<0.001	<0.001	127	<15.0
SB15 (8'-10')	12/13/2016	<0.001	<0.001	15.1	<15.0
SB16 (0'-2')	12/13/2016	<0.001	<0.001	2130	<15.0
SB16 (2'-4')	12/13/2016	<0.001	<0.001	<5.00	<15.0
SB16 (4'-6')	12/13/2016	<0.001	<0.001	5910	<15.0
SB16 (6'-8')	12/13/2016	<0.001	<0.001	5740	<15.0
SB16 (8'-10')	12/13/2016	<0.001	<0.001	1300	<15.0
SB17 (0'-2')	12/13/2016	<0.001	<0.001	1960	<15.0
SB17 (2'-4')	12/13/2016	<0.001	<0.001	3180	<15.0
SB17 (4'-6')	12/13/2016	<0.001	<0.001	6420	<15.0
SB17 (6'-8')	12/13/2016	<0.001	<0.001	4000	<15.0
SB17 (8'-10')	12/13/2016	<0.001	<0.001	6640	<15.0
SB17 (10'-12')	12/13/2016	<0.001	<0.001	913	<15.0
SB17 (12'-14')	12/13/2016	<0.001	<0.001	11.8	<15.0
SB18 (0'-2')	12/13/2016	<0.001	<0.001	1790	60
SB18 (2'-4')	12/13/2016	<0.001	<0.001	4170	<15.0
SB18 (2'-4')	12/13/2016	<0.001	<0.001	4200	<15.0
SB18 (4'-6')	12/13/2016	<0.001	<0.001	4770	<15.0
SB18 (6'-8')	12/13/2016	<0.001	<0.001	4120	<15.0
SB18 (8'-10')	12/13/2016	<0.001	<0.001	6350	<15.0
SB18 (10'-12')	12/13/2016	<0.001	<0.001	315	<15.0

TABLE 2
SOIL SAMPLE ANALYTICAL RESULTS

Area 2					
Sample ID	Date Collected	Benzene mg/kg	Total BTEX mg/kg	Chlorides mg/kg	Total TPH mg/kg
Action Limits		10 mg/kg	50 mg/kg	Horizontal: 600 mg/kg Vertical: 250 mg/kg	5000 mg/kg
SB18 (12'-14')	12/13/2016	<0.001	<0.001	21.5	<15.0
SB19 (2'-4')	12/13/2016	<0.001	<0.001	317	<15.0
SB19 (4'-6')	12/13/2016	<0.001	<0.001	4430	<15.0
SB19 (6'-8')	12/13/2016	<0.001	<0.001	1750	<15.0
SB19 (8'-10')	12/13/2016	<0.001	<0.001	143	<15.0
SB19 (10'-12')	12/13/2016	<0.001	<0.001	16.6	<15.0
SB20 (0'-2')	12/14/2016	<0.001	<0.001	4600	38.1
SB20 (2'-4')	12/14/2016	<0.001	<0.001	5030	<15.0
SB20 (4'-6')	12/14/2016	<0.001	<0.001	4000	68.8
SB20 (6'-8')	12/14/2016	<0.001	<0.001	4670	<15.0
SB20 (8'-10')	12/14/2016	<0.001	<0.001	159	<15.0
SB20 (10'-12')	12/14/2016	<0.001	<0.001	18.8	<15.0
SB21 (0'-2')	12/14/2016	<0.001	<0.001	539	<15.0
SB21 (2'-4')	12/14/2016	<0.001	<0.001	4210	<15.0
SB21 (4'-6')	12/14/2016	<0.001	<0.001	646	<15.0
SB21 (6'-8')	12/14/2016	<0.001	<0.001	<5.00	<15.0
SB21 (6'-8')	12/14/2016	<0.001	<0.001	<5.00	<15.0
SB21 (8'-10')	12/14/2016	<0.001	<0.001	<5.00	<15.0
SB21 (10'-11')	12/14/2016	<0.001	<0.001	6.5	<15.0
SB22 (0'-2')	12/14/2016	<0.001	<0.001	4160	818
SB22 (2'-4')	12/14/2016	<0.001	<0.001	6570	<15.0
SB22 (4'-6')	12/14/2016	<0.001	<0.001	45	<15.0
SB22 (6'-8')	12/14/2016	<0.001	<0.001	14.6	<15.0
SB22 (8'-10')	12/14/2016	<0.001	<0.001	31.8	<15.0
SB23 (0'-2')	12/14/2016	<0.001	<0.001	278	<15.0
SB23 (2'-4')	12/14/2016	<0.001	<0.001	56.2	<15.0
SB23 (4'-6')	12/14/2016	<0.001	<0.001	907	<15.0
SB23 (6'-8')	12/14/2016	<0.001	<0.001	390	<15.0
SB23 (8'-10')	12/14/2016	<0.001	<0.001	206	<15.0
SB24 (0'-2')	12/14/2016	<0.001	<0.001	6.9	<15.0
SB24 (2'-4')	12/14/2016	<0.001	<0.001	7.5	<15.0
SB24 (4'-6')	12/14/2016	<0.001	<0.001	5.45	<15.0
SB24 (6'-8')	12/14/2016	<0.001	<0.001	7.97	<15.0
SB24 (8'-10')	12/14/2016	<0.001	<0.001	19.8	<15.0
SB25 (0'-2')	12/14/2016	<0.001	<0.001	20.3	<15.0
SB25 (2'-4')	12/14/2016	<0.001	<0.001	8.91	<15.0
SB25 (4'-6')	12/14/2016	<0.001	<0.001	<5.00	<15.0
SB25 (6'-8')	12/14/2016	<0.001	<0.001	<5.00	<15.0
SB25 (8'-10')	12/14/2016	<0.001	<0.001	6.06	<15.0
SB26 (0'-2')	12/14/2016	<0.001	<0.001	1470	<15.0
SB26 (0'-2')	12/14/2016	<0.001	<0.001	1630	<15.0
SB26 (2'-4')	12/14/2016	<0.001	<0.001	1940	<15.0
SB26 (4'-6')	12/14/2016	<0.001	<0.001	7.46	<15.0
SB26 (6'-8')	12/14/2016	<0.001	<0.001	7.44	<15.0

TABLE 2
SOIL SAMPLE ANALYTICAL RESULTS

Area 2					
Sample ID	Date Collected	Benzene mg/kg	Total BTEX mg/kg	Chlorides mg/kg	Total TPH mg/kg
Action Limits		10 mg/kg	50 mg/kg	Horizontal: 600 mg/kg Vertical: 250 mg/kg	5000 mg/kg
SB26 (8'-10')	12/14/2016	<0.001	<0.001	<5.00	<15.0
SB27 (0'-2')	12/14/2016	<0.001	<0.001	1210	<15.0
SB27 (2'-4')	12/14/2016	<0.001	<0.001	836	<15.0
SB27 (4'-6')	12/14/2016	<0.001	<0.001	14.8	<15.0
SB27 (6'-8')	12/14/2016	<0.001	<0.001	5.03	<15.0
SB27 (8'-10')	12/14/2016	<0.001	<0.001	12.1	<15.0
SB28 (0'-2')	12/14/2016	<0.001	<0.001	2120	<15.0
SB28 (2'-4')	12/14/2016	<0.001	<0.001	3610	<15.0
SB28 (4'-6')	12/14/2016	<0.001	<0.001	6290	<15.0
SB28 (6'-8')	12/14/2016	<0.001	<0.001	645	<15.0
SB28 (8'-10')	12/14/2016	<0.001	<0.001	<5.00	<15.0
SB29 (0'-2')	12/14/2016	<0.001	<0.001	28.4	<15.0
SB29 (2'-4')	12/14/2016	<0.001	<0.001	5930	<15.0
SB29 (4'-6')	12/14/2016	<0.001	<0.001	5800	<15.0
SB29 (6'-8')	12/14/2016	<0.001	<0.001	1520	<15.0
SB29 (8'-10')	12/14/2016	<0.001	<0.001	216	<15.0
SB30 (0'-2')	12/14/2016	<0.001	<0.001	266	<15.0
SB30 (0'-2')	12/14/2016	<0.001	<0.001	526	<15.0
SB30 (2'-4')	12/14/2016	<0.001	<0.001	4060	<15.0
SB30 (4'-6')	12/14/2016	<0.001	<0.001	3120	<15.0
SB30 (6'-8')	12/14/2016	<0.001	<0.001	5050	<15.0
SB30 (8'-10')	12/14/2016	<0.001	<0.001	3200	<15.0
SB30 (10'-12')	12/14/2016	<0.001	<0.001	4890	<15.0
SB30 (12'-14')	12/14/2016	<0.001	<0.001	124	<15.0
SB31 (0'-2')	12/14/2016	<0.001	<0.001	5.59	<15.0
SB31 (2'-4')	12/14/2016	<0.001	<0.001	8.34	<15.0
SB31 (4'-6')	12/14/2016	<0.001	<0.001	<5.00	<15.0
SB31 (6'-8')	12/14/2016	<0.001	<0.001	<5.00	<15.0
SB32 (0'-2')	12/14/2016	<0.001	<0.001	5.43	<15.0
SB32 (2'-4')	12/14/2016	<0.001	<0.001	<5.00	<15.0
SB32 (4'-6')	12/14/2016	<0.001	<0.001	<5.00	<15.0
SB32 (6'-8')	12/14/2016	<0.001	<0.001	<5.00	<15.0
SB32 (8'-10')	12/14/2016	<0.001	<0.001	12.8	<15.0
SB33 (0'-2')	12/15/2016	<0.001	<0.001	8.08	<15.0
SB33 (2'-4')	12/15/2016	<0.001	<0.001	<5.00	<15.0
SB33 (4'-6')	12/15/2016	<0.001	<0.001	<5.00	<15.0
SB33 (6'-8')	12/15/2016	<0.001	<0.001	9.18	<15.0
SB34 (0'-2')	12/15/2016	<0.001	<0.001	3690	<15.0
SB34 (0'-2')	12/15/2016	<0.001	<0.001	3110	<15.0
SB34 (2'-4')	12/15/2016	<0.001	<0.001	4550	<15.0
SB34 (4'-6')	12/15/2016	<0.001	<0.001	4800	<15.0
SB34 (6'-8')	12/15/2016	<0.001	<0.001	4800	<15.0
SB34 (8'-10')	12/15/2016	<0.001	<0.001	3760	<15.0
SB34 (10'-12')	12/15/2016	<0.001	<0.001	594	<15.0

TABLE 2
SOIL SAMPLE ANALYTICAL RESULTS

Area 2					
Sample ID	Date Collected	Benzene mg/kg	Total BTEX mg/kg	Chlorides mg/kg	Total TPH mg/kg
Action Limits		10 mg/kg	50 mg/kg	Horizontal: 600 mg/kg Vertical: 250 mg/kg	5000 mg/kg
SB34 (12'-14')	12/15/2016	<0.001	<0.001	10.6	<15.0
SB35 (0'-2')	12/15/2016	<0.001	<0.001	8.23	<15.0
SB35 (2'-4')	12/15/2016	<0.001	<0.001	4790	<15.0
SB35 (4'-6')	12/15/2016	<0.001	<0.001	74.6	<15.0
SB35 (6'-8')	12/15/2016	<0.001	<0.001	5330	<15.0
SB35 (8'-10')	12/15/2016	<0.001	<0.001	7670	<15.0
SB35 (10'-10.6')	12/15/2016	<0.001	<0.001	4490	<15.0
SB36 (0'-2')	12/15/2016	<0.001	<0.001	97.3	<15.0
SB36 (2'-4')	12/15/2016	<0.001	<0.001	2470	<15.0
SB36 (4'-6')	12/15/2016	<0.001	<0.001	3450	<15.0
SB36 (6'-8')	12/15/2016	<0.001	<0.001	2360	<15.0
SB36 (8'-10')	12/15/2016	<0.001	<0.001	9.91	<15.0
SB36 (10'-12')	12/15/2016	<0.001	<0.001	<5.00	<15.0
SB37 (0'-2')	12/15/2016	<0.001	<0.001	443	<15.0
SB37 (2'-4')	12/15/2016	<0.001	<0.001	2730	<15.0
SB37 (2'-4')	12/15/2016	<0.001	<0.001	3030	<15.0
SB37 (4'-6')	12/15/2016	<0.001	<0.001	4950	<15.0
SB37 (6'-8')	12/15/2016	<0.001	<0.001	4590	<15.0
SB37 (8'-10')	12/15/2016	<0.001	<0.001	504	<15.0
SB37 (10'-12')	12/15/2016	<0.001	<0.001	9.86	<15.0
SB38 (0'-2')	12/15/2016	<0.001	<0.001	2880	<15.0
SB38 (2'-4')	12/15/2016	<0.001	<0.001	2570	<15.0
SB38 (4'-6')	12/15/2016	<0.001	<0.001	4950	<15.0
SB38 (6'-8')	12/15/2016	<0.001	<0.001	915	<15.0
SB38 (8'-10')	12/15/2016	<0.001	<0.001	15.8	<15.0
SB39 (0'-2')	12/15/2016	<0.001	<0.001	2770	<15.0
SB39 (2'-4')	12/15/2016	<0.001	<0.001	516	<15.0
SB39 (4'-6')	12/15/2016	<0.001	<0.001	4090	<15.0
SB39 (6'-8')	12/15/2016	<0.001	<0.001	8790	<15.0
SB39 (8'-10')	12/15/2016	<0.001	<0.001	4640	<15.0
SB39 (10'-12')	12/15/2016	<0.001	<0.001	3180	<15.0
SB39 (12'-14')	12/15/2016	<0.001	<0.001	31.5	<15.0
SB40 (0'-2')	12/15/2016	<0.001	<0.001	7.61	<15.0
SB40 (2'-4')	12/15/2016	<0.001	<0.001	12.2	<15.0
SB40 (4'-6')	12/15/2016	<0.001	<0.001	5.42	<15.0
SB40 (6'-7')	12/15/2016	<0.001	<0.001	12.3	<15.0
SB40 (6'-7')	12/15/2016	<0.001	<0.001	12.7	<15.0
SB41 (0'-2')	12/20/2016	<0.001	<0.001	5.71	<15.0
SB41 (2'-4')	12/20/2016	<0.001	<0.001	7.46	<15.0
SB41 (4'-6')	12/20/2016	<0.001	<0.001	7.04	<15.0
SB41 (6'-8')	12/20/2016	<0.001	<0.001	<5.00	<15.0
SB42 (0'-2')	12/20/2016	<0.001	<0.001	11.4	<15.0
SB42 (2'-4')	12/20/2016	<0.001	<0.001	6.32	<15.0
SB42 (4'-6')	12/20/2016	<0.001	<0.001	5.12	<15.0

TABLE 2
SOIL SAMPLE ANALYTICAL RESULTS

Area 2					
Sample ID	Date Collected	Benzene mg/kg	Total BTEX mg/kg	Chlorides mg/kg	Total TPH mg/kg
Action Limits		10 mg/kg	50 mg/kg	Horizontal: 600 mg/kg Vertical: 250 mg/kg	5000 mg/kg
SB42 (6'-8')	12/20/2016	<0.001	<0.001	6.11	<15.0
SB43 (0'-2')	12/20/2016	<0.001	<0.001	5.98	<15.0
SB43 (2'-4')	12/20/2016	<0.001	<0.001	5.37	165
SB43 (4'-6')	12/20/2016	<0.001	<0.001	<5.00	<15.0
SB43 (6'-8')	12/20/2016	<0.001	<0.001	7.11	<15.0
SB44 (0'-2')	12/20/2016	<0.001	<0.001	6.27	<15.0
SB44 (2'-4')	12/20/2016	<0.001	<0.001	5.57	<15.0
SB44 (4'-6')	12/20/2016	<0.001	<0.001	5.62	<15.0
SB44 (6'-8')	12/20/2016	<0.001	<0.001	6.49	<15.0
SB45 (0'-2')	12/21/2016	<0.001	<0.001	6.96	<15.0
SB45 (2'-4')	12/21/2016	<0.001	<0.001	5.9	<15.0
SB45 (4'-6')	12/21/2016	<0.001	<0.001	5.28	<15.0
SB45 (6'-8')	12/21/2016	<0.001	<0.001	<5.00	<15.0
SB46 (0'-2')	12/21/2016	<0.001	<0.001	<5.00	<15.0
SB46 (0'-2')	12/21/2016	<0.001	<0.001	5.4	<15.0
SB46 (2'-4')	12/21/2016	<0.001	<0.001	<5.00	<15.0
SB46 (4'-6')	12/21/2016	<0.001	<0.001	<5.00	<15.0
SB46 (6'-8')	12/21/2016	<0.001	<0.001	<5.00	<15.0
SB47 (0'-2')	12/21/2016	<0.001	<0.001	<5.00	<15.0
SB47 (2'-4')	12/21/2016	<0.001	<0.001	<5.00	<15.0
SB47 (4'-6')	12/21/2016	<0.001	<0.001	<5.00	<15.0
SB47 (6'-8')	12/21/2016	<0.001	<0.001	<5.00	<15.0
SB48 (0'-2')	12/21/2016	<0.001	<0.001	<5.00	<15.0
SB48 (2'-4')	12/21/2016	<0.001	<0.001	<5.00	<15.0
SB48 (4'-6')	12/21/2016	<0.001	<0.001	<5.00	<15.0
SB48 (6'-8')	12/21/2016	<0.001	<0.001	<5.00	<15.0
BG (0'-2')	12/21/2016	<0.001	<0.001	7.02	<15.0
BG (2'-4')	12/21/2016	<0.001	<0.001	5.69	<15.0
BG (4'-6')	12/21/2016	<0.001	<0.001	<5.00	<15.0
BG (6'-8')	12/21/2016	<0.001	<0.001	6.99	<15.0
BG (8'-10')	12/21/2016	<0.001	<0.001	6.15	<15.0

(<) Indicates the value was not detected above the laboratory detection limits

Red shaded cells indicate Horizontal Benzene, BTEX, Chlorides and TPH exceedance

Orange shaded cells indicate Horizontal and Vertical Chlorides exceedance.

Action Limits: Benzene - 10 ppm, BTEX - 50 ppm, TPH - 5,000 ppm,
Chlorides - 600 ppm (Horizontal), Chlorides - 250 ppm (Vertical)

Analytical Report 541513
for
KJE Enviromental & Civil Engineering

Project Manager: James Fox
OWL Bobcat/Red Hills Pipeline Release

04-JAN-17

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

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

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



04-JAN-17

Project Manager: **James Fox**
KJE Enviromental & Civil Engineering
500 Mosley Rd
Aubrey, TX 76227

Reference: XENCO Report No(s): **541513**
OWL Bobcat/Red Hills Pipeline Release
Project Address: Jal NM

James Fox:

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) 541513. 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. 541513 will be filed for 60 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

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Odessa - San Antonio - Tampa - Lakeland - Atlanta - Phoenix - Oklahoma - Latin America

KJE Enviromental & Civil Engineering, Aubrey, TX

OWL Bobcat/Red Hills Pipeline Release

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
(1) SB1 0-2	S	12-05-16 14:30		541513-001
(1) SB1 2-4	S	12-05-16 14:35		541513-002
(1) SB1 4-6	S	12-05-16 14:40		541513-003
(1) SB1 6-7	S	12-05-16 14:45		541513-004
(1) SB2 0-2	S	12-05-16 15:00		541513-005
(1) SB2 2-4	S	12-05-16 15:05		541513-006
(1) SB2 4-6	S	12-05-16 15:10		541513-007
(1) SB2 6-8	S	12-05-16 15:15		541513-008
(1) SB3 0-2	S	12-05-16 15:30		541513-009
(1) SB3 2-4	S	12-05-16 15:35		541513-010
(1) SB3 4-6	S	12-05-16 15:40		541513-011
(1) SB3 6-8	S	12-05-16 15:45		541513-012
(1) SB3 8-10	S	12-05-16 15:50		541513-013
(1) SB4 0-2	S	12-05-16 16:15		541513-014
(1) SB4 2-4	S	12-05-16 16:20		541513-015
(1) SB4 4-6	S	12-05-16 16:30		541513-016
(1) SB4 6-8	S	12-05-16 16:40		541513-017
(1) SB4 8-10	S	12-05-16 16:50		541513-018
(1) SB4 10-12	S	12-05-16 17:00		541513-019
(1) SB4 14-16	S	12-05-16 17:10		541513-020
(1) SB4 14-16 SPLIT	S	12-05-16 17:45		541513-021
(1) SB4 16-18	S	12-05-16 18:00		541513-022
(1) SB4 18-20	S	12-06-16 08:30		541513-023
(1) SB4 20-22	S	12-06-16 08:35		541513-024
(1) SB4 22-24	S	12-06-16 08:40		541513-025
(1) SB4 24-26	S	12-06-16 08:45		541513-026
(1) SB5 0-2	S	12-06-16 09:00		541513-027
(1) SB5 2-4	S	12-06-16 09:05		541513-028
(1) SB5 4-6	S	12-06-16 09:10		541513-029
(1) SB5 6-8	S	12-06-16 09:15		541513-030
(1) SB5 8-10	S	12-06-16 00:00		541513-031
(1) SB5 10-12	S	12-06-16 00:00		541513-032
(1) SB5 12-14	S	12-06-16 00:00		541513-033
(1) SB5 14-16	S	12-06-16 00:00		541513-034
(1) SB6 0-2	S	12-06-16 00:00		541513-035
(1) SB6 2-4	S	12-06-16 00:00		541513-036
(1) SB6 4-6	S	12-06-16 00:00		541513-037
(1) SB6 6-8	S	12-06-16 00:00		541513-038
(1) SB6 8-10	S	12-06-16 00:00		541513-039
(1) SB6 10-12	S	12-06-16 00:00		541513-040
(1) SB6 12-14	S	12-06-16 11:30		541513-041
(1) SB6 12-14 SPLIT	S	12-06-16 14:30		541513-042



CASE NARRATIVE



Client Name: KJE Enviromental & Civil Engineering

Project Name: OWL Bobcat/Red Hills Pipeline Release

Project ID:

Work Order Number(s): 541513

Report Date: 04-JAN-17

Date Received: 12/07/2016

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3005267 BTEX by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3005398 BTEX by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3005502 BTEX by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3005505 Inorganic Anions by EPA 300/300.1

Lab Sample ID 541513-025 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 541513-014, -015, -016, -017, -018, -019, -020, -021, -022, -023, -024, -025, -026, -027, -028, -029, -030, -031, -032, -033.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3005553 BTEX-MTBE by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.



Hits Summary 541513



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB1 0-2**

Lab Sample Id : 541513-001

Matrix : Soil

Date Collected : 12.05.16 14.30

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : BTEX by SW 8260B

Seq Number 3005267

Prep Method: SW5030B

Date Prep: 12.08.16 13.02

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.00152	mg/kg	12.08.16 14.25		1
Total BTEX		0.00152	mg/kg	12.08.16 14.25		1

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005174

Prep Method: E300P

Date Prep: 12.07.16 13.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1580	mg/kg	12.08.16 13.48		1

Sample Id : **(1) SB1 2-4**

Lab Sample Id : 541513-002

Matrix : Soil

Date Collected : 12.05.16 14.35

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005174

Prep Method: E300P

Date Prep: 12.07.16 13.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	778	mg/kg	12.08.16 13.55		1



Hits Summary 541513



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB1 4-6**

Lab Sample Id : 541513-003

Matrix : Soil

Date Collected : 12.05.16 14.40

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : BTEX by SW 8260B

Seq Number 3005267

Prep Method: SW5030B

Date Prep: 12.08.16 13.04

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.00330	mg/kg	12.08.16 14.56		1
Toluene	108-88-3	0.00223	mg/kg	12.08.16 14.56		1
Total BTEX		0.00553	mg/kg	12.08.16 14.56		1

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005174

Prep Method: E300P

Date Prep: 12.07.16 13.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.92	mg/kg	12.08.16 14.02		1

Sample Id : **(1) SB1 6-7**

Lab Sample Id : 541513-004

Matrix : Soil

Date Collected : 12.05.16 14.45

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : BTEX by SW 8260B

Seq Number 3005267

Prep Method: SW5030B

Date Prep: 12.08.16 13.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.00281	mg/kg	12.08.16 13.55		1
Toluene	108-88-3	0.00203	mg/kg	12.08.16 13.55		1
Total BTEX		0.00484	mg/kg	12.08.16 13.55		1

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005174

Prep Method: E300P

Date Prep: 12.07.16 13.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14.7	mg/kg	12.08.16 11.31		1



Hits Summary 541513



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB2 0-2**

Lab Sample Id : 541513-005

Matrix : Soil

Date Collected : 12.05.16 15.00

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : BTEX by SW 8260B

Seq Number 3005267

Prep Method: SW5030B

Date Prep: 12.08.16 13.05

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.00180	mg/kg	12.08.16 15.12		1
Toluene	108-88-3	0.00204	mg/kg	12.08.16 15.12		1
Ethylbenzene	100-41-4	0.00158	mg/kg	12.08.16 15.12		1

Analytical Method : BTEX by SW 8260B

Seq Number 3005267

Prep Method: SW5030B

Date Prep: 12.08.16 15.30

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
o-Xylene	95-47-6	0.690	mg/kg	12.08.16 15.46	D	1
Total Xylenes	1330-20-7	0.690	mg/kg	12.08.16 15.46		1
Total BTEX		0.695	mg/kg	12.08.16 15.46		1

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005174

Prep Method: E300P

Date Prep: 12.07.16 13.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1200	mg/kg	12.08.16 14.09		1

Analytical Method : TPH By SW8015 Mod

Seq Number 3005212

Prep Method: TX1005P

Date Prep: 12.07.16 10.30

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	275	mg/kg	12.07.16 22.36		1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	2060	mg/kg	12.07.16 22.36		1
Total TPH	PHC635	2340	mg/kg	12.07.16 22.36		1



Hits Summary 541513



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB2 2-4**

Lab Sample Id : 541513-006

Matrix : Soil

Date Collected : 12.05.16 15.05

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : BTEX by SW 8260B

Seq Number 3005267

Prep Method: SW5030B

Date Prep: 12.08.16 16.31

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.00219	mg/kg	12.08.16 17.16		1
Total BTEX		0.00219	mg/kg	12.08.16 17.16		1

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005174

Prep Method: E300P

Date Prep: 12.07.16 13.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5450	mg/kg	12.08.16 14.16		10

Sample Id : **(1) SB2 4-6**

Lab Sample Id : 541513-007

Matrix : Soil

Date Collected : 12.05.16 15.10

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005174

Prep Method: E300P

Date Prep: 12.07.16 13.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3450	mg/kg	12.08.16 14.23		5



Hits Summary 541513



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB2 6-8**

Lab Sample Id : 541513-008

Matrix : Soil

Date Collected : 12.05.16 15.15

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : BTEX by SW 8260B

Seq Number 3005267

Prep Method: SW5030B

Date Prep: 12.08.16 16.34

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.00130	mg/kg	12.08.16 18.13		1
Total BTEX		0.00130	mg/kg	12.08.16 18.13		1

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005343

Prep Method: E300P

Date Prep: 12.08.16 18.57

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3180	mg/kg	12.08.16 19.39		5

Sample Id : **(1) SB3 0-2**

Lab Sample Id : 541513-009

Matrix : Soil

Date Collected : 12.05.16 15.30

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : BTEX by SW 8260B

Seq Number 3005398

Prep Method: SW5030B

Date Prep: 12.09.16 10.40

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
o-Xylene	95-47-6	0.0821	mg/kg	12.09.16 10.53		1
Total Xylenes	1330-20-7	0.0821	mg/kg	12.09.16 10.53		1
Total BTEX		0.0821	mg/kg	12.09.16 10.53		1

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005343

Prep Method: E300P

Date Prep: 12.08.16 18.57

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	845	mg/kg	12.08.16 19.46		1

Analytical Method : TPH By SW8015 Mod

Seq Number 3005212

Prep Method: TX1005P

Date Prep: 12.07.16 10.30

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	27.3	mg/kg	12.08.16 00.15		1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	121	mg/kg	12.08.16 00.15		1
Total TPH	PHC635	148	mg/kg	12.08.16 00.15		1



Hits Summary 541513



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB3 2-4**

Lab Sample Id : 541513-010

Matrix : Soil

Date Collected : 12.05.16 15.35

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005174

Prep Method: E300P

Date Prep: 12.07.16 13.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4830	mg/kg	12.08.16 11.38		5

Sample Id : **(1) SB3 4-6**

Lab Sample Id : 541513-011

Matrix : Soil

Date Collected : 12.05.16 15.40

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005343

Prep Method: E300P

Date Prep: 12.08.16 18.57

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3480	mg/kg	12.08.16 19.53		5

Sample Id : **(1) SB3 6-8**

Lab Sample Id : 541513-012

Matrix : Soil

Date Collected : 12.05.16 15.45

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005343

Prep Method: E300P

Date Prep: 12.08.16 18.57

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1350	mg/kg	12.08.16 20.14		1

Sample Id : **(1) SB3 8-10**

Lab Sample Id : 541513-013

Matrix : Soil

Date Collected : 12.05.16 15.50

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005343

Prep Method: E300P

Date Prep: 12.08.16 18.57

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2700	mg/kg	12.08.16 20.21		5



Hits Summary 541513



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB4 0-2**

Lab Sample Id : 541513-014

Matrix : Soil

Date Collected : 12.05.16 16.15

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : BTEX by SW 8260B

Seq Number 3005398

Prep Method: SW5030B

Date Prep: 12.09.16 10.41

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Toluene	108-88-3	6.03	mg/kg	12.09.16 11.18		100
Ethylbenzene	100-41-4	0.766	mg/kg	12.09.16 11.18		100
m,p-Xylenes	179601-23-1	38.0	mg/kg	12.09.16 11.18		100
o-Xylene	95-47-6	14.8	mg/kg	12.09.16 11.18		100
Total Xylenes	1330-20-7	52.8	mg/kg	12.09.16 11.18		100
Total BTEX		59.6	mg/kg	12.09.16 11.18		100

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005505

Prep Method: E300P

Date Prep: 12.12.16 18.45

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3000	mg/kg	12.12.16 21.47		5

Analytical Method : TPH By SW8015 Mod

Seq Number 3005432

Prep Method: TX1005P

Date Prep: 12.08.16 11.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	964	mg/kg	12.09.16 01.11		1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	3150	mg/kg	12.09.16 01.11		1
Total TPH	PHC635	4150	mg/kg	12.09.16 01.11		1



Hits Summary 541513



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB4 2-4**

Lab Sample Id : 541513-015

Matrix : Soil

Date Collected : 12.05.16 16.20

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : BTEX by SW 8260B

Seq Number 3005398

Prep Method: SW5030B

Date Prep: 12.09.16 10.44

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Toluene	108-88-3	2.15	mg/kg	12.09.16 12.12		200
Ethylbenzene	100-41-4	0.715	mg/kg	12.09.16 12.12		200
m,p-Xylenes	179601-23-1	109	mg/kg	12.09.16 12.12		200
o-Xylene	95-47-6	43.5	mg/kg	12.09.16 12.12		200
Total Xylenes	1330-20-7	153	mg/kg	12.09.16 12.12		200
Total BTEX		155	mg/kg	12.09.16 12.12		200

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005505

Prep Method: E300P

Date Prep: 12.12.16 18.45

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1590	mg/kg	12.12.16 22.08		1

Analytical Method : TPH By SW8015 Mod

Seq Number 3005432

Prep Method: TX1005P

Date Prep: 12.08.16 11.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	2870	mg/kg	12.09.16 20.19		5
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	8020	mg/kg	12.09.16 20.19		5
Total TPH	PHC635	10900	mg/kg	12.09.16 20.19		5



Hits Summary 541513



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB4 4-6**

Lab Sample Id : 541513-016

Matrix : Soil

Date Collected : 12.05.16 16.30

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : BTEX by SW 8260B

Seq Number 3005398

Prep Method: SW5030B

Date Prep: 12.09.16 10.45

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.731	mg/kg	12.09.16 12.27		200
Toluene	108-88-3	6.72	mg/kg	12.09.16 12.27		200
m,p-Xylenes	179601-23-1	75.9	mg/kg	12.09.16 12.27		200
o-Xylene	95-47-6	28.7	mg/kg	12.09.16 12.27		200
Total Xylenes	1330-20-7	105	mg/kg	12.09.16 12.27		200
Total BTEX		112	mg/kg	12.09.16 12.27		200

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005505

Prep Method: E300P

Date Prep: 12.12.16 18.45

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1330	mg/kg	12.12.16 22.16		1

Analytical Method : TPH By SW8015 Mod

Seq Number 3005432

Prep Method: TX1005P

Date Prep: 12.08.16 11.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	2550	mg/kg	12.09.16 20.42		5
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	4960	mg/kg	12.09.16 20.42		5
Total TPH	PHC635	7510	mg/kg	12.09.16 20.42		5



Hits Summary 541513



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB4 6-8**

Matrix : Soil

% Moisture :

Lab Sample Id : 541513-017

Date Collected : 12.05.16 16.40

Basis : Wet Weight

Date Received : 12.07.16 09.55

Analytical Method : BTEX by SW 8260B

Prep Method: SW5030B

Seq Number 3005398

Date Prep: 12.09.16 10.48

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	7.57	mg/kg	12.09.16 13.14		500
Toluene	108-88-3	97.9	mg/kg	12.09.16 13.14		500
Ethylbenzene	100-41-4	8.20	mg/kg	12.09.16 13.14		500
m,p-Xylenes	179601-23-1	140	mg/kg	12.09.16 13.14		500
o-Xylene	95-47-6	50.2	mg/kg	12.09.16 13.14		500
Total Xylenes	1330-20-7	190	mg/kg	12.09.16 13.14		500
Total BTEX		304	mg/kg	12.09.16 13.14		500

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3005505

Date Prep: 12.12.16 18.45

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1780	mg/kg	12.12.16 22.23		1

Analytical Method : TPH By SW8015 Mod

Prep Method: TX1005P

Seq Number 3005432

Date Prep: 12.08.16 11.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	4210	mg/kg	12.09.16 21.03		5
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	6210	mg/kg	12.09.16 21.03		5
Total TPH	PHC635	10400	mg/kg	12.09.16 21.03		5



Hits Summary 541513



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB4 8-10**

Lab Sample Id : 541513-018

Matrix : Soil

Date Collected : 12.05.16 16.50

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : BTEX by SW 8260B

Seq Number 3005398

Prep Method: SW5030B

Date Prep: 12.09.16 10.43

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.510	mg/kg	12.09.16 11.49		100
Toluene	108-88-3	12.9	mg/kg	12.09.16 11.49		100
Ethylbenzene	100-41-4	5.74	mg/kg	12.09.16 11.49		100
m,p-Xylenes	179601-23-1	21.5	mg/kg	12.09.16 11.49		100
o-Xylene	95-47-6	8.01	mg/kg	12.09.16 11.49		100
Total Xylenes	1330-20-7	29.5	mg/kg	12.09.16 11.49		100
Total BTEX		48.7	mg/kg	12.09.16 11.49		100

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005505

Prep Method: E300P

Date Prep: 12.12.16 18.45

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5970	mg/kg	12.12.16 22.44		10

Analytical Method : TPH By SW8015 Mod

Seq Number 3005432

Prep Method: TX1005P

Date Prep: 12.08.16 11.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	1040	mg/kg	12.09.16 02.38		1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	1680	mg/kg	12.09.16 02.38		1
Total TPH	PHC635	2740	mg/kg	12.09.16 02.38		1



Hits Summary 541513



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB4 10-12**

Lab Sample Id : 541513-019

Matrix : Soil

Date Collected : 12.05.16 17.00

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : BTEX by SW 8260B

Seq Number 3005398

Prep Method: SW5030B

Date Prep: 12.09.16 10.47

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	6.27	mg/kg	12.09.16 12.58		250
Toluene	108-88-3	99.2	mg/kg	12.09.16 12.58		250
Ethylbenzene	100-41-4	30.9	mg/kg	12.09.16 12.58		250
m,p-Xylenes	179601-23-1	115	mg/kg	12.09.16 12.58		250
o-Xylene	95-47-6	40.9	mg/kg	12.09.16 12.58		250
Total Xylenes	1330-20-7	156	mg/kg	12.09.16 12.58		250
Total BTEX		292	mg/kg	12.09.16 12.58		250

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005505

Prep Method: E300P

Date Prep: 12.12.16 18.45

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3670	mg/kg	12.12.16 22.51		5

Analytical Method : TPH By SW8015 Mod

Seq Number 3005432

Prep Method: TX1005P

Date Prep: 12.08.16 11.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	3580	mg/kg	12.09.16 02.59		1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	4910	mg/kg	12.09.16 02.59		1
Total TPH	PHC635	8540	mg/kg	12.09.16 02.59		1



Hits Summary 541513



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB4 14-16**

Matrix : Soil

% Moisture :

Lab Sample Id : 541513-020

Date Collected : 12.05.16 17.10

Basis : Wet Weight

Date Received : 12.07.16 09.55

Analytical Method : BTEX by SW 8260B

Prep Method: SW5030B

Seq Number 3005398

Date Prep: 12.09.16 10.46

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	1.38	mg/kg	12.09.16 12.43		200
Toluene	108-88-3	42.5	mg/kg	12.09.16 12.43		200
Ethylbenzene	100-41-4	17.0	mg/kg	12.09.16 12.43		200
m,p-Xylenes	179601-23-1	58.2	mg/kg	12.09.16 12.43		200
o-Xylene	95-47-6	21.1	mg/kg	12.09.16 12.43		200
Total Xylenes	1330-20-7	79.3	mg/kg	12.09.16 12.43		200
Total BTEX		140	mg/kg	12.09.16 12.43		200

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3005505

Date Prep: 12.12.16 18.45

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2460	mg/kg	12.12.16 22.58		5

Analytical Method : TPH By SW8015 Mod

Prep Method: TX1005P

Seq Number 3005432

Date Prep: 12.08.16 11.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	1830	mg/kg	12.09.16 03.21		1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	2600	mg/kg	12.09.16 03.21		1
Total TPH	PHC635	4460	mg/kg	12.09.16 03.21		1



Hits Summary 541513



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB4 14-16 SPLIT**

Lab Sample Id : 541513-021

Matrix : Soil

Date Collected : 12.05.16 17.45

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : BTEX by SW 8260B

Seq Number 3005398

Prep Method: SW5030B

Date Prep: 12.09.16 10.42

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.247	mg/kg	12.09.16 11.34		100
Toluene	108-88-3	13.8	mg/kg	12.09.16 11.34		100
Ethylbenzene	100-41-4	9.63	mg/kg	12.09.16 11.34		100
m,p-Xylenes	179601-23-1	35.3	mg/kg	12.09.16 11.34		100
o-Xylene	95-47-6	14.0	mg/kg	12.09.16 11.34		100
Total Xylenes	1330-20-7	49.3	mg/kg	12.09.16 11.34		100
Total BTEX		73.0	mg/kg	12.09.16 11.34		100

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005505

Prep Method: E300P

Date Prep: 12.12.16 18.45

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2050	mg/kg	12.12.16 23.05		5

Analytical Method : TPH By SW8015 Mod

Seq Number 3005432

Prep Method: TX1005P

Date Prep: 12.08.16 11.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	1550	mg/kg	12.09.16 04.08		1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	2330	mg/kg	12.09.16 04.08		1
Total TPH	PHC635	3910	mg/kg	12.09.16 04.08		1



Hits Summary 541513



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB4 16-18**

Lab Sample Id : 541513-022

Matrix : Soil

Date Collected : 12.05.16 18.00

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : BTEX by SW 8260B

Seq Number 3005267

Prep Method: SW5030B

Date Prep: 12.08.16 16.37

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
m,p-Xylenes	179601-23-1	0.00247	mg/kg	12.08.16 18.59		1
o-Xylene	95-47-6	0.00105	mg/kg	12.08.16 18.59		1
Total Xylenes	1330-20-7	0.00352	mg/kg	12.08.16 18.59		1
Total BTEX		0.00352	mg/kg	12.08.16 18.59		1

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005505

Prep Method: E300P

Date Prep: 12.12.16 18.45

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2430	mg/kg	12.12.16 23.12		5

Analytical Method : TPH By SW8015 Mod

Seq Number 3005432

Prep Method: TX1005P

Date Prep: 12.08.16 11.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	22.2	mg/kg	12.09.16 05.14		1
Total TPH	PHC635	22.2	mg/kg	12.09.16 05.14		1

Sample Id : **(1) SB4 18-20**

Lab Sample Id : 541513-023

Matrix : Soil

Date Collected : 12.06.16 08.30

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005505

Prep Method: E300P

Date Prep: 12.12.16 18.45

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	982	mg/kg	12.12.16 23.19		1

Analytical Method : TPH By SW8015 Mod

Seq Number 3005432

Prep Method: TX1005P

Date Prep: 12.08.16 11.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	15.7	mg/kg	12.09.16 05.35		1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	69.5	mg/kg	12.09.16 05.35		1
Total TPH	PHC635	85.2	mg/kg	12.09.16 05.35		1

KJE Enviromental & Civil Engineering, Aubrey, TX

OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB4 20-22**

Lab Sample Id : 541513-024

Matrix : Soil

Date Collected : 12.06.16 08.35

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : BTEX by SW 8260B

Seq Number 3005267

Prep Method: SW5030B

Date Prep: 12.08.16 16.39

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Toluene	108-88-3	0.00167	mg/kg	12.08.16 19.29		1
Ethylbenzene	100-41-4	0.00454	mg/kg	12.08.16 19.29		1
m,p-Xylenes	179601-23-1	0.0969	mg/kg	12.08.16 19.29		1
o-Xylene	95-47-6	0.0560	mg/kg	12.08.16 19.29		1
Total Xylenes	1330-20-7	0.153	mg/kg	12.08.16 19.29		1
Total BTEX		0.159	mg/kg	12.08.16 19.29		1

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005505

Prep Method: E300P

Date Prep: 12.12.16 18.45

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1140	mg/kg	12.12.16 23.26		1

Analytical Method : TPH By SW8015 Mod

Seq Number 3005432

Prep Method: TX1005P

Date Prep: 12.08.16 11.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	22.1	mg/kg	12.09.16 05.57		1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	54.0	mg/kg	12.09.16 05.57		1
Total TPH	PHC635	76.1	mg/kg	12.09.16 05.57		1

Sample Id : **(1) SB4 22-24**

Lab Sample Id : 541513-025

Matrix : Soil

Date Collected : 12.06.16 08.40

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005505

Prep Method: E300P

Date Prep: 12.12.16 18.45

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	114	mg/kg	12.12.16 23.33		1



Hits Summary 541513



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB4 24-26**

Lab Sample Id : 541513-026

Matrix : Soil

Date Collected : 12.06.16 08.45

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005505

Prep Method: E300P

Date Prep: 12.12.16 18.45

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	15.1	mg/kg	12.13.16 00.08	B	1

Sample Id : **(1) SB5 0-2**

Lab Sample Id : 541513-027

Matrix : Soil

Date Collected : 12.06.16 09.00

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : BTEX by SW 8260B

Seq Number 3005502

Prep Method: SW5030B

Date Prep: 12.09.16 19.01

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
m,p-Xylenes	179601-23-1	0.00848	mg/kg	12.09.16 20.51		1
o-Xylene	95-47-6	0.00565	mg/kg	12.09.16 20.51		1
Total Xylenes	1330-20-7	0.0141	mg/kg	12.09.16 20.51		1
Total BTEX		0.0141	mg/kg	12.09.16 20.51		1

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005505

Prep Method: E300P

Date Prep: 12.12.16 18.45

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6640	mg/kg	12.13.16 00.15		10

Analytical Method : TPH By SW8015 Mod

Seq Number 3005432

Prep Method: TX1005P

Date Prep: 12.08.16 11.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	41.9	mg/kg	12.09.16 07.02		1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	183	mg/kg	12.09.16 07.02		1
Total TPH	PHC635	225	mg/kg	12.09.16 07.02		1

KJE Enviromental & Civil Engineering, Aubrey, TX

OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB5 2-4**

Lab Sample Id : 541513-028

Matrix : Soil

Date Collected : 12.06.16 09.05

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005505

Prep Method: E300P

Date Prep: 12.12.16 18.45

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	53.2	mg/kg	12.13.16 00.22	B	1

Analytical Method : TPH By SW8015 Mod

Seq Number 3005432

Prep Method: TX1005P

Date Prep: 12.08.16 11.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	22.6	mg/kg	12.09.16 08.18		1
Total TPH	PHC635	22.6	mg/kg	12.09.16 08.18		1

Sample Id : **(1) SB5 4-6**

Lab Sample Id : 541513-029

Matrix : Soil

Date Collected : 12.06.16 09.10

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : BTEX by SW 8260B

Seq Number 3005398

Prep Method: SW5030B

Date Prep: 12.09.16 15.44

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
m,p-Xylenes	179601-23-1	0.00225	mg/kg	12.09.16 17.25		1
o-Xylene	95-47-6	0.00405	mg/kg	12.09.16 17.25		1
Total Xylenes	1330-20-7	0.00630	mg/kg	12.09.16 17.25		1
Total BTEX		0.00630	mg/kg	12.09.16 17.25		1

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005505

Prep Method: E300P

Date Prep: 12.12.16 18.45

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2600	mg/kg	12.13.16 00.29		5

Analytical Method : TPH By SW8015 Mod

Seq Number 3005432

Prep Method: TX1005P

Date Prep: 12.08.16 11.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	97.0	mg/kg	12.09.16 08.41		1
Total TPH	PHC635	97.0	mg/kg	12.09.16 08.41		1



Hits Summary 541513



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB5 6-8**

Lab Sample Id : 541513-030

Matrix : Soil

Date Collected : 12.06.16 09.15

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005505

Prep Method: E300P

Date Prep: 12.12.16 18.45

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5200	mg/kg	12.13.16 00.36		10

Sample Id : **(1) SB5 8-10**

Lab Sample Id : 541513-031

Matrix : Soil

Date Collected : 12.06.16 00.00

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005505

Prep Method: E300P

Date Prep: 12.12.16 18.45

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7400	mg/kg	12.13.16 00.44		20

Sample Id : **(1) SB5 10-12**

Lab Sample Id : 541513-032

Matrix : Soil

Date Collected : 12.06.16 00.00

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005505

Prep Method: E300P

Date Prep: 12.12.16 18.45

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2830	mg/kg	12.13.16 00.51		5

Sample Id : **(1) SB5 12-14**

Lab Sample Id : 541513-033

Matrix : Soil

Date Collected : 12.06.16 00.00

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005505

Prep Method: E300P

Date Prep: 12.12.16 18.45

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	96.1	mg/kg	12.13.16 00.58		1



Hits Summary 541513



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB5 14-16**

Lab Sample Id : 541513-034

Matrix : Soil

Date Collected : 12.06.16 00.00

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : BTEX by SW 8260B

Seq Number 3005502

Prep Method: SW5030B

Date Prep: 12.09.16 12.02

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.00230	mg/kg	12.09.16 13.18		1
Toluene	108-88-3	0.00194	mg/kg	12.09.16 13.18		1
Total BTEX		0.00424	mg/kg	12.09.16 13.18		1

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005469

Prep Method: E300P

Date Prep: 12.12.16 17.25

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14.8	mg/kg	12.12.16 17.59		1

Sample Id : **(1) SB6 0-2**

Lab Sample Id : 541513-035

Matrix : Soil

Date Collected : 12.06.16 00.00

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005469

Prep Method: E300P

Date Prep: 12.12.16 17.25

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2700	mg/kg	12.12.16 18.21		5

Analytical Method : TPH By SW8015 Mod

Seq Number 3005417

Prep Method: TX1005P

Date Prep: 12.09.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	18.0	mg/kg	12.12.16 12.04		1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	99.5	mg/kg	12.12.16 12.04		1
Total TPH	PHC635	118	mg/kg	12.12.16 12.04		1



Hits Summary 541513



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB6 2-4**

Lab Sample Id : 541513-036

Matrix : Soil

Date Collected : 12.06.16 00.00

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005469

Prep Method: E300P

Date Prep: 12.12.16 17.25

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	123	mg/kg	12.12.16 18.42		1

Analytical Method : TPH By SW8015 Mod

Seq Number 3005417

Prep Method: TX1005P

Date Prep: 12.09.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	23.3	mg/kg	12.10.16 01.47		1
Total TPH	PHC635	23.3	mg/kg	12.10.16 01.47		1

Sample Id : **(1) SB6 4-6**

Lab Sample Id : 541513-037

Matrix : Soil

Date Collected : 12.06.16 00.00

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005469

Prep Method: E300P

Date Prep: 12.12.16 17.25

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.28	mg/kg	12.12.16 18.58		1

Sample Id : **(1) SB6 6-8**

Lab Sample Id : 541513-038

Matrix : Soil

Date Collected : 12.06.16 00.00

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005469

Prep Method: E300P

Date Prep: 12.12.16 17.25

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4640	mg/kg	12.12.16 19.05		5



Hits Summary 541513



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB6 8-10**

Lab Sample Id : 541513-039

Matrix : Soil

Date Collected : 12.06.16 00.00

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005469

Prep Method: E300P

Date Prep: 12.12.16 17.25

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1070	mg/kg	12.12.16 19.12		1

Sample Id : **(1) SB6 10-12**

Lab Sample Id : 541513-040

Matrix : Soil

Date Collected : 12.06.16 00.00

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005469

Prep Method: E300P

Date Prep: 12.12.16 17.25

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1160	mg/kg	12.12.16 19.19		1

Sample Id : **(1) SB6 12-14**

Lab Sample Id : 541513-041

Matrix : Soil

Date Collected : 12.06.16 11.30

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005469

Prep Method: E300P

Date Prep: 12.12.16 17.25

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	156	mg/kg	12.12.16 19.26		1

Sample Id : **(1) SB6 12-14 SPLIT**

Lab Sample Id : 541513-042

Matrix : Soil

Date Collected : 12.06.16 14.30

Date Received : 12.07.16 09.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005469

Prep Method: E300P

Date Prep: 12.12.16 17.25

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	62.6	mg/kg	12.12.16 19.33		1



Certificate of Analysis Summary 541513

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal NM

Date Received in Lab: Wed Dec-07-16 09:55 am

Report Date: 04-JAN-17

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	541513-001	541513-002	541513-003	541513-004	541513-005	541513-006
	<i>Field Id:</i>	(1) SB1 0-2	(1) SB1 2-4	(1) SB1 4-6	(1) SB1 6-7	(1) SB2 0-2	(1) SB2 2-4
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-05-16 14:30	Dec-05-16 14:35	Dec-05-16 14:40	Dec-05-16 14:45	Dec-05-16 15:00	Dec-05-16 15:05
BTEX by SW 8260B SUB: TX104704215	<i>Extracted:</i>	Dec-08-16 13:02	Dec-08-16 13:03	Dec-08-16 13:04	Dec-08-16 13:00	Dec-08-16 13:05	Dec-08-16 16:31
	<i>Analyzed:</i>	Dec-08-16 14:25	Dec-08-16 14:41	Dec-08-16 14:56	Dec-08-16 13:55	Dec-08-16 15:12	Dec-08-16 17:16
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		0.00152 0.000998	<0.00100 0.00100	0.00330 0.00100	0.00281 0.00100	0.00180 0.000990	0.00219 0.00100
Toluene		<0.000998 0.000998	<0.00100 0.00100	0.00223 0.00100	0.00203 0.00100	0.00204 0.000990	<0.00100 0.00100
Ethylbenzene		<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	0.00158 0.000990	<0.00100 0.00100
m,p-Xylenes		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
o-Xylene		<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	0.690 D 0.00495	<0.00100 0.00100
Total Xylenes		<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	0.690 0.00198	<0.00100 0.00100
Total BTEX		0.00152 0.000998	<0.00100 0.00100	0.00553 0.00100	0.00484 0.00100	0.695 0.000990	0.00219 0.00100
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Dec-07-16 13:00	Dec-07-16 13:00	Dec-07-16 13:00	Dec-07-16 13:00	Dec-07-16 13:00	Dec-07-16 13:00
	<i>Analyzed:</i>	Dec-08-16 13:48	Dec-08-16 13:55	Dec-08-16 14:02	Dec-08-16 11:31	Dec-08-16 14:09	Dec-08-16 14:16
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1580 5.00	778 5.00	7.92 5.00	14.7 5.00	1200 5.00	5450 50.0
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-07-16 10:30	Dec-07-16 10:30	Dec-07-16 10:30	Dec-07-16 10:30	Dec-07-16 10:30	Dec-07-16 10:30
	<i>Analyzed:</i>	Dec-07-16 20:07	Dec-07-16 21:24	Dec-07-16 21:47	Dec-07-16 22:13	Dec-07-16 22:36	Dec-07-16 23:02
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	275 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	2060 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	2340 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 541513

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal NM

Date Received in Lab: Wed Dec-07-16 09:55 am

Report Date: 04-JAN-17

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	541513-007	541513-008	541513-009	541513-010	541513-011	541513-012
	<i>Field Id:</i>	(1) SB2 4-6	(1) SB2 6-8	(1) SB3 0-2	(1) SB3 2-4	(1) SB3 4-6	(1) SB3 6-8
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-05-16 15:10	Dec-05-16 15:15	Dec-05-16 15:30	Dec-05-16 15:35	Dec-05-16 15:40	Dec-05-16 15:45
BTEX by SW 8260B SUB: TX104704215	<i>Extracted:</i>	Dec-08-16 16:32	Dec-08-16 16:34	Dec-09-16 10:40	Dec-08-16 13:01	Dec-08-16 16:30	Dec-08-16 16:35
	<i>Analyzed:</i>	Dec-08-16 17:43	Dec-08-16 18:13	Dec-09-16 10:53	Dec-08-16 14:10	Dec-08-16 17:00	Dec-08-16 18:28
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000994 0.000994	0.00130 0.000994	<0.000998 0.000998	<0.00100 0.00100	<0.000994 0.000994	<0.000994 0.000994
Toluene		<0.000994 0.000994	<0.000994 0.000994	<0.000998 0.000998	<0.00100 0.00100	<0.000994 0.000994	<0.000994 0.000994
Ethylbenzene		<0.000994 0.000994	<0.000994 0.000994	<0.000998 0.000998	<0.00100 0.00100	<0.000994 0.000994	<0.000994 0.000994
m,p-Xylenes		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199
o-Xylene		<0.000994 0.000994	<0.000994 0.000994	0.0821 0.000998	<0.00100 0.00100	<0.000994 0.000994	<0.000994 0.000994
Total Xylenes		<0.000994 0.000994	<0.000994 0.000994	0.0821 0.000998	<0.00100 0.00100	<0.000994 0.000994	<0.000994 0.000994
Total BTEX		<0.000994 0.000994	0.00130 0.000994	0.0821 0.000998	<0.00100 0.00100	<0.000994 0.000994	<0.000994 0.000994
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Dec-07-16 13:00	Dec-08-16 18:57	Dec-08-16 18:57	Dec-07-16 13:00	Dec-08-16 18:57	Dec-08-16 18:57
	<i>Analyzed:</i>	Dec-08-16 14:23	Dec-08-16 19:39	Dec-08-16 19:46	Dec-08-16 11:38	Dec-08-16 19:53	Dec-08-16 20:14
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		3450 25.0	3180 25.0	845 5.00	4830 25.0	3480 25.0	1350 5.00
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-07-16 10:30	Dec-07-16 10:30	Dec-07-16 10:30	Dec-07-16 10:30	Dec-08-16 11:00	Dec-08-16 11:00
	<i>Analyzed:</i>	Dec-07-16 23:26	Dec-07-16 23:52	Dec-08-16 00:15	Dec-08-16 00:41	Dec-09-16 00:08	Dec-09-16 00:29
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	27.3 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	121 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	148 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-07-16 10:30	Dec-07-16 10:30	Dec-07-16 10:30	Dec-07-16 10:30		
	<i>Analyzed:</i>	Dec-07-16 23:26	Dec-07-16 23:52	Dec-08-16 00:15	Dec-08-16 00:41		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 541513

KJE Environmental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal NM

Date Received in Lab: Wed Dec-07-16 09:55 am

Report Date: 04-JAN-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	541513-013	541513-014	541513-015	541513-016	541513-017	541513-018
	Field Id:	(1) SB3 8-10	(1) SB4 0-2	(1) SB4 2-4	(1) SB4 4-6	(1) SB4 6-8	(1) SB4 8-10
	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-05-16 15:50	Dec-05-16 16:15	Dec-05-16 16:20	Dec-05-16 16:30	Dec-05-16 16:40	Dec-05-16 16:50
BTEX by SW 8260B SUB: TX104704215	Extracted:	Dec-08-16 16:36	Dec-09-16 10:41	Dec-09-16 10:44	Dec-09-16 10:45	Dec-09-16 10:48	Dec-09-16 10:43
	Analyzed:	Dec-08-16 18:43	Dec-09-16 11:18	Dec-09-16 12:12	Dec-09-16 12:27	Dec-09-16 13:14	Dec-09-16 11:49
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00100 0.00100	<0.0996 0.0996	<0.200 0.200	0.731 0.198	7.57 0.497	0.510 0.100
Toluene		<0.00100 0.00100	6.03 0.0996	2.15 0.200	6.72 0.198	97.9 0.497	12.9 0.100
Ethylbenzene		<0.00100 0.00100	0.766 0.0996	0.715 0.200	<0.198 0.198	8.20 0.497	5.74 0.100
m,p-Xylenes		<0.00200 0.00200	38.0 0.199	109 0.401	75.9 0.396	140 0.994	21.5 0.200
o-Xylene		<0.00100 0.00100	14.8 0.0996	43.5 0.200	28.7 0.198	50.2 0.497	8.01 0.100
Total Xylenes		<0.00100 0.00100	52.8 0.0996	153 0.200	105 0.198	190 0.497	29.5 0.100
Total BTEX		<0.00100 0.00100	59.6 0.0996	155 0.200	112 0.198	304 0.497	48.7 0.100
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-08-16 18:57	Dec-12-16 18:45	Dec-12-16 18:45	Dec-12-16 18:45	Dec-12-16 18:45	Dec-12-16 18:45
	Analyzed:	Dec-08-16 20:21	Dec-12-16 21:47	Dec-12-16 22:08	Dec-12-16 22:16	Dec-12-16 22:23	Dec-12-16 22:44
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		2700 25.0	3000 25.0	1590 5.00	1330 5.00	1780 5.00	5970 50.0
TPH By SW8015 Mod	Extracted:	Dec-08-16 11:00	Dec-08-16 11:00	Dec-08-16 11:00	Dec-08-16 11:00	Dec-08-16 11:00	Dec-08-16 11:00
	Analyzed:	Dec-09-16 00:50	Dec-09-16 01:11	Dec-09-16 20:19	Dec-09-16 20:42	Dec-09-16 21:03	Dec-09-16 02:38
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	964 15.0	2870 74.9	2550 74.8	4210 74.8	1040 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	3150 15.0	8020 74.9	4960 74.8	6210 74.8	1680 15.0
Total TPH		<15.0 15.0	4150 15.0	10900 74.9	7510 74.8	10400 74.8	2740 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 541513

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal NM

Date Received in Lab: Wed Dec-07-16 09:55 am

Report Date: 04-JAN-17

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	541513-019	541513-020	541513-021	541513-022	541513-023	541513-024
	<i>Field Id:</i>	(1) SB4 10-12	(1) SB4 14-16	(1) SB4 14-16 SPLIT	(1) SB4 16-18	(1) SB4 18-20	(1) SB4 20-22
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-05-16 17:00	Dec-05-16 17:10	Dec-05-16 17:45	Dec-05-16 18:00	Dec-06-16 08:30	Dec-06-16 08:35
BTEX by SW 8260B SUB: TX104704215	<i>Extracted:</i>	Dec-09-16 10:47	Dec-09-16 10:46	Dec-09-16 10:42	Dec-08-16 16:37	Dec-08-16 16:40	Dec-08-16 16:39
	<i>Analyzed:</i>	Dec-09-16 12:58	Dec-09-16 12:43	Dec-09-16 11:34	Dec-08-16 18:59	Dec-08-16 19:45	Dec-08-16 19:29
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		6.27 0.250	1.38 0.200	0.247 0.0998	<0.000996 0.000996	<0.000994 0.000994	<0.00100 0.00100
Toluene		99.2 0.250	42.5 0.200	13.8 0.0998	<0.000996 0.000996	<0.000994 0.000994	0.00167 0.00100
Ethylbenzene		30.9 0.250	17.0 0.200	9.63 0.0998	<0.000996 0.000996	<0.000994 0.000994	0.00454 0.00100
m,p-Xylenes		115 0.500	58.2 0.400	35.3 0.200	0.00247 0.00199	<0.00199 0.00199	0.0969 0.00200
o-Xylene		40.9 0.250	21.1 0.200	14.0 0.0998	0.00105 0.000996	<0.000994 0.000994	0.0560 0.00100
Total Xylenes		156 0.250	79.3 0.200	49.3 0.0998	0.00352 0.000996	<0.000994 0.000994	0.153 0.00100
Total BTEX		292 0.250	140 0.200	73.0 0.0998	0.00352 0.000996	<0.000994 0.000994	0.159 0.00100
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Dec-12-16 18:45	Dec-12-16 18:45	Dec-12-16 18:45	Dec-12-16 18:45	Dec-12-16 18:45	Dec-12-16 18:45
	<i>Analyzed:</i>	Dec-12-16 22:51	Dec-12-16 22:58	Dec-12-16 23:05	Dec-12-16 23:12	Dec-12-16 23:19	Dec-12-16 23:26
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		3670 25.0	2460 25.0	2050 25.0	2430 25.0	982 5.00	1140 5.00
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-08-16 11:00	Dec-08-16 11:00	Dec-08-16 11:00	Dec-08-16 11:00	Dec-08-16 11:00	Dec-08-16 11:00
	<i>Analyzed:</i>	Dec-09-16 02:59	Dec-09-16 03:21	Dec-09-16 04:08	Dec-09-16 05:14	Dec-09-16 05:35	Dec-09-16 05:57
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		3580 15.0	1830 15.0	1550 15.0	<15.0 15.0	15.7 15.0	22.1 15.0
C10-C28 Diesel Range Hydrocarbons		4910 15.0	2600 15.0	2330 15.0	22.2 15.0	69.5 15.0	54.0 15.0
Total TPH		8540 15.0	4460 15.0	3910 15.0	22.2 15.0	85.2 15.0	76.1 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 541513

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal NM

Date Received in Lab: Wed Dec-07-16 09:55 am

Report Date: 04-JAN-17

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	541513-025	541513-026	541513-027	541513-028	541513-029	541513-030
	<i>Field Id:</i>	(1) SB4 22-24	(1) SB4 24-26	(1) SB5 0-2	(1) SB5 2-4	(1) SB5 4-6	(1) SB5 6-8
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-06-16 08:40	Dec-06-16 08:45	Dec-06-16 09:00	Dec-06-16 09:05	Dec-06-16 09:10	Dec-06-16 09:15
BTEX by SW 8260B SUB: TX104704215	<i>Extracted:</i>	Dec-08-16 16:38	Dec-08-16 16:33	Dec-09-16 19:01	Dec-12-16 15:00	Dec-09-16 15:44	Dec-09-16 15:41
	<i>Analyzed:</i>	Dec-08-16 19:14	Dec-08-16 17:58	Dec-09-16 20:51	Dec-12-16 15:19	Dec-09-16 17:25	Dec-09-16 16:31
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000998 0.000998	<0.000996 0.000996	<0.000998 0.000998	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100
Toluene		<0.000998 0.000998	<0.000996 0.000996	<0.000998 0.000998	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100
Ethylbenzene		<0.000998 0.000998	<0.000996 0.000996	<0.000998 0.000998	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100
m,p-Xylenes		<0.00200 0.00200	<0.00199 0.00199	0.00848 0.00200	<0.00200 0.00200	0.00225 0.00198	<0.00200 0.00200
o-Xylene		<0.000998 0.000998	<0.000996 0.000996	0.00565 0.000998	<0.00100 0.00100	0.00405 0.000990	<0.00100 0.00100
Total Xylenes		<0.000998 0.000998	<0.000996 0.000996	0.0141 0.000998	<0.00100 0.00100	0.00630 0.000990	<0.00100 0.00100
Total BTEX		<0.000998 0.000998	<0.000996 0.000996	0.0141 0.000998	<0.00100 0.00100	0.00630 0.000990	<0.00100 0.00100
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Dec-12-16 18:45	Dec-12-16 18:45	Dec-12-16 18:45	Dec-12-16 18:45	Dec-12-16 18:45	Dec-12-16 18:45
	<i>Analyzed:</i>	Dec-12-16 23:33	Dec-13-16 00:08	Dec-13-16 00:15	Dec-13-16 00:22	Dec-13-16 00:29	Dec-13-16 00:36
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		114 5.00	15.1 B 5.00	6640 50.0	53.2 B 5.00	2600 25.0	5200 50.0
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-08-16 11:00	Dec-08-16 11:00	Dec-08-16 11:00	Dec-08-16 11:00	Dec-08-16 11:00	Dec-08-16 11:00
	<i>Analyzed:</i>	Dec-09-16 06:19	Dec-09-16 06:40	Dec-09-16 07:02	Dec-09-16 08:18	Dec-09-16 08:41	Dec-09-16 09:03
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	41.9 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	183 15.0	22.6 15.0	97.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	225 15.0	22.6 15.0	97.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 541513

KJE Environmental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal NM

Date Received in Lab: Wed Dec-07-16 09:55 am

Report Date: 04-JAN-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	541513-031	541513-032	541513-033	541513-034	541513-035	541513-036
	Field Id:	(1) SB5 8-10	(1) SB5 10-12	(1) SB5 12-14	(1) SB5 14-16	(1) SB6 0-2	(1) SB6 2-4
	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-06-16 00:00	Dec-06-16 00:00	Dec-06-16 00:00	Dec-06-16 00:00	Dec-06-16 00:00	Dec-06-16 00:00
BTEX by SW 8260B SUB: TX104704215	Extracted:	Dec-12-16 11:31	Dec-09-16 12:00	Dec-09-16 12:01	Dec-09-16 12:02	Dec-09-16 15:42	Dec-09-16 12:03
	Analyzed:	Dec-12-16 12:08	Dec-09-16 12:41	Dec-09-16 12:59	Dec-09-16 13:18	Dec-09-16 16:47	Dec-09-16 13:51
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00101 0.00101	<0.00100 0.00100	<0.000990 0.000990	0.00230 0.00100	<0.000990 0.000990	<0.000998 0.000998
Toluene		<0.00101 0.00101	<0.00100 0.00100	<0.000990 0.000990	0.00194 0.00100	<0.000990 0.000990	<0.000998 0.000998
Ethylbenzene		<0.00101 0.00101	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100	<0.000990 0.000990	<0.000998 0.000998
m,p-Xylenes		<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
o-Xylene		<0.00101 0.00101	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100	<0.000990 0.000990	<0.000998 0.000998
Total Xylenes		<0.00101 0.00101	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100	<0.000990 0.000990	<0.000998 0.000998
Total BTEX		<0.00101 0.00101	<0.00100 0.00100	<0.000990 0.000990	0.00424 0.00100	<0.000990 0.000990	<0.000998 0.000998
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-12-16 18:45	Dec-12-16 18:45	Dec-12-16 18:45	Dec-12-16 17:25	Dec-12-16 17:25	Dec-12-16 17:25
	Analyzed:	Dec-13-16 00:44	Dec-13-16 00:51	Dec-13-16 00:58	Dec-12-16 17:59	Dec-12-16 18:21	Dec-12-16 18:42
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		7400 100	2830 25.0	96.1 5.00	14.8 5.00	2700 25.0	123 5.00
TPH By SW8015 Mod	Extracted:	Dec-09-16 14:00	Dec-09-16 14:00	Dec-09-16 14:00	Dec-09-16 14:00	Dec-09-16 14:00	Dec-09-16 14:00
	Analyzed:	Dec-09-16 22:49	Dec-10-16 00:06	Dec-10-16 00:32	Dec-10-16 00:55	Dec-12-16 12:04	Dec-10-16 01:47
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	18.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	99.5 15.0	23.3 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	118 15.0	23.3 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 541513

KJE Environmental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal NM

Date Received in Lab: Wed Dec-07-16 09:55 am

Report Date: 04-JAN-17

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	541513-037	541513-038	541513-039	541513-040	541513-041	541513-042
	<i>Field Id:</i>	(1) SB6 4-6	(1) SB6 6-8	(1) SB6 8-10	(1) SB6 10-12	(1) SB6 12-14	(1) SB6 12-14 SPLIT
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-06-16 00:00	Dec-06-16 00:00	Dec-06-16 00:00	Dec-06-16 00:00	Dec-06-16 11:30	Dec-06-16 14:30
BTEX by SW 8260B SUB: TX104704215	<i>Extracted:</i>	Dec-09-16 13:24	Dec-12-16 11:30	Dec-09-16 12:04	Dec-09-16 14:11	Dec-09-16 14:10	Dec-09-16 14:12
	<i>Analyzed:</i>	Dec-09-16 14:42	Dec-12-16 11:52	Dec-09-16 14:10	Dec-09-16 14:46	Dec-09-16 14:28	Dec-09-16 15:05
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000994 0.000994	<0.000992 0.000992	<0.000998 0.000998	<0.000998 0.000998	<0.000994 0.000994	<0.000990 0.000990
Toluene		<0.000994 0.000994	<0.000992 0.000992	<0.000998 0.000998	<0.000998 0.000998	<0.000994 0.000994	<0.000990 0.000990
Ethylbenzene		<0.000994 0.000994	<0.000992 0.000992	<0.000998 0.000998	<0.000998 0.000998	<0.000994 0.000994	<0.000990 0.000990
m,p-Xylenes		<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198
o-Xylene		<0.000994 0.000994	<0.000992 0.000992	<0.000998 0.000998	<0.000998 0.000998	<0.000994 0.000994	<0.000990 0.000990
Total Xylenes		<0.000994 0.000994	<0.000992 0.000992	<0.000998 0.000998	<0.000998 0.000998	<0.000994 0.000994	<0.000990 0.000990
Total BTEX		<0.000994 0.000994	<0.000992 0.000992	<0.000998 0.000998	<0.000998 0.000998	<0.000994 0.000994	<0.000990 0.000990
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Dec-12-16 17:25	Dec-12-16 17:25	Dec-12-16 17:25	Dec-12-16 17:25	Dec-12-16 17:25	Dec-12-16 17:25
	<i>Analyzed:</i>	Dec-12-16 18:58	Dec-12-16 19:05	Dec-12-16 19:12	Dec-12-16 19:19	Dec-12-16 19:26	Dec-12-16 19:33
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		6.28 5.00	4640 25.0	1070 5.00	1160 5.00	156 5.00	62.6 5.00
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-09-16 14:00	Dec-09-16 14:00	Dec-09-16 14:00	Dec-09-16 14:00	Dec-09-16 14:00	Dec-09-16 14:00
	<i>Analyzed:</i>	Dec-10-16 02:11	Dec-10-16 02:35	Dec-10-16 03:02	Dec-10-16 03:26	Dec-10-16 04:13	Dec-10-16 04:38
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager

- 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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(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(432) 563-1800	(432) 563-1713
(602) 437-0330	



Form 2 - Surrogate Recoveries

Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541513, 541513

Lab Batch #: 3005212

Sample: 541513-001 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/16 20:07

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.0	99.8	90	70-135	
o-Terphenyl	49.5	49.9	99	70-135	

Lab Batch #: 3005212

Sample: 541513-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/16 21:24

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.8	99.7	87	70-135	
o-Terphenyl	45.8	49.9	92	70-135	

Lab Batch #: 3005212

Sample: 541513-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/16 21:47

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.8	99.7	86	70-135	
o-Terphenyl	43.9	49.9	88	70-135	

Lab Batch #: 3005212

Sample: 541513-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/16 22:13

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.5	99.7	86	70-135	
o-Terphenyl	44.0	49.9	88	70-135	

Lab Batch #: 3005212

Sample: 541513-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/16 22:36

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.6	99.9	89	70-135	
o-Terphenyl	46.7	50.0	93	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541513, 541513

Lab Batch #: 3005212

Sample: 541513-006 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/16 23:02

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.9	99.8	84	70-135	
o-Terphenyl	44.5	49.9	89	70-135	

Lab Batch #: 3005212

Sample: 541513-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/16 23:26

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.6	99.9	86	70-135	
o-Terphenyl	45.3	50.0	91	70-135	

Lab Batch #: 3005212

Sample: 541513-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/16 23:52

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.8	100	83	70-135	
o-Terphenyl	44.1	50.0	88	70-135	

Lab Batch #: 3005212

Sample: 541513-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/16 00:15

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.3	99.8	86	70-135	
o-Terphenyl	45.6	49.9	91	70-135	

Lab Batch #: 3005212

Sample: 541513-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/16 00:41

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.8	99.7	85	70-135	
o-Terphenyl	44.9	49.9	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541513, 541513

Lab Batch #: 3005267

Sample: 541513-004 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/16 13:55

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0409	0.0500	82	74-126	
1,2-Dichloroethane-D4	0.0425	0.0500	85	80-120	
Toluene-D8	0.0478	0.0500	96	73-132	

Lab Batch #: 3005267

Sample: 541513-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/16 14:10

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0489	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0515	0.0500	103	80-120	
Toluene-D8	0.0464	0.0500	93	73-132	

Lab Batch #: 3005267

Sample: 541513-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/16 14:25

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0568	0.0500	114	74-126	
1,2-Dichloroethane-D4	0.0525	0.0500	105	80-120	
Toluene-D8	0.0502	0.0500	100	73-132	

Lab Batch #: 3005267

Sample: 541513-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/16 14:41

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0499	0.0500	100	74-126	
1,2-Dichloroethane-D4	0.0547	0.0500	109	80-120	
Toluene-D8	0.0491	0.0500	98	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541513, 541513

Lab Batch #: 3005267

Sample: 541513-003 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/16 14:56

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0572	0.0500	114	74-126	
1,2-Dichloroethane-D4	0.0476	0.0500	95	80-120	
Toluene-D8	0.0463	0.0500	93	73-132	

Lab Batch #: 3005267

Sample: 541513-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/16 15:12

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0416	0.0500	83	74-126	
1,2-Dichloroethane-D4	0.0409	0.0500	82	80-120	
Toluene-D8	0.0467	0.0500	93	73-132	

Lab Batch #: 3005267

Sample: 541513-005 / DL

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/16 15:46

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0392	0.0500	78	74-126	
1,2-Dichloroethane-D4	0.0431	0.0500	86	80-120	
Toluene-D8	0.0501	0.0500	100	73-132	

Lab Batch #: 3005267

Sample: 541513-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/16 17:00

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	0.0474	0.0500	95	80-120	
Toluene-D8	0.0478	0.0500	96	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541513, 541513

Lab Batch #: 3005267

Sample: 541513-006 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/16 17:16

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	0.0478	0.0500	96	80-120	
Toluene-D8	0.0484	0.0500	97	73-132	

Lab Batch #: 3005267

Sample: 541513-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/16 17:43

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0492	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0545	0.0500	109	80-120	
Toluene-D8	0.0471	0.0500	94	73-132	

Lab Batch #: 3005267

Sample: 541513-026 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/16 17:58

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0454	0.0500	91	74-126	
1,2-Dichloroethane-D4	0.0439	0.0500	88	80-120	
Toluene-D8	0.0481	0.0500	96	73-132	

Lab Batch #: 3005267

Sample: 541513-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/16 18:13

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0471	0.0500	94	74-126	
1,2-Dichloroethane-D4	0.0453	0.0500	91	80-120	
Toluene-D8	0.0463	0.0500	93	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541513, 541513

Lab Batch #: 3005267

Sample: 541513-012 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/16 18:28

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0490	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0434	0.0500	87	80-120	
Toluene-D8	0.0476	0.0500	95	73-132	

Lab Batch #: 3005267

Sample: 541513-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/16 18:43

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0527	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0517	0.0500	103	80-120	
Toluene-D8	0.0451	0.0500	90	73-132	

Lab Batch #: 3005267

Sample: 541513-022 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/16 18:59

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	0.0453	0.0500	91	80-120	
Toluene-D8	0.0519	0.0500	104	73-132	

Lab Batch #: 3005267

Sample: 541513-025 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/16 19:14

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0593	0.0500	119	74-126	
1,2-Dichloroethane-D4	0.0549	0.0500	110	80-120	
Toluene-D8	0.0465	0.0500	93	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541513, 541513

Lab Batch #: 3005267

Sample: 541513-024 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/16 19:29

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0460	0.0500	92	74-126	
1,2-Dichloroethane-D4	0.0415	0.0500	83	80-120	
Toluene-D8	0.0539	0.0500	108	73-132	

Lab Batch #: 3005267

Sample: 541513-023 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/16 19:45

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0446	0.0500	89	74-126	
1,2-Dichloroethane-D4	0.0417	0.0500	83	80-120	
Toluene-D8	0.0508	0.0500	102	73-132	

Lab Batch #: 3005432

Sample: 541513-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 00:08

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	87.4	99.8	88	70-135	
o-Terphenyl	45.3	49.9	91	70-135	

Lab Batch #: 3005432

Sample: 541513-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 00:29

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	85.8	99.8	86	70-135	
o-Terphenyl	41.8	49.9	84	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541513, 541513

Lab Batch #: 3005432

Sample: 541513-013 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 00:50

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	90.0	99.9	90	70-135	
o-Terphenyl	45.2	50.0	90	70-135	

Lab Batch #: 3005432

Sample: 541513-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 01:11

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	102	99.7	102	70-135	
o-Terphenyl	45.9	49.9	92	70-135	

Lab Batch #: 3005432

Sample: 541513-018 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 02:38

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	96.9	100	97	70-135	
o-Terphenyl	40.7	50.0	81	70-135	

Lab Batch #: 3005432

Sample: 541513-019 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 02:59

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	88.6	99.9	89	70-135	
o-Terphenyl	36.3	50.0	73	70-135	

Lab Batch #: 3005432

Sample: 541513-020 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 03:21

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	96.4	99.9	96	70-135	
o-Terphenyl	46.0	50.0	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541513, 541513

Lab Batch #: 3005432

Sample: 541513-021 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 04:08

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.5	99.7	90	70-135	
o-Terphenyl	38.5	49.9	77	70-135	

Lab Batch #: 3005432

Sample: 541513-022 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 05:14

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.5	99.8	94	70-135	
o-Terphenyl	47.7	49.9	96	70-135	

Lab Batch #: 3005432

Sample: 541513-023 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 05:35

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.8	99.8	87	70-135	
o-Terphenyl	40.8	49.9	82	70-135	

Lab Batch #: 3005432

Sample: 541513-024 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 05:57

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.5	100	91	70-135	
o-Terphenyl	42.7	50.0	85	70-135	

Lab Batch #: 3005432

Sample: 541513-025 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 06:19

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.3	99.7	79	70-135	
o-Terphenyl	35.1	49.9	70	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541513, 541513

Lab Batch #: 3005432

Sample: 541513-026 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 06:40

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.4	99.9	85	70-135	
o-Terphenyl	39.8	50.0	80	70-135	

Lab Batch #: 3005432

Sample: 541513-027 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 07:02

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.7	99.8	84	70-135	
o-Terphenyl	38.3	49.9	77	70-135	

Lab Batch #: 3005432

Sample: 541513-028 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 08:18

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.5	99.9	84	70-135	
o-Terphenyl	37.0	50.0	74	70-135	

Lab Batch #: 3005432

Sample: 541513-029 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 08:41

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.4	99.9	88	70-135	
o-Terphenyl	42.3	50.0	85	70-135	

Lab Batch #: 3005432

Sample: 541513-030 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 09:03

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.5	99.8	90	70-135	
o-Terphenyl	43.7	49.9	88	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541513, 541513

Lab Batch #: 3005398

Sample: 541513-009 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 10:53

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0401	0.0500	80	74-126	
1,2-Dichloroethane-D4	0.0401	0.0500	80	80-120	
Toluene-D8	0.0505	0.0500	101	73-132	

Lab Batch #: 3005398

Sample: 541513-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 11:18

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0379	0.0500	76	74-126	
1,2-Dichloroethane-D4	0.0437	0.0500	87	80-120	
Toluene-D8	0.0528	0.0500	106	73-132	

Lab Batch #: 3005398

Sample: 541513-021 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 11:34

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0484	0.0500	97	74-126	
1,2-Dichloroethane-D4	0.0459	0.0500	92	80-120	
Toluene-D8	0.0502	0.0500	100	73-132	

Lab Batch #: 3005398

Sample: 541513-018 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 11:49

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0512	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0444	0.0500	89	80-120	
Toluene-D8	0.0493	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541513, 541513

Lab Batch #: 3005398

Sample: 541513-015 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 12:12

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0425	0.0500	85	74-126	
1,2-Dichloroethane-D4	0.0420	0.0500	84	80-120	
Toluene-D8	0.0503	0.0500	101	73-132	

Lab Batch #: 3005398

Sample: 541513-016 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 12:27

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0522	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0490	0.0500	98	80-120	
Toluene-D8	0.0500	0.0500	100	73-132	

Lab Batch #: 3005502

Sample: 541513-032 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 12:41

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0510	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0589	0.0500	118	80-120	
Toluene-D8	0.0543	0.0500	109	73-132	

Lab Batch #: 3005398

Sample: 541513-020 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 12:43

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0502	0.0500	100	74-126	
1,2-Dichloroethane-D4	0.0431	0.0500	86	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541513, 541513

Lab Batch #: 3005398

Sample: 541513-019 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 12:58

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0527	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0440	0.0500	88	80-120	
Toluene-D8	0.0538	0.0500	108	73-132	

Lab Batch #: 3005502

Sample: 541513-033 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 12:59

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0511	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0581	0.0500	116	80-120	
Toluene-D8	0.0628	0.0500	126	73-132	

Lab Batch #: 3005398

Sample: 541513-017 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 13:14

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0458	0.0500	92	74-126	
1,2-Dichloroethane-D4	0.0398	0.0500	80	80-120	
Toluene-D8	0.0517	0.0500	103	73-132	

Lab Batch #: 3005502

Sample: 541513-034 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 13:18

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0475	0.0500	95	74-126	
1,2-Dichloroethane-D4	0.0544	0.0500	109	80-120	
Toluene-D8	0.0532	0.0500	106	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541513, 541513

Lab Batch #: 3005502

Sample: 541513-036 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 13:51

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0539	0.0500	108	74-126	
1,2-Dichloroethane-D4	0.0487	0.0500	97	80-120	
Toluene-D8	0.0543	0.0500	109	73-132	

Lab Batch #: 3005502

Sample: 541513-039 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 14:10

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0526	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0571	0.0500	114	80-120	
Toluene-D8	0.0492	0.0500	98	73-132	

Lab Batch #: 3005502

Sample: 541513-041 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 14:28

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0502	0.0500	100	74-126	
1,2-Dichloroethane-D4	0.0576	0.0500	115	80-120	
Toluene-D8	0.0520	0.0500	104	73-132	

Lab Batch #: 3005398

Sample: 541513-037 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 14:42

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0573	0.0500	115	74-126	
1,2-Dichloroethane-D4	0.0495	0.0500	99	80-120	
Toluene-D8	0.0488	0.0500	98	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541513, 541513

Lab Batch #: 3005502

Sample: 541513-040 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 14:46

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0515	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0509	0.0500	102	80-120	
Toluene-D8	0.0594	0.0500	119	73-132	

Lab Batch #: 3005502

Sample: 541513-042 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 15:05

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0505	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0533	0.0500	107	80-120	
Toluene-D8	0.0482	0.0500	96	73-132	

Lab Batch #: 3005398

Sample: 541513-030 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 16:31

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0628	0.0500	126	74-126	
1,2-Dichloroethane-D4	0.0549	0.0500	110	80-120	
Toluene-D8	0.0490	0.0500	98	73-132	

Lab Batch #: 3005398

Sample: 541513-035 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 16:47

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0489	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0485	0.0500	97	80-120	
Toluene-D8	0.0502	0.0500	100	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541513, 541513

Lab Batch #: 3005398

Sample: 541513-029 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 17:25

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0487	0.0500	97	74-126	
1,2-Dichloroethane-D4	0.0443	0.0500	89	80-120	
Toluene-D8	0.0557	0.0500	111	73-132	

Lab Batch #: 3005432

Sample: 541513-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 20:19

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	103	99.8	103	70-135	
o-Terphenyl	58.8	49.9	118	70-135	

Lab Batch #: 3005432

Sample: 541513-016 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 20:42

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	87.0	99.7	87	70-135	
o-Terphenyl	40.7	49.9	82	70-135	

Lab Batch #: 3005502

Sample: 541513-027 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 20:51

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0512	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0483	0.0500	97	80-120	
Toluene-D8	0.0497	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541513, 541513

Lab Batch #: 3005432

Sample: 541513-017 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 21:03

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.0	99.7	98	70-135	
o-Terphenyl	50.7	49.9	102	70-135	

Lab Batch #: 3005417

Sample: 541513-031 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 22:49

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.1	99.9	83	70-135	
o-Terphenyl	44.5	50.0	89	70-135	

Lab Batch #: 3005417

Sample: 541513-032 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/10/16 00:06

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.5	99.7	88	70-135	
o-Terphenyl	46.7	49.9	94	70-135	

Lab Batch #: 3005417

Sample: 541513-033 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/10/16 00:32

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.3	99.7	85	70-135	
o-Terphenyl	44.6	49.9	89	70-135	

Lab Batch #: 3005417

Sample: 541513-034 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/10/16 00:55

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.5	99.8	94	70-135	
o-Terphenyl	49.3	49.9	99	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541513, 541513

Lab Batch #: 3005417

Sample: 541513-036 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/10/16 01:47

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	72.0	99.9	72	70-135	
o-Terphenyl	38.1	50.0	76	70-135	

Lab Batch #: 3005417

Sample: 541513-037 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/10/16 02:11

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.0	99.8	84	70-135	
o-Terphenyl	44.5	49.9	89	70-135	

Lab Batch #: 3005417

Sample: 541513-038 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/10/16 02:35

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.6	99.8	83	70-135	
o-Terphenyl	43.4	49.9	87	70-135	

Lab Batch #: 3005417

Sample: 541513-039 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/10/16 03:02

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	74.2	99.8	74	70-135	
o-Terphenyl	39.9	49.9	80	70-135	

Lab Batch #: 3005417

Sample: 541513-040 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/10/16 03:26

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.9	100	95	70-135	
o-Terphenyl	50.8	50.0	102	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541513, 541513

Lab Batch #: 3005417

Sample: 541513-041 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/10/16 04:13

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.9	99.7	81	70-135	
o-Terphenyl	43.1	49.9	86	70-135	

Lab Batch #: 3005417

Sample: 541513-042 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/10/16 04:38

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.2	99.9	80	70-135	
o-Terphenyl	42.4	50.0	85	70-135	

Lab Batch #: 3005553

Sample: 541513-038 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/12/16 11:52

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0568	0.0500	114	74-126	
1,2-Dichloroethane-D4	0.0531	0.0500	106	80-120	
Toluene-D8	0.0490	0.0500	98	73-132	

Lab Batch #: 3005417

Sample: 541513-035 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/12/16 12:04

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	99.7	112	70-135	
o-Terphenyl	60.7	49.9	122	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541513, 541513

Lab Batch #: 3005553

Sample: 541513-031 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/12/16 12:08

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0451	0.0500	90	74-126	
1,2-Dichloroethane-D4	0.0432	0.0500	86	80-120	
Toluene-D8	0.0482	0.0500	96	73-132	

Lab Batch #: 3005553

Sample: 541513-028 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/12/16 15:19

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0491	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0408	0.0500	82	80-120	
Toluene-D8	0.0523	0.0500	105	73-132	

Lab Batch #: 3005212

Sample: 716970-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/16 18:54

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	96.7	100	97	70-135	
o-Terphenyl	53.1	50.0	106	70-135	

Lab Batch #: 3005267

Sample: 717002-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/08/16 10:56

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0526	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0508	0.0500	102	80-120	
Toluene-D8	0.0471	0.0500	94	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541513, 541513

Lab Batch #: 3005432

Sample: 717099-1-BLK / BLK

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/08/16 23:03

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	100	112	70-135	
o-Terphenyl	58.2	50.0	116	70-135	

Lab Batch #: 3005398

Sample: 717087-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/09/16 09:48

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0554	0.0500	111	74-126	
1,2-Dichloroethane-D4	0.0538	0.0500	108	80-120	
Toluene-D8	0.0481	0.0500	96	73-132	

Lab Batch #: 3005502

Sample: 717151-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/09/16 12:03

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0460	0.0500	92	74-126	
1,2-Dichloroethane-D4	0.0498	0.0500	100	80-120	
Toluene-D8	0.0446	0.0500	89	73-132	

Lab Batch #: 3005417

Sample: 717101-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/09/16 21:36

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.3	100	86	70-135	
o-Terphenyl	47.4	50.0	95	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541513, 541513

Project ID:

Lab Batch #: 3005553

Sample: 717188-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/12/16 11:19

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0488	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0436	0.0500	87	80-120	
Toluene-D8	0.0463	0.0500	93	73-132	

Lab Batch #: 3005212

Sample: 716970-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/08/16 08:53

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	100	107	70-135	
o-Terphenyl	53.3	50.0	107	70-135	

Lab Batch #: 3005267

Sample: 717002-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/08/16 09:42

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0489	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0556	0.0500	111	80-120	
Toluene-D8	0.0498	0.0500	100	73-132	

Lab Batch #: 3005432

Sample: 717099-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/08/16 23:24

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	100	109	70-135	
o-Terphenyl	57.0	50.0	114	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541513, 541513

Lab Batch #: 3005398

Sample: 717087-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/09/16 08:34

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0566	0.0500	113	74-126	
1,2-Dichloroethane-D4	0.0572	0.0500	114	80-120	
Toluene-D8	0.0493	0.0500	99	73-132	

Lab Batch #: 3005502

Sample: 717151-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/09/16 11:01

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0486	0.0500	97	74-126	
1,2-Dichloroethane-D4	0.0473	0.0500	95	80-120	
Toluene-D8	0.0506	0.0500	101	73-132	

Lab Batch #: 3005417

Sample: 717101-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/09/16 22:01

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	51.5	50.0	103	70-135	

Lab Batch #: 3005553

Sample: 717188-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/12/16 10:08

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0516	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0592	0.0500	118	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541513, 541513

Lab Batch #: 3005212

Sample: 716970-1-BSD / BSD

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/16 19:44

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	100	106	70-135	
o-Terphenyl	49.9	50.0	100	70-135	

Lab Batch #: 3005267

Sample: 717002-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/08/16 09:57

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0430	0.0500	86	74-126	
1,2-Dichloroethane-D4	0.0459	0.0500	92	80-120	
Toluene-D8	0.0504	0.0500	101	73-132	

Lab Batch #: 3005432

Sample: 717099-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/08/16 23:47

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	100	106	70-135	
o-Terphenyl	56.3	50.0	113	70-135	

Lab Batch #: 3005398

Sample: 717087-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/09/16 08:50

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0490	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0451	0.0500	90	80-120	
Toluene-D8	0.0500	0.0500	100	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541513, 541513

Project ID:

Lab Batch #: 3005502

Sample: 717151-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/09/16 10:43

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0468	0.0500	94	74-126	
1,2-Dichloroethane-D4	0.0504	0.0500	101	80-120	
Toluene-D8	0.0528	0.0500	106	73-132	

Lab Batch #: 3005417

Sample: 717101-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/09/16 22:25

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	100	105	70-135	
o-Terphenyl	51.2	50.0	102	70-135	

Lab Batch #: 3005553

Sample: 717188-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/12/16 10:24

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0561	0.0500	112	74-126	
1,2-Dichloroethane-D4	0.0547	0.0500	109	80-120	
Toluene-D8	0.0490	0.0500	98	73-132	

Lab Batch #: 3005212

Sample: 541513-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/16 20:33

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	99.9	110	70-135	
o-Terphenyl	50.4	50.0	101	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541513, 541513

Lab Batch #: 3005267

Sample: 541478-002 S / MS

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/16 12:55

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0435	0.0500	87	74-126	
1,2-Dichloroethane-D4	0.0498	0.0500	100	80-120	
Toluene-D8	0.0522	0.0500	104	73-132	

Lab Batch #: 3005398

Sample: 541513-037 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 13:37

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	0.0587	0.0500	117	80-120	
Toluene-D8	0.0529	0.0500	106	73-132	

Lab Batch #: 3005502

Sample: 541513-032 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 15:24

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0480	0.0500	96	74-126	
1,2-Dichloroethane-D4	0.0468	0.0500	94	80-120	
Toluene-D8	0.0582	0.0500	116	73-132	

Lab Batch #: 3005432

Sample: 541513-030 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 21:24

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	99.7	108	70-135	
o-Terphenyl	42.7	49.9	86	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541513, 541513

Lab Batch #: 3005417

Sample: 541513-031 S / MS

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 23:15

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.6	100	93	70-135	
o-Terphenyl	45.0	50.0	90	70-135	

Lab Batch #: 3005553

Sample: 541817-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/12/16 15:47

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0468	0.0500	94	74-126	
1,2-Dichloroethane-D4	0.0431	0.0500	86	80-120	
Toluene-D8	0.0522	0.0500	104	73-132	

Lab Batch #: 3005212

Sample: 541513-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/16 20:57

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.4	99.8	100	70-135	
o-Terphenyl	45.2	49.9	91	70-135	

Lab Batch #: 3005267

Sample: 541478-002 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/16 13:10

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0430	0.0500	86	74-126	
1,2-Dichloroethane-D4	0.0480	0.0500	96	80-120	
Toluene-D8	0.0500	0.0500	100	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541513, 541513

Project ID:

Lab Batch #: 3005398

Sample: 541513-037 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 13:52

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0452	0.0500	90	74-126	
1,2-Dichloroethane-D4	0.0459	0.0500	92	80-120	
Toluene-D8	0.0517	0.0500	103	73-132	

Lab Batch #: 3005502

Sample: 541513-032 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 15:42

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0511	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0533	0.0500	107	80-120	
Toluene-D8	0.0583	0.0500	117	73-132	

Lab Batch #: 3005432

Sample: 541513-030 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 21:47

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	101	99.8	101	70-135	
o-Terphenyl	43.9	49.9	88	70-135	

Lab Batch #: 3005417

Sample: 541513-031 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/16 23:39

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	50.5	50.0	101	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541513, 541513

Lab Batch #: 3005553

Sample: 541817-001 SD / MSD

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/12/16 16:03

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0485	0.0500	97	74-126	
1,2-Dichloroethane-D4	0.0536	0.0500	107	80-120	
Toluene-D8	0.0496	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.



BS / BSD Recoveries



Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 541513, 541513

Project ID:

Analyst: JTR

Date Prepared: 12/08/2016

Date Analyzed: 12/08/2016

Lab Batch ID: 3005267

Sample: 717002-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.102	102	0.100	0.107	107	5	62-132	25	
Toluene	<0.00100	0.100	0.100	100	0.100	0.106	106	6	66-124	25	
Ethylbenzene	<0.00100	0.100	0.102	102	0.100	0.111	111	8	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.211	106	0.200	0.225	113	6	69-128	25	
o-Xylene	<0.00100	0.100	0.109	109	0.100	0.116	116	6	72-131	25	

Analyst: JTR

Date Prepared: 12/09/2016

Date Analyzed: 12/09/2016

Lab Batch ID: 3005398

Sample: 717087-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.0992	99	0.100	0.101	101	2	62-132	25	
Toluene	<0.00100	0.100	0.0944	94	0.100	0.100	100	6	66-124	25	
Ethylbenzene	<0.00100	0.100	0.0984	98	0.100	0.0994	99	1	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.202	101	0.200	0.203	102	0	69-128	25	
o-Xylene	<0.00100	0.100	0.104	104	0.100	0.102	102	2	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: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 541513, 541513

Project ID:

Analyst: JTR

Date Prepared: 12/09/2016

Date Analyzed: 12/09/2016

Lab Batch ID: 3005502

Sample: 717151-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.0981	98	0.100	0.112	112	13	62-132	25	
Toluene	<0.00100	0.100	0.104	104	0.100	0.114	114	9	66-124	25	
Ethylbenzene	<0.00100	0.100	0.0972	97	0.100	0.114	114	16	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.199	100	0.200	0.233	117	16	69-128	25	
o-Xylene	<0.00100	0.100	0.0931	93	0.100	0.114	114	20	72-131	25	

Analyst: JTR

Date Prepared: 12/12/2016

Date Analyzed: 12/12/2016

Lab Batch ID: 3005553

Sample: 717188-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.0922	92	0.100	0.0931	93	1	62-132	25	
Toluene	<0.00100	0.100	0.0904	90	0.100	0.0917	92	1	66-124	25	
Ethylbenzene	<0.00100	0.100	0.0912	91	0.100	0.0936	94	3	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.184	92	0.200	0.193	97	5	69-128	25	
o-Xylene	<0.00100	0.100	0.0960	96	0.100	0.101	101	5	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: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 541513, 541513

Project ID:

Analyst: SLU

Date Prepared: 12/07/2016

Date Analyzed: 12/07/2016

Lab Batch ID: 3005174

Sample: 716946-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	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
Analytes											
Chloride	<5.00	250	232	93	250	232	93	0	90-110	20	

Analyst: SLU

Date Prepared: 12/08/2016

Date Analyzed: 12/08/2016

Lab Batch ID: 3005343

Sample: 717025-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	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
Analytes											
Chloride	<5.00	250	250	100	250	254	102	2	90-110	20	

Analyst: SLU

Date Prepared: 12/12/2016

Date Analyzed: 12/12/2016

Lab Batch ID: 3005469

Sample: 717126-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	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
Analytes											
Chloride	<5.00	250	258	103	250	262	105	2	90-110	20	

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

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries



Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 541513, 541513

Analyst: SLU

Date Prepared: 12/12/2016

Project ID:

Date Analyzed: 12/12/2016

Lab Batch ID: 3005505

Sample: 717152-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	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
Analytes											
Chloride	5.37	250	260	104	250	254	102	2	90-110	20	

Analyst: ARM

Date Prepared: 12/07/2016

Date Analyzed: 12/08/2016

Lab Batch ID: 3005212

Sample: 716970-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	839	84	1000	829	83	1	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	867	87	1000	832	83	4	70-135	35	

Analyst: ARM

Date Prepared: 12/08/2016

Date Analyzed: 12/08/2016

Lab Batch ID: 3005432

Sample: 717099-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	902	90	1000	950	95	5	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	1130	113	1000	1130	113	0	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



BS / BSD Recoveries



Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 541513, 541513

Project ID:

Analyst: ARM

Date Prepared: 12/09/2016

Date Analyzed: 12/09/2016

Lab Batch ID: 3005417

Sample: 717101-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	852	85	1000	816	82	4	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	843	84	1000	813	81	4	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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 541513

Project ID:

Lab Batch ID: 3005267

QC- Sample ID: 541478-002 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/08/2016

Date Prepared: 12/08/2016

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	<0.0323	3.23	3.46	107	3.23	3.63	112	5	62-132	25	
Toluene	0.342	3.23	3.96	112	3.23	3.99	113	1	66-124	25	
Ethylbenzene	0.285	3.23	4.00	115	3.23	4.37	126	9	71-134	25	
m,p-Xylenes	2.19	6.47	10.2	124	6.47	11.3	141	10	69-128	25	X
o-Xylene	1.03	3.23	5.36	134	3.23	6.20	160	15	72-131	25	X

Lab Batch ID: 3005398

QC- Sample ID: 541513-037 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/09/2016

Date Prepared: 12/09/2016

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	0.0964	97	0.100	0.0998	100	3	62-132	25	
Toluene	<0.000998	0.0998	0.0989	99	0.100	0.0971	97	2	66-124	25	
Ethylbenzene	<0.000998	0.0998	0.0950	95	0.100	0.0951	95	0	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.199	100	0.200	0.194	97	3	69-128	25	
o-Xylene	<0.000998	0.0998	0.0980	98	0.100	0.0992	99	1	72-131	25	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 541513

Project ID:

Lab Batch ID: 3005502

QC- Sample ID: 541513-032 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/09/2016

Date Prepared: 12/09/2016

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	0.0921	92	0.0994	0.105	106	13	62-132	25	
Toluene	<0.000998	0.0998	0.113	113	0.0994	0.112	113	1	66-124	25	
Ethylbenzene	<0.000998	0.0998	0.0992	99	0.0994	0.101	102	2	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.203	102	0.199	0.206	104	1	69-128	25	
o-Xylene	<0.000998	0.0998	0.104	104	0.0994	0.108	109	4	72-131	25	

Lab Batch ID: 3005553

QC- Sample ID: 541817-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/12/2016

Date Prepared: 12/12/2016

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	<0.00104	0.104	0.0860	83	0.104	0.0858	83	0	62-132	25	
Toluene	<0.00104	0.104	0.0900	87	0.104	0.0889	85	1	66-124	25	
Ethylbenzene	<0.00104	0.104	0.0910	88	0.104	0.0932	90	2	71-134	25	
m,p-Xylenes	<0.00208	0.208	0.184	88	0.208	0.192	92	4	69-128	25	
o-Xylene	<0.00104	0.104	0.0940	90	0.104	0.101	97	7	72-131	25	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 541513

Project ID:

Lab Batch ID: 3005174

QC- Sample ID: 541536-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/07/2016

Date Prepared: 12/07/2016

Analyst: SLU

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	3510	1250	4600	87	1250	4710	96	2	90-110	20	X

Lab Batch ID: 3005343

QC- Sample ID: 541480-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/08/2016

Date Prepared: 12/08/2016

Analyst: SLU

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	2800	1250	3700	72	1250	3670	70	1	90-110	20	X

Lab Batch ID: 3005343

QC- Sample ID: 541569-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/12/2016

Date Prepared: 12/09/2016

Analyst: SLU

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	878	250	1040	65	250	1020	57	2	90-110	20	X

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 541513

Project ID:

Lab Batch ID: 3005469

QC- Sample ID: 541513-034 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/12/2016

Date Prepared: 12/12/2016

Analyst: SLU

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	14.8	250	268	101	250	256	96	5	90-110	20	

Lab Batch ID: 3005469

QC- Sample ID: 541522-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/12/2016

Date Prepared: 12/12/2016

Analyst: SLU

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	735	765	1460	95	765	1530	104	5	90-110	20	

Lab Batch ID: 3005505

QC- Sample ID: 541513-014 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/12/2016

Date Prepared: 12/12/2016

Analyst: SLU

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	3000	1250	4100	88	1250	4110	89	0	90-110	20	X

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 541513

Project ID:

Lab Batch ID: 3005505

QC- Sample ID: 541513-025 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/12/2016

Date Prepared: 12/12/2016

Analyst: SLU

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	114	250	349	94	250	353	96	1	90-110	20	

Lab Batch ID: 3005212

QC- Sample ID: 541513-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/07/2016

Date Prepared: 12/07/2016

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	999	977	98	998	877	88	11	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	999	990	99	998	869	87	13	70-135	35	

Lab Batch ID: 3005417

QC- Sample ID: 541513-031 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/09/2016

Date Prepared: 12/09/2016

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	827	83	1000	855	86	3	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	832	83	1000	868	87	4	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.



Form 3 - MS / MSD Recoveries



Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 541513

Project ID:

Lab Batch ID: 3005432

QC- Sample ID: 541513-030 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/09/2016

Date Prepared: 12/08/2016

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	997	840	84	998	923	92	9	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	997	938	94	998	995	100	6	70-135	35	

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

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

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.



XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: KJE Enviromental & Civil Engineering

Date/ Time Received: 12/07/2016 09:55:08 AM

Work Order #: 541513

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	.3
#2 *Shipping container in good condition?	N/A
#3 *Samples received on ice?	Yes
#4 *Custody Seal present on shipping container/ cooler?	N/A
#5 *Custody Seals intact on shipping container/ cooler?	N/A
#6 Custody Seals intact on sample bottles?	N/A
#7 *Custody Seals Signed and dated?	N/A
#8 *Chain of Custody present?	Yes
#9 Sample instructions complete on Chain of Custody?	Yes
#10 Any missing/extra samples?	No
#11 Chain of Custody signed when relinquished/ received?	Yes
#12 Chain of Custody agrees with sample label(s)?	Yes
#13 Container label(s) legible and intact?	Yes
#14 Sample matrix/ properties agree with Chain of Custody?	Yes
#15 Samples in proper container/ bottle?	Yes
#16 Samples properly preserved?	Yes
#17 Sample container(s) intact?	Yes
#18 Sufficient sample amount for indicated test(s)?	Yes
#19 All samples received within hold time?	Yes
#20 Subcontract of sample(s)?	Yes Houston
#21 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#22 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	N/A
#23 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Jessica Kramer

Jessica Kramer

Date: 12/07/2016

Checklist reviewed by:

Irene Vann

Irene Vann

Date: 12/08/2016



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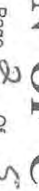
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Xenco Quote #

Xenco Job #

541513

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes						
Company Name / Branch: KLE Environmental & Civil Engineering Company Address: 500 Mosely Road, Cross Roads, Texas 76227 Email: james@kleviromental.com Phone No: (940)387-0805				Project Name/Number: OWL Bobcat/Red Hills Pipeline Release Project Location: Jal, NM Invoice To: OWL														
Project Contact: James Fox Sampler's Name				PO Number:														
No.	Field ID / Point of Collection	Sample Depth	Collection Date	Time	Matrix	# of bottles	HCI	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX	TPH	CHLORIDES	Field Comments
1	SB1 0-2		12/5	1430	S	2									X	X	X	
2	SB1 2-4														X	X	X	
3	SB1 4-6														X	X	X	
4	SB1 6-7														X	X	X	
5	SB2 0-2														X	X	X	
6	SB2 2-4														X	X	X	
7	SB2 4-6														X	X	X	
8	SB2 6-8														X	X	X	
9	SB3 0-2														X	X	X	
10	SB3 2-4														X	X	X	
Turnaround Time (Business days)																		
Data Deliverable Information																		
Notes:																		
Please have 1 day rush on samples: SB1 6-7, SB3 2-4 #4 #10																		
TAT Starts Day received by Lab, if received by 5:00 pm																		
FED-EX / UPS: Tracking #																		
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																		
Relinquished by Sampler: 1 James Fox - KLE Date Time: 12/7/16 Received By: 1 NEANOR 902 Relinquished By: 4 Date Time: Received By: 2																		
Relinquished by: 3 Date Time: Received By: 4 Date Time: Received By: 4																		
Relinquished by: 5 Date Time: Received By: 5 Date Time: Received By: 4																		
On file Cooler Temp. Thermo. Corr. Factor																		
Temp: IR ID: R-8																		
CF: + 0.1 0.2																		
Corrected Temp: 0.3																		



Tampa, Florida (813-620-2000)

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes						
Company Name / Branch: KJE Environmental & Civil Engineering				Project Name/Number: OWL Bobcat/Red Hills Pipeline Release														
Company Address: 500 Moseley Road, Cross Roads, Texas 76227				Project Location: Jal, NM														
Email: james@kjenvironmental.com Phone No: (940)387-4805				Invoice To:														
Project Contact: James Fox				PO Number:														
Samplers's Name																		
No.	Field ID / Point of Collection	Sample Depth	Collection Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX	TPH	CHLORIDES	Field Comments
1	S83 4-6		12/5	1540	S	2									X	X	X	
2	S83 6-8			1545	I										X	X	X	
3	S83 8-10			1550	I										X	X	X	
4	S84 0-2			1615	I										X	X	X	
5	S84 2-4			1620	I										X	X	X	
6	S84 4-6			1630	I										X	X	X	
7	S84 6-8			1640	I										X	X	X	
8	S84 8-10			1650	I										X	X	X	
9	S84 10-12			1700	I										X	X	X	
10	S84 14-16			1710	I										X	X	X	
Turnaround Time (Business days)				Data Deliverable Information				Notes:										
☐ Same Day TAT				☒ 5 Day TAT				☐ Level II Std QC				☐ Level IV (Full Data Pkg /raw data)						
☐ Next Day EMERGENCY				☐ 7 Day TAT				☐ Level III Std QC+ Forms				☐ TRRP Level IV						
☐ 2 Day EMERGENCY				☐ Contract TAT				☐ Level 3 (CLP Forms)				☐ UST / RG -411						
☐ 3 Day EMERGENCY								☐ TRRP Checklist										
TAT Starts Day received by Lab, if received by 5:00 pm																		
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																		
Relinquished by Sampler:				Date Time:				Received By:				Date Time:						
1 James Fox - KJE				12/7/16				JAMES FOX				2						
Relinquished by:				Date Time:				Received By:				Date Time:						
3				3				4				4						
Relinquished by:				Date Time:				Received By:				Date Time:						
5				5				Custody Seal #				Preserved where applicable						
												On Ice						
Temp: IR ID: R-8																		



CHAIN OF CUSTODY

Page 3 of 5

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Stafford, Texas (281-240-4200)

Dallas Texas (214-902-0300)

Service Center - San Antonio, Texas (210-509-3334)

www.xenco.com

Odessa, Texas (432-563-1800)

Norcross, Georgia (770-449-8800)

Lakeland, Florida (863-646-8526)
Tampa, Florida (813-620-2000)

Xenco Quote #

Xenco Job #

541613

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes							
Company Name / Branch: KJE Environmental & Civil Engineering				Project Name/Number: OWL Bobcat/Red Hills Pipeline Release															
Company Address: 500 Mosely Road, Cross Roads, Texas 76227				Project Location: Jal. NM															
Email: james@kjenvironmental.com Phone No: (940)387-0905				Invoice To:															
Project Contact: James Fox				PO Number:															
Sampler's Name																			
No.	Field ID / Point of Collection	Sample Depth	Collection Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MeOH	NONE	BTEX	TPH	CHLORIDES	Field Comments	
1	584 14-16 Split	12/5	12/5	1745	S	2									X	X	X		
2	584 16-18		12/5	1800											X	X	X		
3	584 18-20		12/6	0830															
4	584 20-22			0835															
5	584 22-24			0840															
6	584 24-26			0845															
7	585 0-2			0900															
8	585 2-4			0905															
9	585 4-6			0910															
10	585 6-8			0915															
Turnaround Time (Business days)				Data Deliverable Information				Notes:											
☐ Same Day TAT				☒ 5 Day TAT				☐ Level II Std QC				☐ Level IV (Full Data Pkg / raw data)							
☐ Next Day EMERGENCY				☐ 7 Day TAT				☐ Level III Std QC+ Forms				☐ TRRP Level IV							
☐ 2 Day EMERGENCY				☐ Contract TAT				☐ Level 3 (CLP Forms)				☐ UST / RG 411							
☐ 3 Day EMERGENCY								☐ TRRP Checklist											
TAT Starts Day received by Lab, if received by 5:00 pm																			
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																			
Relinquished by Sampler:				Date Time:				Received By:				Date Time:				Received By:			
1 James Fox - KJE				12/7/16				J. James				900							
Relinquished by:				Date Time:				Received By:				Date Time:				Received By:			
3								3				4							
Relinquished by:				Date Time:				Received By:				Date Time:				Received By:			
5								5				4							
Preserved where applicable				☐				On Ice ☒				Temp: IR ID: R-8				Thermo. Corr. Factor			
Corrected Temp:																			

Cutting the Standard since 1999

Stafford, Texas (281-240-4200)

Dallas Texas (214-902-0300)

Service Center - San Antonio, Texas (210-509-3334)

www.xenco.com

Odessa, Texas (432-563-1800)

Florida (863-646-8526)

Norcross, Georgia (770-449-8800)

Tampa, Florida (813-620-2000)

Xenco Quote #

Xenco Job #

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

541513

Client / Reporting Information						Project Information							Analytical Information								Matrix Codes				
Company Name / Branch: KJE Environmental & Civil Engineering Company Address: 500 Mosely Road, Cross Roads, Texas 76227 Email: james@kjeenvironmental.com Phone No: (940)387-0805 James Fox Samples Name						Project Name/Number: OWL Bobcat/Red Hills Pipeline Release Project Location: Jal. NM Invoice To: DUSL PO Number:																			
No.	Field ID / Point of Collection					Collection		Number of preserved bottles										Field Comments							
	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MeOH	NONE	BTEX	TPH	CHLORIDES									
1	SBS 8-10	12/6		S	2								X	X	X	X									
2	SBS 10-12																								
3	SBS 12-14																								
4	SBS 14-16																								
5	SBS 0-2																								
6	SBS 2-4																								
7	SBS 4-6																								
8	SBS 6-8																								
9	SBS 8-10																								
10	SBS 10-12																								
Turnaround Time (Business days)						Data Deliverable Information										Notes:									
☐ Same Day TAT						☒ 5 Day TAT						☐ Level II Std QC						☐ Level IV (Full Data Pkg /raw data)							
☐ Next Day EMERGENCY						☐ 7 Day TAT						☐ Level III Std QC+ Forms						☐ TRRP Level IV							
☐ 2 Day EMERGENCY						☐ Contract TAT						☐ Level 3 (CLP Forms)						☐ UST / RG -411							
☐ 3 Day EMERGENCY												☐ TRRP Checklist													
TAT Starts Day received by Lab, if received by 5:00 pm																		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:						Date Time:							
1 James Fox - KJE						12/7/16						Shirley Anne Goo						2							
Relinquished by:						Date Time:						Received By:						Date Time:							
3						3						4						4							
Relinquished by:						Date Time:						Received By:						Date Time:							
5						5						Custody Seal #						Preserved where applicable							
On Ice						Cooler Temp.						Thermo Corr. Factor													
Temp:						IR ID:R-8																			



CHAIN OF CUSTODY

Page 5 of 5

Setting the Standard since 1990
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Odessa, Texas (432-563-1800)
Norcross, Georgia (770-449-8800)
Lakeland, Florida (863-646-8526)
Tampa, Florida (813-620-2000)

Xenco Quote #

Xenco Job #

541513

Matrix Codes

Client / Reporting Information

Project Information

Project Name/Number:

OWL Bobcat/Red Hills Pipeline Release

Project Location:

Invoice To:

Jal. NM

Company Address:

500 Mosely Road, Cross Roads, Texas 76227

Phone No: (940)387-0905

Email: james@xencolaboratories.com

Project Contact:

James Fox

Samplers Name

PO Number:

1

Field ID / Point of Collection

Sample Depth

Date

Time

Matrix

of bottles

HCl

NaOH/Zn Acetate

HNO3

H2SO4

NaOH

NaHSO4

MEOH

NONE

Collection

Number of preserved bottles

BTEX (8260)

TPH

CHLORIDES

Field Comments

S = Soil/Sed/Solid

GW = Ground Water

DW = Drinking Water

P = Product

SL = Surface water

OW = Ocean/Sea Water

W = Wipe

O = Oil

WW = Waste Water

A = Air

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

Turnaround Time (Business days)

Same Day TAT

Next Day EMERGENCY

2 Day EMERGENCY

3 Day EMERGENCY

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

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2 Day EMERGENCY

3 Day EMERGENCY

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Turnaround Time (Business days)

Same Day TAT

Next Day EMERGENCY

2 Day EMERGENCY

3 Day EMERGENCY

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

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Turnaround Time (Business days)

Same Day TAT

Next Day EMERGENCY

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3 Day EMERGENCY

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Turnaround Time (Business days)

Same Day TAT

Next Day EMERGENCY

2 Day EMERGENCY

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

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Turnaround Time (Business days)

Same Day TAT

Next Day EMERGENCY

2 Day EMERGENCY

3 Day EMERGENCY

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

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Turnaround Time (Business days)

Same Day TAT

Next Day EMERGENCY

2 Day EMERGENCY

3 Day EMERGENCY

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

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Relinquished by:

Turnaround Time (Business days)

Same Day TAT

Next Day EMERGENCY

2 Day EMERGENCY

3 Day EMERGENCY

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

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Relinquished by:

Turnaround Time (Business days)

Same Day TAT

Next Day EMERGENCY

2 Day EMERGENCY

3 Day EMERGENCY

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

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Relinquished by:

Relinquished by:

Turnaround Time (Business days)

Same Day TAT

Next Day EMERGENCY

2 Day EMERGENCY

3 Day EMERGENCY

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

Relinquished by:

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Relinquished by:

Relinquished by:

Relinquished by:

Turnaround Time (Business days)

Same Day TAT

Next Day EMERGENCY

2 Day EMERGENCY

3 Day EMERGENCY

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

Relinquished by:

Relinquished by:

Relinquished by:



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: KJE Enviromental & Civil Engineering

Date/ Time Received: 12/07/2016 09:55:08 AM

Work Order #: 541513

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	.3
#2 *Shipping container in good condition?	N/A
#3 *Samples received on ice?	Yes
#4 *Custody Seal present on shipping container/ cooler?	N/A
#5 *Custody Seals intact on shipping container/ cooler?	N/A
#6 Custody Seals intact on sample bottles?	N/A
#7 *Custody Seals Signed and dated?	N/A
#8 *Chain of Custody present?	Yes
#9 Sample instructions complete on Chain of Custody?	Yes
#10 Any missing/extra samples?	No
#11 Chain of Custody signed when relinquished/ received?	Yes
#12 Chain of Custody agrees with sample label(s)?	Yes
#13 Container label(s) legible and intact?	Yes
#14 Sample matrix/ properties agree with Chain of Custody?	Yes
#15 Samples in proper container/ bottle?	Yes
#16 Samples properly preserved?	Yes
#17 Sample container(s) intact?	Yes
#18 Sufficient sample amount for indicated test(s)?	Yes
#19 All samples received within hold time?	Yes
#20 Subcontract of sample(s)?	Yes Houston
#21 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#22 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	N/A
#23 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Jessica Kramer

Jessica Kramer

Date: 12/07/2016

Checklist reviewed by:

Irene Vann

Irene Vann

Date: 12/08/2016

Analytical Report 541854
for
KJE Enviromental & Civil Engineering

Project Manager: James Fox
OWL Bobcat/Red Hills Pipeline Release

04-JAN-17

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

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

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



04-JAN-17

Project Manager: **James Fox**
KJE Enviromental & Civil Engineering
500 Mosley Rd
Aubrey, TX 76227

Reference: XENCO Report No(s): **541854**
OWL Bobcat/Red Hills Pipeline Release
Project Address: Jal NM

James Fox:

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) 541854. 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. 541854 will be filed for 60 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

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Odessa - San Antonio - Tampa - Lakeland - Atlanta - Phoenix - Oklahoma - Latin America

KJE Enviromental & Civil Engineering, Aubrey, TX

OWL Bobcat/Red Hills Pipeline Release

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
(1) SB7 0-2	S	12-08-16 11:45		541854-001
(1) SB7 2-4	S	12-08-16 11:50		541854-002
(1) SB7 4-6	S	12-08-16 11:55		541854-003
(1) SB7 6-8	S	12-08-16 12:00		541854-004
(1) SB7 10-12	S	12-08-16 12:10		541854-005
(1) SB8 0-2	S	12-08-16 12:20		541854-006
(1) SB8 2-4	S	12-08-16 12:25		541854-007
(1) SB8 4-6	S	12-08-16 12:30		541854-008
(1) SB8 6-8	S	12-08-16 12:35		541854-009
(1) SB8 8-10	S	12-08-16 12:40		541854-010
(1) SB8 10-12	S	12-08-16 12:46		541854-011
(1) SB9 0-2	S	12-08-16 13:00		541854-012
(1) SB9 2-4	S	12-08-16 13:05		541854-013
(1) SB9 4-6	S	12-08-16 13:10		541854-014
(1) SB9 6-8	S	12-08-16 13:15		541854-015
(1) SB9 8-10	S	12-08-16 13:20		541854-016
(1) SB9 10-12	S	12-08-16 13:30		541854-017
(1) SB10 0-2	S	12-08-16 14:45		541854-018
(1) SB10 2-4	S	12-08-16 14:50		541854-019
(1) SB10 4-6 Split	S	12-08-16 14:55		541854-020
(1) SB10 4-6	S	12-08-16 14:57		541854-021
(1) SB10 6-8	S	12-08-16 14:58		541854-022
(1) SB10 8-10	S	12-08-16 15:00		541854-023
(1) SB11 0-2	S	12-08-16 15:05		541854-024
(1) SB11 2-4	S	12-08-16 15:10		541854-025
(1) SB11 4-6	S	12-08-16 15:15		541854-026
(1) SB11 6-8	S	12-08-16 15:20		541854-027
(1) SB11 8-10	S	12-08-16 15:30		541854-028
(1) SB12 0-2	S	12-08-16 15:32		541854-029
(1) SB12 2-4	S	12-08-16 15:35		541854-030
(1) SB12 4-6	S	12-08-16 15:40		541854-031
(1) SB12 6-8	S	12-08-16 15:45		541854-032
(1) SB12 8-10	S	12-08-16 15:50		541854-033
(1) SB13 0-2	S	12-08-16 17:35		541854-034
(1) SB13 2-4	S	12-08-16 17:40		541854-035
(1) SB13 4-6	S	12-08-16 17:50		541854-036
(1) SB13 6-8	S	12-08-16 18:02		541854-037
(1) SB14 0-2	S	12-08-16 18:05		541854-038
(1) SB14 2-4	S	12-08-16 18:10		541854-039
(1) SB14 4-6	S	12-08-16 18:15		541854-040
(1) SB14 6-8 Split	S	12-08-16 18:28		541854-041
(1) SB14 6-8	S	12-08-16 18:30		541854-042
(1) SB14 8-10	S	12-08-16 18:35		541854-043

KJE Enviromental & Civil Engineering, Aubrey, TX

OWL Bobcat/Red Hills Pipeline Release

(1) SB15 0-2	S	12-08-16 18:37	541854-044
(1) SB15 2-4	S	12-08-16 18:40	541854-045
(1) SB15 4-6	S	12-08-16 18:45	541854-046
(1) SB15 6-8	S	12-08-16 18:50	541854-047
(1) SB16 0-2	S	12-09-16 07:30	541854-048
(1) SB16 2-4	S	12-09-16 07:35	541854-049
(1) SB16 4-6	S	12-09-16 07:40	541854-050
(1) SB16 6-8	S	12-09-16 07:45	541854-051
(1) SB16 8-10	S	12-09-16 07:50	541854-052
(1) SB16 10-12	S	12-09-16 08:00	541854-053
(1) SB16 12-14	S	12-09-16 08:10	541854-054
(1) SB16 16-18	S	12-09-16 08:20	541854-055
(1) SB16 18-20	S	12-09-16 08:30	541854-056
(1) SB16 20-22	S	12-09-16 08:40	541854-057
(1) SB16 22-24	S	12-09-16 08:50	541854-058
(1) SB16 24-26	S	12-09-16 09:07	541854-059
(1) SB17 0-2	S	12-09-16 09:15	541854-060
(1) SB17 2-4	S	12-09-16 09:15	541854-061
(1) SB17 4-6 Split	S	12-09-16 09:20	541854-062
(1) SB17 4-6	S	12-09-16 09:25	541854-063
(1) SB17 6-8	S	12-09-16 09:34	541854-064
(1) SB18 0-2	S	12-09-16 09:40	541854-065
(1) SB18 2-4	S	12-09-16 09:45	541854-066
(1) SB18 4-6	S	12-09-16 09:50	541854-067
(1) SB18 6-8	S	12-09-16 09:55	541854-068
(1) SB18 8-10	S	12-09-16 10:00	541854-069
(1) SB19 0-2	S	12-09-16 10:10	541854-070
(1) SB19 2-4	S	12-09-16 10:15	541854-071
(1) SB19 4-6	S	12-09-16 10:25	541854-072
(1) SB19 6-8	S	12-09-16 10:30	541854-073
(1) SB20 0-2	S	12-09-16 10:40	541854-074
(1) SB20 2-4	S	12-09-16 10:45	541854-075
(1) SB20 4-6	S	12-09-16 10:50	541854-076
(1) SB20 6-8	S	12-09-16 10:52	541854-077
(1) SB20 8-10	S	12-09-16 10:55	541854-078
(1) SB20 10-12	S	12-09-16 11:00	541854-079
(1) SB21 0-2	S	12-09-16 11:02	541854-080
(1) SB21 2-4	S	12-09-16 11:05	541854-081
(1) SB21 4-6	S	12-09-16 11:10	541854-082
(1) SB21 6-8 Split	S	12-09-16 11:15	541854-083
(1) SB21 6-8	S	12-09-16 11:19	541854-084
(1) SB21 8-10	S	12-09-16 11:30	541854-085



CASE NARRATIVE



Client Name: KJE Enviromental & Civil Engineering

Project Name: OWL Bobcat/Red Hills Pipeline Release

Project ID:

Work Order Number(s): 541854

Report Date: 04-JAN-17

Date Received: 12/09/2016

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3005608 BTEX by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3005769 BTEX by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3005784 BTEX by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3005809 BTEX by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3005825 BTEX by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Lab Sample ID 541854-059 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). o-Xylene recovered above QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 541854-059.

The Laboratory Control Sample for o-Xylene is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3005931 Inorganic Anions by EPA 300/300.1

Lab Sample ID 542375-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 541854-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.



Hits Summary 541854



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB7 0-2**

Lab Sample Id : 541854-001

Matrix : Soil

Date Collected : 12.08.16 11.45

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005931

Prep Method: E300P

Date Prep: 12.17.16 13.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	474	mg/kg	12.17.16 19.51		1

Analytical Method : TPH By SW8015 Mod

Seq Number 3005863

Prep Method: TX1005P

Date Prep: 12.15.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	68.8	mg/kg	12.15.16 22.01		1
Total TPH	PHC635	68.8	mg/kg	12.15.16 22.01		1

Sample Id : **(1) SB7 2-4**

Lab Sample Id : 541854-002

Matrix : Soil

Date Collected : 12.08.16 11.50

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005931

Prep Method: E300P

Date Prep: 12.17.16 13.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.46	mg/kg	12.17.16 19.58		1

Sample Id : **(1) SB7 4-6**

Lab Sample Id : 541854-003

Matrix : Soil

Date Collected : 12.08.16 11.55

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005931

Prep Method: E300P

Date Prep: 12.17.16 13.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.27	mg/kg	12.17.16 20.05		1



Hits Summary 541854



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB7 6-8**

Matrix : Soil

% Moisture :

Lab Sample Id : 541854-004

Date Collected : 12.08.16 12.00

Basis : Wet Weight

Date Received : 12.09.16 17.25

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3005931

Date Prep: 12.17.16 13.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	15.2	mg/kg	12.17.16 20.12		1

Sample Id : **(1) SB7 10-12**

Matrix : Soil

% Moisture :

Lab Sample Id : 541854-005

Date Collected : 12.08.16 12.10

Basis : Wet Weight

Date Received : 12.09.16 17.25

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3005931

Date Prep: 12.17.16 13.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.57	mg/kg	12.17.16 20.19		1

KJE Enviromental & Civil Engineering, Aubrey, TX

OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB8 0-2**

Lab Sample Id : 541854-006

Matrix : Soil

Date Collected : 12.08.16 12.20

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : BTEX by SW 8260B

Seq Number 3005784

Prep Method: SW5030B

Date Prep: 12.14.16 14.21

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
o-Xylene	95-47-6	0.00852	mg/kg	12.14.16 14.36		1
Total Xylenes	1330-20-7	0.00852	mg/kg	12.14.16 14.36		1
Total BTEX		0.00852	mg/kg	12.14.16 14.36		1

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005931

Prep Method: E300P

Date Prep: 12.17.16 13.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4330	mg/kg	12.17.16 20.26		5

Analytical Method : TPH By SW8015 Mod

Seq Number 3005863

Prep Method: TX1005P

Date Prep: 12.15.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	29.6	mg/kg	12.15.16 23.53		1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	398	mg/kg	12.15.16 23.53		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	76.6	mg/kg	12.15.16 23.53		1
Total TPH	PHC635	504	mg/kg	12.15.16 23.53		1

Sample Id : **(1) SB8 2-4**

Lab Sample Id : 541854-007

Matrix : Soil

Date Collected : 12.08.16 12.25

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005931

Prep Method: E300P

Date Prep: 12.17.16 13.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	605	mg/kg	12.17.16 20.48		1



Hits Summary 541854



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB8 4-6**

Lab Sample Id : 541854-008

Matrix : Soil

Date Collected : 12.08.16 12.30

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005931

Prep Method: E300P

Date Prep: 12.17.16 13.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3770	mg/kg	12.17.16 21.09		5

Sample Id : **(1) SB8 6-8**

Lab Sample Id : 541854-009

Matrix : Soil

Date Collected : 12.08.16 12.35

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005931

Prep Method: E300P

Date Prep: 12.17.16 13.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3670	mg/kg	12.17.16 21.16		5

Sample Id : **(1) SB8 8-10**

Lab Sample Id : 541854-010

Matrix : Soil

Date Collected : 12.08.16 12.40

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005931

Prep Method: E300P

Date Prep: 12.17.16 13.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1940	mg/kg	12.17.16 21.23		5

Sample Id : **(1) SB8 10-12**

Lab Sample Id : 541854-011

Matrix : Soil

Date Collected : 12.08.16 12.46

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005931

Prep Method: E300P

Date Prep: 12.17.16 13.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2140	mg/kg	12.17.16 21.30		5



Hits Summary 541854



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB9 0-2**

Lab Sample Id : 541854-012

Matrix : Soil

Date Collected : 12.08.16 13.00

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005931

Prep Method: E300P

Date Prep: 12.17.16 13.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3080	mg/kg	12.17.16 21.37		5

Analytical Method : TPH By SW8015 Mod

Seq Number 3005862

Prep Method: TX1005P

Date Prep: 12.15.16 07.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	156	mg/kg	12.15.16 12.10		1
Total TPH	PHC635	156	mg/kg	12.15.16 12.10		1

Sample Id : **(1) SB9 2-4**

Lab Sample Id : 541854-013

Matrix : Soil

Date Collected : 12.08.16 13.05

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005931

Prep Method: E300P

Date Prep: 12.17.16 13.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8.85	mg/kg	12.17.16 21.44		1



Hits Summary 541854



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB9 4-6**

Lab Sample Id : 541854-014

Matrix : Soil

Date Collected : 12.08.16 13.10

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005931

Prep Method: E300P

Date Prep: 12.17.16 13.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	683	mg/kg	12.17.16 21.51		1

Analytical Method : TPH By SW8015 Mod

Seq Number 3005862

Prep Method: TX1005P

Date Prep: 12.15.16 07.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	50.8	mg/kg	12.16.16 07.18		1
Total TPH	PHC635	50.8	mg/kg	12.16.16 07.18		1

Sample Id : **(1) SB9 6-8**

Lab Sample Id : 541854-015

Matrix : Soil

Date Collected : 12.08.16 13.15

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3005931

Prep Method: E300P

Date Prep: 12.17.16 13.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.29	mg/kg	12.17.16 21.58		1

Sample Id : **(1) SB9 8-10**

Lab Sample Id : 541854-016

Matrix : Soil

Date Collected : 12.08.16 13.20

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006037

Prep Method: E300P

Date Prep: 12.17.16 13.50

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.40	mg/kg	12.17.16 22.40		1



Hits Summary 541854



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB9 10-12**

Lab Sample Id : 541854-017

Matrix : Soil

Date Collected : 12.08.16 13.30

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006037

Prep Method: E300P

Date Prep: 12.17.16 13.50

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.2	mg/kg	12.17.16 23.02		1

Sample Id : **(1) SB10 0-2**

Lab Sample Id : 541854-018

Matrix : Soil

Date Collected : 12.08.16 14.45

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006037

Prep Method: E300P

Date Prep: 12.17.16 13.50

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	354	mg/kg	12.17.16 23.09		1

Sample Id : **(1) SB10 2-4**

Lab Sample Id : 541854-019

Matrix : Soil

Date Collected : 12.08.16 14.50

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006037

Prep Method: E300P

Date Prep: 12.17.16 13.50

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.93	mg/kg	12.17.16 23.16		1

Sample Id : **(1) SB10 4-6 Split**

Lab Sample Id : 541854-020

Matrix : Soil

Date Collected : 12.08.16 14.55

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006037

Prep Method: E300P

Date Prep: 12.17.16 13.50

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8.51	mg/kg	12.17.16 23.23		1



Hits Summary 541854



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB10 4-6**

Lab Sample Id : 541854-021

Matrix : Soil

Date Collected : 12.08.16 14.57

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006037

Prep Method: E300P

Date Prep: 12.17.16 13.50

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.83	mg/kg	12.17.16 23.44		1

Sample Id : **(1) SB10 6-8**

Lab Sample Id : 541854-022

Matrix : Soil

Date Collected : 12.08.16 14.58

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006037

Prep Method: E300P

Date Prep: 12.17.16 13.50

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.60	mg/kg	12.17.16 23.51		1

Sample Id : **(1) SB10 8-10**

Lab Sample Id : 541854-023

Matrix : Soil

Date Collected : 12.08.16 15.00

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006037

Prep Method: E300P

Date Prep: 12.17.16 13.50

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.75	mg/kg	12.17.16 23.58		1

Sample Id : **(1) SB11 0-2**

Lab Sample Id : 541854-024

Matrix : Soil

Date Collected : 12.08.16 15.05

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006037

Prep Method: E300P

Date Prep: 12.17.16 13.50

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	394	mg/kg	12.18.16 00.05		1



Hits Summary 541854



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB11 2-4**

Lab Sample Id : 541854-025

Matrix : Soil

Date Collected : 12.08.16 15.10

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006037

Prep Method: E300P

Date Prep: 12.17.16 13.50

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	361	mg/kg	12.18.16 00.12		1

Sample Id : **(1) SB11 4-6**

Lab Sample Id : 541854-026

Matrix : Soil

Date Collected : 12.08.16 15.15

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006037

Prep Method: E300P

Date Prep: 12.17.16 13.50

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5070	mg/kg	12.18.16 00.19		5

Sample Id : **(1) SB11 6-8**

Lab Sample Id : 541854-027

Matrix : Soil

Date Collected : 12.08.16 15.20

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006037

Prep Method: E300P

Date Prep: 12.17.16 13.50

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1630	mg/kg	12.18.16 00.40		5

Sample Id : **(1) SB11 8-10**

Lab Sample Id : 541854-028

Matrix : Soil

Date Collected : 12.08.16 15.30

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006037

Prep Method: E300P

Date Prep: 12.17.16 13.50

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	322	mg/kg	12.18.16 01.01		1



Hits Summary 541854



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB12 0-2**

Lab Sample Id : 541854-029

Matrix : Soil

Date Collected : 12.08.16 15.32

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006037

Prep Method: E300P

Date Prep: 12.17.16 13.50

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	45.2	mg/kg	12.18.16 01.08		1

Sample Id : **(1) SB12 2-4**

Lab Sample Id : 541854-030

Matrix : Soil

Date Collected : 12.08.16 15.35

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006037

Prep Method: E300P

Date Prep: 12.17.16 13.50

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	184	mg/kg	12.18.16 01.15		1

Sample Id : **(1) SB12 4-6**

Lab Sample Id : 541854-031

Matrix : Soil

Date Collected : 12.08.16 15.40

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006037

Prep Method: E300P

Date Prep: 12.17.16 13.50

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.60	mg/kg	12.18.16 01.22		1

Sample Id : **(1) SB12 6-8**

Lab Sample Id : 541854-032

Matrix : Soil

Date Collected : 12.08.16 15.45

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006037

Prep Method: E300P

Date Prep: 12.17.16 13.50

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.11	mg/kg	12.18.16 01.29		1



Hits Summary 541854



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB12 8-10**

Lab Sample Id : 541854-033

Matrix : Soil

Date Collected : 12.08.16 15.50

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006037

Prep Method: E300P

Date Prep: 12.17.16 13.50

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8.13	mg/kg	12.18.16 01.37		1

Sample Id : **(1) SB13 0-2**

Lab Sample Id : 541854-034

Matrix : Soil

Date Collected : 12.08.16 17.35

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006037

Prep Method: E300P

Date Prep: 12.17.16 13.50

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8.10	mg/kg	12.18.16 01.44		1

Sample Id : **(1) SB13 2-4**

Lab Sample Id : 541854-035

Matrix : Soil

Date Collected : 12.08.16 17.40

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006037

Prep Method: E300P

Date Prep: 12.17.16 13.50

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.70	mg/kg	12.18.16 01.51		1

Sample Id : **(1) SB13 4-6**

Lab Sample Id : 541854-036

Matrix : Soil

Date Collected : 12.08.16 17.50

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006040

Prep Method: E300P

Date Prep: 12.19.16 09.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.57	mg/kg	12.19.16 11.55		1



Hits Summary 541854



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB13 6-8**

Lab Sample Id : 541854-037

Matrix : Soil

Date Collected : 12.08.16 18.02

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006040

Prep Method: E300P

Date Prep: 12.19.16 09.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9.45	mg/kg	12.19.16 12.16		1

Sample Id : **(1) SB14 0-2**

Lab Sample Id : 541854-038

Matrix : Soil

Date Collected : 12.08.16 18.05

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006040

Prep Method: E300P

Date Prep: 12.19.16 09.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.24	mg/kg	12.19.16 12.23		1

Sample Id : **(1) SB14 2-4**

Lab Sample Id : 541854-039

Matrix : Soil

Date Collected : 12.08.16 18.10

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006040

Prep Method: E300P

Date Prep: 12.19.16 09.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.86	mg/kg	12.19.16 12.44		1

Sample Id : **(1) SB14 4-6**

Lab Sample Id : 541854-040

Matrix : Soil

Date Collected : 12.08.16 18.15

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006040

Prep Method: E300P

Date Prep: 12.19.16 09.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.93	mg/kg	12.19.16 12.51		1



Hits Summary 541854



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB14 6-8 Split**

Lab Sample Id : 541854-041

Matrix : Soil

Date Collected : 12.08.16 18.28

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006040

Prep Method: E300P

Date Prep: 12.19.16 09.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.83	mg/kg	12.19.16 12.58		1

Sample Id : **(1) SB14 6-8**

Lab Sample Id : 541854-042

Matrix : Soil

Date Collected : 12.08.16 18.30

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006040

Prep Method: E300P

Date Prep: 12.19.16 09.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.57	mg/kg	12.19.16 13.05		1

Sample Id : **(1) SB14 8-10**

Lab Sample Id : 541854-043

Matrix : Soil

Date Collected : 12.08.16 18.35

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006040

Prep Method: E300P

Date Prep: 12.19.16 09.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.00	mg/kg	12.19.16 13.12		1

Sample Id : **(1) SB15 0-2**

Lab Sample Id : 541854-044

Matrix : Soil

Date Collected : 12.08.16 18.37

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006040

Prep Method: E300P

Date Prep: 12.19.16 09.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.4	mg/kg	12.19.16 13.19		1



Hits Summary 541854



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB15 2-4**

Lab Sample Id : 541854-045

Matrix : Soil

Date Collected : 12.08.16 18.40

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006040

Prep Method: E300P

Date Prep: 12.19.16 09.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.0	mg/kg	12.19.16 13.26		1

Sample Id : **(1) SB15 4-6**

Lab Sample Id : 541854-046

Matrix : Soil

Date Collected : 12.08.16 18.45

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006040

Prep Method: E300P

Date Prep: 12.19.16 09.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.60	mg/kg	12.19.16 13.33		1

Sample Id : **(1) SB15 6-8**

Lab Sample Id : 541854-047

Matrix : Soil

Date Collected : 12.08.16 18.50

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006040

Prep Method: E300P

Date Prep: 12.19.16 09.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.57	mg/kg	12.19.16 14.08		1

Sample Id : **(1) SB16 0-2**

Lab Sample Id : 541854-048

Matrix : Soil

Date Collected : 12.09.16 07.30

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006040

Prep Method: E300P

Date Prep: 12.19.16 09.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1570	mg/kg	12.19.16 14.15		1



Hits Summary 541854



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB16 2-4**

Lab Sample Id : 541854-049

Matrix : Soil

Date Collected : 12.09.16 07.35

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006040

Prep Method: E300P

Date Prep: 12.19.16 09.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2100	mg/kg	12.19.16 14.23		5

Sample Id : **(1) SB16 4-6**

Lab Sample Id : 541854-050

Matrix : Soil

Date Collected : 12.09.16 07.40

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006040

Prep Method: E300P

Date Prep: 12.19.16 09.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2620	mg/kg	12.19.16 14.30		5

Sample Id : **(1) SB16 6-8**

Lab Sample Id : 541854-051

Matrix : Soil

Date Collected : 12.09.16 07.45

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006040

Prep Method: E300P

Date Prep: 12.19.16 09.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6170	mg/kg	12.19.16 14.37		10

Sample Id : **(1) SB16 8-10**

Lab Sample Id : 541854-052

Matrix : Soil

Date Collected : 12.09.16 07.50

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006040

Prep Method: E300P

Date Prep: 12.19.16 09.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5600	mg/kg	12.19.16 14.44		10



Hits Summary 541854



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB16 10-12**

Lab Sample Id : 541854-053

Matrix : Soil

Date Collected : 12.09.16 08.00

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006040

Prep Method: E300P

Date Prep: 12.19.16 09.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3690	mg/kg	12.19.16 14.51		5

Sample Id : **(1) SB16 12-14**

Lab Sample Id : 541854-054

Matrix : Soil

Date Collected : 12.09.16 08.10

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006040

Prep Method: E300P

Date Prep: 12.19.16 09.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3170	mg/kg	12.19.16 14.58		5

Sample Id : **(1) SB16 16-18**

Lab Sample Id : 541854-055

Matrix : Soil

Date Collected : 12.09.16 08.20

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006040

Prep Method: E300P

Date Prep: 12.19.16 09.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1560	mg/kg	12.19.16 15.05		1

Sample Id : **(1) SB16 18-20**

Lab Sample Id : 541854-056

Matrix : Soil

Date Collected : 12.09.16 08.30

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006064

Prep Method: E300P

Date Prep: 12.19.16 10.30

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2690	mg/kg	12.19.16 15.47		5



Hits Summary 541854



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB16 20-22**

Lab Sample Id : 541854-057

Matrix : Soil

Date Collected : 12.09.16 08.40

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006064

Prep Method: E300P

Date Prep: 12.19.16 10.30

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2020	mg/kg	12.19.16 16.08		5

Sample Id : **(1) SB16 22-24**

Lab Sample Id : 541854-058

Matrix : Soil

Date Collected : 12.09.16 08.50

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006064

Prep Method: E300P

Date Prep: 12.19.16 10.30

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	387	mg/kg	12.19.16 16.15		1

Sample Id : **(1) SB16 24-26**

Lab Sample Id : 541854-059

Matrix : Soil

Date Collected : 12.09.16 09.07

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006064

Prep Method: E300P

Date Prep: 12.19.16 10.30

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	251	mg/kg	12.19.16 16.22		1

Sample Id : **(1) SB17 0-2**

Lab Sample Id : 541854-060

Matrix : Soil

Date Collected : 12.09.16 09.15

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006064

Prep Method: E300P

Date Prep: 12.19.16 10.30

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8.36	mg/kg	12.19.16 16.29		1



Hits Summary 541854



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB17 2-4**

Lab Sample Id : 541854-061

Matrix : Soil

Date Collected : 12.09.16 09.15

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006064

Prep Method: E300P

Date Prep: 12.19.16 10.30

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9.35	mg/kg	12.19.16 16.50		1

Sample Id : **(1) SB17 4-6 Split**

Lab Sample Id : 541854-062

Matrix : Soil

Date Collected : 12.09.16 09.20

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006064

Prep Method: E300P

Date Prep: 12.19.16 10.30

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.18	mg/kg	12.19.16 16.58		1

Sample Id : **(1) SB17 4-6**

Lab Sample Id : 541854-063

Matrix : Soil

Date Collected : 12.09.16 09.25

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006064

Prep Method: E300P

Date Prep: 12.19.16 10.30

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9.12	mg/kg	12.19.16 17.05		1

Sample Id : **(1) SB17 6-8**

Lab Sample Id : 541854-064

Matrix : Soil

Date Collected : 12.09.16 09.34

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006064

Prep Method: E300P

Date Prep: 12.19.16 10.30

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.2	mg/kg	12.19.16 17.12		1



Hits Summary 541854



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB18 0-2**

Lab Sample Id : 541854-065

Matrix : Soil

Date Collected : 12.09.16 09.40

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006064

Prep Method: E300P

Date Prep: 12.19.16 10.30

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.1	mg/kg	12.19.16 17.19		1

Sample Id : **(1) SB18 2-4**

Lab Sample Id : 541854-066

Matrix : Soil

Date Collected : 12.09.16 09.45

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006064

Prep Method: E300P

Date Prep: 12.19.16 10.30

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.33	mg/kg	12.19.16 17.26		1

Sample Id : **(1) SB18 4-6**

Lab Sample Id : 541854-067

Matrix : Soil

Date Collected : 12.09.16 09.50

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006064

Prep Method: E300P

Date Prep: 12.19.16 10.30

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.73	mg/kg	12.19.16 17.47		1

Sample Id : **(1) SB18 6-8**

Lab Sample Id : 541854-068

Matrix : Soil

Date Collected : 12.09.16 09.55

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006064

Prep Method: E300P

Date Prep: 12.19.16 10.30

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.27	mg/kg	12.19.16 17.54		1



Hits Summary 541854



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB18 8-10**

Lab Sample Id : 541854-069

Matrix : Soil

Date Collected : 12.09.16 10.00

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006064

Prep Method: E300P

Date Prep: 12.19.16 10.30

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.86	mg/kg	12.19.16 18.15		1

Sample Id : **(1) SB19 0-2**

Lab Sample Id : 541854-070

Matrix : Soil

Date Collected : 12.09.16 10.10

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006064

Prep Method: E300P

Date Prep: 12.19.16 10.30

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.47	mg/kg	12.19.16 18.22		1

Sample Id : **(1) SB19 2-4**

Lab Sample Id : 541854-071

Matrix : Soil

Date Collected : 12.09.16 10.15

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006064

Prep Method: E300P

Date Prep: 12.19.16 10.30

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11.1	mg/kg	12.19.16 18.29		1



Hits Summary 541854



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB19 4-6**

Lab Sample Id : 541854-072

Matrix : Soil

Date Collected : 12.09.16 10.25

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006064

Prep Method: E300P

Date Prep: 12.19.16 10.30

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.86	mg/kg	12.19.16 18.36		1

Analytical Method : TPH By SW8015 Mod

Seq Number 3005749

Prep Method: TX1005P

Date Prep: 12.13.16 10.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	50.6	mg/kg	12.13.16 16.12		1
Total TPH	PHC635	50.6	mg/kg	12.13.16 16.12		1

Sample Id : **(1) SB19 6-8**

Lab Sample Id : 541854-073

Matrix : Soil

Date Collected : 12.09.16 10.30

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006064

Prep Method: E300P

Date Prep: 12.19.16 10.30

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.86	mg/kg	12.19.16 18.43		1

Sample Id : **(1) SB20 0-2**

Lab Sample Id : 541854-074

Matrix : Soil

Date Collected : 12.09.16 10.40

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006064

Prep Method: E300P

Date Prep: 12.19.16 10.30

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.62	mg/kg	12.19.16 18.50		1



Hits Summary 541854



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB20 2-4**

Lab Sample Id : 541854-075

Matrix : Soil

Date Collected : 12.09.16 10.45

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006064

Prep Method: E300P

Date Prep: 12.19.16 10.30

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.87	mg/kg	12.19.16 18.57		1

Sample Id : **(1) SB20 4-6**

Lab Sample Id : 541854-076

Matrix : Soil

Date Collected : 12.09.16 10.50

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006068

Prep Method: E300P

Date Prep: 12.19.16 15.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	25.7	mg/kg	12.19.16 19.40		5

Sample Id : **(1) SB20 6-8**

Lab Sample Id : 541854-077

Matrix : Soil

Date Collected : 12.09.16 10.52

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006068

Prep Method: E300P

Date Prep: 12.19.16 15.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7170	mg/kg	12.19.16 20.01		5

Sample Id : **(1) SB20 8-10**

Lab Sample Id : 541854-078

Matrix : Soil

Date Collected : 12.09.16 10.55

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006068

Prep Method: E300P

Date Prep: 12.19.16 15.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.2	mg/kg	12.19.16 20.08		1



Hits Summary 541854



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB20 10-12**

Lab Sample Id : 541854-079

Matrix : Soil

Date Collected : 12.09.16 11.00

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006068

Prep Method: E300P

Date Prep: 12.19.16 15.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.42	mg/kg	12.19.16 20.15		1

Sample Id : **(1) SB21 0-2**

Lab Sample Id : 541854-080

Matrix : Soil

Date Collected : 12.09.16 11.02

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006068

Prep Method: E300P

Date Prep: 12.19.16 15.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.08	mg/kg	12.19.16 20.22		1

Sample Id : **(1) SB21 2-4**

Lab Sample Id : 541854-081

Matrix : Soil

Date Collected : 12.09.16 11.05

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006068

Prep Method: E300P

Date Prep: 12.19.16 15.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.94	mg/kg	12.19.16 20.43		1

Sample Id : **(1) SB21 4-6**

Lab Sample Id : 541854-082

Matrix : Soil

Date Collected : 12.09.16 11.10

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006068

Prep Method: E300P

Date Prep: 12.19.16 15.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.02	mg/kg	12.19.16 20.50		1



Hits Summary 541854



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB21 6-8 Split**

Lab Sample Id : 541854-083

Matrix : Soil

Date Collected : 12.09.16 11.15

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006068

Prep Method: E300P

Date Prep: 12.19.16 15.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.14	mg/kg	12.19.16 20.57		1

Sample Id : **(1) SB21 6-8**

Lab Sample Id : 541854-084

Matrix : Soil

Date Collected : 12.09.16 11.19

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006068

Prep Method: E300P

Date Prep: 12.19.16 15.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.30	mg/kg	12.19.16 21.04		1

Sample Id : **(1) SB21 8-10**

Lab Sample Id : 541854-085

Matrix : Soil

Date Collected : 12.09.16 11.30

Date Received : 12.09.16 17.25

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006068

Prep Method: E300P

Date Prep: 12.19.16 15.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.97	mg/kg	12.19.16 21.11		1



Certificate of Analysis Summary 541854

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal NM

Date Received in Lab: Fri Dec-09-16 05:25 pm

Report Date: 04-JAN-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	541854-001	541854-002	541854-003	541854-004	541854-005	541854-006
	Field Id:	(1) SB7 0-2	(1) SB7 2-4	(1) SB7 4-6	(1) SB7 6-8	(1) SB7 10-12	(1) SB8 0-2
	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-08-16 11:45	Dec-08-16 11:50	Dec-08-16 11:55	Dec-08-16 12:00	Dec-08-16 12:10	Dec-08-16 12:20
BTEX by SW 8260B SUB: TX104704215	Extracted:	Dec-13-16 12:30	Dec-13-16 12:31	Dec-13-16 12:32	Dec-13-16 12:33	Dec-13-16 12:34	Dec-14-16 14:21
	Analyzed:	Dec-13-16 13:05	Dec-13-16 13:20	Dec-13-16 13:40	Dec-13-16 13:56	Dec-13-16 14:11	Dec-14-16 14:36
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00100 0.00100	<0.00101 0.00101	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100	<0.000992 0.000992
Toluene		<0.00100 0.00100	<0.00101 0.00101	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100	<0.000992 0.000992
Ethylbenzene		<0.00100 0.00100	<0.00101 0.00101	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100	<0.000992 0.000992
m,p-Xylenes		<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198
o-Xylene		<0.00100 0.00100	<0.00101 0.00101	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100	0.00852 0.000992
Total Xylenes		<0.00100 0.00100	<0.00101 0.00101	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100	0.00852 0.000992
Total BTEX		<0.00100 0.00100	<0.00101 0.00101	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100	0.00852 0.000992
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-17-16 13:00	Dec-17-16 13:00	Dec-17-16 13:00	Dec-17-16 13:00	Dec-17-16 13:00	Dec-17-16 13:00
	Analyzed:	Dec-17-16 19:51	Dec-17-16 19:58	Dec-17-16 20:05	Dec-17-16 20:12	Dec-17-16 20:19	Dec-17-16 20:26
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		474 5.00	6.46 5.00	7.27 5.00	15.2 5.00	6.57 5.00	4330 25.0
TPH By SW8015 Mod	Extracted:	Dec-15-16 14:00	Dec-15-16 14:00	Dec-15-16 14:00	Dec-15-16 14:00	Dec-15-16 14:00	Dec-15-16 14:00
	Analyzed:	Dec-15-16 22:01	Dec-15-16 22:23	Dec-15-16 22:46	Dec-15-16 23:08	Dec-15-16 23:30	Dec-15-16 23:53
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	29.6 15.0
C10-C28 Diesel Range Hydrocarbons		68.8 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	398 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	76.6 15.0
Total TPH		68.8 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	504 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 541854

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal NM

Date Received in Lab: Fri Dec-09-16 05:25 pm

Report Date: 04-JAN-17

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	541854-007	541854-008	541854-009	541854-010	541854-011	541854-012
	<i>Field Id:</i>	(1) SB8 2-4	(1) SB8 4-6	(1) SB8 6-8	(1) SB8 8-10	(1) SB8 10-12	(1) SB9 0-2
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-08-16 12:25	Dec-08-16 12:30	Dec-08-16 12:35	Dec-08-16 12:40	Dec-08-16 12:46	Dec-08-16 13:00
BTEX by SW 8260B SUB: TX104704215	<i>Extracted:</i>	Dec-13-16 12:35	Dec-13-16 12:36	Dec-13-16 16:30	Dec-13-16 16:31	Dec-13-16 16:32	Dec-13-16 16:33
	<i>Analyzed:</i>	Dec-13-16 14:27	Dec-13-16 14:42	Dec-13-16 17:18	Dec-13-16 17:33	Dec-13-16 17:49	Dec-13-16 18:04
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00100 0.00100	<0.000998 0.000998	<0.000996 0.000996	<0.00100 0.00100	<0.000996 0.000996	<0.000996 0.000996
Toluene		<0.00100 0.00100	<0.000998 0.000998	<0.000996 0.000996	<0.00100 0.00100	<0.000996 0.000996	<0.000996 0.000996
Ethylbenzene		<0.00100 0.00100	<0.000998 0.000998	<0.000996 0.000996	<0.00100 0.00100	<0.000996 0.000996	<0.000996 0.000996
m,p-Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199
o-Xylene		<0.00100 0.00100	<0.000998 0.000998	<0.000996 0.000996	<0.00100 0.00100	<0.000996 0.000996	<0.000996 0.000996
Total Xylenes		<0.00100 0.00100	<0.000998 0.000998	<0.000996 0.000996	<0.00100 0.00100	<0.000996 0.000996	<0.000996 0.000996
Total BTEX		<0.00100 0.00100	<0.000998 0.000998	<0.000996 0.000996	<0.00100 0.00100	<0.000996 0.000996	<0.000996 0.000996
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Dec-17-16 13:00	Dec-17-16 13:00	Dec-17-16 13:00	Dec-17-16 13:00	Dec-17-16 13:00	Dec-17-16 13:00
	<i>Analyzed:</i>	Dec-17-16 20:48	Dec-17-16 21:09	Dec-17-16 21:16	Dec-17-16 21:23	Dec-17-16 21:30	Dec-17-16 21:37
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		605 5.00	3770 25.0	3670 25.0	1940 25.0	2140 25.0	3080 25.0
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-15-16 14:00	Dec-15-16 14:00	Dec-15-16 14:00	Dec-15-16 14:00	Dec-15-16 07:00	Dec-15-16 07:00
	<i>Analyzed:</i>	Dec-16-16 00:16	Dec-16-16 00:39	Dec-16-16 01:02	Dec-16-16 01:24	Dec-15-16 11:49	Dec-15-16 12:10
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	156 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	156 15.0
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-15-16 14:00	Dec-15-16 14:00	Dec-15-16 14:00	Dec-15-16 14:00		
	<i>Analyzed:</i>	Dec-16-16 00:16	Dec-16-16 00:39	Dec-16-16 01:02	Dec-16-16 01:24		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 541854

KJE Environmental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal NM

Date Received in Lab: Fri Dec-09-16 05:25 pm

Report Date: 04-JAN-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	541854-013	541854-014	541854-015	541854-016	541854-017	541854-018
	Field Id:	(1) SB9 2-4	(1) SB9 4-6	(1) SB9 6-8	(1) SB9 8-10	(1) SB9 10-12	(1) SB10 0-2
	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-08-16 13:05	Dec-08-16 13:10	Dec-08-16 13:15	Dec-08-16 13:20	Dec-08-16 13:30	Dec-08-16 14:45
BTEX by SW 8260B SUB: TX104704215	Extracted:	Dec-13-16 16:34	Dec-13-16 16:35	Dec-13-16 16:36	Dec-13-16 16:37	Dec-14-16 14:24	Dec-13-16 16:39
	Analyzed:	Dec-13-16 18:20	Dec-13-16 18:35	Dec-13-16 18:51	Dec-13-16 19:06	Dec-14-16 15:14	Dec-13-16 19:36
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000994 0.000994	<0.00101 0.00101	<0.00100 0.00100	<0.000996 0.000996	<0.000998 0.000998	<0.000992 0.000992
Toluene		<0.000994 0.000994	<0.00101 0.00101	<0.00100 0.00100	<0.000996 0.000996	<0.000998 0.000998	<0.000992 0.000992
Ethylbenzene		<0.000994 0.000994	<0.00101 0.00101	<0.00100 0.00100	<0.000996 0.000996	<0.000998 0.000998	<0.000992 0.000992
m,p-Xylenes		<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198
o-Xylene		<0.000994 0.000994	<0.00101 0.00101	<0.00100 0.00100	<0.000996 0.000996	<0.000998 0.000998	<0.000992 0.000992
Total Xylenes		<0.000994 0.000994	<0.00101 0.00101	<0.00100 0.00100	<0.000996 0.000996	<0.000998 0.000998	<0.000992 0.000992
Total BTEX		<0.000994 0.000994	<0.00101 0.00101	<0.00100 0.00100	<0.000996 0.000996	<0.000998 0.000998	<0.000992 0.000992
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-17-16 13:00	Dec-17-16 13:00	Dec-17-16 13:00	Dec-17-16 13:50	Dec-17-16 13:50	Dec-17-16 13:50
	Analyzed:	Dec-17-16 21:44	Dec-17-16 21:51	Dec-17-16 21:58	Dec-17-16 22:40	Dec-17-16 23:02	Dec-17-16 23:09
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		8.85 5.00	683 5.00	7.29 5.00	6.40 5.00	10.2 5.00	354 5.00
TPH By SW8015 Mod	Extracted:	Dec-15-16 07:00	Dec-15-16 07:00	Dec-15-16 07:00	Dec-15-16 07:00	Dec-15-16 07:00	Dec-15-16 07:00
	Analyzed:	Dec-15-16 12:34	Dec-16-16 07:18	Dec-15-16 13:16	Dec-15-16 13:39	Dec-15-16 14:01	Dec-15-16 14:22
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	50.8 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	50.8 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 541854

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal NM

Date Received in Lab: Fri Dec-09-16 05:25 pm

Report Date: 04-JAN-17

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	541854-019	541854-020	541854-021	541854-022	541854-023	541854-024
	<i>Field Id:</i>	(1) SB10 2-4	(1) SB10 4-6 Split	(1) SB10 4-6	(1) SB10 6-8	(1) SB10 8-10	(1) SB11 0-2
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-08-16 14:50	Dec-08-16 14:55	Dec-08-16 14:57	Dec-08-16 14:58	Dec-08-16 15:00	Dec-08-16 15:05
BTEX by SW 8260B SUB: TX104704215	<i>Extracted:</i>	Dec-13-16 17:26	Dec-13-16 17:20	Dec-13-16 14:10	Dec-13-16 14:11	Dec-13-16 14:12	Dec-13-16 14:13
	<i>Analyzed:</i>	Dec-13-16 19:31	Dec-13-16 17:39	Dec-13-16 14:36	Dec-13-16 14:55	Dec-13-16 15:19	Dec-13-16 15:38
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000998 0.000998	<0.00100 0.00100	<0.000990 0.000990	<0.000990 0.000990	<0.00101 0.00101	<0.00100 0.00100
Toluene		<0.000998 0.000998	<0.00100 0.00100	<0.000990 0.000990	<0.000990 0.000990	<0.00101 0.00101	<0.00100 0.00100
Ethylbenzene		<0.000998 0.000998	<0.00100 0.00100	<0.000990 0.000990	<0.000990 0.000990	<0.00101 0.00101	<0.00100 0.00100
m,p-Xylenes		<0.00200 0.00200	<0.00201 0.00201	<0.00198 0.00198	<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200
o-Xylene		<0.000998 0.000998	<0.00100 0.00100	<0.000990 0.000990	<0.000990 0.000990	<0.00101 0.00101	<0.00100 0.00100
Total Xylenes		<0.000998 0.000998	<0.00100 0.00100	<0.000990 0.000990	<0.000990 0.000990	<0.00101 0.00101	<0.00100 0.00100
Total BTEX		<0.000998 0.000998	<0.00100 0.00100	<0.000990 0.000990	<0.000990 0.000990	<0.00101 0.00101	<0.00100 0.00100
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Dec-17-16 13:50	Dec-17-16 13:50	Dec-17-16 13:50	Dec-17-16 13:50	Dec-17-16 13:50	Dec-17-16 13:50
	<i>Analyzed:</i>	Dec-17-16 23:16	Dec-17-16 23:23	Dec-17-16 23:44	Dec-17-16 23:51	Dec-17-16 23:58	Dec-18-16 00:05
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		7.93 5.00	8.51 5.00	7.83 5.00	6.60 5.00	6.75 5.00	394 5.00
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-15-16 07:00	Dec-15-16 14:00	Dec-15-16 07:00	Dec-15-16 07:00	Dec-15-16 07:00	Dec-15-16 07:00
	<i>Analyzed:</i>	Dec-15-16 14:46	Dec-16-16 02:08	Dec-15-16 15:08	Dec-15-16 15:50	Dec-15-16 16:14	Dec-15-16 16:38
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
TPH By SW8015 Mod	<i>Extracted:</i>		Dec-15-16 14:00				
	<i>Analyzed:</i>		Dec-16-16 02:08				
	<i>Units/RL:</i>		mg/kg RL				
C28-C35 Oil Range Hydrocarbons			<15.0 15.0				

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 541854

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal NM

Date Received in Lab: Fri Dec-09-16 05:25 pm

Report Date: 04-JAN-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	541854-025	541854-026	541854-027	541854-028	541854-029	541854-030
	Field Id:	(1) SB11 2-4	(1) SB11 4-6	(1) SB11 6-8	(1) SB11 8-10	(1) SB12 0-2	(1) SB12 2-4
	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-08-16 15:10	Dec-08-16 15:15	Dec-08-16 15:20	Dec-08-16 15:30	Dec-08-16 15:32	Dec-08-16 15:35
BTEX by SW 8260B SUB: TX104704215	Extracted:	Dec-13-16 14:14	Dec-13-16 17:21	Dec-13-16 17:22	Dec-13-16 17:23	Dec-13-16 17:24	Dec-13-16 17:25
	Analyzed:	Dec-13-16 15:56	Dec-13-16 17:57	Dec-13-16 18:16	Dec-13-16 18:35	Dec-13-16 18:53	Dec-13-16 19:12
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00100 0.00100	<0.000992 0.000992	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100	<0.000990 0.000990
Toluene		<0.00100 0.00100	<0.000992 0.000992	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100	<0.000990 0.000990
Ethylbenzene		<0.00100 0.00100	<0.000992 0.000992	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100	<0.000990 0.000990
m,p-Xylenes		<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
o-Xylene		<0.00100 0.00100	<0.000992 0.000992	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100	<0.000990 0.000990
Total Xylenes		<0.00100 0.00100	<0.000992 0.000992	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100	<0.000990 0.000990
Total BTEX		<0.00100 0.00100	<0.000992 0.000992	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100	<0.000990 0.000990
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-17-16 13:50	Dec-17-16 13:50	Dec-17-16 13:50	Dec-17-16 13:50	Dec-17-16 13:50	Dec-17-16 13:50
	Analyzed:	Dec-18-16 00:12	Dec-18-16 00:19	Dec-18-16 00:40	Dec-18-16 01:01	Dec-18-16 01:08	Dec-18-16 01:15
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		361 5.00	5070 25.0	1630 25.0	322 5.00	45.2 5.00	184 5.00
TPH By SW8015 Mod	Extracted:	Dec-15-16 07:00	Dec-15-16 07:00	Dec-15-16 07:00	Dec-15-16 07:00	Dec-15-16 07:00	Dec-15-16 07:00
	Analyzed:	Dec-15-16 17:01	Dec-15-16 17:24	Dec-15-16 17:48	Dec-15-16 18:12	Dec-15-16 18:34	Dec-15-16 18:57
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 541854

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal NM

Date Received in Lab: Fri Dec-09-16 05:25 pm

Report Date: 04-JAN-17

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	541854-031	541854-032	541854-033	541854-034	541854-035	541854-036
	<i>Field Id:</i>	(1) SB12 4-6	(1) SB12 6-8	(1) SB12 8-10	(1) SB13 0-2	(1) SB13 2-4	(1) SB13 4-6
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-08-16 15:40	Dec-08-16 15:45	Dec-08-16 15:50	Dec-08-16 17:35	Dec-08-16 17:40	Dec-08-16 17:50
BTEX by SW 8260B SUB: TX104704215	<i>Extracted:</i>	Dec-14-16 17:04	Dec-14-16 17:05	Dec-14-16 17:06	Dec-14-16 17:07	Dec-14-16 17:08	Dec-14-16 17:09
	<i>Analyzed:</i>	Dec-14-16 18:23	Dec-14-16 18:39	Dec-14-16 18:54	Dec-14-16 19:09	Dec-14-16 19:25	Dec-14-16 19:40
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000998 0.000998	<0.00100 0.00100	<0.000994 0.000994	<0.000994 0.000994	<0.000996 0.000996	<0.00100 0.00100
Toluene		<0.000998 0.000998	<0.00100 0.00100	<0.000994 0.000994	<0.000994 0.000994	<0.000996 0.000996	<0.00100 0.00100
Ethylbenzene		<0.000998 0.000998	<0.00100 0.00100	<0.000994 0.000994	<0.000994 0.000994	<0.000996 0.000996	<0.00100 0.00100
m,p-Xylenes		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201
o-Xylene		<0.000998 0.000998	<0.00100 0.00100	<0.000994 0.000994	<0.000994 0.000994	<0.000996 0.000996	<0.00100 0.00100
Total Xylenes		<0.000998 0.000998	<0.00100 0.00100	<0.000994 0.000994	<0.000994 0.000994	<0.000996 0.000996	<0.00100 0.00100
Total BTEX		<0.000998 0.000998	<0.00100 0.00100	<0.000994 0.000994	<0.000994 0.000994	<0.000996 0.000996	<0.00100 0.00100
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Dec-17-16 13:50	Dec-17-16 13:50	Dec-17-16 13:50	Dec-17-16 13:50	Dec-17-16 13:50	Dec-19-16 09:00
	<i>Analyzed:</i>	Dec-18-16 01:22	Dec-18-16 01:29	Dec-18-16 01:37	Dec-18-16 01:44	Dec-18-16 01:51	Dec-19-16 11:55
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		6.60 5.00	6.11 5.00	8.13 5.00	8.10 5.00	6.70 5.00	7.57 5.00
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-14-16 14:00	Dec-14-16 14:00	Dec-14-16 14:00	Dec-14-16 14:00	Dec-14-16 14:00	Dec-14-16 14:00
	<i>Analyzed:</i>	Dec-14-16 21:33	Dec-14-16 21:55	Dec-14-16 22:16	Dec-14-16 22:37	Dec-14-16 22:58	Dec-14-16 23:20
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 541854

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal NM

Date Received in Lab: Fri Dec-09-16 05:25 pm

Report Date: 04-JAN-17

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	541854-037	541854-038	541854-039	541854-040	541854-041	541854-042
	<i>Field Id:</i>	(1) SB13 6-8	(1) SB14 0-2	(1) SB14 2-4	(1) SB14 4-6	(1) SB14 6-8 Split	(1) SB14 6-8
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-08-16 18:02	Dec-08-16 18:05	Dec-08-16 18:10	Dec-08-16 18:15	Dec-08-16 18:28	Dec-08-16 18:30
BTEX by SW 8260B SUB: TX104704215	<i>Extracted:</i>	Dec-14-16 17:10	Dec-14-16 17:11	Dec-14-16 17:12	Dec-14-16 17:13	Dec-14-16 17:14	Dec-14-16 17:14
	<i>Analyzed:</i>	Dec-14-16 19:55	Dec-14-16 20:10	Dec-14-16 20:26	Dec-14-16 20:44	Dec-14-16 21:00	Dec-14-16 21:15
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100	<0.000994 0.000994	<0.00100 0.00100	<0.000996 0.000996
Toluene		<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100	<0.000994 0.000994	<0.00100 0.00100	<0.000996 0.000996
Ethylbenzene		<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100	<0.000994 0.000994	<0.00100 0.00100	<0.000996 0.000996
m,p-Xylenes		<0.00202 0.00202	<0.00201 0.00201	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
o-Xylene		<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100	<0.000994 0.000994	<0.00100 0.00100	<0.000996 0.000996
Total Xylenes		<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100	<0.000994 0.000994	<0.00100 0.00100	<0.000996 0.000996
Total BTEX		<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100	<0.000994 0.000994	<0.00100 0.00100	<0.000996 0.000996
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Dec-19-16 09:00	Dec-19-16 09:00	Dec-19-16 09:00	Dec-19-16 09:00	Dec-19-16 09:00	Dec-19-16 09:00
	<i>Analyzed:</i>	Dec-19-16 12:16	Dec-19-16 12:23	Dec-19-16 12:44	Dec-19-16 12:51	Dec-19-16 12:58	Dec-19-16 13:05
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		9.45 5.00	7.24 5.00	6.86 5.00	6.93 5.00	6.83 5.00	6.57 5.00
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-14-16 14:00	Dec-14-16 14:00	Dec-14-16 14:00	Dec-15-16 07:00	Dec-14-16 14:00	Dec-14-16 14:00
	<i>Analyzed:</i>	Dec-14-16 23:43	Dec-15-16 00:04	Dec-15-16 00:50	Dec-15-16 19:19	Dec-15-16 08:58	Dec-15-16 01:34
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 541854

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal NM

Date Received in Lab: Fri Dec-09-16 05:25 pm

Report Date: 04-JAN-17

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	541854-043	541854-044	541854-045	541854-046	541854-047	541854-048
	<i>Field Id:</i>	(1) SB14 8-10	(1) SB15 0-2	(1) SB15 2-4	(1) SB15 4-6	(1) SB15 6-8	(1) SB16 0-2
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-08-16 18:35	Dec-08-16 18:37	Dec-08-16 18:40	Dec-08-16 18:45	Dec-08-16 18:50	Dec-09-16 07:30
BTEX by SW 8260B SUB: TX104704215	<i>Extracted:</i>	Dec-14-16 17:15	Dec-14-16 17:16	Dec-14-16 17:17	Dec-14-16 17:18	Dec-14-16 17:19	Dec-14-16 17:20
	<i>Analyzed:</i>	Dec-14-16 21:31	Dec-14-16 21:46	Dec-14-16 22:02	Dec-14-16 22:17	Dec-14-16 22:33	Dec-14-16 22:48
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000998 0.000998	<0.000996 0.000996	<0.000996 0.000996	<0.000992 0.000992	<0.00101 0.00101	<0.00100 0.00100
Toluene		<0.000998 0.000998	<0.000996 0.000996	<0.000996 0.000996	<0.000992 0.000992	<0.00101 0.00101	<0.00100 0.00100
Ethylbenzene		<0.000998 0.000998	<0.000996 0.000996	<0.000996 0.000996	<0.000992 0.000992	<0.00101 0.00101	<0.00100 0.00100
m,p-Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00198 0.00198	<0.00201 0.00201	<0.00201 0.00201
o-Xylene		<0.000998 0.000998	<0.000996 0.000996	<0.000996 0.000996	<0.000992 0.000992	<0.00101 0.00101	<0.00100 0.00100
Total Xylenes		<0.000998 0.000998	<0.000996 0.000996	<0.000996 0.000996	<0.000992 0.000992	<0.00101 0.00101	<0.00100 0.00100
Total BTEX		<0.000998 0.000998	<0.000996 0.000996	<0.000996 0.000996	<0.000992 0.000992	<0.00101 0.00101	<0.00100 0.00100
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Dec-19-16 09:00	Dec-19-16 09:00	Dec-19-16 09:00	Dec-19-16 09:00	Dec-19-16 09:00	Dec-19-16 09:00
	<i>Analyzed:</i>	Dec-19-16 13:12	Dec-19-16 13:19	Dec-19-16 13:26	Dec-19-16 13:33	Dec-19-16 14:08	Dec-19-16 14:15
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		7.00 5.00	10.4 5.00	12.0 5.00	6.60 5.00	7.57 5.00	1570 5.00
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-14-16 14:00	Dec-14-16 14:00	Dec-14-16 14:00	Dec-14-16 07:00	Dec-14-16 07:00	Dec-14-16 07:00
	<i>Analyzed:</i>	Dec-15-16 01:56	Dec-15-16 02:17	Dec-15-16 02:41	Dec-14-16 10:34	Dec-14-16 10:56	Dec-14-16 11:17
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 541854

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal NM

Date Received in Lab: Fri Dec-09-16 05:25 pm

Report Date: 04-JAN-17

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	541854-049	541854-050	541854-051	541854-052	541854-053	541854-054
	<i>Field Id:</i>	(1) SB16 2-4	(1) SB16 4-6	(1) SB16 6-8	(1) SB16 8-10	(1) SB16 10-12	(1) SB16 12-14
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-09-16 07:35	Dec-09-16 07:40	Dec-09-16 07:45	Dec-09-16 07:50	Dec-09-16 08:00	Dec-09-16 08:10
BTEX by SW 8260B SUB: TX104704215	<i>Extracted:</i>	Dec-14-16 17:21	Dec-14-16 17:21	Dec-14-16 17:20	Dec-14-16 17:21	Dec-14-16 17:22	Dec-14-16 17:23
	<i>Analyzed:</i>	Dec-14-16 23:03	Dec-14-16 23:19	Dec-14-16 17:37	Dec-14-16 17:56	Dec-14-16 18:14	Dec-14-16 18:33
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00100 0.00100	<0.000996 0.000996	<0.00100 0.00100	<0.000996 0.000996	<0.000998 0.000998	<0.00100 0.00100
Toluene		<0.00100 0.00100	<0.000996 0.000996	<0.00100 0.00100	<0.000996 0.000996	<0.000998 0.000998	<0.00100 0.00100
Ethylbenzene		<0.00100 0.00100	<0.000996 0.000996	<0.00100 0.00100	<0.000996 0.000996	<0.000998 0.000998	<0.00100 0.00100
m,p-Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
o-Xylene		<0.00100 0.00100	<0.000996 0.000996	<0.00100 0.00100	<0.000996 0.000996	<0.000998 0.000998	<0.00100 0.00100
Total Xylenes		<0.00100 0.00100	<0.000996 0.000996	<0.00100 0.00100	<0.000996 0.000996	<0.000998 0.000998	<0.00100 0.00100
Total BTEX		<0.00100 0.00100	<0.000996 0.000996	<0.00100 0.00100	<0.000996 0.000996	<0.000998 0.000998	<0.00100 0.00100
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Dec-19-16 09:00	Dec-19-16 09:00	Dec-19-16 09:00	Dec-19-16 09:00	Dec-19-16 09:00	Dec-19-16 09:00
	<i>Analyzed:</i>	Dec-19-16 14:23	Dec-19-16 14:30	Dec-19-16 14:37	Dec-19-16 14:44	Dec-19-16 14:51	Dec-19-16 14:58
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		2100 25.0	2620 25.0	6170 50.0	5600 50.0	3690 25.0	3170 25.0
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-14-16 07:00	Dec-14-16 07:00	Dec-14-16 07:00	Dec-14-16 07:00	Dec-14-16 07:00	Dec-14-16 07:00
	<i>Analyzed:</i>	Dec-14-16 11:40	Dec-14-16 12:02	Dec-14-16 12:24	Dec-14-16 12:45	Dec-14-16 13:07	Dec-14-16 13:29
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 541854

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal NM

Date Received in Lab: Fri Dec-09-16 05:25 pm

Report Date: 04-JAN-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	541854-055	541854-056	541854-057	541854-058	541854-059	541854-060
	Field Id:	(1) SB16 16-18	(1) SB16 18-20	(1) SB16 20-22	(1) SB16 22-24	(1) SB16 24-26	(1) SB17 0-2
	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-09-16 08:20	Dec-09-16 08:30	Dec-09-16 08:40	Dec-09-16 08:50	Dec-09-16 09:07	Dec-09-16 09:15
BTEX by SW 8260B SUB: TX104704215	Extracted:	Dec-14-16 17:24	Dec-14-16 17:25	Dec-15-16 11:01	Dec-15-16 11:02	Dec-15-16 20:10	Dec-15-16 11:04
	Analyzed:	Dec-14-16 18:52	Dec-14-16 19:10	Dec-15-16 11:38	Dec-15-16 11:53	Dec-15-16 22:14	Dec-15-16 12:24
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000998 0.000998	<0.000992 0.000992	<0.000992 0.000992	<0.000998 0.000998	<0.00101 0.00101	<0.00100 0.00100
Toluene		<0.000998 0.000998	<0.000992 0.000992	<0.000992 0.000992	<0.000998 0.000998	<0.00101 0.00101	<0.00100 0.00100
Ethylbenzene		<0.000998 0.000998	<0.000992 0.000992	<0.000992 0.000992	<0.000998 0.000998	<0.00101 0.00101	<0.00100 0.00100
m,p-Xylenes		<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200
o-Xylene		<0.000998 0.000998	<0.000992 0.000992	<0.000992 0.000992	<0.000998 0.000998	<0.00101 0.00101	<0.00100 0.00100
Total Xylenes		<0.000998 0.000998	<0.000992 0.000992	<0.000992 0.000992	<0.000998 0.000998	<0.00101 0.00101	<0.00100 0.00100
Total BTEX		<0.000998 0.000998	<0.000992 0.000992	<0.000992 0.000992	<0.000998 0.000998	<0.00101 0.00101	<0.00100 0.00100
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-19-16 09:00	Dec-19-16 10:30	Dec-19-16 10:30	Dec-19-16 10:30	Dec-19-16 10:30	Dec-19-16 10:30
	Analyzed:	Dec-19-16 15:05	Dec-19-16 15:47	Dec-19-16 16:08	Dec-19-16 16:15	Dec-19-16 16:22	Dec-19-16 16:29
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1560 5.00	2690 25.0	2020 25.0	387 5.00	251 5.00	8.36 5.00
TPH By SW8015 Mod	Extracted:	Dec-14-16 07:00	Dec-14-16 07:00	Dec-14-16 07:00	Dec-14-16 07:00	Dec-14-16 14:00	Dec-14-16 14:00
	Analyzed:	Dec-14-16 13:51	Dec-14-16 14:33	Dec-14-16 14:55	Dec-14-16 15:16	Dec-15-16 03:48	Dec-15-16 04:09
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 541854

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal NM

Date Received in Lab: Fri Dec-09-16 05:25 pm

Report Date: 04-JAN-17

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	541854-061	541854-062	541854-063	541854-064	541854-065	541854-066
	<i>Field Id:</i>	(1) SB17 2-4	(1) SB17 4-6 Split	(1) SB17 4-6	(1) SB17 6-8	(1) SB18 0-2	(1) SB18 2-4
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-09-16 09:15	Dec-09-16 09:20	Dec-09-16 09:25	Dec-09-16 09:34	Dec-09-16 09:40	Dec-09-16 09:45
BTEX by SW 8260B SUB: TX104704215	<i>Extracted:</i>	Dec-15-16 11:05	Dec-15-16 11:06	Dec-15-16 11:07	Dec-15-16 11:08	Dec-15-16 11:09	Dec-15-16 11:10
	<i>Analyzed:</i>	Dec-15-16 12:39	Dec-15-16 12:55	Dec-15-16 13:10	Dec-15-16 13:26	Dec-15-16 13:41	Dec-15-16 13:57
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000998 0.000998	<0.000998 0.000998	<0.000996 0.000996	<0.000998 0.000998	<0.000998 0.000998	<0.000996 0.000996
Toluene		<0.000998 0.000998	<0.000998 0.000998	<0.000996 0.000996	<0.000998 0.000998	<0.000998 0.000998	<0.000996 0.000996
Ethylbenzene		<0.000998 0.000998	<0.000998 0.000998	<0.000996 0.000996	<0.000998 0.000998	<0.000998 0.000998	<0.000996 0.000996
m,p-Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199
o-Xylene		<0.000998 0.000998	<0.000998 0.000998	<0.000996 0.000996	<0.000998 0.000998	<0.000998 0.000998	<0.000996 0.000996
Total Xylenes		<0.000998 0.000998	<0.000998 0.000998	<0.000996 0.000996	<0.000998 0.000998	<0.000998 0.000998	<0.000996 0.000996
Total BTEX		<0.000998 0.000998	<0.000998 0.000998	<0.000996 0.000996	<0.000998 0.000998	<0.000998 0.000998	<0.000996 0.000996
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Dec-19-16 10:30	Dec-19-16 10:30	Dec-19-16 10:30	Dec-19-16 10:30	Dec-19-16 10:30	Dec-19-16 10:30
	<i>Analyzed:</i>	Dec-19-16 16:50	Dec-19-16 16:58	Dec-19-16 17:05	Dec-19-16 17:12	Dec-19-16 17:19	Dec-19-16 17:26
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		9.35 5.00	7.18 5.00	9.12 5.00	10.2 5.00	10.1 5.00	5.33 5.00
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-14-16 14:00	Dec-14-16 14:00	Dec-14-16 14:00	Dec-15-16 14:00	Dec-14-16 07:00	Dec-13-16 10:00
	<i>Analyzed:</i>	Dec-15-16 04:33	Dec-15-16 04:55	Dec-15-16 05:16	Dec-16-16 03:15	Dec-14-16 17:52	Dec-13-16 12:06
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
TPH By SW8015 Mod	<i>Extracted:</i>				Dec-15-16 14:00		
	<i>Analyzed:</i>				Dec-16-16 03:15		
	<i>Units/RL:</i>				mg/kg RL		
C28-C35 Oil Range Hydrocarbons					<15.0 15.0		

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 541854

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal NM

Date Received in Lab: Fri Dec-09-16 05:25 pm

Report Date: 04-JAN-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	541854-067	541854-068	541854-069	541854-070	541854-071	541854-072
	Field Id:	(1) SB18 4-6	(1) SB18 6-8	(1) SB18 8-10	(1) SB19 0-2	(1) SB19 2-4	(1) SB19 4-6
	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-09-16 09:50	Dec-09-16 09:55	Dec-09-16 10:00	Dec-09-16 10:10	Dec-09-16 10:15	Dec-09-16 10:25
BTEX by SW 8260B SUB: TX104704215	Extracted:	Dec-15-16 11:11	Dec-15-16 11:04	Dec-15-16 11:05	Dec-15-16 11:06	Dec-15-16 11:00	Dec-15-16 11:07
	Analyzed:	Dec-15-16 14:12	Dec-15-16 12:59	Dec-15-16 13:18	Dec-15-16 13:37	Dec-15-16 11:19	Dec-15-16 13:59
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00100 0.00100	<0.000990 0.000990	<0.000990 0.000990	<0.00100 0.00100	<0.000992 0.000992	<0.000998 0.000998
Toluene		<0.00100 0.00100	<0.000990 0.000990	<0.000990 0.000990	<0.00100 0.00100	<0.000992 0.000992	<0.000998 0.000998
Ethylbenzene		<0.00100 0.00100	<0.000990 0.000990	<0.000990 0.000990	<0.00100 0.00100	<0.000992 0.000992	<0.000998 0.000998
m,p-Xylenes		<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200
o-Xylene		<0.00100 0.00100	<0.000990 0.000990	<0.000990 0.000990	<0.00100 0.00100	<0.000992 0.000992	<0.000998 0.000998
Total Xylenes		<0.00100 0.00100	<0.000990 0.000990	<0.000990 0.000990	<0.00100 0.00100	<0.000992 0.000992	<0.000998 0.000998
Total BTEX		<0.00100 0.00100	<0.000990 0.000990	<0.000990 0.000990	<0.00100 0.00100	<0.000992 0.000992	<0.000998 0.000998
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-19-16 10:30	Dec-19-16 10:30	Dec-19-16 10:30	Dec-19-16 10:30	Dec-19-16 10:30	Dec-19-16 10:30
	Analyzed:	Dec-19-16 17:47	Dec-19-16 17:54	Dec-19-16 18:15	Dec-19-16 18:22	Dec-19-16 18:29	Dec-19-16 18:36
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		6.73 5.00	6.27 5.00	5.86 5.00	5.47 5.00	11.1 5.00	5.86 5.00
TPH By SW8015 Mod	Extracted:	Dec-13-16 10:00	Dec-13-16 10:00	Dec-13-16 10:00	Dec-13-16 10:00	Dec-13-16 10:00	Dec-13-16 10:00
	Analyzed:	Dec-13-16 13:15	Dec-13-16 13:36	Dec-13-16 13:59	Dec-13-16 14:21	Dec-13-16 14:42	Dec-13-16 16:12
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	50.6 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	50.6 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 541854

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal NM

Date Received in Lab: Fri Dec-09-16 05:25 pm

Report Date: 04-JAN-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	541854-073	541854-074	541854-075	541854-076	541854-077	541854-078
	Field Id:	(1) SB19 6-8	(1) SB20 0-2	(1) SB20 2-4	(1) SB20 4-6	(1) SB20 6-8	(1) SB20 8-10
	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-09-16 10:30	Dec-09-16 10:40	Dec-09-16 10:45	Dec-09-16 10:50	Dec-09-16 10:52	Dec-09-16 10:55
BTEX by SW 8260B SUB: TX104704215	Extracted:	Dec-15-16 11:08	Dec-15-16 11:09	Dec-15-16 11:10	Dec-15-16 11:12	Dec-15-16 11:13	Dec-15-16 11:14
	Analyzed:	Dec-15-16 14:18	Dec-15-16 14:36	Dec-15-16 14:55	Dec-15-16 14:27	Dec-15-16 14:43	Dec-15-16 14:58
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000996 0.000996	<0.000992 0.000992	<0.000992 0.000992	<0.00100 0.00100	<0.00101 0.00101	<0.00100 0.00100
Toluene		<0.000996 0.000996	<0.000992 0.000992	<0.000992 0.000992	<0.00100 0.00100	<0.00101 0.00101	<0.00100 0.00100
Ethylbenzene		<0.000996 0.000996	<0.000992 0.000992	<0.000992 0.000992	<0.00100 0.00100	<0.00101 0.00101	<0.00100 0.00100
m,p-Xylenes		<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198	<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201
o-Xylene		<0.000996 0.000996	<0.000992 0.000992	<0.000992 0.000992	<0.00100 0.00100	<0.00101 0.00101	<0.00100 0.00100
Total Xylenes		<0.000996 0.000996	<0.000992 0.000992	<0.000992 0.000992	<0.00100 0.00100	<0.00101 0.00101	<0.00100 0.00100
Total BTEX		<0.000996 0.000996	<0.000992 0.000992	<0.000992 0.000992	<0.00100 0.00100	<0.00101 0.00101	<0.00100 0.00100
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-19-16 10:30	Dec-19-16 10:30	Dec-19-16 10:30	Dec-19-16 15:00	Dec-19-16 15:00	Dec-19-16 15:00
	Analyzed:	Dec-19-16 18:43	Dec-19-16 18:50	Dec-19-16 18:57	Dec-19-16 19:40	Dec-19-16 20:01	Dec-19-16 20:08
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		5.86 5.00	6.62 5.00	7.87 5.00	25.7 25.0	7170 25.0	10.2 5.00
TPH By SW8015 Mod	Extracted:	Dec-13-16 10:00	Dec-13-16 10:00	Dec-13-16 10:00	Dec-13-16 10:00	Dec-13-16 10:00	Dec-13-16 10:00
	Analyzed:	Dec-13-16 16:33	Dec-14-16 08:09	Dec-13-16 17:16	Dec-13-16 17:59	Dec-13-16 18:21	Dec-13-16 18:42
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 541854

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal NM

Date Received in Lab: Fri Dec-09-16 05:25 pm

Report Date: 04-JAN-17

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	541854-079	541854-080	541854-081	541854-082	541854-083	541854-084
	<i>Field Id:</i>	(1) SB20 10-12	(1) SB21 0-2	(1) SB21 2-4	(1) SB21 4-6	(1) SB21 6-8 Split	(1) SB21 6-8
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-09-16 11:00	Dec-09-16 11:02	Dec-09-16 11:05	Dec-09-16 11:10	Dec-09-16 11:15	Dec-09-16 11:19
BTEX by SW 8260B SUB: TX104704215	<i>Extracted:</i>	Dec-15-16 11:16	Dec-15-16 11:15	Dec-15-16 11:00	Dec-15-16 11:01	Dec-15-16 11:02	Dec-15-16 11:02
	<i>Analyzed:</i>	Dec-15-16 15:29	Dec-15-16 15:14	Dec-15-16 11:22	Dec-15-16 11:41	Dec-15-16 12:03	Dec-15-16 12:22
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00100 0.00100	<0.000994 0.000994	<0.000998 0.000998	<0.000996 0.000996	<0.000990 0.000990	<0.00100 0.00100
Toluene		<0.00100 0.00100	<0.000994 0.000994	<0.000998 0.000998	<0.000996 0.000996	<0.000990 0.000990	<0.00100 0.00100
Ethylbenzene		<0.00100 0.00100	<0.000994 0.000994	<0.000998 0.000998	<0.000996 0.000996	<0.000990 0.000990	<0.00100 0.00100
m,p-Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200
o-Xylene		<0.00100 0.00100	<0.000994 0.000994	<0.000998 0.000998	<0.000996 0.000996	<0.000990 0.000990	<0.00100 0.00100
Total Xylenes		<0.00100 0.00100	<0.000994 0.000994	<0.000998 0.000998	<0.000996 0.000996	<0.000990 0.000990	<0.00100 0.00100
Total BTEX		<0.00100 0.00100	<0.000994 0.000994	<0.000998 0.000998	<0.000996 0.000996	<0.000990 0.000990	<0.00100 0.00100
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Dec-19-16 15:00	Dec-19-16 15:00	Dec-19-16 15:00	Dec-19-16 15:00	Dec-19-16 15:00	Dec-19-16 15:00
	<i>Analyzed:</i>	Dec-19-16 20:15	Dec-19-16 20:22	Dec-19-16 20:43	Dec-19-16 20:50	Dec-19-16 20:57	Dec-19-16 21:04
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		6.42 5.00	6.08 5.00	7.94 5.00	6.02 5.00	6.14 5.00	6.30 5.00
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-13-16 10:00	Dec-13-16 10:00	Dec-13-16 10:00	Dec-13-16 10:00	Dec-13-16 10:00	Dec-13-16 10:00
	<i>Analyzed:</i>	Dec-13-16 19:03	Dec-13-16 19:24	Dec-13-16 19:45	Dec-13-16 20:19	Dec-13-16 20:41	Dec-13-16 21:02
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 541854

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal NM

Date Received in Lab: Fri Dec-09-16 05:25 pm

Report Date: 04-JAN-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id: Field Id: Depth: Matrix: Sampled:	541854-085 (1) SB21 8-10 SOIL Dec-09-16 11:30					
BTEX by SW 8260B SUB: TX104704215	Extracted: Analyzed: Units/RL:	Dec-15-16 11:03 Dec-15-16 12:40 mg/kg RL					
Benzene		<0.000996 0.000996					
Toluene		<0.000996 0.000996					
Ethylbenzene		<0.000996 0.000996					
m,p-Xylenes		<0.00199 0.00199					
o-Xylene		<0.000996 0.000996					
Total Xylenes		<0.000996 0.000996					
Total BTEX		<0.000996 0.000996					
Inorganic Anions by EPA 300/300.1	Extracted: Analyzed: Units/RL:	Dec-19-16 15:00 Dec-19-16 21:11 mg/kg RL					
Chloride		5.97 5.00					
TPH By SW8015 Mod	Extracted: Analyzed: Units/RL:	Dec-13-16 10:00 Dec-13-16 21:23 mg/kg RL					
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0					
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0					
Total TPH		<15.0 15.0					

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use.
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Kelsey Brooks
Project Manager

- 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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(602) 437-0330	



Form 2 - Surrogate Recoveries

Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005749

Sample: 541854-066 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 12:06

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	99.8	105	70-135	
o-Terphenyl	50.6	49.9	101	70-135	

Lab Batch #: 3005611

Sample: 541854-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 13:05

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0472	0.0500	94	74-126	
1,2-Dichloroethane-D4	0.0408	0.0500	82	80-120	
Toluene-D8	0.0493	0.0500	99	73-132	

Lab Batch #: 3005749

Sample: 541854-067 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 13:15

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.7	99.7	99	70-135	
o-Terphenyl	44.8	49.9	90	70-135	

Lab Batch #: 3005611

Sample: 541854-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 13:20

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0581	0.0500	116	74-126	
1,2-Dichloroethane-D4	0.0496	0.0500	99	80-120	
Toluene-D8	0.0435	0.0500	87	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005749

Sample: 541854-068 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 13:36

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.0	100	93	70-135	
o-Terphenyl	42.0	50.0	84	70-135	

Lab Batch #: 3005611

Sample: 541854-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 13:40

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	0.0491	0.0500	98	80-120	
Toluene-D8	0.0472	0.0500	94	73-132	

Lab Batch #: 3005611

Sample: 541854-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 13:56

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0591	0.0500	118	74-126	
1,2-Dichloroethane-D4	0.0504	0.0500	101	80-120	
Toluene-D8	0.0484	0.0500	97	73-132	

Lab Batch #: 3005749

Sample: 541854-069 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 13:59

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.0	99.9	82	70-135	
o-Terphenyl	35.2	50.0	70	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005611

Sample: 541854-005 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 14:11

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0516	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0427	0.0500	85	80-120	
Toluene-D8	0.0431	0.0500	86	73-132	

Lab Batch #: 3005749

Sample: 541854-070 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 14:21

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	100	99.8	100	70-135	
o-Terphenyl	47.7	49.9	96	70-135	

Lab Batch #: 3005611

Sample: 541854-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 14:27

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0547	0.0500	109	74-126	
1,2-Dichloroethane-D4	0.0508	0.0500	102	80-120	
Toluene-D8	0.0474	0.0500	95	73-132	

Lab Batch #: 3005608

Sample: 541854-021 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 14:36

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0498	0.0500	100	74-126	
1,2-Dichloroethane-D4	0.0565	0.0500	113	80-120	
Toluene-D8	0.0546	0.0500	109	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005611

Sample: 541854-008 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 14:42

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0581	0.0500	116	74-126	
1,2-Dichloroethane-D4	0.0522	0.0500	104	80-120	
Toluene-D8	0.0454	0.0500	91	73-132	

Lab Batch #: 3005749

Sample: 541854-071 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 14:42

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	97.0	99.8	97	70-135	
o-Terphenyl	45.9	49.9	92	70-135	

Lab Batch #: 3005608

Sample: 541854-022 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 14:55

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0532	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0515	0.0500	103	80-120	
Toluene-D8	0.0537	0.0500	107	73-132	

Lab Batch #: 3005608

Sample: 541854-023 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 15:19

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0500	0.0500	100	74-126	
1,2-Dichloroethane-D4	0.0542	0.0500	108	80-120	
Toluene-D8	0.0524	0.0500	105	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005608

Sample: 541854-024 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 15:38

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0517	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0511	0.0500	102	80-120	
Toluene-D8	0.0541	0.0500	108	73-132	

Lab Batch #: 3005608

Sample: 541854-025 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 15:56

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0509	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0499	0.0500	100	80-120	
Toluene-D8	0.0582	0.0500	116	73-132	

Lab Batch #: 3005749

Sample: 541854-072 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 16:12

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	99.7	99.8	100	70-135	
o-Terphenyl	47.6	49.9	95	70-135	

Lab Batch #: 3005749

Sample: 541854-073 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 16:33

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	101	99.7	101	70-135	
o-Terphenyl	49.9	49.9	100	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005749

Sample: 541854-075 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 17:16

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	95.2	99.6	96	70-135	
o-Terphenyl	42.8	49.8	86	70-135	

Lab Batch #: 3005611

Sample: 541854-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 17:18

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0549	0.0500	110	74-126	
1,2-Dichloroethane-D4	0.0517	0.0500	103	80-120	
Toluene-D8	0.0462	0.0500	92	73-132	

Lab Batch #: 3005611

Sample: 541854-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 17:33

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0486	0.0500	97	74-126	
1,2-Dichloroethane-D4	0.0501	0.0500	100	80-120	
Toluene-D8	0.0462	0.0500	92	73-132	

Lab Batch #: 3005608

Sample: 541854-020 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 17:39

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0539	0.0500	108	74-126	
1,2-Dichloroethane-D4	0.0499	0.0500	100	80-120	
Toluene-D8	0.0503	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005611

Sample: 541854-011 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 17:49

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0579	0.0500	116	74-126	
1,2-Dichloroethane-D4	0.0520	0.0500	104	80-120	
Toluene-D8	0.0457	0.0500	91	73-132	

Lab Batch #: 3005608

Sample: 541854-026 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 17:57

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0524	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0569	0.0500	114	80-120	
Toluene-D8	0.0509	0.0500	102	73-132	

Lab Batch #: 3005749

Sample: 541854-076 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 17:59

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	93.9	99.9	94	70-135	
o-Terphenyl	42.1	50.0	84	70-135	

Lab Batch #: 3005611

Sample: 541854-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 18:04

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0589	0.0500	118	74-126	
1,2-Dichloroethane-D4	0.0493	0.0500	99	80-120	
Toluene-D8	0.0506	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005608

Sample: 541854-027 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 18:16

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0507	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0529	0.0500	106	80-120	
Toluene-D8	0.0564	0.0500	113	73-132	

Lab Batch #: 3005611

Sample: 541854-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 18:20

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0555	0.0500	111	74-126	
1,2-Dichloroethane-D4	0.0451	0.0500	90	80-120	
Toluene-D8	0.0464	0.0500	93	73-132	

Lab Batch #: 3005749

Sample: 541854-077 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 18:21

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	101	99.9	101	70-135	
o-Terphenyl	48.1	50.0	96	70-135	

Lab Batch #: 3005611

Sample: 541854-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 18:35

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0510	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0454	0.0500	91	80-120	
Toluene-D8	0.0472	0.0500	94	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005608

Sample: 541854-028 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 18:35

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0522	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0520	0.0500	104	80-120	
Toluene-D8	0.0506	0.0500	101	73-132	

Lab Batch #: 3005749

Sample: 541854-078 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 18:42

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	99.2	100	99	70-135	
o-Terphenyl	46.5	50.0	93	70-135	

Lab Batch #: 3005611

Sample: 541854-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 18:51

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0495	0.0500	99	74-126	
1,2-Dichloroethane-D4	0.0510	0.0500	102	80-120	
Toluene-D8	0.0488	0.0500	98	73-132	

Lab Batch #: 3005608

Sample: 541854-029 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 18:53

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0550	0.0500	110	74-126	
1,2-Dichloroethane-D4	0.0532	0.0500	106	80-120	
Toluene-D8	0.0489	0.0500	98	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005749

Sample: 541854-079 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 19:03

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	99.7	102	70-135	
o-Terphenyl	50.5	49.9	101	70-135	

Lab Batch #: 3005611

Sample: 541854-016 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 19:06

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0439	0.0500	88	74-126	
1,2-Dichloroethane-D4	0.0483	0.0500	97	80-120	
Toluene-D8	0.0478	0.0500	96	73-132	

Lab Batch #: 3005608

Sample: 541854-030 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 19:12

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0501	0.0500	100	74-126	
1,2-Dichloroethane-D4	0.0520	0.0500	104	80-120	
Toluene-D8	0.0589	0.0500	118	73-132	

Lab Batch #: 3005749

Sample: 541854-080 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 19:24

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	99.8	102	70-135	
o-Terphenyl	49.4	49.9	99	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005608

Sample: 541854-019 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 19:31

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0518	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0560	0.0500	112	80-120	
Toluene-D8	0.0511	0.0500	102	73-132	

Lab Batch #: 3005611

Sample: 541854-018 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 19:36

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0457	0.0500	91	74-126	
1,2-Dichloroethane-D4	0.0449	0.0500	90	80-120	
Toluene-D8	0.0454	0.0500	91	73-132	

Lab Batch #: 3005749

Sample: 541854-081 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 19:45

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	92.8	99.7	93	70-135	
o-Terphenyl	41.4	49.9	83	70-135	

Lab Batch #: 3005749

Sample: 541854-082 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 20:19

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	96.2	99.7	96	70-135	
o-Terphenyl	46.3	49.9	93	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005749

Sample: 541854-083 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 20:41

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.2	99.8	95	70-135	
o-Terphenyl	45.9	49.9	92	70-135	

Lab Batch #: 3005749

Sample: 541854-084 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 21:02

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	99.9	101	70-135	
o-Terphenyl	51.0	50.0	102	70-135	

Lab Batch #: 3005749

Sample: 541854-085 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 21:23

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.3	99.8	97	70-135	
o-Terphenyl	46.8	49.9	94	70-135	

Lab Batch #: 3005749

Sample: 541854-074 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 08:09

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	99.8	107	70-135	
o-Terphenyl	51.8	49.9	104	70-135	

Lab Batch #: 3005750

Sample: 541854-046 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 10:34

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.6	99.7	94	70-135	
o-Terphenyl	45.3	49.9	91	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005750

Sample: 541854-047 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 10:56

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.6	99.6	93	70-135	
o-Terphenyl	43.6	49.8	88	70-135	

Lab Batch #: 3005750

Sample: 541854-048 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 11:17

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.7	99.9	93	70-135	
o-Terphenyl	43.0	50.0	86	70-135	

Lab Batch #: 3005750

Sample: 541854-049 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 11:40

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.1	99.8	88	70-135	
o-Terphenyl	40.7	49.9	82	70-135	

Lab Batch #: 3005750

Sample: 541854-050 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 12:02

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.1	99.8	88	70-135	
o-Terphenyl	40.1	49.9	80	70-135	

Lab Batch #: 3005750

Sample: 541854-051 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 12:24

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.0	100	90	70-135	
o-Terphenyl	41.9	50.0	84	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005750

Sample: 541854-052 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 12:45

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.9	99.8	95	70-135	
o-Terphenyl	45.0	49.9	90	70-135	

Lab Batch #: 3005750

Sample: 541854-053 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 13:07

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	99.6	100	70-135	
o-Terphenyl	50.1	49.8	101	70-135	

Lab Batch #: 3005750

Sample: 541854-054 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 13:29

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.5	99.9	94	70-135	
o-Terphenyl	42.9	50.0	86	70-135	

Lab Batch #: 3005750

Sample: 541854-055 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 13:51

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.6	99.9	98	70-135	
o-Terphenyl	47.2	50.0	94	70-135	

Lab Batch #: 3005750

Sample: 541854-056 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 14:33

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.4	99.7	84	70-135	
o-Terphenyl	34.9	49.9	70	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005784

Sample: 541854-006 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 14:36

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0526	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0509	0.0500	102	80-120	
Toluene-D8	0.0476	0.0500	95	73-132	

Lab Batch #: 3005750

Sample: 541854-057 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 14:55

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	48.5	50.0	97	70-135	

Lab Batch #: 3005784

Sample: 541854-017 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 15:14

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0522	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0498	0.0500	100	80-120	
Toluene-D8	0.0513	0.0500	103	73-132	

Lab Batch #: 3005750

Sample: 541854-058 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 15:16

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	87.9	99.8	88	70-135	
o-Terphenyl	38.0	49.9	76	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005784

Sample: 541854-051 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 17:37

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0518	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0526	0.0500	105	80-120	
Toluene-D8	0.0527	0.0500	105	73-132	

Lab Batch #: 3005750

Sample: 541854-065 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 17:52

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	93.7	99.7	94	70-135	
o-Terphenyl	42.7	49.9	86	70-135	

Lab Batch #: 3005784

Sample: 541854-052 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 17:56

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0559	0.0500	112	74-126	
1,2-Dichloroethane-D4	0.0516	0.0500	103	80-120	
Toluene-D8	0.0535	0.0500	107	73-132	

Lab Batch #: 3005784

Sample: 541854-053 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 18:14

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0523	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0559	0.0500	112	80-120	
Toluene-D8	0.0580	0.0500	116	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005769

Sample: 541854-031 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 18:23

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0484	0.0500	97	74-126	
1,2-Dichloroethane-D4	0.0401	0.0500	80	80-120	
Toluene-D8	0.0452	0.0500	90	73-132	

Lab Batch #: 3005784

Sample: 541854-054 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 18:33

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	0.0540	0.0500	108	80-120	
Toluene-D8	0.0579	0.0500	116	73-132	

Lab Batch #: 3005769

Sample: 541854-032 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 18:39

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	0.0462	0.0500	92	80-120	
Toluene-D8	0.0444	0.0500	89	73-132	

Lab Batch #: 3005784

Sample: 541854-055 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 18:52

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0512	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0491	0.0500	98	80-120	
Toluene-D8	0.0518	0.0500	104	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005769

Sample: 541854-033 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 18:54

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0461	0.0500	92	74-126	
1,2-Dichloroethane-D4	0.0446	0.0500	89	80-120	
Toluene-D8	0.0429	0.0500	86	73-132	

Lab Batch #: 3005769

Sample: 541854-034 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 19:09

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0442	0.0500	88	74-126	
1,2-Dichloroethane-D4	0.0412	0.0500	82	80-120	
Toluene-D8	0.0469	0.0500	94	73-132	

Lab Batch #: 3005784

Sample: 541854-056 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 19:10

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0527	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0493	0.0500	99	80-120	
Toluene-D8	0.0526	0.0500	105	73-132	

Lab Batch #: 3005769

Sample: 541854-035 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 19:25

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0490	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0415	0.0500	83	80-120	
Toluene-D8	0.0476	0.0500	95	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005769

Sample: 541854-036 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 19:40

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0550	0.0500	110	74-126	
1,2-Dichloroethane-D4	0.0449	0.0500	90	80-120	
Toluene-D8	0.0445	0.0500	89	73-132	

Lab Batch #: 3005769

Sample: 541854-037 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 19:55

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0435	0.0500	87	74-126	
1,2-Dichloroethane-D4	0.0464	0.0500	93	80-120	
Toluene-D8	0.0434	0.0500	87	73-132	

Lab Batch #: 3005769

Sample: 541854-038 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 20:10

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0431	0.0500	86	74-126	
1,2-Dichloroethane-D4	0.0426	0.0500	85	80-120	
Toluene-D8	0.0461	0.0500	92	73-132	

Lab Batch #: 3005769

Sample: 541854-039 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 20:26

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0557	0.0500	111	74-126	
1,2-Dichloroethane-D4	0.0419	0.0500	84	80-120	
Toluene-D8	0.0486	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005769

Sample: 541854-040 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 20:44

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0534	0.0500	107	74-126	
1,2-Dichloroethane-D4	0.0454	0.0500	91	80-120	
Toluene-D8	0.0488	0.0500	98	73-132	

Lab Batch #: 3005769

Sample: 541854-041 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 21:00

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0478	0.0500	96	74-126	
1,2-Dichloroethane-D4	0.0464	0.0500	93	80-120	
Toluene-D8	0.0437	0.0500	87	73-132	

Lab Batch #: 3005769

Sample: 541854-042 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 21:15

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0527	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0481	0.0500	96	80-120	
Toluene-D8	0.0479	0.0500	96	73-132	

Lab Batch #: 3005769

Sample: 541854-043 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 21:31

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	0.0450	0.0500	90	80-120	
Toluene-D8	0.0482	0.0500	96	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005753

Sample: 541854-031 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 21:33

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	99.9	108	70-135	
o-Terphenyl	55.9	50.0	112	70-135	

Lab Batch #: 3005769

Sample: 541854-044 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 21:46

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0549	0.0500	110	74-126	
1,2-Dichloroethane-D4	0.0469	0.0500	94	80-120	
Toluene-D8	0.0457	0.0500	91	73-132	

Lab Batch #: 3005753

Sample: 541854-032 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 21:55

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	51.1	50.0	102	70-135	

Lab Batch #: 3005769

Sample: 541854-045 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 22:02

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0578	0.0500	116	74-126	
1,2-Dichloroethane-D4	0.0474	0.0500	95	80-120	
Toluene-D8	0.0470	0.0500	94	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005753

Sample: 541854-033 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 22:16

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.1	99.6	97	70-135	
o-Terphenyl	45.7	49.8	92	70-135	

Lab Batch #: 3005769

Sample: 541854-046 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 22:17

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0548	0.0500	110	74-126	
1,2-Dichloroethane-D4	0.0533	0.0500	107	80-120	
Toluene-D8	0.0492	0.0500	98	73-132	

Lab Batch #: 3005769

Sample: 541854-047 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 22:33

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0562	0.0500	112	74-126	
1,2-Dichloroethane-D4	0.0469	0.0500	94	80-120	
Toluene-D8	0.0473	0.0500	95	73-132	

Lab Batch #: 3005753

Sample: 541854-034 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 22:37

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.4	99.7	91	70-135	
o-Terphenyl	36.1	49.9	72	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005769

Sample: 541854-048 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 22:48

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0535	0.0500	107	74-126	
1,2-Dichloroethane-D4	0.0526	0.0500	105	80-120	
Toluene-D8	0.0470	0.0500	94	73-132	

Lab Batch #: 3005753

Sample: 541854-035 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 22:58

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	101	99.7	101	70-135	
o-Terphenyl	48.2	49.9	97	70-135	

Lab Batch #: 3005769

Sample: 541854-049 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 23:03

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0552	0.0500	110	74-126	
1,2-Dichloroethane-D4	0.0513	0.0500	103	80-120	
Toluene-D8	0.0474	0.0500	95	73-132	

Lab Batch #: 3005769

Sample: 541854-050 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 23:19

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0502	0.0500	100	74-126	
1,2-Dichloroethane-D4	0.0474	0.0500	95	80-120	
Toluene-D8	0.0482	0.0500	96	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005753

Sample: 541854-036 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 23:20

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.6	99.8	98	70-135	
o-Terphenyl	46.4	49.9	93	70-135	

Lab Batch #: 3005753

Sample: 541854-037 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 23:43

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.3	99.7	96	70-135	
o-Terphenyl	46.2	49.9	93	70-135	

Lab Batch #: 3005753

Sample: 541854-038 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 00:04

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.0	99.9	99	70-135	
o-Terphenyl	48.0	50.0	96	70-135	

Lab Batch #: 3005753

Sample: 541854-039 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 00:50

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.1	99.9	96	70-135	
o-Terphenyl	47.3	50.0	95	70-135	

Lab Batch #: 3005753

Sample: 541854-042 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 01:34

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.0	99.8	95	70-135	
o-Terphenyl	44.2	49.9	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005753

Sample: 541854-043 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 01:56

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	99.9	101	70-135	
o-Terphenyl	50.2	50.0	100	70-135	

Lab Batch #: 3005753

Sample: 541854-044 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 02:17

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.9	99.8	86	70-135	
o-Terphenyl	35.4	49.9	71	70-135	

Lab Batch #: 3005753

Sample: 541854-045 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 02:41

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.8	99.8	89	70-135	
o-Terphenyl	43.0	49.9	86	70-135	

Lab Batch #: 3005753

Sample: 541854-059 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 03:48

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.2	100	86	70-135	
o-Terphenyl	40.2	50.0	80	70-135	

Lab Batch #: 3005753

Sample: 541854-060 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 04:09

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.3	99.6	94	70-135	
o-Terphenyl	43.8	49.8	88	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005753

Sample: 541854-061 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 04:33

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.4	99.7	87	70-135	
o-Terphenyl	38.0	49.9	76	70-135	

Lab Batch #: 3005753

Sample: 541854-062 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 04:55

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.8	99.6	94	70-135	
o-Terphenyl	45.7	49.8	92	70-135	

Lab Batch #: 3005753

Sample: 541854-063 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 05:16

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	99.9	100	70-135	
o-Terphenyl	47.8	50.0	96	70-135	

Lab Batch #: 3005753

Sample: 541854-041 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 08:58

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.9	99.8	94	70-135	
o-Terphenyl	46.9	49.9	94	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005815

Sample: 541854-071 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 11:19

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0464	0.0500	93	74-126	
1,2-Dichloroethane-D4	0.0418	0.0500	84	80-120	
Toluene-D8	0.0454	0.0500	91	73-132	

Lab Batch #: 3005809

Sample: 541854-081 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 11:22

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0532	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0531	0.0500	106	80-120	
Toluene-D8	0.0531	0.0500	106	73-132	

Lab Batch #: 3005815

Sample: 541854-057 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 11:38

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0591	0.0500	118	74-126	
1,2-Dichloroethane-D4	0.0509	0.0500	102	80-120	
Toluene-D8	0.0480	0.0500	96	73-132	

Lab Batch #: 3005809

Sample: 541854-082 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 11:41

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0561	0.0500	112	74-126	
1,2-Dichloroethane-D4	0.0548	0.0500	110	80-120	
Toluene-D8	0.0552	0.0500	110	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005862

Sample: 541854-011 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 11:49

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.7	99.8	86	70-135	
o-Terphenyl	35.1	49.9	70	70-135	

Lab Batch #: 3005815

Sample: 541854-058 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 11:53

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0518	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0501	0.0500	100	80-120	
Toluene-D8	0.0463	0.0500	93	73-132	

Lab Batch #: 3005809

Sample: 541854-083 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 12:03

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0542	0.0500	108	74-126	
1,2-Dichloroethane-D4	0.0523	0.0500	105	80-120	
Toluene-D8	0.0522	0.0500	104	73-132	

Lab Batch #: 3005862

Sample: 541854-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 12:10

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.7	99.8	99	70-135	
o-Terphenyl	47.8	49.9	96	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005809

Sample: 541854-084 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 12:22

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0494	0.0500	99	74-126	
1,2-Dichloroethane-D4	0.0478	0.0500	96	80-120	
Toluene-D8	0.0502	0.0500	100	73-132	

Lab Batch #: 3005815

Sample: 541854-060 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 12:24

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0512	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0524	0.0500	105	80-120	
Toluene-D8	0.0472	0.0500	94	73-132	

Lab Batch #: 3005862

Sample: 541854-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 12:34

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	81.0	99.9	81	70-135	
o-Terphenyl	35.1	50.0	70	70-135	

Lab Batch #: 3005815

Sample: 541854-061 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 12:39

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0506	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0478	0.0500	96	80-120	
Toluene-D8	0.0466	0.0500	93	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005809

Sample: 541854-085 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 12:40

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0516	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0539	0.0500	108	80-120	
Toluene-D8	0.0491	0.0500	98	73-132	

Lab Batch #: 3005815

Sample: 541854-062 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 12:55

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0625	0.0500	125	74-126	
1,2-Dichloroethane-D4	0.0509	0.0500	102	80-120	
Toluene-D8	0.0454	0.0500	91	73-132	

Lab Batch #: 3005809

Sample: 541854-068 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 12:59

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0524	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0473	0.0500	95	80-120	
Toluene-D8	0.0565	0.0500	113	73-132	

Lab Batch #: 3005815

Sample: 541854-063 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 13:10

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0580	0.0500	116	74-126	
1,2-Dichloroethane-D4	0.0460	0.0500	92	80-120	
Toluene-D8	0.0465	0.0500	93	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005862

Sample: 541854-015 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 13:16

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.0	99.9	87	70-135	
o-Terphenyl	37.5	50.0	75	70-135	

Lab Batch #: 3005809

Sample: 541854-069 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 13:18

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0493	0.0500	99	74-126	
1,2-Dichloroethane-D4	0.0526	0.0500	105	80-120	
Toluene-D8	0.0562	0.0500	112	73-132	

Lab Batch #: 3005815

Sample: 541854-064 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 13:26

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0574	0.0500	115	74-126	
1,2-Dichloroethane-D4	0.0461	0.0500	92	80-120	
Toluene-D8	0.0451	0.0500	90	73-132	

Lab Batch #: 3005809

Sample: 541854-070 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 13:37

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0521	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0520	0.0500	104	80-120	
Toluene-D8	0.0537	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005862

Sample: 541854-016 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 13:39

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.0	99.9	92	70-135	
o-Terphenyl	44.3	50.0	89	70-135	

Lab Batch #: 3005815

Sample: 541854-065 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 13:41

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0624	0.0500	125	74-126	
1,2-Dichloroethane-D4	0.0450	0.0500	90	80-120	
Toluene-D8	0.0445	0.0500	89	73-132	

Lab Batch #: 3005815

Sample: 541854-066 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 13:57

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	0.0450	0.0500	90	80-120	
Toluene-D8	0.0429	0.0500	86	73-132	

Lab Batch #: 3005809

Sample: 541854-072 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 13:59

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	0.0530	0.0500	106	80-120	
Toluene-D8	0.0568	0.0500	114	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005862

Sample: 541854-017 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 14:01

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.4	100	90	70-135	
o-Terphenyl	39.4	50.0	79	70-135	

Lab Batch #: 3005815

Sample: 541854-067 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 14:12

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0529	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0517	0.0500	103	80-120	
Toluene-D8	0.0475	0.0500	95	73-132	

Lab Batch #: 3005809

Sample: 541854-073 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 14:18

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0552	0.0500	110	74-126	
1,2-Dichloroethane-D4	0.0533	0.0500	107	80-120	
Toluene-D8	0.0517	0.0500	103	73-132	

Lab Batch #: 3005862

Sample: 541854-018 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 14:22

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	99.7	100	70-135	
o-Terphenyl	47.9	49.9	96	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005815

Sample: 541854-076 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 14:27

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0561	0.0500	112	74-126	
1,2-Dichloroethane-D4	0.0516	0.0500	103	80-120	
Toluene-D8	0.0442	0.0500	88	73-132	

Lab Batch #: 3005809

Sample: 541854-074 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 14:36

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0512	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0530	0.0500	106	80-120	
Toluene-D8	0.0493	0.0500	99	73-132	

Lab Batch #: 3005815

Sample: 541854-077 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 14:43

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0565	0.0500	113	74-126	
1,2-Dichloroethane-D4	0.0558	0.0500	112	80-120	
Toluene-D8	0.0426	0.0500	85	73-132	

Lab Batch #: 3005862

Sample: 541854-019 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 14:46

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.3	99.8	87	70-135	
o-Terphenyl	39.5	49.9	79	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005809

Sample: 541854-075 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 14:55

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0546	0.0500	109	74-126	
1,2-Dichloroethane-D4	0.0524	0.0500	105	80-120	
Toluene-D8	0.0501	0.0500	100	73-132	

Lab Batch #: 3005815

Sample: 541854-078 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 14:58

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0579	0.0500	116	74-126	
1,2-Dichloroethane-D4	0.0468	0.0500	94	80-120	
Toluene-D8	0.0427	0.0500	85	73-132	

Lab Batch #: 3005862

Sample: 541854-021 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 15:08

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	95.5	99.7	96	70-135	
o-Terphenyl	45.4	49.9	91	70-135	

Lab Batch #: 3005815

Sample: 541854-080 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 15:14

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0527	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0487	0.0500	97	80-120	
Toluene-D8	0.0438	0.0500	88	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005815

Sample: 541854-079 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 15:29

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0531	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0545	0.0500	109	80-120	
Toluene-D8	0.0434	0.0500	87	73-132	

Lab Batch #: 3005862

Sample: 541854-022 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 15:50

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	97.4	99.9	97	70-135	
o-Terphenyl	44.4	50.0	89	70-135	

Lab Batch #: 3005862

Sample: 541854-023 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 16:14

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	85.6	100	86	70-135	
o-Terphenyl	40.9	50.0	82	70-135	

Lab Batch #: 3005862

Sample: 541854-024 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 16:38

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	92.5	99.8	93	70-135	
o-Terphenyl	44.0	49.9	88	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005862

Sample: 541854-025 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 17:01

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.4	99.8	91	70-135	
o-Terphenyl	41.9	49.9	84	70-135	

Lab Batch #: 3005862

Sample: 541854-026 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 17:24

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.0	99.7	86	70-135	
o-Terphenyl	39.3	49.9	79	70-135	

Lab Batch #: 3005862

Sample: 541854-027 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 17:48

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.7	99.9	92	70-135	
o-Terphenyl	41.2	50.0	82	70-135	

Lab Batch #: 3005862

Sample: 541854-028 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 18:12

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.0	99.7	93	70-135	
o-Terphenyl	46.5	49.9	93	70-135	

Lab Batch #: 3005862

Sample: 541854-029 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 18:34

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	99.9	102	70-135	
o-Terphenyl	49.3	50.0	99	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005862

Sample: 541854-030 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 18:57

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.3	99.8	93	70-135	
o-Terphenyl	42.1	49.9	84	70-135	

Lab Batch #: 3005862

Sample: 541854-040 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 19:19

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.7	99.9	98	70-135	
o-Terphenyl	46.5	50.0	93	70-135	

Lab Batch #: 3005863

Sample: 541854-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 22:01

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.1	99.7	96	70-135	
o-Terphenyl	45.4	49.9	91	70-135	

Lab Batch #: 3005825

Sample: 541854-059 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 22:14

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0534	0.0500	107	74-126	
1,2-Dichloroethane-D4	0.0569	0.0500	114	80-120	
Toluene-D8	0.0515	0.0500	103	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005863

Sample: 541854-002 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 22:23

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.0	99.7	96	70-135	
o-Terphenyl	45.0	49.9	90	70-135	

Lab Batch #: 3005863

Sample: 541854-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 22:46

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.5	99.9	100	70-135	
o-Terphenyl	47.6	50.0	95	70-135	

Lab Batch #: 3005863

Sample: 541854-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 23:08

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.5	99.8	94	70-135	
o-Terphenyl	43.3	49.9	87	70-135	

Lab Batch #: 3005863

Sample: 541854-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 23:30

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.1	100	97	70-135	
o-Terphenyl	46.6	50.0	93	70-135	

Lab Batch #: 3005863

Sample: 541854-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 23:53

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	99.9	104	70-135	
o-Terphenyl	50.5	50.0	101	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005863

Sample: 541854-007 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 00:16

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.3	99.7	95	70-135	
o-Terphenyl	41.1	49.9	82	70-135	

Lab Batch #: 3005863

Sample: 541854-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 00:39

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.7	99.7	94	70-135	
o-Terphenyl	43.1	49.9	86	70-135	

Lab Batch #: 3005863

Sample: 541854-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 01:02

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.5	99.7	97	70-135	
o-Terphenyl	47.9	49.9	96	70-135	

Lab Batch #: 3005863

Sample: 541854-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 01:24

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	100	100	70-135	
o-Terphenyl	49.7	50.0	99	70-135	

Lab Batch #: 3005863

Sample: 541854-020 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 02:08

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.5	99.8	100	70-135	
o-Terphenyl	49.4	49.9	99	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005863

Sample: 541854-064 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 03:15

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	99.8	100	70-135	
o-Terphenyl	47.7	49.9	96	70-135	

Lab Batch #: 3005862

Sample: 541854-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 07:18

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	99.8	106	70-135	
o-Terphenyl	52.4	49.9	105	70-135	

Lab Batch #: 3005749

Sample: 717304-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/13/16 11:44

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	100	109	70-135	
o-Terphenyl	54.0	50.0	108	70-135	

Lab Batch #: 3005611

Sample: 717229-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/13/16 12:26

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0476	0.0500	95	74-126	
1,2-Dichloroethane-D4	0.0547	0.0500	109	80-120	
Toluene-D8	0.0471	0.0500	94	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005608

Sample: 717223-1-BLK / BLK

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/13/16 13:58

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0508	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0516	0.0500	103	80-120	
Toluene-D8	0.0547	0.0500	109	73-132	

Lab Batch #: 3005750

Sample: 717305-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/14/16 09:27

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	99.3	100	99	70-135	
o-Terphenyl	48.3	50.0	97	70-135	

Lab Batch #: 3005784

Sample: 717330-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/14/16 12:40

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0529	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0491	0.0500	98	80-120	
Toluene-D8	0.0509	0.0500	102	73-132	

Lab Batch #: 3005769

Sample: 717316-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/14/16 18:08

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0488	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0452	0.0500	90	80-120	
Toluene-D8	0.0470	0.0500	94	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005753

Sample: 717306-1-BLK / BLK

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/14/16 19:17

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.6	100	96	70-135	
o-Terphenyl	41.8	50.0	84	70-135	

Lab Batch #: 3005815

Sample: 717361-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/15/16 10:39

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0602	0.0500	120	74-126	
1,2-Dichloroethane-D4	0.0563	0.0500	113	80-120	
Toluene-D8	0.0469	0.0500	94	73-132	

Lab Batch #: 3005862

Sample: 717331-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/15/16 10:44

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	47.2	50.0	94	70-135	

Lab Batch #: 3005809

Sample: 717357-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/15/16 10:45

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	0.0517	0.0500	103	80-120	
Toluene-D8	0.0505	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005863

Sample: 717332-1-BLK / BLK

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/15/16 20:55

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	114	100	114	70-135	
o-Terphenyl	57.0	50.0	114	70-135	

Lab Batch #: 3005825

Sample: 717371-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/15/16 21:55

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	0.0526	0.0500	105	80-120	
Toluene-D8	0.0518	0.0500	104	73-132	

Lab Batch #: 3005611

Sample: 717229-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/13/16 11:12

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0587	0.0500	117	74-126	
1,2-Dichloroethane-D4	0.0536	0.0500	107	80-120	
Toluene-D8	0.0500	0.0500	100	73-132	

Lab Batch #: 3005749

Sample: 717304-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/13/16 11:23

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	100	125	70-135	
o-Terphenyl	53.9	50.0	108	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005608

Sample: 717223-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/13/16 11:33

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0488	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0460	0.0500	92	80-120	
Toluene-D8	0.0569	0.0500	114	73-132	

Lab Batch #: 3005750

Sample: 717305-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/14/16 09:48

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	120	100	120	70-135	
o-Terphenyl	49.2	50.0	98	70-135	

Lab Batch #: 3005784

Sample: 717330-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/14/16 10:09

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0528	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0516	0.0500	103	80-120	
Toluene-D8	0.0517	0.0500	103	73-132	

Lab Batch #: 3005769

Sample: 717316-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/14/16 16:14

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0406	0.0500	81	74-126	
1,2-Dichloroethane-D4	0.0437	0.0500	87	80-120	
Toluene-D8	0.0498	0.0500	100	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005753

Sample: 717306-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/14/16 19:39

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	123	100	123	70-135	
o-Terphenyl	50.8	50.0	102	70-135	

Lab Batch #: 3005809

Sample: 717357-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/15/16 08:37

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0505	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0528	0.0500	106	80-120	
Toluene-D8	0.0505	0.0500	101	73-132	

Lab Batch #: 3005815

Sample: 717361-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/15/16 08:50

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0435	0.0500	87	74-126	
1,2-Dichloroethane-D4	0.0514	0.0500	103	80-120	
Toluene-D8	0.0495	0.0500	99	73-132	

Lab Batch #: 3005862

Sample: 717331-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/15/16 11:04

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	100	105	70-135	
o-Terphenyl	39.5	50.0	79	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005825

Sample: 717371-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/15/16 18:47

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0488	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0502	0.0500	100	80-120	
Toluene-D8	0.0559	0.0500	112	73-132	

Lab Batch #: 3005863

Sample: 717332-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/15/16 21:17

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	111	100	111	70-135	
o-Terphenyl	42.4	50.0	85	70-135	

Lab Batch #: 3005749

Sample: 717304-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/13/16 10:56

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	129	100	129	70-135	
o-Terphenyl	58.2	50.0	116	70-135	

Lab Batch #: 3005611

Sample: 717229-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/13/16 11:28

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0500	0.0500	100	74-126	
1,2-Dichloroethane-D4	0.0558	0.0500	112	80-120	
Toluene-D8	0.0507	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005608

Sample: 717223-1-BSD / BSD

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/13/16 13:00

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0490	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0492	0.0500	98	80-120	
Toluene-D8	0.0592	0.0500	118	73-132	

Lab Batch #: 3005750

Sample: 717305-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/14/16 10:10

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	121	100	121	70-135	
o-Terphenyl	50.3	50.0	101	70-135	

Lab Batch #: 3005784

Sample: 717330-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/14/16 10:28

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0517	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0508	0.0500	102	80-120	
Toluene-D8	0.0506	0.0500	101	73-132	

Lab Batch #: 3005769

Sample: 717316-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/14/16 16:29

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0448	0.0500	90	74-126	
1,2-Dichloroethane-D4	0.0458	0.0500	92	80-120	
Toluene-D8	0.0505	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005753

Sample: 717306-1-BSD / BSD

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/14/16 21:12

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	117	100	117	70-135	
o-Terphenyl	63.7	50.0	127	70-135	

Lab Batch #: 3005809

Sample: 717357-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/15/16 08:55

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0491	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0522	0.0500	104	80-120	
Toluene-D8	0.0485	0.0500	97	73-132	

Lab Batch #: 3005815

Sample: 717361-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/15/16 09:05

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0490	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0410	0.0500	82	80-120	
Toluene-D8	0.0493	0.0500	99	73-132	

Lab Batch #: 3005862

Sample: 717331-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/15/16 11:28

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	40.3	50.0	81	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005825

Sample: 717371-1-BSD / BSD

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/15/16 19:59

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0504	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0508	0.0500	102	80-120	
Toluene-D8	0.0500	0.0500	100	73-132	

Lab Batch #: 3005863

Sample: 717332-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/15/16 21:39

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	113	100	113	70-135	
o-Terphenyl	45.5	50.0	91	70-135	

Lab Batch #: 3005749

Sample: 541854-066 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 12:30

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	113	99.9	113	70-135	
o-Terphenyl	43.5	50.0	87	70-135	

Lab Batch #: 3005611

Sample: 541854-002 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 15:13

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0572	0.0500	114	74-126	
1,2-Dichloroethane-D4	0.0436	0.0500	87	80-120	
Toluene-D8	0.0551	0.0500	110	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005608

Sample: 541854-021 S / MS

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 16:15

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0518	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0536	0.0500	107	80-120	
Toluene-D8	0.0546	0.0500	109	73-132	

Lab Batch #: 3005784

Sample: 541854-017 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 11:25

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0528	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0514	0.0500	103	80-120	
Toluene-D8	0.0503	0.0500	101	73-132	

Lab Batch #: 3005769

Sample: 541854-031 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 16:45

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0418	0.0500	84	74-126	
1,2-Dichloroethane-D4	0.0421	0.0500	84	80-120	
Toluene-D8	0.0531	0.0500	106	73-132	

Lab Batch #: 3005750

Sample: 541854-065 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 18:13

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	122	99.8	122	70-135	
o-Terphenyl	50.7	49.9	102	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005753

Sample: 541854-045 S / MS

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 03:03

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	100	110	70-135	
o-Terphenyl	46.7	50.0	93	70-135	

Lab Batch #: 3005809

Sample: 541854-081 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 09:27

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0514	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0543	0.0500	109	80-120	
Toluene-D8	0.0561	0.0500	112	73-132	

Lab Batch #: 3005815

Sample: 541854-071 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 09:33

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0425	0.0500	85	74-126	
1,2-Dichloroethane-D4	0.0410	0.0500	82	80-120	
Toluene-D8	0.0531	0.0500	106	73-132	

Lab Batch #: 3005862

Sample: 541854-040 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 19:49

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	99.8	104	70-135	
o-Terphenyl	50.2	49.9	101	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Project ID:

Lab Batch #: 3005825

Sample: 541854-059 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 20:22

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0484	0.0500	97	74-126	
1,2-Dichloroethane-D4	0.0504	0.0500	101	80-120	
Toluene-D8	0.0518	0.0500	104	73-132	

Lab Batch #: 3005863

Sample: 541854-020 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 02:31

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	120	99.9	120	70-135	
o-Terphenyl	48.1	50.0	96	70-135	

Lab Batch #: 3005749

Sample: 541854-066 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 12:53

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	123	99.8	123	70-135	
o-Terphenyl	50.5	49.9	101	70-135	

Lab Batch #: 3005611

Sample: 541854-002 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 16:00

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0543	0.0500	109	74-126	
1,2-Dichloroethane-D4	0.0540	0.0500	108	80-120	
Toluene-D8	0.0486	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Project ID:

Lab Batch #: 3005608

Sample: 541854-021 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/13/16 16:34

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0530	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0488	0.0500	98	80-120	
Toluene-D8	0.0524	0.0500	105	73-132	

Lab Batch #: 3005784

Sample: 541854-017 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 11:43

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0528	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0527	0.0500	105	80-120	
Toluene-D8	0.0531	0.0500	106	73-132	

Lab Batch #: 3005769

Sample: 541854-031 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 17:00

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0472	0.0500	94	74-126	
1,2-Dichloroethane-D4	0.0440	0.0500	88	80-120	
Toluene-D8	0.0493	0.0500	99	73-132	

Lab Batch #: 3005750

Sample: 541854-065 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/14/16 18:34

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	127	100	127	70-135	
o-Terphenyl	53.6	50.0	107	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Project ID:

Lab Batch #: 3005753

Sample: 541854-045 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 03:23

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	99.9	105	70-135	
o-Terphenyl	37.6	50.0	75	70-135	

Lab Batch #: 3005809

Sample: 541854-081 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 09:46

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0492	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0509	0.0500	102	80-120	
Toluene-D8	0.0511	0.0500	102	73-132	

Lab Batch #: 3005815

Sample: 541854-071 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 09:49

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0427	0.0500	85	74-126	
1,2-Dichloroethane-D4	0.0483	0.0500	97	80-120	
Toluene-D8	0.0530	0.0500	106	73-132	

Lab Batch #: 3005862

Sample: 541854-040 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 20:11

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	99.9	116	70-135	
o-Terphenyl	53.2	50.0	106	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 541854, 541854

Lab Batch #: 3005825

Sample: 541854-059 SD / MSD

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 20:41

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0479	0.0500	96	74-126	
1,2-Dichloroethane-D4	0.0494	0.0500	99	80-120	
Toluene-D8	0.0500	0.0500	100	73-132	

Lab Batch #: 3005863

Sample: 541854-020 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 02:53

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	120	99.8	120	70-135	
o-Terphenyl	50.0	49.9	100	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.



BS / BSD Recoveries



Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 541854, 541854

Analyst: JTR

Date Prepared: 12/13/2016

Project ID:

Date Analyzed: 12/13/2016

Lab Batch ID: 3005608

Sample: 717223-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.0945	95	0.100	0.100	100	6	62-132	25	
Toluene	<0.00100	0.100	0.102	102	0.100	0.110	110	8	66-124	25	
Ethylbenzene	<0.00100	0.100	0.0963	96	0.100	0.0955	96	1	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.193	97	0.200	0.198	99	3	69-128	25	
o-Xylene	<0.00100	0.100	0.0979	98	0.100	0.0996	100	2	72-131	25	

Analyst: JTR

Date Prepared: 12/13/2016

Date Analyzed: 12/13/2016

Lab Batch ID: 3005611

Sample: 717229-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.0937	94	0.100	0.0901	90	4	62-132	25	
Toluene	<0.00100	0.100	0.0936	94	0.100	0.0906	91	3	66-124	25	
Ethylbenzene	<0.00100	0.100	0.0908	91	0.100	0.0896	90	1	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.188	94	0.200	0.186	93	1	69-128	25	
o-Xylene	<0.00100	0.100	0.0986	99	0.100	0.0945	95	4	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: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 541854, 541854

Analyst: JTR

Date Prepared: 12/14/2016

Project ID:

Date Analyzed: 12/14/2016

Lab Batch ID: 3005769

Sample: 717316-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.0903	90	0.100	0.0959	96	6	62-132	25	
Toluene	<0.00100	0.100	0.0895	90	0.100	0.0951	95	6	66-124	25	
Ethylbenzene	<0.00100	0.100	0.0965	97	0.100	0.0995	100	3	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.199	100	0.200	0.207	104	4	69-128	25	
o-Xylene	<0.00100	0.100	0.105	105	0.100	0.106	106	1	72-131	25	

Analyst: JTR

Date Prepared: 12/14/2016

Date Analyzed: 12/14/2016

Lab Batch ID: 3005784

Sample: 717330-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.0945	95	0.100	0.0941	94	0	62-132	25	
Toluene	<0.00100	0.100	0.0915	92	0.100	0.0932	93	2	66-124	25	
Ethylbenzene	<0.00100	0.100	0.0917	92	0.100	0.0880	88	4	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.185	93	0.200	0.188	94	2	69-128	25	
o-Xylene	<0.00100	0.100	0.0920	92	0.100	0.0939	94	2	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: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 541854, 541854

Project ID:

Analyst: JTR

Date Prepared: 12/15/2016

Date Analyzed: 12/15/2016

Lab Batch ID: 3005809

Sample: 717357-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.115	115	0.100	0.111	111	4	62-132	25	
Toluene	<0.00100	0.100	0.110	110	0.100	0.102	102	8	66-124	25	
Ethylbenzene	<0.00100	0.100	0.107	107	0.100	0.107	107	0	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.224	112	0.200	0.226	113	1	69-128	25	
o-Xylene	<0.00100	0.100	0.116	116	0.100	0.112	112	4	72-131	25	

Analyst: JTR

Date Prepared: 12/15/2016

Date Analyzed: 12/15/2016

Lab Batch ID: 3005815

Sample: 717361-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.116	116	0.100	0.110	110	5	62-132	25	
Toluene	<0.00100	0.100	0.101	101	0.100	0.107	107	6	66-124	25	
Ethylbenzene	<0.00100	0.100	0.103	103	0.100	0.112	112	8	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.218	109	0.200	0.234	117	7	69-128	25	
o-Xylene	<0.00100	0.100	0.115	115	0.100	0.124	124	8	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: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 541854, 541854

Project ID:

Analyst: JTR

Date Prepared: 12/15/2016

Date Analyzed: 12/15/2016

Lab Batch ID: 3005825

Sample: 717371-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.112	112	0.100	0.111	111	1	62-132	25	
Toluene	<0.00100	0.100	0.118	118	0.100	0.104	104	13	66-124	25	
Ethylbenzene	<0.00100	0.100	0.110	110	0.100	0.109	109	1	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.217	109	0.200	0.225	113	4	69-128	25	
o-Xylene	<0.00100	0.100	0.112	112	0.100	0.114	114	2	72-131	25	

Analyst: MNR

Date Prepared: 12/17/2016

Date Analyzed: 12/17/2016

Lab Batch ID: 3005931

Sample: 717402-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	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
Analytes											
Chloride	<5.00	250	242	97	250	248	99	2	90-110	20	

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

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries



Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 541854, 541854

Project ID:

Analyst: MNR

Date Prepared: 12/17/2016

Date Analyzed: 12/17/2016

Lab Batch ID: 3006037

Sample: 717404-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	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
Analytes											
Chloride	<5.00	250	258	103	250	258	103	0	90-110	20	

Analyst: MNR

Date Prepared: 12/19/2016

Date Analyzed: 12/19/2016

Lab Batch ID: 3006040

Sample: 717430-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	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
Analytes											
Chloride	<5.00	250	258	103	250	258	103	0	90-110	20	

Analyst: MNR

Date Prepared: 12/19/2016

Date Analyzed: 12/19/2016

Lab Batch ID: 3006064

Sample: 717433-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	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
Analytes											
Chloride	<5.00	250	245	98	250	252	101	3	90-110	20	

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

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries



Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 541854, 541854

Project ID:

Analyst: MNR

Date Prepared: 12/19/2016

Date Analyzed: 12/19/2016

Lab Batch ID: 3006068

Sample: 717451-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	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
Analytes											
Chloride	<5.00	250	240	96	250	239	96	0	90-110	20	

Analyst: ARM

Date Prepared: 12/13/2016

Date Analyzed: 12/13/2016

Lab Batch ID: 3005749

Sample: 717304-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	854	85	1000	875	88	2	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	947	95	1000	925	93	2	70-135	35	

Analyst: ARM

Date Prepared: 12/14/2016

Date Analyzed: 12/14/2016

Lab Batch ID: 3005750

Sample: 717305-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	864	86	1000	874	87	1	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	926	93	1000	958	96	3	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



BS / BSD Recoveries



Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 541854, 541854

Project ID:

Analyst: ARM

Date Prepared: 12/14/2016

Date Analyzed: 12/14/2016

Lab Batch ID: 3005753

Sample: 717306-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	888	89	1000	966	97	8	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	973	97	1000	1070	107	9	70-135	35	

Analyst: ARM

Date Prepared: 12/15/2016

Date Analyzed: 12/15/2016

Lab Batch ID: 3005862

Sample: 717331-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	868	87	1000	862	86	1	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	981	98	1000	952	95	3	70-135	35	

Analyst: ARM

Date Prepared: 12/15/2016

Date Analyzed: 12/15/2016

Lab Batch ID: 3005863

Sample: 717332-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	883	88	1000	940	94	6	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	950	95	1000	1030	103	8	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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 541854

Project ID:

Lab Batch ID: 3005608

QC- Sample ID: 541854-021 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/13/2016

Date Prepared: 12/13/2016

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	0.0891	89	0.100	0.0925	93	4	62-132	25	
Toluene	<0.000998	0.0998	0.0917	92	0.100	0.0946	95	3	66-124	25	
Ethylbenzene	<0.000998	0.0998	0.0871	87	0.100	0.0918	92	5	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.181	91	0.200	0.186	93	3	69-128	25	
o-Xylene	<0.000998	0.0998	0.0831	83	0.100	0.0885	89	6	72-131	25	

Lab Batch ID: 3005611

QC- Sample ID: 541854-002 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/13/2016

Date Prepared: 12/13/2016

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	<0.000990	0.0990	0.0910	92	0.100	0.0795	80	13	62-132	25	
Toluene	<0.000990	0.0990	0.0970	98	0.100	0.0725	73	29	66-124	25	F
Ethylbenzene	<0.000990	0.0990	0.0915	92	0.100	0.0774	77	17	71-134	25	
m,p-Xylenes	<0.00198	0.198	0.187	94	0.200	0.160	80	16	69-128	25	
o-Xylene	<0.000990	0.0990	0.0971	98	0.100	0.0799	80	19	72-131	25	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 541854

Project ID:

Lab Batch ID: 3005769

QC- Sample ID: 541854-031 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/14/2016

Date Prepared: 12/14/2016

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	<0.00100	0.100	0.0799	80	0.100	0.0753	75	6	62-132	25	
Toluene	<0.00100	0.100	0.0851	85	0.100	0.0731	73	15	66-124	25	
Ethylbenzene	<0.00100	0.100	0.0841	84	0.100	0.0778	78	8	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.173	87	0.200	0.161	81	7	69-128	25	
o-Xylene	<0.00100	0.100	0.0897	90	0.100	0.0858	86	4	72-131	25	

Lab Batch ID: 3005784

QC- Sample ID: 541854-017 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/14/2016

Date Prepared: 12/14/2016

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	<0.00100	0.100	0.0829	83	0.100	0.0939	94	12	62-132	25	
Toluene	<0.00100	0.100	0.0835	84	0.100	0.0927	93	10	66-124	25	
Ethylbenzene	<0.00100	0.100	0.0756	76	0.100	0.0851	85	12	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.155	78	0.200	0.171	86	10	69-128	25	
o-Xylene	<0.00100	0.100	0.0740	74	0.100	0.0859	86	15	72-131	25	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 541854

Project ID:

Lab Batch ID: 3005809

QC- Sample ID: 541854-081 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/15/2016

Date Prepared: 12/15/2016

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	<0.00100	0.100	0.106	106	0.100	0.100	100	6	62-132	25	
Toluene	<0.00100	0.100	0.110	110	0.100	0.101	101	9	66-124	25	
Ethylbenzene	<0.00100	0.100	0.103	103	0.100	0.0998	100	3	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.219	110	0.200	0.207	104	6	69-128	25	
o-Xylene	<0.00100	0.100	0.111	111	0.100	0.102	102	8	72-131	25	

Lab Batch ID: 3005815

QC- Sample ID: 541854-071 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/15/2016

Date Prepared: 12/15/2016

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	0.0976	98	0.0998	0.0946	95	3	62-132	25	
Toluene	<0.000992	0.0992	0.104	105	0.0998	0.101	101	3	66-124	25	
Ethylbenzene	<0.000992	0.0992	0.100	101	0.0998	0.0958	96	4	71-134	25	
m,p-Xylenes	<0.00198	0.198	0.209	106	0.200	0.201	101	4	69-128	25	
o-Xylene	<0.000992	0.0992	0.106	107	0.0998	0.102	102	4	72-131	25	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 541854

Project ID:

Lab Batch ID: 3005825

QC- Sample ID: 541854-059 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/15/2016

Date Prepared: 12/15/2016

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	0.0999	100	0.100	0.112	112	11	62-132	25	
Toluene	<0.000998	0.0998	0.102	102	0.100	0.108	108	6	66-124	25	
Ethylbenzene	<0.000998	0.0998	0.101	101	0.100	0.114	114	12	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.215	108	0.201	0.235	117	9	69-128	25	
o-Xylene	<0.000998	0.0998	0.112	112	0.100	0.135	135	19	72-131	25	X

Lab Batch ID: 3005931

QC- Sample ID: 541854-006 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/17/2016

Date Prepared: 12/17/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	4330	1250	5530	96	1250	5730	112	4	90-110	20	X

Lab Batch ID: 3005931

QC- Sample ID: 542375-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/19/2016

Date Prepared: 12/17/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	262	250	529	107	250	528	106	0	90-110	20	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 541854

Project ID:

Lab Batch ID: 3006037

QC- Sample ID: 541854-016 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/17/2016

Date Prepared: 12/17/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	6.40	250	270	105	250	267	104	1	90-110	20	

Lab Batch ID: 3006037

QC- Sample ID: 541854-026 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/18/2016

Date Prepared: 12/17/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	5070	1250	6300	98	1250	6400	106	2	90-110	20	

Lab Batch ID: 3006040

QC- Sample ID: 541854-036 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/19/2016

Date Prepared: 12/19/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	7.57	250	271	105	250	273	106	1	90-110	20	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 541854

Project ID:

Lab Batch ID: 3006040

QC- Sample ID: 541854-046 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/19/2016

Date Prepared: 12/19/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	6.60	250	271	106	250	267	104	1	90-110	20	

Lab Batch ID: 3006064

QC- Sample ID: 541854-056 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/19/2016

Date Prepared: 12/19/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	2690	1250	4000	105	1250	4020	106	0	90-110	20	

Lab Batch ID: 3006064

QC- Sample ID: 541854-066 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/19/2016

Date Prepared: 12/19/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	5.33	250	272	107	250	269	105	1	90-110	20	

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

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

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

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



Form 3 - MS / MSD Recoveries



Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 541854

Project ID:

Lab Batch ID: 3006068

QC- Sample ID: 541854-076 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/19/2016

Date Prepared: 12/19/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	25.7	1250	1360	107	1250	1400	110	3	90-110	20	

Lab Batch ID: 3006068

QC- Sample ID: 542067-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/19/2016

Date Prepared: 12/19/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	353	250	596	97	250	602	100	1	90-110	20	

Lab Batch ID: 3005749

QC- Sample ID: 541854-066 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/13/2016

Date Prepared: 12/13/2016

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	999	893	89	998	943	94	5	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	999	930	93	998	1040	104	11	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.



Form 3 - MS / MSD Recoveries



Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 541854

Project ID:

Lab Batch ID: 3005750

QC- Sample ID: 541854-065 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/14/2016

Date Prepared: 12/14/2016

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	998	941	94	1000	1000	100	6	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	998	1010	101	1000	1030	103	2	70-135	35	

Lab Batch ID: 3005753

QC- Sample ID: 541854-045 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/15/2016

Date Prepared: 12/14/2016

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	915	92	999	869	87	5	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	925	93	999	866	87	7	70-135	35	

Lab Batch ID: 3005862

QC- Sample ID: 541854-040 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/15/2016

Date Prepared: 12/15/2016

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	998	948	95	999	942	94	1	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	998	1060	106	999	1060	106	0	70-135	35	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 541854

Project ID:

Lab Batch ID: 3005863

QC- Sample ID: 541854-020 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/16/2016

Date Prepared: 12/15/2016

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	999	947	95	998	900	90	5	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	999	1020	102	998	996	100	2	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.



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: KJE Enviromental & Civil Engineering

Date/ Time Received: 12/09/2016 05:25:00 PM

Work Order #: 541854

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	5.3
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seal present on shipping container/ cooler?	No
#5 *Custody Seals intact on shipping container/ cooler?	N/A
#6 Custody Seals intact on sample bottles?	N/A
#7 *Custody Seals Signed and dated?	N/A
#8 *Chain of Custody present?	Yes
#9 Sample instructions complete on Chain of Custody?	Yes
#10 Any missing/extra samples?	No
#11 Chain of Custody signed when relinquished/ received?	Yes
#12 Chain of Custody agrees with sample label(s)?	Yes
#13 Container label(s) legible and intact?	Yes
#14 Sample matrix/ properties agree with Chain of Custody?	Yes
#15 Samples in proper container/ bottle?	Yes
#16 Samples properly preserved?	Yes
#17 Sample container(s) intact?	Yes
#18 Sufficient sample amount for indicated test(s)?	Yes
#19 All samples received within hold time?	Yes
#20 Subcontract of sample(s)?	Yes
#21 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#22 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	N/A
#23 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	N/A

Samples sent to Xenco-Houston

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Julian Martinez

Date: 12/12/2016

Checklist reviewed by:

Kelsey Brooks

Date: 12/12/2016



CHAIN OF CUSTODY

Page 1 of 2

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Norcross, Georgia (770-449-8800)

Lakeland, Florida (883-646-8526)
Tampa, Florida (813-620-2000)

Xenco Quote #

Xenco Job #

541854

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes							
Company Name / Branch: KLE Environmental & Civil Engineering				Project Name/Number: OWL Bobcat/Red Hills Pipeline Release															
Company Address: 500 Mosely Road, Cross Roads, Texas 76227				Project Location: Jal, NM															
Email: james@kleenvironmental.com Phone No: (940)387-0805				Invoice To:															
Project Contact: James Fox				PO Number:															
Samplers Name																			
No.	Field ID / Point of Collection	Sample Depth	Collection Date	Time	Matrix	# of bottles	HCI	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX	TPH	CHLORIDES	Field Comments	
1	SB7 0-2		12/8	11:45	S	2									X	X	X		
2	SB7 2-4			11:50											X	X	X		
3	SB7 4-6			11:55											X	X	X		
4	SB7 6-8			12:00											X	X	X		
5	SB7 10-12			12:10											X	X	X		
6	SB8 0-2			12:20											X	X	X		
7	SB8 2-4			12:25											X	X	X		
8	SB8 4-6			12:30											X	X	X		
9	SB8 6-8			12:35											X	X	X		
10	SB8 8-10			12:40											X	X	X		
Turnaround Time (Business days)																			
Data Deliverable Information																			
Notes:																			
Same Day TAT ☒ 5 Day TAT ☐ Level II Std QC ☐ Level IV (Full Data Pkg /raw data) ☐																			
Next Day EMERGENCY ☐ 7 Day TAT ☐ Level III Std QC+ Forms ☐ TRRP Level IV ☐																			
2 Day EMERGENCY ☐ Contract TAT ☐ Level 3 (CLP Forms) ☐ UST / RG -411 ☐																			
3 Day EMERGENCY ☐ TRRP Checklist ☐																			
TAT Starts Day received by Lab, if received by 5:00 pm																			
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:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		Received By:		Date Time:	
1				James Fox-KSE				12/8/17				12/8/17				12/8/17			
3				Relinquished by:				3				4				4			
5				Relinquished by:				5				5				5			
Temp: IR ID: R-8 CF: + 0.1 5.3 5.3 Corrected Temp: 5.3																			

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to XENCO Laboratories and its affiliates, subcontractors and assigns XENCO's standard terms and conditions of service unless previously negotiated under a fully executed client contract.

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Isabeland Elavida (862-646-0526)

Norcross, Georgia (770-449-8800)

Tampa, Florida (813-620-2000)

Xenco Quote #

Xenco Job #

54135

Client / Reporting Information										Project Information										Analytical Information										Matrix Codes										
Company Name / Branch: KJE, Environmental & Civil Engineering										Project Name/Number: OWL Bobcat/Red Hills Pipeline Release																														
Company Address: 500 Mosely Road, Cross Roads, Texas 76227										Project Location: Jal, NM																														
Email: james@kjenvironmental.com Phone No: (940)387-0805										Invoice To:																														
Project Contact: James Fox										PO Number:																														
Sampler's Name																																								
No. Field ID / Point of Collection										Collection										Number of preserved bottles										Field Comments										
										Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MeOH	NONE	BTEX	TPH	CHLORIDES															
1										SB8	10-12																													
2										SB9	6-2	12/8	12:46	5	2							X	X	X																
3										SB9	2-4																													
4										SB9	4-6																													
5										SB9	6-8																													
6										SB9	8-10																													
7										SB9	10-12																													
8										SB10	0-2																													
9										SB10	2-4																													
10										SB10	4-6	Split																												
Turnaround Time (Business days)										Data Deliverable Information										Notes:																				
☐ Same Day TAT										☒ 5 Day TAT										☐ Level II Std QC										☐ Level IV (Full Data Pkg /raw data)										
☐ Next Day EMERGENCY										☐ 7 Day TAT										☐ Level III Std QC+ Forms										☐ TRRP Level IV										
☐ 2 Day EMERGENCY										☐ Contract TAT										☐ Level 3 (CLP Forms)										☐ UST / RG-411										
☐ 3 Day EMERGENCY																				☐ TRRP Checklist																				
TAT Starts Day received by Lab, if received by 5:00 pm																																								
Relinquished by Sampler:										SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY										FED-EX / UPS: Tracking #																				
1										James Fox - KJE	Date Time:										Received By:										Date Time:									
3											Date Time:										Received By:										Date Time:									
5											Date Time:										Received By:										Date Time:									
Relinquished by:										Date Time:										Received By:										Date Time:										
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CHAIN OF CUSTODY

Page 3 of 2

Setting the Standard since 1990
Stafford, Texas (281-240-4200)

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Odessa, Texas (432-563-1800)

Norcross, Georgia (770-449-8800)

Lakeland, Florida (863-646-8526)

Xenco Quote # Xenco Job #

Tampa, Florida (813-620-2000)

Matrix Codes

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

Client / Reporting Information

Company Name / Branch:

KJE, Environmental & Civil Engineering

Company Address:

500 Mosely Road, Cross Roads, Texas 76227

Email: James@kjenvironmental.com Phone No: (940)397-0905

Project Contact: James Fox

Samplers Name

Project Information

Project Name/Number:

OWL Bobcat/Red Hills Pipeline Release

Project Location:

Jal, NM

Invoice To:

PO Number:

Analytical Information

BTEX 8260

TPH

CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

TPH

CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

TPH

CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

TPH

CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

TPH

CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

TPH

CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

TPH

CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

TPH

CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

TPH

CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

TPH

CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

TPH

CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

TPH

CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

TPH

CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

TPH

CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

TPH

CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

TPH

CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

TPH

CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

TPH

CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

TPH

CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

TPH

CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

TPH

CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

TPH

CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

TPH

CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

TPH

CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

TPH

CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

TPH

CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

TPH

CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

TPH

CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

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CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

TPH

CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

TPH

CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

TPH

CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

TPH

CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

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CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

TPH

CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

TPH

CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

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CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

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Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

TPH

CHLORIDES

Field Comments

Collection

Number of preserved bottles

HCl NaOH/Zn Acetate HNO3 H2SO4 NaOH NaHSO4 MEQH NONE

BTEX

TPH

CHLORIDES



CHAIN OF CUSTODY

Page 4 of 9

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Norcross, Georgia (770-449-8800)
Lakeland, Florida (863-646-8526)
Tampa, Florida (813-620-2000)

Xenco Quote # 541854
Xenco Job #

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes																		
Company Name / Branch: KJE Environmental & Civil Engineering				Project Name/Number: OWL Bobcat/Red Hills Pipeline Release																										
Company Address: 500 Mosely Road, Cross Roads, Texas 76227				Project Location: Jail NM																										
Email: james@kjenvironmental.com Phone No: (940)387-0805				Invoice To:																										
Project Contact: James Fox				PO Number:																										
Sampler's Name																														
No.	Field ID / Point of Collection	Sample Depth	Collection Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX	TPH	CHLORIDES	Field Comments												
1	SB 12	4-6	15/8	1540	S	2									X	X	X													
2	SB 12	6-8		1545											X	X	X													
3	SB 12	8-10		1550											X	X	X													
4	SB 13	0-2		1735											X	X	X													
5	SB 13	2-4		1740											X	X	X													
6	SB 13	4-6		1750											X	X	X													
7	SB 13	6-8		1802											X	X	X													
8	SB 14	0-2		1805											X	X	X													
9	SB 14	2-4		1810											X	X	X													
10	SB 14	4-6		1815											X	X	X													
Turnaround Time (Business days)																			Data Deliverable Information				Notes:							
☐ Same Day TAT																			☒ 5 Day TAT				☐ Level II Std QC				☐ Level IV (Full Data Pkg / raw data)			
☐ Next Day EMERGENCY																			☐ 7 Day TAT				☐ Level III Std QC+ Forms				☐ TRRP Level IV			
☐ 2 Day EMERGENCY																			☐ Contract TAT				☐ Level 3 (CLP Forms)				☐ UST / RG 411			
☐ 3 Day EMERGENCY																							☐ TRRP Checklist							
TAT Starts Day received by Lab, if received by 5:00 pm																														
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																														
Relinquished by Sampler:																			Received By:				Relinquished By:				Date Time:			
1 James Fox - KJE																			1 KJE				2				12/16/17 25			
Relinquished by:																			Received By:				Relinquished By:				Date Time:			
3																			3				4							
Relinquished by:																			Received By:				Custody Seal #				Preserved where applicable			
5																			5											
Temp: IR ID: R-8																														
CF: + 0.1																														
Corrected Temp: 5.3																														

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to XENCO Laboratories and its affiliates, subcontractors and assigns XENCO's standard terms and conditions of service unless previously negotiated under a fully executed client contract.



CHAIN OF CUSTODY

Page 5 of 2

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Odessa, Texas (432-563-1800)

Lakeland, Florida (863-646-8526)

Norcross, Georgia (770-449-8800)

Tampa, Florida (813-620-2000)

Xenco Quote #

Xenco Job #

541854

Client / Reporting Information

Project Information

Company Name / Branch:

Project Name/Number:

KJE, Environmental & Civil Engineering

OWL Bobcat/Red Hills Pipeline Release

Company Address:

Project Location:

500 Mosely Road, Cross Roads, Texas 76227

Invoice To:

Email: james@kjenvironmental.com

Phone No: (940)387-0905

James Fox

Project Contact:

PO Number:

James Fox

Samplers Name

Field ID / Point of Collection

Collection

Date

Time

Matrix

of bottles

HCl

NaOH/Zn Acetate

HNO3

H2SO4

NaOH

NaHSO4

MeOH

NONE

Number of preserved bottles

No.

Field ID / Point of Collection

Sample Depth

Date

Time

Matrix

of bottles

HCl

NaOH/Zn Acetate

HNO3

H2SO4

NaOH

NaHSO4

MeOH

NONE

Number of preserved bottles

1 SB 14 6-8 Spl. #

12/8

1828

5

1

1

1

1

1

1

1

1

1

1

1

2 SB 14 6-8

12/8

1830

5

1

1

1

1

1

1

1

1

1

1

1

3 SB 14 8-10

12/8

1832

5

1

1

1

1

1

1

1

1

1

1

1

4 SB 15 0-2

12/8

1834

5

1

1

1

1

1

1

1

1

1

1

1

5 SB 15 2-4

12/8

1836

5

1

1

1

1

1

1

1

1

1

1

1

6 SB 15 4-6

12/8

1838

5

1

1

1

1

1

1

1

1

1

1

1

7 SB 15 6-8

12/8

1840

5

1

1

1

1

1

1

1

1

1

1

1

8 SB 16 0-2

12/8

1842

5

1

1

1

1

1

1

1

1

1

1

1

9 SB 16 2-4

12/8

1844

5

1

1

1

1

1

1

1

1

1

1

1

10 SB 16 4-6

12/8

1846

5

1

1

1

1

1

1

1

1

1

1

1

Turnaround Time (Business days)

Level II Std QC

Level III Std QC+ Forms

Level IV (Full Data Pkg /raw data)

Level I Std QC

Level II Std QC

Level III Std QC+ Forms

Level IV (Full Data Pkg /raw data)

Level I Std QC

Level II Std QC

Level III Std QC+ Forms

Level IV (Full Data Pkg /raw data)

Level I Std QC

Level II Std QC

Level III Std QC+ Forms

Same Day TAT

Next Day EMERGENCY

2 Day EMERGENCY

3 Day EMERGENCY

Contract TAT

TRRP Checklist

TRRP Level IV

TRRP Level I

TRRP Level II

TRRP Level III

TRRP Level IV

TRRP Level V

TRRP Level VI

TRRP Level VII

TRRP Level VIII

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

Relinquished by Sampler:

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

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CHAIN OF CUSTODY

Page 6 of 2

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Odessa, Texas (432-563-1800)

Norcross, Georgia (770-449-8800)

Lakeland, Florida (863-646-8526)

Xenco Quote #

Xenco Job #

541854

Client / Reporting Information		Project Information		Analytical Information		Matrix Codes													
Company Name / Branch: KJE, Environmental & Civil Engineering		Project Name/Number: OWL Bobcat/Red Hills Pipeline Release																	
Company Address: 500 Mosely Road, Cross Roads, Texas 76227		Project Location: Jal, NM																	
Email: james@kjenvironmental.com		Invoice To:																	
Project Contact: James Fox		PO Number:																	
Sampler's Name																			
No.	Field ID / Point of Collection	Sample Depth	Collection Date	Time	Matrix	# of bottles	HCI	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX	TPH	CHLORIDES	Notes:	Field Comments
1	SB16 6-8		12/4	7:45	5	2									X				
2	SB16 8-10			7:50															
3	SB16 10-12			8:00															
4	SB16 12-14			8:10															
5	SB16 16-18			8:20															
6	SB16 18-20			8:30															
7	SB16 20-22			8:40															
8	SB16 22-24			8:50															
9	SB16 24-26			9:07															
10	SB17 0-2			9:15															
Turnaround Time (Business days)																			
☐ Same Day TAT		☒ 5 Day TAT																	
☐ Next Day EMERGENCY		☐ 7 Day TAT																	
☐ 2 Day EMERGENCY		☐ Contract TAT																	
☐ 3 Day EMERGENCY		☐ TRRP Checklist																	
TAT Starts Day received by Lab, if received by 5:00 pm																			
Relinquished by Sampler:		Date Time:		Received By:		Relinquished By:		Date Time:		Received By:		Date Time:		Received By:		Date Time:		Received By:	
1 Relinquished by: <i>James Fox - KJE</i>		Date Time:		Received By: <i>[Signature]</i>		Relinquished By:		Date Time:		Received By:		Date Time:		Received By:		Date Time:		Received By:	
3 Relinquished by:		Date Time:		Received By:		Relinquished By:		Date Time:		Received By:		Date Time:		Received By:		Date Time:		Received By:	
5 Relinquished by:		Date Time:		Received By:		Relinquished By:		Date Time:		Received By:		Date Time:		Received By:		Date Time:		Received By:	

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

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to XENCO Laboratories and its affiliates, subcontractors and assigns XENCO's standard terms and conditions of service unless previously negotiated under a fully executed client contract.



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Norcross, Georgia (770-449-8800)

Lakeland, Florida (863-646-8526)
Tampa, Florida (813-520-2000)

www.xenco.com

Xenco Quote #

Xenco Job #

541854

Client / Reporting Information		Project Information										Analytical Information				Matrix Codes			
Company Name / Branch: KJE, Environmental & Civil Engineering		Project Name/Number: OWL Bobcat/Red Hills Pipeline Release																	
Company Address: 500 Moseley Road, Cross Roads, Texas 76227		Project Location: Jal, NM																	
Email: james@kjenvironmental.com		Invoice To: Jal, NM																	
Phone No: (940)387-0805																			
Project Contact: James Fox		PO Number:																	
Samplers Name																			
No.	Field ID / Point of Collection	Sample Depth	Collection Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MeOH	NONE	BTEX	TPH	CHLORIDES	Notes:	
1	SB17 2-4		12/4	915	5	2									X	X	X		
2	SB17 4-6 split			920											X	X	X		
3	SB17 4-6			925											X	X	X		
4	SB17 6-8			934											X	X	X		
5	SB18 0-2			940											X	X	X		
6	SB18 2-4			945											X	X	X		
7	SB18 4-6			950											X	X	X		
8	SB18 6-8			955											X	X	X		
9	SB18 8-10			1000											X	X	X		
10	SB19 0-2			1010											X	X	X		
Turnaround Time (Business days)		Data Deliverable Information										Notes:							
☐ Same Day TAT		☒ 5 Day TAT																	
☐ Next Day EMERGENCY		☐ 7 Day TAT																	
☐ 2 Day EMERGENCY		☐ Contract TAT																	
☐ 3 Day EMERGENCY		☐ TRRP Checklist																	
TAT Starts Day received by Lab, if received by 5:00 pm																			
Relinquished by Sampler:		SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY										FED-EX / UPS: Tracking #							
Date Time:		Received By: 1 James Fox - KJE										Relinquished By: 2		Date Time: 12/16/17 1:25		Received By: 4			
Relinquished by:		Date Time:										Received By: 3		Relinquished By: 4		Date Time:			
Relinquished by:		Date Time:										Received By: 5		Relinquished By: 4		Date Time:			
Temp: IR ID: R-8		CF: + 0.1										Corrected Temp: 5.30e							

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to XENCO Laboratories and its affiliates, subcontractors and assigns XENCO's standard terms and conditions of service unless previously negotiated under a fully executed client contract.



CHAIN OF CUSTODY

Page 8 of 9

Setting the Standard since 1990
Stafford, Texas (281-240-4200)

Dallas Texas (214-902-0300)

Service Center - San Antonio, Texas (210-509-3334)

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Odessa, Texas (432-563-1800)

Norcross, Georgia (770-449-8800)

Lakeland, Florida (863-646-8526)
Tampa, Florida (813-620-2000)

Xenco Quote #

Xenco Job #

541854

Client / Reporting Information				Project Information										Analytical Information				Matrix Codes																	
Company Name / Branch: KJE Environmental & Civil Engineering				Project Name/Number: OWL Bobcat/Red Hills Pipeline Release																															
Company Address: 500 Mosely Road, Cross Roads, Texas 76227				Project Location: Jal, NM																															
Email: james@kjenvironmental.com				Invoice To: Jal, NM																															
Phone No: (940)387-0805																																			
Project Contact: James Fox				PO Number:																															
Samplers Name																																			
No.	Field ID / Point of Collection	Sample Depth	Collection Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX	TPH	CHLORIDES	Notes	Field Comments																
1	SB 19	2-4	12/4	1015	5	1									X	X	X																		
2	SB 19	4-6		1025											X	X	X																		
3	SB 19	6-8		1030											X	X	X																		
4	SB 20	0-2		1040											X	X	X																		
5	SB 20	2-4		1045											X	X	X																		
6	SB 20	4-6		1050											X	X	X																		
7	SB 20	6-8		1052											X	X	X																		
8	SB 20	8-10		1055											X	X	X																		
9	SB 20	10-12		11:00											X	X	X																		
10	SB 21	0-2		1102											X	X	X																		
Turnaround Time (Business days)																				Data Deliverable Information				Notes:											
☐ Same Day TAT																				☐ Level II Std QC				☐ Level IV (Full Data Pkg /raw data)											
☐ Next Day EMERGENCY																				☐ 7 Day TAT				☐ Level III Std QC+ Forms				☐ TRRP Level IV							
☐ 2 Day EMERGENCY																				☐ Contract TAT				☐ Level 3 (CLP Forms)				☐ UST / RG-411							
☐ 3 Day EMERGENCY																				☐ TRRP Checklist															
TAT Starts Day received by Lab, if received by 5:00 pm																																			
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																																			
Relinquished by Sampler:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:															
1 James Fox - KJE																																			
3																																			
5																																			

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



Tampa, Florida (813-620-2000)



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: KJE Enviromental & Civil Engineering

Date/ Time Received: 12/09/2016 05:25:00 PM

Work Order #: 541854

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	5.3
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seal present on shipping container/ cooler?	No
#5 *Custody Seals intact on shipping container/ cooler?	N/A
#6 Custody Seals intact on sample bottles?	N/A
#7 *Custody Seals Signed and dated?	N/A
#8 *Chain of Custody present?	Yes
#9 Sample instructions complete on Chain of Custody?	Yes
#10 Any missing/extra samples?	No
#11 Chain of Custody signed when relinquished/ received?	Yes
#12 Chain of Custody agrees with sample label(s)?	Yes
#13 Container label(s) legible and intact?	Yes
#14 Sample matrix/ properties agree with Chain of Custody?	Yes
#15 Samples in proper container/ bottle?	Yes
#16 Samples properly preserved?	Yes
#17 Sample container(s) intact?	Yes
#18 Sufficient sample amount for indicated test(s)?	Yes
#19 All samples received within hold time?	Yes
#20 Subcontract of sample(s)?	Yes
#21 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#22 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	N/A
#23 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	N/A

Samples sent to Xenco-Houston

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Julian Martinez

Date: 12/12/2016

Checklist reviewed by:

Kelsey Brooks

Date: 12/12/2016

Analytical Report 542067
for
KJE Enviromental & Civil Engineering

Project Manager: James Fox
OWL Bobcat/Red Hills Pipeline Release

23-DEC-16

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

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

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



23-DEC-16

Project Manager: **James Fox**
KJE Enviromental & Civil Engineering
500 Mosley Rd
Aubrey, TX 76227

Reference: XENCO Report No(s): **542067**
OWL Bobcat/Red Hills Pipeline Release
Project Address: Jal, NM

James Fox:

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) 542067. 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. 542067 will be filed for 60 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

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

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KJE Enviromental & Civil Engineering, Aubrey, TX

OWL Bobcat/Red Hills Pipeline Release

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
(2) SB1 0-2	S	12-12-16 13:40	0 - 2	542067-001
(2) SB1 2-4	S	12-12-16 13:45	2 - 4	542067-002
(2) SB1 4-6	S	12-12-16 13:50	4 - 6	542067-003
(2) SB1 6-8	S	12-12-16 13:55	6 - 8	542067-004
(2) SB2 0-2	S	12-12-16 14:20	0 - 2	542067-005
(2) SB2 2-4	S	12-12-16 14:25	2 - 4	542067-006
(2) SB2 4-6	S	12-12-16 14:30	4 - 6	542067-007
(2) SB2 6-8	S	12-12-16 14:35	6 - 8	542067-008
(2) SB3 0-2	S	12-12-16 14:50	0 - 2	542067-009
(2) SB3 2-4	S	12-12-16 15:00	2 - 4	542067-010
(2) SB3 4-6	S	12-12-16 15:02	4 - 6	542067-011
(2) SB3 6-8	S	12-12-16 15:05	6 - 8	542067-012
(2) SB4 0-2	S	12-12-16 15:20	0 - 2	542067-013
(2) SB4 2-4	S	12-12-16 15:25	2 - 4	542067-014
(2) SB4 4-6	S	12-12-16 15:30	4 - 6	542067-015
(2) SB4 6-8	S	12-12-16 15:32	6 - 8	542067-016
(2) SB4 8-10	S	12-12-16 15:35	8 - 10	542067-017
(2) SB5 0-2	S	12-12-16 16:00	0 - 2	542067-018
(2) SB5 2-4	S	12-12-16 16:05	2 - 4	542067-019
(2) SB5 4-6	S	12-12-16 16:10	4 - 6	542067-020
(2) SB5 6-8	S	12-12-16 16:15	6 - 8	542067-021
(2) SB5 8-9.5	S	12-12-16 16:20	8 - 9.5	542067-022
(2) SB6 0-2	S	12-12-16 16:45	0 - 2	542067-023
(2) SB6 2-4	S	12-12-16 16:50	2 - 4	542067-024
(2) SB6 4-6	S	12-12-16 16:55	4 - 6	542067-025
(2) SB6 6-8	S	12-12-16 17:00	6 - 8	542067-026
(2) SB7 0-2	S	12-13-16 09:00	0 - 2	542067-027
(2) SB7 2-4	S	12-13-16 09:03	2 - 4	542067-028
(2) SB7 4-6	S	12-13-16 09:06	4 - 6	542067-029
(2) SB7 6-8	S	12-13-16 09:10	6 - 8	542067-030
(2) SB7 8-10	S	12-13-16 09:15	8 - 10	542067-031
(2) SB8 0-2	S	12-13-16 09:20	0 - 2	542067-032
(2) SB8 2-4	S	12-13-16 09:24	2 - 4	542067-033
(2) SB8 4-6	S	12-13-16 09:28	4 - 6	542067-034
(2) SB8 6-8	S	12-13-16 09:32	6 - 8	542067-035
(2) SB8 8-10	S	12-13-16 09:35	8 - 10	542067-036
(2) SB9 0-2	S	12-13-16 09:55	0 - 2	542067-037
(2) SB9 2-4	S	12-13-16 09:59	2 - 4	542067-038
(2) SB9 4-6	S	12-13-16 10:03	4 - 6	542067-039
(2) SB9 6-8	S	12-13-16 10:07	6 - 8	542067-040
(2) SB9 8-10	S	12-13-16 10:10	8 - 10	542067-041
(2) SB9 8-10 SPLIT	S	12-13-16 10:10	8 - 10	542067-042
(2) SB10 0-2	S	12-13-16 10:15	0 - 2	542067-043

KJE Enviromental & Civil Engineering, Aubrey, TX

OWL Bobcat/Red Hills Pipeline Release

(2) SB10 2-4	S	12-13-16 10:16	2 - 4	542067-044
(2) SB10 4-6	S	12-13-16 10:17	4 - 6	542067-045
(2) SB10 6-8	S	12-13-16 10:18	6 - 8	542067-046
(2) SB10 8-10	S	12-13-16 10:20	8 - 10	542067-047
(2) SB11 0-2	S	12-13-16 10:26	0 - 2	542067-048
(2) SB11 2-4	S	12-13-16 10:30	2 - 4	542067-049
(2) SB11 4-6	S	12-13-16 10:35	4 - 6	542067-050
(2) SB11 6-8	S	12-13-16 10:40	6 - 8	542067-051
(2) SB12 0-2	S	12-13-16 10:55	0 - 2	542067-052
(2) SB12 2-4	S	12-13-16 11:00	2 - 4	542067-053
(2) SB12 4-6	S	12-13-16 11:05	4 - 6	542067-054
(2) SB12 6-8	S	12-13-16 11:16	6 - 8	542067-055
(2) SB13 0-2	S	12-13-16 11:22	0 - 2	542067-056
(2) SB13 2-4	S	12-13-16 11:25	2 - 4	542067-057
(2) SB13 4-6	S	12-13-16 11:30	4 - 6	542067-058
(2) SB13 6-8	S	12-13-16 11:33	6 - 8	542067-059
(2) SB14 0-2	S	12-13-16 11:50	0 - 2	542067-060
(2) SB14 2-4	S	12-13-16 11:52	2 - 4	542067-061
(2) SB14 4-6	S	12-13-16 11:56	4 - 6	542067-062
(2) SB15 4-6 SPLIT	S	12-13-16 11:56	4 - 6	542067-063
(2) SB14 6-8	S	12-13-16 12:00	6 - 8	542067-064
(2) SB15 0-2	S	12-13-16 14:11	0 - 2	542067-065
(2) SB15 2-4	S	12-13-16 14:15	2 - 4	542067-066
(2) SB15 4-6	S	12-13-16 14:20	4 - 6	542067-067
(2) SB15 6-8	S	12-13-16 14:30	6 - 8	542067-068
(2) SB15 8-10	S	12-13-16 14:35	8 - 10	542067-069
(2) SB16 0-2	S	12-13-16 14:40	0 - 2	542067-070
(2) SB16 2-4	S	12-13-16 14:45	2 - 4	542067-071
(2) SB16 4-6	S	12-13-16 14:47	4 - 6	542067-072
(2) SB16 6-8	S	12-13-16 14:50	6 - 8	542067-073
(2) SB16 8-10	S	12-13-16 15:05	8 - 10	542067-074
(2) SB17 0-2	S	12-13-16 15:15	0 - 2	542067-075
(2) SB17 2-4	S	12-13-16 15:17	2 - 4	542067-076
(2) SB17 4-6	S	12-13-16 15:19	4 - 6	542067-077
(2) SB17 6-8	S	12-13-16 15:21	6 - 8	542067-078
(2) SB17 8-10	S	12-13-16 15:22	8 - 10	542067-079
(2) SB17 10-12	S	12-13-16 15:23	10 - 12	542067-080
(2) SB17 12-14	S	12-13-16 15:25	12 - 14	542067-081
(2) SB18 0-2	S	12-13-16 15:50	0 - 2	542067-082
(2) SB18 2-4	S	12-13-16 15:52	2 - 4	542067-083
(2) SB18 2-4 SPLIT	S	12-13-16 15:52	2 - 4	542067-084
(2) SB18 4-6	S	12-13-16 15:55	4 - 6	542067-085
(2) SB18 6-8	S	12-13-16 15:57	6 - 8	542067-086
(2) SB18 8-10	S	12-13-16 15:59	8 - 10	542067-087



Sample Cross Reference 542067



KJE Enviromental & Civil Engineering, Aubrey, TX

OWL Bobcat/Red Hills Pipeline Release

(2) SB18 10-12	S	12-13-16 16:00	10 - 12	542067-088
(2) SB18 12-14	S	12-13-16 16:05	12 - 14	542067-089
(2) SB19 2-4	S	12-13-16 16:30	2 - 4	542067-090
(2) SB19 4-6	S	12-13-16 16:35	4 - 6	542067-091
(2) SB19 6-8	S	12-13-16 16:40	6 - 8	542067-092
(2) SB19 8-10	S	12-13-16 16:50	8 - 10	542067-093
(2) SB19 10-12	S	12-13-16 17:00	10 - 12	542067-094
(2) SB5 4-5 SPLIT	S	12-12-16 16:10	4 - 6	542067-095

Client Name: KJE Enviromental & Civil Engineering**Project Name: OWL Bobcat/Red Hills Pipeline Release**

Project ID:

Work Order Number(s): 542067

Report Date: 23-DEC-16

Date Received: 12/13/2016

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3005815 BTEX by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3005825 BTEX by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3005967 BTEX by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3005969 BTEX by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3005975 BTEX by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3005979 BTEX by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3006002 BTEX by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3006270 Inorganic Anions by EPA 300/300.1

Lab Sample ID 542067-090 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 542067-080, -081, -082, -083, -084, -085, -086, -087, -088, -089, -090, -091, -092, -093, -094, -095.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.



CASE NARRATIVE



Client Name: KJE Enviromental & Civil Engineering

Project Name: OWL Bobcat/Red Hills Pipeline Release

Project ID:

Work Order Number(s): 542067

Report Date: 23-DEC-16

Date Received: 12/13/2016



Certificate of Analysis Summary 542067

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Tue Dec-13-16 08:15 pm

Report Date: 23-DEC-16

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	542067-001	542067-002	542067-003	542067-004	542067-005	542067-006
	<i>Field Id:</i>	(2) SB1 0-2	(2) SB1 2-4	(2) SB1 4-6	(2) SB1 6-8	(2) SB2 0-2	(2) SB2 2-4
	<i>Depth:</i>	0-2	2-4	4-6	6-8	0-2	2-4
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-12-16 13:40	Dec-12-16 13:45	Dec-12-16 13:50	Dec-12-16 13:55	Dec-12-16 14:20	Dec-12-16 14:25
BTEX by SW 8260B SUB: TX104704215	<i>Extracted:</i>	Dec-15-16 19:35	Dec-15-16 15:00	Dec-15-16 15:01	Dec-15-16 15:02	Dec-15-16 15:03	Dec-15-16 15:04
	<i>Analyzed:</i>	Dec-15-16 20:17	Dec-15-16 15:20	Dec-15-16 15:38	Dec-15-16 15:57	Dec-15-16 16:15	Dec-15-16 16:34
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.000992 0.000992	<0.00100 0.00100	<0.00100 0.00100
Toluene		<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.000992 0.000992	<0.00100 0.00100	<0.00100 0.00100
Ethylbenzene		<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.000992 0.000992	<0.00100 0.00100	<0.00100 0.00100
m,p-Xylenes		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200
o-Xylene		<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.000992 0.000992	<0.00100 0.00100	<0.00100 0.00100
Total Xylenes		<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.000992 0.000992	<0.00100 0.00100	<0.00100 0.00100
Total BTEX		<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.000992 0.000992	<0.00100 0.00100	<0.00100 0.00100
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Dec-19-16 15:00	Dec-19-16 15:00	Dec-19-16 15:00	Dec-19-16 15:00	Dec-19-16 15:00	Dec-19-16 15:00
	<i>Analyzed:</i>	Dec-19-16 21:18	Dec-19-16 21:39	Dec-19-16 22:01	Dec-19-16 22:08	Dec-19-16 22:15	Dec-19-16 22:22
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		353 5.00	483 5.00	800 5.00	539 5.00	7.45 5.00	639 5.00
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-16-16 09:00	Dec-16-16 09:00	Dec-16-16 09:00	Dec-16-16 09:00	Dec-16-16 09:00	Dec-16-16 09:00
	<i>Analyzed:</i>	Dec-16-16 09:46	Dec-16-16 10:59	Dec-16-16 11:24	Dec-16-16 11:47	Dec-16-16 12:10	Dec-16-16 12:33
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Version: 1.9%

Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542067

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Tue Dec-13-16 08:15 pm

Report Date: 23-DEC-16

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542067-007	542067-008	542067-009	542067-010	542067-011	542067-012
	Field Id:	(2) SB2 4-6	(2) SB2 6-8	(2) SB3 0-2	(2) SB3 2-4	(2) SB3 4-6	(2) SB3 6-8
	Depth:	4-6	6-8	0-2	2-4	4-6	6-8
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-12-16 14:30	Dec-12-16 14:35	Dec-12-16 14:50	Dec-12-16 15:00	Dec-12-16 15:02	Dec-12-16 15:05
BTEX by SW 8260B SUB: TX104704215	Extracted:	Dec-15-16 15:05	Dec-16-16 17:33	Dec-15-16 15:07	Dec-15-16 15:01	Dec-15-16 15:02	Dec-15-16 15:03
	Analyzed:	Dec-15-16 16:52	Dec-16-16 21:21	Dec-15-16 17:29	Dec-15-16 15:45	Dec-15-16 16:00	Dec-15-16 16:15
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000990 0.000990	<0.000994 0.000994	<0.000998 0.000998	<0.00101 0.00101	<0.000990 0.000990	<0.000998 0.000998
Toluene		<0.000990 0.000990	<0.000994 0.000994	<0.000998 0.000998	<0.00101 0.00101	<0.000990 0.000990	<0.000998 0.000998
Ethylbenzene		<0.000990 0.000990	<0.000994 0.000994	<0.000998 0.000998	<0.00101 0.00101	<0.000990 0.000990	<0.000998 0.000998
m,p-Xylenes		<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200
o-Xylene		<0.000990 0.000990	<0.000994 0.000994	<0.000998 0.000998	<0.00101 0.00101	<0.000990 0.000990	<0.000998 0.000998
Total Xylenes		<0.000990 0.000990	<0.000994 0.000994	<0.000998 0.000998	<0.00101 0.00101	<0.000990 0.000990	<0.000998 0.000998
Total BTEX		<0.000990 0.000990	<0.000994 0.000994	<0.000998 0.000998	<0.00101 0.00101	<0.000990 0.000990	<0.000998 0.000998
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-19-16 15:00	Dec-19-16 15:00	Dec-19-16 15:00	Dec-19-16 15:00	Dec-20-16 10:00	Dec-20-16 10:00
	Analyzed:	Dec-19-16 22:29	Dec-19-16 22:36	Dec-19-16 22:43	Dec-19-16 22:50	Dec-20-16 15:18	Dec-20-16 15:25
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		592 5.00	728 5.00	414 5.00	185 5.00	8.85 5.00	5.85 5.00
TPH By SW8015 Mod	Extracted:	Dec-16-16 09:00	Dec-16-16 09:00	Dec-16-16 09:00	Dec-16-16 09:00	Dec-16-16 09:00	Dec-16-16 09:00
	Analyzed:	Dec-16-16 12:56	Dec-16-16 13:20	Dec-16-16 13:44	Dec-16-16 14:07	Dec-16-16 14:52	Dec-16-16 15:15
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<14.9 14.9
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<14.9 14.9
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<14.9 14.9
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<14.9 14.9

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542067

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Tue Dec-13-16 08:15 pm

Report Date: 23-DEC-16

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	542067-013	542067-014	542067-015	542067-016	542067-017	542067-018
	<i>Field Id:</i>	(2) SB4 0-2	(2) SB4 2-4	(2) SB4 4-6	(2) SB4 6-8	(2) SB4 8-10	(2) SB5 0-2
	<i>Depth:</i>	0-2	2-4	4-6	6-8	8-10	0-2
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-12-16 15:20	Dec-12-16 15:25	Dec-12-16 15:30	Dec-12-16 15:32	Dec-12-16 15:35	Dec-12-16 16:00
BTEX by SW 8260B SUB: TX104704215	<i>Extracted:</i>	Dec-15-16 20:12	Dec-18-16 13:02	Dec-15-16 20:14	Dec-15-16 20:15	Dec-15-16 20:16	Dec-15-16 20:17
	<i>Analyzed:</i>	Dec-15-16 22:51	Dec-18-16 15:48	Dec-15-16 23:28	Dec-15-16 23:47	Dec-16-16 00:06	Dec-16-16 00:24
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000998 0.000998	<0.000990 0.000990	<0.000998 0.000998	<0.000990 0.000990	<0.000992 0.000992	<0.000992 0.000992
Toluene		<0.000998 0.000998	<0.000990 0.000990	<0.000998 0.000998	<0.000990 0.000990	<0.000992 0.000992	<0.000992 0.000992
Ethylbenzene		<0.000998 0.000998	<0.000990 0.000990	<0.000998 0.000998	<0.000990 0.000990	<0.000992 0.000992	<0.000992 0.000992
m,p-Xylenes		<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198	<0.00198 0.00198
o-Xylene		<0.000998 0.000998	<0.000990 0.000990	<0.000998 0.000998	<0.000990 0.000990	<0.000992 0.000992	<0.000992 0.000992
Total Xylenes		<0.000998 0.000998	<0.000990 0.000990	<0.000998 0.000998	<0.000990 0.000990	<0.000992 0.000992	<0.000992 0.000992
Total BTEX		<0.000998 0.000998	<0.000990 0.000990	<0.000998 0.000998	<0.000990 0.000990	<0.000992 0.000992	<0.000992 0.000992
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Dec-20-16 10:00	Dec-20-16 10:00	Dec-20-16 10:00	Dec-20-16 10:00	Dec-20-16 10:00	Dec-20-16 10:00
	<i>Analyzed:</i>	Dec-20-16 15:32	Dec-20-16 15:39	Dec-20-16 16:14	Dec-20-16 16:21	Dec-20-16 16:28	Dec-20-16 16:35
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1900 25.0	3990 25.0	5350 25.0	6180 25.0	4400 25.0	15.0 5.00
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-16-16 09:00	Dec-16-16 09:00	Dec-16-16 09:00	Dec-16-16 09:00	Dec-16-16 09:00	Dec-16-16 09:00
	<i>Analyzed:</i>	Dec-16-16 15:37	Dec-16-16 16:00	Dec-16-16 16:23	Dec-16-16 16:47	Dec-16-16 17:11	Dec-16-16 17:34
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542067

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Tue Dec-13-16 08:15 pm

Report Date: 23-DEC-16

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542067-019	542067-020	542067-021	542067-022	542067-023	542067-024
	Field Id:	(2) SB5 2-4	(2) SB5 4-6	(2) SB5 6-8	(2) SB5 8-9.5	(2) SB6 0-2	(2) SB6 2-4
	Depth:	2-4	4-6	6-8	8-9.5	0-2	2-4
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-12-16 16:05	Dec-12-16 16:10	Dec-12-16 16:15	Dec-12-16 16:20	Dec-12-16 16:45	Dec-12-16 16:50
BTEX by SW 8260B SUB: TX104704215	Extracted:	Dec-18-16 13:01	Dec-15-16 20:19	Dec-16-16 15:05	Dec-16-16 15:01	Dec-15-16 20:22	Dec-16-16 15:02
	Analyzed:	Dec-18-16 15:33	Dec-16-16 01:02	Dec-16-16 16:45	Dec-16-16 15:43	Dec-16-16 01:58	Dec-16-16 15:59
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000992 0.000992	<0.000998 0.000998	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100	<0.000994 0.000994
Toluene		<0.000992 0.000992	<0.000998 0.000998	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100	<0.000994 0.000994
Ethylbenzene		<0.000992 0.000992	<0.000998 0.000998	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100	<0.000994 0.000994
m,p-Xylenes		<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200	<0.00199 0.00199
o-Xylene		<0.000992 0.000992	<0.000998 0.000998	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100	<0.000994 0.000994
Total Xylenes		<0.000992 0.000992	<0.000998 0.000998	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100	<0.000994 0.000994
Total BTEX		<0.000992 0.000992	<0.000998 0.000998	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100	<0.000994 0.000994
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-20-16 10:00	Dec-20-16 10:00	Dec-20-16 10:00	Dec-20-16 10:00	Dec-20-16 10:00	Dec-20-16 14:00
	Analyzed:	Dec-20-16 16:42	Dec-20-16 16:49	Dec-20-16 16:56	Dec-20-16 17:03	Dec-20-16 17:10	Dec-20-16 17:53
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<5.00 5.00	<5.00 5.00	5.08 5.00	<5.00 5.00	11.9 5.00	<5.00 5.00
TPH By SW8015 Mod	Extracted:	Dec-16-16 09:00	Dec-16-16 09:00	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00
	Analyzed:	Dec-16-16 17:57	Dec-16-16 18:22	Dec-16-16 20:27	Dec-16-16 21:44	Dec-16-16 22:09	Dec-16-16 22:35
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542067

KJE Environmental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Tue Dec-13-16 08:15 pm

Report Date: 23-DEC-16

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542067-025	542067-026	542067-027	542067-028	542067-029	542067-030
	Field Id:	(2) SB6 4-6	(2) SB6 6-8	(2) SB7 0-2	(2) SB7 2-4	(2) SB7 4-6	(2) SB7 6-8
	Depth:	4-6	6-8	0-2	2-4	4-6	6-8
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-12-16 16:55	Dec-12-16 17:00	Dec-13-16 09:00	Dec-13-16 09:03	Dec-13-16 09:06	Dec-13-16 09:10
BTEX by SW 8260B SUB: TX104704215	Extracted:	Dec-15-16 20:24	Dec-16-16 15:03	Dec-15-16 20:26	Dec-16-16 15:04	Dec-15-16 20:28	Dec-15-16 20:29
	Analyzed:	Dec-16-16 02:35	Dec-16-16 16:14	Dec-16-16 03:13	Dec-16-16 16:30	Dec-16-16 03:51	Dec-16-16 04:09
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000998 0.000998	<0.000996 0.000996	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
Toluene		<0.000998 0.000998	<0.000996 0.000996	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
Ethylbenzene		<0.000998 0.000998	<0.000996 0.000996	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
m,p-Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200
o-Xylene		<0.000998 0.000998	<0.000996 0.000996	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
Total Xylenes		<0.000998 0.000998	<0.000996 0.000996	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
Total BTEX		<0.000998 0.000998	<0.000996 0.000996	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-20-16 14:00	Dec-20-16 14:00	Dec-20-16 14:00	Dec-20-16 14:00	Dec-20-16 14:00	Dec-20-16 14:00
	Analyzed:	Dec-20-16 18:14	Dec-20-16 18:21	Dec-20-16 18:28	Dec-20-16 18:35	Dec-20-16 18:56	Dec-20-16 19:03
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<5.00 5.00	7.28 5.00	6.22 5.00	<5.00 5.00	<5.00 5.00	<5.00 5.00
TPH By SW8015 Mod	Extracted:	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00
	Analyzed:	Dec-16-16 23:03	Dec-16-16 23:30	Dec-16-16 23:57	Dec-17-16 00:25	Dec-17-16 00:52	Dec-17-16 01:20
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542067

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Tue Dec-13-16 08:15 pm

Report Date: 23-DEC-16

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542067-031	542067-032	542067-033	542067-034	542067-035	542067-036
	Field Id:	(2) SB7 8-10	(2) SB8 0-2	(2) SB8 2-4	(2) SB8 4-6	(2) SB8 6-8	(2) SB8 8-10
	Depth:	8-10	0-2	2-4	4-6	6-8	8-10
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-13-16 09:15	Dec-13-16 09:20	Dec-13-16 09:24	Dec-13-16 09:28	Dec-13-16 09:32	Dec-13-16 09:35
BTEX by SW 8260B SUB: TX104704215	Extracted:	Dec-15-16 19:36	Dec-15-16 19:37	Dec-15-16 19:38	Dec-15-16 19:39	Dec-15-16 19:40	Dec-15-16 19:41
	Analyzed:	Dec-15-16 20:33	Dec-15-16 20:48	Dec-15-16 21:04	Dec-15-16 21:19	Dec-15-16 21:34	Dec-15-16 21:50
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00100 0.00100	<0.000994 0.000994	<0.00101 0.00101	<0.000990 0.000990	<0.00100 0.00100	<0.000990 0.000990
Toluene		<0.00100 0.00100	<0.000994 0.000994	<0.00101 0.00101	<0.000990 0.000990	<0.00100 0.00100	<0.000990 0.000990
Ethylbenzene		<0.00100 0.00100	<0.000994 0.000994	<0.00101 0.00101	<0.000990 0.000990	<0.00100 0.00100	<0.000990 0.000990
m,p-Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	<0.00198 0.00198	<0.00201 0.00201	<0.00198 0.00198
o-Xylene		<0.00100 0.00100	<0.000994 0.000994	<0.00101 0.00101	<0.000990 0.000990	<0.00100 0.00100	<0.000990 0.000990
Total Xylenes		<0.00100 0.00100	<0.000994 0.000994	<0.00101 0.00101	<0.000990 0.000990	<0.00100 0.00100	<0.000990 0.000990
Total BTEX		<0.00100 0.00100	<0.000994 0.000994	<0.00101 0.00101	<0.000990 0.000990	<0.00100 0.00100	<0.000990 0.000990
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-20-16 14:00	Dec-20-16 14:00	Dec-20-16 14:00	Dec-20-16 14:00	Dec-20-16 14:00	Dec-20-16 14:00
	Analyzed:	Dec-20-16 19:10	Dec-20-16 19:17	Dec-20-16 19:24	Dec-20-16 19:31	Dec-20-16 20:07	Dec-20-16 20:14
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<5.00 5.00	<5.00 5.00	<5.00 5.00	<5.00 5.00	6.08 5.00	5.85 5.00
TPH By SW8015 Mod	Extracted:	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00
	Analyzed:	Dec-17-16 02:15	Dec-19-16 08:48	Dec-17-16 03:13	Dec-17-16 03:40	Dec-17-16 04:08	Dec-17-16 04:36
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	36.2 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
Total TPH		<15.0 15.0	36.2 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9

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Version: 1.9%

Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542067

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Tue Dec-13-16 08:15 pm

Report Date: 23-DEC-16

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542067-037	542067-038	542067-039	542067-040	542067-041	542067-042
	Field Id:	(2) SB9 0-2	(2) SB9 2-4	(2) SB9 4-6	(2) SB9 6-8	(2) SB9 8-10	(2) SB9 8-10 SPLIT
	Depth:	0-2	2-4	4-6	6-8	8-10	8-10
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-13-16 09:55	Dec-13-16 09:59	Dec-13-16 10:03	Dec-13-16 10:07	Dec-13-16 10:10	Dec-13-16 10:10
BTEX by SW 8260B SUB: TX104704215	Extracted:	Dec-18-16 13:03	Dec-15-16 19:43	Dec-15-16 19:44	Dec-15-16 19:45	Dec-15-16 19:46	Dec-15-16 19:47
	Analyzed:	Dec-18-16 16:03	Dec-15-16 22:21	Dec-15-16 22:36	Dec-15-16 22:52	Dec-15-16 23:07	Dec-15-16 23:22
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000992 0.000992	<0.00100 0.00100	<0.000992 0.000992	<0.00101 0.00101	<0.00100 0.00100	<0.00101 0.00101
Toluene		<0.000992 0.000992	<0.00100 0.00100	<0.000992 0.000992	<0.00101 0.00101	<0.00100 0.00100	<0.00101 0.00101
Ethylbenzene		<0.000992 0.000992	<0.00100 0.00100	<0.000992 0.000992	<0.00101 0.00101	<0.00100 0.00100	<0.00101 0.00101
m,p-Xylenes		<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201
o-Xylene		<0.000992 0.000992	<0.00100 0.00100	<0.000992 0.000992	<0.00101 0.00101	<0.00100 0.00100	<0.00101 0.00101
Total Xylenes		<0.000992 0.000992	<0.00100 0.00100	<0.000992 0.000992	<0.00101 0.00101	<0.00100 0.00100	<0.00101 0.00101
Total BTEX		<0.000992 0.000992	<0.00100 0.00100	<0.000992 0.000992	<0.00101 0.00101	<0.00100 0.00100	<0.00101 0.00101
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-20-16 14:00	Dec-20-16 14:00	Dec-20-16 14:00	Dec-20-16 14:00	Dec-20-16 14:00	Dec-20-16 14:00
	Analyzed:	Dec-20-16 20:21	Dec-20-16 20:28	Dec-20-16 20:35	Dec-20-16 20:42	Dec-20-16 20:49	Dec-20-16 20:56
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		11.2 5.00	18.0 5.00	9.83 5.00	6.36 5.00	7.45 5.00	7.70 5.00
TPH By SW8015 Mod	Extracted:	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00
	Analyzed:	Dec-17-16 05:05	Dec-19-16 09:11	Dec-19-16 09:57	Dec-17-16 06:31	Dec-17-16 08:52	Dec-17-16 10:10
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	68.3 15.0	153 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	29.4 15.0	62.5 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	97.7 15.0	216 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542067

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Tue Dec-13-16 08:15 pm

Report Date: 23-DEC-16

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	542067-043	542067-044	542067-045	542067-046	542067-047	542067-048
	<i>Field Id:</i>	(2) SB10 0-2	(2) SB10 2-4	(2) SB10 4-6	(2) SB10 6-8	(2) SB10 8-10	(2) SB11 0-2
	<i>Depth:</i>	0-2	2-4	4-6	6-8	8-10	0-2
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-13-16 10:15	Dec-13-16 10:16	Dec-13-16 10:17	Dec-13-16 10:18	Dec-13-16 10:20	Dec-13-16 10:26
BTEX by SW 8260B SUB: TX104704215	<i>Extracted:</i>	Dec-15-16 19:48	Dec-15-16 19:49	Dec-15-16 19:50	Dec-15-16 19:51	Dec-15-16 19:52	Dec-15-16 19:53
	<i>Analyzed:</i>	Dec-15-16 23:38	Dec-15-16 23:53	Dec-16-16 00:09	Dec-16-16 00:24	Dec-16-16 00:39	Dec-16-16 00:54
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101	<0.00100 0.00100	<0.000992 0.000992
Toluene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101	<0.00100 0.00100	<0.000992 0.000992
Ethylbenzene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101	<0.00100 0.00100	<0.000992 0.000992
m,p-Xylenes		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198
o-Xylene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101	<0.00100 0.00100	<0.000992 0.000992
Total Xylenes		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101	<0.00100 0.00100	<0.000992 0.000992
Total BTEX		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101	<0.00100 0.00100	<0.000992 0.000992
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Dec-20-16 14:00	Dec-21-16 18:30	Dec-21-16 18:30	Dec-21-16 18:30	Dec-21-16 18:30	Dec-21-16 18:30
	<i>Analyzed:</i>	Dec-20-16 21:03	Dec-21-16 23:28	Dec-21-16 23:49	Dec-21-16 23:56	Dec-22-16 00:03	Dec-22-16 00:10
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		6.87 5.00	<5.00 5.00	5.31 5.00	<5.00 5.00	<5.00 5.00	<5.00 5.00
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00
	<i>Analyzed:</i>	Dec-19-16 10:20	Dec-19-16 10:45	Dec-19-16 11:10	Dec-17-16 12:09	Dec-17-16 12:38	Dec-19-16 11:36
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542067

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Tue Dec-13-16 08:15 pm

Report Date: 23-DEC-16

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542067-049	542067-050	542067-051	542067-052	542067-053	542067-054
	Field Id:	(2) SB11 2-4	(2) SB11 4-6	(2) SB11 6-8	(2) SB12 0-2	(2) SB12 2-4	(2) SB12 4-6
	Depth:	2-4	4-6	6-8	0-2	2-4	4-6
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-13-16 10:30	Dec-13-16 10:35	Dec-13-16 10:40	Dec-13-16 10:55	Dec-13-16 11:00	Dec-13-16 11:05
BTEX by SW 8260B SUB: TX104704215	Extracted:	Dec-15-16 19:54	Dec-16-16 10:40	Dec-16-16 10:41	Dec-16-16 10:42	Dec-16-16 10:43	Dec-16-16 10:44
	Analyzed:	Dec-16-16 01:10	Dec-16-16 11:10	Dec-16-16 11:34	Dec-16-16 11:50	Dec-16-16 12:05	Dec-16-16 12:20
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00100 0.00100	<0.000998 0.000998	<0.00101 0.00101	<0.00101 0.00101	<0.000996 0.000996	<0.00100 0.00100
Toluene		<0.00100 0.00100	<0.000998 0.000998	<0.00101 0.00101	<0.00101 0.00101	<0.000996 0.000996	<0.00100 0.00100
Ethylbenzene		<0.00100 0.00100	<0.000998 0.000998	<0.00101 0.00101	<0.00101 0.00101	<0.000996 0.000996	<0.00100 0.00100
m,p-Xylenes		<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200
o-Xylene		<0.00100 0.00100	<0.000998 0.000998	<0.00101 0.00101	<0.00101 0.00101	<0.000996 0.000996	<0.00100 0.00100
Total Xylenes		<0.00100 0.00100	<0.000998 0.000998	<0.00101 0.00101	<0.00101 0.00101	<0.000996 0.000996	<0.00100 0.00100
Total BTEX		<0.00100 0.00100	<0.000998 0.000998	<0.00101 0.00101	<0.00101 0.00101	<0.000996 0.000996	<0.00100 0.00100
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-21-16 18:30	Dec-21-16 18:30	Dec-21-16 18:30	Dec-21-16 18:30	Dec-21-16 18:30	Dec-21-16 18:30
	Analyzed:	Dec-22-16 00:17	Dec-22-16 00:24	Dec-22-16 00:31	Dec-22-16 00:52	Dec-22-16 00:59	Dec-22-16 08:48
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<5.00 5.00	<5.00 5.00	<5.00 5.00	25.3 5.00	5.02 5.00	<5.00 5.00
TPH By SW8015 Mod	Extracted:	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00
	Analyzed:	Dec-19-16 12:03	Dec-19-16 12:30	Dec-17-16 15:02	Dec-17-16 15:27	Dec-17-16 15:54	Dec-17-16 16:18
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542067

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Tue Dec-13-16 08:15 pm

Report Date: 23-DEC-16

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	542067-055	542067-056	542067-057	542067-058	542067-059	542067-060
	<i>Field Id:</i>	(2) SB12 6-8	(2) SB13 0-2	(2) SB13 2-4	(2) SB13 4-6	(2) SB13 6-8	(2) SB14 0-2
	<i>Depth:</i>	6-8	0-2	2-4	4-6	6-8	0-2
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-13-16 11:16	Dec-13-16 11:22	Dec-13-16 11:25	Dec-13-16 11:30	Dec-13-16 11:33	Dec-13-16 11:50
BTEX by SW 8260B SUB: TX104704215	<i>Extracted:</i>	Dec-16-16 10:45	Dec-16-16 10:46	Dec-16-16 10:47	Dec-16-16 10:48	Dec-16-16 10:49	Dec-16-16 10:50
	<i>Analyzed:</i>	Dec-16-16 12:35	Dec-16-16 13:11	Dec-16-16 13:26	Dec-16-16 13:41	Dec-16-16 13:57	Dec-16-16 14:13
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000990 0.000990	<0.000998 0.000998	<0.000992 0.000992	<0.000990 0.000990	<0.000998 0.000998	<0.00100 0.00100
Toluene		<0.000990 0.000990	<0.000998 0.000998	<0.000992 0.000992	<0.000990 0.000990	<0.000998 0.000998	<0.00100 0.00100
Ethylbenzene		<0.000990 0.000990	<0.000998 0.000998	<0.000992 0.000992	<0.000990 0.000990	<0.000998 0.000998	<0.00100 0.00100
m,p-Xylenes		<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200
o-Xylene		<0.000990 0.000990	<0.000998 0.000998	<0.000992 0.000992	<0.000990 0.000990	<0.000998 0.000998	<0.00100 0.00100
Total Xylenes		<0.000990 0.000990	<0.000998 0.000998	<0.000992 0.000992	<0.000990 0.000990	<0.000998 0.000998	<0.00100 0.00100
Total BTEX		<0.000990 0.000990	<0.000998 0.000998	<0.000992 0.000992	<0.000990 0.000990	<0.000998 0.000998	<0.00100 0.00100
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Dec-21-16 18:30	Dec-21-16 18:30	Dec-21-16 18:30	Dec-21-16 18:30	Dec-21-16 18:30	Dec-22-16 10:06
	<i>Analyzed:</i>	Dec-22-16 08:55	Dec-22-16 09:03	Dec-22-16 09:10	Dec-22-16 09:17	Dec-22-16 09:24	Dec-22-16 10:06
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<5.00 5.00	<5.00 5.00	<5.00 5.00	5.15 5.00	8.48 5.00	6.12 5.00
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00
	<i>Analyzed:</i>	Dec-17-16 16:47	Dec-17-16 17:12	Dec-17-16 17:39	Dec-17-16 18:06	Dec-17-16 18:34	Dec-19-16 12:58
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Version: 1.9%

Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542067

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Tue Dec-13-16 08:15 pm

Report Date: 23-DEC-16

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	542067-061	542067-062	542067-063	542067-064	542067-065	542067-066
	<i>Field Id:</i>	(2) SB14 2-4	(2) SB14 4-6	(2) SB15 4-6 SPLIT	(2) SB14 6-8	(2) SB15 0-2	(2) SB15 2-4
	<i>Depth:</i>	2-4	4-6	4-6	6-8	0-2	2-4
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-13-16 11:52	Dec-13-16 11:56	Dec-13-16 11:56	Dec-13-16 12:00	Dec-13-16 14:11	Dec-13-16 14:15
BTEX by SW 8260B SUB: TX104704215	<i>Extracted:</i>	Dec-16-16 10:52	Dec-16-16 10:51	Dec-16-16 10:53	Dec-16-16 10:54	Dec-18-16 13:04	Dec-18-16 13:05
	<i>Analyzed:</i>	Dec-16-16 14:47	Dec-16-16 14:28	Dec-16-16 15:02	Dec-16-16 15:18	Dec-18-16 16:18	Dec-18-16 16:33
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000996 0.000996	<0.000998 0.000998	<0.000994 0.000994	<0.00100 0.00100	<0.000992 0.000992	<0.000998 0.000998
Toluene		<0.000996 0.000996	<0.000998 0.000998	<0.000994 0.000994	<0.00100 0.00100	<0.000992 0.000992	<0.000998 0.000998
Ethylbenzene		<0.000996 0.000996	<0.000998 0.000998	<0.000994 0.000994	<0.00100 0.00100	<0.000992 0.000992	<0.000998 0.000998
m,p-Xylenes		<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
o-Xylene		<0.000996 0.000996	<0.000998 0.000998	<0.000994 0.000994	<0.00100 0.00100	<0.000992 0.000992	<0.000998 0.000998
Total Xylenes		<0.000996 0.000996	<0.000998 0.000998	<0.000994 0.000994	<0.00100 0.00100	<0.000992 0.000992	<0.000998 0.000998
Total BTEX		<0.000996 0.000996	<0.000998 0.000998	<0.000994 0.000994	<0.00100 0.00100	<0.000992 0.000992	<0.000998 0.000998
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Dec-22-16 10:27	Dec-22-16 10:34	Dec-22-16 10:41	Dec-22-16 10:48	Dec-22-16 11:09	Dec-22-16 11:16
	<i>Analyzed:</i>	Dec-22-16 10:27	Dec-22-16 10:34	Dec-22-16 10:41	Dec-22-16 10:48	Dec-22-16 11:09	Dec-22-16 11:16
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		5.38 5.00	5.83 5.00	5.83 5.00	5.47 5.00	1840 5.00	869 5.00
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00
	<i>Analyzed:</i>	Dec-16-16 21:40	Dec-16-16 23:15	Dec-16-16 23:50	Dec-17-16 00:26	Dec-17-16 01:02	Dec-17-16 01:38
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0

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Version: 1.9%

Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542067

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Tue Dec-13-16 08:15 pm

Report Date: 23-DEC-16

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	542067-067	542067-068	542067-069	542067-070	542067-071	542067-072
	<i>Field Id:</i>	(2) SB15 4-6	(2) SB15 6-8	(2) SB15 8-10	(2) SB16 0-2	(2) SB16 2-4	(2) SB16 4-6
	<i>Depth:</i>	4-6	6-8	8-10	0-2	2-4	4-6
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-13-16 14:20	Dec-13-16 14:30	Dec-13-16 14:35	Dec-13-16 14:40	Dec-13-16 14:45	Dec-13-16 14:47
BTEX by SW 8260B SUB: TX104704215	<i>Extracted:</i>	Dec-18-16 13:06	Dec-16-16 19:11	Dec-16-16 19:12	Dec-16-16 19:13	Dec-16-16 19:14	Dec-16-16 19:15
	<i>Analyzed:</i>	Dec-18-16 16:49	Dec-16-16 20:17	Dec-16-16 20:32	Dec-16-16 20:48	Dec-16-16 21:03	Dec-16-16 21:18
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.000994 0.000994	<0.00100 0.00100	<0.000996 0.000996
Toluene		<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.000994 0.000994	<0.00100 0.00100	<0.000996 0.000996
Ethylbenzene		<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.000994 0.000994	<0.00100 0.00100	<0.000996 0.000996
m,p-Xylenes		<0.00201 0.00201	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
o-Xylene		<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.000994 0.000994	<0.00100 0.00100	<0.000996 0.000996
Total Xylenes		<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.000994 0.000994	<0.00100 0.00100	<0.000996 0.000996
Total BTEX		<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.000994 0.000994	<0.00100 0.00100	<0.000996 0.000996
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Dec-22-16 11:23	Dec-22-16 11:30	Dec-22-16 11:38	Dec-22-16 11:45	Dec-22-16 12:41	Dec-22-16 12:48
	<i>Analyzed:</i>	Dec-22-16 11:23	Dec-22-16 11:30	Dec-22-16 11:38	Dec-22-16 11:45	Dec-22-16 12:41	Dec-22-16 12:48
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1090 5.00	127 5.00	15.1 5.00	2130 25.0	<5.00 5.00	5910 50.0
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00
	<i>Analyzed:</i>	Dec-17-16 02:15	Dec-17-16 02:51	Dec-17-16 03:28	Dec-17-16 04:05	Dec-17-16 05:18	Dec-17-16 05:56
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542067

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Tue Dec-13-16 08:15 pm

Report Date: 23-DEC-16

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542067-073	542067-074	542067-075	542067-076	542067-077	542067-078
	Field Id:	(2) SB16 6-8	(2) SB16 8-10	(2) SB17 0-2	(2) SB17 2-4	(2) SB17 4-6	(2) SB17 6-8
	Depth:	6-8	8-10	0-2	2-4	4-6	6-8
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-13-16 14:50	Dec-13-16 15:05	Dec-13-16 15:15	Dec-13-16 15:17	Dec-13-16 15:19	Dec-13-16 15:21
BTEX by SW 8260B SUB: TX104704215	Extracted:	Dec-16-16 19:16	Dec-16-16 19:17	Dec-16-16 19:18	Dec-16-16 19:19	Dec-16-16 19:20	Dec-16-16 19:21
	Analyzed:	Dec-16-16 21:33	Dec-16-16 21:49	Dec-16-16 22:04	Dec-16-16 22:20	Dec-16-16 22:35	Dec-16-16 22:51
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Benzene	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.000994 0.000994	<0.00101 0.00101	<0.00101 0.00101
	Toluene	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.000994 0.000994	<0.00101 0.00101	<0.00101 0.00101
Ethylbenzene		<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.000994 0.000994	<0.00101 0.00101	<0.00101 0.00101
m,p-Xylenes		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201
o-Xylene		<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.000994 0.000994	<0.00101 0.00101	<0.00101 0.00101
Total Xylenes		<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.000994 0.000994	<0.00101 0.00101	<0.00101 0.00101
Total BTEX		<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.000994 0.000994	<0.00101 0.00101	<0.00101 0.00101
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-22-16 12:55	Dec-22-16 13:02	Dec-22-16 13:09	Dec-22-16 13:16	Dec-22-16 13:23	Dec-22-16 13:44
	Analyzed:	Dec-22-16 12:55	Dec-22-16 13:02	Dec-22-16 13:09	Dec-22-16 13:16	Dec-22-16 13:23	Dec-22-16 13:44
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Chloride	5740 50.0	1300 5.00	1960 25.0	3180 25.0	6420 50.0	4000 25.0
TPH By SW8015 Mod	Extracted:	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00
	Analyzed:	Dec-17-16 06:34	Dec-17-16 07:13	Dec-17-16 07:52	Dec-17-16 08:30	Dec-17-16 09:05	Dec-17-16 09:36
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	C6-C10 Gasoline Range Hydrocarbons	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
	C10-C28 Diesel Range Hydrocarbons	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Version: 1.9%

Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542067

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Tue Dec-13-16 08:15 pm

Report Date: 23-DEC-16

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542067-079	542067-080	542067-081	542067-082	542067-083	542067-084
	Field Id:	(2) SB17 8-10	(2) SB17 10-12	(2) SB17 12-14	(2) SB18 0-2	(2) SB18 2-4	(2) SB18 2-4 SPLIT
	Depth:	8-10	10-12	12-14	0-2	2-4	2-4
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-13-16 15:22	Dec-13-16 15:23	Dec-13-16 15:25	Dec-13-16 15:50	Dec-13-16 15:52	Dec-13-16 15:52
BTEX by SW 8260B SUB: TX104704215	Extracted:	Dec-16-16 19:22	Dec-16-16 19:23	Dec-16-16 19:24	Dec-16-16 17:22	Dec-16-16 17:23	Dec-16-16 17:24
	Analyzed:	Dec-16-16 23:06	Dec-16-16 23:22	Dec-16-16 23:37	Dec-16-16 17:56	Dec-16-16 18:15	Dec-16-16 18:33
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Benzene	<0.000996 0.000996	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100
	Toluene	<0.000996 0.000996	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100
Ethylbenzene		<0.000996 0.000996	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100
m,p-Xylenes		<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
o-Xylene		<0.000996 0.000996	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100
Total Xylenes		<0.000996 0.000996	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100
Total BTEX		<0.000996 0.000996	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-22-16 13:51	Dec-22-16 13:00	Dec-22-16 13:00	Dec-22-16 13:00	Dec-22-16 13:00	Dec-22-16 13:00
	Analyzed:	Dec-22-16 13:51	Dec-22-16 14:20	Dec-22-16 14:41	Dec-22-16 14:48	Dec-22-16 15:09	Dec-22-16 15:16
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Chloride	6640 50.0	913 5.00	11.8 5.00	1790 25.0	4170 25.0	4200 25.0
TPH By SW8015 Mod	Extracted:	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00
	Analyzed:	Dec-17-16 10:08	Dec-17-16 10:45	Dec-17-16 14:10	Dec-17-16 15:54	Dec-17-16 16:24	Dec-17-16 16:59
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	C6-C10 Gasoline Range Hydrocarbons	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
	C10-C28 Diesel Range Hydrocarbons	<15.0 15.0	<15.0 15.0	<15.0 15.0	60.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	60.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542067

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Tue Dec-13-16 08:15 pm

Report Date: 23-DEC-16

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542067-085	542067-086	542067-087	542067-088	542067-089	542067-090
	Field Id:	(2) SB18 4-6	(2) SB18 6-8	(2) SB18 8-10	(2) SB18 10-12	(2) SB18 12-14	(2) SB19 2-4
	Depth:	4-6	6-8	8-10	10-12	12-14	2-4
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-13-16 15:55	Dec-13-16 15:57	Dec-13-16 15:59	Dec-13-16 16:00	Dec-13-16 16:05	Dec-13-16 16:30
BTEX by SW 8260B SUB: TX104704215	Extracted:	Dec-16-16 17:25	Dec-16-16 17:26	Dec-16-16 17:21	Dec-16-16 17:27	Dec-16-16 17:28	Dec-16-16 17:29
	Analyzed:	Dec-16-16 18:52	Dec-16-16 19:11	Dec-16-16 17:37	Dec-16-16 19:29	Dec-16-16 19:48	Dec-16-16 20:06
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000996 0.000996	<0.00101 0.00101	<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
Toluene		<0.000996 0.000996	<0.00101 0.00101	<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
Ethylbenzene		<0.000996 0.000996	<0.00101 0.00101	<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
m,p-Xylenes		<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200
o-Xylene		<0.000996 0.000996	<0.00101 0.00101	<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
Total Xylenes		<0.000996 0.000996	<0.00101 0.00101	<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
Total BTEX		<0.000996 0.000996	<0.00101 0.00101	<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-22-16 13:00	Dec-22-16 13:00	Dec-22-16 13:00	Dec-22-16 13:00	Dec-22-16 13:00	Dec-22-16 13:00
	Analyzed:	Dec-22-16 15:23	Dec-22-16 15:30	Dec-22-16 15:37	Dec-22-16 15:44	Dec-22-16 15:51	Dec-22-16 15:58
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		4770 50.0	4120 25.0	6350 50.0	315 5.00	21.5 5.00	317 5.00
TPH By SW8015 Mod	Extracted:	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00
	Analyzed:	Dec-17-16 17:33	Dec-17-16 18:07	Dec-17-16 18:44	Dec-17-16 19:21	Dec-17-16 19:56	Dec-17-16 20:31
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Version: 1.9%

Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542067

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Tue Dec-13-16 08:15 pm

Report Date: 23-DEC-16

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	542067-091	542067-092	542067-093	542067-094	542067-095	
	<i>Field Id:</i>	(2) SB19 4-6	(2) SB19 6-8	(2) SB19 8-10	(2) SB19 10-12	(2) SB5 4-5 SPLIT	
	<i>Depth:</i>	4-6	6-8	8-10	10-12	4-6	
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	Dec-13-16 16:35	Dec-13-16 16:40	Dec-13-16 16:50	Dec-13-16 17:00	Dec-12-16 16:10	
BTEX by SW 8260B SUB: TX104704215	<i>Extracted:</i>	Dec-16-16 17:30	Dec-18-16 13:07	Dec-18-16 13:08	Dec-16-16 17:31	Dec-16-16 17:32	
	<i>Analyzed:</i>	Dec-16-16 20:25	Dec-18-16 17:04	Dec-18-16 17:19	Dec-16-16 20:43	Dec-16-16 21:02	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		<0.00100 0.00100	<0.00100 0.00100	<0.000994 0.000994	<0.000998 0.000998	<0.000994 0.000994	
Toluene		<0.00100 0.00100	<0.00100 0.00100	<0.000994 0.000994	<0.000998 0.000998	<0.000994 0.000994	
Ethylbenzene		<0.00100 0.00100	<0.00100 0.00100	<0.000994 0.000994	<0.000998 0.000998	<0.000994 0.000994	
m,p-Xylenes		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	
o-Xylene		<0.00100 0.00100	<0.00100 0.00100	<0.000994 0.000994	<0.000998 0.000998	<0.000994 0.000994	
Total Xylenes		<0.00100 0.00100	<0.00100 0.00100	<0.000994 0.000994	<0.000998 0.000998	<0.000994 0.000994	
Total BTEX		<0.00100 0.00100	<0.00100 0.00100	<0.000994 0.000994	<0.000998 0.000998	<0.000994 0.000994	
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Dec-22-16 13:00	Dec-22-16 13:00	Dec-22-16 13:00	Dec-22-16 13:00	Dec-22-16 13:00	
	<i>Analyzed:</i>	Dec-22-16 16:33	Dec-22-16 16:41	Dec-22-16 16:48	Dec-22-16 16:55	Dec-22-16 17:02	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		4430 50.0	1750 25.0	143 5.00	16.6 5.00	7.10 5.00	
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00	Dec-16-16 20:00	
	<i>Analyzed:</i>	Dec-17-16 21:40	Dec-17-16 22:12	Dec-17-16 22:44	Dec-17-16 23:16	Dec-17-16 23:46	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Version: 1.9%

Kelsey Brooks
Project Manager

- 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 **SQL** Sample 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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(210) 509-3334	(210) 509-3335
(432) 563-1800	(432) 563-1713
(602) 437-0330	



Form 2 - Surrogate Recoveries

Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3005809

Sample: 542067-002 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 15:20

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0519	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0493	0.0500	99	80-120	
Toluene-D8	0.0477	0.0500	95	73-132	

Lab Batch #: 3005809

Sample: 542067-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 15:38

SURROGATE RECOVERY STUDY

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

Lab Batch #: 3005815

Sample: 542067-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 15:45

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0583	0.0500	117	74-126	
1,2-Dichloroethane-D4	0.0461	0.0500	92	80-120	
Toluene-D8	0.0436	0.0500	87	73-132	

Lab Batch #: 3005809

Sample: 542067-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 15:57

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0504	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0553	0.0500	111	80-120	
Toluene-D8	0.0525	0.0500	105	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3005815

Sample: 542067-011 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 16:00

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0450	0.0500	90	74-126	
1,2-Dichloroethane-D4	0.0458	0.0500	92	80-120	
Toluene-D8	0.0428	0.0500	86	73-132	

Lab Batch #: 3005809

Sample: 542067-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 16:15

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	0.0505	0.0500	101	80-120	
Toluene-D8	0.0485	0.0500	97	73-132	

Lab Batch #: 3005815

Sample: 542067-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 16:15

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0568	0.0500	114	74-126	
1,2-Dichloroethane-D4	0.0451	0.0500	90	80-120	
Toluene-D8	0.0426	0.0500	85	73-132	

Lab Batch #: 3005809

Sample: 542067-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 16:34

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0494	0.0500	99	74-126	
1,2-Dichloroethane-D4	0.0448	0.0500	90	80-120	
Toluene-D8	0.0555	0.0500	111	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3005809

Sample: 542067-007 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 16:52

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0503	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0537	0.0500	107	80-120	
Toluene-D8	0.0538	0.0500	108	73-132	

Lab Batch #: 3005809

Sample: 542067-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 17:29

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0522	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0493	0.0500	99	80-120	
Toluene-D8	0.0507	0.0500	101	73-132	

Lab Batch #: 3005967

Sample: 542067-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 20:17

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0574	0.0500	115	74-126	
1,2-Dichloroethane-D4	0.0474	0.0500	95	80-120	
Toluene-D8	0.0450	0.0500	90	73-132	

Lab Batch #: 3005967

Sample: 542067-031 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 20:33

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0582	0.0500	116	74-126	
1,2-Dichloroethane-D4	0.0561	0.0500	112	80-120	
Toluene-D8	0.0446	0.0500	89	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3005967

Sample: 542067-032 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 20:48

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0550	0.0500	110	74-126	
1,2-Dichloroethane-D4	0.0472	0.0500	94	80-120	
Toluene-D8	0.0447	0.0500	89	73-132	

Lab Batch #: 3005967

Sample: 542067-033 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 21:04

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0564	0.0500	113	74-126	
1,2-Dichloroethane-D4	0.0458	0.0500	92	80-120	
Toluene-D8	0.0455	0.0500	91	73-132	

Lab Batch #: 3005967

Sample: 542067-034 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 21:19

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0560	0.0500	112	74-126	
1,2-Dichloroethane-D4	0.0472	0.0500	94	80-120	
Toluene-D8	0.0420	0.0500	84	73-132	

Lab Batch #: 3005967

Sample: 542067-035 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 21:34

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0547	0.0500	109	74-126	
1,2-Dichloroethane-D4	0.0493	0.0500	99	80-120	
Toluene-D8	0.0433	0.0500	87	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3005967

Sample: 542067-036 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 21:50

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0563	0.0500	113	74-126	
1,2-Dichloroethane-D4	0.0552	0.0500	110	80-120	
Toluene-D8	0.0429	0.0500	86	73-132	

Lab Batch #: 3005967

Sample: 542067-038 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 22:21

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0569	0.0500	114	74-126	
1,2-Dichloroethane-D4	0.0480	0.0500	96	80-120	
Toluene-D8	0.0440	0.0500	88	73-132	

Lab Batch #: 3005967

Sample: 542067-039 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 22:36

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0566	0.0500	113	74-126	
1,2-Dichloroethane-D4	0.0526	0.0500	105	80-120	
Toluene-D8	0.0429	0.0500	86	73-132	

Lab Batch #: 3005825

Sample: 542067-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 22:51

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0509	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0531	0.0500	106	80-120	
Toluene-D8	0.0544	0.0500	109	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3005967

Sample: 542067-040 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 22:52

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0571	0.0500	114	74-126	
1,2-Dichloroethane-D4	0.0539	0.0500	108	80-120	
Toluene-D8	0.0456	0.0500	91	73-132	

Lab Batch #: 3005967

Sample: 542067-041 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 23:07

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0579	0.0500	116	74-126	
1,2-Dichloroethane-D4	0.0543	0.0500	109	80-120	
Toluene-D8	0.0434	0.0500	87	73-132	

Lab Batch #: 3005967

Sample: 542067-042 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 23:22

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0578	0.0500	116	74-126	
1,2-Dichloroethane-D4	0.0543	0.0500	109	80-120	
Toluene-D8	0.0428	0.0500	86	73-132	

Lab Batch #: 3005825

Sample: 542067-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 23:28

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0462	0.0500	92	74-126	
1,2-Dichloroethane-D4	0.0503	0.0500	101	80-120	
Toluene-D8	0.0554	0.0500	111	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3005967

Sample: 542067-043 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 23:38

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0566	0.0500	113	74-126	
1,2-Dichloroethane-D4	0.0462	0.0500	92	80-120	
Toluene-D8	0.0445	0.0500	89	73-132	

Lab Batch #: 3005825

Sample: 542067-016 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 23:47

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0538	0.0500	108	74-126	
1,2-Dichloroethane-D4	0.0512	0.0500	102	80-120	
Toluene-D8	0.0510	0.0500	102	73-132	

Lab Batch #: 3005967

Sample: 542067-044 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 23:53

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0570	0.0500	114	74-126	
1,2-Dichloroethane-D4	0.0487	0.0500	97	80-120	
Toluene-D8	0.0455	0.0500	91	73-132	

Lab Batch #: 3005825

Sample: 542067-017 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 00:06

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0507	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0485	0.0500	97	80-120	
Toluene-D8	0.0538	0.0500	108	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3005967

Sample: 542067-045 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 00:09

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0574	0.0500	115	74-126	
1,2-Dichloroethane-D4	0.0463	0.0500	93	80-120	
Toluene-D8	0.0477	0.0500	95	73-132	

Lab Batch #: 3005825

Sample: 542067-018 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 00:24

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0495	0.0500	99	74-126	
1,2-Dichloroethane-D4	0.0532	0.0500	106	80-120	
Toluene-D8	0.0537	0.0500	107	73-132	

Lab Batch #: 3005967

Sample: 542067-046 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 00:24

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0573	0.0500	115	74-126	
1,2-Dichloroethane-D4	0.0544	0.0500	109	80-120	
Toluene-D8	0.0450	0.0500	90	73-132	

Lab Batch #: 3005967

Sample: 542067-047 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 00:39

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0570	0.0500	114	74-126	
1,2-Dichloroethane-D4	0.0514	0.0500	103	80-120	
Toluene-D8	0.0446	0.0500	89	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3005967

Sample: 542067-048 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 00:54

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0575	0.0500	115	74-126	
1,2-Dichloroethane-D4	0.0534	0.0500	107	80-120	
Toluene-D8	0.0483	0.0500	97	73-132	

Lab Batch #: 3005825

Sample: 542067-020 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 01:02

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0534	0.0500	107	74-126	
1,2-Dichloroethane-D4	0.0506	0.0500	101	80-120	
Toluene-D8	0.0536	0.0500	107	73-132	

Lab Batch #: 3005967

Sample: 542067-049 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 01:10

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0577	0.0500	115	74-126	
1,2-Dichloroethane-D4	0.0543	0.0500	109	80-120	
Toluene-D8	0.0486	0.0500	97	73-132	

Lab Batch #: 3005825

Sample: 542067-023 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 01:58

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0491	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0500	0.0500	100	80-120	
Toluene-D8	0.0541	0.0500	108	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3005825

Sample: 542067-025 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 02:35

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0526	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0506	0.0500	101	80-120	
Toluene-D8	0.0490	0.0500	98	73-132	

Lab Batch #: 3005825

Sample: 542067-027 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 03:13

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	0.0530	0.0500	106	80-120	
Toluene-D8	0.0538	0.0500	108	73-132	

Lab Batch #: 3005825

Sample: 542067-029 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 03:51

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	0.0563	0.0500	113	80-120	
Toluene-D8	0.0562	0.0500	112	73-132	

Lab Batch #: 3005825

Sample: 542067-030 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 04:09

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0519	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0552	0.0500	110	80-120	
Toluene-D8	0.0507	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3006196

Sample: 542067-001 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 09:46

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.7	99.9	93	70-135	
o-Terphenyl	42.3	50.0	85	70-135	

Lab Batch #: 3006196

Sample: 542067-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 10:59

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.5	100	86	70-135	
o-Terphenyl	39.1	50.0	78	70-135	

Lab Batch #: 3005969

Sample: 542067-050 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 11:10

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0558	0.0500	112	74-126	
1,2-Dichloroethane-D4	0.0475	0.0500	95	80-120	
Toluene-D8	0.0455	0.0500	91	73-132	

Lab Batch #: 3006196

Sample: 542067-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 11:24

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.7	99.7	87	70-135	
o-Terphenyl	41.2	49.9	83	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3005969

Sample: 542067-051 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 11:34

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0512	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0456	0.0500	91	80-120	
Toluene-D8	0.0434	0.0500	87	73-132	

Lab Batch #: 3006196

Sample: 542067-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 11:47

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	86.8	99.7	87	70-135	
o-Terphenyl	38.0	49.9	76	70-135	

Lab Batch #: 3005969

Sample: 542067-052 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 11:50

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0511	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0459	0.0500	92	80-120	
Toluene-D8	0.0444	0.0500	89	73-132	

Lab Batch #: 3005969

Sample: 542067-053 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 12:05

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0575	0.0500	115	74-126	
1,2-Dichloroethane-D4	0.0483	0.0500	97	80-120	
Toluene-D8	0.0447	0.0500	89	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3006196

Sample: 542067-005 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 12:10

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.5	99.9	90	70-135	
o-Terphenyl	42.8	50.0	86	70-135	

Lab Batch #: 3005969

Sample: 542067-054 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 12:20

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0581	0.0500	116	74-126	
1,2-Dichloroethane-D4	0.0543	0.0500	109	80-120	
Toluene-D8	0.0454	0.0500	91	73-132	

Lab Batch #: 3006196

Sample: 542067-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 12:33

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.9	99.8	95	70-135	
o-Terphenyl	45.0	49.9	90	70-135	

Lab Batch #: 3005969

Sample: 542067-055 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 12:35

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0522	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0481	0.0500	96	80-120	
Toluene-D8	0.0439	0.0500	88	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3006196

Sample: 542067-007 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 12:56

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.1	99.8	93	70-135	
o-Terphenyl	42.9	49.9	86	70-135	

Lab Batch #: 3005969

Sample: 542067-056 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 13:11

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	0.0473	0.0500	95	80-120	
Toluene-D8	0.0445	0.0500	89	73-132	

Lab Batch #: 3006196

Sample: 542067-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 13:20

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.9	99.8	93	70-135	
o-Terphenyl	43.5	49.9	87	70-135	

Lab Batch #: 3005969

Sample: 542067-057 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 13:26

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0575	0.0500	115	74-126	
1,2-Dichloroethane-D4	0.0516	0.0500	103	80-120	
Toluene-D8	0.0419	0.0500	84	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3005969

Sample: 542067-058 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 13:41

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0568	0.0500	114	74-126	
1,2-Dichloroethane-D4	0.0510	0.0500	102	80-120	
Toluene-D8	0.0437	0.0500	87	73-132	

Lab Batch #: 3006196

Sample: 542067-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 13:44

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	91.8	100	92	70-135	
o-Terphenyl	41.9	50.0	84	70-135	

Lab Batch #: 3005969

Sample: 542067-059 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 13:57

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0584	0.0500	117	74-126	
1,2-Dichloroethane-D4	0.0499	0.0500	100	80-120	
Toluene-D8	0.0450	0.0500	90	73-132	

Lab Batch #: 3006196

Sample: 542067-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 14:07

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	96.4	99.7	97	70-135	
o-Terphenyl	41.6	49.9	83	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3005969

Sample: 542067-060 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 14:13

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0570	0.0500	114	74-126	
1,2-Dichloroethane-D4	0.0481	0.0500	96	80-120	
Toluene-D8	0.0452	0.0500	90	73-132	

Lab Batch #: 3005969

Sample: 542067-062 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 14:28

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0575	0.0500	115	74-126	
1,2-Dichloroethane-D4	0.0551	0.0500	110	80-120	
Toluene-D8	0.0423	0.0500	85	73-132	

Lab Batch #: 3005969

Sample: 542067-061 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 14:47

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0558	0.0500	112	74-126	
1,2-Dichloroethane-D4	0.0537	0.0500	107	80-120	
Toluene-D8	0.0425	0.0500	85	73-132	

Lab Batch #: 3006196

Sample: 542067-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 14:52

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	87.0	99.6	87	70-135	
o-Terphenyl	37.2	49.8	75	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3005969

Sample: 542067-063 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 15:02

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0576	0.0500	115	74-126	
1,2-Dichloroethane-D4	0.0504	0.0500	101	80-120	
Toluene-D8	0.0431	0.0500	86	73-132	

Lab Batch #: 3006196

Sample: 542067-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 15:15

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	91.0	99.6	91	70-135	
o-Terphenyl	41.3	49.8	83	70-135	

Lab Batch #: 3005969

Sample: 542067-064 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 15:18

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0580	0.0500	116	74-126	
1,2-Dichloroethane-D4	0.0553	0.0500	111	80-120	
Toluene-D8	0.0447	0.0500	89	73-132	

Lab Batch #: 3006196

Sample: 542067-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 15:37

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	96.7	99.8	97	70-135	
o-Terphenyl	46.1	49.9	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3005969

Sample: 542067-022 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 15:43

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0560	0.0500	112	74-126	
1,2-Dichloroethane-D4	0.0474	0.0500	95	80-120	
Toluene-D8	0.0429	0.0500	86	73-132	

Lab Batch #: 3005969

Sample: 542067-024 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 15:59

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0581	0.0500	116	74-126	
1,2-Dichloroethane-D4	0.0510	0.0500	102	80-120	
Toluene-D8	0.0428	0.0500	86	73-132	

Lab Batch #: 3006196

Sample: 542067-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 16:00

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	91.7	100	92	70-135	
o-Terphenyl	41.8	50.0	84	70-135	

Lab Batch #: 3005969

Sample: 542067-026 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 16:14

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0571	0.0500	114	74-126	
1,2-Dichloroethane-D4	0.0496	0.0500	99	80-120	
Toluene-D8	0.0453	0.0500	91	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3006196

Sample: 542067-015 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 16:23

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.6	99.8	85	70-135	
o-Terphenyl	37.1	49.9	74	70-135	

Lab Batch #: 3005969

Sample: 542067-028 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 16:30

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0540	0.0500	108	74-126	
1,2-Dichloroethane-D4	0.0473	0.0500	95	80-120	
Toluene-D8	0.0418	0.0500	84	73-132	

Lab Batch #: 3005969

Sample: 542067-021 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 16:45

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0574	0.0500	115	74-126	
1,2-Dichloroethane-D4	0.0493	0.0500	99	80-120	
Toluene-D8	0.0415	0.0500	83	73-132	

Lab Batch #: 3006196

Sample: 542067-016 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 16:47

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.6	99.6	91	70-135	
o-Terphenyl	44.3	49.8	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3006196

Sample: 542067-017 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 17:11

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.1	99.7	85	70-135	
o-Terphenyl	38.8	49.9	78	70-135	

Lab Batch #: 3006196

Sample: 542067-018 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 17:34

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.6	99.8	90	70-135	
o-Terphenyl	42.6	49.9	85	70-135	

Lab Batch #: 3005979

Sample: 542067-087 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 17:37

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0511	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0489	0.0500	98	80-120	
Toluene-D8	0.0543	0.0500	109	73-132	

Lab Batch #: 3005979

Sample: 542067-082 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 17:56

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	0.0502	0.0500	100	80-120	
Toluene-D8	0.0537	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3006196

Sample: 542067-019 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 17:57

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.7	99.7	93	70-135	
o-Terphenyl	43.4	49.9	87	70-135	

Lab Batch #: 3005979

Sample: 542067-083 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 18:15

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0526	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0537	0.0500	107	80-120	
Toluene-D8	0.0556	0.0500	111	73-132	

Lab Batch #: 3006196

Sample: 542067-020 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 18:22

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.6	99.7	88	70-135	
o-Terphenyl	41.2	49.9	83	70-135	

Lab Batch #: 3005979

Sample: 542067-084 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 18:33

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0501	0.0500	100	74-126	
1,2-Dichloroethane-D4	0.0501	0.0500	100	80-120	
Toluene-D8	0.0558	0.0500	112	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3005979

Sample: 542067-085 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 18:52

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0524	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0552	0.0500	110	80-120	
Toluene-D8	0.0527	0.0500	105	73-132	

Lab Batch #: 3005979

Sample: 542067-086 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 19:11

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0511	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0491	0.0500	98	80-120	
Toluene-D8	0.0511	0.0500	102	73-132	

Lab Batch #: 3005979

Sample: 542067-088 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 19:29

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0488	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0521	0.0500	104	80-120	
Toluene-D8	0.0533	0.0500	107	73-132	

Lab Batch #: 3005979

Sample: 542067-089 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 19:48

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0545	0.0500	109	74-126	
1,2-Dichloroethane-D4	0.0535	0.0500	107	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3005979

Sample: 542067-090 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 20:06

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0510	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0504	0.0500	101	80-120	
Toluene-D8	0.0482	0.0500	96	73-132	

Lab Batch #: 3005975

Sample: 542067-068 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 20:17

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0585	0.0500	117	74-126	
1,2-Dichloroethane-D4	0.0464	0.0500	93	80-120	
Toluene-D8	0.0426	0.0500	85	73-132	

Lab Batch #: 3005979

Sample: 542067-091 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 20:25

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0504	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0550	0.0500	110	80-120	
Toluene-D8	0.0521	0.0500	104	73-132	

Lab Batch #: 3006198

Sample: 542067-021 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 20:27

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	87.0	99.8	87	70-135	
o-Terphenyl	40.4	49.9	81	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3005975

Sample: 542067-069 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 20:32

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0575	0.0500	115	74-126	
1,2-Dichloroethane-D4	0.0542	0.0500	108	80-120	
Toluene-D8	0.0403	0.0500	81	73-132	

Lab Batch #: 3005979

Sample: 542067-094 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 20:43

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0512	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0505	0.0500	101	80-120	
Toluene-D8	0.0471	0.0500	94	73-132	

Lab Batch #: 3005975

Sample: 542067-070 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 20:48

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0578	0.0500	116	74-126	
1,2-Dichloroethane-D4	0.0466	0.0500	93	80-120	
Toluene-D8	0.0427	0.0500	85	73-132	

Lab Batch #: 3005979

Sample: 542067-095 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 21:02

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0519	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0519	0.0500	104	80-120	
Toluene-D8	0.0483	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3005975

Sample: 542067-071 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 21:03

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0579	0.0500	116	74-126	
1,2-Dichloroethane-D4	0.0471	0.0500	94	80-120	
Toluene-D8	0.0443	0.0500	89	73-132	

Lab Batch #: 3005975

Sample: 542067-072 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 21:18

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0578	0.0500	116	74-126	
1,2-Dichloroethane-D4	0.0558	0.0500	112	80-120	
Toluene-D8	0.0456	0.0500	91	73-132	

Lab Batch #: 3005979

Sample: 542067-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 21:21

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0525	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0521	0.0500	104	80-120	
Toluene-D8	0.0514	0.0500	103	73-132	

Lab Batch #: 3005975

Sample: 542067-073 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 21:33

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0568	0.0500	114	74-126	
1,2-Dichloroethane-D4	0.0563	0.0500	113	80-120	
Toluene-D8	0.0448	0.0500	90	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3006201

Sample: 542067-061 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 21:40

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	81.0	99.8	81	70-135	
o-Terphenyl	37.8	49.9	76	70-135	

Lab Batch #: 3006198

Sample: 542067-022 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 21:44

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	77.7	99.9	78	70-135	
o-Terphenyl	36.3	50.0	73	70-135	

Lab Batch #: 3005975

Sample: 542067-074 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 21:49

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0571	0.0500	114	74-126	
1,2-Dichloroethane-D4	0.0502	0.0500	100	80-120	
Toluene-D8	0.0456	0.0500	91	73-132	

Lab Batch #: 3005975

Sample: 542067-075 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 22:04

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0572	0.0500	114	74-126	
1,2-Dichloroethane-D4	0.0472	0.0500	94	80-120	
Toluene-D8	0.0467	0.0500	93	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3006198

Sample: 542067-023 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 22:09

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.7	99.9	90	70-135	
o-Terphenyl	40.6	50.0	81	70-135	

Lab Batch #: 3005975

Sample: 542067-076 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 22:20

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0573	0.0500	115	74-126	
1,2-Dichloroethane-D4	0.0514	0.0500	103	80-120	
Toluene-D8	0.0459	0.0500	92	73-132	

Lab Batch #: 3006198

Sample: 542067-024 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 22:35

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.5	99.9	85	70-135	
o-Terphenyl	39.7	50.0	79	70-135	

Lab Batch #: 3005975

Sample: 542067-077 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 22:35

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0580	0.0500	116	74-126	
1,2-Dichloroethane-D4	0.0566	0.0500	113	80-120	
Toluene-D8	0.0453	0.0500	91	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3005975

Sample: 542067-078 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 22:51

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0579	0.0500	116	74-126	
1,2-Dichloroethane-D4	0.0539	0.0500	108	80-120	
Toluene-D8	0.0440	0.0500	88	73-132	

Lab Batch #: 3006198

Sample: 542067-025 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 23:03

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	80.1	99.7	80	70-135	
o-Terphenyl	36.3	49.9	73	70-135	

Lab Batch #: 3005975

Sample: 542067-079 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 23:06

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0582	0.0500	116	74-126	
1,2-Dichloroethane-D4	0.0572	0.0500	114	80-120	
Toluene-D8	0.0479	0.0500	96	73-132	

Lab Batch #: 3006201

Sample: 542067-062 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 23:15

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	79.0	99.9	79	70-135	
o-Terphenyl	36.2	50.0	72	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3005975

Sample: 542067-080 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 23:22

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0585	0.0500	117	74-126	
1,2-Dichloroethane-D4	0.0522	0.0500	104	80-120	
Toluene-D8	0.0454	0.0500	91	73-132	

Lab Batch #: 3006198

Sample: 542067-026 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 23:30

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	83.2	99.8	83	70-135	
o-Terphenyl	37.3	49.9	75	70-135	

Lab Batch #: 3005975

Sample: 542067-081 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 23:37

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0579	0.0500	116	74-126	
1,2-Dichloroethane-D4	0.0501	0.0500	100	80-120	
Toluene-D8	0.0436	0.0500	87	73-132	

Lab Batch #: 3006201

Sample: 542067-063 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 23:50

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	76.9	99.7	77	70-135	
o-Terphenyl	35.1	49.9	70	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3006198

Sample: 542067-027 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 23:57

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	76.3	100	76	70-135	
o-Terphenyl	35.6	50.0	71	70-135	

Lab Batch #: 3006198

Sample: 542067-028 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 00:25

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	74.0	99.8	74	70-135	
o-Terphenyl	35.0	49.9	70	70-135	

Lab Batch #: 3006201

Sample: 542067-064 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 00:26

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.5	99.7	79	70-135	
o-Terphenyl	36.2	49.9	73	70-135	

Lab Batch #: 3006198

Sample: 542067-029 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 00:52

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.7	99.9	79	70-135	
o-Terphenyl	35.1	50.0	70	70-135	

Lab Batch #: 3006201

Sample: 542067-065 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 01:02

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	75.9	99.6	76	70-135	
o-Terphenyl	35.2	49.8	71	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3006198

Sample: 542067-030 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 01:20

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.0	99.8	80	70-135	
o-Terphenyl	35.1	49.9	70	70-135	

Lab Batch #: 3006201

Sample: 542067-066 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 01:38

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	76.7	99.9	77	70-135	
o-Terphenyl	35.2	50.0	70	70-135	

Lab Batch #: 3006198

Sample: 542067-031 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 02:15

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	72.6	99.7	73	70-135	
o-Terphenyl	35.6	49.9	71	70-135	

Lab Batch #: 3006201

Sample: 542067-067 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 02:15

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	76.5	99.8	77	70-135	
o-Terphenyl	35.5	49.9	71	70-135	

Lab Batch #: 3006201

Sample: 542067-068 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 02:51

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	76.4	99.8	77	70-135	
o-Terphenyl	35.7	49.9	72	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3006198

Sample: 542067-033 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 03:13

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	72.9	100	73	70-135	
o-Terphenyl	35.3	50.0	71	70-135	

Lab Batch #: 3006201

Sample: 542067-069 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 03:28

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.5	99.7	79	70-135	
o-Terphenyl	36.4	49.9	73	70-135	

Lab Batch #: 3006198

Sample: 542067-034 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 03:40

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	76.3	99.8	76	70-135	
o-Terphenyl	35.5	49.9	71	70-135	

Lab Batch #: 3006201

Sample: 542067-070 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 04:05

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	74.6	99.9	75	70-135	
o-Terphenyl	35.0	50.0	70	70-135	

Lab Batch #: 3006198

Sample: 542067-035 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 04:08

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	73.9	99.8	74	70-135	
o-Terphenyl	35.5	49.9	71	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3006198

Sample: 542067-036 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 04:36

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	75.7	99.6	76	70-135	
o-Terphenyl	34.9	49.8	70	70-135	

Lab Batch #: 3006198

Sample: 542067-037 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 05:05

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	77.2	99.8	77	70-135	
o-Terphenyl	35.0	49.9	70	70-135	

Lab Batch #: 3006201

Sample: 542067-071 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 05:18

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	74.6	100	75	70-135	
o-Terphenyl	35.0	50.0	70	70-135	

Lab Batch #: 3006201

Sample: 542067-072 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 05:56

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	77.6	99.8	78	70-135	
o-Terphenyl	35.7	49.9	72	70-135	

Lab Batch #: 3006198

Sample: 542067-040 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 06:31

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	76.6	99.9	77	70-135	
o-Terphenyl	35.3	50.0	71	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3006201

Sample: 542067-073 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 06:34

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	76.3	99.8	76	70-135	
o-Terphenyl	35.4	49.9	71	70-135	

Lab Batch #: 3006201

Sample: 542067-074 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 07:13

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	76.1	99.7	76	70-135	
o-Terphenyl	35.3	49.9	71	70-135	

Lab Batch #: 3006201

Sample: 542067-075 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 07:52

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	71.8	99.8	72	70-135	
o-Terphenyl	34.9	49.9	70	70-135	

Lab Batch #: 3006201

Sample: 542067-076 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 08:30

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	73.1	100	73	70-135	
o-Terphenyl	35.0	50.0	70	70-135	

Lab Batch #: 3006200

Sample: 542067-041 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 08:52

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	79.8	99.8	80	70-135	
o-Terphenyl	36.4	49.9	73	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3006201

Sample: 542067-077 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 09:05

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.0	99.9	80	70-135	
o-Terphenyl	37.0	50.0	74	70-135	

Lab Batch #: 3006201

Sample: 542067-078 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 09:36

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.0	99.9	83	70-135	
o-Terphenyl	38.2	50.0	76	70-135	

Lab Batch #: 3006201

Sample: 542067-079 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 10:08

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.8	99.7	84	70-135	
o-Terphenyl	38.8	49.9	78	70-135	

Lab Batch #: 3006200

Sample: 542067-042 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 10:10

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.6	99.7	84	70-135	
o-Terphenyl	35.6	49.9	71	70-135	

Lab Batch #: 3006201

Sample: 542067-080 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 10:45

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	75.9	99.8	76	70-135	
o-Terphenyl	35.1	49.9	70	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3006200

Sample: 542067-046 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 12:09

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	71.5	99.9	72	70-135	
o-Terphenyl	35.2	50.0	70	70-135	

Lab Batch #: 3006200

Sample: 542067-047 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 12:38

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.5	99.9	85	70-135	
o-Terphenyl	39.9	50.0	80	70-135	

Lab Batch #: 3006202

Sample: 542067-081 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 14:10

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	74.1	99.9	74	70-135	
o-Terphenyl	35.0	50.0	70	70-135	

Lab Batch #: 3006200

Sample: 542067-051 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 15:02

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.4	100	78	70-135	
o-Terphenyl	37.0	50.0	74	70-135	

Lab Batch #: 3006200

Sample: 542067-052 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 15:27

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.8	99.9	83	70-135	
o-Terphenyl	39.3	50.0	79	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3006200

Sample: 542067-053 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 15:54

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.0	99.9	78	70-135	
o-Terphenyl	35.1	50.0	70	70-135	

Lab Batch #: 3006200

Sample: 542067-082 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 15:54

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.4	99.9	80	70-135	
o-Terphenyl	37.1	50.0	74	70-135	

Lab Batch #: 3006200

Sample: 542067-054 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 16:18

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.6	99.8	91	70-135	
o-Terphenyl	40.9	49.9	82	70-135	

Lab Batch #: 3006200

Sample: 542067-083 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 16:24

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	81.8	99.7	82	70-135	
o-Terphenyl	37.4	49.9	75	70-135	

Lab Batch #: 3006200

Sample: 542067-055 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 16:47

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	81.8	99.7	82	70-135	
o-Terphenyl	38.5	49.9	77	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3006202

Sample: 542067-084 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 16:59

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.4	99.8	81	70-135	
o-Terphenyl	36.9	49.9	74	70-135	

Lab Batch #: 3006202

Sample: 542067-056 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 17:12

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.6	99.8	91	70-135	
o-Terphenyl	40.1	49.9	80	70-135	

Lab Batch #: 3006202

Sample: 542067-085 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 17:33

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	79.0	99.7	79	70-135	
o-Terphenyl	36.8	49.9	74	70-135	

Lab Batch #: 3006200

Sample: 542067-057 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 17:39

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.3	99.7	81	70-135	
o-Terphenyl	35.7	49.9	72	70-135	

Lab Batch #: 3006200

Sample: 542067-058 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 18:06

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	73.2	99.7	73	70-135	
o-Terphenyl	35.1	49.9	70	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3006202

Sample: 542067-086 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 18:07

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	79.3	99.9	79	70-135	
o-Terphenyl	36.6	50.0	73	70-135	

Lab Batch #: 3006202

Sample: 542067-059 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 18:34

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	79.0	99.7	79	70-135	
o-Terphenyl	37.5	49.9	75	70-135	

Lab Batch #: 3006202

Sample: 542067-087 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 18:44

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.2	99.7	80	70-135	
o-Terphenyl	37.1	49.9	74	70-135	

Lab Batch #: 3006202

Sample: 542067-088 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 19:21

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	77.3	99.7	78	70-135	
o-Terphenyl	35.7	49.9	72	70-135	

Lab Batch #: 3006202

Sample: 542067-089 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 19:56

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.7	99.8	81	70-135	
o-Terphenyl	37.0	49.9	74	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3006202

Sample: 542067-090 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 20:31

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.4	99.9	82	70-135	
o-Terphenyl	37.7	50.0	75	70-135	

Lab Batch #: 3006202

Sample: 542067-091 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 21:40

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	81.5	99.9	82	70-135	
o-Terphenyl	37.5	50.0	75	70-135	

Lab Batch #: 3006202

Sample: 542067-092 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 22:12

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	81.1	99.8	81	70-135	
o-Terphenyl	37.2	49.9	75	70-135	

Lab Batch #: 3006202

Sample: 542067-093 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 22:44

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.9	99.8	81	70-135	
o-Terphenyl	37.4	49.9	75	70-135	

Lab Batch #: 3006202

Sample: 542067-094 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 23:16

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	81.6	100	82	70-135	
o-Terphenyl	37.5	50.0	75	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3006202

Sample: 542067-095 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 23:46

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.3	100	82	70-135	
o-Terphenyl	38.3	50.0	77	70-135	

Lab Batch #: 3006002

Sample: 542067-019 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/18/16 15:33

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0580	0.0500	116	74-126	
1,2-Dichloroethane-D4	0.0455	0.0500	91	80-120	
Toluene-D8	0.0422	0.0500	84	73-132	

Lab Batch #: 3006002

Sample: 542067-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/18/16 15:48

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0583	0.0500	117	74-126	
1,2-Dichloroethane-D4	0.0534	0.0500	107	80-120	
Toluene-D8	0.0468	0.0500	94	73-132	

Lab Batch #: 3006002

Sample: 542067-037 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/18/16 16:03

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0550	0.0500	110	74-126	
1,2-Dichloroethane-D4	0.0493	0.0500	99	80-120	
Toluene-D8	0.0450	0.0500	90	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3006002

Sample: 542067-065 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/18/16 16:18

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0568	0.0500	114	74-126	
1,2-Dichloroethane-D4	0.0527	0.0500	105	80-120	
Toluene-D8	0.0434	0.0500	87	73-132	

Lab Batch #: 3006002

Sample: 542067-066 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/18/16 16:33

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0620	0.0500	124	74-126	
1,2-Dichloroethane-D4	0.0486	0.0500	97	80-120	
Toluene-D8	0.0435	0.0500	87	73-132	

Lab Batch #: 3006002

Sample: 542067-067 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/18/16 16:49

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0621	0.0500	124	74-126	
1,2-Dichloroethane-D4	0.0588	0.0500	118	80-120	
Toluene-D8	0.0450	0.0500	90	73-132	

Lab Batch #: 3006002

Sample: 542067-092 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/18/16 17:04

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0580	0.0500	116	74-126	
1,2-Dichloroethane-D4	0.0569	0.0500	114	80-120	
Toluene-D8	0.0413	0.0500	83	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3006002

Sample: 542067-093 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/18/16 17:19

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0581	0.0500	116	74-126	
1,2-Dichloroethane-D4	0.0588	0.0500	118	80-120	
Toluene-D8	0.0460	0.0500	92	73-132	

Lab Batch #: 3006198

Sample: 542067-032 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 08:48

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	117	99.9	117	70-135	
o-Terphenyl	58.1	50.0	116	70-135	

Lab Batch #: 3006198

Sample: 542067-038 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 09:11

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	118	99.7	118	70-135	
o-Terphenyl	54.1	49.9	108	70-135	

Lab Batch #: 3006198

Sample: 542067-039 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 09:57

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	122	99.9	122	70-135	
o-Terphenyl	59.3	50.0	119	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3006200

Sample: 542067-043 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 10:20

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.4	99.7	94	70-135	
o-Terphenyl	41.4	49.9	83	70-135	

Lab Batch #: 3006200

Sample: 542067-044 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 10:45

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.8	99.7	96	70-135	
o-Terphenyl	42.4	49.9	85	70-135	

Lab Batch #: 3006200

Sample: 542067-045 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 11:10

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.3	100	97	70-135	
o-Terphenyl	44.3	50.0	89	70-135	

Lab Batch #: 3006200

Sample: 542067-048 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 11:36

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.5	99.8	94	70-135	
o-Terphenyl	42.8	49.9	86	70-135	

Lab Batch #: 3006200

Sample: 542067-049 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 12:03

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.4	99.8	88	70-135	
o-Terphenyl	41.3	49.9	83	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3006200

Sample: 542067-050 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 12:30

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.2	99.7	96	70-135	
o-Terphenyl	44.9	49.9	90	70-135	

Lab Batch #: 3006200

Sample: 542067-060 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 12:58

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	71.2	99.9	71	70-135	
o-Terphenyl	35.0	50.0	70	70-135	

Lab Batch #: 3005815

Sample: 717361-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/15/16 10:39

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0602	0.0500	120	74-126	
1,2-Dichloroethane-D4	0.0563	0.0500	113	80-120	
Toluene-D8	0.0469	0.0500	94	73-132	

Lab Batch #: 3005809

Sample: 717357-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/15/16 10:45

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	0.0517	0.0500	103	80-120	
Toluene-D8	0.0505	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3005967

Sample: 717464-1-BLK / BLK

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/15/16 20:02

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0570	0.0500	114	74-126	
1,2-Dichloroethane-D4	0.0517	0.0500	103	80-120	
Toluene-D8	0.0432	0.0500	86	73-132	

Lab Batch #: 3005825

Sample: 717371-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/15/16 21:55

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	0.0526	0.0500	105	80-120	
Toluene-D8	0.0518	0.0500	104	73-132	

Lab Batch #: 3006196

Sample: 717590-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/16/16 08:33

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	100	115	70-135	
o-Terphenyl	57.1	50.0	114	70-135	

Lab Batch #: 3005969

Sample: 717466-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/16/16 10:53

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0579	0.0500	116	74-126	
1,2-Dichloroethane-D4	0.0502	0.0500	100	80-120	
Toluene-D8	0.0467	0.0500	93	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3006201

Sample: 717593-1-BLK / BLK

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/16/16 15:58

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.8	100	87	70-135	
o-Terphenyl	40.4	50.0	81	70-135	

Lab Batch #: 3005979

Sample: 717472-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/16/16 17:18

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0487	0.0500	97	74-126	
1,2-Dichloroethane-D4	0.0499	0.0500	100	80-120	
Toluene-D8	0.0556	0.0500	111	73-132	

Lab Batch #: 3006198

Sample: 717591-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/16/16 19:12

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	100	115	70-135	
o-Terphenyl	53.6	50.0	107	70-135	

Lab Batch #: 3005975

Sample: 717470-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/16/16 19:46

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0565	0.0500	113	74-126	
1,2-Dichloroethane-D4	0.0499	0.0500	100	80-120	
Toluene-D8	0.0441	0.0500	88	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3006200

Sample: 717592-1-BLK / BLK

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/17/16 07:29

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	123	100	123	70-135	
o-Terphenyl	60.7	50.0	121	70-135	

Lab Batch #: 3006200

Sample: 717594-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/17/16 12:04

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.7	100	88	70-135	
o-Terphenyl	40.8	50.0	82	70-135	

Lab Batch #: 3006002

Sample: 717476-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/18/16 12:58

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0565	0.0500	113	74-126	
1,2-Dichloroethane-D4	0.0444	0.0500	89	80-120	
Toluene-D8	0.0443	0.0500	89	73-132	

Lab Batch #: 3005809

Sample: 717357-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/15/16 08:37

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0505	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0528	0.0500	106	80-120	
Toluene-D8	0.0505	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3005815

Sample: 717361-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/15/16 08:50

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0435	0.0500	87	74-126	
1,2-Dichloroethane-D4	0.0514	0.0500	103	80-120	
Toluene-D8	0.0495	0.0500	99	73-132	

Lab Batch #: 3005967

Sample: 717464-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/15/16 17:08

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0477	0.0500	95	74-126	
1,2-Dichloroethane-D4	0.0488	0.0500	98	80-120	
Toluene-D8	0.0509	0.0500	102	73-132	

Lab Batch #: 3005825

Sample: 717371-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/15/16 18:47

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0488	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0502	0.0500	100	80-120	
Toluene-D8	0.0559	0.0500	112	73-132	

Lab Batch #: 3005969

Sample: 717466-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/16/16 08:50

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0536	0.0500	107	74-126	
1,2-Dichloroethane-D4	0.0519	0.0500	104	80-120	
Toluene-D8	0.0473	0.0500	95	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3006196

Sample: 717590-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/16/16 08:57

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	100	121	70-135	
o-Terphenyl	56.9	50.0	114	70-135	

Lab Batch #: 3005979

Sample: 717472-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/16/16 15:21

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0493	0.0500	99	74-126	
1,2-Dichloroethane-D4	0.0505	0.0500	101	80-120	
Toluene-D8	0.0488	0.0500	98	73-132	

Lab Batch #: 3006201

Sample: 717593-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/16/16 16:24

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	47.6	50.0	95	70-135	

Lab Batch #: 3005975

Sample: 717470-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/16/16 17:49

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0483	0.0500	97	74-126	
1,2-Dichloroethane-D4	0.0412	0.0500	82	80-120	
Toluene-D8	0.0505	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3006198

Sample: 717591-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/16/16 19:36

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	114	100	114	70-135	
o-Terphenyl	43.3	50.0	87	70-135	

Lab Batch #: 3006200

Sample: 717592-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/17/16 07:58

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	100	120	70-135	
o-Terphenyl	50.0	50.0	100	70-135	

Lab Batch #: 3006202

Sample: 717594-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/17/16 12:46

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	47.6	50.0	95	70-135	

Lab Batch #: 3006002

Sample: 717476-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/18/16 09:13

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0522	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0566	0.0500	113	80-120	
Toluene-D8	0.0501	0.0500	100	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3005809

Sample: 717357-1-BSD / BSD

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/15/16 08:55

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0491	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0522	0.0500	104	80-120	
Toluene-D8	0.0485	0.0500	97	73-132	

Lab Batch #: 3005815

Sample: 717361-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/15/16 09:05

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0490	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0410	0.0500	82	80-120	
Toluene-D8	0.0493	0.0500	99	73-132	

Lab Batch #: 3005967

Sample: 717464-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/15/16 17:23

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	0.0428	0.0500	86	80-120	
Toluene-D8	0.0485	0.0500	97	73-132	

Lab Batch #: 3005825

Sample: 717371-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/15/16 19:59

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0504	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0508	0.0500	102	80-120	
Toluene-D8	0.0500	0.0500	100	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3005969

Sample: 717466-1-BSD / BSD

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/16/16 09:04

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0512	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0571	0.0500	114	80-120	
Toluene-D8	0.0512	0.0500	102	73-132	

Lab Batch #: 3006196

Sample: 717590-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/16/16 09:21

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	39.5	50.0	79	70-135	

Lab Batch #: 3005979

Sample: 717472-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/16/16 15:39

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0447	0.0500	89	74-126	
1,2-Dichloroethane-D4	0.0521	0.0500	104	80-120	
Toluene-D8	0.0515	0.0500	103	73-132	

Lab Batch #: 3006201

Sample: 717593-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/16/16 16:53

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	97.6	100	98	70-135	
o-Terphenyl	44.8	50.0	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3005975

Sample: 717470-1-BSD / BSD

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/16/16 18:04

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0498	0.0500	100	74-126	
1,2-Dichloroethane-D4	0.0519	0.0500	104	80-120	
Toluene-D8	0.0504	0.0500	101	73-132	

Lab Batch #: 3006198

Sample: 717591-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/16/16 20:01

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	113	100	113	70-135	
o-Terphenyl	41.5	50.0	83	70-135	

Lab Batch #: 3006200

Sample: 717592-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/17/16 08:26

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	110	100	110	70-135	
o-Terphenyl	46.0	50.0	92	70-135	

Lab Batch #: 3006202

Sample: 717594-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/17/16 13:28

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	98.1	100	98	70-135	
o-Terphenyl	45.5	50.0	91	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3006002

Sample: 717476-1-BSD / BSD

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/18/16 09:28

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0464	0.0500	93	74-126	
1,2-Dichloroethane-D4	0.0527	0.0500	105	80-120	
Toluene-D8	0.0494	0.0500	99	73-132	

Lab Batch #: 3005809

Sample: 541854-081 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 09:27

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0514	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0543	0.0500	109	80-120	
Toluene-D8	0.0561	0.0500	112	73-132	

Lab Batch #: 3005815

Sample: 541854-071 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 09:33

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0425	0.0500	85	74-126	
1,2-Dichloroethane-D4	0.0410	0.0500	82	80-120	
Toluene-D8	0.0531	0.0500	106	73-132	

Lab Batch #: 3005967

Sample: 542067-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 18:23

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0428	0.0500	86	74-126	
1,2-Dichloroethane-D4	0.0443	0.0500	89	80-120	
Toluene-D8	0.0508	0.0500	102	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3005825

Sample: 541854-059 S / MS

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 20:22

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0484	0.0500	97	74-126	
1,2-Dichloroethane-D4	0.0504	0.0500	101	80-120	
Toluene-D8	0.0518	0.0500	104	73-132	

Lab Batch #: 3005969

Sample: 542067-050 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 09:29

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	0.0501	0.0500	100	80-120	
Toluene-D8	0.0511	0.0500	102	73-132	

Lab Batch #: 3006196

Sample: 542067-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 10:10

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	99.8	109	70-135	
o-Terphenyl	43.6	49.9	87	70-135	

Lab Batch #: 3005979

Sample: 542067-087 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 15:59

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	0.0486	0.0500	97	80-120	
Toluene-D8	0.0540	0.0500	108	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3005975

Sample: 542184-016 S / MS

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 18:24

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0486	0.0500	97	74-126	
1,2-Dichloroethane-D4	0.0464	0.0500	93	80-120	
Toluene-D8	0.0487	0.0500	97	73-132	

Lab Batch #: 3006198

Sample: 542067-021 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 20:52

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	106	99.8	106	70-135	
o-Terphenyl	43.9	49.9	88	70-135	

Lab Batch #: 3006201

Sample: 542067-061 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 22:09

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	96.5	100	97	70-135	
o-Terphenyl	42.4	50.0	85	70-135	

Lab Batch #: 3006200

Sample: 542067-041 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 09:19

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	93.6	99.8	94	70-135	
o-Terphenyl	38.6	49.9	77	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3006202

Sample: 542067-081 S / MS

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 14:44

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	99.8	101	70-135	
o-Terphenyl	47.1	49.9	94	70-135	

Lab Batch #: 3006002

Sample: 542184-021 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/18/16 09:47

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0562	0.0500	112	74-126	
1,2-Dichloroethane-D4	0.0548	0.0500	110	80-120	
Toluene-D8	0.0523	0.0500	105	73-132	

Lab Batch #: 3005809

Sample: 541854-081 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 09:46

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0492	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0509	0.0500	102	80-120	
Toluene-D8	0.0511	0.0500	102	73-132	

Lab Batch #: 3005815

Sample: 541854-071 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 09:49

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0427	0.0500	85	74-126	
1,2-Dichloroethane-D4	0.0483	0.0500	97	80-120	
Toluene-D8	0.0530	0.0500	106	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3005967

Sample: 542067-001 SD / MSD

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 18:58

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0423	0.0500	85	74-126	
1,2-Dichloroethane-D4	0.0453	0.0500	91	80-120	
Toluene-D8	0.0549	0.0500	110	73-132	

Lab Batch #: 3005825

Sample: 541854-059 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/15/16 20:41

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	0.0494	0.0500	99	80-120	
Toluene-D8	0.0500	0.0500	100	73-132	

Lab Batch #: 3005969

Sample: 542067-050 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 09:45

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0474	0.0500	95	74-126	
1,2-Dichloroethane-D4	0.0492	0.0500	98	80-120	
Toluene-D8	0.0505	0.0500	101	73-132	

Lab Batch #: 3006196

Sample: 542067-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 10:35

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	99.8	111	70-135	
o-Terphenyl	42.9	49.9	86	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3005979

Sample: 542067-087 SD / MSD

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 16:18

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0498	0.0500	100	74-126	
1,2-Dichloroethane-D4	0.0526	0.0500	105	80-120	
Toluene-D8	0.0512	0.0500	102	73-132	

Lab Batch #: 3005975

Sample: 542184-016 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 18:39

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0490	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0444	0.0500	89	80-120	
Toluene-D8	0.0506	0.0500	101	73-132	

Lab Batch #: 3006198

Sample: 542067-021 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 21:17

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	99.0	99.7	99	70-135	
o-Terphenyl	37.5	49.9	75	70-135	

Lab Batch #: 3006201

Sample: 542067-061 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 22:41

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	89.6	99.9	90	70-135	
o-Terphenyl	40.4	50.0	81	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542067,

Lab Batch #: 3006200

Sample: 542067-041 SD / MSD

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 09:46

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.4	99.9	97	70-135	
o-Terphenyl	37.8	50.0	76	70-135	

Lab Batch #: 3006202

Sample: 542067-081 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 15:19

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.9	99.8	92	70-135	
o-Terphenyl	42.1	49.9	84	70-135	

Lab Batch #: 3006002

Sample: 542184-021 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/18/16 10:02

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0569	0.0500	114	74-126	
1,2-Dichloroethane-D4	0.0511	0.0500	102	80-120	
Toluene-D8	0.0515	0.0500	103	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: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 542067

Project ID:

Analyst: JTR

Date Prepared: 12/15/2016

Date Analyzed: 12/15/2016

Lab Batch ID: 3005809

Sample: 717357-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.115	115	0.100	0.111	111	4	62-132	25	
Toluene	<0.00100	0.100	0.110	110	0.100	0.102	102	8	66-124	25	
Ethylbenzene	<0.00100	0.100	0.107	107	0.100	0.107	107	0	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.224	112	0.200	0.226	113	1	69-128	25	
o-Xylene	<0.00100	0.100	0.116	116	0.100	0.112	112	4	72-131	25	

Analyst: JTR

Date Prepared: 12/15/2016

Date Analyzed: 12/15/2016

Lab Batch ID: 3005815

Sample: 717361-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.116	116	0.100	0.110	110	5	62-132	25	
Toluene	<0.00100	0.100	0.101	101	0.100	0.107	107	6	66-124	25	
Ethylbenzene	<0.00100	0.100	0.103	103	0.100	0.112	112	8	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.218	109	0.200	0.234	117	7	69-128	25	
o-Xylene	<0.00100	0.100	0.115	115	0.100	0.124	124	8	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: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 542067

Project ID:

Analyst: JTR

Date Prepared: 12/15/2016

Date Analyzed: 12/15/2016

Lab Batch ID: 3005825

Sample: 717371-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.112	112	0.100	0.111	111	1	62-132	25	
Toluene	<0.00100	0.100	0.118	118	0.100	0.104	104	13	66-124	25	
Ethylbenzene	<0.00100	0.100	0.110	110	0.100	0.109	109	1	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.217	109	0.200	0.225	113	4	69-128	25	
o-Xylene	<0.00100	0.100	0.112	112	0.100	0.114	114	2	72-131	25	

Analyst: JTR

Date Prepared: 12/15/2016

Date Analyzed: 12/15/2016

Lab Batch ID: 3005967

Sample: 717464-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.115	115	0.100	0.112	112	3	62-132	25	
Toluene	<0.00100	0.100	0.115	115	0.100	0.108	108	6	66-124	25	
Ethylbenzene	<0.00100	0.100	0.112	112	0.100	0.108	108	4	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.236	118	0.200	0.231	116	2	69-128	25	
o-Xylene	<0.00100	0.100	0.120	120	0.100	0.118	118	2	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: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 542067

Project ID:

Analyst: JTR

Date Prepared: 12/16/2016

Date Analyzed: 12/16/2016

Lab Batch ID: 3005969

Sample: 717466-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.100	100	0.100	0.108	108	8	62-132	25	
Toluene	<0.00100	0.100	0.0982	98	0.100	0.110	110	11	66-124	25	
Ethylbenzene	<0.00100	0.100	0.0992	99	0.100	0.107	107	8	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.209	105	0.200	0.226	113	8	69-128	25	
o-Xylene	<0.00100	0.100	0.107	107	0.100	0.116	116	8	72-131	25	

Analyst: JTR

Date Prepared: 12/16/2016

Date Analyzed: 12/16/2016

Lab Batch ID: 3005975

Sample: 717470-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.102	102	0.100	0.108	108	6	62-132	25	
Toluene	<0.00100	0.100	0.102	102	0.100	0.107	107	5	66-124	25	
Ethylbenzene	<0.00100	0.100	0.101	101	0.100	0.105	105	4	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.217	109	0.200	0.229	115	5	69-128	25	
o-Xylene	<0.00100	0.100	0.110	110	0.100	0.115	115	4	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: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 542067

Project ID:

Analyst: JTR

Date Prepared: 12/16/2016

Date Analyzed: 12/16/2016

Lab Batch ID: 3005979

Sample: 717472-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.108	108	0.100	0.103	103	5	62-132	25	
Toluene	<0.00100	0.100	0.103	103	0.100	0.103	103	0	66-124	25	
Ethylbenzene	<0.00100	0.100	0.106	106	0.100	0.104	104	2	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.223	112	0.200	0.215	108	4	69-128	25	
o-Xylene	<0.00100	0.100	0.112	112	0.100	0.112	112	0	72-131	25	

Analyst: JTR

Date Prepared: 12/18/2016

Date Analyzed: 12/18/2016

Lab Batch ID: 3006002

Sample: 717476-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.102	102	0.100	0.107	107	5	62-132	25	
Toluene	<0.00100	0.100	0.0989	99	0.100	0.102	102	3	66-124	25	
Ethylbenzene	<0.00100	0.100	0.0967	97	0.100	0.0998	100	3	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.206	103	0.200	0.213	107	3	69-128	25	
o-Xylene	<0.00100	0.100	0.108	108	0.100	0.110	110	2	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: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 542067

Project ID:

Analyst: MNR

Date Prepared: 12/19/2016

Date Analyzed: 12/19/2016

Lab Batch ID: 3006068

Sample: 717451-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	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
Analytes											
Chloride	<5.00	250	240	96	250	239	96	0	90-110	20	

Analyst: MNR

Date Prepared: 12/20/2016

Date Analyzed: 12/20/2016

Lab Batch ID: 3006035

Sample: 717478-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	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
Analytes											
Chloride	<5.00	250	251	100	250	251	100	0	90-110	20	

Analyst: MNR

Date Prepared: 12/20/2016

Date Analyzed: 12/20/2016

Lab Batch ID: 3006125

Sample: 717530-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	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
Analytes											
Chloride	<5.00	250	246	98	250	245	98	0	90-110	20	

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

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries



Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 542067

Project ID:

Analyst: MNR

Date Prepared: 12/21/2016

Date Analyzed: 12/21/2016

Lab Batch ID: 3006224

Sample: 717595-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	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
Analytes											
Chloride	<5.00	250	233	93	250	238	95	2	90-110	20	

Analyst: MNR

Date Prepared: 12/22/2016

Date Analyzed: 12/22/2016

Lab Batch ID: 3006243

Sample: 717617-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	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
Analytes											
Chloride	<5.00	250	233	93	250	230	92	1	90-110	20	

Analyst: MNR

Date Prepared: 12/22/2016

Date Analyzed: 12/22/2016

Lab Batch ID: 3006270

Sample: 717619-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	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
Analytes											
Chloride	<5.00	250	232	93	250	232	93	0	90-110	20	

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

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries



Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 542067

Project ID:

Analyst: ARM

Date Prepared: 12/16/2016

Date Analyzed: 12/16/2016

Lab Batch ID: 3006196

Sample: 717590-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	990	99	1000	867	87	13	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	1050	105	1000	915	92	14	70-135	35	

Analyst: ARM

Date Prepared: 12/16/2016

Date Analyzed: 12/16/2016

Lab Batch ID: 3006198

Sample: 717591-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	966	97	1000	939	94	3	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	1020	102	1000	959	96	6	70-135	35	

Analyst: ARM

Date Prepared: 12/16/2016

Date Analyzed: 12/17/2016

Lab Batch ID: 3006200

Sample: 717592-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	1040	104	1000	959	96	8	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	1050	105	1000	948	95	10	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



BS / BSD Recoveries



Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 542067

Project ID:

Analyst: ARM

Date Prepared: 12/16/2016

Date Analyzed: 12/16/2016

Lab Batch ID: 3006201

Sample: 717593-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	901	90	1000	927	93	3	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	989	99	1000	979	98	1	70-135	35	

Analyst: ARM

Date Prepared: 12/16/2016

Date Analyzed: 12/17/2016

Lab Batch ID: 3006202

Sample: 717594-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	988	99	1000	973	97	2	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	964	96	1000	966	97	0	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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542067

Project ID:

Lab Batch ID: 3005809

QC- Sample ID: 541854-081 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/15/2016

Date Prepared: 12/15/2016

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	<0.00100	0.100	0.106	106	0.100	0.100	100	6	62-132	25	
Toluene	<0.00100	0.100	0.110	110	0.100	0.101	101	9	66-124	25	
Ethylbenzene	<0.00100	0.100	0.103	103	0.100	0.0998	100	3	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.219	110	0.200	0.207	104	6	69-128	25	
o-Xylene	<0.00100	0.100	0.111	111	0.100	0.102	102	8	72-131	25	

Lab Batch ID: 3005815

QC- Sample ID: 541854-071 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/15/2016

Date Prepared: 12/15/2016

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	0.0976	98	0.0998	0.0946	95	3	62-132	25	
Toluene	<0.000992	0.0992	0.104	105	0.0998	0.101	101	3	66-124	25	
Ethylbenzene	<0.000992	0.0992	0.100	101	0.0998	0.0958	96	4	71-134	25	
m,p-Xylenes	<0.00198	0.198	0.209	106	0.200	0.201	101	4	69-128	25	
o-Xylene	<0.000992	0.0992	0.106	107	0.0998	0.102	102	4	72-131	25	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542067

Project ID:

Lab Batch ID: 3005825

QC- Sample ID: 541854-059 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/15/2016

Date Prepared: 12/15/2016

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	0.0999	100	0.100	0.112	112	11	62-132	25	
Toluene	<0.000998	0.0998	0.102	102	0.100	0.108	108	6	66-124	25	
Ethylbenzene	<0.000998	0.0998	0.101	101	0.100	0.114	114	12	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.215	108	0.201	0.235	117	9	69-128	25	
o-Xylene	<0.000998	0.0998	0.112	112	0.100	0.135	135	19	72-131	25	X

Lab Batch ID: 3005967

QC- Sample ID: 542067-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/15/2016

Date Prepared: 12/15/2016

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	<0.00100	0.100	0.105	105	0.0994	0.103	104	2	62-132	25	
Toluene	<0.00100	0.100	0.106	106	0.0994	0.110	111	4	66-124	25	
Ethylbenzene	<0.00100	0.100	0.107	107	0.0994	0.107	108	0	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.232	116	0.199	0.225	113	3	69-128	25	
o-Xylene	<0.00100	0.100	0.122	122	0.0994	0.118	119	3	72-131	25	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542067

Project ID:

Lab Batch ID: 3005969

QC- Sample ID: 542067-050 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/16/2016

Date Prepared: 12/16/2016

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	<0.00100	0.100	0.107	107	0.100	0.0980	98	9	62-132	25	
Toluene	<0.00100	0.100	0.103	103	0.100	0.0985	99	4	66-124	25	
Ethylbenzene	<0.00100	0.100	0.104	104	0.100	0.0961	96	8	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.222	111	0.200	0.205	103	8	69-128	25	
o-Xylene	<0.00100	0.100	0.113	113	0.100	0.104	104	8	72-131	25	

Lab Batch ID: 3005975

QC- Sample ID: 542184-016 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/16/2016

Date Prepared: 12/16/2016

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	0.0947	95	0.0996	0.0986	99	4	62-132	25	
Toluene	<0.000998	0.0998	0.0905	91	0.0996	0.0979	98	8	66-124	25	
Ethylbenzene	<0.000998	0.0998	0.0950	95	0.0996	0.0991	99	4	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.206	103	0.199	0.210	106	2	69-128	25	
o-Xylene	<0.000998	0.0998	0.106	106	0.0996	0.107	107	1	72-131	25	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542067

Project ID:

Lab Batch ID: 3005979

QC- Sample ID: 542067-087 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/16/2016

Date Prepared: 12/16/2016

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	0.0935	94	0.100	0.102	102	9	62-132	25	
Toluene	<0.000992	0.0992	0.103	104	0.100	0.101	101	2	66-124	25	
Ethylbenzene	<0.000992	0.0992	0.101	102	0.100	0.101	101	0	71-134	25	
m,p-Xylenes	<0.00198	0.198	0.208	105	0.200	0.204	102	2	69-128	25	
o-Xylene	<0.000992	0.0992	0.105	106	0.100	0.107	107	2	72-131	25	

Lab Batch ID: 3006002

QC- Sample ID: 542184-021 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/18/2016

Date Prepared: 12/18/2016

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	0.0952	95	0.100	0.0923	92	3	62-132	25	
Toluene	<0.000998	0.0998	0.0898	90	0.100	0.0866	87	4	66-124	25	
Ethylbenzene	<0.000998	0.0998	0.0867	87	0.100	0.0817	82	6	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.182	91	0.200	0.173	87	5	69-128	25	
o-Xylene	<0.000998	0.0998	0.0912	91	0.100	0.0907	91	1	72-131	25	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542067

Project ID:

Lab Batch ID: 3006035

QC- Sample ID: 542067-014 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/20/2016

Date Prepared: 12/20/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	3990	1250	5130	91	1250	5180	95	1	90-110	20	

Lab Batch ID: 3006035

QC- Sample ID: 542545-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/20/2016

Date Prepared: 12/20/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	2370	1250	3590	98	1250	3550	94	1	90-110	20	

Lab Batch ID: 3006068

QC- Sample ID: 541854-076 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/19/2016

Date Prepared: 12/19/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	25.7	1250	1360	107	1250	1400	110	3	90-110	20	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542067

Project ID:

Lab Batch ID: 3006068

QC- Sample ID: 542067-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/19/2016

Date Prepared: 12/19/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	353	250	596	97	250	602	100	1	90-110	20	

Lab Batch ID: 3006125

QC- Sample ID: 542067-024 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/20/2016

Date Prepared: 12/20/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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

Lab Batch ID: 3006125

QC- Sample ID: 542067-034 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/20/2016

Date Prepared: 12/20/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	262	105	250	259	104	1	90-110	20	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542067

Project ID:

Lab Batch ID: 3006224

QC- Sample ID: 542067-044 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/21/2016

Date Prepared: 12/21/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	234	94	250	249	100	6	90-110	20	

Lab Batch ID: 3006224

QC- Sample ID: 542329-037 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/22/2016

Date Prepared: 12/21/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	3180	1250	4460	102	1250	4480	104	0	90-110	20	

Lab Batch ID: 3006243

QC- Sample ID: 542067-060 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/22/2016

Date Prepared: 12/22/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	6.12	250	232	90	250	230	90	1	90-110	20	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542067

Project ID:

Lab Batch ID: 3006243

QC- Sample ID: 542067-070 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/22/2016

Date Prepared: 12/22/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	2130	1250	3340	97	1250	3350	98	0	90-110	20	

Lab Batch ID: 3006270

QC- Sample ID: 542067-080 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/22/2016

Date Prepared: 12/22/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	913	250	1150	95	250	1150	95	0	90-110	20	

Lab Batch ID: 3006270

QC- Sample ID: 542067-090 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/22/2016

Date Prepared: 12/22/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	317	250	555	95	250	540	89	3	90-110	20	X

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542067

Project ID:

Lab Batch ID: 3006196

QC- Sample ID: 542067-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/16/2016

Date Prepared: 12/16/2016

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	998	904	91	998	948	95	5	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	998	988	99	998	994	100	1	70-135	35	

Lab Batch ID: 3006198

QC- Sample ID: 542067-021 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/16/2016

Date Prepared: 12/16/2016

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	998	921	92	997	883	89	4	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	998	984	99	997	900	90	9	70-135	35	

Lab Batch ID: 3006200

QC- Sample ID: 542067-041 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/17/2016

Date Prepared: 12/16/2016

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	998	849	85	999	894	89	5	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	998	894	90	999	892	89	0	70-135	35	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542067

Project ID:

Lab Batch ID: 3006201

QC- Sample ID: 542067-061 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/16/2016

Date Prepared: 12/16/2016

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	903	90	999	878	88	3	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	941	94	999	899	90	5	70-135	35	

Lab Batch ID: 3006202

QC- Sample ID: 542067-081 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/17/2016

Date Prepared: 12/16/2016

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	998	991	99	998	942	94	5	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	998	993	99	998	886	89	11	70-135	35	

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

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

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.



XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: KJE Enviromental & Civil Engineering

Date/ Time Received: 12/13/2016 08:15:00 PM

Work Order #: 542067

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	-.6
#2 *Shipping container in good condition?	N/A
#3 *Samples received on ice?	Yes
#4 *Custody Seal present on shipping container/ cooler?	N/A
#5 *Custody Seals intact on shipping container/ cooler?	N/A
#6 Custody Seals intact on sample bottles?	N/A
#7 *Custody Seals Signed and dated?	N/A
#8 *Chain of Custody present?	Yes
#9 Sample instructions complete on Chain of Custody?	Yes
#10 Any missing/extra samples?	No
#11 Chain of Custody signed when relinquished/ received?	Yes
#12 Chain of Custody agrees with sample label(s)?	Yes
#13 Container label(s) legible and intact?	Yes
#14 Sample matrix/ properties agree with Chain of Custody?	Yes
#15 Samples in proper container/ bottle?	Yes
#16 Samples properly preserved?	Yes
#17 Sample container(s) intact?	Yes
#18 Sufficient sample amount for indicated test(s)?	Yes
#19 All samples received within hold time?	Yes
#20 Subcontract of sample(s)?	Yes Houston
#21 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#22 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	N/A
#23 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by: Jessica Kramer
Jessica Kramer

Date: 12/14/2016

Checklist reviewed by: Kelsey Brooks
Kelsey Brooks

Date: 12/14/2016

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Norcross, Georgia (770-449-8800)

Lakeland, Florida (863-646-8526)

Tampa, Florida (813-620-2000)

Client / Reporting Information		Project Information		Analytical Information		Matrix Codes
Company Name / Branch: KJE Environmental & Civil Engineering Company Address: 500 Mosely Road, Cross Roads, Texas 76227 Email: james@kjenvironmental.com Phone No: (940)367-0805		Project Name/Number: OWL Bobcat/Red Hills Pipeline Release Project Location: Jal, NM Invoice To:				S = Soil/Sed/Solid GW = Ground Water DW = Drinking Water P = Product SW = Surface water SL = Sludge OW = Ocean/Sea Water W = Waste WW = Waste Water A = Air
Project Contact: James Fox Samplers Name		PO Number:				
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles
		Collection				
		Number of preserved bottles				
		HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH
		NaHSO4	MEOH	NONE	BTEX	TPH
		CHLORIDES				
		Field Comments				

No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX	TPH	CHLORIDES	Field Comments
1	(2) SDBI O-Z		12/12/14	1340		1									X	X	X	
2	(2) SDBI Z-U			1345		1									X	X	X	
3	(2) SDBI U-B			1350		1									X	X	X	
4	(2) SDBI B-S			1355		1									X	X	X	
5	(2) SDBI O-Z			1420		1									X	X	X	
6	(2) SDBI Z-U			1425		1									X	X	X	
7	(2) SDBI U-B			1430		1									X	X	X	
8	(2) SDBI B-S			1435		1									X	X	X	
9	(2) SDBI O-Z			1450		1									X	X	X	
10	(2) SDBI Z-U			1500		1									X	X	X	

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

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

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY			
Relinquished by Sampler:	Date Time:	Received By:	Date Time:
1 James Fox	12/13/14	1 [Signature]	12-13-14 08:15
Relinquished by:	Date Time:	Received By:	Date Time:
3		3	
Relinquished by:	Date Time:	Received By:	Date Time:
5		5	

FED-EX / UPS Tracking #	Preserved where applicable	On Ice	Temp: IR ID: R-8 CF: +0.1 -0.5°C Corrected Temp: 0.6°C
		☒	



CHAIN OF CUSTODY

Page 2 of 10

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Lakeland, Florida (883-646-8526)
Tampa, Florida (813-620-2000)

Xenco Quote #

Xenco Job #

542067

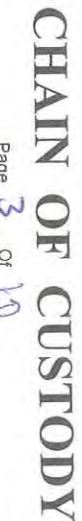
Client / Reporting Information		Project Information		Analytical Information		Matrix Codes													
Company Name / Branch: KLE Environmental & Civil Engineering		Project Name/Number: OWL Bobcat/Red Hills Pipeline Release																	
Company Address: 500 Mosely Road, Cross Roads, Texas 76227		Project Location: Jal, NM																	
Email: james@kleenvironmental.com Phone No: (940)387-0805		Invoice To:																	
Project Contact: James Fox		PO Number:																	
Sample's Name																			
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCI	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX	TPH	CHLORIDES	Field Comments	
1	(2) S03 4-b		12/12	1505											X	X	X		
2	(2) S03 4-b			1505											X	X	X		
3	(2) S04 0-2			1520											X	X	X		
4	(2) S04 2-4			1525											X	X	X		
5	(2) S04 4-b			1530											X	X	X		
6	(2) S04 4-b			1532											X	X	X		
7	(2) S04 4-10			1535											X	X	X		
8	(2) S05 0-2			1505											X	X	X		
9	(2) S05 2-4			1505											X	X	X		
10	(2) S05 4-b			1510											X	X	X		
Turnaround Time (Business days)																			
Same Day TAT		☒ 5 Day TAT																	
Next Day EMERGENCY		☐ 7 Day TAT																	
2 Day EMERGENCY		☐ Contract TAT																	
3 Day EMERGENCY		☐ TRRP Checklist																	
TAT Starts Day received by Lab, if received by 5:00 pm																			
Relinquished by Sampler:		Date Time:		Received By:		Date Time:		Received By:		Date Time:		Received By:		Date Time:		Received By:		Date Time:	
1. Tame Evans - KSE		12/13/16		1. [Signature]		12/13/16		2. [Signature]		12/13/16		2. [Signature]		12/13/16		2. [Signature]		12/13/16	
Relinquished by:		Date Time:		Received By:		Date Time:		Received By:		Date Time:		Received By:		Date Time:		Received By:		Date Time:	
3. [Signature]		3. [Signature]		3. [Signature]		3. [Signature]		3. [Signature]		3. [Signature]		3. [Signature]		3. [Signature]		3. [Signature]		3. [Signature]	
Relinquished by:		Date Time:		Received By:		Date Time:		Received By:		Date Time:		Received By:		Date Time:		Received By:		Date Time:	
5. [Signature]		5. [Signature]		5. [Signature]		5. [Signature]		5. [Signature]		5. [Signature]		5. [Signature]		5. [Signature]		5. [Signature]		5. [Signature]	

Notes: (2) S05 4-b Split
date: 12/12 @ 1610

Temp: IR ID: R-8
CF: +0.1 -0.5°C
Corrected Temp: 70.6°C

On Ice ☒

FED-EX / UPS: Tracking #



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[illegible]

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Client / Reporting Information										Project Information										Analytical Information										Matrix Codes																										
Company Name / Branch: KJE Environmental & Civil Engineering					Project Name/Number: OWL Bobcat/Red Hills Pipeline Release																																																			
Company Address:					Project Location:																																																			
500 Mosely Road, Cross Roads, Texas 76227					Jal, NM																																																			
Email: james@kjenvironmental.com Phone No: (940)387-9805					Invoice To:																																																			
Project Contact: James Fox					PO Number:																																																			
Sampler's Name																																																								
No.	Field ID / Point of Collection				Collection		Number of preserved bottles										BTEX										TPH										CHLORIDES										Field Comments									
	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO ₃	H ₂ SO ₄	NaOH	NaHSO ₄	MEOH	NONE	BTEX	TPH	CHLORIDES																																								
1	(2) 5' B T	8-10	12/13/15	Q15										X	X	X																																								
2	(2) 5' B T	O-T	9:20											X	X	X																																								
3	(2) 5' B T	Z-U	9:24											X	X	X																																								
4	(2) 5' B T	V-B	9:28											X	X	X																																								
5	(2) 5' B T	b-v	9:32											X	X	X																																								
6	(2) 5' B T	8-10	9:35											X	X	X																																								
7	(2) 5' B T	O-T	9:55											X	X	X																																								
8	(2) 5' B T	T-U	9:59											X	X	X																																								
9	(2) 5' B T	U-V	10:03											X	X	X																																								
10	(2) 5' B T	B-B	10:07											X	X	X																																								
Turnaround Time (Business days)										Data Deliverable Information										Notes:																																				
Same Day TAT										☒ 5 Day TAT										☐ Level II Std QC										☐ Level IV (Full Data Pkg /raw data)																										
Next Day EMERGENCY										☐ 7 Day TAT										☐ Level III Std QC+ Forms										☐ TRRP Level IV																										
2 Day EMERGENCY										☐ Contract TAT										☐ Level 3 (CLP Forms)										☐ UST / RG -411																										
3 Day EMERGENCY										☐ TRRP Checklist																																														
TAT Starts Day received by Lab, if received by 5:00 pm																																																								
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																																																								
Relinquished by Sampler: <i>James Fox</i>										Received By: <i>[Signature]</i>										Date Time: <i>12/16/2015</i>										FED-EX / UPS: Tracking #																										
Relinquished by:										Received By:										Date Time:										On Ice ☒																										
Temp: IR ID-R-8 CF:+ 0.1 -0.5°C Corrected Temp:-0.6°C																																																								

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Norcross, Georgia (770-449-8800)

Tampa, Florida (813-620-2000)

Xenco Quote #

Xenco Job #

542047

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes								
Company Name / Branch: KJE Environmental & Civil Engineering				Project Name/Number: OWL Bobcat/Red Hills Pipeline Release																
Company Address: 500 Mosely Road, Cross Roads, Texas 76227				Project Location: Jal, NM																
Email: james@kjeenvironmental.com				Phone No: (940)387-0805																
Project Contact: James Fox				Invoice To:																
Samplers Name				PO Number:																
No. Field ID / Point of Collection				Collection				Number of preserved bottles				Field Comments								
				Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MeOH	NONE	BTEX	TPH	CHLORIDES	
1 (2) SB9 8-10					12/13	1010											X	X	X	
2 (2) SB9 8-10 split						1010											X	X	X	
3 (2) SB10 0-2						1015											X	X	X	
4 (2) SB10 2-4						1016											X	X	X	
5 (2) SB10 4-6						1017											X	X	X	
6 (2) SB10 6-8						1018											X	X	X	
7 (2) SB10 8-10						1020											X	X	X	
8 (2) SB11 0-2						1021											X	X	X	
9 (2) SB11 2-4						1030											X	X	X	
10 (2) SB11 4-6						1035											X	X	X	
Turnaround Time (Business days)				Data Deliverable Information				Notes:												
☐ Same Day TAT				☒ 5 Day TAT				☐ Level II Std QC				☐ Level IV (Full Data Pkg /raw data)								
☐ Next Day EMERGENCY				☐ 7 Day TAT				☐ Level III Std QC+ Forms				☐ TRRP Level IV								
☐ 2 Day EMERGENCY				☐ Contract TAT				☐ Level 3 (CLP Forms)				☐ UST / RG -411								
☐ 3 Day EMERGENCY								☐ TRRP Checklist												
TAT Starts Day received by Lab, if received by 5:00 pm																				
Relinquished by Sampler:				SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																
1 Relinquished by: Tanner Evans-KJE				Date Time: Received By: 1/30/16				Date Time: Relinquished By: 2/3/16				Date Time: Received By: 2/3/16								
3 Relinquished by:				Date Time: Received By: 3				Date Time: Relinquished By: 4				Date Time: Received By: 4								
5 Relinquished by:				Date Time: Received By: 5				Date Time: Relinquished By: 5				Date Time: Received By: 5								
Temp: IR ID: R-8				CF: +0.1				Corrected Temp: 0.6°C												

Setting the Standard since 1990

Stafford, Texas (281-240-4200)

Dallas Texas (214-902-0300)

Service Center - San Antonio, Texas (210-509-3334)

www.xenco.com

Odessa, Texas (432-563-1800)

Norcross, Georgia (770-449-8800)

Lakeland, Florida (863-646-8526)

Tampa, Florida (813-620-2000)

[illegible]



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Service Center - San Antonio, Texas (210-509-3334)

CHAIN OF CUSTODY

Page 2 of 10

Odessa, Texas (432-563-1800)

Norcross, Georgia (770-449-8800)

Lakeland, Florida (863-646-8526)
Tampa, Florida (813-620-2000)

www.xenco.com

Client / Reporting Information

Company Name / Branch:

KJE Environmental & Civil Engineering

Company Address:

500 Mosely Road, Cross Roads, Texas 76227

Email: james@kjeenvironmental.com

Phone No: (840)387-0805

Invoice To:

Jal NM

Project Contact:

James Fox

james@kjeenvironmental.com

PO Number:

Project Information

Project Name/Number:

OWL Bobcat/Red Hills Pipeline Release

Project Location:

No. Field ID / Point of Collection

1 (2) SB14 2-4

2 (2) SB14 4-1

3 (2) SB14 5-1

4 (2) SB14 6-8

5 (2) SB14 0-2

6 (2) SB14 2-4

7 (2) SB14 4-6

8 (2) SB14 6-8

9 (2) SB14 8-10

10 (2) SB14 0-2

Sample Depth

Date

Time

Matrix

of bottles

HCl

NaOH/Zn Acetate

HNO3

H2SO4

NaOH

NaHSO4

MEOH

NONE

BTEX

TPH

CHLORIDES

Notes:

Turnaround Time (Business days)

Data Deliverable Information

Level II Std QC

Level III Std QC+ Forms

Level 3 (CLP Forms)

TRRP Checklist

TRRP Level IV

UST / RG -411

TRRP Level IV

TRRP Level IV

TRRP Level IV

TRRP Level IV

TRRP Level IV

TRRP Level IV

TRRP Level IV

TRRP Level IV

TRRP Level IV

TRRP Level IV

TRRP Level IV

TRRP Level IV

TRRP Level IV

TRRP Level IV

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

Relinquished by Sampler:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Relinquished by Sampler:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished by Sampler:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished by Sampler:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished by Sampler:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished by Sampler:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Setting the Standard since 1990

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Lakeland, Florida (863-646-8526)
Tampa, Florida (813-620-2000)

Xenco Quote #

Xenco Job #

542067

Matrix Codes

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes					
Company Name / Branch: KJE Environmental & Civil Engineering Company Address: 500 Mosely Road Cross Roads, Texas 76227 Email: james@kjenvironmental.com Phone No: (940)387-4905				Project Name/Number: OWL Bobcat/Red Hills Pipeline Release Project Location: Jal, NM Invoice To:													
Project Contact: James FOX Samplers Name				PO Number:													
Field ID / Point of Collection				Collection				Number of preserved bottles				Field Comments					
No.	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX	TPH	CHLORIDES	
1	(2) SB16	2-4	13/3	1445										X	X	X	
2	(2) SB16	4-6		1447										X	X	X	
3	(2) SB16	6-8		1450										X	X	X	
4	(2) SB16	8-10		1505										X	X	X	
5	(2) SB17	0-2		1515										X	X	X	
6	(2) SB17	2-4		1517										X	X	X	
7	(2) SB17	4-6		1519										X	X	X	
8	(2) SB17	6-8		1521										X	X	X	
9	(2) SB17	8-10		1522										X	X	X	
10	(2) SB17	10-12		1523										X	X	X	
Turnaround Time (Business days)				Data Deliverable Information				Notes:									
☐ Same Day TAT				☒ 5 Day TAT				☐ Level II Std QC				☐ Level IV (Full Data Pkg /raw data)					
☐ Next Day EMERGENCY				☐ 7 Day TAT				☐ Level III Std QC+ Forms				☐ TRRP Level IV					
☐ 2 Day EMERGENCY				☐ Contract TAT				☐ Level 3 (CLP Forms)				☐ UST / RG -411					
☐ 3 Day EMERGENCY				☐ TRRP Checklist													
TAT Starts Day received by Lab, if received by 5:00 pm																	
Relinquished by Sampler:				Date Time:				Received By:				Date Time:					
1 Tanso Evans CKIT								1 [Signature]				2 [Signature]					
Relinquished by:				Date Time:				Received By:				Date Time:					
3								3				4					
Relinquished by:				Date Time:				Received By:				Date Time:					
5								5									
FED-EX / UPS: Tracking #																	
Temp: IR ID:R-8																	
CF: + 0.1																	
Corrected Temp: -0.60																	

Setting the Standard since 1990

Stafford, Texas (281-240-4200)

Dallas Texas (214-902-0300)

Service Center - San Antonio, Texas (210-509-3334)

www.xenco.com

Odessa, Texas (432-563-1800)

Norcross, Georgia (770-449-8800)

Lakeland, Florida (863-646-8526)
Tampa, Florida (813-620-2000)

Tampa, Florida (813-620-2000)

Service Center - San Antonio, Texas (210-503-3334)							www.xenco.com		Xenco Quote # 6420067		Xenco Job #							
Client / Reporting Information				Project Information				Analytical Information				Matrix Codes						
Company Name / Branch: KJE Environmental & Civil Engineering				Project Name/Number: OWL Bobcat/Red Hills Pipeline Release														
Company Address: 500 Mosely Road, Cross Roads, Texas 76227				Project Location: Jal, NM														
Email: james@kjenvironmental.com				Phone No: (940)397-0905														
Invoice To:																		
Project Contact: James Fox				PO Number:														
Samplers's Name																		
No.	Field ID / Point of Collection	Sample Depth	Collection Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO ₃	H ₂ SO ₄	NaOH	NaHSO ₄	MEOH	NONE	BTEX	TPH	CHLORIDES	Field Comments
1	(Z) SGB17	12-14	12/13/2015	15:50											X	X	X	
2	(Z) SGB18	0-2													X	X	X	
3	(Z) SGB18	2-4													X	X	X	
4	(Z) SGB18	2-4 Split													X	X	X	
5	(Z) SGB18	4-6													X	X	X	
6	(Z) SGB18	6-8													X	X	X	
7	(Z) SGB18	8-10													X	X	X	
8	(Z) SGB18	10-12													X	X	X	
9	(Z) SGB18	12-14													X	X	X	
10	(Z) SGB18	0-2													X	X	X	
Turnaround Time (Business days)																		
Data Deliverable Information																		
Notes:																		
☐ Same Day TAT ☒ 5 Day TAT ☐ Level II Std QC ☐ Level IV (Full Data Pkg / raw data) ☐ Next Day EMERGENCY ☐ 7 Day TAT ☐ Level III Std QC+ Forms ☐ TRRP Level IV ☐ 2 Day EMERGENCY ☐ Contract TAT ☐ Level 3 (CLP Forms) ☐ UST / RG -411 ☐ 3 Day EMERGENCY ☐ TRRP Checklist																		
TAT Starts Day received by Lab, if received by 5:00 pm																		
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: Date Time: Relinquished By:																		
Relinquished by: Tamara Evans-LCSF Date Time: 12/13/2015 15:50 Received By: [Signature] Date Time: 12/13/2015 20:15 Relinquished By: [Signature]																		
Relinquished by: Date Time: Received By: Date Time: Relinquished By:																		
Custody Seal # Preserved where applicable On Ice																		
Temp: IR ID: R-8 CF: + 0.1 Corrected Temp: -0.5°C																		

Setting the Standard since 1990

Stafford, Texas (281-240-4200)

Dallas Texas (214-902-0300)

Service Center - San Antonio, Texas (210-509-3334)

www.xenco.com

Odessa, Texas (432-563-1800)

Lakeland, Florida (863-646-8526)

Norcross, Georgia (770-449-8800)

Tampa, Florida (813-620-2000)

Xenco Quote #

Xenco Job #

542067

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes						
Company Name / Branch: KJE, Environmental & Civil Engineering				Project Name/Number: OWL Bobcat/Red Hills Pipeline Release														
Company Address: 500 Mosely Road, Cross Roads, Texas 76227				Project Location: Jal, NM														
Email: james@kjenvironmental.com				Invoice To:														
Phone No: (940)387-0805																		
Project Contact: James Fox				PO Number:														
Samplers Name																		
Field ID / Point of Collection				Collection				Number of preserved bottles				Notes						
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MeOH	NONE	BTEX	TPH	CHLORIDES	Field Comments
1	(2) SGB 19	2-4	12/13	1630		1635									X	X	X	
2	(2) SGB 19	4-6				1640									X	X	X	
3	(2) SGB 19	6-8				1650									X	X	X	
4	(2) SGB 19	8-10				1700									X	X	X	
5	(2) SGB 19	10-12													X	X	X	
6	(2) SGB 5	4-10 split	12/12	1610											X	X	X	
7																		
8																		
9																		
10																		
Turnaround Time (Business days)				Data Deliverable Information				Notes:										
☐ Same Day TAT				☒ 5 Day TAT				☐ Level II Std QC				☐ Level IV (Full Data Pkg /raw data)						
☐ Next Day EMERGENCY				☐ 7 Day TAT				☐ Level III Std QC+ Forms				☐ TRRP Level IV						
☐ 2 Day EMERGENCY				☐ Contract TAT				☐ Level 3 (CLP Forms)				☐ UST / RG -411						
☐ 3 Day EMERGENCY								☐ TRRP Checklist										
TAT Starts Day received by Lab, if received by 5:00 pm												FED-EX / UPS: Tracking #						
Relinquished by Sampler:				Date Time:				Received By:				Date Time:						
1. <i>Tanner Evans - 1556</i>								1. <i>[Signature]</i>				2. <i>12/31/2015</i>						
Relinquished by:				Date Time:				Received By:				Date Time:						
3.								3.				4.						
Relinquished by:				Date Time:				Received By:				Date Time:						
5.								5.										
Temp: IR ID: R-8				CF: + 0.1				Corrected Temp: 0.6°C										



XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: KJE Enviromental & Civil Engineering

Date/ Time Received: 12/13/2016 08:15:00 PM

Work Order #: 542067

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	-.6
#2 *Shipping container in good condition?	N/A
#3 *Samples received on ice?	Yes
#4 *Custody Seal present on shipping container/ cooler?	N/A
#5 *Custody Seals intact on shipping container/ cooler?	N/A
#6 Custody Seals intact on sample bottles?	N/A
#7 *Custody Seals Signed and dated?	N/A
#8 *Chain of Custody present?	Yes
#9 Sample instructions complete on Chain of Custody?	Yes
#10 Any missing/extra samples?	No
#11 Chain of Custody signed when relinquished/ received?	Yes
#12 Chain of Custody agrees with sample label(s)?	Yes
#13 Container label(s) legible and intact?	Yes
#14 Sample matrix/ properties agree with Chain of Custody?	Yes
#15 Samples in proper container/ bottle?	Yes
#16 Samples properly preserved?	Yes
#17 Sample container(s) intact?	Yes
#18 Sufficient sample amount for indicated test(s)?	Yes
#19 All samples received within hold time?	Yes
#20 Subcontract of sample(s)?	Yes Houston
#21 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#22 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	N/A
#23 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Jessica Kramer

Jessica Kramer

Date: 12/14/2016

Checklist reviewed by:

Kelsey Brooks

Kelsey Brooks

Date: 12/14/2016

Analytical Report 542184
for
KJE Enviromental & Civil Engineering

Project Manager: James Fox
OWL Bobcat/Red Hills Pipeline Release

30-DEC-16

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

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

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



30-DEC-16

Project Manager: **James Fox**
KJE Enviromental & Civil Engineering
500 Mosley Rd
Aubrey, TX 76227

Reference: XENCO Report No(s): **542184**
OWL Bobcat/Red Hills Pipeline Release
Project Address: Jal, NM

James Fox:

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) 542184. 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. 542184 will be filed for 60 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

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

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KJE Enviromental & Civil Engineering, Aubrey, TX

OWL Bobcat/Red Hills Pipeline Release

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
(2) SB20 0-2	S	12-14-16 07:30	0 - 2	542184-001
(2) SB20 2-4	S	12-14-16 07:35	2 - 4	542184-002
(2) SB20 4-6	S	12-14-16 07:40	4 - 6	542184-003
(2) SB20 6-8	S	12-14-16 07:45	6 - 8	542184-004
(2) SB2 8-10	S	12-14-16 07:50	8 - 10	542184-005
(2) SB20 10-12	S	12-14-16 08:00	10 - 12	542184-006
(2) SB21 0-2	S	12-14-16 08:15	0 - 2	542184-007
(2) SB21 2-4	S	12-14-16 08:20	2 - 4	542184-008
(2) SB21 4-6	S	12-14-16 08:25	4 - 6	542184-009
(2) SB21 6-8	S	12-14-16 08:30	6 - 8	542184-010
(2) SB21 6-8 SPLIT	S	12-14-16 08:30	6 - 8	542184-011
(2) SB21 8-10	S	12-14-16 08:30	8 - 10	542184-012
(2) SB21 10-11	S	12-14-16 08:30	10 - 11	542184-013
(2) SB22 0-2	S	12-14-16 08:55	0 - 2	542184-014
(2) SB22 2-4	S	12-14-16 09:00	2 - 4	542184-015
(2) SB22 4-6	S	12-14-16 09:05	4 - 6	542184-016
(2) SB22 6-8	S	12-14-16 09:10	6 - 8	542184-017
(2) SB22 8-10	S	12-14-16 09:15	8 - 10	542184-018
(2) SB23 0-2	S	12-14-16 09:30	0 - 2	542184-019
(2) SB23 2-4	S	12-14-16 09:35	2 - 4	542184-020
(2) SB23 4-6	S	12-14-16 09:40	4 - 6	542184-021
(2) SB23 6-8	S	12-14-16 09:43	6 - 8	542184-022
(2) SB23 8-10	S	12-14-16 09:45	8 - 10	542184-023
(2) SB24 0-2	S	12-14-16 10:15	0 - 2	542184-024
(2) SB24 2-4	S	12-14-16 10:20	2 - 4	542184-025
(2) SB24 4-6	S	12-14-16 10:25	4 - 6	542184-026
(2) SB24 6-8	S	12-14-16 10:35	6 - 8	542184-027
(2) SB24 8-10	S	12-14-16 10:55	8 - 10	542184-028
(2) SB25 0-2	S	12-14-16 11:00	0 - 2	542184-029
(2) SB25 2-4	S	12-14-16 11:05	2 - 4	542184-030
(2) SB25 4-6	S	12-14-16 11:07	4 - 6	542184-031
(2) SB25 6-8	S	12-14-16 11:10	6 - 8	542184-032
(2) SB25 8-10	S	12-14-16 11:15	8 - 10	542184-033
(2) SB26 0-2	S	12-14-16 11:30	0 - 2	542184-034
(2) SB26 0-2 SPLIT	S	12-14-16 11:35	0 - 2	542184-035
(2) SB26 2-4	S	12-14-16 11:40	2 - 4	542184-036
(2) SB26 4-6	S	12-14-16 11:43	4 - 6	542184-037
(2) SB26 6-8	S	12-14-16 11:47	6 - 8	542184-038
(2) SB26 8-10	S	12-14-16 11:50	8 - 10	542184-039
(2) SB27 0-2	S	12-14-16 13:30	0 - 2	542184-040
(2) SB27 2-4	S	12-14-16 13:35	2 - 4	542184-041
(2) SB27 4-6	S	12-14-16 13:37	4 - 6	542184-042
(2) SB27 6-8	S	12-14-16 13:40	6 - 8	542184-043

KJE Enviromental & Civil Engineering, Aubrey, TX

OWL Bobcat/Red Hills Pipeline Release

(2) SB27 8-10	S	12-14-16 13:45	8 - 10	542184-044
(2) SB28 0-2	S	12-14-16 14:00	0 - 2	542184-045
(2) SB28 2-4	S	12-14-16 14:03	2 - 4	542184-046
(2) SB28 4-6	S	12-14-16 14:05	4 - 6	542184-047
(2) SB28 6-8	S	12-14-16 14:07	6 - 8	542184-048
(2) SB28 8-10	S	12-14-16 14:10	8 - 10	542184-049
(2) SB29 0-2	S	12-14-16 14:15	0 - 2	542184-050
(2) SB29 2-4	S	12-14-16 14:20	2 - 4	542184-051
(2) SB29 4-6	S	12-14-16 14:23	4 - 6	542184-052
(2) SB29 6-8	S	12-14-16 14:27	6 - 8	542184-053
(2) SB29 8-10	S	12-14-16 14:30	8 - 10	542184-054
(2) SB30 0-2	S	12-14-16 14:50	0 - 2	542184-055
(2) SB30 0-2 SPLIT	S	12-14-16 14:53	0 - 2	542184-056
(2) SB30 2-4	S	12-14-16 14:55	2 - 4	542184-057
(2) SB30 4-6	S	12-14-16 14:57	4 - 6	542184-058
(2) SB30 6-8	S	12-14-16 14:59	6 - 8	542184-059
(2) SB30 8-10	S	12-14-16 15:00	8 - 10	542184-060
(2) SB30 10-12	S	12-14-16 15:03	10 - 12	542184-061
(2) SB30 12-14	S	12-14-16 15:05	12 - 14	542184-062
(2) SB31 0-2	S	12-14-16 15:10	0 - 2	542184-063
(2) SB31 2-4	S	12-14-16 15:15	2 - 4	542184-064
(2) SB31 4-6	S	12-14-16 15:25	4 - 6	542184-065
(2) SB31 6-8	S	12-14-16 15:35	6 - 8	542184-066
(2) SB32 0-2	S	12-14-16 15:40	0 - 2	542184-067
(2) SB32 2-4	S	12-14-16 15:45	2 - 4	542184-068
(2) SB32 4-6	S	12-14-16 15:50	4 - 6	542184-069
(2) SB32 6-8	S	12-14-16 16:00	6 - 8	542184-070
(2) SB32 8-10	S	12-14-16 16:05	8 - 10	542184-071



CASE NARRATIVE



Client Name: KJE Enviromental & Civil Engineering

Project Name: OWL Bobcat/Red Hills Pipeline Release

Project ID:
Work Order Number(s): 542184

Report Date: 30-DEC-16
Date Received: 12/14/2016

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3005975 BTEX by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3006002 BTEX by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3006289 BTEX-MTBE by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3006325 BTEX by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3006339 BTEX by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3006480 BTEX by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.



Hits Summary 542184



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(2) SB20 0-2**

Matrix : Soil

% Moisture :

Lab Sample Id : 542184-001

Date Collected : 12.14.16 07.30

Basis : Wet Weight

Sample Depth : 0 - 2

Date Received : 12.14.16 19.55

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006481

Date Prep: 12.27.16 08.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4600	mg/kg	12.27.16 11.30		5

Analytical Method : TPH By SW8015 Mod

Prep Method: TX1005P

Seq Number 3006413

Date Prep: 12.19.16 17.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	38.1	mg/kg	12.19.16 23.28		1
Total TPH	PHC635	38.1	mg/kg	12.19.16 23.28		1

Sample Id : **(2) SB20 2-4**

Matrix : Soil

% Moisture :

Lab Sample Id : 542184-002

Date Collected : 12.14.16 07.35

Basis : Wet Weight

Sample Depth : 2 - 4

Date Received : 12.14.16 19.55

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006481

Date Prep: 12.27.16 08.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5030	mg/kg	12.27.16 11.51		5



Hits Summary 542184



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(2) SB20 4-6**

Matrix : Soil

% Moisture :

Lab Sample Id : 542184-003

Date Collected : 12.14.16 07.40

Basis : Wet Weight

Sample Depth : 4 - 6

Date Received : 12.14.16 19.55

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006481

Date Prep: 12.27.16 08.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4000	mg/kg	12.27.16 11.58		5

Analytical Method : TPH By SW8015 Mod

Prep Method: TX1005P

Seq Number 3006413

Date Prep: 12.19.16 17.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	51.9	mg/kg	12.21.16 16.03		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	16.9	mg/kg	12.21.16 16.03		1
Total TPH	PHC635	68.8	mg/kg	12.21.16 16.03		1

Sample Id : **(2) SB20 6-8**

Matrix : Soil

% Moisture :

Lab Sample Id : 542184-004

Date Collected : 12.14.16 07.45

Basis : Wet Weight

Sample Depth : 6 - 8

Date Received : 12.14.16 19.55

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006481

Date Prep: 12.27.16 08.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4670	mg/kg	12.27.16 12.19		5

Sample Id : **(2) SB2 8-10**

Matrix : Soil

% Moisture :

Lab Sample Id : 542184-005

Date Collected : 12.14.16 07.50

Basis : Wet Weight

Sample Depth : 8 - 10

Date Received : 12.14.16 19.55

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006481

Date Prep: 12.27.16 08.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	159	mg/kg	12.27.16 12.26		1



Hits Summary 542184



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(2) SB20 10-12**

Lab Sample Id : 542184-006

Sample Depth : 10 - 12

Matrix : Soil

Date Collected : 12.14.16 08.00

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006481

Prep Method: E300P

Date Prep: 12.27.16 08.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	18.8	mg/kg	12.27.16 12.33		1

Sample Id : **(2) SB21 0-2**

Lab Sample Id : 542184-007

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.14.16 08.15

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006481

Prep Method: E300P

Date Prep: 12.27.16 08.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	539	mg/kg	12.27.16 12.40		1

Sample Id : **(2) SB21 2-4**

Lab Sample Id : 542184-008

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.14.16 08.20

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006481

Prep Method: E300P

Date Prep: 12.27.16 08.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4210	mg/kg	12.27.16 12.48		5

Sample Id : **(2) SB21 4-6**

Lab Sample Id : 542184-009

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.14.16 08.25

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006481

Prep Method: E300P

Date Prep: 12.27.16 08.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	646	mg/kg	12.27.16 12.55		1

KJE Enviromental & Civil Engineering, Aubrey, TX

OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(2) SB21 10-11**

Lab Sample Id : 542184-013

Sample Depth : 10 - 11

Matrix : Soil

Date Collected : 12.14.16 08.30

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006481

Prep Method: E300P

Date Prep: 12.27.16 08.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.50	mg/kg	12.27.16 13.51		1

Sample Id : **(2) SB22 0-2**

Lab Sample Id : 542184-014

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.14.16 08.55

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006481

Prep Method: E300P

Date Prep: 12.27.16 08.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4160	mg/kg	12.27.16 13.58		5

Analytical Method : TPH By SW8015 Mod

Seq Number 3006413

Prep Method: TX1005P

Date Prep: 12.19.16 17.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	82.9	mg/kg	12.21.16 22.30		1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	735	mg/kg	12.21.16 22.30		1
Total TPH	PHC635	818	mg/kg	12.21.16 22.30		1

Sample Id : **(2) SB22 2-4**

Lab Sample Id : 542184-015

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.14.16 09.00

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006481

Prep Method: E300P

Date Prep: 12.27.16 08.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6570	mg/kg	12.27.16 14.05		10



Hits Summary 542184



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(2) SB22 4-6**

Lab Sample Id : 542184-016

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.14.16 09.05

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006481

Prep Method: E300P

Date Prep: 12.27.16 08.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	45.0	mg/kg	12.27.16 14.12		1

Sample Id : **(2) SB22 6-8**

Lab Sample Id : 542184-017

Sample Depth : 6 - 8

Matrix : Soil

Date Collected : 12.14.16 09.10

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006481

Prep Method: E300P

Date Prep: 12.27.16 08.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14.6	mg/kg	12.27.16 14.19		1

Sample Id : **(2) SB22 8-10**

Lab Sample Id : 542184-018

Sample Depth : 8 - 10

Matrix : Soil

Date Collected : 12.14.16 09.15

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006481

Prep Method: E300P

Date Prep: 12.27.16 08.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	31.8	mg/kg	12.27.16 14.26		1

Sample Id : **(2) SB23 0-2**

Lab Sample Id : 542184-019

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.14.16 09.30

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006481

Prep Method: E300P

Date Prep: 12.27.16 08.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	278	mg/kg	12.27.16 14.33		1



Hits Summary 542184



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(2) SB23 2-4**

Lab Sample Id : 542184-020

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.14.16 09.35

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006481

Prep Method: E300P

Date Prep: 12.27.16 08.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	56.2	mg/kg	12.27.16 14.40		1

Sample Id : **(2) SB23 4-6**

Lab Sample Id : 542184-021

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.14.16 09.40

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006484

Prep Method: E300P

Date Prep: 12.27.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	907	mg/kg	12.27.16 15.23		1

Sample Id : **(2) SB23 6-8**

Lab Sample Id : 542184-022

Sample Depth : 6 - 8

Matrix : Soil

Date Collected : 12.14.16 09.43

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006484

Prep Method: E300P

Date Prep: 12.27.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	390	mg/kg	12.27.16 15.44		1

Sample Id : **(2) SB23 8-10**

Lab Sample Id : 542184-023

Sample Depth : 8 - 10

Matrix : Soil

Date Collected : 12.14.16 09.45

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006484

Prep Method: E300P

Date Prep: 12.27.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	206	mg/kg	12.27.16 15.51		1



Hits Summary 542184



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(2) SB24 0-2**

Lab Sample Id : 542184-024

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.14.16 10.15

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006484

Prep Method: E300P

Date Prep: 12.27.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.90	mg/kg	12.27.16 15.58		1

Sample Id : **(2) SB24 2-4**

Lab Sample Id : 542184-025

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.14.16 10.20

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006484

Prep Method: E300P

Date Prep: 12.27.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.50	mg/kg	12.27.16 16.05		1

Sample Id : **(2) SB24 4-6**

Lab Sample Id : 542184-026

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.14.16 10.25

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006484

Prep Method: E300P

Date Prep: 12.27.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.45	mg/kg	12.27.16 16.26		1

Sample Id : **(2) SB24 6-8**

Lab Sample Id : 542184-027

Sample Depth : 6 - 8

Matrix : Soil

Date Collected : 12.14.16 10.35

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006484

Prep Method: E300P

Date Prep: 12.27.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.97	mg/kg	12.27.16 16.33		1



Hits Summary 542184



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(2) SB24 8-10**

Matrix : Soil

% Moisture :

Lab Sample Id : 542184-028

Date Collected : 12.14.16 10.55

Basis : Wet Weight

Sample Depth : 8 - 10

Date Received : 12.14.16 19.55

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006484

Date Prep: 12.27.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	19.8	mg/kg	12.27.16 16.40		1

Sample Id : **(2) SB25 0-2**

Matrix : Soil

% Moisture :

Lab Sample Id : 542184-029

Date Collected : 12.14.16 11.00

Basis : Wet Weight

Sample Depth : 0 - 2

Date Received : 12.14.16 19.55

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006484

Date Prep: 12.27.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	20.3	mg/kg	12.27.16 16.47		1

Sample Id : **(2) SB25 2-4**

Matrix : Soil

% Moisture :

Lab Sample Id : 542184-030

Date Collected : 12.14.16 11.05

Basis : Wet Weight

Sample Depth : 2 - 4

Date Received : 12.14.16 19.55

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006484

Date Prep: 12.27.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8.91	mg/kg	12.27.16 16.54		1

Sample Id : **(2) SB25 8-10**

Matrix : Soil

% Moisture :

Lab Sample Id : 542184-033

Date Collected : 12.14.16 11.15

Basis : Wet Weight

Sample Depth : 8 - 10

Date Received : 12.14.16 19.55

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006484

Date Prep: 12.27.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.06	mg/kg	12.27.16 17.43		1



Hits Summary 542184



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(2) SB26 0-2**

Lab Sample Id : 542184-034

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.14.16 11.30

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006484

Prep Method: E300P

Date Prep: 12.27.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1470	mg/kg	12.27.16 17.51		1

Sample Id : **(2) SB26 0-2 SPLIT**

Lab Sample Id : 542184-035

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.14.16 11.35

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006484

Prep Method: E300P

Date Prep: 12.27.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1630	mg/kg	12.27.16 17.58		1

Sample Id : **(2) SB26 2-4**

Lab Sample Id : 542184-036

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.14.16 11.40

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006484

Prep Method: E300P

Date Prep: 12.27.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1940	mg/kg	12.27.16 18.05		1

Sample Id : **(2) SB26 4-6**

Lab Sample Id : 542184-037

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.14.16 11.43

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006484

Prep Method: E300P

Date Prep: 12.27.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.46	mg/kg	12.27.16 18.12		1



Hits Summary 542184



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(2) SB26 6-8**

Lab Sample Id : 542184-038

Sample Depth : 6 - 8

Matrix : Soil

Date Collected : 12.14.16 11.47

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006484

Prep Method: E300P

Date Prep: 12.27.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.44	mg/kg	12.27.16 18.19		1

Sample Id : **(2) SB27 0-2**

Lab Sample Id : 542184-040

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.14.16 13.30

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006484

Prep Method: E300P

Date Prep: 12.27.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1210	mg/kg	12.27.16 18.33		1

Sample Id : **(2) SB27 2-4**

Lab Sample Id : 542184-041

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.14.16 13.35

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006512

Prep Method: E300P

Date Prep: 12.27.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	836	mg/kg	12.28.16 15.47		1

Sample Id : **(2) SB27 4-6**

Lab Sample Id : 542184-042

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.14.16 13.37

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006512

Prep Method: E300P

Date Prep: 12.27.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14.8	mg/kg	12.27.16 19.36		1



Hits Summary 542184



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(2) SB27 6-8**

Lab Sample Id : 542184-043

Sample Depth : 6 - 8

Matrix : Soil

Date Collected : 12.14.16 13.40

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006512

Prep Method: E300P

Date Prep: 12.27.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.03	mg/kg	12.27.16 19.43		1

Sample Id : **(2) SB27 8-10**

Lab Sample Id : 542184-044

Sample Depth : 8 - 10

Matrix : Soil

Date Collected : 12.14.16 13.45

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006512

Prep Method: E300P

Date Prep: 12.27.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.1	mg/kg	12.27.16 19.50		1

Sample Id : **(2) SB28 0-2**

Lab Sample Id : 542184-045

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.14.16 14.00

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006512

Prep Method: E300P

Date Prep: 12.27.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2120	mg/kg	12.27.16 19.57		5

Sample Id : **(2) SB28 2-4**

Lab Sample Id : 542184-046

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.14.16 14.03

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006512

Prep Method: E300P

Date Prep: 12.27.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3610	mg/kg	12.27.16 20.18		5



Hits Summary 542184



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(2) SB28 4-6**

Lab Sample Id : 542184-047

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.14.16 14.05

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006512

Prep Method: E300P

Date Prep: 12.27.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6290	mg/kg	12.27.16 20.26		10

Sample Id : **(2) SB28 6-8**

Lab Sample Id : 542184-048

Sample Depth : 6 - 8

Matrix : Soil

Date Collected : 12.14.16 14.07

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006512

Prep Method: E300P

Date Prep: 12.27.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	645	mg/kg	12.27.16 20.33		1

Sample Id : **(2) SB29 0-2**

Lab Sample Id : 542184-050

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.14.16 14.15

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006512

Prep Method: E300P

Date Prep: 12.27.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	28.4	mg/kg	12.27.16 20.47		1

Sample Id : **(2) SB29 2-4**

Lab Sample Id : 542184-051

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.14.16 14.20

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006512

Prep Method: E300P

Date Prep: 12.27.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5930	mg/kg	12.27.16 20.54		10



Hits Summary 542184



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(2) SB29 4-6**

Lab Sample Id : 542184-052

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.14.16 14.23

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006512

Prep Method: E300P

Date Prep: 12.27.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5800	mg/kg	12.27.16 21.29		10

Sample Id : **(2) SB29 6-8**

Lab Sample Id : 542184-053

Sample Depth : 6 - 8

Matrix : Soil

Date Collected : 12.14.16 14.27

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006512

Prep Method: E300P

Date Prep: 12.27.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1520	mg/kg	12.27.16 21.36		1

Sample Id : **(2) SB29 8-10**

Lab Sample Id : 542184-054

Sample Depth : 8 - 10

Matrix : Soil

Date Collected : 12.14.16 14.30

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006512

Prep Method: E300P

Date Prep: 12.27.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	216	mg/kg	12.27.16 21.43		1

Sample Id : **(2) SB30 0-2**

Lab Sample Id : 542184-055

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.14.16 14.50

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006512

Prep Method: E300P

Date Prep: 12.27.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	266	mg/kg	12.27.16 21.50		1



Hits Summary 542184



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(2) SB30 0-2 SPLIT**

Matrix : Soil

% Moisture :

Lab Sample Id : 542184-056

Date Collected : 12.14.16 14.53

Basis : Wet Weight

Sample Depth : 0 - 2

Date Received : 12.14.16 19.55

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006512

Date Prep: 12.27.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	526	mg/kg	12.27.16 21.57		1

Sample Id : **(2) SB30 2-4**

Matrix : Soil

% Moisture :

Lab Sample Id : 542184-057

Date Collected : 12.14.16 14.55

Basis : Wet Weight

Sample Depth : 2 - 4

Date Received : 12.14.16 19.55

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006512

Date Prep: 12.27.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4060	mg/kg	12.27.16 22.04		5

Sample Id : **(2) SB30 4-6**

Matrix : Soil

% Moisture :

Lab Sample Id : 542184-058

Date Collected : 12.14.16 14.57

Basis : Wet Weight

Sample Depth : 4 - 6

Date Received : 12.14.16 19.55

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006512

Date Prep: 12.27.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3120	mg/kg	12.27.16 22.11		5

Sample Id : **(2) SB30 6-8**

Matrix : Soil

% Moisture :

Lab Sample Id : 542184-059

Date Collected : 12.14.16 14.59

Basis : Wet Weight

Sample Depth : 6 - 8

Date Received : 12.14.16 19.55

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006512

Date Prep: 12.27.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5050	mg/kg	12.27.16 22.18		5



Hits Summary 542184



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(2) SB30 8-10**

Matrix : Soil

% Moisture :

Lab Sample Id : 542184-060

Date Collected : 12.14.16 15.00

Basis : Wet Weight

Sample Depth : 8 - 10

Date Received : 12.14.16 19.55

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006512

Date Prep: 12.27.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3200	mg/kg	12.27.16 22.25		5

Sample Id : **(2) SB30 10-12**

Matrix : Soil

% Moisture :

Lab Sample Id : 542184-061

Date Collected : 12.14.16 15.03

Basis : Wet Weight

Sample Depth : 10 - 12

Date Received : 12.14.16 19.55

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006517

Date Prep: 12.27.16 16.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4890	mg/kg	12.27.16 23.08		5

Sample Id : **(2) SB30 12-14**

Matrix : Soil

% Moisture :

Lab Sample Id : 542184-062

Date Collected : 12.14.16 15.05

Basis : Wet Weight

Sample Depth : 12 - 14

Date Received : 12.14.16 19.55

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006517

Date Prep: 12.27.16 16.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	124	mg/kg	12.27.16 23.29		1

Sample Id : **(2) SB31 0-2**

Matrix : Soil

% Moisture :

Lab Sample Id : 542184-063

Date Collected : 12.14.16 15.10

Basis : Wet Weight

Sample Depth : 0 - 2

Date Received : 12.14.16 19.55

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006517

Date Prep: 12.27.16 16.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.59	mg/kg	12.27.16 23.36		1



Hits Summary 542184



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(2) SB31 2-4**

Lab Sample Id : 542184-064

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.14.16 15.15

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006517

Prep Method: E300P

Date Prep: 12.27.16 16.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8.34	mg/kg	12.27.16 23.43		1

Sample Id : **(2) SB32 0-2**

Lab Sample Id : 542184-067

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.14.16 15.40

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006517

Prep Method: E300P

Date Prep: 12.27.16 16.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.43	mg/kg	12.28.16 00.18		1

Sample Id : **(2) SB32 8-10**

Lab Sample Id : 542184-071

Sample Depth : 8 - 10

Matrix : Soil

Date Collected : 12.14.16 16.05

Date Received : 12.14.16 19.55

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006517

Prep Method: E300P

Date Prep: 12.27.16 16.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.8	mg/kg	12.28.16 00.46		1



Certificate of Analysis Summary 542184

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Wed Dec-14-16 07:55 pm

Report Date: 30-DEC-16

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	542184-001	542184-002	542184-003	542184-004	542184-005	542184-006
	<i>Field Id:</i>	(2) SB20 0-2	(2) SB20 2-4	(2) SB20 4-6	(2) SB20 6-8	(2) SB2 8-10	(2) SB20 10-12
	<i>Depth:</i>	0-2	2-4	4-6	6-8	8-10	10-12
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-14-16 07:30	Dec-14-16 07:35	Dec-14-16 07:40	Dec-14-16 07:45	Dec-14-16 07:50	Dec-14-16 08:00
BTEX by SW 8260B SUB: TX104704215	<i>Extracted:</i>	Dec-19-16 11:01	Dec-28-16 11:10	Dec-16-16 19:25	Dec-16-16 19:26	Dec-16-16 19:27	Dec-16-16 19:28
	<i>Analyzed:</i>	Dec-19-16 11:58	Dec-28-16 12:46	Dec-16-16 23:52	Dec-17-16 00:08	Dec-17-16 00:24	Dec-17-16 00:39
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00101 0.00101	<0.000994 0.000994	<0.000996 0.000996	<0.00100 0.00100	<0.000992 0.000992	<0.00100 0.00100
Toluene		<0.00101 0.00101	<0.000994 0.000994	<0.000996 0.000996	<0.00100 0.00100	<0.000992 0.000992	<0.00100 0.00100
Ethylbenzene		<0.00101 0.00101	<0.000994 0.000994	<0.000996 0.000996	<0.00100 0.00100	<0.000992 0.000992	<0.00100 0.00100
m,p-Xylenes		<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
o-Xylene		<0.00101 0.00101	<0.000994 0.000994	<0.000996 0.000996	<0.00100 0.00100	<0.000992 0.000992	<0.00100 0.00100
Total Xylenes		<0.00101 0.00101	<0.000994 0.000994	<0.000996 0.000996	<0.00100 0.00100	<0.000992 0.000992	<0.00100 0.00100
Total BTEX		<0.00101 0.00101	<0.000994 0.000994	<0.000996 0.000996	<0.00100 0.00100	<0.000992 0.000992	<0.00100 0.00100
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Dec-27-16 08:00	Dec-27-16 08:00	Dec-27-16 08:00	Dec-27-16 08:00	Dec-27-16 08:00	Dec-27-16 08:00
	<i>Analyzed:</i>	Dec-27-16 11:30	Dec-27-16 11:51	Dec-27-16 11:58	Dec-27-16 12:19	Dec-27-16 12:26	Dec-27-16 12:33
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		4600 25.0	5030 25.0	4000 25.0	4670 25.0	159 5.00	18.8 5.00
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-19-16 17:00	Dec-19-16 17:00	Dec-19-16 17:00	Dec-19-16 17:00	Dec-19-16 17:00	Dec-19-16 17:00
	<i>Analyzed:</i>	Dec-19-16 23:28	Dec-20-16 00:44	Dec-21-16 16:03	Dec-20-16 01:34	Dec-20-16 02:00	Dec-20-16 02:25
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		38.1 15.0	<15.0 15.0	51.9 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	16.9 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0
Total TPH		38.1 15.0	<15.0 15.0	68.8 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0

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Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542184

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Wed Dec-14-16 07:55 pm

Report Date: 30-DEC-16

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542184-007	542184-008	542184-009	542184-010	542184-011	542184-012
	Field Id:	(2) SB21 0-2	(2) SB21 2-4	(2) SB21 4-6	(2) SB21 6-8	(2) SB21 6-8 SPLIT	(2) SB21 8-10
	Depth:	0-2	2-4	4-6	6-8	6-8	8-10
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-14-16 08:15	Dec-14-16 08:20	Dec-14-16 08:25	Dec-14-16 08:30	Dec-14-16 08:30	Dec-14-16 08:30
BTEX by SW 8260B SUB: TX104704215	Extracted:	Dec-19-16 11:02	Dec-19-16 11:03	Dec-19-16 11:04	Dec-19-16 11:05	Dec-19-16 11:06	Dec-19-16 11:07
	Analyzed:	Dec-19-16 12:29	Dec-19-16 12:48	Dec-19-16 13:07	Dec-19-16 13:25	Dec-19-16 13:44	Dec-19-16 14:03
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000990 0.000990	<0.00101 0.00101	<0.00100 0.00100	<0.000990 0.000990	<0.00101 0.00101	<0.000990 0.000990
Toluene		<0.000990 0.000990	<0.00101 0.00101	<0.00100 0.00100	<0.000990 0.000990	<0.00101 0.00101	<0.000990 0.000990
Ethylbenzene		<0.000990 0.000990	<0.00101 0.00101	<0.00100 0.00100	<0.000990 0.000990	<0.00101 0.00101	<0.000990 0.000990
m,p-Xylenes		<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00202 0.00202	<0.00198 0.00198
o-Xylene		<0.000990 0.000990	<0.00101 0.00101	<0.00100 0.00100	<0.000990 0.000990	<0.00101 0.00101	<0.000990 0.000990
Total Xylenes		<0.000990 0.000990	<0.00101 0.00101	<0.00100 0.00100	<0.000990 0.000990	<0.00101 0.00101	<0.000990 0.000990
Total BTEX		<0.000990 0.000990	<0.00101 0.00101	<0.00100 0.00100	<0.000990 0.000990	<0.00101 0.00101	<0.000990 0.000990
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-27-16 08:00	Dec-27-16 08:00	Dec-27-16 08:00	Dec-27-16 08:00	Dec-27-16 08:00	Dec-27-16 08:00
	Analyzed:	Dec-27-16 12:40	Dec-27-16 12:48	Dec-27-16 12:55	Dec-27-16 13:02	Dec-27-16 13:09	Dec-27-16 13:44
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		539 5.00	4210 25.0	646 5.00	<5.00 5.00	<5.00 5.00	<5.00 5.00
TPH By SW8015 Mod	Extracted:	Dec-19-16 17:00	Dec-19-16 17:00	Dec-19-16 17:00	Dec-19-16 17:00	Dec-26-16 13:00	Dec-19-16 17:00
	Analyzed:	Dec-20-16 02:51	Dec-20-16 03:17	Dec-21-16 16:25	Dec-21-16 20:32	Dec-27-16 00:52	Dec-22-16 07:58
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542184

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Wed Dec-14-16 07:55 pm

Report Date: 30-DEC-16

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542184-013	542184-014	542184-015	542184-016	542184-017	542184-018
	Field Id:	(2) SB21 10-11	(2) SB22 0-2	(2) SB22 2-4	(2) SB22 4-6	(2) SB22 6-8	(2) SB22 8-10
	Depth:	10-11	0-2	2-4	4-6	6-8	8-10
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-14-16 08:30	Dec-14-16 08:55	Dec-14-16 09:00	Dec-14-16 09:05	Dec-14-16 09:10	Dec-14-16 09:15
BTEX by SW 8260B SUB: TX104704215	Extracted:	Dec-19-16 11:08	Dec-19-16 11:09	Dec-18-16 13:09	Dec-16-16 19:10	Dec-18-16 13:10	Dec-18-16 13:11
	Analyzed:	Dec-19-16 14:21	Dec-19-16 14:40	Dec-18-16 17:35	Dec-16-16 20:01	Dec-18-16 17:50	Dec-18-16 18:05
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000990 0.000990	<0.000992 0.000992	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101
Toluene		<0.000990 0.000990	<0.000992 0.000992	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101
Ethylbenzene		<0.000990 0.000990	<0.000992 0.000992	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101
m,p-Xylenes		<0.00198 0.00198	<0.00198 0.00198	<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201	<0.00202 0.00202
o-Xylene		<0.000990 0.000990	<0.000992 0.000992	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101
Total Xylenes		<0.000990 0.000990	<0.000992 0.000992	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101
Total BTEX		<0.000990 0.000990	<0.000992 0.000992	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-27-16 08:00	Dec-27-16 08:00	Dec-27-16 08:00	Dec-27-16 08:00	Dec-27-16 08:00	Dec-27-16 08:00
	Analyzed:	Dec-27-16 13:51	Dec-27-16 13:58	Dec-27-16 14:05	Dec-27-16 14:12	Dec-27-16 14:19	Dec-27-16 14:26
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		6.50 5.00	4160 25.0	6570 50.0	45.0 5.00	14.6 5.00	31.8 5.00
TPH By SW8015 Mod	Extracted:	Dec-19-16 17:00	Dec-19-16 17:00	Dec-19-16 17:00	Dec-19-16 17:00	Dec-19-16 17:00	Dec-19-16 17:00
	Analyzed:	Dec-21-16 22:06	Dec-21-16 22:30	Dec-21-16 22:53	Dec-21-16 23:16	Dec-20-16 07:29	Dec-20-16 07:54
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	82.9 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	735 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	818 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542184

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Wed Dec-14-16 07:55 pm

Report Date: 30-DEC-16

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542184-019	542184-020	542184-021	542184-022	542184-023	542184-024
	Field Id:	(2) SB23 0-2	(2) SB23 2-4	(2) SB23 4-6	(2) SB23 6-8	(2) SB23 8-10	(2) SB24 0-2
	Depth:	0-2	2-4	4-6	6-8	8-10	0-2
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-14-16 09:30	Dec-14-16 09:35	Dec-14-16 09:40	Dec-14-16 09:43	Dec-14-16 09:45	Dec-14-16 10:15
BTEX by SW 8260B SUB: TX104704215	Extracted:	Dec-18-16 13:12	Dec-18-16 13:13	Dec-18-16 13:00	Dec-19-16 11:10	Dec-19-16 11:11	Dec-19-16 11:12
	Analyzed:	Dec-18-16 18:20	Dec-18-16 18:35	Dec-18-16 15:18	Dec-19-16 14:58	Dec-19-16 15:17	Dec-19-16 15:36
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000994 0.000994	<0.000992 0.000992	<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.000996 0.000996
Toluene		<0.000994 0.000994	<0.000992 0.000992	<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.000996 0.000996
Ethylbenzene		<0.000994 0.000994	<0.000992 0.000992	<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.000996 0.000996
m,p-Xylenes		<0.00199 0.00199	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199
o-Xylene		<0.000994 0.000994	<0.000992 0.000992	<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.000996 0.000996
Total Xylenes		<0.000994 0.000994	<0.000992 0.000992	<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.000996 0.000996
Total BTEX		<0.000994 0.000994	<0.000992 0.000992	<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.000996 0.000996
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-27-16 08:00	Dec-27-16 08:00	Dec-27-16 12:00	Dec-27-16 12:00	Dec-27-16 12:00	Dec-27-16 12:00
	Analyzed:	Dec-27-16 14:33	Dec-27-16 14:40	Dec-27-16 15:23	Dec-27-16 15:44	Dec-27-16 15:51	Dec-27-16 15:58
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		278 5.00	56.2 5.00	907 5.00	390 5.00	206 5.00	6.90 5.00
TPH By SW8015 Mod	Extracted:	Dec-19-16 17:00	Dec-19-16 17:00	Dec-19-16 17:00	Dec-19-16 17:00	Dec-19-16 17:00	Dec-19-16 17:00
	Analyzed:	Dec-20-16 08:19	Dec-20-16 08:45	Dec-20-16 10:52	Dec-20-16 12:06	Dec-20-16 12:33	Dec-20-16 13:00
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542184

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Wed Dec-14-16 07:55 pm

Report Date: 30-DEC-16

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542184-025	542184-026	542184-027	542184-028	542184-029	542184-030
	Field Id:	(2) SB24 2-4	(2) SB24 4-6	(2) SB24 6-8	(2) SB24 8-10	(2) SB25 0-2	(2) SB25 2-4
	Depth:	2-4	4-6	6-8	8-10	0-2	2-4
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-14-16 10:20	Dec-14-16 10:25	Dec-14-16 10:35	Dec-14-16 10:55	Dec-14-16 11:00	Dec-14-16 11:05
BTEX by SW 8260B SUB: TX104704215	Extracted:	Dec-19-16 11:13	Dec-19-16 11:14	Dec-19-16 11:15	Dec-19-16 11:16	Dec-19-16 11:17	Dec-19-16 11:18
	Analyzed:	Dec-19-16 15:54	Dec-19-16 16:13	Dec-19-16 16:32	Dec-19-16 16:50	Dec-19-16 17:08	Dec-19-16 17:27
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00101 0.00101	<0.000994 0.000994	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
Toluene		<0.00101 0.00101	<0.000994 0.000994	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
Ethylbenzene		<0.00101 0.00101	<0.000994 0.000994	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
m,p-Xylenes		<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00201 0.00201
o-Xylene		<0.00101 0.00101	<0.000994 0.000994	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
Total Xylenes		<0.00101 0.00101	<0.000994 0.000994	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
Total BTEX		<0.00101 0.00101	<0.000994 0.000994	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-27-16 12:00	Dec-27-16 12:00	Dec-27-16 12:00	Dec-27-16 12:00	Dec-27-16 12:00	Dec-27-16 12:00
	Analyzed:	Dec-27-16 16:05	Dec-27-16 16:26	Dec-27-16 16:33	Dec-27-16 16:40	Dec-27-16 16:47	Dec-27-16 16:54
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		7.50 5.00	5.45 5.00	7.97 5.00	19.8 5.00	20.3 5.00	8.91 5.00
TPH By SW8015 Mod	Extracted:	Dec-19-16 17:00	Dec-19-16 17:00	Dec-19-16 17:00	Dec-19-16 17:00	Dec-19-16 17:00	Dec-19-16 17:00
	Analyzed:	Dec-20-16 13:29	Dec-21-16 23:39	Dec-20-16 14:22	Dec-20-16 14:49	Dec-20-16 15:13	Dec-20-16 15:38
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542184

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Wed Dec-14-16 07:55 pm

Report Date: 30-DEC-16

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542184-031	542184-032	542184-033	542184-034	542184-035	542184-036
	Field Id:	(2) SB25 4-6	(2) SB25 6-8	(2) SB25 8-10	(2) SB26 0-2	(2) SB26 0-2 SPLIT	(2) SB26 2-4
	Depth:	4-6	6-8	8-10	0-2	0-2	2-4
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-14-16 11:07	Dec-14-16 11:10	Dec-14-16 11:15	Dec-14-16 11:30	Dec-14-16 11:35	Dec-14-16 11:40
BTEX by SW 8260B SUB: TX104704215	Extracted:	Dec-19-16 11:19	Dec-19-16 11:20	Dec-19-16 14:01	Dec-28-16 11:11	Dec-19-16 14:03	Dec-19-16 14:04
	Analyzed:	Dec-19-16 17:45	Dec-19-16 18:04	Dec-19-16 14:17	Dec-28-16 13:06	Dec-19-16 14:48	Dec-19-16 15:04
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Benzene	<0.000998 0.000998	<0.00100 0.00100	<0.00101 0.00101	<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100
	Toluene	<0.000998 0.000998	<0.00100 0.00100	<0.00101 0.00101	<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100
Ethylbenzene		<0.000998 0.000998	<0.00100 0.00100	<0.00101 0.00101	<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100
m,p-Xylenes		<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201
o-Xylene		<0.000998 0.000998	<0.00100 0.00100	<0.00101 0.00101	<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100
Total Xylenes		<0.000998 0.000998	<0.00100 0.00100	<0.00101 0.00101	<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100
Total BTEX		<0.000998 0.000998	<0.00100 0.00100	<0.00101 0.00101	<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-27-16 12:00	Dec-27-16 12:00	Dec-27-16 12:00	Dec-27-16 12:00	Dec-27-16 12:00	Dec-27-16 12:00
	Analyzed:	Dec-27-16 17:01	Dec-27-16 17:36	Dec-27-16 17:43	Dec-27-16 17:51	Dec-27-16 17:58	Dec-27-16 18:05
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Chloride	<5.00 5.00	<5.00 5.00	6.06 5.00	1470 5.00	1630 5.00	1940 5.00
TPH By SW8015 Mod	Extracted:	Dec-19-16 17:00	Dec-19-16 17:00	Dec-19-16 17:00	Dec-19-16 17:00	Dec-19-16 17:00	Dec-19-16 17:00
	Analyzed:	Dec-20-16 16:27	Dec-20-16 16:52	Dec-20-16 17:18	Dec-20-16 17:43	Dec-20-16 18:08	Dec-20-16 18:34
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	C6-C10 Gasoline Range Hydrocarbons	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
	C10-C28 Diesel Range Hydrocarbons	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542184

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Wed Dec-14-16 07:55 pm

Report Date: 30-DEC-16

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542184-037	542184-038	542184-039	542184-040	542184-041	542184-042
	Field Id:	(2) SB26 4-6	(2) SB26 6-8	(2) SB26 8-10	(2) SB27 0-2	(2) SB27 2-4	(2) SB27 4-6
	Depth:	4-6	6-8	8-10	0-2	2-4	4-6
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-14-16 11:43	Dec-14-16 11:47	Dec-14-16 11:50	Dec-14-16 13:30	Dec-14-16 13:35	Dec-14-16 13:37
BTEX by SW 8260B SUB: TX104704215	Extracted:	Dec-19-16 14:05	Dec-19-16 14:06	Dec-19-16 14:07	Dec-19-16 14:08	Dec-19-16 14:09	Dec-19-16 14:10
	Analyzed:	Dec-19-16 15:19	Dec-19-16 15:35	Dec-19-16 15:50	Dec-19-16 16:05	Dec-19-16 16:20	Dec-19-16 16:35
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000990 0.000990	<0.00101 0.00101	<0.00100 0.00100	<0.000996 0.000996	<0.000996 0.000996	<0.00100 0.00100
Toluene		<0.000990 0.000990	<0.00101 0.00101	<0.00100 0.00100	<0.000996 0.000996	<0.000996 0.000996	<0.00100 0.00100
Ethylbenzene		<0.000990 0.000990	<0.00101 0.00101	<0.00100 0.00100	<0.000996 0.000996	<0.000996 0.000996	<0.00100 0.00100
m,p-Xylenes		<0.00198 0.00198	<0.00202 0.00202	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200
o-Xylene		<0.000990 0.000990	<0.00101 0.00101	<0.00100 0.00100	<0.000996 0.000996	<0.000996 0.000996	<0.00100 0.00100
Total Xylenes		<0.000990 0.000990	<0.00101 0.00101	<0.00100 0.00100	<0.000996 0.000996	<0.000996 0.000996	<0.00100 0.00100
Total BTEX		<0.000990 0.000990	<0.00101 0.00101	<0.00100 0.00100	<0.000996 0.000996	<0.000996 0.000996	<0.00100 0.00100
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-27-16 12:00	Dec-27-16 12:00	Dec-27-16 12:00	Dec-27-16 12:00	Dec-27-16 14:00	Dec-27-16 14:00
	Analyzed:	Dec-27-16 18:12	Dec-27-16 18:19	Dec-27-16 18:26	Dec-27-16 18:33	Dec-28-16 15:47	Dec-27-16 19:36
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		7.46 5.00	7.44 5.00	<5.00 5.00	1210 5.00	836 5.00	14.8 5.00
TPH By SW8015 Mod	Extracted:	Dec-19-16 17:00	Dec-19-16 17:00	Dec-19-16 17:00	Dec-19-16 17:00	Dec-19-16 16:00	Dec-19-16 16:00
	Analyzed:	Dec-20-16 19:00	Dec-20-16 19:24	Dec-22-16 00:02	Dec-20-16 20:15	Dec-19-16 23:46	Dec-20-16 01:22
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542184

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Wed Dec-14-16 07:55 pm

Report Date: 30-DEC-16

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542184-043	542184-044	542184-045	542184-046	542184-047	542184-048
	Field Id:	(2) SB27 6-8	(2) SB27 8-10	(2) SB28 0-2	(2) SB28 2-4	(2) SB28 4-6	(2) SB28 6-8
	Depth:	6-8	8-10	0-2	2-4	4-6	6-8
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-14-16 13:40	Dec-14-16 13:45	Dec-14-16 14:00	Dec-14-16 14:03	Dec-14-16 14:05	Dec-14-16 14:07
BTEX by SW 8260B SUB: TX104704215	Extracted:	Dec-19-16 14:11	Dec-19-16 14:12	Dec-19-16 14:13	Dec-19-16 14:14	Dec-19-16 14:15	Dec-19-16 11:01
	Analyzed:	Dec-19-16 16:50	Dec-19-16 17:05	Dec-19-16 17:21	Dec-19-16 17:36	Dec-19-16 17:51	Dec-19-16 12:05
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100
Toluene		<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100
Ethylbenzene		<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100
m,p-Xylenes		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200
o-Xylene		<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100
Total Xylenes		<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100
Total BTEX		<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-27-16 14:00	Dec-27-16 14:00	Dec-27-16 14:00	Dec-27-16 14:00	Dec-27-16 14:00	Dec-27-16 14:00
	Analyzed:	Dec-27-16 19:43	Dec-27-16 19:50	Dec-27-16 19:57	Dec-27-16 20:18	Dec-27-16 20:26	Dec-27-16 20:33
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		5.03 5.00	12.1 5.00	2120 25.0	3610 25.0	6290 50.0	645 5.00
TPH By SW8015 Mod	Extracted:	Dec-19-16 16:00	Dec-19-16 16:00	Dec-19-16 16:00	Dec-19-16 16:00	Dec-19-16 16:00	Dec-19-16 16:00
	Analyzed:	Dec-20-16 01:55	Dec-20-16 02:27	Dec-20-16 02:59	Dec-20-16 03:30	Dec-20-16 04:03	Dec-20-16 04:36
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542184

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Wed Dec-14-16 07:55 pm

Report Date: 30-DEC-16

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542184-049	542184-050	542184-051	542184-052	542184-053	542184-054
	Field Id:	(2) SB28 8-10	(2) SB29 0-2	(2) SB29 2-4	(2) SB29 4-6	(2) SB29 6-8	(2) SB29 8-10
	Depth:	8-10	0-2	2-4	4-6	6-8	8-10
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-14-16 14:10	Dec-14-16 14:15	Dec-14-16 14:20	Dec-14-16 14:23	Dec-14-16 14:27	Dec-14-16 14:30
BTEX by SW 8260B SUB: TX104704215	Extracted:	Dec-21-16 12:01	Dec-21-16 12:02	Dec-21-16 12:03	Dec-21-16 12:04	Dec-21-16 12:05	Dec-21-16 12:06
	Analyzed:	Dec-21-16 12:43	Dec-21-16 13:02	Dec-21-16 13:20	Dec-21-16 13:39	Dec-21-16 13:58	Dec-21-16 14:20
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Benzene	<0.000994 0.000994	<0.000994 0.000994	<0.000994 0.000994	<0.00100 0.00100	<0.000996 0.000996	<0.000998 0.000998
	Toluene	<0.000994 0.000994	<0.000994 0.000994	<0.000994 0.000994	<0.00100 0.00100	<0.000996 0.000996	<0.000998 0.000998
Ethylbenzene		<0.000994 0.000994	<0.000994 0.000994	<0.000994 0.000994	<0.00100 0.00100	<0.000996 0.000996	<0.000998 0.000998
m,p-Xylenes		<0.00199 0.00199	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
o-Xylene		<0.000994 0.000994	<0.000994 0.000994	<0.000994 0.000994	<0.00100 0.00100	<0.000996 0.000996	<0.000998 0.000998
Total Xylenes		<0.000994 0.000994	<0.000994 0.000994	<0.000994 0.000994	<0.00100 0.00100	<0.000996 0.000996	<0.000998 0.000998
Total BTEX		<0.000994 0.000994	<0.000994 0.000994	<0.000994 0.000994	<0.00100 0.00100	<0.000996 0.000996	<0.000998 0.000998
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-27-16 14:00	Dec-27-16 14:00	Dec-27-16 14:00	Dec-27-16 14:00	Dec-27-16 14:00	Dec-27-16 14:00
	Analyzed:	Dec-27-16 20:40	Dec-27-16 20:47	Dec-27-16 20:54	Dec-27-16 21:29	Dec-27-16 21:36	Dec-27-16 21:43
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Chloride	<5.00 5.00	28.4 5.00	5930 50.0	5800 50.0	1520 5.00	216 5.00
TPH By SW8015 Mod	Extracted:	Dec-19-16 16:00	Dec-19-16 16:00	Dec-19-16 16:00	Dec-19-16 16:00	Dec-19-16 16:00	Dec-19-16 16:00
	Analyzed:	Dec-20-16 05:07	Dec-20-16 05:39	Dec-20-16 06:43	Dec-20-16 07:15	Dec-20-16 07:46	Dec-20-16 08:18
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	C6-C10 Gasoline Range Hydrocarbons	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
	C10-C28 Diesel Range Hydrocarbons	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542184

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Wed Dec-14-16 07:55 pm

Report Date: 30-DEC-16

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542184-055	542184-056	542184-057	542184-058	542184-059	542184-060
	Field Id:	(2) SB30 0-2	(2) SB30 0-2 SPLIT	(2) SB30 2-4	(2) SB30 4-6	(2) SB30 6-8	(2) SB30 8-10
	Depth:	0-2	0-2	2-4	4-6	6-8	8-10
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-14-16 14:50	Dec-14-16 14:53	Dec-14-16 14:55	Dec-14-16 14:57	Dec-14-16 14:59	Dec-14-16 15:00
BTEX by SW 8260B SUB: TX104704215	Extracted:	Dec-21-16 12:07	Dec-21-16 16:09	Dec-21-16 16:10	Dec-21-16 16:11	Dec-21-16 16:12	Dec-22-16 17:00
	Analyzed:	Dec-21-16 14:39	Dec-21-16 17:09	Dec-21-16 17:27	Dec-21-16 17:46	Dec-21-16 18:05	Dec-22-16 18:11
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Benzene	<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.000996 0.000996	<0.00100 0.00100	<0.000994 0.000994
	Toluene	<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.000996 0.000996	<0.00100 0.00100	<0.000994 0.000994
Ethylbenzene		<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.000996 0.000996	<0.00100 0.00100	<0.000994 0.000994
m,p-Xylenes		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199
o-Xylene		<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.000996 0.000996	<0.00100 0.00100	<0.000994 0.000994
Total Xylenes		<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.000996 0.000996	<0.00100 0.00100	<0.000994 0.000994
Total BTEX		<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.000996 0.000996	<0.00100 0.00100	<0.000994 0.000994
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-27-16 14:00	Dec-27-16 14:00	Dec-27-16 14:00	Dec-27-16 14:00	Dec-27-16 14:00	Dec-27-16 14:00
	Analyzed:	Dec-27-16 21:50	Dec-27-16 21:57	Dec-27-16 22:04	Dec-27-16 22:11	Dec-27-16 22:18	Dec-27-16 22:25
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Chloride	266 5.00	526 5.00	4060 25.0	3120 25.0	5050 25.0	3200 25.0
TPH By SW8015 Mod	Extracted:	Dec-19-16 16:00	Dec-19-16 16:00	Dec-19-16 16:00	Dec-19-16 16:00	Dec-19-16 16:00	Dec-19-16 16:00
	Analyzed:	Dec-20-16 08:50	Dec-20-16 09:22	Dec-20-16 09:55	Dec-20-16 10:27	Dec-20-16 14:20	Dec-20-16 10:58
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	C6-C10 Gasoline Range Hydrocarbons	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
	C10-C28 Diesel Range Hydrocarbons	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542184

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Wed Dec-14-16 07:55 pm

Report Date: 30-DEC-16

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542184-061	542184-062	542184-063	542184-064	542184-065	542184-066
	Field Id:	(2) SB30 10-12	(2) SB30 12-14	(2) SB31 0-2	(2) SB31 2-4	(2) SB31 4-6	(2) SB31 6-8
	Depth:	10-12	12-14	0-2	2-4	4-6	6-8
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-14-16 15:03	Dec-14-16 15:05	Dec-14-16 15:10	Dec-14-16 15:15	Dec-14-16 15:25	Dec-14-16 15:35
BTEX by SW 8260B SUB: TX104704215	Extracted:	Dec-21-16 16:14	Dec-21-16 16:15	Dec-21-16 16:16	Dec-21-16 16:17	Dec-21-16 16:18	Dec-21-16 16:19
	Analyzed:	Dec-21-16 18:43	Dec-21-16 19:02	Dec-21-16 19:20	Dec-21-16 19:39	Dec-21-16 19:58	Dec-21-16 20:16
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Benzene	<0.000998 0.000998	<0.000998 0.000998	<0.000996 0.000996	<0.00101 0.00101	<0.000998 0.000998	<0.00100 0.00100
	Toluene	<0.000998 0.000998	<0.000998 0.000998	<0.000996 0.000996	<0.00101 0.00101	<0.000998 0.000998	<0.00100 0.00100
Ethylbenzene		<0.000998 0.000998	<0.000998 0.000998	<0.000996 0.000996	<0.00101 0.00101	<0.000998 0.000998	<0.00100 0.00100
m,p-Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200
o-Xylene		<0.000998 0.000998	<0.000998 0.000998	<0.000996 0.000996	<0.00101 0.00101	<0.000998 0.000998	<0.00100 0.00100
Total Xylenes		<0.000998 0.000998	<0.000998 0.000998	<0.000996 0.000996	<0.00101 0.00101	<0.000998 0.000998	<0.00100 0.00100
Total BTEX		<0.000998 0.000998	<0.000998 0.000998	<0.000996 0.000996	<0.00101 0.00101	<0.000998 0.000998	<0.00100 0.00100
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-27-16 16:00	Dec-27-16 16:00	Dec-27-16 16:00	Dec-27-16 16:00	Dec-27-16 16:00	Dec-27-16 16:00
	Analyzed:	Dec-27-16 23:08	Dec-27-16 23:29	Dec-27-16 23:36	Dec-27-16 23:43	Dec-27-16 23:50	Dec-28-16 00:11
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Chloride	4890 25.0	124 5.00	5.59 5.00	8.34 5.00	<5.00 5.00	<5.00 5.00
TPH By SW8015 Mod	Extracted:	Dec-19-16 16:00	Dec-19-16 16:00	Dec-19-16 16:00	Dec-19-16 16:00	Dec-19-16 16:00	Dec-19-16 16:00
	Analyzed:	Dec-20-16 11:29	Dec-20-16 15:58	Dec-20-16 16:29	Dec-20-16 17:01	Dec-20-16 17:35	Dec-20-16 18:07
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	C6-C10 Gasoline Range Hydrocarbons	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
	C10-C28 Diesel Range Hydrocarbons	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542184

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Wed Dec-14-16 07:55 pm

Report Date: 30-DEC-16

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	542184-067	542184-068	542184-069	542184-070	542184-071	
	<i>Field Id:</i>	(2) SB32 0-2	(2) SB32 2-4	(2) SB32 4-6	(2) SB32 6-8	(2) SB32 8-10	
	<i>Depth:</i>	0-2	2-4	4-6	6-8	8-10	
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	Dec-14-16 15:40	Dec-14-16 15:45	Dec-14-16 15:50	Dec-14-16 16:00	Dec-14-16 16:05	
BTEX by SW 8260B SUB: TX104704215	<i>Extracted:</i>	Dec-21-16 16:21	Dec-22-16 17:01	Dec-22-16 17:02	Dec-22-16 17:03	Dec-22-16 17:04	
	<i>Analyzed:</i>	Dec-21-16 20:35	Dec-22-16 18:30	Dec-22-16 18:48	Dec-22-16 19:50	Dec-22-16 20:09	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		<0.00100 0.00100	<0.000996 0.000996	<0.000998 0.000998	<0.000994 0.000994	<0.00100 0.00100	
Toluene		<0.00100 0.00100	<0.000996 0.000996	<0.000998 0.000998	<0.000994 0.000994	<0.00100 0.00100	
Ethylbenzene		<0.00100 0.00100	<0.000996 0.000996	<0.000998 0.000998	<0.000994 0.000994	<0.00100 0.00100	
m,p-Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	
o-Xylene		<0.00100 0.00100	<0.000996 0.000996	<0.000998 0.000998	<0.000994 0.000994	<0.00100 0.00100	
Total Xylenes		<0.00100 0.00100	<0.000996 0.000996	<0.000998 0.000998	<0.000994 0.000994	<0.00100 0.00100	
Total BTEX		<0.00100 0.00100	<0.000996 0.000996	<0.000998 0.000998	<0.000994 0.000994	<0.00100 0.00100	
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Dec-27-16 16:00	Dec-27-16 16:00	Dec-27-16 16:00	Dec-27-16 16:00	Dec-27-16 16:00	
	<i>Analyzed:</i>	Dec-28-16 00:18	Dec-28-16 00:25	Dec-28-16 00:32	Dec-28-16 00:39	Dec-28-16 00:46	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		5.43 5.00	<5.00 5.00	<5.00 5.00	<5.00 5.00	12.8 5.00	
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-19-16 16:00	Dec-19-16 16:00	Dec-19-16 16:00	Dec-19-16 16:00	Dec-19-16 16:00	
	<i>Analyzed:</i>	Dec-20-16 18:36	Dec-20-16 19:08	Dec-20-16 19:40	Dec-20-16 20:12	Dec-20-16 20:44	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	

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Kelsey Brooks
Project Manager

- 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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 5332 Blackberry Drive, San Antonio TX 78238
 1211 W Florida Ave, Midland, TX 79701
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(281) 240-4200	(281) 240-4280
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(602) 437-0330	



Form 2 - Surrogate Recoveries

Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3005975

Sample: 542184-016 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 20:01

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0581	0.0500	116	74-126	
1,2-Dichloroethane-D4	0.0526	0.0500	105	80-120	
Toluene-D8	0.0457	0.0500	91	73-132	

Lab Batch #: 3005975

Sample: 542184-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 23:52

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0573	0.0500	115	74-126	
1,2-Dichloroethane-D4	0.0518	0.0500	104	80-120	
Toluene-D8	0.0470	0.0500	94	73-132	

Lab Batch #: 3005975

Sample: 542184-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 00:08

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0571	0.0500	114	74-126	
1,2-Dichloroethane-D4	0.0506	0.0500	101	80-120	
Toluene-D8	0.0456	0.0500	91	73-132	

Lab Batch #: 3005975

Sample: 542184-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 00:24

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0584	0.0500	117	74-126	
1,2-Dichloroethane-D4	0.0552	0.0500	110	80-120	
Toluene-D8	0.0454	0.0500	91	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3005975

Sample: 542184-006 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/16 00:39

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0574	0.0500	115	74-126	
1,2-Dichloroethane-D4	0.0580	0.0500	116	80-120	
Toluene-D8	0.0439	0.0500	88	73-132	

Lab Batch #: 3006002

Sample: 542184-021 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/18/16 15:18

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0557	0.0500	111	74-126	
1,2-Dichloroethane-D4	0.0442	0.0500	88	80-120	
Toluene-D8	0.0443	0.0500	89	73-132	

Lab Batch #: 3006002

Sample: 542184-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/18/16 17:35

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0606	0.0500	121	74-126	
1,2-Dichloroethane-D4	0.0479	0.0500	96	80-120	
Toluene-D8	0.0441	0.0500	88	73-132	

Lab Batch #: 3006002

Sample: 542184-017 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/18/16 17:50

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0572	0.0500	114	74-126	
1,2-Dichloroethane-D4	0.0579	0.0500	116	80-120	
Toluene-D8	0.0411	0.0500	82	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006002

Sample: 542184-018 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/18/16 18:05

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0577	0.0500	115	74-126	
1,2-Dichloroethane-D4	0.0549	0.0500	110	80-120	
Toluene-D8	0.0460	0.0500	92	73-132	

Lab Batch #: 3006002

Sample: 542184-019 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/18/16 18:20

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0564	0.0500	113	74-126	
1,2-Dichloroethane-D4	0.0433	0.0500	87	80-120	
Toluene-D8	0.0439	0.0500	88	73-132	

Lab Batch #: 3006002

Sample: 542184-020 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/18/16 18:35

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0580	0.0500	116	74-126	
1,2-Dichloroethane-D4	0.0559	0.0500	112	80-120	
Toluene-D8	0.0469	0.0500	94	73-132	

Lab Batch #: 3006017

Sample: 542184-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 11:58

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0537	0.0500	107	74-126	
1,2-Dichloroethane-D4	0.0446	0.0500	89	80-120	
Toluene-D8	0.0519	0.0500	104	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006325

Sample: 542184-048 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 12:05

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0523	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0553	0.0500	111	80-120	
Toluene-D8	0.0519	0.0500	104	73-132	

Lab Batch #: 3006325

Sample: 542184-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 12:29

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0498	0.0500	100	74-126	
1,2-Dichloroethane-D4	0.0521	0.0500	104	80-120	
Toluene-D8	0.0533	0.0500	107	73-132	

Lab Batch #: 3006325

Sample: 542184-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 12:48

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0532	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0502	0.0500	100	80-120	
Toluene-D8	0.0503	0.0500	101	73-132	

Lab Batch #: 3006325

Sample: 542184-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 13:07

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0530	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0513	0.0500	103	80-120	
Toluene-D8	0.0541	0.0500	108	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006325

Sample: 542184-010 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 13:25

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0537	0.0500	107	74-126	
1,2-Dichloroethane-D4	0.0560	0.0500	112	80-120	
Toluene-D8	0.0542	0.0500	108	73-132	

Lab Batch #: 3006325

Sample: 542184-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 13:44

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	0.0516	0.0500	103	80-120	
Toluene-D8	0.0555	0.0500	111	73-132	

Lab Batch #: 3006325

Sample: 542184-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 14:03

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0514	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0522	0.0500	104	80-120	
Toluene-D8	0.0543	0.0500	109	73-132	

Lab Batch #: 3006017

Sample: 542184-033 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 14:17

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0511	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0482	0.0500	96	80-120	
Toluene-D8	0.0466	0.0500	93	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006325

Sample: 542184-013 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 14:21

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0504	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0537	0.0500	107	80-120	
Toluene-D8	0.0553	0.0500	111	73-132	

Lab Batch #: 3006325

Sample: 542184-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 14:40

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0465	0.0500	93	74-126	
1,2-Dichloroethane-D4	0.0504	0.0500	101	80-120	
Toluene-D8	0.0464	0.0500	93	73-132	

Lab Batch #: 3006017

Sample: 542184-035 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 14:48

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0569	0.0500	114	74-126	
1,2-Dichloroethane-D4	0.0477	0.0500	95	80-120	
Toluene-D8	0.0490	0.0500	98	73-132	

Lab Batch #: 3006325

Sample: 542184-022 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 14:58

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0506	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0502	0.0500	100	80-120	
Toluene-D8	0.0541	0.0500	108	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006017

Sample: 542184-036 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 15:04

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0545	0.0500	109	74-126	
1,2-Dichloroethane-D4	0.0508	0.0500	102	80-120	
Toluene-D8	0.0452	0.0500	90	73-132	

Lab Batch #: 3006325

Sample: 542184-023 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 15:17

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0518	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0501	0.0500	100	80-120	
Toluene-D8	0.0558	0.0500	112	73-132	

Lab Batch #: 3006017

Sample: 542184-037 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 15:19

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0563	0.0500	113	74-126	
1,2-Dichloroethane-D4	0.0461	0.0500	92	80-120	
Toluene-D8	0.0484	0.0500	97	73-132	

Lab Batch #: 3006017

Sample: 542184-038 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 15:35

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0506	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0413	0.0500	83	80-120	
Toluene-D8	0.0469	0.0500	94	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006325

Sample: 542184-024 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 15:36

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0508	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0538	0.0500	108	80-120	
Toluene-D8	0.0526	0.0500	105	73-132	

Lab Batch #: 3006017

Sample: 542184-039 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 15:50

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0495	0.0500	99	74-126	
1,2-Dichloroethane-D4	0.0462	0.0500	92	80-120	
Toluene-D8	0.0486	0.0500	97	73-132	

Lab Batch #: 3006325

Sample: 542184-025 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 15:54

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0509	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0505	0.0500	101	80-120	
Toluene-D8	0.0501	0.0500	100	73-132	

Lab Batch #: 3006017

Sample: 542184-040 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 16:05

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0531	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0433	0.0500	87	80-120	
Toluene-D8	0.0472	0.0500	94	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006325

Sample: 542184-026 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 16:13

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0521	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0526	0.0500	105	80-120	
Toluene-D8	0.0547	0.0500	109	73-132	

Lab Batch #: 3006017

Sample: 542184-041 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 16:20

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0580	0.0500	116	74-126	
1,2-Dichloroethane-D4	0.0472	0.0500	94	80-120	
Toluene-D8	0.0460	0.0500	92	73-132	

Lab Batch #: 3006325

Sample: 542184-027 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 16:32

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0509	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0539	0.0500	108	80-120	
Toluene-D8	0.0553	0.0500	111	73-132	

Lab Batch #: 3006017

Sample: 542184-042 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 16:35

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0582	0.0500	116	74-126	
1,2-Dichloroethane-D4	0.0452	0.0500	90	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006325

Sample: 542184-028 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 16:50

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0536	0.0500	107	74-126	
1,2-Dichloroethane-D4	0.0537	0.0500	107	80-120	
Toluene-D8	0.0507	0.0500	101	73-132	

Lab Batch #: 3006017

Sample: 542184-043 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 16:50

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0513	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0474	0.0500	95	80-120	
Toluene-D8	0.0471	0.0500	94	73-132	

Lab Batch #: 3006017

Sample: 542184-044 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 17:05

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0572	0.0500	114	74-126	
1,2-Dichloroethane-D4	0.0446	0.0500	89	80-120	
Toluene-D8	0.0429	0.0500	86	73-132	

Lab Batch #: 3006325

Sample: 542184-029 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 17:08

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0500	0.0500	100	74-126	
1,2-Dichloroethane-D4	0.0512	0.0500	102	80-120	
Toluene-D8	0.0496	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006017

Sample: 542184-045 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 17:21

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0576	0.0500	115	74-126	
1,2-Dichloroethane-D4	0.0470	0.0500	94	80-120	
Toluene-D8	0.0498	0.0500	100	73-132	

Lab Batch #: 3006325

Sample: 542184-030 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 17:27

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0519	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0534	0.0500	107	80-120	
Toluene-D8	0.0539	0.0500	108	73-132	

Lab Batch #: 3006017

Sample: 542184-046 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 17:36

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0576	0.0500	115	74-126	
1,2-Dichloroethane-D4	0.0497	0.0500	99	80-120	
Toluene-D8	0.0453	0.0500	91	73-132	

Lab Batch #: 3006325

Sample: 542184-031 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 17:45

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0493	0.0500	99	74-126	
1,2-Dichloroethane-D4	0.0541	0.0500	108	80-120	
Toluene-D8	0.0532	0.0500	106	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006017

Sample: 542184-047 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 17:51

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0575	0.0500	115	74-126	
1,2-Dichloroethane-D4	0.0510	0.0500	102	80-120	
Toluene-D8	0.0483	0.0500	97	73-132	

Lab Batch #: 3006325

Sample: 542184-032 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 18:04

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0509	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0536	0.0500	107	80-120	
Toluene-D8	0.0552	0.0500	110	73-132	

Lab Batch #: 3006413

Sample: 542184-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 23:28

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	93.8	100	94	70-135	
o-Terphenyl	49.4	50.0	99	70-135	

Lab Batch #: 3006649

Sample: 542184-041 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 23:46

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	79.0	99.8	79	70-135	
o-Terphenyl	36.6	49.9	73	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006413

Sample: 542184-002 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 00:44

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.7	99.8	83	70-135	
o-Terphenyl	39.9	49.9	80	70-135	

Lab Batch #: 3006649

Sample: 542184-042 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 01:22

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	79.0	99.9	79	70-135	
o-Terphenyl	36.4	50.0	73	70-135	

Lab Batch #: 3006413

Sample: 542184-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 01:34

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.9	99.8	91	70-135	
o-Terphenyl	45.8	49.9	92	70-135	

Lab Batch #: 3006649

Sample: 542184-043 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 01:55

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	77.5	99.7	78	70-135	
o-Terphenyl	35.8	49.9	72	70-135	

Lab Batch #: 3006413

Sample: 542184-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 02:00

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.2	99.6	94	70-135	
o-Terphenyl	47.5	49.8	95	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006413

Sample: 542184-006 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 02:25

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.6	100	88	70-135	
o-Terphenyl	42.1	50.0	84	70-135	

Lab Batch #: 3006649

Sample: 542184-044 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 02:27

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	77.4	99.7	78	70-135	
o-Terphenyl	35.5	49.9	71	70-135	

Lab Batch #: 3006413

Sample: 542184-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 02:51

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.0	99.7	85	70-135	
o-Terphenyl	42.2	49.9	85	70-135	

Lab Batch #: 3006649

Sample: 542184-045 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 02:59

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	77.3	99.8	77	70-135	
o-Terphenyl	35.1	49.9	70	70-135	

Lab Batch #: 3006413

Sample: 542184-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 03:17

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.3	99.9	85	70-135	
o-Terphenyl	42.5	50.0	85	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006649

Sample: 542184-046 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 03:30

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	75.4	99.8	76	70-135	
o-Terphenyl	34.9	49.9	70	70-135	

Lab Batch #: 3006649

Sample: 542184-047 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 04:03

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	76.6	100	77	70-135	
o-Terphenyl	35.2	50.0	70	70-135	

Lab Batch #: 3006649

Sample: 542184-048 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 04:36

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	73.7	99.9	74	70-135	
o-Terphenyl	35.0	50.0	70	70-135	

Lab Batch #: 3006649

Sample: 542184-049 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 05:07

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.6	99.8	83	70-135	
o-Terphenyl	37.8	49.9	76	70-135	

Lab Batch #: 3006649

Sample: 542184-050 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 05:39

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.1	99.8	80	70-135	
o-Terphenyl	36.6	49.9	73	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006649

Sample: 542184-051 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 06:43

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.5	99.8	79	70-135	
o-Terphenyl	36.0	49.9	72	70-135	

Lab Batch #: 3006649

Sample: 542184-052 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 07:15

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.8	100	79	70-135	
o-Terphenyl	36.3	50.0	73	70-135	

Lab Batch #: 3006413

Sample: 542184-017 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 07:29

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.4	99.9	90	70-135	
o-Terphenyl	45.1	50.0	90	70-135	

Lab Batch #: 3006649

Sample: 542184-053 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 07:46

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	77.7	99.8	78	70-135	
o-Terphenyl	35.8	49.9	72	70-135	

Lab Batch #: 3006413

Sample: 542184-018 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 07:54

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.2	99.9	87	70-135	
o-Terphenyl	41.9	50.0	84	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006649

Sample: 542184-054 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 08:18

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	77.9	99.7	78	70-135	
o-Terphenyl	36.0	49.9	72	70-135	

Lab Batch #: 3006413

Sample: 542184-019 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 08:19

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.2	99.8	90	70-135	
o-Terphenyl	44.1	49.9	88	70-135	

Lab Batch #: 3006413

Sample: 542184-020 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 08:45

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.4	99.9	89	70-135	
o-Terphenyl	44.3	50.0	89	70-135	

Lab Batch #: 3006649

Sample: 542184-055 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 08:50

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	76.0	99.9	76	70-135	
o-Terphenyl	35.0	50.0	70	70-135	

Lab Batch #: 3006649

Sample: 542184-056 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 09:22

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	73.5	99.9	74	70-135	
o-Terphenyl	35.0	50.0	70	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006649

Sample: 542184-057 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 09:55

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	75.1	99.9	75	70-135	
o-Terphenyl	35.1	50.0	70	70-135	

Lab Batch #: 3006649

Sample: 542184-058 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 10:27

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	71.7	99.8	72	70-135	
o-Terphenyl	35.0	49.9	70	70-135	

Lab Batch #: 3006416

Sample: 542184-021 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 10:52

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.2	99.8	90	70-135	
o-Terphenyl	43.5	49.9	87	70-135	

Lab Batch #: 3006649

Sample: 542184-060 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 10:58

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	81.2	100	81	70-135	
o-Terphenyl	37.4	50.0	75	70-135	

Lab Batch #: 3006649

Sample: 542184-061 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 11:29

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	79.7	99.9	80	70-135	
o-Terphenyl	36.7	50.0	73	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006416

Sample: 542184-022 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 12:06

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.0	99.7	87	70-135	
o-Terphenyl	44.2	49.9	89	70-135	

Lab Batch #: 3006416

Sample: 542184-023 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 12:33

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.0	99.9	85	70-135	
o-Terphenyl	43.4	50.0	87	70-135	

Lab Batch #: 3006416

Sample: 542184-024 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 13:00

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	81.7	99.7	82	70-135	
o-Terphenyl	40.7	49.9	82	70-135	

Lab Batch #: 3006416

Sample: 542184-025 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 13:29

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	77.6	99.8	78	70-135	
o-Terphenyl	39.4	49.9	79	70-135	

Lab Batch #: 3006651

Sample: 542184-059 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 14:20

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	76.1	99.9	76	70-135	
o-Terphenyl	35.2	50.0	70	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006416

Sample: 542184-027 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 14:22

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.8	99.9	85	70-135	
o-Terphenyl	42.7	50.0	85	70-135	

Lab Batch #: 3006416

Sample: 542184-028 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 14:49

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.8	99.9	86	70-135	
o-Terphenyl	42.6	50.0	85	70-135	

Lab Batch #: 3006416

Sample: 542184-029 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 15:13

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.3	99.7	86	70-135	
o-Terphenyl	41.0	49.9	82	70-135	

Lab Batch #: 3006416

Sample: 542184-030 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 15:38

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.5	99.9	87	70-135	
o-Terphenyl	42.5	50.0	85	70-135	

Lab Batch #: 3006651

Sample: 542184-062 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 15:58

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	74.2	99.8	74	70-135	
o-Terphenyl	35.0	49.9	70	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006416

Sample: 542184-031 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 16:27

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.4	99.8	88	70-135	
o-Terphenyl	42.7	49.9	86	70-135	

Lab Batch #: 3006651

Sample: 542184-063 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 16:29

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.5	99.9	79	70-135	
o-Terphenyl	35.8	50.0	72	70-135	

Lab Batch #: 3006416

Sample: 542184-032 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 16:52

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.8	99.9	92	70-135	
o-Terphenyl	44.5	50.0	89	70-135	

Lab Batch #: 3006651

Sample: 542184-064 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 17:01

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	73.0	99.7	73	70-135	
o-Terphenyl	35.0	49.9	70	70-135	

Lab Batch #: 3006416

Sample: 542184-033 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 17:18

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.7	99.8	88	70-135	
o-Terphenyl	42.2	49.9	85	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006651

Sample: 542184-065 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 17:35

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.0	99.7	78	70-135	
o-Terphenyl	35.8	49.9	72	70-135	

Lab Batch #: 3006416

Sample: 542184-034 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 17:43

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.2	100	88	70-135	
o-Terphenyl	42.0	50.0	84	70-135	

Lab Batch #: 3006651

Sample: 542184-066 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 18:07

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.3	99.9	78	70-135	
o-Terphenyl	35.7	50.0	71	70-135	

Lab Batch #: 3006416

Sample: 542184-035 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 18:08

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.2	99.8	84	70-135	
o-Terphenyl	40.7	49.9	82	70-135	

Lab Batch #: 3006416

Sample: 542184-036 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 18:34

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.6	99.8	94	70-135	
o-Terphenyl	45.8	49.9	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006651

Sample: 542184-067 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 18:36

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	74.0	100	74	70-135	
o-Terphenyl	35.1	50.0	70	70-135	

Lab Batch #: 3006416

Sample: 542184-037 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 19:00

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.4	99.7	86	70-135	
o-Terphenyl	43.1	49.9	86	70-135	

Lab Batch #: 3006651

Sample: 542184-068 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 19:08

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	77.0	99.8	77	70-135	
o-Terphenyl	35.0	49.9	70	70-135	

Lab Batch #: 3006416

Sample: 542184-038 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 19:24

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.7	99.7	85	70-135	
o-Terphenyl	40.3	49.9	81	70-135	

Lab Batch #: 3006651

Sample: 542184-069 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 19:40

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	77.4	99.8	78	70-135	
o-Terphenyl	35.9	49.9	72	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006651

Sample: 542184-070 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 20:12

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.9	99.9	79	70-135	
o-Terphenyl	36.0	50.0	72	70-135	

Lab Batch #: 3006416

Sample: 542184-040 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 20:15

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.2	99.7	82	70-135	
o-Terphenyl	38.0	49.9	76	70-135	

Lab Batch #: 3006651

Sample: 542184-071 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 20:44

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	77.0	99.8	77	70-135	
o-Terphenyl	35.2	49.9	71	70-135	

Lab Batch #: 3006339

Sample: 542184-049 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 12:43

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0500	0.0500	100	74-126	
1,2-Dichloroethane-D4	0.0529	0.0500	106	80-120	
Toluene-D8	0.0530	0.0500	106	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006339

Sample: 542184-050 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 13:02

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0523	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0512	0.0500	102	80-120	
Toluene-D8	0.0514	0.0500	103	73-132	

Lab Batch #: 3006339

Sample: 542184-051 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 13:20

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0545	0.0500	109	74-126	
1,2-Dichloroethane-D4	0.0545	0.0500	109	80-120	
Toluene-D8	0.0516	0.0500	103	73-132	

Lab Batch #: 3006339

Sample: 542184-052 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 13:39

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	0.0537	0.0500	107	80-120	
Toluene-D8	0.0529	0.0500	106	73-132	

Lab Batch #: 3006339

Sample: 542184-053 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 13:58

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0536	0.0500	107	74-126	
1,2-Dichloroethane-D4	0.0560	0.0500	112	80-120	
Toluene-D8	0.0515	0.0500	103	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006339

Sample: 542184-054 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 14:20

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0510	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0506	0.0500	101	80-120	
Toluene-D8	0.0548	0.0500	110	73-132	

Lab Batch #: 3006339

Sample: 542184-055 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 14:39

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0488	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0474	0.0500	95	80-120	
Toluene-D8	0.0534	0.0500	107	73-132	

Lab Batch #: 3006413

Sample: 542184-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 16:03

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	92.0	99.8	92	70-135	
o-Terphenyl	46.2	49.9	93	70-135	

Lab Batch #: 3006413

Sample: 542184-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 16:25

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	122	100	122	70-135	
o-Terphenyl	59.8	50.0	120	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006339

Sample: 542184-056 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 17:09

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0510	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0545	0.0500	109	80-120	
Toluene-D8	0.0487	0.0500	97	73-132	

Lab Batch #: 3006339

Sample: 542184-057 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 17:27

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0530	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0534	0.0500	107	80-120	
Toluene-D8	0.0488	0.0500	98	73-132	

Lab Batch #: 3006339

Sample: 542184-058 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 17:46

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0512	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0547	0.0500	109	80-120	
Toluene-D8	0.0491	0.0500	98	73-132	

Lab Batch #: 3006339

Sample: 542184-059 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 18:05

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0525	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0546	0.0500	109	80-120	
Toluene-D8	0.0498	0.0500	100	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006339

Sample: 542184-061 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 18:43

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0509	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0479	0.0500	96	80-120	
Toluene-D8	0.0486	0.0500	97	73-132	

Lab Batch #: 3006339

Sample: 542184-062 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 19:02

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0504	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0523	0.0500	105	80-120	
Toluene-D8	0.0491	0.0500	98	73-132	

Lab Batch #: 3006339

Sample: 542184-063 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 19:20

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0528	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0540	0.0500	108	80-120	
Toluene-D8	0.0518	0.0500	104	73-132	

Lab Batch #: 3006339

Sample: 542184-064 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 19:39

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0529	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0517	0.0500	103	80-120	
Toluene-D8	0.0494	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006339

Sample: 542184-065 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 19:58

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0515	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0534	0.0500	107	80-120	
Toluene-D8	0.0527	0.0500	105	73-132	

Lab Batch #: 3006339

Sample: 542184-066 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 20:16

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0540	0.0500	108	74-126	
1,2-Dichloroethane-D4	0.0544	0.0500	109	80-120	
Toluene-D8	0.0494	0.0500	99	73-132	

Lab Batch #: 3006413

Sample: 542184-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 20:32

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	90.2	99.9	90	70-135	
o-Terphenyl	44.9	50.0	90	70-135	

Lab Batch #: 3006339

Sample: 542184-067 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 20:35

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0524	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0532	0.0500	106	80-120	
Toluene-D8	0.0501	0.0500	100	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006413

Sample: 542184-013 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 22:06

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.0	99.7	98	70-135	
o-Terphenyl	45.7	49.9	92	70-135	

Lab Batch #: 3006413

Sample: 542184-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 22:30

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	99.8	116	70-135	
o-Terphenyl	53.9	49.9	108	70-135	

Lab Batch #: 3006413

Sample: 542184-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 22:53

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	99.7	106	70-135	
o-Terphenyl	50.6	49.9	101	70-135	

Lab Batch #: 3006413

Sample: 542184-016 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 23:16

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	99.7	102	70-135	
o-Terphenyl	45.8	49.9	92	70-135	

Lab Batch #: 3006416

Sample: 542184-026 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 23:39

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	99.8	102	70-135	
o-Terphenyl	47.3	49.9	95	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006416

Sample: 542184-039 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/22/16 00:02

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.6	99.8	99	70-135	
o-Terphenyl	46.3	49.9	93	70-135	

Lab Batch #: 3006413

Sample: 542184-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/22/16 07:58

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.9	99.9	88	70-135	
o-Terphenyl	43.8	50.0	88	70-135	

Lab Batch #: 3006289

Sample: 542184-060 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/22/16 18:11

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0504	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0490	0.0500	98	80-120	
Toluene-D8	0.0518	0.0500	104	73-132	

Lab Batch #: 3006289

Sample: 542184-068 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/22/16 18:30

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0534	0.0500	107	74-126	
1,2-Dichloroethane-D4	0.0505	0.0500	101	80-120	
Toluene-D8	0.0505	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006289

Sample: 542184-069 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/22/16 18:48

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0543	0.0500	109	74-126	
1,2-Dichloroethane-D4	0.0542	0.0500	108	80-120	
Toluene-D8	0.0511	0.0500	102	73-132	

Lab Batch #: 3006289

Sample: 542184-070 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/22/16 19:50

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0551	0.0500	110	74-126	
1,2-Dichloroethane-D4	0.0516	0.0500	103	80-120	
Toluene-D8	0.0517	0.0500	103	73-132	

Lab Batch #: 3006289

Sample: 542184-071 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/22/16 20:09

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0511	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0497	0.0500	99	80-120	
Toluene-D8	0.0524	0.0500	105	73-132	

Lab Batch #: 3006506

Sample: 542184-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/27/16 00:52

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	89.0	99.8	89	70-135	
o-Terphenyl	42.9	49.9	86	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006480

Sample: 542184-002 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 12:46

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0553	0.0500	111	74-126	
1,2-Dichloroethane-D4	0.0546	0.0500	109	80-120	
Toluene-D8	0.0548	0.0500	110	73-132	

Lab Batch #: 3006480

Sample: 542184-034 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 13:06

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0539	0.0500	108	74-126	
1,2-Dichloroethane-D4	0.0495	0.0500	99	80-120	
Toluene-D8	0.0474	0.0500	95	73-132	

Lab Batch #: 3005975

Sample: 717470-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/16/16 19:46

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0565	0.0500	113	74-126	
1,2-Dichloroethane-D4	0.0499	0.0500	100	80-120	
Toluene-D8	0.0441	0.0500	88	73-132	

Lab Batch #: 3006002

Sample: 717476-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/18/16 12:58

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0565	0.0500	113	74-126	
1,2-Dichloroethane-D4	0.0444	0.0500	89	80-120	
Toluene-D8	0.0443	0.0500	89	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006017

Sample: 717498-1-BLK / BLK

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/19/16 11:27

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0530	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0448	0.0500	90	80-120	
Toluene-D8	0.0493	0.0500	99	73-132	

Lab Batch #: 3006325

Sample: 717675-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/19/16 11:46

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0514	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0540	0.0500	108	80-120	
Toluene-D8	0.0516	0.0500	103	73-132	

Lab Batch #: 3006413

Sample: 717732-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/19/16 22:11

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.6	100	95	70-135	
o-Terphenyl	46.2	50.0	92	70-135	

Lab Batch #: 3006649

Sample: 717874-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/19/16 22:11

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.7	100	83	70-135	
o-Terphenyl	38.6	50.0	77	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006416

Sample: 717733-1-BLK / BLK

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/20/16 09:36

SURROGATE RECOVERY STUDY

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

Lab Batch #: 3006651

Sample: 717877-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/20/16 12:37

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.2	100	86	70-135	
o-Terphenyl	39.8	50.0	80	70-135	

Lab Batch #: 3006339

Sample: 717690-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/21/16 12:21

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0494	0.0500	99	74-126	
1,2-Dichloroethane-D4	0.0490	0.0500	98	80-120	
Toluene-D8	0.0538	0.0500	108	73-132	

Lab Batch #: 3006289

Sample: 717652-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/22/16 16:29

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0473	0.0500	95	74-126	
1,2-Dichloroethane-D4	0.0442	0.0500	88	80-120	
Toluene-D8	0.0551	0.0500	110	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006506

Sample: 717812-1-BLK / BLK

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/26/16 23:04

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.7	100	100	70-135	
o-Terphenyl	50.6	50.0	101	70-135	

Lab Batch #: 3006480

Sample: 717806-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/28/16 12:04

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	0.0473	0.0500	95	80-120	
Toluene-D8	0.0546	0.0500	109	73-132	

Lab Batch #: 3005975

Sample: 717470-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/16/16 17:49

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0483	0.0500	97	74-126	
1,2-Dichloroethane-D4	0.0412	0.0500	82	80-120	
Toluene-D8	0.0505	0.0500	101	73-132	

Lab Batch #: 3006002

Sample: 717476-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/18/16 09:13

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0522	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0566	0.0500	113	80-120	
Toluene-D8	0.0501	0.0500	100	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006017

Sample: 717498-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/19/16 09:06

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0481	0.0500	96	74-126	
1,2-Dichloroethane-D4	0.0479	0.0500	96	80-120	
Toluene-D8	0.0475	0.0500	95	73-132	

Lab Batch #: 3006325

Sample: 717675-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/19/16 09:53

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0513	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0507	0.0500	101	80-120	
Toluene-D8	0.0488	0.0500	98	73-132	

Lab Batch #: 3006413

Sample: 717732-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/19/16 22:37

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	107	100	107	70-135	
o-Terphenyl	44.6	50.0	89	70-135	

Lab Batch #: 3006649

Sample: 717874-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/19/16 22:42

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	90.3	100	90	70-135	
o-Terphenyl	42.2	50.0	84	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006416

Sample: 717733-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/20/16 10:02

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	100	112	70-135	
o-Terphenyl	46.9	50.0	94	70-135	

Lab Batch #: 3006651

Sample: 717877-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/20/16 13:11

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.4	100	93	70-135	
o-Terphenyl	42.5	50.0	85	70-135	

Lab Batch #: 3006339

Sample: 717690-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/21/16 11:00

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0480	0.0500	96	74-126	
1,2-Dichloroethane-D4	0.0514	0.0500	103	80-120	
Toluene-D8	0.0502	0.0500	100	73-132	

Lab Batch #: 3006289

Sample: 717652-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/22/16 11:30

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	0.0479	0.0500	96	80-120	
Toluene-D8	0.0509	0.0500	102	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006506

Sample: 717812-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/26/16 23:40

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	100	106	70-135	
o-Terphenyl	52.9	50.0	106	70-135	

Lab Batch #: 3006480

Sample: 717806-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/28/16 10:07

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0498	0.0500	100	74-126	
1,2-Dichloroethane-D4	0.0544	0.0500	109	80-120	
Toluene-D8	0.0523	0.0500	105	73-132	

Lab Batch #: 3005975

Sample: 717470-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/16/16 18:04

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	0.0519	0.0500	104	80-120	
Toluene-D8	0.0504	0.0500	101	73-132	

Lab Batch #: 3006002

Sample: 717476-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/18/16 09:28

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0464	0.0500	93	74-126	
1,2-Dichloroethane-D4	0.0527	0.0500	105	80-120	
Toluene-D8	0.0494	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006017

Sample: 717498-1-BSD / BSD

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/19/16 09:22

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0605	0.0500	121	74-126	
1,2-Dichloroethane-D4	0.0578	0.0500	116	80-120	
Toluene-D8	0.0505	0.0500	101	73-132	

Lab Batch #: 3006325

Sample: 717675-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/19/16 10:12

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0483	0.0500	97	74-126	
1,2-Dichloroethane-D4	0.0518	0.0500	104	80-120	
Toluene-D8	0.0522	0.0500	104	73-132	

Lab Batch #: 3006413

Sample: 717732-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/19/16 23:03

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.5	100	89	70-135	
o-Terphenyl	45.0	50.0	90	70-135	

Lab Batch #: 3006649

Sample: 717874-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/19/16 23:14

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.6	100	93	70-135	
o-Terphenyl	42.2	50.0	84	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006416

Sample: 717733-1-BSD / BSD

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/20/16 10:27

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	100	110	70-135	
o-Terphenyl	43.6	50.0	87	70-135	

Lab Batch #: 3006651

Sample: 717877-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/20/16 13:46

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.5	100	89	70-135	
o-Terphenyl	40.9	50.0	82	70-135	

Lab Batch #: 3006339

Sample: 717690-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/21/16 11:19

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0489	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0471	0.0500	94	80-120	
Toluene-D8	0.0525	0.0500	105	73-132	

Lab Batch #: 3006289

Sample: 717652-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/22/16 11:49

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0483	0.0500	97	74-126	
1,2-Dichloroethane-D4	0.0492	0.0500	98	80-120	
Toluene-D8	0.0490	0.0500	98	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006506

Sample: 717812-1-BSD / BSD

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/27/16 00:16

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	100	105	70-135	
o-Terphenyl	52.1	50.0	104	70-135	

Lab Batch #: 3005975

Sample: 542184-016 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 18:24

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0486	0.0500	97	74-126	
1,2-Dichloroethane-D4	0.0464	0.0500	93	80-120	
Toluene-D8	0.0487	0.0500	97	73-132	

Lab Batch #: 3006002

Sample: 542184-021 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/18/16 09:47

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0562	0.0500	112	74-126	
1,2-Dichloroethane-D4	0.0548	0.0500	110	80-120	
Toluene-D8	0.0523	0.0500	105	73-132	

Lab Batch #: 3006325

Sample: 542184-048 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 10:31

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0492	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0470	0.0500	94	80-120	
Toluene-D8	0.0518	0.0500	104	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006017

Sample: 542184-001 S / MS

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 10:34

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0490	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0512	0.0500	102	80-120	
Toluene-D8	0.0514	0.0500	103	73-132	

Lab Batch #: 3006413

Sample: 542184-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 23:53

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	111	99.9	111	70-135	
o-Terphenyl	45.1	50.0	90	70-135	

Lab Batch #: 3006649

Sample: 542184-041 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 00:18

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	86.2	99.9	86	70-135	
o-Terphenyl	39.9	50.0	80	70-135	

Lab Batch #: 3006416

Sample: 542184-021 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 11:16

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	111	99.8	111	70-135	
o-Terphenyl	47.3	49.9	95	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006651

Sample: 542184-059 S / MS

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 14:54

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.1	99.9	84	70-135	
o-Terphenyl	39.6	50.0	79	70-135	

Lab Batch #: 3006339

Sample: 542329-019 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 16:13

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0514	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0560	0.0500	112	80-120	
Toluene-D8	0.0489	0.0500	98	73-132	

Lab Batch #: 3006289

Sample: 542605-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/22/16 12:19

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0500	0.0500	100	74-126	
1,2-Dichloroethane-D4	0.0569	0.0500	114	80-120	
Toluene-D8	0.0440	0.0500	88	73-132	

Lab Batch #: 3006506

Sample: 542184-011 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/27/16 01:27

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.4	100	99	70-135	
o-Terphenyl	48.9	50.0	98	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006480

Sample: 542184-002 S / MS

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 10:47

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0530	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0498	0.0500	100	80-120	
Toluene-D8	0.0524	0.0500	105	73-132	

Lab Batch #: 3005975

Sample: 542184-016 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/16/16 18:39

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0490	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0444	0.0500	89	80-120	
Toluene-D8	0.0506	0.0500	101	73-132	

Lab Batch #: 3006002

Sample: 542184-021 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/18/16 10:02

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0569	0.0500	114	74-126	
1,2-Dichloroethane-D4	0.0511	0.0500	102	80-120	
Toluene-D8	0.0515	0.0500	103	73-132	

Lab Batch #: 3006017

Sample: 542184-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 10:11

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	0.0527	0.0500	105	80-120	
Toluene-D8	0.0520	0.0500	104	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006325

Sample: 542184-048 SD / MSD

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 10:50

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0522	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0500	0.0500	100	80-120	
Toluene-D8	0.0531	0.0500	106	73-132	

Lab Batch #: 3006413

Sample: 542184-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 00:19

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	115	100	115	70-135	
o-Terphenyl	47.3	50.0	95	70-135	

Lab Batch #: 3006649

Sample: 542184-041 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 00:50

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	86.8	99.8	87	70-135	
o-Terphenyl	39.8	49.9	80	70-135	

Lab Batch #: 3006416

Sample: 542184-021 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 11:42

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	108	100	108	70-135	
o-Terphenyl	47.3	50.0	95	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006651

Sample: 542184-059 SD / MSD

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 15:25

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.6	100	92	70-135	
o-Terphenyl	40.9	50.0	82	70-135	

Lab Batch #: 3006339

Sample: 542329-019 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 15:54

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0504	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0530	0.0500	106	80-120	
Toluene-D8	0.0497	0.0500	99	73-132	

Lab Batch #: 3006289

Sample: 542605-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/22/16 12:38

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0474	0.0500	95	74-126	
1,2-Dichloroethane-D4	0.0476	0.0500	95	80-120	
Toluene-D8	0.0509	0.0500	102	73-132	

Lab Batch #: 3006506

Sample: 542184-011 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/27/16 02:04

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	99.8	105	70-135	
o-Terphenyl	50.1	49.9	100	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542184,

Lab Batch #: 3006480

Sample: 542184-002 SD / MSD

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 11:06

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0542	0.0500	108	74-126	
1,2-Dichloroethane-D4	0.0525	0.0500	105	80-120	
Toluene-D8	0.0540	0.0500	108	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.



Blank Spike Recovery

Project Name: OWL Bobcat/Red Hills Pipeline Release



Work Order #: 542184

Project ID:

Lab Batch #: 3006480

Sample: 717806-1-BKS

Matrix: Solid

Date Analyzed: 12/28/2016

Date Prepared: 12/28/2016

Analyst: JTR

Reporting Units: mg/kg

Batch #: 1

BLANK /BLANK SPIKE RECOVERY STUDY

BTEX by SW 8260B Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Benzene	<0.00100	0.100	0.103	103	62-132	
Toluene	<0.00100	0.100	0.104	104	66-124	
Ethylbenzene	<0.00100	0.100	0.107	107	71-134	
m,p-Xylenes	<0.00200	0.200	0.217	109	69-128	
o-Xylene	<0.00100	0.100	0.107	107	72-131	

Blank Spike Recovery [D] = $100 \times [C] / [B]$

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

BRL - Below Reporting Limit



BS / BSD Recoveries



Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 542184

Project ID:

Analyst: JTR

Date Prepared: 12/16/2016

Date Analyzed: 12/16/2016

Lab Batch ID: 3005975

Sample: 717470-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.102	102	0.100	0.108	108	6	62-132	25	
Toluene	<0.00100	0.100	0.102	102	0.100	0.107	107	5	66-124	25	
Ethylbenzene	<0.00100	0.100	0.101	101	0.100	0.105	105	4	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.217	109	0.200	0.229	115	5	69-128	25	
o-Xylene	<0.00100	0.100	0.110	110	0.100	0.115	115	4	72-131	25	

Analyst: JTR

Date Prepared: 12/18/2016

Date Analyzed: 12/18/2016

Lab Batch ID: 3006002

Sample: 717476-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.102	102	0.100	0.107	107	5	62-132	25	
Toluene	<0.00100	0.100	0.0989	99	0.100	0.102	102	3	66-124	25	
Ethylbenzene	<0.00100	0.100	0.0967	97	0.100	0.0998	100	3	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.206	103	0.200	0.213	107	3	69-128	25	
o-Xylene	<0.00100	0.100	0.108	108	0.100	0.110	110	2	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: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 542184

Analyst: JTR

Date Prepared: 12/19/2016

Project ID:

Date Analyzed: 12/19/2016

Lab Batch ID: 3006017

Sample: 717498-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.0946	95	0.100	0.0971	97	3	62-132	25	
Toluene	<0.00100	0.100	0.0865	87	0.100	0.0919	92	6	66-124	25	
Ethylbenzene	<0.00100	0.100	0.0884	88	0.100	0.0867	87	2	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.191	96	0.200	0.183	92	4	69-128	25	
o-Xylene	<0.00100	0.100	0.100	100	0.100	0.0938	94	6	72-131	25	

Analyst: JTR

Date Prepared: 12/22/2016

Date Analyzed: 12/22/2016

Lab Batch ID: 3006289

Sample: 717652-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.0774	77	0.100	0.0720	72	7	62-132	25	
Toluene	<0.00100	0.100	0.0834	83	0.100	0.0766	77	9	66-124	25	
Ethylbenzene	<0.00100	0.100	0.0837	84	0.100	0.0766	77	9	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.173	87	0.200	0.155	78	11	69-128	25	
o-Xylene	<0.00100	0.100	0.0845	85	0.100	0.0775	78	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: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 542184

Analyst: JTR

Date Prepared: 12/19/2016

Project ID:

Date Analyzed: 12/19/2016

Lab Batch ID: 3006325

Sample: 717675-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.0964	96	0.100	0.0963	96	0	62-132	25	
Toluene	<0.00100	0.100	0.0910	91	0.100	0.0979	98	7	66-124	25	
Ethylbenzene	<0.00100	0.100	0.0959	96	0.100	0.0969	97	1	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.199	100	0.200	0.199	100	0	69-128	25	
o-Xylene	<0.00100	0.100	0.101	101	0.100	0.0995	100	1	72-131	25	

Analyst: JTR

Date Prepared: 12/21/2016

Date Analyzed: 12/21/2016

Lab Batch ID: 3006339

Sample: 717690-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.0919	92	0.100	0.0871	87	5	62-132	25	
Toluene	<0.00100	0.100	0.0899	90	0.100	0.0976	98	8	66-124	25	
Ethylbenzene	<0.00100	0.100	0.0937	94	0.100	0.0926	93	1	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.189	95	0.200	0.189	95	0	69-128	25	
o-Xylene	<0.00100	0.100	0.0995	100	0.100	0.0902	90	10	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: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 542184

Project ID:

Analyst: MNR

Date Prepared: 12/27/2016

Date Analyzed: 12/27/2016

Lab Batch ID: 3006481

Sample: 717738-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	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
Analytes											
Chloride	<5.00	250	242	97	250	239	96	1	90-110	20	

Analyst: MNR

Date Prepared: 12/27/2016

Date Analyzed: 12/27/2016

Lab Batch ID: 3006484

Sample: 717739-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	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
Analytes											
Chloride	<5.00	250	244	98	250	244	98	0	90-110	20	

Analyst: MNR

Date Prepared: 12/27/2016

Date Analyzed: 12/27/2016

Lab Batch ID: 3006512

Sample: 717740-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	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
Analytes											
Chloride	<5.00	250	253	101	250	242	97	4	90-110	20	

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

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries



Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 542184

Project ID:

Analyst: MNR

Date Prepared: 12/27/2016

Date Analyzed: 12/27/2016

Lab Batch ID: 3006517

Sample: 717741-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	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
Analytes											
Chloride	<5.00	250	247	99	250	255	102	3	90-110	20	

Analyst: ARM

Date Prepared: 12/19/2016

Date Analyzed: 12/19/2016

Lab Batch ID: 3006413

Sample: 717732-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	922	92	1000	990	99	7	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	951	95	1000	890	89	7	70-135	35	

Analyst: ARM

Date Prepared: 12/19/2016

Date Analyzed: 12/20/2016

Lab Batch ID: 3006416

Sample: 717733-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	1020	102	1000	1090	109	7	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	1080	108	1000	1080	108	0	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



BS / BSD Recoveries



Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 542184

Project ID:

Analyst: ARM

Date Prepared: 12/26/2016

Date Analyzed: 12/26/2016

Lab Batch ID: 3006506

Sample: 717812-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	886	89	1000	932	93	5	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	952	95	1000	965	97	1	70-135	35	

Analyst: ARM

Date Prepared: 12/19/2016

Date Analyzed: 12/19/2016

Lab Batch ID: 3006649

Sample: 717874-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	916	92	1000	877	88	4	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	962	96	1000	913	91	5	70-135	35	

Analyst: ARM

Date Prepared: 12/19/2016

Date Analyzed: 12/20/2016

Lab Batch ID: 3006651

Sample: 717877-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	971	97	1000	943	94	3	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	929	93	1000	933	93	0	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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542184

Project ID:

Lab Batch ID: 3005975

QC- Sample ID: 542184-016 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/16/2016

Date Prepared: 12/16/2016

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	0.0947	95	0.0996	0.0986	99	4	62-132	25	
Toluene	<0.000998	0.0998	0.0905	91	0.0996	0.0979	98	8	66-124	25	
Ethylbenzene	<0.000998	0.0998	0.0950	95	0.0996	0.0991	99	4	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.206	103	0.199	0.210	106	2	69-128	25	
o-Xylene	<0.000998	0.0998	0.106	106	0.0996	0.107	107	1	72-131	25	

Lab Batch ID: 3006002

QC- Sample ID: 542184-021 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/18/2016

Date Prepared: 12/18/2016

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	0.0952	95	0.100	0.0923	92	3	62-132	25	
Toluene	<0.000998	0.0998	0.0898	90	0.100	0.0866	87	4	66-124	25	
Ethylbenzene	<0.000998	0.0998	0.0867	87	0.100	0.0817	82	6	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.182	91	0.200	0.173	87	5	69-128	25	
o-Xylene	<0.000998	0.0998	0.0912	91	0.100	0.0907	91	1	72-131	25	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542184

Project ID:

Lab Batch ID: 3006017

QC- Sample ID: 542184-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/19/2016

Date Prepared: 12/19/2016

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	<0.00101	0.101	0.0866	86	0.100	0.100	100	14	62-132	25	
Toluene	<0.00101	0.101	0.0833	82	0.100	0.0982	98	16	66-124	25	
Ethylbenzene	<0.00101	0.101	0.0784	78	0.100	0.0876	88	11	71-134	25	
m,p-Xylenes	<0.00202	0.202	0.166	82	0.200	0.187	94	12	69-128	25	
o-Xylene	<0.00101	0.101	0.0904	90	0.100	0.0984	98	8	72-131	25	

Lab Batch ID: 3006289

QC- Sample ID: 542605-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/22/2016

Date Prepared: 12/22/2016

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	0.0291	0.122	0.120	75	0.122	0.105	62	13	62-132	25	
Toluene	<0.00122	0.122	0.0830	68	0.122	0.0919	75	10	66-124	25	
Ethylbenzene	<0.00122	0.122	0.0994	81	0.122	0.0887	73	11	71-134	25	
m,p-Xylenes	<0.00245	0.245	0.203	83	0.245	0.177	72	14	69-128	25	
o-Xylene	<0.00122	0.122	0.109	89	0.122	0.0898	74	19	72-131	25	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542184

Project ID:

Lab Batch ID: 3006325

QC- Sample ID: 542184-048 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/19/2016

Date Prepared: 12/19/2016

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	0.0927	93	0.0994	0.0916	92	1	62-132	25	
Toluene	<0.000998	0.0998	0.0972	97	0.0994	0.0941	95	3	66-124	25	
Ethylbenzene	<0.000998	0.0998	0.0959	96	0.0994	0.0919	92	4	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.198	99	0.199	0.189	95	5	69-128	25	
o-Xylene	<0.000998	0.0998	0.0999	100	0.0994	0.0958	96	4	72-131	25	

Lab Batch ID: 3006339

QC- Sample ID: 542329-019 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/21/2016

Date Prepared: 12/21/2016

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	0.0775	78	0.0990	0.0751	76	3	62-132	25	
Toluene	<0.000998	0.0998	0.0753	75	0.0990	0.0710	72	6	66-124	25	
Ethylbenzene	<0.000998	0.0998	0.0792	79	0.0990	0.0721	73	9	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.167	84	0.198	0.152	77	9	69-128	25	
o-Xylene	<0.000998	0.0998	0.0846	85	0.0990	0.0757	76	11	72-131	25	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542184

Project ID:

Lab Batch ID: 3006480

QC- Sample ID: 542184-002 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/28/2016

Date Prepared: 12/28/2016

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	<0.00100	0.100	0.105	105	0.0998	0.0987	99	6	62-132	25	
Toluene	<0.00100	0.100	0.108	108	0.0998	0.106	106	2	66-124	25	
Ethylbenzene	<0.00100	0.100	0.103	103	0.0998	0.100	100	3	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.216	108	0.200	0.205	103	5	69-128	25	
o-Xylene	<0.00100	0.100	0.105	105	0.0998	0.0963	96	9	72-131	25	

Lab Batch ID: 3006481

QC- Sample ID: 542184-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/27/2016

Date Prepared: 12/27/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	4600	1250	5900	104	1250	5880	102	0	90-110	20	

Lab Batch ID: 3006481

QC- Sample ID: 542184-011 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/27/2016

Date Prepared: 12/27/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	260	104	250	249	100	4	90-110	20	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542184

Project ID:

Lab Batch ID: 3006484

QC- Sample ID: 542184-021 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/27/2016

Date Prepared: 12/27/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	907	250	1170	105	250	1180	109	1	90-110	20	

Lab Batch ID: 3006484

QC- Sample ID: 542184-031 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/27/2016

Date Prepared: 12/27/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	264	106	250	254	102	4	90-110	20	

Lab Batch ID: 3006512

QC- Sample ID: 542184-041 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/28/2016

Date Prepared: 12/27/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	836	250	1080	98	250	1070	94	1	90-110	20	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542184

Project ID:

Lab Batch ID: 3006512

QC- Sample ID: 542184-051 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/27/2016

Date Prepared: 12/27/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	5930	2500	8430	100	2500	8460	101	0	90-110	20	

Lab Batch ID: 3006517

QC- Sample ID: 542184-061 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/27/2016

Date Prepared: 12/27/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	4890	1250	6030	91	1250	6100	97	1	90-110	20	

Lab Batch ID: 3006517

QC- Sample ID: 542184-071 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/28/2016

Date Prepared: 12/27/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	12.8	250	276	105	250	289	110	5	90-110	20	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542184

Project ID:

Lab Batch ID: 3006413

QC- Sample ID: 542184-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/19/2016

Date Prepared: 12/19/2016

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	999	924	92	1000	956	96	3	70-135	35	
C10-C28 Diesel Range Hydrocarbons	38.1	999	1060	102	1000	1080	104	2	70-135	35	

Lab Batch ID: 3006416

QC- Sample ID: 542184-021 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/20/2016

Date Prepared: 12/19/2016

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	998	1010	101	1000	965	97	5	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	998	1070	107	1000	1050	105	2	70-135	35	

Lab Batch ID: 3006506

QC- Sample ID: 542184-011 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/27/2016

Date Prepared: 12/26/2016

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	940	94	998	874	88	7	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	984	98	998	977	98	1	70-135	35	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542184

Project ID:

Lab Batch ID: 3006649

QC- Sample ID: 542184-041 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/20/2016

Date Prepared: 12/19/2016

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	999	884	88	998	841	84	5	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	999	840	84	998	841	84	0	70-135	35	

Lab Batch ID: 3006651

QC- Sample ID: 542184-059 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/20/2016

Date Prepared: 12/19/2016

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	999	967	97	1000	893	89	8	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	999	935	94	1000	883	88	6	70-135	35	

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

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

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.



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: KJE Enviromental & Civil Engineering

Date/ Time Received: 12/14/2016 07:55:00 PM

Work Order #: 542184

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2
#2 *Shipping container in good condition?	N/A
#3 *Samples received on ice?	Yes
#4 *Custody Seal present on shipping container/ cooler?	N/A
#5 *Custody Seals intact on shipping container/ cooler?	N/A
#6 Custody Seals intact on sample bottles?	N/A
#7 *Custody Seals Signed and dated?	N/A
#8 *Chain of Custody present?	Yes
#9 Sample instructions complete on Chain of Custody?	Yes
#10 Any missing/extra samples?	No
#11 Chain of Custody signed when relinquished/ received?	Yes
#12 Chain of Custody agrees with sample label(s)?	Yes
#13 Container label(s) legible and intact?	Yes
#14 Sample matrix/ properties agree with Chain of Custody?	Yes
#15 Samples in proper container/ bottle?	Yes
#16 Samples properly preserved?	Yes
#17 Sample container(s) intact?	Yes
#18 Sufficient sample amount for indicated test(s)?	Yes
#19 All samples received within hold time?	Yes
#20 Subcontract of sample(s)?	Yes Houston
#21 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#22 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	N/A
#23 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Jessica Kramer

Jessica Kramer

Date: 12/15/2016

Checklist reviewed by:

Kelsey Brooks

Kelsey Brooks

Date: 12/15/2016



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Xenco Job #

542-184

Client / Reporting Information						Project Information							Analytical Information								Matrix Codes				
Company Name / Branch: KJE Environmental & Civil Engineering Company Address: 500 Mosely Road, Cross Roads, Texas 76227 Email: james@kjenvironmental.com Phone No: (940)387-0805 James Fox Sampler's Name						Project Name/Number: OWL Bobcat/Red Hills Pipeline Release Project Location: Jal. NM Invoice To:																			
Field ID / Point of Collection						Collection		Number of preserved bottles																	
No.	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX	TPH	CHLORIDES									
1	(2) SB20 0-2	12/14	730	S	2								X	X	X	X									
2	(2) SB20 2-4													X	X	X									
3	(2) SB20 4-6		740	I										X	X	X									
4	(2) SB20 6-8		745	I										X	X	X									
5	(2) SB20 8-10		750	I										X	X	X									
6	(2) SB20 10-12		800	I										X	X	X									
7	(2) SB21 0-2		815	I										X	X	X									
8	(2) SB21 2-4		820	I										X	X	X									
9	(2) SB21 4-6		825	I										X	X	X									
10	(2) SB21 6-8		830	I										X	X	X									
Turnaround Time (Business days)						Date Deliverable Information										Notes:									
☐ Same Day TAT						☒ 5 Day TAT						☐ Level II Std QC						☐ Level IV (Full Data Pkg /raw data)							
☐ Next Day EMERGENCY						☐ 7 Day TAT						☐ Level III Std QC+ Forms						☐ TRRP Level IV							
☐ 2 Day EMERGENCY						☐ Contract TAT						☐ Level 3 (CLP Forms)						☐ UST / RG -411							
☐ 3 Day EMERGENCY												☐ TRRP Checklist													
TAT Starts Day received by Lab, if received by 5:00 pm																		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:						Date Time:							
1 James Fox						12/14/86						1 J. J. Jones M.						2							
Relinquished by:						Date Time:						Received By:						Date Time:							
3						19:55						3						4							
Relinquished by:						Date Time:						Received By:						Date Time:							
5												5													
I hereby certify that the information provided herein is true and correct to the best of my knowledge and belief. Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to XENCO Laboratories and its affiliates. Temp: 19 IR ID: R-8 CF: + 0.1 Corrected Temp: 2.0																									

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Norcross, Georgia (770-449-8800)

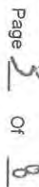
Tampa, Florida (813-620-2000)

Xenco Quote #

Xenco Job #

542184

Service Center - San Antonio, Texas (210-509-3334)										www.xenco.com		Xenco Quote #	Xenco Job #					
Client / Reporting Information					Project Information					Analytical Information				Matrix Codes				
Company Name / Branch: KJE Environmental & Civil Engineering Company Address: 500 Mosely Road, Cross Roads, Texas 76227 Email: james@kjenvironmental.com Phone No: (940)387-0805					Project Name/Number: OWL Bobcat/Red Hills Pipeline Release Project Location: Jal, NM Invoice To:									S = Soil/Sed/Solid GW = Ground Water DW = Drinking Water P = Product SW = Surface water SL = Sludge OW = Ocean/Sea Water W = Wipe O = Oil WW= Waste Water A = Air				
Project Contact: James Fox Samplers Name					PO Number:													
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX	TPH	CHLORIDES	Field Comments
1	(2) SB 21 E-8 Sp/rt		12/14	830	S	2									X	X	X	
2	(2) SB 21 E-10			830											X	X	X	
3	(2) SB 21 I-6-11			830											X	X	X	
4	(2) SB 22 D-2			835											X	X	X	
5	(2) SB 22 Z-4			900											X	X	X	
6	(2) SB 22 Y-6			965											X	X	X	
7	(2) SB 22 E-8			910											X	X	X	
8	(2) SB 22 E-10			915											X	X	X	
9	(2) SB 23 O-2			930											X	X	X	
10	(2) SB 23 Z-4			935											X	X	X	
Turnaround Time (Business days)					Data Deliverable Information					Notes:								
Same Day TAT ☒ 5 Day TAT					Level II Std QC					Level IV (Full Data Plg raw data)								
Next Day EMERGENCY ☐ 7 Day TAT					Level III Std QC+ Forms					TRRP Level IV								
2 Day EMERGENCY ☐ Contract TAT					Level 3 (CLP Forms)					UST / RG-411								
3 Day EMERGENCY ☐					TRRP Checklist													
TAT Starts Day received by Lab, if received by 5:00 pm										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 James Fox		12/14 1:55 PM		1 J. J. Jones		2		2		2								
Relinquished by:		Date Time:		Received By:		Relinquished By:		Date Time:		Received By:								
3				3		4		4		4								
Relinquished by:		Date Time:		Received By:		Custody Seal #		Preserved where applicable		On file								
5				5														
I hereby certify that the information provided herein is true and correct to the best of my knowledge and belief.										Temp: 19 IR ID: R-8 CF: + 0.1 Corrected Temp: 2.0								



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Client / Reporting Information				Project Information				Analytical Information				Matrix Codes					
Company Name / Branch: KJE Environmental & Civil Engineering Company Address: 500 Mosely Road, Cross Roads, Texas 76227 Email: james@kjenvironmental.com Phone No: (940)387-0805				Project Name/Number: OWL Bobcat/Red Hills Pipeline Release Project Location: Jail, NM Invoice To:													
Project Contact: James Fox				PO Number:													
Sampler's Name																	
No.	Field ID / Point of Collection			Collection		Number of preserved bottles											
	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX	TPH	CHLORIDES	Field Comments
1	(2) SG23 4-6	12/14	940	S	2									X	X	X	
2	(2) SG23 6-8		943	I										X	X	X	
3	(2) SG23 8-10		945														
4	(2) SG24 0-2		1615														
5	(2) SG24 2-4		1020														
6	(2) SG24 4-6		1025														
7	(2) SG24 6-8		1235														
8	(2) SG24 8-10		1055														
9	(2) SG25 0-2		1100														
10	(2) SG25 2-4		1105														
Turnaround Time (Business days)				Data Deliverable Information				Notes:									
☐ Same Day TAT				☒ 5 Day TAT				☐ Level II Std QC				☐ Level IV (Full Data Pkg /raw data)					
☐ Next Day EMERGENCY				☐ 7 Day TAT				☐ Level III Std QC+ Forms				☐ TRRP Level IV					
☐ 2 Day EMERGENCY				☐ Contract TAT				☐ Level 3 (CLP Forms)				☐ UST / RG -411					
☐ 3 Day EMERGENCY								☐ TRRP Checklist									
TAT Starts Day received by Lab, if received by 5:00 pm																	
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																	
Relinquished by Sampler:				Date Time:				Received By:				Date Time:					
1 James Fox				12/14/16 1:35 PM				1 JAMES W				2					
Relinquished by:				Date Time:				Received By:				Date Time:					
3								3				4					
Relinquished by:				Date Time:				Received By:				Date Time:					
5								5				On Ice					
Temp: 19 IR ID: R-8 CF: + 0.1 Corrected Temp: 2.0																	
I declare the signature of this document and relinquishment of samples constitutes a valid purchase order from client company to XENCO Laboratories and its affiliates, subcontractors and assigns XENCO's standard terms and conditions of service unless provided otherwise in writing.																	

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Norcross, Georgia (770-449-8800)

Tampa, Florida (813-620-2000)

Xenco Quote #

Xenco Job #

542184

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes								
Company Name / Branch: KJE, Environmental & Civil Engineering				Project Name/Number: OWL Bobcat/Red Hills Pipeline Release																
Company Address: 500 Mosely Road, Cross Roads, Texas 76227				Project Location: Jal, NM																
Email: james@kjenvironmental.com				Phone No: (940)387-0905																
Project Contact: James FOX				Invoice To:																
Samplers Name				PO Number:																
Field ID / Point of Collection				Collection				Number of preserved bottles				Field Comments								
No.	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX	TPH	CHLORIDES				
1	2	5/25	4-6											X	X	X				
2	2	5/25	6-8											X	X	X				
3	2	5/25	8-10											X	X	X				
4	1	5/26	0-2											X	X	X				
5	2	5/26	0-2 split											X	X	X				
6	2	5/26	2-4											X	X	X				
7	2	5/26	4-6											X	X	X				
8	2	5/26	6-8											X	X	X				
9	2	5/26	8-10											X	X	X				
10	2	5/27	0-2											X	X	X				
Turnaround Time (Business days)				Data Deliverable Information				Notes:												
☐ Same Day TAT				☒ 5 Day TAT				☐ Level II Std QC				☐ Level IV (Full Data Pkg /raw data)								
☐ Next Day EMERGENCY				☐ 7 Day TAT				☐ Level III Std QC+ Forms				☐ TRRP Level IV								
☐ 2 Day EMERGENCY				☐ Contract TAT				☐ Level 3 (CLP Forms)				☐ UST / RG -411								
☐ 3 Day EMERGENCY				☐ TRRP Checklist																
TAT Starts Day received by Lab, if received by 5:00 pm																				
Relinquished by Sampler:				Date Time:				Received By:				Date Time:								
1 James FOX				12/14 19:55				1 JOLIAN				2								
Relinquished by:				Date Time:				Received By:				Date Time:								
3								3				4								
Relinquished by:				Date Time:				Received By:				Date Time:								
5								5												
Voice Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to XENCO Laboratories and its affiliates, subcontractors and assigns XENCO's standard terms and conditions of service unless previously negotiated under a written contract.																				

Setting the Standard since 1990

Stafford, Texas (281-240-4200)

Dallas Texas (214-902-0300)

Service Center - San Antonio, Texas (210-509-3334)

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1 Lakeland, Florida (863-646-8526)

Norcross, Georgia (770-449-8800)

Tampa, Florida (813-620-2000)

Xenco Quote #

Xenco Job #

[illegible]

542104

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes			
Company Name / Branch: KJE Environmental & Civil Engineering				Project Name/Number: OWL Bobcat/Red Hills Pipeline Release											
Company Address: 500 Moseley Road, Cross Roads, Texas 76227				Project Location: Jal, NM											
Email: james@kjenvironmental.com Phone No: (940)387-0805				Invoice To:											
James Fox															
Project Contact: James Fox				PO Number:											
Samplers Name															
No.		Field ID / Point of Collection		Collection		Number of preserved bottles									
		Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MeOH	NONE	
1		(2) SB 27	2-4	12/14	1337	5	2								
2		(2) SB 27	4-6												
3		(2) SB 27	6-8												
4		(2) SB 27	8-10												
5		(2) SB 28	0-2												
6		(2) SB 28	2-4												
7		(2) SB 28	4-6												
8		(2) SB 28	6-8												
9		(2) SB 28	8-10												
10		(2) SB 29	0-2												
Turnaround Time (Business days)				Data Deliverable Information				Notes:							
☐ Same Day TAT				☒ 5 Day TAT				☐ Level II Std QC				☐ Level IV (Full Data Pkg /raw data)			
☐ Next Day EMERGENCY				☐ 7 Day TAT				☐ Level III Std QC+ Forms				☐ TRRP Level IV			
☐ 2 Day EMERGENCY				☐ Contract TAT				☐ Level 3 (CLP Forms)				☐ UST / RG 411			
☐ 3 Day EMERGENCY								☐ TRRP Checklist							
TAT Starts Day received by Lab, if received by 5:00 pm															
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY															
Relinquished by Sampler:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:	
1		James Fox		12/14/13		J. Bobcat		2				2			
Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:	
3				3				4				4			
Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:	
5				5				5				5			
FED-EX / UPS: Tracking #															
Temp: 19 IR ID: R-8 CF: + 0.1 Corrected Temp: 2.0															

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Norcross, Georgia (770-449-8800)

Lakeland, Florida (863-646-8526)

Tampa, Florida (813-620-2000)

Service Center - San Antonio, Texas (210-509-3334)
www.xenco.com

Xenoco Quote #

Xenoco Job #
542984

Matrix Codes

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

Analytical Information

BTEX	(8260)	
TPH		
CHLORIDES		

Project Information

Company Name / Branch:
KJE, Environmental & Civil Engineering
Company Address:
500 Mosely Road, Cross Roads, Texas 76227
Email: james@kjenvironmental.com Phone No: (840)367-0805
James Fox
Samplers's Name

Client / Reporting Information

Project Name/Number:
OWL Bobcat/Red Hills Pipeline Release
Project Location:
Jal, NM
Invoice To:

No. Field ID / Point of Collection

	Sample Depth	Collection		Matrix	# of bottles	Number of preserved bottles								BTEX	TPH	CHLORIDES	Field Comments
		Date	Time			HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE				
1	(2) SB29 2-y	12/14	1420	S	2												
2	(2) SB29 4-b		1423														
3	(2) SB29 b-e		1427														
4	(2) SB29 g-i		1430														
5	(2) SB30 0-2		1450														
6	(2) SB30 0-2 split		1453														
7	(2) SB30 2-4		1455														
8	(2) SB30 4-b		1457														
9	(2) SB30 6-8		1459														
10	(2) SB30 8-10		1500														

Turnaround Time (Business days) Data Deliverable Information Notes:

Same Day TAT ☒ 5 Day TAT ☐
 Next Day EMERGENCY ☐ 7 Day TAT ☐
 2 Day EMERGENCY ☐ Contract TAT ☐
 3 Day EMERGENCY ☐ TRRP Checklist ☐

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

FED-EX / UPS, Tracking #

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY			
Relinquished By Sampler: James Fox	Date Time: 12/14/16	Received By: Arlene M.	Date Time:
Relinquished By:	Date Time:	Received By:	Date Time:
Relinquished By:	Date Time:	Received By:	Date Time:
Custody Seal #		Preserved where applicable	On Ice ☒

Temp: 14 IR ID: R-8
CF: + 0.1
Corrected Temp: 7.0

Setting the Standard since 1999

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1 Lakeland, Florida (863-646-8536)

Norcross, Georgia (770-449-8800)

Tampa, Florida (813-620-2000)

Xenco Quote #

Xenco Job #

542-84

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes									
Company Name / Branch: KJE, Environmental & Civil Engineering				Project Name/Number: OWL Bobcat/Red Hills Pipeline Release																	
Company Address: 500 Mosely Road, Cross Roads, Texas 76227				Project Location: Jal, NM																	
Email: james@kjenvironmental.com Phone No: (940)367-0805				Invoice To:																	
Project Contact: James Fox				PO Number:																	
Samplers Name																					
Field ID / Point of Collection				Collection		Number of preserved bottles						Field Comments									
No.				Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX	TPH	CHLORIDES		
1				(2) SG30	10-12												X	X	X		
2				(2) SG30	12-14												X	X	X		
3				(2) SG30	0-2												X	X	X		
4				(2) SG31	2-4												X	X	X		
5				(2) SG31	4-6												X	X	X		
6				(2) SG31	6-8												X	X	X		
7				(2) SG32	0-2												X	X	X		
8				(2) SG32	2-4												X	X	X		
9				(2) SG32	4-6												X	X	X		
10				(2) SG32	6-8												X	X	X		
Turnaround Time (Business days)								Data Deliverable Information				Notes:									
☐ Same Day TAT				☒ 5 Day TAT				☐ Level II Std QC				☐ Level IV (Full Data Pkg /raw data)									
☐ Next Day EMERGENCY				☐ 7 Day TAT				☐ Level III Std QC+ Forms				☐ TRRP Level IV									
☐ 2 Day EMERGENCY				☐ Contract TAT				☐ Level 3 (CLP Forms)				☐ UST / RG-411									
☐ 3 Day EMERGENCY								☐ TRRP Checklist													
TAT Starts Day received by Lab, if received by 5:00 pm																					
Relinquished by Sampler:				Date Time:				Received By:				Date Time:				Received By:					
1 James Fox				12/14/16				17 01:00 PM				2				2					
Relinquished by:				Date Time:				Received By:				Date Time:				Received By:					
3				12:55				3				4				4					
Relinquished by:				Date Time:				Received By:				Date Time:				Received By:					
5				5				5				5				5					
On file																					
Temp: 19.1 R ID-R-8																					
CF: + 0.1																					
Corrected Temp: 2.0																					



CHAIN OF CUSTODY

Page 2 of 8

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Lakeland, Florida (863-646-8526)
Tampa, Florida (813-620-2000)

Xenco Quote #

Xenco Job #

642184

Analytical Information

Matrix Codes

Client / Reporting Information

Project Information

Company Name / Branch:

Project Name/Number:

OWL Bobcat/Red Hills Pipeline Release

Company Address:

Project Location:

500 Mosely Road, Cross Roads, Texas 76227

Email: james@klienvironmental.com

Phone No: (940)387-0905

Invoice To:

Jal. NM

dena@klienvironmental.com

Project Contact:

James Fox

PO Number:

Sampler's Name

No. Field ID / Point of Collection

Collection

Number of preserved bottles

BTX (8260)

TPH

CHLORIDES

Field Comments

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

1 (2) SB 32 8-10

2

3

4

5

6

7

8

9

10

Turnaround Time (Business days)

Same Day TAT

Next Day EMERGENCY

2 Day EMERGENCY

3 Day EMERGENCY

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

Relinquished by Sampler:

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

5 Day TAT

7 Day TAT

Contract TAT

Level II Std QC

Level III Std QC+ Forms

Level 3 (CLP Forms)

TRRP Checklist

Level IV (Full Data Pkg /raw data)

TRRP Level IV

UST / RG -411

Notes:

FED-EX / UPS: Tracking #

Relinquished By:

Relinquished By:

Date Time:

Relinquished By:

Relinquished By:

Relinquished By:

Relinquished By:

Relinquished By:

Temp: 19 IR ID: R-8

CF: + 0.1

Corrected Temp: 2.0

On Ice

Preserved where applicable

On Ice



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: KJE Enviromental & Civil Engineering

Date/ Time Received: 12/14/2016 07:55:00 PM

Work Order #: 542184

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2
#2 *Shipping container in good condition?	N/A
#3 *Samples received on ice?	Yes
#4 *Custody Seal present on shipping container/ cooler?	N/A
#5 *Custody Seals intact on shipping container/ cooler?	N/A
#6 Custody Seals intact on sample bottles?	N/A
#7 *Custody Seals Signed and dated?	N/A
#8 *Chain of Custody present?	Yes
#9 Sample instructions complete on Chain of Custody?	Yes
#10 Any missing/extra samples?	No
#11 Chain of Custody signed when relinquished/ received?	Yes
#12 Chain of Custody agrees with sample label(s)?	Yes
#13 Container label(s) legible and intact?	Yes
#14 Sample matrix/ properties agree with Chain of Custody?	Yes
#15 Samples in proper container/ bottle?	Yes
#16 Samples properly preserved?	Yes
#17 Sample container(s) intact?	Yes
#18 Sufficient sample amount for indicated test(s)?	Yes
#19 All samples received within hold time?	Yes
#20 Subcontract of sample(s)?	Yes Houston
#21 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#22 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	N/A
#23 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Jessica Kramer

Jessica Kramer

Date: 12/15/2016

Checklist reviewed by:

Kelsey Brooks

Kelsey Brooks

Date: 12/15/2016

Analytical Report 542329
for
KJE Enviromental & Civil Engineering

Project Manager: James Fox
OWL Bobcat/Red Hills Pipeline Release

30-DEC-16

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

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

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



30-DEC-16

Project Manager: **James Fox**
KJE Enviromental & Civil Engineering
500 Mosley Rd
Aubrey, TX 76227

Reference: XENCO Report No(s): **542329**
OWL Bobcat/Red Hills Pipeline Release
Project Address: Jal, NM

James Fox:

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) 542329. 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. 542329 will be filed for 60 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

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

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KJE Enviromental & Civil Engineering, Aubrey, TX

OWL Bobcat/Red Hills Pipeline Release

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
(2) SB34 0-2	S	12-15-16 07:10	0 - 2	542329-001
(2) SB34 0-2 SPLIT	S	12-15-16 07:15	0 - 2	542329-002
(2) SB34 2-4	S	12-15-16 07:20	2 - 4	542329-003
(2) SB34 4-6	S	12-15-16 07:25	4 - 6	542329-004
(2) SB34 6-8	S	12-15-16 07:30	6 - 8	542329-005
(2) SB34 8-10	S	12-15-16 07:35	8 - 10	542329-006
(2) SB34 10-12	S	12-15-16 07:45	10 - 12	542329-007
(2) SB3 12-14	S	12-15-16 07:55	12 - 14	542329-008
(2) SB35 0-2	S	12-15-16 08:00	0 - 2	542329-009
(2) SB35 2-4	S	12-15-16 08:05	2 - 4	542329-010
(2) SB35 4-6	S	12-15-16 08:00	4 - 6	542329-011
(2) SB35 6-8	S	12-15-16 08:10	6 - 8	542329-012
(2) SB35 8-10	S	12-15-16 08:20	8 - 10	542329-013
(2) SB35 10-10.6	S	12-15-16 08:50	10 - 10.6	542329-014
(2) SB36 0-2	S	12-15-16 09:00	0 - 2	542329-015
(2) SB36 2-4	S	12-15-16 09:05	2 - 4	542329-016
(2) SB36 4-6	S	12-15-16 09:10	4 - 6	542329-017
(2) SB36 6-8	S	12-15-16 09:15	6 - 8	542329-018
(2) SB36 8-10	S	12-15-16 09:20	8 - 10	542329-019
(2) SB36 10-12	S	12-15-16 09:25	10 - 12	542329-020
(2) SB37 0-2	S	12-15-16 09:45	0 - 2	542329-021
(2) SB37 2-4	S	12-15-16 09:50	2 - 4	542329-022
(2) SB37 4-6	S	12-15-16 09:55	4 - 6	542329-023
(2) SB37 6-8	S	12-15-16 10:00	6 - 8	542329-024
(2) SB37 8-10	S	12-15-16 10:05	8 - 10	542329-025
(2) SB37 10-12	S	12-15-16 10:20	10 - 12	542329-026
(2) SB38 0-2	S	12-15-16 11:00	0 - 2	542329-027
(2) SB38 2-4	S	12-15-16 11:05	2 - 4	542329-028
(2) SB38 4-6	S	12-15-16 11:10	4 - 6	542329-029
(2) SB38 6-8	S	12-15-16 11:15	6 - 8	542329-030
(2) SB38 8-10	S	12-15-16 11:30	8 - 10	542329-031
(2) SB39 0-2	S	12-15-16 11:35	0 - 2	542329-032
(2) SB39 2-4	S	12-15-16 11:40	2 - 4	542329-033
(2) SB39 4-6	S	12-15-16 11:45	4 - 6	542329-034
(2) SB39 6-8	S	12-15-16 11:50	6 - 8	542329-035
(2) SB39 8-10	S	12-15-16 11:55	8 - 10	542329-036
(2) SB39 10-12	S	12-15-16 11:57	10 - 12	542329-037
(2) SB39 12-14	S	12-15-16 13:00	12 - 14	542329-038
(2) SB40 0-2	S	12-15-16 13:00	0 - 2	542329-039
(2) SB40 2-4	S	12-15-16 13:05	2 - 4	542329-040
(2) SB40 4-6	S	12-15-16 13:07	4 - 6	542329-041
(2) SB40 6-7	S	12-15-16 13:10	6 - 7	542329-042
(2) SB40 6-7 SPLIT	S	12-15-16 13:15	6 - 7	542329-043



Sample Cross Reference 542329



KJE Enviromental & Civil Engineering, Aubrey, TX

OWL Bobcat/Red Hills Pipeline Release

(2) SB37 2-4 SPLIT	S	12-15-16 00:00	2 - 4	542329-044
(2) SB33 0-2	S	12-15-16 00:00	0 - 2	542329-045
(2) SB33 2-4	S	12-15-16 00:00	2 - 4	542329-046
(2) SB33 4-6	S	12-15-16 00:00	4 - 6	542329-047
(2) SB33 6-8	S	12-15-16 00:00	6 - 8	542329-048



CASE NARRATIVE



Client Name: KJE Enviromental & Civil Engineering

Project Name: OWL Bobcat/Red Hills Pipeline Release

Project ID:
Work Order Number(s): 542329

Report Date: 30-DEC-16
Date Received: 12/15/2016

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3006154 BTEX by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3006339 BTEX by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3006426 BTEX by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3006652 TPH By SW8015 Mod

Lab Sample ID 542329-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). C10-C28 Diesel Range Hydrocarbons recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 542329-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -019, -020.

The Laboratory Control Sample for C10-C28 Diesel Range Hydrocarbons is within laboratory Control Limits, therefore the data was accepted.

KJE Enviromental & Civil Engineering, Aubrey, TX

OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(2) SB34 0-2**

Matrix : Soil

% Moisture :

Lab Sample Id : 542329-001

Date Collected : 12.15.16 07.10

Basis : Wet Weight

Sample Depth : 0 - 2

Date Received : 12.15.16 17.15

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006215

Date Prep: 12.21.16 11.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3690	mg/kg	12.21.16 16.25		5

Analytical Method : TPH By SW8015 Mod

Prep Method: TX1005P

Seq Number 3006652

Date Prep: 12.19.16 16.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	150	mg/kg	12.20.16 23.23		1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	865	mg/kg	12.20.16 23.23		1

Sample Id : **(2) SB34 0-2 SPLIT**

Matrix : Soil

% Moisture :

Lab Sample Id : 542329-002

Date Collected : 12.15.16 07.15

Basis : Wet Weight

Sample Depth : 0 - 2

Date Received : 12.15.16 17.15

Analytical Method : BTEX by SW 8260B

Prep Method: SW5030B

Seq Number 3006426

Date Prep: 12.20.16 13.17

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
m,p-Xylenes	179601-23-1	0.00350	mg/kg	12.20.16 19.44		1
o-Xylene	95-47-6	0.00662	mg/kg	12.20.16 19.44		1
Total Xylenes	1330-20-7	0.0101	mg/kg	12.20.16 19.44		1
Total BTEX		0.0101	mg/kg	12.20.16 19.44		1

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006215

Date Prep: 12.21.16 11.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3110	mg/kg	12.21.16 16.46		5

Analytical Method : TPH By SW8015 Mod

Prep Method: TX1005P

Seq Number 3006652

Date Prep: 12.19.16 16.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	22.8	mg/kg	12.21.16 01.02		1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	116	mg/kg	12.21.16 01.02		1



Hits Summary 542329



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(2) SB34 2-4**

Lab Sample Id : 542329-003

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.15.16 07.20

Date Received : 12.15.16 17.15

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006215

Prep Method: E300P

Date Prep: 12.21.16 11.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4550	mg/kg	12.21.16 16.53		5

Sample Id : **(2) SB34 4-6**

Lab Sample Id : 542329-004

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.15.16 07.25

Date Received : 12.15.16 17.15

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006215

Prep Method: E300P

Date Prep: 12.21.16 11.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4800	mg/kg	12.21.16 17.00		5

Sample Id : **(2) SB34 6-8**

Lab Sample Id : 542329-005

Sample Depth : 6 - 8

Matrix : Soil

Date Collected : 12.15.16 07.30

Date Received : 12.15.16 17.15

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006215

Prep Method: E300P

Date Prep: 12.21.16 11.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4800	mg/kg	12.21.16 17.07		5

Sample Id : **(2) SB34 8-10**

Lab Sample Id : 542329-006

Sample Depth : 8 - 10

Matrix : Soil

Date Collected : 12.15.16 07.35

Date Received : 12.15.16 17.15

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006215

Prep Method: E300P

Date Prep: 12.21.16 11.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3760	mg/kg	12.21.16 17.14		5



Hits Summary 542329



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(2) SB34 10-12**

Matrix : Soil

% Moisture :

Lab Sample Id : 542329-007

Date Collected : 12.15.16 07.45

Basis : Wet Weight

Sample Depth : 10 - 12

Date Received : 12.15.16 17.15

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006215

Date Prep: 12.21.16 11.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	594	mg/kg	12.21.16 17.21		1

Sample Id : **(2) SB3 12-14**

Matrix : Soil

% Moisture :

Lab Sample Id : 542329-008

Date Collected : 12.15.16 07.55

Basis : Wet Weight

Sample Depth : 12 - 14

Date Received : 12.15.16 17.15

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006215

Date Prep: 12.21.16 11.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.6	mg/kg	12.21.16 17.57		1

Sample Id : **(2) SB35 0-2**

Matrix : Soil

% Moisture :

Lab Sample Id : 542329-009

Date Collected : 12.15.16 08.00

Basis : Wet Weight

Sample Depth : 0 - 2

Date Received : 12.15.16 17.15

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006215

Date Prep: 12.21.16 11.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8.23	mg/kg	12.21.16 18.04		1

Sample Id : **(2) SB35 2-4**

Matrix : Soil

% Moisture :

Lab Sample Id : 542329-010

Date Collected : 12.15.16 08.05

Basis : Wet Weight

Sample Depth : 2 - 4

Date Received : 12.15.16 17.15

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006215

Date Prep: 12.21.16 11.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4790	mg/kg	12.21.16 18.11		10



Hits Summary 542329



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(2) SB35 4-6**

Matrix : Soil

% Moisture :

Lab Sample Id : 542329-011

Date Collected : 12.15.16 08.00

Basis : Wet Weight

Sample Depth : 4 - 6

Date Received : 12.15.16 17.15

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006215

Date Prep: 12.21.16 11.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	74.6	mg/kg	12.21.16 18.18		1

Sample Id : **(2) SB35 6-8**

Matrix : Soil

% Moisture :

Lab Sample Id : 542329-012

Date Collected : 12.15.16 08.10

Basis : Wet Weight

Sample Depth : 6 - 8

Date Received : 12.15.16 17.15

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006215

Date Prep: 12.21.16 11.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5330	mg/kg	12.21.16 18.25		10

Sample Id : **(2) SB35 8-10**

Matrix : Soil

% Moisture :

Lab Sample Id : 542329-013

Date Collected : 12.15.16 08.20

Basis : Wet Weight

Sample Depth : 8 - 10

Date Received : 12.15.16 17.15

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006215

Date Prep: 12.21.16 11.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7670	mg/kg	12.21.16 18.32		10

Sample Id : **(2) SB35 10-10.6**

Matrix : Soil

% Moisture :

Lab Sample Id : 542329-014

Date Collected : 12.15.16 08.50

Basis : Wet Weight

Sample Depth : 10 - 10.6

Date Received : 12.15.16 17.15

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006215

Date Prep: 12.21.16 11.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4490	mg/kg	12.21.16 18.39		5

KJE Enviromental & Civil Engineering, Aubrey, TX

OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(2) SB36 0-2**

Lab Sample Id : 542329-015

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.15.16 09.00

Date Received : 12.15.16 17.15

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006215

Prep Method: E300P

Date Prep: 12.21.16 11.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	97.3	mg/kg	12.21.16 18.46		1

Sample Id : **(2) SB36 2-4**

Lab Sample Id : 542329-016

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.15.16 09.05

Date Received : 12.15.16 17.15

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006215

Prep Method: E300P

Date Prep: 12.21.16 11.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2470	mg/kg	12.21.16 18.53		5

Sample Id : **(2) SB36 4-6**

Lab Sample Id : 542329-017

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.15.16 09.10

Date Received : 12.15.16 17.15

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006222

Prep Method: E300P

Date Prep: 12.21.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3450	mg/kg	12.21.16 19.35		5

Sample Id : **(2) SB36 6-8**

Lab Sample Id : 542329-018

Sample Depth : 6 - 8

Matrix : Soil

Date Collected : 12.15.16 09.15

Date Received : 12.15.16 17.15

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006222

Prep Method: E300P

Date Prep: 12.21.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2360	mg/kg	12.21.16 19.56		5



Hits Summary 542329



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(2) SB36 8-10**

Matrix : Soil

% Moisture :

Lab Sample Id : 542329-019

Date Collected : 12.15.16 09.20

Basis : Wet Weight

Sample Depth : 8 - 10

Date Received : 12.15.16 17.15

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006222

Date Prep: 12.21.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9.91	mg/kg	12.21.16 20.03		1

Sample Id : **(2) SB37 0-2**

Matrix : Soil

% Moisture :

Lab Sample Id : 542329-021

Date Collected : 12.15.16 09.45

Basis : Wet Weight

Sample Depth : 0 - 2

Date Received : 12.15.16 17.15

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006222

Date Prep: 12.21.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	443	mg/kg	12.21.16 20.18		1

Sample Id : **(2) SB37 2-4**

Matrix : Soil

% Moisture :

Lab Sample Id : 542329-022

Date Collected : 12.15.16 09.50

Basis : Wet Weight

Sample Depth : 2 - 4

Date Received : 12.15.16 17.15

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006222

Date Prep: 12.21.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2730	mg/kg	12.21.16 20.39		5

Sample Id : **(2) SB37 4-6**

Matrix : Soil

% Moisture :

Lab Sample Id : 542329-023

Date Collected : 12.15.16 09.55

Basis : Wet Weight

Sample Depth : 4 - 6

Date Received : 12.15.16 17.15

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006222

Date Prep: 12.21.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4950	mg/kg	12.21.16 20.46		5



Hits Summary 542329



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(2) SB37 6-8**

Matrix : Soil

% Moisture :

Lab Sample Id : 542329-024

Date Collected : 12.15.16 10.00

Basis : Wet Weight

Sample Depth : 6 - 8

Date Received : 12.15.16 17.15

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006222

Date Prep: 12.21.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4590	mg/kg	12.21.16 20.53		5

Sample Id : **(2) SB37 8-10**

Matrix : Soil

% Moisture :

Lab Sample Id : 542329-025

Date Collected : 12.15.16 10.05

Basis : Wet Weight

Sample Depth : 8 - 10

Date Received : 12.15.16 17.15

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006222

Date Prep: 12.21.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	504	mg/kg	12.21.16 21.00		1

Sample Id : **(2) SB37 10-12**

Matrix : Soil

% Moisture :

Lab Sample Id : 542329-026

Date Collected : 12.15.16 10.20

Basis : Wet Weight

Sample Depth : 10 - 12

Date Received : 12.15.16 17.15

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006222

Date Prep: 12.21.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9.86	mg/kg	12.21.16 21.07		1

Sample Id : **(2) SB38 0-2**

Matrix : Soil

% Moisture :

Lab Sample Id : 542329-027

Date Collected : 12.15.16 11.00

Basis : Wet Weight

Sample Depth : 0 - 2

Date Received : 12.15.16 17.15

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006222

Date Prep: 12.21.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2880	mg/kg	12.21.16 21.14		5



Hits Summary 542329



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(2) SB38 2-4**

Lab Sample Id : 542329-028

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.15.16 11.05

Date Received : 12.15.16 17.15

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006222

Prep Method: E300P

Date Prep: 12.21.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2570	mg/kg	12.21.16 21.35		5

Sample Id : **(2) SB38 4-6**

Lab Sample Id : 542329-029

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.15.16 11.10

Date Received : 12.15.16 17.15

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006222

Prep Method: E300P

Date Prep: 12.21.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4950	mg/kg	12.21.16 21.56		10

Sample Id : **(2) SB38 6-8**

Lab Sample Id : 542329-030

Sample Depth : 6 - 8

Matrix : Soil

Date Collected : 12.15.16 11.15

Date Received : 12.15.16 17.15

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006222

Prep Method: E300P

Date Prep: 12.21.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	915	mg/kg	12.21.16 22.03		1

Sample Id : **(2) SB38 8-10**

Lab Sample Id : 542329-031

Sample Depth : 8 - 10

Matrix : Soil

Date Collected : 12.15.16 11.30

Date Received : 12.15.16 17.15

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006222

Prep Method: E300P

Date Prep: 12.21.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	15.8	mg/kg	12.21.16 22.10		1

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OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(2) SB39 0-2**

Lab Sample Id : 542329-032

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.15.16 11.35

Date Received : 12.15.16 17.15

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006222

Prep Method: E300P

Date Prep: 12.21.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2770	mg/kg	12.21.16 22.17		5

Sample Id : **(2) SB39 2-4**

Lab Sample Id : 542329-033

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.15.16 11.40

Date Received : 12.15.16 17.15

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006222

Prep Method: E300P

Date Prep: 12.21.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	516	mg/kg	12.21.16 22.24		0

Sample Id : **(2) SB39 4-6**

Lab Sample Id : 542329-034

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.15.16 11.45

Date Received : 12.15.16 17.15

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006222

Prep Method: E300P

Date Prep: 12.21.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4090	mg/kg	12.21.16 22.32		5

Sample Id : **(2) SB39 6-8**

Lab Sample Id : 542329-035

Sample Depth : 6 - 8

Matrix : Soil

Date Collected : 12.15.16 11.50

Date Received : 12.15.16 17.15

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006222

Prep Method: E300P

Date Prep: 12.21.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8790	mg/kg	12.21.16 22.39		10



Hits Summary 542329



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(2) SB39 8-10**

Matrix : Soil

% Moisture :

Lab Sample Id : 542329-036

Date Collected : 12.15.16 11.55

Basis : Wet Weight

Sample Depth : 8 - 10

Date Received : 12.15.16 17.15

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006222

Date Prep: 12.21.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4640	mg/kg	12.21.16 22.46		5

Sample Id : **(2) SB39 10-12**

Matrix : Soil

% Moisture :

Lab Sample Id : 542329-037

Date Collected : 12.15.16 11.57

Basis : Wet Weight

Sample Depth : 10 - 12

Date Received : 12.15.16 17.15

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006224

Date Prep: 12.21.16 18.30

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3180	mg/kg	12.22.16 01.07		5

Sample Id : **(2) SB39 12-14**

Matrix : Soil

% Moisture :

Lab Sample Id : 542329-038

Date Collected : 12.15.16 13.00

Basis : Wet Weight

Sample Depth : 12 - 14

Date Received : 12.15.16 17.15

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006224

Date Prep: 12.21.16 18.30

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	31.5	mg/kg	12.22.16 01.28		1

Sample Id : **(2) SB40 0-2**

Matrix : Soil

% Moisture :

Lab Sample Id : 542329-039

Date Collected : 12.15.16 13.00

Basis : Wet Weight

Sample Depth : 0 - 2

Date Received : 12.15.16 17.15

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006224

Date Prep: 12.21.16 18.30

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.61	mg/kg	12.22.16 01.35		1



Hits Summary 542329



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(2) SB40 2-4**

Lab Sample Id : 542329-040

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.15.16 13.05

Date Received : 12.15.16 17.15

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006224

Prep Method: E300P

Date Prep: 12.21.16 18.30

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.2	mg/kg	12.22.16 01.42		1

Sample Id : **(2) SB40 4-6**

Lab Sample Id : 542329-041

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.15.16 13.07

Date Received : 12.15.16 17.15

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006270

Prep Method: E300P

Date Prep: 12.22.16 13.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.42	mg/kg	12.22.16 17.09		1

Sample Id : **(2) SB40 6-7**

Lab Sample Id : 542329-042

Sample Depth : 6 - 7

Matrix : Soil

Date Collected : 12.15.16 13.10

Date Received : 12.15.16 17.15

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006270

Prep Method: E300P

Date Prep: 12.22.16 13.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.3	mg/kg	12.22.16 17.16		1

Sample Id : **(2) SB40 6-7 SPLIT**

Lab Sample Id : 542329-043

Sample Depth : 6 - 7

Matrix : Soil

Date Collected : 12.15.16 13.15

Date Received : 12.15.16 17.15

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006270

Prep Method: E300P

Date Prep: 12.22.16 13.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.7	mg/kg	12.22.16 17.23		1



Hits Summary 542329



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(2) SB37 2-4 SPLIT**

Matrix : Soil

% Moisture :

Lab Sample Id : 542329-044

Date Collected : 12.15.16 00.00

Basis : Wet Weight

Sample Depth : 2 - 4

Date Received : 12.15.16 17.15

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006270

Date Prep: 12.22.16 13.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3030	mg/kg	12.22.16 17.30		5

Sample Id : **(2) SB33 0-2**

Matrix : Soil

% Moisture :

Lab Sample Id : 542329-045

Date Collected : 12.15.16 00.00

Basis : Wet Weight

Sample Depth : 0 - 2

Date Received : 12.15.16 17.15

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006288

Date Prep: 12.22.16 13.51

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8.08	mg/kg	12.22.16 18.12		1

Sample Id : **(2) SB33 6-8**

Matrix : Soil

% Moisture :

Lab Sample Id : 542329-048

Date Collected : 12.15.16 00.00

Basis : Wet Weight

Sample Depth : 6 - 8

Date Received : 12.15.16 17.15

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006288

Date Prep: 12.22.16 13.51

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9.18	mg/kg	12.22.16 18.47		1



Certificate of Analysis Summary 542329

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-15-16 05:15 pm

Report Date: 30-DEC-16

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	542329-001	542329-002	542329-003	542329-004	542329-005	542329-006
	<i>Field Id:</i>	(2) SB34 0-2	(2) SB34 0-2 SPLIT	(2) SB34 2-4	(2) SB34 4-6	(2) SB34 6-8	(2) SB34 8-10
	<i>Depth:</i>	0-2	0-2	2-4	4-6	6-8	8-10
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-15-16 07:10	Dec-15-16 07:15	Dec-15-16 07:20	Dec-15-16 07:25	Dec-15-16 07:30	Dec-15-16 07:35
BTEX by SW 8260B SUB: TX104704215	<i>Extracted:</i>	Dec-19-16 19:36	Dec-20-16 13:17	Dec-20-16 13:16	Dec-19-16 19:39	Dec-19-16 19:40	Dec-19-16 19:41
	<i>Analyzed:</i>	Dec-19-16 21:29	Dec-20-16 19:44	Dec-20-16 19:25	Dec-19-16 22:24	Dec-19-16 22:43	Dec-19-16 23:01
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00101 0.00101	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100
Toluene		<0.00101 0.00101	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100
Ethylbenzene		<0.00101 0.00101	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100
m,p-Xylenes		<0.00201 0.00201	0.00350 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
o-Xylene		<0.00101 0.00101	0.00662 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100
Total Xylenes		<0.00101 0.00101	0.0101 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100
Total BTEX		<0.00101 0.00101	0.0101 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Dec-21-16 11:00	Dec-21-16 11:00	Dec-21-16 11:00	Dec-21-16 11:00	Dec-21-16 11:00	Dec-21-16 11:00
	<i>Analyzed:</i>	Dec-21-16 16:25	Dec-21-16 16:46	Dec-21-16 16:53	Dec-21-16 17:00	Dec-21-16 17:07	Dec-21-16 17:14
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		3690 25.0	3110 25.0	4550 25.0	4800 25.0	4800 25.0	3760 25.0
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-19-16 16:00	Dec-19-16 16:00	Dec-19-16 16:00	Dec-19-16 16:00	Dec-19-16 16:00	Dec-19-16 16:00
	<i>Analyzed:</i>	Dec-20-16 23:23	Dec-21-16 01:02	Dec-21-16 01:35	Dec-21-16 02:10	Dec-21-16 02:45	Dec-21-16 03:19
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		150 15.0	22.8 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		865 15.0	116 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542329

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-15-16 05:15 pm

Report Date: 30-DEC-16

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542329-007	542329-008	542329-009	542329-010	542329-011	542329-012
	Field Id:	(2) SB34 10-12	(2) SB3 12-14	(2) SB35 0-2	(2) SB35 2-4	(2) SB35 4-6	(2) SB35 6-8
	Depth:	10-12	12-14	0-2	2-4	4-6	6-8
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-15-16 07:45	Dec-15-16 07:55	Dec-15-16 08:00	Dec-15-16 08:05	Dec-15-16 08:00	Dec-15-16 08:10
BTEX by SW 8260B SUB: TX104704215	Extracted:	Dec-19-16 19:42	Dec-19-16 19:43	Dec-19-16 19:44	Dec-19-16 19:45	Dec-19-16 19:46	Dec-19-16 19:47
	Analyzed:	Dec-19-16 23:20	Dec-19-16 23:39	Dec-19-16 23:57	Dec-20-16 00:16	Dec-20-16 00:34	Dec-20-16 00:53
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000998 0.000998	<0.000996 0.000996	<0.00101 0.00101	<0.000994 0.000994	<0.00101 0.00101	<0.00101 0.00101
Toluene		<0.000998 0.000998	<0.000996 0.000996	<0.00101 0.00101	<0.000994 0.000994	<0.00101 0.00101	<0.00101 0.00101
Ethylbenzene		<0.000998 0.000998	<0.000996 0.000996	<0.00101 0.00101	<0.000994 0.000994	<0.00101 0.00101	<0.00101 0.00101
m,p-Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00202 0.00202	<0.00202 0.00202
o-Xylene		<0.000998 0.000998	<0.000996 0.000996	<0.00101 0.00101	<0.000994 0.000994	<0.00101 0.00101	<0.00101 0.00101
Total Xylenes		<0.000998 0.000998	<0.000996 0.000996	<0.00101 0.00101	<0.000994 0.000994	<0.00101 0.00101	<0.00101 0.00101
Total BTEX		<0.000998 0.000998	<0.000996 0.000996	<0.00101 0.00101	<0.000994 0.000994	<0.00101 0.00101	<0.00101 0.00101
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-21-16 11:00	Dec-21-16 11:00	Dec-21-16 11:00	Dec-21-16 11:00	Dec-21-16 11:00	Dec-21-16 11:00
	Analyzed:	Dec-21-16 17:21	Dec-21-16 17:57	Dec-21-16 18:04	Dec-21-16 18:11	Dec-21-16 18:18	Dec-21-16 18:25
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		594 5.00	10.6 5.00	8.23 5.00	4790 50.0	74.6 5.00	5330 50.0
TPH By SW8015 Mod	Extracted:	Dec-19-16 16:00	Dec-19-16 16:00	Dec-19-16 16:00	Dec-19-16 16:00	Dec-19-16 16:00	Dec-19-16 16:00
	Analyzed:	Dec-21-16 03:54	Dec-21-16 04:31	Dec-21-16 05:06	Dec-21-16 05:41	Dec-21-16 06:51	Dec-21-16 07:24
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542329

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-15-16 05:15 pm

Report Date: 30-DEC-16

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542329-013	542329-014	542329-015	542329-016	542329-017	542329-018
	Field Id:	(2) SB35 8-10	(2) SB35 10-10.6	(2) SB36 0-2	(2) SB36 2-4	(2) SB36 4-6	(2) SB36 6-8
	Depth:	8-10	10-10.6	0-2	2-4	4-6	6-8
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-15-16 08:20	Dec-15-16 08:50	Dec-15-16 09:00	Dec-15-16 09:05	Dec-15-16 09:10	Dec-15-16 09:15
BTEX by SW 8260B SUB: TX104704215	Extracted:	Dec-19-16 19:48	Dec-19-16 19:49	Dec-19-16 19:50	Dec-19-16 19:51	Dec-19-16 19:52	Dec-19-16 19:53
	Analyzed:	Dec-20-16 01:12	Dec-20-16 01:30	Dec-20-16 01:49	Dec-20-16 02:08	Dec-20-16 02:26	Dec-20-16 02:45
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00100 0.00100	<0.000994 0.000994	<0.00101 0.00101	<0.000990 0.000990	<0.00101 0.00101	<0.00100 0.00100
Toluene		<0.00100 0.00100	<0.000994 0.000994	<0.00101 0.00101	<0.000990 0.000990	<0.00101 0.00101	<0.00100 0.00100
Ethylbenzene		<0.00100 0.00100	<0.000994 0.000994	<0.00101 0.00101	<0.000990 0.000990	<0.00101 0.00101	<0.00100 0.00100
m,p-Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00198 0.00198	<0.00201 0.00201	<0.00201 0.00201
o-Xylene		<0.00100 0.00100	<0.000994 0.000994	<0.00101 0.00101	<0.000990 0.000990	<0.00101 0.00101	<0.00100 0.00100
Total Xylenes		<0.00100 0.00100	<0.000994 0.000994	<0.00101 0.00101	<0.000990 0.000990	<0.00101 0.00101	<0.00100 0.00100
Total BTEX		<0.00100 0.00100	<0.000994 0.000994	<0.00101 0.00101	<0.000990 0.000990	<0.00101 0.00101	<0.00100 0.00100
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-21-16 11:00	Dec-21-16 11:00	Dec-21-16 11:00	Dec-21-16 11:00	Dec-21-16 14:00	Dec-21-16 14:00
	Analyzed:	Dec-21-16 18:32	Dec-21-16 18:39	Dec-21-16 18:46	Dec-21-16 18:53	Dec-21-16 19:35	Dec-21-16 19:56
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		7670 50.0	4490 25.0	97.3 5.00	2470 25.0	3450 25.0	2360 25.0
TPH By SW8015 Mod	Extracted:	Dec-19-16 16:00	Dec-19-16 16:00	Dec-19-16 16:00	Dec-19-16 16:00	Dec-19-16 16:00	Dec-19-16 16:00
	Analyzed:	Dec-21-16 07:59	Dec-21-16 08:31	Dec-21-16 09:06	Dec-21-16 09:39	Dec-21-16 10:15	Dec-21-16 10:50
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542329

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-15-16 05:15 pm

Report Date: 30-DEC-16

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542329-019		542329-020		542329-021		542329-022		542329-023		542329-024	
	Field Id:	(2) SB36 8-10		(2) SB36 10-12		(2) SB37 0-2		(2) SB37 2-4		(2) SB37 4-6		(2) SB37 6-8	
	Depth:	8-10		10-12		0-2		2-4		4-6		6-8	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Dec-15-16 09:20		Dec-15-16 09:25		Dec-15-16 09:45		Dec-15-16 09:50		Dec-15-16 09:55		Dec-15-16 10:00	
BTEX by SW 8260B SUB: TX104704215	Extracted:	Dec-21-16 12:08		Dec-19-16 19:54		Dec-20-16 11:30		Dec-20-16 11:31		Dec-20-16 11:32		Dec-20-16 11:33	
	Analyzed:	Dec-21-16 15:02		Dec-20-16 03:04		Dec-20-16 12:56		Dec-20-16 13:27		Dec-20-16 13:47		Dec-20-16 14:02	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.000994	0.000994	<0.000998	0.000998	<0.000994	0.000994	<0.00101	0.00101	<0.00101	0.00101	<0.00100	0.00100
Toluene		<0.000994	0.000994	<0.000998	0.000998	<0.000994	0.000994	<0.00101	0.00101	<0.00101	0.00101	<0.00100	0.00100
Ethylbenzene		<0.000994	0.000994	<0.000998	0.000998	<0.000994	0.000994	<0.00101	0.00101	<0.00101	0.00101	<0.00100	0.00100
m,p-Xylenes		<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199	<0.00201	0.00201	<0.00202	0.00202	<0.00200	0.00200
o-Xylene		<0.000994	0.000994	<0.000998	0.000998	<0.000994	0.000994	<0.00101	0.00101	<0.00101	0.00101	<0.00100	0.00100
Total Xylenes		<0.000994	0.000994	<0.000998	0.000998	<0.000994	0.000994	<0.00101	0.00101	<0.00101	0.00101	<0.00100	0.00100
Total BTEX		<0.000994	0.000994	<0.000998	0.000998	<0.000994	0.000994	<0.00101	0.00101	<0.00101	0.00101	<0.00100	0.00100
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-21-16 14:00		Dec-21-16 14:00		Dec-21-16 14:00		Dec-21-16 14:00		Dec-21-16 14:00		Dec-21-16 14:00	
	Analyzed:	Dec-21-16 20:03		Dec-21-16 20:11		Dec-21-16 20:18		Dec-21-16 20:39		Dec-21-16 20:46		Dec-21-16 20:53	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		9.91	5.00	<5.00	5.00	443	5.00	2730	25.0	4950	25.0	4590	25.0
TPH By SW8015 Mod	Extracted:	Dec-19-16 16:00		Dec-19-16 16:00		Dec-19-16 18:00		Dec-19-16 18:00		Dec-19-16 18:00		Dec-19-16 18:00	
	Analyzed:	Dec-21-16 11:25		Dec-21-16 12:00		Dec-20-16 22:21		Dec-22-16 00:26		Dec-21-16 00:04		Dec-22-16 00:50	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C10 Gasoline Range Hydrocarbons		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
C10-C28 Diesel Range Hydrocarbons		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
C28-C35 Oil Range Hydrocarbons		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542329

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-15-16 05:15 pm

Report Date: 30-DEC-16

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542329-025	542329-026	542329-027	542329-028	542329-029	542329-030
	Field Id:	(2) SB37 8-10	(2) SB37 10-12	(2) SB38 0-2	(2) SB38 2-4	(2) SB38 4-6	(2) SB38 6-8
	Depth:	8-10	10-12	0-2	2-4	4-6	6-8
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-15-16 10:05	Dec-15-16 10:20	Dec-15-16 11:00	Dec-15-16 11:05	Dec-15-16 11:10	Dec-15-16 11:15
BTEX by SW 8260B SUB: TX104704215	Extracted:	Dec-20-16 11:34	Dec-20-16 11:35	Dec-20-16 11:36	Dec-20-16 11:37	Dec-20-16 11:38	Dec-20-16 11:39
	Analyzed:	Dec-20-16 14:18	Dec-20-16 14:33	Dec-20-16 14:48	Dec-20-16 15:03	Dec-20-16 15:19	Dec-20-16 15:34
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Benzene	<0.00100 0.00100	<0.000996 0.000996	<0.00101 0.00101	<0.000996 0.000996	<0.00100 0.00100	<0.00100 0.00100
	Toluene	<0.00100 0.00100	<0.000996 0.000996	<0.00101 0.00101	<0.000996 0.000996	<0.00100 0.00100	<0.00100 0.00100
Ethylbenzene		<0.00100 0.00100	<0.000996 0.000996	<0.00101 0.00101	<0.000996 0.000996	<0.00100 0.00100	<0.00100 0.00100
m,p-Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201
o-Xylene		<0.00100 0.00100	<0.000996 0.000996	<0.00101 0.00101	<0.000996 0.000996	<0.00100 0.00100	<0.00100 0.00100
Total Xylenes		<0.00100 0.00100	<0.000996 0.000996	<0.00101 0.00101	<0.000996 0.000996	<0.00100 0.00100	<0.00100 0.00100
Total BTEX		<0.00100 0.00100	<0.000996 0.000996	<0.00101 0.00101	<0.000996 0.000996	<0.00100 0.00100	<0.00100 0.00100
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-21-16 14:00	Dec-21-16 14:00	Dec-21-16 14:00	Dec-21-16 14:00	Dec-21-16 14:00	Dec-21-16 14:00
	Analyzed:	Dec-21-16 21:00	Dec-21-16 21:07	Dec-21-16 21:14	Dec-21-16 21:35	Dec-21-16 21:56	Dec-21-16 22:03
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Chloride	504 5.00	9.86 5.00	2880 25.0	2570 25.0	4950 50.0	915 5.00
TPH By SW8015 Mod	Extracted:	Dec-19-16 18:00	Dec-19-16 18:00	Dec-19-16 18:00	Dec-19-16 18:00	Dec-19-16 18:00	Dec-19-16 18:00
	Analyzed:	Dec-22-16 01:15	Dec-21-16 01:24	Dec-21-16 01:52	Dec-22-16 01:40	Dec-21-16 02:45	Dec-21-16 03:11
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	C6-C10 Gasoline Range Hydrocarbons	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
	C10-C28 Diesel Range Hydrocarbons	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542329

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-15-16 05:15 pm

Report Date: 30-DEC-16

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	542329-031	542329-032	542329-033	542329-034	542329-035	542329-036
	<i>Field Id:</i>	(2) SB38 8-10	(2) SB39 0-2	(2) SB39 2-4	(2) SB39 4-6	(2) SB39 6-8	(2) SB39 8-10
	<i>Depth:</i>	8-10	0-2	2-4	4-6	6-8	8-10
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-15-16 11:30	Dec-15-16 11:35	Dec-15-16 11:40	Dec-15-16 11:45	Dec-15-16 11:50	Dec-15-16 11:55
BTEX by SW 8260B SUB: TX104704215	<i>Extracted:</i>	Dec-20-16 11:40	Dec-20-16 13:01	Dec-20-16 13:02	Dec-20-16 13:03	Dec-20-16 13:03	Dec-20-16 13:04
	<i>Analyzed:</i>	Dec-20-16 15:50	Dec-20-16 14:26	Dec-20-16 14:45	Dec-20-16 15:04	Dec-20-16 15:23	Dec-20-16 15:42
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000996 0.000996	<0.000992 0.000992	<0.00100 0.00100	<0.000996 0.000996	<0.00101 0.00101	<0.000992 0.000992
Toluene		<0.000996 0.000996	<0.000992 0.000992	<0.00100 0.00100	<0.000996 0.000996	<0.00101 0.00101	<0.000992 0.000992
Ethylbenzene		<0.000996 0.000996	<0.000992 0.000992	<0.00100 0.00100	<0.000996 0.000996	<0.00101 0.00101	<0.000992 0.000992
m,p-Xylenes		<0.00199 0.00199	<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.00202 0.00202	<0.00198 0.00198
o-Xylene		<0.000996 0.000996	<0.000992 0.000992	<0.00100 0.00100	<0.000996 0.000996	<0.00101 0.00101	<0.000992 0.000992
Total Xylenes		<0.000996 0.000996	<0.000992 0.000992	<0.00100 0.00100	<0.000996 0.000996	<0.00101 0.00101	<0.000992 0.000992
Total BTEX		<0.000996 0.000996	<0.000992 0.000992	<0.00100 0.00100	<0.000996 0.000996	<0.00101 0.00101	<0.000992 0.000992
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Dec-21-16 14:00	Dec-21-16 14:00	Dec-21-16 14:00	Dec-21-16 14:00	Dec-21-16 14:00	Dec-21-16 14:00
	<i>Analyzed:</i>	Dec-21-16 22:10	Dec-21-16 22:17	Dec-21-16 22:24	Dec-21-16 22:32	Dec-21-16 22:39	Dec-21-16 22:46
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		15.8 5.00	2770 25.0	516 5.00	4090 25.0	8790 50.0	4640 25.0
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-19-16 18:00	Dec-19-16 18:00	Dec-19-16 18:00	Dec-19-16 18:00	Dec-19-16 18:00	Dec-19-16 18:00
	<i>Analyzed:</i>	Dec-21-16 04:04	Dec-21-16 04:31	Dec-22-16 02:04	Dec-22-16 02:29	Dec-21-16 05:52	Dec-21-16 06:19
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542329

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-15-16 05:15 pm

Report Date: 30-DEC-16

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542329-037	542329-038	542329-039	542329-040	542329-041	542329-042
	Field Id:	(2) SB39 10-12	(2) SB39 12-14	(2) SB40 0-2	(2) SB40 2-4	(2) SB40 4-6	(2) SB40 6-7
	Depth:	10-12	12-14	0-2	2-4	4-6	6-7
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-15-16 11:57	Dec-15-16 13:00	Dec-15-16 13:00	Dec-15-16 13:05	Dec-15-16 13:07	Dec-15-16 13:10
BTEX by SW 8260B SUB: TX104704215	Extracted:	Dec-20-16 13:05	Dec-20-16 13:06	Dec-20-16 13:07	Dec-20-16 13:08	Dec-20-16 13:09	Dec-20-16 13:00
	Analyzed:	Dec-20-16 16:00	Dec-20-16 16:19	Dec-20-16 16:38	Dec-20-16 16:56	Dec-20-16 17:15	Dec-20-16 14:08
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Benzene	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.000992 0.000992	<0.00101 0.00101
	Toluene	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.000992 0.000992	<0.00101 0.00101
Ethylbenzene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.000992 0.000992	<0.00101 0.00101
m,p-Xylenes		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	<0.00201 0.00201
o-Xylene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.000992 0.000992	<0.00101 0.00101
Total Xylenes		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.000992 0.000992	<0.00101 0.00101
Total BTEX		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.000992 0.000992	<0.00101 0.00101
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-21-16 18:30	Dec-21-16 18:30	Dec-21-16 18:30	Dec-21-16 18:30	Dec-22-16 13:00	Dec-22-16 13:00
	Analyzed:	Dec-22-16 01:07	Dec-22-16 01:28	Dec-22-16 01:35	Dec-22-16 01:42	Dec-22-16 17:09	Dec-22-16 17:16
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Chloride	3180 25.0	31.5 5.00	7.61 5.00	12.2 5.00	5.42 5.00	12.3 5.00
TPH By SW8015 Mod	Extracted:	Dec-19-16 18:00	Dec-19-16 18:00	Dec-19-16 18:00	Dec-19-16 18:00	Dec-20-16 18:00	Dec-20-16 18:00
	Analyzed:	Dec-21-16 06:45	Dec-21-16 07:11	Dec-21-16 07:37	Dec-21-16 08:03	Dec-21-16 10:17	Dec-21-16 11:35
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	C6-C10 Gasoline Range Hydrocarbons	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
	C10-C28 Diesel Range Hydrocarbons	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542329

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-15-16 05:15 pm

Report Date: 30-DEC-16

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542329-043	542329-044	542329-045	542329-046	542329-047	542329-048
	Field Id:	(2) SB40 6-7 SPLIT	(2) SB37 2-4 SPLIT	(2) SB33 0-2	(2) SB33 2-4	(2) SB33 4-6	(2) SB33 6-8
	Depth:	6-7	2-4	0-2	2-4	4-6	6-8
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-15-16 13:15	Dec-15-16 00:00	Dec-15-16 00:00	Dec-15-16 00:00	Dec-15-16 00:00	Dec-15-16 00:00
BTEX by SW 8260B SUB: TX104704215	Extracted:	Dec-20-16 13:10	Dec-20-16 13:11	Dec-20-16 13:12	Dec-20-16 13:13	Dec-21-16 16:13	Dec-20-16 13:15
	Analyzed:	Dec-20-16 17:34	Dec-20-16 17:53	Dec-20-16 18:11	Dec-20-16 18:30	Dec-21-16 18:24	Dec-20-16 19:06
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Benzene	<0.000998 0.000998	<0.00100 0.00100	<0.000994 0.000994	<0.000996 0.000996	<0.000998 0.000998	<0.00100 0.00100
	Toluene	<0.000998 0.000998	<0.00100 0.00100	<0.000994 0.000994	<0.000996 0.000996	<0.000998 0.000998	<0.00100 0.00100
Ethylbenzene		<0.000998 0.000998	<0.00100 0.00100	<0.000994 0.000994	<0.000996 0.000996	<0.000998 0.000998	<0.00100 0.00100
m,p-Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
o-Xylene		<0.000998 0.000998	<0.00100 0.00100	<0.000994 0.000994	<0.000996 0.000996	<0.000998 0.000998	<0.00100 0.00100
Total Xylenes		<0.000998 0.000998	<0.00100 0.00100	<0.000994 0.000994	<0.000996 0.000996	<0.000998 0.000998	<0.00100 0.00100
Total BTEX		<0.000998 0.000998	<0.00100 0.00100	<0.000994 0.000994	<0.000996 0.000996	<0.000998 0.000998	<0.00100 0.00100
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-22-16 13:00	Dec-22-16 13:00	Dec-22-16 13:51	Dec-22-16 13:51	Dec-22-16 13:51	Dec-22-16 13:51
	Analyzed:	Dec-22-16 17:23	Dec-22-16 17:30	Dec-22-16 18:12	Dec-22-16 18:33	Dec-22-16 18:40	Dec-22-16 18:47
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Chloride	12.7 5.00	3030 25.0	8.08 5.00	<5.00 5.00	<5.00 5.00	9.18 5.00
TPH By SW8015 Mod	Extracted:	Dec-20-16 18:00	Dec-20-16 18:00	Dec-20-16 18:00	Dec-20-16 18:00	Dec-20-16 18:00	Dec-20-16 18:00
	Analyzed:	Dec-22-16 02:54	Dec-21-16 12:28	Dec-22-16 10:26	Dec-22-16 08:45	Dec-22-16 09:09	Dec-22-16 09:34
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	C6-C10 Gasoline Range Hydrocarbons	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
	C10-C28 Diesel Range Hydrocarbons	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager

- 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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 5332 Blackberry Drive, San Antonio TX 78238
 1211 W Florida Ave, Midland, TX 79701
 2525 W. Huntington Dr. - Suite 102, Tempe AZ 85282

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(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(432) 563-1800	(432) 563-1713
(602) 437-0330	



Form 2 - Surrogate Recoveries

Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542329,

Lab Batch #: 3006334

Sample: 542329-001 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 21:29

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0503	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0508	0.0500	102	80-120	
Toluene-D8	0.0561	0.0500	112	73-132	

Lab Batch #: 3006334

Sample: 542329-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 22:24

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0510	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0484	0.0500	97	80-120	
Toluene-D8	0.0517	0.0500	103	73-132	

Lab Batch #: 3006334

Sample: 542329-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 22:43

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0506	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0552	0.0500	110	80-120	
Toluene-D8	0.0524	0.0500	105	73-132	

Lab Batch #: 3006334

Sample: 542329-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 23:01

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0493	0.0500	99	74-126	
1,2-Dichloroethane-D4	0.0526	0.0500	105	80-120	
Toluene-D8	0.0560	0.0500	112	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542329,

Lab Batch #: 3006334

Sample: 542329-007 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 23:20

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0528	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0506	0.0500	101	80-120	
Toluene-D8	0.0535	0.0500	107	73-132	

Lab Batch #: 3006334

Sample: 542329-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 23:39

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0520	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0511	0.0500	102	80-120	
Toluene-D8	0.0550	0.0500	110	73-132	

Lab Batch #: 3006334

Sample: 542329-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 23:57

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0525	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0547	0.0500	109	80-120	
Toluene-D8	0.0548	0.0500	110	73-132	

Lab Batch #: 3006334

Sample: 542329-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 00:16

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0526	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0504	0.0500	101	80-120	
Toluene-D8	0.0516	0.0500	103	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542329,

Lab Batch #: 3006334

Sample: 542329-011 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 00:34

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0548	0.0500	110	74-126	
1,2-Dichloroethane-D4	0.0558	0.0500	112	80-120	
Toluene-D8	0.0532	0.0500	106	73-132	

Lab Batch #: 3006334

Sample: 542329-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 00:53

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0512	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0521	0.0500	104	80-120	
Toluene-D8	0.0550	0.0500	110	73-132	

Lab Batch #: 3006334

Sample: 542329-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 01:12

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0545	0.0500	109	74-126	
1,2-Dichloroethane-D4	0.0542	0.0500	108	80-120	
Toluene-D8	0.0515	0.0500	103	73-132	

Lab Batch #: 3006334

Sample: 542329-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 01:30

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0528	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0481	0.0500	96	80-120	
Toluene-D8	0.0509	0.0500	102	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542329,

Lab Batch #: 3006334

Sample: 542329-015 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 01:49

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0550	0.0500	110	74-126	
1,2-Dichloroethane-D4	0.0509	0.0500	102	80-120	
Toluene-D8	0.0529	0.0500	106	73-132	

Lab Batch #: 3006334

Sample: 542329-016 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 02:08

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0519	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0530	0.0500	106	80-120	
Toluene-D8	0.0545	0.0500	109	73-132	

Lab Batch #: 3006334

Sample: 542329-017 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 02:26

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0500	0.0500	100	74-126	
1,2-Dichloroethane-D4	0.0555	0.0500	111	80-120	
Toluene-D8	0.0513	0.0500	103	73-132	

Lab Batch #: 3006334

Sample: 542329-018 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 02:45

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0539	0.0500	108	74-126	
1,2-Dichloroethane-D4	0.0524	0.0500	105	80-120	
Toluene-D8	0.0542	0.0500	108	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542329,

Lab Batch #: 3006334

Sample: 542329-020 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 03:04

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0568	0.0500	114	74-126	
1,2-Dichloroethane-D4	0.0503	0.0500	101	80-120	
Toluene-D8	0.0516	0.0500	103	73-132	

Lab Batch #: 3006154

Sample: 542329-021 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 12:56

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0531	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0500	0.0500	100	80-120	
Toluene-D8	0.0430	0.0500	86	73-132	

Lab Batch #: 3006154

Sample: 542329-022 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 13:27

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0617	0.0500	123	74-126	
1,2-Dichloroethane-D4	0.0508	0.0500	102	80-120	
Toluene-D8	0.0485	0.0500	97	73-132	

Lab Batch #: 3006154

Sample: 542329-023 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 13:47

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0541	0.0500	108	74-126	
1,2-Dichloroethane-D4	0.0540	0.0500	108	80-120	
Toluene-D8	0.0469	0.0500	94	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542329,

Lab Batch #: 3006154

Sample: 542329-024 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 14:02

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0559	0.0500	112	74-126	
1,2-Dichloroethane-D4	0.0487	0.0500	97	80-120	
Toluene-D8	0.0436	0.0500	87	73-132	

Lab Batch #: 3006426

Sample: 542329-042 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 14:08

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0514	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0484	0.0500	97	80-120	
Toluene-D8	0.0558	0.0500	112	73-132	

Lab Batch #: 3006154

Sample: 542329-025 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 14:18

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0584	0.0500	117	74-126	
1,2-Dichloroethane-D4	0.0494	0.0500	99	80-120	
Toluene-D8	0.0476	0.0500	95	73-132	

Lab Batch #: 3006426

Sample: 542329-032 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 14:26

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	0.0552	0.0500	110	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542329,

Lab Batch #: 3006154

Sample: 542329-026 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 14:33

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0581	0.0500	116	74-126	
1,2-Dichloroethane-D4	0.0497	0.0500	99	80-120	
Toluene-D8	0.0431	0.0500	86	73-132	

Lab Batch #: 3006426

Sample: 542329-033 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 14:45

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0504	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0509	0.0500	102	80-120	
Toluene-D8	0.0546	0.0500	109	73-132	

Lab Batch #: 3006154

Sample: 542329-027 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 14:48

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0567	0.0500	113	74-126	
1,2-Dichloroethane-D4	0.0569	0.0500	114	80-120	
Toluene-D8	0.0470	0.0500	94	73-132	

Lab Batch #: 3006154

Sample: 542329-028 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 15:03

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0579	0.0500	116	74-126	
1,2-Dichloroethane-D4	0.0553	0.0500	111	80-120	
Toluene-D8	0.0457	0.0500	91	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542329,

Lab Batch #: 3006426

Sample: 542329-034 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 15:04

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0508	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0520	0.0500	104	80-120	
Toluene-D8	0.0510	0.0500	102	73-132	

Lab Batch #: 3006154

Sample: 542329-029 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 15:19

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0573	0.0500	115	74-126	
1,2-Dichloroethane-D4	0.0529	0.0500	106	80-120	
Toluene-D8	0.0470	0.0500	94	73-132	

Lab Batch #: 3006426

Sample: 542329-035 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 15:23

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0522	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0508	0.0500	102	80-120	
Toluene-D8	0.0517	0.0500	103	73-132	

Lab Batch #: 3006154

Sample: 542329-030 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 15:34

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0558	0.0500	112	74-126	
1,2-Dichloroethane-D4	0.0484	0.0500	97	80-120	
Toluene-D8	0.0474	0.0500	95	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542329,

Lab Batch #: 3006426

Sample: 542329-036 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 15:42

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0528	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0509	0.0500	102	80-120	
Toluene-D8	0.0488	0.0500	98	73-132	

Lab Batch #: 3006154

Sample: 542329-031 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 15:50

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0561	0.0500	112	74-126	
1,2-Dichloroethane-D4	0.0516	0.0500	103	80-120	
Toluene-D8	0.0440	0.0500	88	73-132	

Lab Batch #: 3006426

Sample: 542329-037 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 16:00

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0520	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0488	0.0500	98	80-120	
Toluene-D8	0.0484	0.0500	97	73-132	

Lab Batch #: 3006426

Sample: 542329-038 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 16:19

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0517	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0512	0.0500	102	80-120	
Toluene-D8	0.0475	0.0500	95	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542329,

Lab Batch #: 3006426

Sample: 542329-039 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 16:38

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0505	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0499	0.0500	100	80-120	
Toluene-D8	0.0486	0.0500	97	73-132	

Lab Batch #: 3006426

Sample: 542329-040 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 16:56

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0511	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0514	0.0500	103	80-120	
Toluene-D8	0.0524	0.0500	105	73-132	

Lab Batch #: 3006426

Sample: 542329-041 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 17:15

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0517	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0521	0.0500	104	80-120	
Toluene-D8	0.0509	0.0500	102	73-132	

Lab Batch #: 3006426

Sample: 542329-043 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 17:34

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0537	0.0500	107	74-126	
1,2-Dichloroethane-D4	0.0525	0.0500	105	80-120	
Toluene-D8	0.0519	0.0500	104	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542329,

Lab Batch #: 3006426

Sample: 542329-044 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 17:53

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0522	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0517	0.0500	103	80-120	
Toluene-D8	0.0491	0.0500	98	73-132	

Lab Batch #: 3006426

Sample: 542329-045 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 18:11

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0516	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0494	0.0500	99	80-120	
Toluene-D8	0.0462	0.0500	92	73-132	

Lab Batch #: 3006426

Sample: 542329-046 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 18:30

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0520	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0540	0.0500	108	80-120	
Toluene-D8	0.0512	0.0500	102	73-132	

Lab Batch #: 3006426

Sample: 542329-048 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 19:06

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0514	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0469	0.0500	94	80-120	
Toluene-D8	0.0519	0.0500	104	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542329,

Lab Batch #: 3006426

Sample: 542329-003 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 19:25

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0504	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0486	0.0500	97	80-120	
Toluene-D8	0.0534	0.0500	107	73-132	

Lab Batch #: 3006426

Sample: 542329-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 19:44

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0479	0.0500	96	74-126	
1,2-Dichloroethane-D4	0.0493	0.0500	99	80-120	
Toluene-D8	0.0472	0.0500	94	73-132	

Lab Batch #: 3006418

Sample: 542329-021 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 22:21

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	80.5	99.8	81	70-135	
o-Terphenyl	40.0	49.9	80	70-135	

Lab Batch #: 3006652

Sample: 542329-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 23:23

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	80.9	99.7	81	70-135	
o-Terphenyl	40.1	49.9	80	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542329,

Lab Batch #: 3006418

Sample: 542329-023 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 00:04

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	81.6	99.9	82	70-135	
o-Terphenyl	40.3	50.0	81	70-135	

Lab Batch #: 3006652

Sample: 542329-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 01:02

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	79.4	99.9	79	70-135	
o-Terphenyl	35.7	50.0	71	70-135	

Lab Batch #: 3006418

Sample: 542329-026 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 01:24

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.9	99.8	83	70-135	
o-Terphenyl	40.3	49.9	81	70-135	

Lab Batch #: 3006652

Sample: 542329-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 01:35

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	72.0	99.8	72	70-135	
o-Terphenyl	35.0	49.9	70	70-135	

Lab Batch #: 3006418

Sample: 542329-027 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 01:52

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	76.5	99.7	77	70-135	
o-Terphenyl	37.5	49.9	75	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542329,

Lab Batch #: 3006652

Sample: 542329-004 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 02:10

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	72.4	99.9	72	70-135	
o-Terphenyl	35.0	50.0	70	70-135	

Lab Batch #: 3006652

Sample: 542329-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 02:45

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	77.2	99.9	77	70-135	
o-Terphenyl	35.1	50.0	70	70-135	

Lab Batch #: 3006418

Sample: 542329-029 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 02:45

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.4	99.9	80	70-135	
o-Terphenyl	38.4	50.0	77	70-135	

Lab Batch #: 3006418

Sample: 542329-030 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 03:11

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.5	99.8	86	70-135	
o-Terphenyl	41.6	49.9	83	70-135	

Lab Batch #: 3006652

Sample: 542329-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 03:19

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	79.2	100	79	70-135	
o-Terphenyl	35.8	50.0	72	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542329,

Lab Batch #: 3006652

Sample: 542329-007 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 03:54

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	73.4	99.7	74	70-135	
o-Terphenyl	34.9	49.9	70	70-135	

Lab Batch #: 3006418

Sample: 542329-031 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 04:04

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.9	99.8	85	70-135	
o-Terphenyl	41.5	49.9	83	70-135	

Lab Batch #: 3006652

Sample: 542329-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 04:31

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	73.9	100	74	70-135	
o-Terphenyl	35.1	50.0	70	70-135	

Lab Batch #: 3006418

Sample: 542329-032 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 04:31

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	77.1	99.8	77	70-135	
o-Terphenyl	38.3	49.9	77	70-135	

Lab Batch #: 3006652

Sample: 542329-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 05:06

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	75.9	99.8	76	70-135	
o-Terphenyl	35.0	49.9	70	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542329,

Lab Batch #: 3006652

Sample: 542329-010 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 05:41

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	77.7	99.7	78	70-135	
o-Terphenyl	35.6	49.9	71	70-135	

Lab Batch #: 3006418

Sample: 542329-035 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 05:52

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.4	99.9	80	70-135	
o-Terphenyl	39.1	50.0	78	70-135	

Lab Batch #: 3006418

Sample: 542329-036 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 06:19

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.0	99.7	78	70-135	
o-Terphenyl	39.2	49.9	79	70-135	

Lab Batch #: 3006418

Sample: 542329-037 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 06:45

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.0	99.8	87	70-135	
o-Terphenyl	42.0	49.9	84	70-135	

Lab Batch #: 3006652

Sample: 542329-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 06:51

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	73.0	99.7	73	70-135	
o-Terphenyl	35.0	49.9	70	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542329,

Lab Batch #: 3006418

Sample: 542329-038 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 07:11

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.3	99.8	78	70-135	
o-Terphenyl	38.5	49.9	77	70-135	

Lab Batch #: 3006652

Sample: 542329-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 07:24

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	70.8	99.6	71	70-135	
o-Terphenyl	34.9	49.8	70	70-135	

Lab Batch #: 3006418

Sample: 542329-039 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 07:37

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.9	99.9	79	70-135	
o-Terphenyl	38.6	50.0	77	70-135	

Lab Batch #: 3006652

Sample: 542329-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 07:59

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	79.9	99.8	80	70-135	
o-Terphenyl	36.3	49.9	73	70-135	

Lab Batch #: 3006418

Sample: 542329-040 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 08:03

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	75.0	99.8	75	70-135	
o-Terphenyl	36.9	49.9	74	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542329,

Lab Batch #: 3006652

Sample: 542329-014 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 08:31

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	77.3	99.8	77	70-135	
o-Terphenyl	35.2	49.9	71	70-135	

Lab Batch #: 3006652

Sample: 542329-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 09:06

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	71.7	99.9	72	70-135	
o-Terphenyl	35.2	50.0	70	70-135	

Lab Batch #: 3006652

Sample: 542329-016 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 09:39

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	73.9	99.8	74	70-135	
o-Terphenyl	35.0	49.9	70	70-135	

Lab Batch #: 3006652

Sample: 542329-017 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 10:15

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	70.1	99.8	70	70-135	
o-Terphenyl	35.0	49.9	70	70-135	

Lab Batch #: 3006420

Sample: 542329-041 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 10:17

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	72.0	99.8	72	70-135	
o-Terphenyl	35.2	49.9	71	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542329,

Lab Batch #: 3006652

Sample: 542329-018 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 10:50

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	74.7	99.9	75	70-135	
o-Terphenyl	35.0	50.0	70	70-135	

Lab Batch #: 3006652

Sample: 542329-019 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 11:25

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	71.6	99.9	72	70-135	
o-Terphenyl	35.1	50.0	70	70-135	

Lab Batch #: 3006420

Sample: 542329-042 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 11:35

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.9	99.9	85	70-135	
o-Terphenyl	40.5	50.0	81	70-135	

Lab Batch #: 3006652

Sample: 542329-020 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 12:00

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	70.2	99.8	70	70-135	
o-Terphenyl	35.0	49.9	70	70-135	

Lab Batch #: 3006420

Sample: 542329-044 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 12:28

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.2	99.8	78	70-135	
o-Terphenyl	38.3	49.9	77	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542329,

Lab Batch #: 3006339

Sample: 542329-019 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 15:02

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0523	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0528	0.0500	106	80-120	
Toluene-D8	0.0501	0.0500	100	73-132	

Lab Batch #: 3006339

Sample: 542329-047 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 18:24

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0504	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0529	0.0500	106	80-120	
Toluene-D8	0.0512	0.0500	102	73-132	

Lab Batch #: 3006418

Sample: 542329-022 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/22/16 00:26

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	90.4	99.9	90	70-135	
o-Terphenyl	41.4	50.0	83	70-135	

Lab Batch #: 3006418

Sample: 542329-024 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/22/16 00:50

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	95.1	99.9	95	70-135	
o-Terphenyl	44.9	50.0	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542329,

Lab Batch #: 3006418

Sample: 542329-025 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/22/16 01:15

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.2	99.7	98	70-135	
o-Terphenyl	47.4	49.9	95	70-135	

Lab Batch #: 3006418

Sample: 542329-028 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/22/16 01:40

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.7	99.7	90	70-135	
o-Terphenyl	42.4	49.9	85	70-135	

Lab Batch #: 3006418

Sample: 542329-033 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/22/16 02:04

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.0	100	93	70-135	
o-Terphenyl	43.8	50.0	88	70-135	

Lab Batch #: 3006418

Sample: 542329-034 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/22/16 02:29

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.9	99.9	87	70-135	
o-Terphenyl	40.7	50.0	81	70-135	

Lab Batch #: 3006420

Sample: 542329-043 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/22/16 02:54

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	81.1	99.7	81	70-135	
o-Terphenyl	38.5	49.9	77	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542329,

Lab Batch #: 3006420

Sample: 542329-046 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/22/16 08:45

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.8	99.9	84	70-135	
o-Terphenyl	39.3	50.0	79	70-135	

Lab Batch #: 3006420

Sample: 542329-047 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/22/16 09:09

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.2	99.9	88	70-135	
o-Terphenyl	38.1	50.0	76	70-135	

Lab Batch #: 3006420

Sample: 542329-048 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/22/16 09:34

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.8	99.8	91	70-135	
o-Terphenyl	43.7	49.9	88	70-135	

Lab Batch #: 3006420

Sample: 542329-045 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/22/16 10:26

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	75.8	99.7	76	70-135	
o-Terphenyl	35.5	49.9	71	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542329,

Lab Batch #: 3006334

Sample: 717679-1-BLK / BLK

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/19/16 21:10

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0483	0.0500	97	74-126	
1,2-Dichloroethane-D4	0.0519	0.0500	104	80-120	
Toluene-D8	0.0540	0.0500	108	73-132	

Lab Batch #: 3006154

Sample: 717569-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/20/16 12:19

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0606	0.0500	121	74-126	
1,2-Dichloroethane-D4	0.0495	0.0500	99	80-120	
Toluene-D8	0.0448	0.0500	90	73-132	

Lab Batch #: 3006426

Sample: 717745-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/20/16 12:49

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	0.0464	0.0500	93	80-120	
Toluene-D8	0.0491	0.0500	98	73-132	

Lab Batch #: 3006418

Sample: 717734-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/20/16 21:06

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.2	100	97	70-135	
o-Terphenyl	47.3	50.0	95	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542329,

Lab Batch #: 3006652

Sample: 717879-1-BLK / BLK

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/20/16 21:47

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.3	100	83	70-135	
o-Terphenyl	38.6	50.0	77	70-135	

Lab Batch #: 3006420

Sample: 717735-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/21/16 08:56

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.7	100	92	70-135	
o-Terphenyl	44.6	50.0	89	70-135	

Lab Batch #: 3006339

Sample: 717690-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/21/16 12:21

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0494	0.0500	99	74-126	
1,2-Dichloroethane-D4	0.0490	0.0500	98	80-120	
Toluene-D8	0.0538	0.0500	108	73-132	

Lab Batch #: 3006334

Sample: 717679-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/19/16 19:01

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0508	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0508	0.0500	102	80-120	
Toluene-D8	0.0545	0.0500	109	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542329,

Lab Batch #: 3006154

Sample: 717569-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/20/16 09:01

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0583	0.0500	117	74-126	
1,2-Dichloroethane-D4	0.0564	0.0500	113	80-120	
Toluene-D8	0.0539	0.0500	108	73-132	

Lab Batch #: 3006426

Sample: 717745-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/20/16 09:59

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0487	0.0500	97	74-126	
1,2-Dichloroethane-D4	0.0535	0.0500	107	80-120	
Toluene-D8	0.0526	0.0500	105	73-132	

Lab Batch #: 3006418

Sample: 717734-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/20/16 21:30

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	115	100	115	70-135	
o-Terphenyl	47.7	50.0	95	70-135	

Lab Batch #: 3006652

Sample: 717879-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/20/16 22:19

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	92.0	100	92	70-135	
o-Terphenyl	42.4	50.0	85	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542329,

Lab Batch #: 3006420

Sample: 717735-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/21/16 09:23

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	100	109	70-135	
o-Terphenyl	43.8	50.0	88	70-135	

Lab Batch #: 3006339

Sample: 717690-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/21/16 11:00

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0480	0.0500	96	74-126	
1,2-Dichloroethane-D4	0.0514	0.0500	103	80-120	
Toluene-D8	0.0502	0.0500	100	73-132	

Lab Batch #: 3006334

Sample: 717679-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/19/16 19:20

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0489	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0478	0.0500	96	80-120	
Toluene-D8	0.0533	0.0500	107	73-132	

Lab Batch #: 3006154

Sample: 717569-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/20/16 09:16

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0459	0.0500	92	74-126	
1,2-Dichloroethane-D4	0.0442	0.0500	88	80-120	
Toluene-D8	0.0517	0.0500	103	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542329,

Lab Batch #: 3006426

Sample: 717745-1-BSD / BSD

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/20/16 10:17

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0497	0.0500	99	74-126	
1,2-Dichloroethane-D4	0.0499	0.0500	100	80-120	
Toluene-D8	0.0538	0.0500	108	73-132	

Lab Batch #: 3006418

Sample: 717734-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/20/16 21:56

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	114	100	114	70-135	
o-Terphenyl	53.2	50.0	106	70-135	

Lab Batch #: 3006652

Sample: 717879-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/20/16 22:49

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	94.4	100	94	70-135	
o-Terphenyl	43.8	50.0	88	70-135	

Lab Batch #: 3006420

Sample: 717735-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/21/16 09:50

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	112	100	112	70-135	
o-Terphenyl	47.3	50.0	95	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542329,

Lab Batch #: 3006339

Sample: 717690-1-BSD / BSD

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/21/16 11:19

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0489	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0471	0.0500	94	80-120	
Toluene-D8	0.0525	0.0500	105	73-132	

Lab Batch #: 3006334

Sample: 542329-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 19:38

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0486	0.0500	97	74-126	
1,2-Dichloroethane-D4	0.0492	0.0500	98	80-120	
Toluene-D8	0.0535	0.0500	107	73-132	

Lab Batch #: 3006154

Sample: 542329-021 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 09:49

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0395	0.0500	79	74-126	
1,2-Dichloroethane-D4	0.0425	0.0500	85	80-120	
Toluene-D8	0.0544	0.0500	109	73-132	

Lab Batch #: 3006426

Sample: 542329-042 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 10:47

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	0.0481	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542329,

Lab Batch #: 3006418

Sample: 542329-021 S / MS

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 22:46

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	100	109	70-135	
o-Terphenyl	46.2	50.0	92	70-135	

Lab Batch #: 3006652

Sample: 542329-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 23:56

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.0	99.8	94	70-135	
o-Terphenyl	43.6	49.9	87	70-135	

Lab Batch #: 3006420

Sample: 542329-041 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 10:44

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.7	103	70-135	
o-Terphenyl	42.5	49.9	85	70-135	

Lab Batch #: 3006339

Sample: 542329-019 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 16:13

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0514	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0560	0.0500	112	80-120	
Toluene-D8	0.0489	0.0500	98	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542329,

Lab Batch #: 3006334

Sample: 542329-001 SD / MSD

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/16 19:56

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0484	0.0500	97	74-126	
1,2-Dichloroethane-D4	0.0519	0.0500	104	80-120	
Toluene-D8	0.0528	0.0500	106	73-132	

Lab Batch #: 3006154

Sample: 542329-021 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 10:04

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0471	0.0500	94	74-126	
1,2-Dichloroethane-D4	0.0468	0.0500	94	80-120	
Toluene-D8	0.0523	0.0500	105	73-132	

Lab Batch #: 3006426

Sample: 542329-042 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 11:06

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0486	0.0500	97	74-126	
1,2-Dichloroethane-D4	0.0528	0.0500	106	80-120	
Toluene-D8	0.0521	0.0500	104	73-132	

Lab Batch #: 3006418

Sample: 542329-021 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/20/16 23:13

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	99.8	104	70-135	
o-Terphenyl	43.4	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542329,

Lab Batch #: 3006652

Sample: 542329-001 SD / MSD

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 00:30

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.2	99.8	91	70-135	
o-Terphenyl	44.3	49.9	89	70-135	

Lab Batch #: 3006420

Sample: 542329-041 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 11:08

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	99.9	108	70-135	
o-Terphenyl	45.4	50.0	91	70-135	

Lab Batch #: 3006339

Sample: 542329-019 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/21/16 15:54

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0504	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0530	0.0500	106	80-120	
Toluene-D8	0.0497	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.



BS / BSD Recoveries



Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 542329

Analyst: JTR

Date Prepared: 12/20/2016

Project ID:

Date Analyzed: 12/20/2016

Lab Batch ID: 3006154

Sample: 717569-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.0920	92	0.100	0.0982	98	7	62-132	25	
Toluene	<0.00100	0.100	0.101	101	0.100	0.0952	95	6	66-124	25	
Ethylbenzene	<0.00100	0.100	0.0933	93	0.100	0.101	101	8	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.198	99	0.200	0.214	107	8	69-128	25	
o-Xylene	<0.00100	0.100	0.0994	99	0.100	0.115	115	15	72-131	25	

Analyst: JTR

Date Prepared: 12/19/2016

Date Analyzed: 12/19/2016

Lab Batch ID: 3006334

Sample: 717679-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.0924	92	0.100	0.0952	95	3	62-132	25	
Toluene	<0.00100	0.100	0.0973	97	0.100	0.0982	98	1	66-124	25	
Ethylbenzene	<0.00100	0.100	0.0971	97	0.100	0.0969	97	0	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.204	102	0.200	0.205	103	0	69-128	25	
o-Xylene	<0.00100	0.100	0.102	102	0.100	0.104	104	2	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: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 542329

Project ID:

Analyst: JTR

Date Prepared: 12/21/2016

Date Analyzed: 12/21/2016

Lab Batch ID: 3006339

Sample: 717690-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.0919	92	0.100	0.0871	87	5	62-132	25	
Toluene	<0.00100	0.100	0.0899	90	0.100	0.0976	98	8	66-124	25	
Ethylbenzene	<0.00100	0.100	0.0937	94	0.100	0.0926	93	1	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.189	95	0.200	0.189	95	0	69-128	25	
o-Xylene	<0.00100	0.100	0.0995	100	0.100	0.0902	90	10	72-131	25	

Analyst: SAD

Date Prepared: 12/20/2016

Date Analyzed: 12/20/2016

Lab Batch ID: 3006426

Sample: 717745-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.0898	90	0.100	0.0886	89	1	62-132	25	
Toluene	<0.00100	0.100	0.0925	93	0.100	0.0967	97	4	66-124	25	
Ethylbenzene	<0.00100	0.100	0.0928	93	0.100	0.0922	92	1	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.193	97	0.200	0.192	96	1	69-128	25	
o-Xylene	<0.00100	0.100	0.0997	100	0.100	0.102	102	2	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: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 542329

Project ID:

Analyst: MNR

Date Prepared: 12/21/2016

Date Analyzed: 12/21/2016

Lab Batch ID: 3006215

Sample: 717587-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	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
Analytes											
Chloride	<5.00	250	235	94	250	237	95	1	90-110	20	

Analyst: MNR

Date Prepared: 12/21/2016

Date Analyzed: 12/21/2016

Lab Batch ID: 3006222

Sample: 717588-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	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
Analytes											
Chloride	<5.00	250	235	94	250	233	93	1	90-110	20	

Analyst: MNR

Date Prepared: 12/21/2016

Date Analyzed: 12/21/2016

Lab Batch ID: 3006224

Sample: 717595-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	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
Analytes											
Chloride	<5.00	250	233	93	250	238	95	2	90-110	20	

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

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries



Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 542329

Project ID:

Analyst: MNR

Date Prepared: 12/22/2016

Date Analyzed: 12/22/2016

Lab Batch ID: 3006270

Sample: 717619-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	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
Analytes											
Chloride	<5.00	250	232	93	250	232	93	0	90-110	20	

Analyst: MNR

Date Prepared: 12/22/2016

Date Analyzed: 12/22/2016

Lab Batch ID: 3006288

Sample: 717621-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	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
Analytes											
Chloride	<5.00	250	233	93	250	234	94	0	90-110	20	

Analyst: ARM

Date Prepared: 12/19/2016

Date Analyzed: 12/20/2016

Lab Batch ID: 3006418

Sample: 717734-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	971	97	1000	935	94	4	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	1020	102	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



BS / BSD Recoveries



Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 542329

Project ID:

Analyst: ARM

Date Prepared: 12/20/2016

Date Analyzed: 12/21/2016

Lab Batch ID: 3006420

Sample: 717735-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	905	91	1000	934	93	3	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	941	94	1000	981	98	4	70-135	35	

Analyst: ARM

Date Prepared: 12/19/2016

Date Analyzed: 12/20/2016

Lab Batch ID: 3006652

Sample: 717879-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	917	92	1000	929	93	1	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	959	96	1000	952	95	1	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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542329

Project ID:

Lab Batch ID: 3006154

QC- Sample ID: 542329-021 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/20/2016

Date Prepared: 12/20/2016

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	<0.00100	0.100	0.0845	85	0.100	0.0881	88	4	62-132	25	
Toluene	<0.00100	0.100	0.0874	87	0.100	0.0846	85	3	66-124	25	
Ethylbenzene	<0.00100	0.100	0.0895	90	0.100	0.0841	84	6	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.192	96	0.200	0.177	89	8	69-128	25	
o-Xylene	<0.00100	0.100	0.0981	98	0.100	0.0920	92	6	72-131	25	

Lab Batch ID: 3006334

QC- Sample ID: 542329-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/19/2016

Date Prepared: 12/19/2016

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	0.0871	87	0.0998	0.0921	92	6	62-132	25	
Toluene	<0.000998	0.0998	0.0934	94	0.0998	0.0995	100	6	66-124	25	
Ethylbenzene	<0.000998	0.0998	0.0908	91	0.0998	0.0946	95	4	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.187	94	0.200	0.196	98	5	69-128	25	
o-Xylene	<0.000998	0.0998	0.0927	93	0.0998	0.0980	98	6	72-131	25	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542329

Project ID:

Lab Batch ID: 3006339

QC- Sample ID: 542329-019 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/21/2016

Date Prepared: 12/21/2016

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	0.0775	78	0.0990	0.0751	76	3	62-132	25	
Toluene	<0.000998	0.0998	0.0753	75	0.0990	0.0710	72	6	66-124	25	
Ethylbenzene	<0.000998	0.0998	0.0792	79	0.0990	0.0721	73	9	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.167	84	0.198	0.152	77	9	69-128	25	
o-Xylene	<0.000998	0.0998	0.0846	85	0.0990	0.0757	76	11	72-131	25	

Lab Batch ID: 3006426

QC- Sample ID: 542329-042 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/20/2016

Date Prepared: 12/20/2016

Analyst: SAD

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	<0.00100	0.100	0.0849	85	0.100	0.0825	83	3	62-132	25	
Toluene	<0.00100	0.100	0.0878	88	0.100	0.0854	85	3	66-124	25	
Ethylbenzene	<0.00100	0.100	0.0861	86	0.100	0.0829	83	4	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.183	92	0.200	0.169	85	8	69-128	25	
o-Xylene	<0.00100	0.100	0.0956	96	0.100	0.0879	88	8	72-131	25	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542329

Project ID:

Lab Batch ID: 3006215

QC- Sample ID: 542322-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/21/2016

Date Prepared: 12/21/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	981	1250	2250	102	1250	2240	101	0	90-110	20	

Lab Batch ID: 3006215

QC- Sample ID: 542329-007 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/22/2016

Date Prepared: 12/21/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	594	250	853	104	250	847	101	1	90-110	20	

Lab Batch ID: 3006222

QC- Sample ID: 542329-017 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/21/2016

Date Prepared: 12/21/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	3450	1250	4790	107	1250	4800	108	0	90-110	20	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542329

Project ID:

Lab Batch ID: 3006222

QC- Sample ID: 542329-027 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/21/2016

Date Prepared: 12/21/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	2880	1250	4120	99	1250	4150	102	1	90-110	20	

Lab Batch ID: 3006224

QC- Sample ID: 542067-044 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/21/2016

Date Prepared: 12/21/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	234	94	250	249	100	6	90-110	20	

Lab Batch ID: 3006224

QC- Sample ID: 542329-037 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/22/2016

Date Prepared: 12/21/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	3180	1250	4460	102	1250	4480	104	0	90-110	20	

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

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

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

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



Form 3 - MS / MSD Recoveries



Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542329

Project ID:

Lab Batch ID: 3006270

QC- Sample ID: 542067-080 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/22/2016

Date Prepared: 12/22/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	913	250	1150	95	250	1150	95	0	90-110	20	

Lab Batch ID: 3006270

QC- Sample ID: 542067-090 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/22/2016

Date Prepared: 12/22/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	317	250	555	95	250	540	89	3	90-110	20	X

Lab Batch ID: 3006288

QC- Sample ID: 542329-045 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/22/2016

Date Prepared: 12/22/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	8.08	250	255	99	250	256	99	0	90-110	20	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542329

Project ID:

Lab Batch ID: 3006288

QC- Sample ID: 542710-008 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/22/2016

Date Prepared: 12/22/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	2950	1250	4330	110	1250	4230	102	2	90-110	20	

Lab Batch ID: 3006418

QC- Sample ID: 542329-021 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/20/2016

Date Prepared: 12/19/2016

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	830	83	998	802	80	3	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	880	88	998	813	81	8	70-135	35	

Lab Batch ID: 3006420

QC- Sample ID: 542329-041 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/21/2016

Date Prepared: 12/20/2016

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	997	936	94	999	974	97	4	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	997	956	96	999	1000	100	4	70-135	35	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542329

Project ID:

Lab Batch ID: 3006652

QC- Sample ID: 542329-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/20/2016

Date Prepared: 12/19/2016

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	150	998	901	75	998	980	83	8	70-135	35	
C10-C28 Diesel Range Hydrocarbons	865	998	1070	21	998	1090	23	2	70-135	35	X

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

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

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.



XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: KJE Enviromental & Civil Engineering

Date/ Time Received: 12/15/2016 05:15:00 PM

Work Order #: 542329

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	-1.1
#2 *Shipping container in good condition?	N/A
#3 *Samples received on ice?	Yes
#4 *Custody Seal present on shipping container/ cooler?	N/A
#5 *Custody Seals intact on shipping container/ cooler?	N/A
#6 Custody Seals intact on sample bottles?	N/A
#7 *Custody Seals Signed and dated?	N/A
#8 *Chain of Custody present?	Yes
#9 Sample instructions complete on Chain of Custody?	Yes
#10 Any missing/extra samples?	No
#11 Chain of Custody signed when relinquished/ received?	Yes
#12 Chain of Custody agrees with sample label(s)?	Yes
#13 Container label(s) legible and intact?	Yes
#14 Sample matrix/ properties agree with Chain of Custody?	Yes
#15 Samples in proper container/ bottle?	Yes
#16 Samples properly preserved?	Yes
#17 Sample container(s) intact?	Yes
#18 Sufficient sample amount for indicated test(s)?	Yes
#19 All samples received within hold time?	Yes
#20 Subcontract of sample(s)?	Yes Houston
#21 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#22 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	N/A
#23 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Jessica Kramer

Jessica Kramer

Date: 12/16/2016

Checklist reviewed by:

Julian Martinez

Julian Martinez

Date: 12/19/2016



CHAIN OF CUSTODY

Page 1 of 2

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Xenco Quote #

Xenco Job #

5428329

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes						
Company Name / Branch: KJE Environmental & Civil Engineering				Project Name/Number: OWL Bobcat/Red Hills Pipeline Release														
Company Address: 500 Mosely Road, Cross Roads, Texas 76227				Project Location: Jal, NM														
Email: james@kjenvironmental.com Phone No: (940)387-0905				Invoice To:														
Project Contact: James Fox				PO Number:														
Sampler's Name																		
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX	TPH	CHLORIDES	Field Comments
1	(2) SB 34 0-2		12/15	7:10	S	2								X	X	X		
2	(2) SB 34 0-2 split																	
3	(2) SB 34 2-4																	
4	(2) SB 34 4-6																	
5	(2) SB 34 6-8																	
6	(2) SB 34 8-10																	
7	(2) SB 34 10-12																	
8	(2) SB 34 12-14																	
9	(2) SB 35 0-2																	
10	(2) SB 35 2-4																	
Turnaround Time (Business days)																		
Data Deliverable Information																		
Notes:																		
TAT Starts Day received by Lab, if received by 5:00 pm																		
FED-EX / UPS: Tracking #																		
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																		
Relinquished by Sampler:																		
1. Dawn Fox Date Time: 12/15/16 Received By: 1. [Signature] Date Time: 12/15/16 17:15																		
Relinquished by:																		
3. Relinquished by: Date Time: Received By: 4. Custody Seal # On Ice																		
5. Relinquished by: Date Time: Received By: Temp: IR ID: R-8 CF: + 0.1 -1.0°C Corrected Temp: -1.1°C																		

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to XENCO Laboratories and its affiliates, subcontractors and assigns XENCO's standard terms and conditions of service unless previously negotiated under a fully executed client contract.



CHAIN OF CUSTODY

Page 2 of 5

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Norcross, Georgia (770-449-8800)

Lakeland, Florida (883-646-8526)
Tampa, Florida (813-620-2000)

Xenoco Quote #

Xenoco Job #

5423329

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes									
Company Name / Branch: KJE Environmental & Civil Engineering				Project Name/Number: OWL Bobcat/Red Hills Pipeline Release																	
Company Address: 500 Mosely Road, Cross Roads, Texas 76227 Email: james@kjenvironmental.com Phone No: (940)387-0805				Project Location: Jal, NM																	
Project Contact: James Fox				Invoice To:																	
Sampler's Name				PO Number:																	
No.	Field ID / Point of Collection	Sample Depth	Collection Date	Time	Matrix	# of bottles	HCI	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MeOH	NONE	BTEX	TPH	CHLORIDES	Field Comments			
1	(2) SO3 35 4-6		12/15	800											X	X	X				
2	(2) SO3 35 6-8		12/15	810											X	X	X				
3	(2) SO3 35 8-10		12/15	820											X	X	X				
4	(2) SO3 35 10-10,6		12/15	830											X	X	X				
5	(2) SO3 36 0-2		12/15	900											X	X	X				
6	(2) SO3 36 2-4			905											X	X	X				
7	(2) SO3 36 4-6			910											X	X	X				
8	(2) SO3 36 6-8			915											X	X	X				
9	(2) SO3 36 8-10			920											X	X	X				
10	(2) SO3 36 10-12			925											X	X	X				
Turnaround Time (Business days)				Data Deliverable Information														Notes:			
☐ Same Day TAT		☒ 5 Day TAT		☐ Level II Std QC		☐ Level IV (Full Data Pkg / raw data)															
☐ Next Day EMERGENCY		☐ 7 Day TAT		☐ Level III Std QC+ Forms		☐ TRRP Level IV															
☐ 2 Day EMERGENCY		☐ Contract TAT		☐ Level 3 (CLP Forms)		☐ UST / RG -411															
☐ 3 Day EMERGENCY				☐ TRRP Checklist																	
TAT Starts Day received by Lab, if received by 5:00 pm																		FED-EX / UPS: Tracking #			
Relinquished by Sampler:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:									
1 Tanner Evans - 1555		12/15		1 Bell		2		2		12/16/17/15		2									
Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:									
3				3		4		4													
Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:									
5				5		4		4													
Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:									
Temp: IR ID: R-8		CF: + 0.1		Corrected Temp: 7.1°C																	

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Tampa, Florida (813-620-2000)

Xenoco Quote #

Xenoco Job #

5423329

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes							
Company Name / Branch: KJE Environmental & Civil Engineering				Project Name/Number: OWL Bobcat/Red Hills Pipeline Release															
Company Address: 500 Mosely Road, Cross Roads, Texas 76227 Email: james@kjenvironmental.com Phone No: (940)387-0805				Project Location: Jal, NM															
Project Contact: James Fox				Invoice To:															
Sampler's Name				PO Number:															
No.	Field ID / Point of Collection	Sample Depth	Collection Date	Time	Matrix	# of bottles	HCI	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX	TPH	CHLORIDES	Field Comments	
1	(2) S0337	0-2	12/15	945											X	X	X		
2	(2) S0337	2-4		950											X	X	X		
3	(2) S0337	4-6		955											X	X	X		
4	(2) S0337	6-8		1000											X	X	X		
5	(2) S0337	8-10		1005											X	X	X		
6	(2) S0337	10-12		1020											X	X	X		
7	(2) S0338	0-2		1100											X	X	X		
8	(2) S0338	2-4		1105											X	X	X		
9	(2) S0338	4-6		1110											X	X	X		
10	(2) S0338	6-8		1115											X	X	X		
Turnaround Time (Business days)				Data Deliverable Information														Notes:	
☐ Same Day TAT		☒ 5 Day TAT		☐ Level II Std QC		☐ Level IV (Full Data Pkg / raw data)													
☐ Next Day EMERGENCY		☐ 7 Day TAT		☐ Level III Std QC+ Forms		☐ TRRP Level IV													
☐ 2 Day EMERGENCY		☐ Contract TAT		☐ Level 3 (CLP Forms)		☐ UST / RG -411													
☐ 3 Day EMERGENCY				☐ TRRP Checklist															
TAT Starts Day received by Lab, if received by 5:00 pm																		FED-EX / UPS: Tracking #	
Relinquished by Sampler:				Date Time:				Received By:				Date Time:				Received By:			
1. Tanner Evans - 15315				12/15				1. [Signature]				12/15/16 17:15				2. [Signature]			
Relinquished by:				Date Time:				Received By:				Date Time:				Received By:			
3. [Signature]								3. [Signature]								4. [Signature]			
Relinquished by:				Date Time:				Received By:				Date Time:				Received By:			
5. [Signature]								5. [Signature]								6. [Signature]			

Temp: IR ID: R-8
CF: + 0.1
Corrected Temp: 1.00°C



547320



CHAIN OF CUSTODY

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Norcross, Georgia (770-449-8800)

Lakeland, Florida (888-646-8526)
Tampa, Florida (813-620-2000)

Xenco Quote #

Xenco Job #

542329

Client / Reporting Information		Project Information		Analytical Information		Matrix Codes													
Company Name / Branch:		Project Name/Number:																	
KJE, Environmental & Civil Engineering		OWL Bobcat/Red Hills Pipeline Release																	
Company Address:		Project Location:																	
500 Mosely Road, Cross Roads, Texas 76227		Jal, NM																	
Email: james@kjenvironmental.com		Invoice To:																	
Phone No: (840)387-0805																			
Project Contact:		PO Number:																	
James Fox																			
Sample's Name																			
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX	TPH	CHLORIDES	Field Comments	
1	(2) SB40 4-6		12/15	1307	S	2									X	X	X		
2	(2) SB40 6-7			1310											X	X	X		
3	(2) SB40 6-7 split			1315											X	X	X		
4	(2) SB37 2-4 split														X	X	X		
5	(2) SB33 0-2														X	X	X		
6	(2) SB33 2-4														X	X	X		
7	(2) SB33 4-6														X	X	X		
8	(2) SB33 6-8														X	X	X		
9																			
10																			
Turnaround Time (Business days)		Data Deliverable Information		Notes:															
☐ Same Day TAT		☒ 5 Day TAT		☐ Level II Std QC		☐ Level IV (Full Data Pkg /raw data)													
☐ Next Day EMERGENCY		☐ 7 Day TAT		☐ Level III Std QC+ Forms		☐ TRRP Level IV													
☐ 2 Day EMERGENCY		☐ Contract TAT		☐ Level 3 (CLP Forms)		☐ UST / RG -411													
☐ 3 Day EMERGENCY				☐ TRRP Checklist															
TAT Starts Day received by Lab, if received by 5:00 pm																			
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																			
Relinquished by Sampler:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:							
1 James Fox		12/14/16		1 [Signature]		12/15/16 17:15		2 [Signature]		12/15/16 17:15		2 [Signature]							
Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:							
3				3				4				4							
Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:							
5				5				6				6							
Temp: IR ID-R-8																			
CF: + 0.1																			
Corrected Temp: 1.02																			

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XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: KJE Enviromental & Civil Engineering

Date/ Time Received: 12/15/2016 05:15:00 PM

Work Order #: 542329

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	-1.1
#2 *Shipping container in good condition?	N/A
#3 *Samples received on ice?	Yes
#4 *Custody Seal present on shipping container/ cooler?	N/A
#5 *Custody Seals intact on shipping container/ cooler?	N/A
#6 Custody Seals intact on sample bottles?	N/A
#7 *Custody Seals Signed and dated?	N/A
#8 *Chain of Custody present?	Yes
#9 Sample instructions complete on Chain of Custody?	Yes
#10 Any missing/extra samples?	No
#11 Chain of Custody signed when relinquished/ received?	Yes
#12 Chain of Custody agrees with sample label(s)?	Yes
#13 Container label(s) legible and intact?	Yes
#14 Sample matrix/ properties agree with Chain of Custody?	Yes
#15 Samples in proper container/ bottle?	Yes
#16 Samples properly preserved?	Yes
#17 Sample container(s) intact?	Yes
#18 Sufficient sample amount for indicated test(s)?	Yes
#19 All samples received within hold time?	Yes
#20 Subcontract of sample(s)?	Yes Houston
#21 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#22 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	N/A
#23 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Jessica Kramer

Jessica Kramer

Date: 12/16/2016

Checklist reviewed by:

Julian Martinez

Julian Martinez

Date: 12/19/2016

Analytical Report 542330
for
KJE Enviromental & Civil Engineering

Project Manager: James Fox
OWL Bobcat/Red Hills Pipeline Release

04-JAN-17

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

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

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



04-JAN-17

Project Manager: **James Fox**
KJE Enviromental & Civil Engineering
500 Mosley Rd
Aubrey, TX 76227

Reference: XENCO Report No(s): **542330**
OWL Bobcat/Red Hills Pipeline Release
Project Address: Jal, NM

James Fox:

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) 542330. 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. 542330 will be filed for 60 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

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Houston - Dallas - Odessa - San Antonio - Tampa - Lakeland - Atlanta - Phoenix - Oklahoma - Latin America



Sample Cross Reference 542330



KJE Enviromental & Civil Engineering, Aubrey, TX

OWL Bobcat/Red Hills Pipeline Release

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
(1) SB22 0-2	S	12-15-16 14:45	0 - 2	542330-001
(1) SB22 2-4	S	12-15-16 15:00	2 - 4	542330-002
(1) SB22 4-6	S	12-15-16 15:30	4 - 6	542330-003



CASE NARRATIVE



Client Name: KJE Enviromental & Civil Engineering

Project Name: OWL Bobcat/Red Hills Pipeline Release

Project ID:

Work Order Number(s): 542330

Report Date: 04-JAN-17

Date Received: 12/15/2016

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3006289 BTEX-MTBE by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.



Hits Summary 542330



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB22 0-2**

Lab Sample Id : 542330-001

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.15.16 14.45

Date Received : 12.15.16 17.15

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006374

Prep Method: E300P

Date Prep: 12.23.16 15.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.81	mg/kg	12.23.16 18.30		1

Sample Id : **(1) SB22 2-4**

Lab Sample Id : 542330-002

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.15.16 15.00

Date Received : 12.15.16 17.15

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006374

Prep Method: E300P

Date Prep: 12.23.16 15.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.06	mg/kg	12.23.16 18.37		1

Sample Id : **(1) SB22 4-6**

Lab Sample Id : 542330-003

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.15.16 15.30

Date Received : 12.15.16 17.15

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006374

Prep Method: E300P

Date Prep: 12.23.16 15.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.98	mg/kg	12.23.16 18.44		1



Certificate of Analysis Summary 542330

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-15-16 05:15 pm

Report Date: 04-JAN-17

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	542330-001	542330-002	542330-003			
	<i>Field Id:</i>	(1) SB22 0-2	(1) SB22 2-4	(1) SB22 4-6			
	<i>Depth:</i>	0-2	2-4	4-6			
	<i>Matrix:</i>	SOIL	SOIL	SOIL			
	<i>Sampled:</i>	Dec-15-16 14:45	Dec-15-16 15:00	Dec-15-16 15:30			
BTEX by SW 8260B SUB: TX104704215	<i>Extracted:</i>	Dec-22-16 17:05	Dec-22-16 17:06	Dec-22-16 17:07			
	<i>Analyzed:</i>	Dec-22-16 20:28	Dec-22-16 20:46	Dec-22-16 21:05			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100			
Toluene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100			
Ethylbenzene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100			
m,p-Xylenes		<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201			
o-Xylene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100			
Total Xylenes		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100			
Total BTEX		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100			
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Dec-23-16 15:00	Dec-23-16 15:00	Dec-23-16 15:00			
	<i>Analyzed:</i>	Dec-23-16 18:30	Dec-23-16 18:37	Dec-23-16 18:44			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		5.81 5.00	5.06 5.00	7.98 5.00			
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-26-16 13:00	Dec-26-16 13:00	Dec-26-16 13:00			
	<i>Analyzed:</i>	Dec-27-16 02:40	Dec-27-16 03:16	Dec-27-16 03:51			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0			
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0			
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0			
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0			

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use.
The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories.
XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented.
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Kelsey Brooks
Project Manager

- 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 **SQL** 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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(602) 437-0330	



Form 2 - Surrogate Recoveries

Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542330, 542330

Lab Batch #: 3006289

Sample: 542330-001 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/22/16 20:28

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0511	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0495	0.0500	99	80-120	
Toluene-D8	0.0494	0.0500	99	73-132	

Lab Batch #: 3006289

Sample: 542330-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/22/16 20:46

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0529	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0538	0.0500	108	80-120	
Toluene-D8	0.0514	0.0500	103	73-132	

Lab Batch #: 3006289

Sample: 542330-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/22/16 21:05

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0526	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0560	0.0500	112	80-120	
Toluene-D8	0.0526	0.0500	105	73-132	

Lab Batch #: 3006506

Sample: 542330-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/27/16 02:40

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	91.2	99.9	91	70-135	
o-Terphenyl	44.4	50.0	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542330, 542330

Lab Batch #: 3006506

Sample: 542330-002 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/27/16 03:16

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.0	99.9	92	70-135	
o-Terphenyl	44.4	50.0	89	70-135	

Lab Batch #: 3006506

Sample: 542330-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/27/16 03:51

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.6	99.7	91	70-135	
o-Terphenyl	43.5	49.9	87	70-135	

Lab Batch #: 3006289

Sample: 717652-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/22/16 16:29

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0473	0.0500	95	74-126	
1,2-Dichloroethane-D4	0.0442	0.0500	88	80-120	
Toluene-D8	0.0551	0.0500	110	73-132	

Lab Batch #: 3006506

Sample: 717812-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/26/16 23:04

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.7	100	100	70-135	
o-Terphenyl	50.6	50.0	101	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542330, 542330

Lab Batch #: 3006289

Sample: 717652-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/22/16 11:30

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0498	0.0500	100	74-126	
1,2-Dichloroethane-D4	0.0479	0.0500	96	80-120	
Toluene-D8	0.0509	0.0500	102	73-132	

Lab Batch #: 3006506

Sample: 717812-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/26/16 23:40

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	106	100	106	70-135	
o-Terphenyl	52.9	50.0	106	70-135	

Lab Batch #: 3006289

Sample: 717652-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/22/16 11:49

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0483	0.0500	97	74-126	
1,2-Dichloroethane-D4	0.0492	0.0500	98	80-120	
Toluene-D8	0.0490	0.0500	98	73-132	

Lab Batch #: 3006506

Sample: 717812-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/27/16 00:16

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	105	100	105	70-135	
o-Terphenyl	52.1	50.0	104	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542330, 542330

Lab Batch #: 3006289

Sample: 542605-001 S / MS

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/22/16 12:19

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0500	0.0500	100	74-126	
1,2-Dichloroethane-D4	0.0569	0.0500	114	80-120	
Toluene-D8	0.0440	0.0500	88	73-132	

Lab Batch #: 3006506

Sample: 542184-011 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/27/16 01:27

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	99.4	100	99	70-135	
o-Terphenyl	48.9	50.0	98	70-135	

Lab Batch #: 3006289

Sample: 542605-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/22/16 12:38

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0474	0.0500	95	74-126	
1,2-Dichloroethane-D4	0.0476	0.0500	95	80-120	
Toluene-D8	0.0509	0.0500	102	73-132	

Lab Batch #: 3006506

Sample: 542184-011 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/27/16 02:04

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	105	99.8	105	70-135	
o-Terphenyl	50.1	49.9	100	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.



BS / BSD Recoveries



Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 542330, 542330

Project ID:

Analyst: JTR

Date Prepared: 12/22/2016

Date Analyzed: 12/22/2016

Lab Batch ID: 3006289

Sample: 717652-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.0774	77	0.100	0.0720	72	7	62-132	25	
Toluene	<0.00100	0.100	0.0834	83	0.100	0.0766	77	9	66-124	25	
Ethylbenzene	<0.00100	0.100	0.0837	84	0.100	0.0766	77	9	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.173	87	0.200	0.155	78	11	69-128	25	
o-Xylene	<0.00100	0.100	0.0845	85	0.100	0.0775	78	9	72-131	25	

Analyst: MNR

Date Prepared: 12/23/2016

Date Analyzed: 12/23/2016

Lab Batch ID: 3006374

Sample: 717689-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	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
Analytes											
Chloride	<5.00	250	244	98	250	250	100	2	90-110	20	

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

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries



Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 542330, 542330

Project ID:

Analyst: ARM

Date Prepared: 12/26/2016

Date Analyzed: 12/26/2016

Lab Batch ID: 3006506

Sample: 717812-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	886	89	1000	932	93	5	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	952	95	1000	965	97	1	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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542330

Project ID:

Lab Batch ID: 3006289

QC- Sample ID: 542605-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/22/2016

Date Prepared: 12/22/2016

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	0.0291	0.122	0.120	75	0.122	0.105	62	13	62-132	25	
Toluene	<0.00122	0.122	0.0830	68	0.122	0.0919	75	10	66-124	25	
Ethylbenzene	<0.00122	0.122	0.0994	81	0.122	0.0887	73	11	71-134	25	
m,p-Xylenes	<0.00245	0.245	0.203	83	0.245	0.177	72	14	69-128	25	
o-Xylene	<0.00122	0.122	0.109	89	0.122	0.0898	74	19	72-131	25	

Lab Batch ID: 3006374

QC- Sample ID: 541977-022 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/23/2016

Date Prepared: 12/23/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	239	96	250	235	94	2	90-110	20	

Lab Batch ID: 3006374

QC- Sample ID: 542600-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/23/2016

Date Prepared: 12/23/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	2170	1250	3290	90	1250	3310	91	1	90-110	20	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542330

Project ID:

Lab Batch ID: 3006506

QC- Sample ID: 542184-011 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/27/2016

Date Prepared: 12/26/2016

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	940	94	998	874	88	7	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	984	98	998	977	98	1	70-135	35	

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

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

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.



XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: KJE Enviromental & Civil Engineering

Date/ Time Received: 12/15/2016 05:15:00 PM

Work Order #: 542330

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	-1.1
#2 *Shipping container in good condition?	N/A
#3 *Samples received on ice?	Yes
#4 *Custody Seal present on shipping container/ cooler?	N/A
#5 *Custody Seals intact on shipping container/ cooler?	N/A
#6 Custody Seals intact on sample bottles?	N/A
#7 *Custody Seals Signed and dated?	N/A
#8 *Chain of Custody present?	Yes
#9 Sample instructions complete on Chain of Custody?	Yes
#10 Any missing/extra samples?	No
#11 Chain of Custody signed when relinquished/ received?	Yes
#12 Chain of Custody agrees with sample label(s)?	Yes
#13 Container label(s) legible and intact?	Yes
#14 Sample matrix/ properties agree with Chain of Custody?	Yes
#15 Samples in proper container/ bottle?	Yes
#16 Samples properly preserved?	Yes
#17 Sample container(s) intact?	Yes
#18 Sufficient sample amount for indicated test(s)?	Yes
#19 All samples received within hold time?	Yes
#20 Subcontract of sample(s)?	Yes Houston
#21 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#22 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	N/A
#23 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Jessica Kramer

Jessica Kramer

Date: 12/16/2016

Checklist reviewed by:

Julian Martinez

Julian Martinez

Date: 12/19/2016

Setting the Standard since 1990

Stafford, Texas (281-240-4200)

Dallas Texas (214-902-0300)

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Norcross, Georgia (770-449-8800)

Lakeland, Florida (863-646-8526)
Tampa, Florida (813-620-2000)

Xenco Quote #

Xenco Job #

542330

Client / Reporting Information								Project Information						Analytical Information							Matrix Codes														
Company Name / Branch: KJE Environmental & Civil Engineering Company Address: 500 Mosely Road, Cross Roads, Texas 76227 Email: james@kjenvironmental.com Phone No: (940)367-4805								Project Name/Number: OWL Bobcat/Red Hills Pipeline Release Project Location: Jal. NM Invoice To:																											
Project Contact: James Fox Samplers Name								PO Number:																											
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCI	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX	TPH	CHLORIDES																		
1	S022	0-2	12/15	1445										X	X	X	X																		
2	S022	2-4	12/15	1500										X	X	X	X																		
3	S022	4-6	12/15	1530										X	X	X	X																		
4																																			
5																																			
6																																			
7																																			
8																																			
9																																			
10																																			
Turnaround Time (Business days)								Data Deliverable Information								Notes:																			
☐ Same Day TAT								☒ 5 Day TAT								☐ Level II Std QC								☐ Level IV (Full Data Pkg /raw data)											
☐ Next Day EMERGENCY								☐ 7 Day TAT								☐ Level III Std QC+ Forms								☐ TRRP Level IV											
☐ 2 Day EMERGENCY								☐ Contract TAT								☐ Level 3 (CLP Forms)								☐ UST / RG -411											
☐ 3 Day EMERGENCY																☐ TRRP Checklist																			
TAT Starts Day received by Lab, if received by 5:00 pm																		FED-EX / UPS: Tracking #																	
Relinquished by Sampler: Tanner Evans - KJE																		Relinquished By: Received By: 12-15-16 17:15																	
Relinquished by: 3																		Relinquished By: 2																	
Date Time: 5																		Date Time: 4																	
Preserved where applicable																		On Ice																	
Temp: IR ID: R-8																		CF: + 0.1																	
Corrected Temp: 71.0c																																			



XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: KJE Enviromental & Civil Engineering

Date/ Time Received: 12/15/2016 05:15:00 PM

Work Order #: 542330

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	-1.1
#2 *Shipping container in good condition?	N/A
#3 *Samples received on ice?	Yes
#4 *Custody Seal present on shipping container/ cooler?	N/A
#5 *Custody Seals intact on shipping container/ cooler?	N/A
#6 Custody Seals intact on sample bottles?	N/A
#7 *Custody Seals Signed and dated?	N/A
#8 *Chain of Custody present?	Yes
#9 Sample instructions complete on Chain of Custody?	Yes
#10 Any missing/extra samples?	No
#11 Chain of Custody signed when relinquished/ received?	Yes
#12 Chain of Custody agrees with sample label(s)?	Yes
#13 Container label(s) legible and intact?	Yes
#14 Sample matrix/ properties agree with Chain of Custody?	Yes
#15 Samples in proper container/ bottle?	Yes
#16 Samples properly preserved?	Yes
#17 Sample container(s) intact?	Yes
#18 Sufficient sample amount for indicated test(s)?	Yes
#19 All samples received within hold time?	Yes
#20 Subcontract of sample(s)?	Yes Houston
#21 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#22 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	N/A
#23 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Jessica Kramer

Date: 12/16/2016

Checklist reviewed by:

Julian Martinez

Date: 12/19/2016

Analytical Report 542784
for
KJE Enviromental & Civil Engineering

Project Manager: James Fox
OWL Bobcat/Red Hills Pipeline Release

06-JAN-17

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

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

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



06-JAN-17

Project Manager: **James Fox**
KJE Enviromental & Civil Engineering
500 Mosley Rd
Aubrey, TX 76227

Reference: XENCO Report No(s): **542784**
OWL Bobcat/Red Hills Pipeline Release
Project Address: Jal, NM

James Fox:

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) 542784. 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. 542784 will be filed for 60 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

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

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KJE Enviromental & Civil Engineering, Aubrey, TX

OWL Bobcat/Red Hills Pipeline Release

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
(2) SB 41 0-2	S	12-20-16 15:30	0 - 2	542784-001
(2) SB 41 2-4	S	12-20-16 15:35	2 - 4	542784-002
(2) SB 41 4-6	S	12-20-16 15:37	4 - 6	542784-003
(2) SB 41 6-8	S	12-20-16 15:40	6 - 8	542784-004
(2) SB 42 0-2	S	12-20-16 15:55	0 - 2	542784-005
(2) SB 42 2-4	S	12-20-16 16:00	2 - 4	542784-006
(2) SB 42 4-6	S	12-20-16 16:10	4 - 6	542784-007
(2) SB 42 6-8	S	12-20-16 16:15	6 - 8	542784-008
(2) SB 43 0-2	S	12-20-16 16:17	0 - 2	542784-009
(2) SB 43 2-4	S	12-20-16 16:20	2 - 4	542784-010
(2) SB 43 4-6	S	12-20-16 16:25	4 - 6	542784-011
(2) SB 43 6-8	S	12-20-16 16:30	6 - 8	542784-012
(2) SB 44 0-2	S	12-20-16 16:35	0 - 2	542784-013
(2) SB 44 2-4	S	12-20-16 16:40	2 - 4	542784-014
(2) SB 44 4-6	S	12-20-16 16:50	4 - 6	542784-015
(2) SB 44 6-8	S	12-20-16 17:00	6 - 8	542784-016
(2) SB 45 0-2	S	12-21-16 07:00	0 - 2	542784-017
(2) SB 45 2-4	S	12-21-16 07:05	2 - 4	542784-018
(2) SB 45 4-6	S	12-21-16 07:10	4 - 6	542784-019
(2) SB 45 6-8	S	12-21-16 07:30	6 - 8	542784-020
(2) SB 46 0-2	S	12-21-16 07:35	0 - 2	542784-021
(2) SB 46 0-2 SPLIT	S	12-21-16 07:40	0 - 2	542784-022
(2) SB 46 2-4	S	12-21-16 07:45	2 - 4	542784-023
(2) SB 46 4-6	S	12-21-16 07:50	4 - 6	542784-024
(2) SB 46 6-8	S	12-21-16 08:00	6 - 8	542784-025
(2) SB 47 0-2	S	12-21-16 08:10	0 - 2	542784-026
(2) SB 47 2-4	S	12-21-16 08:15	2 - 4	542784-027
(2) SB 47 4-6	S	12-21-16 08:30	4 - 6	542784-028
(2) SB 47 6-8	S	12-21-16 08:40	6 - 8	542784-029
(2) SB 48 0-2	S	12-21-16 10:30	0 - 2	542784-030
(2) SB 48 2-4	S	12-21-16 10:35	0 - 2	542784-031
(2) SB 48 4-6	S	12-21-16 10:40	4 - 6	542784-032
(2) SB 48 6-8	S	12-21-16 10:45	6 - 8	542784-033
(2) BG 0-2	S	12-21-16 08:45	0 - 2	542784-034
(2) BG 2-4	S	12-21-16 08:50	2 - 4	542784-035
(2) BG 4-6	S	12-21-16 08:55	4 - 6	542784-036
(2) BG 6-8	S	12-21-16 08:57	6 - 8	542784-037
(2) BG 8-10	S	12-21-16 09:00	8 - 10	542784-038



CASE NARRATIVE



Client Name: KJE Enviromental & Civil Engineering

Project Name: OWL Bobcat/Red Hills Pipeline Release

Project ID:
Work Order Number(s): 542784

Report Date: 06-JAN-17
Date Received: 12/22/2016

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3006725 Inorganic Anions by EPA 300/300.1

Lab Sample ID 542784-030 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 542784-021, -022, -023, -024, -025, -026, -027, -028, -029, -030, -031, -032, -033, -034, -035, -036, -037, -038.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3006852 BTEX by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3006858 BTEX by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3006967 BTEX by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3006989 BTEX by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.



Hits Summary 542784



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(2) SB 41 0-2**

Lab Sample Id : 542784-001

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.20.16 15.30

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006682

Prep Method: E300P

Date Prep: 12.28.16 17.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.71	mg/kg	12.28.16 19.45		1

Sample Id : **(2) SB 41 2-4**

Lab Sample Id : 542784-002

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.20.16 15.35

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006682

Prep Method: E300P

Date Prep: 12.28.16 17.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.46	mg/kg	12.28.16 20.06		1

Sample Id : **(2) SB 41 4-6**

Lab Sample Id : 542784-003

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.20.16 15.37

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006682

Prep Method: E300P

Date Prep: 12.28.16 17.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.04	mg/kg	12.28.16 20.13		1

Sample Id : **(2) SB 42 0-2**

Lab Sample Id : 542784-005

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.20.16 15.55

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006682

Prep Method: E300P

Date Prep: 12.28.16 17.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11.4	mg/kg	12.28.16 20.27		1



Hits Summary 542784



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(2) SB 42 2-4**

Lab Sample Id : 542784-006

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.20.16 16.00

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006682

Prep Method: E300P

Date Prep: 12.28.16 17.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.32	mg/kg	12.28.16 20.48		1

Sample Id : **(2) SB 42 4-6**

Lab Sample Id : 542784-007

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.20.16 16.10

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006682

Prep Method: E300P

Date Prep: 12.28.16 17.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.12	mg/kg	12.28.16 20.55		1

Sample Id : **(2) SB 42 6-8**

Lab Sample Id : 542784-008

Sample Depth : 6 - 8

Matrix : Soil

Date Collected : 12.20.16 16.15

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006682

Prep Method: E300P

Date Prep: 12.28.16 17.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.11	mg/kg	12.28.16 21.02		1

Sample Id : **(2) SB 43 0-2**

Lab Sample Id : 542784-009

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.20.16 16.17

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006682

Prep Method: E300P

Date Prep: 12.28.16 17.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.98	mg/kg	12.28.16 21.09		1



Hits Summary 542784



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(2) SB 43 2-4**

Matrix : Soil

% Moisture :

Lab Sample Id : 542784-010

Date Collected : 12.20.16 16.20

Basis : Wet Weight

Sample Depth : 2 - 4

Date Received : 12.22.16 09.45

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006682

Date Prep: 12.28.16 17.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.37	mg/kg	12.28.16 21.17		1

Analytical Method : TPH By SW8015 Mod

Prep Method: TX1005P

Seq Number 3006625

Date Prep: 12.25.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C10-C28 Diesel Range Hydrocarbons	PHCG1228	134	mg/kg	12.26.16 12.15		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	31.0	mg/kg	12.26.16 12.15		1
Total TPH	PHC635	165	mg/kg	12.26.16 12.15		1

Sample Id : **(2) SB 43 6-8**

Matrix : Soil

% Moisture :

Lab Sample Id : 542784-012

Date Collected : 12.20.16 16.30

Basis : Wet Weight

Sample Depth : 6 - 8

Date Received : 12.22.16 09.45

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006682

Date Prep: 12.28.16 17.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.11	mg/kg	12.28.16 21.59		1

Sample Id : **(2) SB 44 0-2**

Matrix : Soil

% Moisture :

Lab Sample Id : 542784-013

Date Collected : 12.20.16 16.35

Basis : Wet Weight

Sample Depth : 0 - 2

Date Received : 12.22.16 09.45

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006682

Date Prep: 12.28.16 17.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.27	mg/kg	12.28.16 22.06		1



Hits Summary 542784



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(2) SB 44 2-4**

Lab Sample Id : 542784-014

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.20.16 16.40

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006682

Prep Method: E300P

Date Prep: 12.28.16 17.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.57	mg/kg	12.28.16 22.13		1

Sample Id : **(2) SB 44 4-6**

Lab Sample Id : 542784-015

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.20.16 16.50

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006682

Prep Method: E300P

Date Prep: 12.28.16 17.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.62	mg/kg	12.28.16 22.20		1

Sample Id : **(2) SB 44 6-8**

Lab Sample Id : 542784-016

Sample Depth : 6 - 8

Matrix : Soil

Date Collected : 12.20.16 17.00

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006682

Prep Method: E300P

Date Prep: 12.28.16 17.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.49	mg/kg	12.28.16 22.27		1

Sample Id : **(2) SB 45 0-2**

Lab Sample Id : 542784-017

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.21.16 07.00

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006682

Prep Method: E300P

Date Prep: 12.28.16 17.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.96	mg/kg	12.28.16 22.34		1



Hits Summary 542784



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(2) SB 45 2-4**

Lab Sample Id : 542784-018

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.21.16 07.05

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006682

Prep Method: E300P

Date Prep: 12.28.16 17.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.90	mg/kg	12.28.16 22.41		1

Sample Id : **(2) SB 45 4-6**

Lab Sample Id : 542784-019

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.21.16 07.10

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006682

Prep Method: E300P

Date Prep: 12.28.16 17.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.28	mg/kg	12.28.16 22.48		1

Sample Id : **(2) SB 46 0-2 SPLIT**

Lab Sample Id : 542784-022

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.21.16 07.40

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006725

Prep Method: E300P

Date Prep: 12.30.16 10.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.40	mg/kg	12.30.16 14.20		1

Sample Id : **(2) BG 0-2**

Lab Sample Id : 542784-034

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.21.16 08.45

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006725

Prep Method: E300P

Date Prep: 12.30.16 10.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.02	mg/kg	12.30.16 16.27		1



Hits Summary 542784



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(2) BG 2-4**

Lab Sample Id : 542784-035

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.21.16 08.50

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006725

Prep Method: E300P

Date Prep: 12.30.16 10.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.69	mg/kg	12.30.16 16.34		1

Sample Id : **(2) BG 6-8**

Lab Sample Id : 542784-037

Sample Depth : 6 - 8

Matrix : Soil

Date Collected : 12.21.16 08.57

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006725

Prep Method: E300P

Date Prep: 12.30.16 10.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.99	mg/kg	12.30.16 16.48		1

Sample Id : **(2) BG 8-10**

Lab Sample Id : 542784-038

Sample Depth : 8 - 10

Matrix : Soil

Date Collected : 12.21.16 09.00

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006725

Prep Method: E300P

Date Prep: 12.30.16 10.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.15	mg/kg	12.30.16 16.55		1



Certificate of Analysis Summary 542784

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542784-001	542784-002	542784-003	542784-004	542784-005	542784-006
	Field Id:	(2) SB 41 0-2	(2) SB 41 2-4	(2) SB 41 4-6	(2) SB 41 6-8	(2) SB 42 0-2	(2) SB 42 2-4
	Depth:	0-2	2-4	4-6	6-8	0-2	2-4
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-20-16 15:30	Dec-20-16 15:35	Dec-20-16 15:37	Dec-20-16 15:40	Dec-20-16 15:55	Dec-20-16 16:00
BTEX by SW 8260B SUB: TX104704215	Extracted:	Dec-29-16 19:01	Dec-29-16 19:02	Dec-29-16 19:03	Dec-29-16 19:04	Jan-03-17 14:03	Dec-29-16 19:06
	Analyzed:	Dec-29-16 21:14	Dec-29-16 21:33	Dec-29-16 21:52	Dec-29-16 22:11	Jan-03-17 15:39	Dec-29-16 22:49
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00100 0.00100	<0.00096 0.00096	<0.00094 0.00094	<0.00096 0.00096	<0.00100 0.00100	<0.00092 0.00092
Toluene		<0.00100 0.00100	<0.00096 0.00096	<0.00094 0.00094	<0.00096 0.00096	<0.00100 0.00100	<0.00092 0.00092
Ethylbenzene		<0.00100 0.00100	<0.00096 0.00096	<0.00094 0.00094	<0.00096 0.00096	<0.00100 0.00100	<0.00092 0.00092
m,p-Xylenes		<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198
o-Xylene		<0.00100 0.00100	<0.00096 0.00096	<0.00094 0.00094	<0.00096 0.00096	<0.00100 0.00100	<0.00092 0.00092
Total Xylenes		<0.00100 0.00100	<0.00096 0.00096	<0.00094 0.00094	<0.00096 0.00096	<0.00100 0.00100	<0.00092 0.00092
Total BTEX		<0.00100 0.00100	<0.00096 0.00096	<0.00094 0.00094	<0.00096 0.00096	<0.00100 0.00100	<0.00092 0.00092
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-28-16 17:00	Dec-28-16 17:00	Dec-28-16 17:00	Dec-28-16 17:00	Dec-28-16 17:00	Dec-28-16 17:00
	Analyzed:	Dec-28-16 19:45	Dec-28-16 20:06	Dec-28-16 20:13	Dec-28-16 20:20	Dec-28-16 20:27	Dec-28-16 20:48
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		5.71 5.00	7.46 5.00	7.04 5.00	<5.00 5.00	11.4 5.00	6.32 5.00
TPH By SW8015 Mod	Extracted:	Dec-25-16 14:00	Dec-25-16 14:00	Dec-25-16 14:00	Dec-25-16 14:00	Dec-25-16 14:00	Dec-25-16 14:00
	Analyzed:	Dec-26-16 03:48	Dec-26-16 05:05	Dec-26-16 05:32	Dec-26-16 05:57	Dec-26-16 06:24	Dec-26-16 06:49
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542784

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	542784-007	542784-008	542784-009	542784-010	542784-011	542784-012
	<i>Field Id:</i>	(2) SB 42 4-6	(2) SB 42 6-8	(2) SB 43 0-2	(2) SB 43 2-4	(2) SB 43 4-6	(2) SB 43 6-8
	<i>Depth:</i>	4-6	6-8	0-2	2-4	4-6	6-8
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-20-16 16:10	Dec-20-16 16:15	Dec-20-16 16:17	Dec-20-16 16:20	Dec-20-16 16:25	Dec-20-16 16:30
BTEX by SW 8260B SUB: TX104704215	<i>Extracted:</i>	Dec-29-16 19:07	Dec-29-16 19:08	Dec-29-16 19:09	Dec-29-16 19:10	Dec-29-16 19:11	Dec-29-16 19:12
	<i>Analyzed:</i>	Dec-29-16 23:08	Dec-29-16 23:26	Dec-29-16 23:45	Dec-30-16 00:04	Dec-30-16 00:23	Dec-30-16 00:42
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000992 0.000992	<0.000992 0.000992	<0.000998 0.000998	<0.00100 0.00100	<0.000990 0.000990	<0.000992 0.000992
Toluene		<0.000992 0.000992	<0.000992 0.000992	<0.000998 0.000998	<0.00100 0.00100	<0.000990 0.000990	<0.000992 0.000992
Ethylbenzene		<0.000992 0.000992	<0.000992 0.000992	<0.000998 0.000998	<0.00100 0.00100	<0.000990 0.000990	<0.000992 0.000992
m,p-Xylenes		<0.00198 0.00198	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198
o-Xylene		<0.000992 0.000992	<0.000992 0.000992	<0.000998 0.000998	<0.00100 0.00100	<0.000990 0.000990	<0.000992 0.000992
Total Xylenes		<0.000992 0.000992	<0.000992 0.000992	<0.000998 0.000998	<0.00100 0.00100	<0.000990 0.000990	<0.000992 0.000992
Total BTEX		<0.000992 0.000992	<0.000992 0.000992	<0.000998 0.000998	<0.00100 0.00100	<0.000990 0.000990	<0.000992 0.000992
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Dec-28-16 17:00	Dec-28-16 17:00	Dec-28-16 17:00	Dec-28-16 17:00	Dec-28-16 17:00	Dec-28-16 17:00
	<i>Analyzed:</i>	Dec-28-16 20:55	Dec-28-16 21:02	Dec-28-16 21:09	Dec-28-16 21:17	Dec-28-16 21:24	Dec-28-16 21:59
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		5.12 5.00	6.11 5.00	5.98 5.00	5.37 5.00	<5.00 5.00	7.11 5.00
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-25-16 14:00	Dec-25-16 14:00	Dec-25-16 14:00	Dec-25-16 14:00	Dec-25-16 14:00	Dec-25-16 14:00
	<i>Analyzed:</i>	Dec-26-16 07:14	Dec-26-16 07:40	Dec-26-16 08:06	Dec-26-16 12:15	Dec-26-16 13:07	Dec-26-16 13:35
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	134 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	31.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	165 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542784

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	542784-013	542784-014	542784-015	542784-016	542784-017	542784-018
	<i>Field Id:</i>	(2) SB 44 0-2	(2) SB 44 2-4	(2) SB 44 4-6	(2) SB 44 6-8	(2) SB 45 0-2	(2) SB 45 2-4
	<i>Depth:</i>	0-2	2-4	4-6	6-8	0-2	2-4
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-20-16 16:35	Dec-20-16 16:40	Dec-20-16 16:50	Dec-20-16 17:00	Dec-21-16 07:00	Dec-21-16 07:05
BTEX by SW 8260B SUB: TX104704215	<i>Extracted:</i>	Jan-03-17 20:01	Jan-03-17 12:01	Jan-03-17 14:04	Jan-03-17 14:05	Jan-04-17 19:15	Jan-05-17 15:43
	<i>Analyzed:</i>	Jan-03-17 22:02	Jan-03-17 13:08	Jan-03-17 16:17	Jan-03-17 16:36	Jan-04-17 23:34	Jan-05-17 17:20
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00100 0.00100	<0.00100 0.00100	<0.000992 0.000992	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101
Toluene		<0.00100 0.00100	<0.00100 0.00100	<0.000992 0.000992	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101
Ethylbenzene		<0.00100 0.00100	<0.00100 0.00100	<0.000992 0.000992	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101
m,p-Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202
o-Xylene		<0.00100 0.00100	<0.00100 0.00100	<0.000992 0.000992	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101
Total Xylenes		<0.00100 0.00100	<0.00100 0.00100	<0.000992 0.000992	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101
Total BTEX		<0.00100 0.00100	<0.00100 0.00100	<0.000992 0.000992	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Dec-28-16 17:00	Dec-28-16 17:00	Dec-28-16 17:00	Dec-28-16 17:00	Dec-28-16 17:00	Dec-28-16 17:00
	<i>Analyzed:</i>	Dec-28-16 22:06	Dec-28-16 22:13	Dec-28-16 22:20	Dec-28-16 22:27	Dec-28-16 22:34	Dec-28-16 22:41
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		6.27 5.00	5.57 5.00	5.62 5.00	6.49 5.00	6.96 5.00	5.90 5.00
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-25-16 14:00	Dec-25-16 14:00	Dec-25-16 14:00	Dec-25-16 14:00	Dec-25-16 14:00	Dec-25-16 14:00
	<i>Analyzed:</i>	Dec-27-16 13:44	Dec-26-16 14:33	Dec-26-16 15:01	Dec-26-16 16:46	Dec-26-16 17:11	Dec-27-16 14:09
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542784

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	542784-019	542784-020	542784-021	542784-022	542784-023	542784-024
	<i>Field Id:</i>	(2) SB 45 4-6	(2) SB 45 6-8	(2) SB 46 0-2	(2) SB 46 0-2 SPLIT	(2) SB 46 2-4	(2) SB 46 4-6
	<i>Depth:</i>	4-6	6-8	0-2	0-2	2-4	4-6
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-21-16 07:10	Dec-21-16 07:30	Dec-21-16 07:35	Dec-21-16 07:40	Dec-21-16 07:45	Dec-21-16 07:50
BTEX by SW 8260B SUB: TX104704215	<i>Extracted:</i>	Jan-04-17 19:20	Jan-04-17 19:21	Jan-04-17 19:22	Jan-04-17 19:23	Jan-04-17 19:24	Jan-04-17 21:40
	<i>Analyzed:</i>	Jan-05-17 00:51	Jan-05-17 01:10	Jan-05-17 01:29	Jan-05-17 01:48	Jan-05-17 02:07	Jan-05-17 00:33
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000996 0.000996	<0.000996 0.000996	<0.00100 0.00100
Toluene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000996 0.000996	<0.000996 0.000996	<0.00100 0.00100
Ethylbenzene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000996 0.000996	<0.000996 0.000996	<0.00100 0.00100
m,p-Xylenes		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200
o-Xylene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000996 0.000996	<0.000996 0.000996	<0.00100 0.00100
Total Xylenes		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000996 0.000996	<0.000996 0.000996	<0.00100 0.00100
Total BTEX		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000996 0.000996	<0.000996 0.000996	<0.00100 0.00100
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Dec-28-16 17:00	Dec-28-16 17:00	Dec-30-16 10:00	Dec-30-16 10:00	Dec-30-16 10:00	Dec-30-16 10:00
	<i>Analyzed:</i>	Dec-28-16 22:48	Dec-28-16 22:55	Dec-30-16 14:13	Dec-30-16 14:20	Dec-30-16 14:27	Dec-30-16 14:49
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		5.28 5.00	<5.00 5.00	<5.00 5.00	5.40 5.00	<5.00 5.00	<5.00 5.00
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-25-16 14:00	Dec-25-16 14:00	Dec-27-16 14:00	Dec-27-16 14:00	Dec-27-16 14:00	Dec-27-16 14:00
	<i>Analyzed:</i>	Dec-26-16 18:03	Dec-26-16 18:31	Dec-27-16 21:02	Dec-27-16 22:36	Dec-27-16 23:09	Dec-27-16 23:41
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-25-16 14:00	Dec-25-16 14:00				
	<i>Analyzed:</i>	Dec-26-16 18:03	Dec-26-16 18:31				
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL				
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0				
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0				

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542784

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542784-019	542784-020	542784-021	542784-022	542784-023	542784-024
	Field Id:	(2) SB 45 4-6	(2) SB 45 6-8	(2) SB 46 0-2	(2) SB 46 0-2 SPLIT	(2) SB 46 2-4	(2) SB 46 4-6
	Depth:	4-6	6-8	0-2	0-2	2-4	4-6
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-21-16 07:10	Dec-21-16 07:30	Dec-21-16 07:35	Dec-21-16 07:40	Dec-21-16 07:45	Dec-21-16 07:50
TPH By SW8015 Mod	Extracted:			Dec-27-16 14:00	Dec-27-16 14:00	Dec-27-16 14:00	Dec-27-16 14:00
	Analyzed:			Dec-27-16 21:02	Dec-27-16 22:36	Dec-27-16 23:09	Dec-27-16 23:41
	Units/RL:			mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons				<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
C10-C28 Diesel Range Hydrocarbons				<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542784

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542784-025	542784-026	542784-027	542784-028	542784-029	542784-030
	Field Id:	(2) SB 46 6-8	(2) SB 47 0-2	(2) SB 47 2-4	(2) SB 47 4-6	(2) SB 47 6-8	(2) SB 48 0-2
	Depth:	6-8	0-2	2-4	4-6	6-8	0-2
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-21-16 08:00	Dec-21-16 08:10	Dec-21-16 08:15	Dec-21-16 08:30	Dec-21-16 08:40	Dec-21-16 10:30
BTEX by SW 8260B SUB: TX104704215	Extracted:	Jan-04-17 19:26	Jan-04-17 19:27	Jan-04-17 19:28	Jan-04-17 19:25	Jan-04-17 21:46	Jan-05-17 12:06
	Analyzed:	Jan-05-17 02:45	Jan-05-17 03:05	Jan-05-17 03:24	Jan-05-17 02:26	Jan-05-17 02:36	Jan-05-17 13:00
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00098 0.00098	<0.00101 0.00101	<0.00101 0.00101
Toluene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00098 0.00098	<0.00101 0.00101	<0.00101 0.00101
Ethylbenzene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00098 0.00098	<0.00101 0.00101	<0.00101 0.00101
m,p-Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201
o-Xylene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00098 0.00098	<0.00101 0.00101	<0.00101 0.00101
Total Xylenes		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00098 0.00098	<0.00101 0.00101	<0.00101 0.00101
Total BTEX		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00098 0.00098	<0.00101 0.00101	<0.00101 0.00101
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-30-16 10:00	Dec-30-16 10:00	Dec-30-16 10:00	Dec-30-16 10:00	Dec-30-16 10:00	Dec-30-16 10:00
	Analyzed:	Dec-30-16 14:56	Dec-30-16 15:03	Dec-30-16 15:10	Dec-30-16 15:17	Dec-30-16 15:24	Dec-30-16 15:31
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<5.00 5.00	<5.00 5.00	<5.00 5.00	<5.00 5.00	<5.00 5.00	<5.00 5.00
TPH By SW8015 Mod	Extracted:	Dec-27-16 14:00	Dec-27-16 14:00	Dec-27-16 14:00	Dec-27-16 14:00	Dec-27-16 14:00	Dec-27-16 14:00
	Analyzed:	Dec-28-16 00:13	Dec-28-16 00:47	Dec-28-16 01:19	Dec-28-16 01:52	Dec-28-16 02:22	Dec-28-16 02:54
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542784

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542784-031	542784-032	542784-033	542784-034	542784-035	542784-036
	Field Id:	(2) SB 48 2-4	(2) SB 48 4-6	(2) SB 48 6-8	(2) BG 0-2	(2) BG 2-4	(2) BG 4-6
	Depth:	0-2	4-6	6-8	0-2	2-4	4-6
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-21-16 10:35	Dec-21-16 10:40	Dec-21-16 10:45	Dec-21-16 08:45	Dec-21-16 08:50	Dec-21-16 08:55
BTEX by SW 8260B SUB: TX104704215	Extracted:	Jan-04-17 21:48	Jan-04-17 21:49	Jan-04-17 21:50	Jan-04-17 19:10	Jan-04-17 21:51	Jan-04-17 21:52
	Analyzed:	Jan-05-17 03:06	Jan-05-17 03:21	Jan-05-17 03:37	Jan-04-17 21:59	Jan-05-17 03:52	Jan-05-17 04:08
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000994 0.000994	<0.00100 0.00100	<0.00101 0.00101	<0.000994 0.000994	<0.000996 0.000996	<0.00100 0.00100
Toluene		<0.000994 0.000994	<0.00100 0.00100	<0.00101 0.00101	<0.000994 0.000994	<0.000996 0.000996	<0.00100 0.00100
Ethylbenzene		<0.000994 0.000994	<0.00100 0.00100	<0.00101 0.00101	<0.000994 0.000994	<0.000996 0.000996	<0.00100 0.00100
m,p-Xylenes		<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200
o-Xylene		<0.000994 0.000994	<0.00100 0.00100	<0.00101 0.00101	<0.000994 0.000994	<0.000996 0.000996	<0.00100 0.00100
Total Xylenes		<0.000994 0.000994	<0.00100 0.00100	<0.00101 0.00101	<0.000994 0.000994	<0.000996 0.000996	<0.00100 0.00100
Total BTEX		<0.000994 0.000994	<0.00100 0.00100	<0.00101 0.00101	<0.000994 0.000994	<0.000996 0.000996	<0.00100 0.00100
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-30-16 10:00	Dec-30-16 10:00	Dec-30-16 10:00	Dec-30-16 10:00	Dec-30-16 10:00	Dec-30-16 10:00
	Analyzed:	Dec-30-16 16:06	Dec-30-16 16:13	Dec-30-16 16:20	Dec-30-16 16:27	Dec-30-16 16:34	Dec-30-16 16:41
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<5.00 5.00	<5.00 5.00	<5.00 5.00	7.02 5.00	5.69 5.00	<5.00 5.00
TPH By SW8015 Mod	Extracted:	Dec-27-16 14:00	Dec-27-16 14:00	Dec-27-16 14:00	Dec-27-16 14:00	Dec-27-16 14:00	Dec-27-16 14:00
	Analyzed:	Dec-28-16 04:00	Dec-28-16 04:32	Dec-28-16 05:04	Dec-28-16 05:37	Dec-28-16 06:09	Dec-28-16 06:41
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542784

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542784-037	542784-038				
	Field Id:	(2) BG 6-8	(2) BG 8-10				
	Depth:	6-8	8-10				
	Matrix:	SOIL	SOIL				
	Sampled:	Dec-21-16 08:57	Dec-21-16 09:00				
BTEX by SW 8260B SUB: TX104704215	Extracted:	Jan-04-17 21:57	Jan-04-17 21:58				
	Analyzed:	Jan-05-17 05:25	Jan-05-17 05:40				
	Units/RL:	mg/kg RL	mg/kg RL				
	Benzene	<0.000992 0.000992	<0.000996 0.000996				
	Toluene	<0.000992 0.000992	<0.000996 0.000996				
Ethylbenzene		<0.000992 0.000992	<0.000996 0.000996				
m,p-Xylenes		<0.00198 0.00198	<0.00199 0.00199				
o-Xylene		<0.000992 0.000992	<0.000996 0.000996				
Total Xylenes		<0.000992 0.000992	<0.000996 0.000996				
Total BTEX		<0.000992 0.000992	<0.000996 0.000996				
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-30-16 10:00	Dec-30-16 10:00				
	Analyzed:	Dec-30-16 16:48	Dec-30-16 16:55				
	Units/RL:	mg/kg RL	mg/kg RL				
	Chloride	6.99 5.00	6.15 5.00				
TPH By SW8015 Mod	Extracted:	Dec-27-16 14:00	Dec-27-16 14:00				
	Analyzed:	Dec-28-16 07:12	Dec-28-16 07:44				
	Units/RL:	mg/kg RL	mg/kg RL				
	C6-C10 Gasoline Range Hydrocarbons	<15.0 15.0	<15.0 15.0				
	C10-C28 Diesel Range Hydrocarbons	<15.0 15.0	<15.0 15.0				
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0				
Total TPH		<15.0 15.0	<15.0 15.0				

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Kelsey Brooks
Project Manager

- 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 **SQL** 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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(432) 563-1800	(432) 563-1713
(602) 437-0330	



Form 2 - Surrogate Recoveries

Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542784, 542784

Lab Batch #: 3006625

Sample: 542784-001 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/26/16 03:48

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.3	99.8	78	70-135	
o-Terphenyl	37.6	49.9	75	70-135	

Lab Batch #: 3006625

Sample: 542784-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/26/16 05:05

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	74.9	99.9	75	70-135	
o-Terphenyl	36.3	50.0	73	70-135	

Lab Batch #: 3006625

Sample: 542784-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/26/16 05:32

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.0	99.9	84	70-135	
o-Terphenyl	40.1	50.0	80	70-135	

Lab Batch #: 3006625

Sample: 542784-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/26/16 05:57

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.5	99.7	85	70-135	
o-Terphenyl	40.4	49.9	81	70-135	

Lab Batch #: 3006625

Sample: 542784-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/26/16 06:24

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.8	99.8	83	70-135	
o-Terphenyl	38.5	49.9	77	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542784, 542784

Lab Batch #: 3006625

Sample: 542784-006 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/26/16 06:49

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.2	99.7	93	70-135	
o-Terphenyl	42.9	49.9	86	70-135	

Lab Batch #: 3006625

Sample: 542784-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/26/16 07:14

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	77.0	99.9	77	70-135	
o-Terphenyl	35.2	50.0	70	70-135	

Lab Batch #: 3006625

Sample: 542784-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/26/16 07:40

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.6	100	86	70-135	
o-Terphenyl	40.1	50.0	80	70-135	

Lab Batch #: 3006625

Sample: 542784-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/26/16 08:06

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.7	99.8	81	70-135	
o-Terphenyl	36.3	49.9	73	70-135	

Lab Batch #: 3006625

Sample: 542784-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/26/16 12:15

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	79.9	99.8	80	70-135	
o-Terphenyl	37.5	49.9	75	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542784, 542784

Lab Batch #: 3006625

Sample: 542784-011 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/26/16 13:07

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	73.2	99.9	73	70-135	
o-Terphenyl	35.0	50.0	70	70-135	

Lab Batch #: 3006625

Sample: 542784-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/26/16 13:35

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.4	99.8	79	70-135	
o-Terphenyl	38.6	49.9	77	70-135	

Lab Batch #: 3006625

Sample: 542784-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/26/16 14:33

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	71.9	99.7	72	70-135	
o-Terphenyl	35.0	49.9	70	70-135	

Lab Batch #: 3006625

Sample: 542784-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/26/16 15:01

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	73.7	99.7	74	70-135	
o-Terphenyl	36.4	49.9	73	70-135	

Lab Batch #: 3006625

Sample: 542784-016 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/26/16 16:46

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.1	99.9	83	70-135	
o-Terphenyl	40.1	50.0	80	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542784, 542784

Lab Batch #: 3006625

Sample: 542784-017 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/26/16 17:11

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.8	99.9	81	70-135	
o-Terphenyl	39.3	50.0	79	70-135	

Lab Batch #: 3006625

Sample: 542784-019 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/26/16 18:03

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.9	99.9	90	70-135	
o-Terphenyl	39.5	50.0	79	70-135	

Lab Batch #: 3006625

Sample: 542784-020 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/26/16 18:31

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	73.3	99.7	74	70-135	
o-Terphenyl	36.0	49.9	72	70-135	

Lab Batch #: 3006625

Sample: 542784-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/27/16 13:44

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.6	99.7	95	70-135	
o-Terphenyl	44.9	49.9	90	70-135	

Lab Batch #: 3006625

Sample: 542784-018 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/27/16 14:09

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.0	100	86	70-135	
o-Terphenyl	38.9	50.0	78	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542784, 542784

Lab Batch #: 3006644

Sample: 542784-021 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/27/16 21:02

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.5	100	97	70-135	
o-Terphenyl	45.7	50.0	91	70-135	

Lab Batch #: 3006644

Sample: 542784-022 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/27/16 22:36

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.0	99.7	93	70-135	
o-Terphenyl	44.8	49.9	90	70-135	

Lab Batch #: 3006644

Sample: 542784-023 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/27/16 23:09

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.1	99.7	92	70-135	
o-Terphenyl	44.0	49.9	88	70-135	

Lab Batch #: 3006644

Sample: 542784-024 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/27/16 23:41

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.9	99.6	95	70-135	
o-Terphenyl	44.8	49.8	90	70-135	

Lab Batch #: 3006644

Sample: 542784-025 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 00:13

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.2	99.9	97	70-135	
o-Terphenyl	46.0	50.0	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542784, 542784

Lab Batch #: 3006644

Sample: 542784-026 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 00:47

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.2	99.8	92	70-135	
o-Terphenyl	43.7	49.9	88	70-135	

Lab Batch #: 3006644

Sample: 542784-027 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 01:19

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.7	99.8	94	70-135	
o-Terphenyl	44.5	49.9	89	70-135	

Lab Batch #: 3006644

Sample: 542784-028 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 01:52

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.8	100	96	70-135	
o-Terphenyl	46.3	50.0	93	70-135	

Lab Batch #: 3006644

Sample: 542784-029 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 02:22

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.7	99.7	99	70-135	
o-Terphenyl	47.3	49.9	95	70-135	

Lab Batch #: 3006644

Sample: 542784-030 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 02:54

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.7	99.7	94	70-135	
o-Terphenyl	44.3	49.9	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542784, 542784

Lab Batch #: 3006644

Sample: 542784-031 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 04:00

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.0	99.8	92	70-135	
o-Terphenyl	44.2	49.9	89	70-135	

Lab Batch #: 3006644

Sample: 542784-032 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 04:32

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.9	99.9	89	70-135	
o-Terphenyl	42.2	50.0	84	70-135	

Lab Batch #: 3006644

Sample: 542784-033 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 05:04

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.1	99.9	91	70-135	
o-Terphenyl	43.5	50.0	87	70-135	

Lab Batch #: 3006644

Sample: 542784-034 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 05:37

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.4	99.9	90	70-135	
o-Terphenyl	43.1	50.0	86	70-135	

Lab Batch #: 3006644

Sample: 542784-035 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 06:09

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.8	99.7	88	70-135	
o-Terphenyl	42.0	49.9	84	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542784, 542784

Lab Batch #: 3006644

Sample: 542784-036 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 06:41

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.9	99.8	89	70-135	
o-Terphenyl	41.7	49.9	84	70-135	

Lab Batch #: 3006644

Sample: 542784-037 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 07:12

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.4	100	90	70-135	
o-Terphenyl	43.6	50.0	87	70-135	

Lab Batch #: 3006644

Sample: 542784-038 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 07:44

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.0	99.8	89	70-135	
o-Terphenyl	42.5	49.9	85	70-135	

Lab Batch #: 3006691

Sample: 542784-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/29/16 21:14

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0530	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0515	0.0500	103	80-120	
Toluene-D8	0.0507	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542784, 542784

Lab Batch #: 3006691

Sample: 542784-002 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/29/16 21:33

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0535	0.0500	107	74-126	
1,2-Dichloroethane-D4	0.0483	0.0500	97	80-120	
Toluene-D8	0.0470	0.0500	94	73-132	

Lab Batch #: 3006691

Sample: 542784-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/29/16 21:52

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0530	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0527	0.0500	105	80-120	
Toluene-D8	0.0459	0.0500	92	73-132	

Lab Batch #: 3006691

Sample: 542784-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/29/16 22:11

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0552	0.0500	110	74-126	
1,2-Dichloroethane-D4	0.0500	0.0500	100	80-120	
Toluene-D8	0.0447	0.0500	89	73-132	

Lab Batch #: 3006691

Sample: 542784-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/29/16 22:49

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0530	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0530	0.0500	106	80-120	
Toluene-D8	0.0469	0.0500	94	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542784, 542784

Lab Batch #: 3006691

Sample: 542784-007 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/29/16 23:08

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0543	0.0500	109	74-126	
1,2-Dichloroethane-D4	0.0538	0.0500	108	80-120	
Toluene-D8	0.0494	0.0500	99	73-132	

Lab Batch #: 3006691

Sample: 542784-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/29/16 23:26

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0540	0.0500	108	74-126	
1,2-Dichloroethane-D4	0.0512	0.0500	102	80-120	
Toluene-D8	0.0456	0.0500	91	73-132	

Lab Batch #: 3006691

Sample: 542784-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/29/16 23:45

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0533	0.0500	107	74-126	
1,2-Dichloroethane-D4	0.0510	0.0500	102	80-120	
Toluene-D8	0.0442	0.0500	88	73-132	

Lab Batch #: 3006691

Sample: 542784-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/30/16 00:04

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0532	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0526	0.0500	105	80-120	
Toluene-D8	0.0464	0.0500	93	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542784, 542784

Lab Batch #: 3006691

Sample: 542784-011 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/30/16 00:23

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0524	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0526	0.0500	105	80-120	
Toluene-D8	0.0464	0.0500	93	73-132	

Lab Batch #: 3006691

Sample: 542784-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/30/16 00:42

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0510	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0484	0.0500	97	80-120	
Toluene-D8	0.0480	0.0500	96	73-132	

Lab Batch #: 3006852

Sample: 542784-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/17 13:08

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0525	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0489	0.0500	98	80-120	
Toluene-D8	0.0465	0.0500	93	73-132	

Lab Batch #: 3006852

Sample: 542784-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/17 15:39

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0492	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0437	0.0500	87	80-120	
Toluene-D8	0.0466	0.0500	93	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542784, 542784

Lab Batch #: 3006852

Sample: 542784-015 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/17 16:17

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0526	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0463	0.0500	93	80-120	
Toluene-D8	0.0483	0.0500	97	73-132	

Lab Batch #: 3006852

Sample: 542784-016 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/17 16:36

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0526	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0487	0.0500	97	80-120	
Toluene-D8	0.0445	0.0500	89	73-132	

Lab Batch #: 3006858

Sample: 542784-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/17 22:02

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0511	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0480	0.0500	96	80-120	
Toluene-D8	0.0463	0.0500	93	73-132	

Lab Batch #: 3006967

Sample: 542784-034 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 21:59

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0538	0.0500	108	74-126	
1,2-Dichloroethane-D4	0.0557	0.0500	111	80-120	
Toluene-D8	0.0466	0.0500	93	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542784, 542784

Lab Batch #: 3006967

Sample: 542784-017 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 23:34

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0549	0.0500	110	74-126	
1,2-Dichloroethane-D4	0.0510	0.0500	102	80-120	
Toluene-D8	0.0468	0.0500	94	73-132	

Lab Batch #: 3006935

Sample: 542784-024 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 00:33

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0504	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0446	0.0500	89	80-120	
Toluene-D8	0.0463	0.0500	93	73-132	

Lab Batch #: 3006967

Sample: 542784-019 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 00:51

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	0.0478	0.0500	96	80-120	
Toluene-D8	0.0446	0.0500	89	73-132	

Lab Batch #: 3006967

Sample: 542784-020 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 01:10

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0548	0.0500	110	74-126	
1,2-Dichloroethane-D4	0.0540	0.0500	108	80-120	
Toluene-D8	0.0443	0.0500	89	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542784, 542784

Lab Batch #: 3006967

Sample: 542784-021 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 01:29

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0569	0.0500	114	74-126	
1,2-Dichloroethane-D4	0.0502	0.0500	100	80-120	
Toluene-D8	0.0451	0.0500	90	73-132	

Lab Batch #: 3006967

Sample: 542784-022 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 01:48

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0546	0.0500	109	74-126	
1,2-Dichloroethane-D4	0.0509	0.0500	102	80-120	
Toluene-D8	0.0436	0.0500	87	73-132	

Lab Batch #: 3006967

Sample: 542784-023 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 02:07

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0537	0.0500	107	74-126	
1,2-Dichloroethane-D4	0.0490	0.0500	98	80-120	
Toluene-D8	0.0446	0.0500	89	73-132	

Lab Batch #: 3006967

Sample: 542784-028 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 02:26

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0535	0.0500	107	74-126	
1,2-Dichloroethane-D4	0.0510	0.0500	102	80-120	
Toluene-D8	0.0469	0.0500	94	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542784, 542784

Lab Batch #: 3006935

Sample: 542784-029 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 02:36

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0486	0.0500	97	74-126	
1,2-Dichloroethane-D4	0.0460	0.0500	92	80-120	
Toluene-D8	0.0460	0.0500	92	73-132	

Lab Batch #: 3006967

Sample: 542784-025 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 02:45

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0569	0.0500	114	74-126	
1,2-Dichloroethane-D4	0.0535	0.0500	107	80-120	
Toluene-D8	0.0441	0.0500	88	73-132	

Lab Batch #: 3006967

Sample: 542784-026 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 03:05

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0529	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0532	0.0500	106	80-120	
Toluene-D8	0.0452	0.0500	90	73-132	

Lab Batch #: 3006935

Sample: 542784-031 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 03:06

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0498	0.0500	100	74-126	
1,2-Dichloroethane-D4	0.0450	0.0500	90	80-120	
Toluene-D8	0.0475	0.0500	95	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542784, 542784

Lab Batch #: 3006935

Sample: 542784-032 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 03:21

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0537	0.0500	107	74-126	
1,2-Dichloroethane-D4	0.0443	0.0500	89	80-120	
Toluene-D8	0.0471	0.0500	94	73-132	

Lab Batch #: 3006967

Sample: 542784-027 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 03:24

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0519	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0483	0.0500	97	80-120	
Toluene-D8	0.0441	0.0500	88	73-132	

Lab Batch #: 3006935

Sample: 542784-033 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 03:37

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0528	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0453	0.0500	91	80-120	
Toluene-D8	0.0456	0.0500	91	73-132	

Lab Batch #: 3006935

Sample: 542784-035 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 03:52

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0492	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0448	0.0500	90	80-120	
Toluene-D8	0.0470	0.0500	94	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542784, 542784

Lab Batch #: 3006935

Sample: 542784-036 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 04:08

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0503	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0409	0.0500	82	80-120	
Toluene-D8	0.0443	0.0500	89	73-132	

Lab Batch #: 3006935

Sample: 542784-037 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 05:25

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0503	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0416	0.0500	83	80-120	
Toluene-D8	0.0449	0.0500	90	73-132	

Lab Batch #: 3006935

Sample: 542784-038 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 05:40

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0441	0.0500	88	74-126	
1,2-Dichloroethane-D4	0.0465	0.0500	93	80-120	
Toluene-D8	0.0443	0.0500	89	73-132	

Lab Batch #: 3006989

Sample: 542784-030 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 13:00

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0529	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0471	0.0500	94	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.



Form 2 - Surrogate Recoveries

Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542784, 542784

Lab Batch #: 3006989

Sample: 542784-018 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 17:20

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0513	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0446	0.0500	89	80-120	
Toluene-D8	0.0456	0.0500	91	73-132	

Lab Batch #: 3006625

Sample: 717864-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/26/16 18:58

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	110	100	110	70-135	
o-Terphenyl	53.0	50.0	106	70-135	

Lab Batch #: 3006644

Sample: 717865-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/27/16 19:27

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	99.5	100	100	70-135	
o-Terphenyl	50.7	50.0	101	70-135	

Lab Batch #: 3006691

Sample: 717917-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/29/16 20:36

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0514	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0510	0.0500	102	80-120	
Toluene-D8	0.0471	0.0500	94	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542784, 542784

Project ID:

Lab Batch #: 3006852

Sample: 718028-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/03/17 12:30

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0495	0.0500	99	74-126	
1,2-Dichloroethane-D4	0.0503	0.0500	101	80-120	
Toluene-D8	0.0462	0.0500	92	73-132	

Lab Batch #: 3006858

Sample: 718031-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/03/17 21:43

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	0.0498	0.0500	100	80-120	
Toluene-D8	0.0447	0.0500	89	73-132	

Lab Batch #: 3006967

Sample: 718111-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/04/17 21:10

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0467	0.0500	93	74-126	
1,2-Dichloroethane-D4	0.0474	0.0500	95	80-120	
Toluene-D8	0.0530	0.0500	106	73-132	

Lab Batch #: 3006935

Sample: 718082-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/05/17 00:03

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	0.0472	0.0500	94	80-120	
Toluene-D8	0.0443	0.0500	89	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542784, 542784

Lab Batch #: 3006989

Sample: 718120-1-BLK / BLK

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/05/17 12:21

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0517	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0476	0.0500	95	80-120	
Toluene-D8	0.0455	0.0500	91	73-132	

Lab Batch #: 3006625

Sample: 717864-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/26/16 19:24

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	111	100	111	70-135	
o-Terphenyl	44.0	50.0	88	70-135	

Lab Batch #: 3006644

Sample: 717865-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/27/16 19:58

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	108	100	108	70-135	
o-Terphenyl	52.8	50.0	106	70-135	

Lab Batch #: 3006691

Sample: 717917-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/29/16 18:43

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0495	0.0500	99	74-126	
1,2-Dichloroethane-D4	0.0532	0.0500	106	80-120	
Toluene-D8	0.0452	0.0500	90	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542784, 542784

Lab Batch #: 3006852

Sample: 718028-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/03/17 10:32

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0518	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0523	0.0500	105	80-120	
Toluene-D8	0.0442	0.0500	88	73-132	

Lab Batch #: 3006858

Sample: 718031-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/03/17 19:50

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0501	0.0500	100	74-126	
1,2-Dichloroethane-D4	0.0499	0.0500	100	80-120	
Toluene-D8	0.0465	0.0500	93	73-132	

Lab Batch #: 3006967

Sample: 718111-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/04/17 18:20

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0525	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0482	0.0500	96	80-120	
Toluene-D8	0.0457	0.0500	91	73-132	

Lab Batch #: 3006935

Sample: 718082-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/04/17 21:59

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0521	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0555	0.0500	111	80-120	
Toluene-D8	0.0492	0.0500	98	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542784, 542784

Lab Batch #: 3006989

Sample: 718120-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/05/17 09:49

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0533	0.0500	107	74-126	
1,2-Dichloroethane-D4	0.0513	0.0500	103	80-120	
Toluene-D8	0.0440	0.0500	88	73-132	

Lab Batch #: 3006625

Sample: 717864-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/26/16 03:21

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	113	100	113	70-135	
o-Terphenyl	50.7	50.0	101	70-135	

Lab Batch #: 3006644

Sample: 717865-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/27/16 20:28

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	105	100	105	70-135	
o-Terphenyl	52.5	50.0	105	70-135	

Lab Batch #: 3006691

Sample: 717917-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/29/16 19:02

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0532	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0511	0.0500	102	80-120	
Toluene-D8	0.0468	0.0500	94	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542784, 542784

Lab Batch #: 3006852

Sample: 718028-1-BSD / BSD

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/03/17 10:51

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0519	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0526	0.0500	105	80-120	
Toluene-D8	0.0467	0.0500	93	73-132	

Lab Batch #: 3006858

Sample: 718031-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/03/17 20:09

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0505	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0498	0.0500	100	80-120	
Toluene-D8	0.0463	0.0500	93	73-132	

Lab Batch #: 3006967

Sample: 718111-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/04/17 18:39

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	0.0483	0.0500	97	80-120	
Toluene-D8	0.0449	0.0500	90	73-132	

Lab Batch #: 3006935

Sample: 718082-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/04/17 22:15

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0430	0.0500	86	74-126	
1,2-Dichloroethane-D4	0.0515	0.0500	103	80-120	
Toluene-D8	0.0489	0.0500	98	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542784, 542784

Lab Batch #: 3006989

Sample: 718120-1-BSD / BSD

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/05/17 10:08

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0492	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0473	0.0500	95	80-120	
Toluene-D8	0.0470	0.0500	94	73-132	

Lab Batch #: 3006625

Sample: 542784-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/26/16 04:14

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	115	100	115	70-135	
o-Terphenyl	45.5	50.0	91	70-135	

Lab Batch #: 3006644

Sample: 542784-021 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/27/16 21:33

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	106	99.8	106	70-135	
o-Terphenyl	50.8	49.9	102	70-135	

Lab Batch #: 3006691

Sample: 542784-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/29/16 19:21

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0530	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0472	0.0500	94	80-120	
Toluene-D8	0.0458	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.



Form 2 - Surrogate Recoveries

Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542784, 542784

Lab Batch #: 3006852

Sample: 542784-014 S / MS

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/17 11:10

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0507	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0476	0.0500	95	80-120	
Toluene-D8	0.0450	0.0500	90	73-132	

Lab Batch #: 3006858

Sample: 542784-013 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/17 20:28

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0481	0.0500	96	74-126	
1,2-Dichloroethane-D4	0.0477	0.0500	95	80-120	
Toluene-D8	0.0454	0.0500	91	73-132	

Lab Batch #: 3006967

Sample: 542784-034 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 18:58

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0530	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0518	0.0500	104	80-120	
Toluene-D8	0.0460	0.0500	92	73-132	

Lab Batch #: 3006935

Sample: 542784-024 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 22:31

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0439	0.0500	88	74-126	
1,2-Dichloroethane-D4	0.0473	0.0500	95	80-120	
Toluene-D8	0.0513	0.0500	103	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542784, 542784

Lab Batch #: 3006989

Sample: 543133-001 S / MS

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 10:27

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0523	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0444	0.0500	89	80-120	
Toluene-D8	0.0457	0.0500	91	73-132	

Lab Batch #: 3006625

Sample: 542784-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/26/16 04:39

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	95.7	99.8	96	70-135	
o-Terphenyl	37.6	49.9	75	70-135	

Lab Batch #: 3006644

Sample: 542784-021 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/27/16 22:06

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	105	99.9	105	70-135	
o-Terphenyl	51.0	50.0	102	70-135	

Lab Batch #: 3006691

Sample: 542784-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/29/16 19:40

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0516	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0532	0.0500	106	80-120	
Toluene-D8	0.0484	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542784, 542784

Lab Batch #: 3006852

Sample: 542784-014 SD / MSD

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/17 11:29

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0511	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0501	0.0500	100	80-120	
Toluene-D8	0.0465	0.0500	93	73-132	

Lab Batch #: 3006858

Sample: 542784-013 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/17 20:47

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0493	0.0500	99	74-126	
1,2-Dichloroethane-D4	0.0479	0.0500	96	80-120	
Toluene-D8	0.0453	0.0500	91	73-132	

Lab Batch #: 3006967

Sample: 542784-034 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 19:17

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0530	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0463	0.0500	93	80-120	
Toluene-D8	0.0460	0.0500	92	73-132	

Lab Batch #: 3006935

Sample: 542784-024 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 22:46

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0474	0.0500	95	74-126	
1,2-Dichloroethane-D4	0.0453	0.0500	91	80-120	
Toluene-D8	0.0518	0.0500	104	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542784, 542784

Lab Batch #: 3006989

Sample: 543133-001 SD / MSD

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 10:46

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	0.0511	0.0500	102	80-120	
Toluene-D8	0.0448	0.0500	90	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: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 542784, 542784

Analyst: JTR

Date Prepared: 12/29/2016

Project ID:

Date Analyzed: 12/29/2016

Lab Batch ID: 3006691

Sample: 717917-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.0973	97	0.100	0.0958	96	2	62-132	25	
Toluene	<0.00100	0.100	0.0895	90	0.100	0.0942	94	5	66-124	25	
Ethylbenzene	<0.00100	0.100	0.0998	100	0.100	0.0974	97	2	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.204	102	0.200	0.197	99	3	69-128	25	
o-Xylene	<0.00100	0.100	0.101	101	0.100	0.0927	93	9	72-131	25	

Analyst: JTR

Date Prepared: 01/03/2017

Date Analyzed: 01/03/2017

Lab Batch ID: 3006852

Sample: 718028-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.0990	99	0.100	0.104	104	5	62-132	25	
Toluene	<0.00100	0.100	0.0890	89	0.100	0.101	101	13	66-124	25	
Ethylbenzene	<0.00100	0.100	0.0984	98	0.100	0.105	105	6	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.207	104	0.200	0.220	110	6	69-128	25	
o-Xylene	<0.00100	0.100	0.0959	96	0.100	0.0978	98	2	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: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 542784, 542784

Analyst: JTR

Date Prepared: 01/03/2017

Project ID:

Date Analyzed: 01/03/2017

Lab Batch ID: 3006858

Sample: 718031-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.103	103	0.100	0.107	107	4	62-132	25	
Toluene	<0.00100	0.100	0.0986	99	0.100	0.100	100	1	66-124	25	
Ethylbenzene	<0.00100	0.100	0.105	105	0.100	0.110	110	5	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.221	111	0.200	0.224	112	1	69-128	25	
o-Xylene	<0.00100	0.100	0.0995	100	0.100	0.102	102	2	72-131	25	

Analyst: SAD

Date Prepared: 01/04/2017

Date Analyzed: 01/04/2017

Lab Batch ID: 3006935

Sample: 718082-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.103	103	0.100	0.0941	94	9	62-132	25	
Toluene	<0.00100	0.100	0.103	103	0.100	0.0842	84	20	66-124	25	
Ethylbenzene	<0.00100	0.100	0.105	105	0.100	0.108	108	3	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.210	105	0.200	0.221	111	5	69-128	25	
o-Xylene	<0.00100	0.100	0.108	108	0.100	0.113	113	5	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: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 542784, 542784

Analyst: SAD

Date Prepared: 01/04/2017

Project ID:

Date Analyzed: 01/04/2017

Lab Batch ID: 3006967

Sample: 718111-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.0995	100	0.100	0.107	107	7	62-132	25	
Toluene	<0.00100	0.100	0.0926	93	0.100	0.102	102	10	66-124	25	
Ethylbenzene	<0.00100	0.100	0.106	106	0.100	0.110	110	4	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.209	105	0.200	0.218	109	4	69-128	25	
o-Xylene	<0.00100	0.100	0.0999	100	0.100	0.104	104	4	72-131	25	

Analyst: SAD

Date Prepared: 01/05/2017

Date Analyzed: 01/05/2017

Lab Batch ID: 3006989

Sample: 718120-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.100	100	0.100	0.111	111	10	62-132	25	
Toluene	<0.00100	0.100	0.0945	95	0.100	0.106	106	11	66-124	25	
Ethylbenzene	<0.00100	0.100	0.105	105	0.100	0.115	115	9	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.211	106	0.200	0.232	116	9	69-128	25	
o-Xylene	<0.00100	0.100	0.0962	96	0.100	0.106	106	10	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: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 542784, 542784

Analyst: MNR

Date Prepared: 12/28/2016

Project ID:

Date Analyzed: 12/28/2016

Lab Batch ID: 3006682

Sample: 717827-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	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
Analytes											
Chloride	<5.00	250	240	96	250	250	100	4	90-110	20	

Analyst: MNR

Date Prepared: 12/30/2016

Date Analyzed: 12/30/2016

Lab Batch ID: 3006725

Sample: 717945-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	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
Analytes											
Chloride	<5.00	250	268	107	250	268	107	0	90-110	20	

Analyst: ARM

Date Prepared: 12/25/2016

Date Analyzed: 12/26/2016

Lab Batch ID: 3006625

Sample: 717864-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	856	86	1000	935	94	9	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	948	95	1000	1040	104	9	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



BS / BSD Recoveries



Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 542784, 542784

Project ID:

Analyst: ARM

Date Prepared: 12/27/2016

Date Analyzed: 12/27/2016

Lab Batch ID: 3006644

Sample: 717865-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	998	100	1000	934	93	7	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	1030	103	1000	1040	104	1	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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542784

Project ID:

Lab Batch ID: 3006691

QC- Sample ID: 542784-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/29/2016

Date Prepared: 12/29/2016

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	<0.000990	0.0990	0.0907	92	0.0990	0.0913	92	1	62-132	25	
Toluene	<0.000990	0.0990	0.0836	84	0.0990	0.0855	86	2	66-124	25	
Ethylbenzene	<0.000990	0.0990	0.0931	94	0.0990	0.0881	89	6	71-134	25	
m,p-Xylenes	<0.00198	0.198	0.194	98	0.198	0.181	91	7	69-128	25	
o-Xylene	<0.000990	0.0990	0.0912	92	0.0990	0.0817	83	11	72-131	25	

Lab Batch ID: 3006852

QC- Sample ID: 542784-014 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/03/2017

Date Prepared: 01/03/2017

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	0.100	100	0.0996	0.0975	98	3	62-132	25	
Toluene	<0.000998	0.0998	0.0942	94	0.0996	0.0941	94	0	66-124	25	
Ethylbenzene	<0.000998	0.0998	0.101	101	0.0996	0.0956	96	5	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.209	105	0.199	0.200	101	4	69-128	25	
o-Xylene	<0.000998	0.0998	0.0964	97	0.0996	0.0891	89	8	72-131	25	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542784

Project ID:

Lab Batch ID: 3006858

QC- Sample ID: 542784-013 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/03/2017

Date Prepared: 01/03/2017

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	0.102	102	0.100	0.107	107	5	62-132	25	
Toluene	<0.000998	0.0998	0.0976	98	0.100	0.0955	96	2	66-124	25	
Ethylbenzene	<0.000998	0.0998	0.101	101	0.100	0.101	101	0	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.214	107	0.200	0.210	105	2	69-128	25	
o-Xylene	<0.000998	0.0998	0.102	102	0.100	0.0963	96	6	72-131	25	

Lab Batch ID: 3006935

QC- Sample ID: 542784-024 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/04/2017

Date Prepared: 01/04/2017

Analyst: SAD

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	0.0947	95	0.0990	0.0945	95	0	62-132	25	
Toluene	<0.000998	0.0998	0.0975	98	0.0990	0.0992	100	2	66-124	25	
Ethylbenzene	<0.000998	0.0998	0.0932	93	0.0990	0.0948	96	2	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.187	94	0.198	0.189	95	1	69-128	25	
o-Xylene	<0.000998	0.0998	0.0944	95	0.0990	0.0934	94	1	72-131	25	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542784

Project ID:

Lab Batch ID: 3006967

QC- Sample ID: 542784-034 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/04/2017

Date Prepared: 01/04/2017

Analyst: SAD

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	<0.000990	0.0990	0.0983	99	0.0998	0.0958	96	3	62-132	25	
Toluene	<0.000990	0.0990	0.0897	91	0.0998	0.0923	92	3	66-124	25	
Ethylbenzene	<0.000990	0.0990	0.0979	99	0.0998	0.0981	98	0	71-134	25	
m,p-Xylenes	<0.00198	0.198	0.191	96	0.200	0.195	98	2	69-128	25	
o-Xylene	<0.000990	0.0990	0.0887	90	0.0998	0.0900	90	1	72-131	25	

Lab Batch ID: 3006989

QC- Sample ID: 543133-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/05/2017

Date Prepared: 01/05/2017

Analyst: SAD

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	<0.000996	0.0996	0.0932	94	0.0994	0.0952	96	2	62-132	25	
Toluene	<0.000996	0.0996	0.0908	91	0.0994	0.0874	88	4	66-124	25	
Ethylbenzene	<0.000996	0.0996	0.0990	99	0.0994	0.0987	99	0	71-134	25	
m,p-Xylenes	<0.00199	0.199	0.198	99	0.199	0.196	98	1	69-128	25	
o-Xylene	<0.000996	0.0996	0.0935	94	0.0994	0.0880	89	6	72-131	25	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542784

Project ID:

Lab Batch ID: 3006682

QC- Sample ID: 542784-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/28/2016

Date Prepared: 12/28/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	5.71	250	250	98	250	237	93	5	90-110	20	

Lab Batch ID: 3006682

QC- Sample ID: 542784-011 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/28/2016

Date Prepared: 12/28/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	263	105	250	258	103	2	90-110	20	

Lab Batch ID: 3006725

QC- Sample ID: 542717-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/30/2016

Date Prepared: 12/30/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	91.9	250	352	104	250	351	104	0	90-110	20	

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

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

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

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



Form 3 - MS / MSD Recoveries



Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542784

Project ID:

Lab Batch ID: 3006725

QC- Sample ID: 542784-030 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/30/2016

Date Prepared: 12/30/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	288	115	250	284	114	1	90-110	20	X

Lab Batch ID: 3006625

QC- Sample ID: 542784-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/26/2016

Date Prepared: 12/25/2016

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	839	84	998	884	89	5	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	931	93	998	896	90	4	70-135	35	

Lab Batch ID: 3006644

QC- Sample ID: 542784-021 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/27/2016

Date Prepared: 12/27/2016

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	998	961	96	999	891	89	8	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	998	1040	104	999	1060	106	2	70-135	35	

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

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

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.



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: KJE Enviromental & Civil Engineering

Date/ Time Received: 12/22/2016 09:45:00 AM

Work Order #: 542784

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	.8	
#2 *Shipping container in good condition?	N/A	
#3 *Samples received on ice?	Yes	
#4 *Custody Seal present on shipping container/ cooler?	N/A	
#5 *Custody Seals intact on shipping container/ cooler?	N/A	
#6 Custody Seals intact on sample bottles?	N/A	
#7 *Custody Seals Signed and dated?	N/A	
#8 *Chain of Custody present?	Yes	
#9 Sample instructions complete on Chain of Custody?	Yes	
#10 Any missing/extra samples?	No	
#11 Chain of Custody signed when relinquished/ received?	Yes	
#12 Chain of Custody agrees with sample label(s)?	Yes	
#13 Container label(s) legible and intact?	Yes	
#14 Sample matrix/ properties agree with Chain of Custody?	Yes	
#15 Samples in proper container/ bottle?	Yes	
#16 Samples properly preserved?	Yes	
#17 Sample container(s) intact?	Yes	
#18 Sufficient sample amount for indicated test(s)?	Yes	
#19 All samples received within hold time?	Yes	
#20 Subcontract of sample(s)?	Yes	Houston
#21 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A	
#22 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	N/A	
#23 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	N/A	

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Jessica Kramer

Jessica Kramer

Date: 12/22/2016

Checklist reviewed by:

Kelsey Brooks

Kelsey Brooks

Date: 12/23/2016



CHAIN OF CUSTODY

Page 1 of 4

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Norcross, Georgia (770-449-8800)

Lakeland, Florida (863-646-8526)
Tampa, Florida (813-620-2000)

Client / Reporting Information

Project Information

Analytical Information

Matrix Codes

Company Name / Branch:
KJE Environmental & Civil Engineering

Company Address:

500 Mosely Road, Cross Roads, Texas 76227

Email: james@kjenvironmental.com Phone No: (940)387-0805

Project Contact:

James Fox

Samplers Name

Project Name/Number:

Project Location:

Invoice To:

Jal, NM

PO Number:

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

No. Field ID / Point of Collection

Collection

Number of preserved bottles

Field Comments

Sample Depth

Date

Time

Matrix

of bottles

HCl

NaOH/Zn Acetate

HNO3

H2SO4

NaOH

NaHSO4

MEOH

NONE

BTEX

TPH

CHLORIDES

12/20

1530

5

1

1535

1537

1540

1555

1600

1610

1615

1617

1620

1537

1540

1555

1600

1610

1615

1617

1620

1537

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1600

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CHAIN OF CUSTODY

Page 2 of 4

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Norcross, Georgia (770-449-8800)

Lakeland, Florida (863-646-8526)
Tampa, Florida (813-620-2000)

Client / Reporting Information		Project Information		Analytical Information		Matrix Codes	
Company Name / Branch: KJE, Environmental & Civil Engineering		Project Name/Number: OWL Bobcat/Red Hills Pipeline Release					
Company Address: 500 Mosely Road, Cross Roads, Texas 76227		Project Location: Jal. NM					
Email: james@kjenvironmental.com Phone No: (940)387-0905		Invoice To:					
Project Contact: James Fox		PO Number:					
Samplers Name							

Company Name / Branch: KJE, Environmental & Civil Engineering		Project Name/Number: OWL Bobcat/Red Hills Pipeline Release	
Company Address: 500 Mosely Road, Cross Roads, Texas 76227		Project Location: Jal, NM	
Email: james@kjenvironmental.com		Invoice To:	
Phone No: (940)387-0805			
Project Contact: James Fox		PO Number:	
Samplers Name			
No.		Field ID / Point of Collection	
		Collection	
		Number of preserved bottles	

☐ Same Day TAT		☒ 5 Day TAT		☐ Level II Std QC		☐ Level IV (Full Data Pkg / raw data)	
☐ Next Day EMERGENCY		☐ 7 Day TAT		☐ Level III Std QC + Forms		☐ TRRP Level IV	
☐ 2 Day EMERGENCY		☐ Contract TAT		☐ Level 3 (CLP Forms)		☐ UST / RG-411	
☐ 3 Day EMERGENCY				☐ TRRP Checklist			
TAT Starts Day received by Lab, if received by 5:00 pm							
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY							
Relinquished by Sampler:		Date Time:		Received By:		Date Time:	
1 James Fox		12/22/16		1 James Fox		12/22/16	
Relinquished by:		Date Time:		Received By:		Date Time:	
3				3			
Relinquished by:		Date Time:		Received By:		Date Time:	
5				5			
Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to XENCO Laboratories and its affiliates, subcontractors and assigns XENCO's standard terms and conditions of service unless previously negl		Preserved where applicable		On Ice		Cooler Temp. Thermo. Corr. Factor	
				☒		Temp: IR ID: R-8	
						CF: 0.10-7	
						Corrected Temp: 0.8	



CHAIN OF CUSTODY

Page 3 of 4

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Lakeland, Florida (863-646-8526)
Tampa, Florida (813-620-2000)

Client / Reporting Information

Project Information

Company Name / Branch: KJE, Environmental & Civil Engineering
Project Name/Number: OWL Bobcat/Red Hills Pipeline Release
Project Location: Jai, NM

Invoice To:

Jai, NM

PO Number:

Project Contact:

James FOX

Sample's Name

James FOX

Field ID / Point of Collection

No.

Field ID / Point of Collection

Sample Depth

Date

Time

Matrix

of bottles

HCl

NaOH/Zn Acetate

HNO3

H2SO4

NaOH

NaHSO4

MEOH

Collection

Date

Time

Matrix

of bottles

HCl

NaOH/Zn Acetate

HNO3

H2SO4

NaOH

NaHSO4

MEOH

NONE

BTEX

TPH

CHLORIDES

Notes:

Field Comments

Matrix Codes

S = Soil/Sed/Solid

GW = Ground Water

DW = Drinking Water

P = Product

SW = Surface water

SL = Sludge

OW = Ocean/Sea Water

W = Wipe

O = Oil

WW = Waste Water

A = Air

Turnaround Time (Business days)

Same Day TAT

Next Day EMERGENCY

2 Day EMERGENCY

3 Day EMERGENCY

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

Relinquished by Sampler:

Relinquished By:

Date Time:

Received By:

Date Time:

Relinquished By:

Date Time:

Received By:

Relinquished By:

Date Time:

Received By:

Relinquished By:

Date Time:

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CHAIN OF CUSTODY

Page 4 of 4

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Xenco Quote #

Xenco Job #

542784

Service Center - San Antonio, Texas (210-509-3334)

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes											
Company Name / Branch: KJE, Environmental & Civil Engineering Company Address: 500 Mosely Road, Cross Roads, Texas 76227 Email: james@kjenvironmental.com Phone No: (840)387-0805				Project Name/Number: OWL Bobcat/Red Hills Pipeline Release Project Location: Jal, NM Invoice To: Jal, NM				PO Number:															
Project Contact: James Fox Samplers Name				Collection				Number of preserved bottles															
Field ID / Point of Collection				Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MeOH	NONE	BTEX	TPH	CHLORIDES	Field Comments			
1	(2) 5648	2-4		12/21	1035	5	1										X	X	X				
2	(2) 5848	4-6			1040												X	X	X				
3	(2) 5848	6-8			1045												X	X	X				
4	(2) 64	0-2			845												X	X	X				
5	(2) 64	2-4			850												X	X	X				
6	(2) 64	4-6			855												X	X	X				
7	(2) 64	6-8			857												X	X	X				
8	(2) 64	8-10			900												X	X	X				
9																							
10																							
Turnaround Time (Business days)				Data Deliverable Information				Notes:															
☐ Same Day TAT				☒ 5 Day TAT				☐ Level II Std QC				☐ Level IV (Full Data Pkg/raw data)											
☐ Next Day EMERGENCY				☐ 7 Day TAT				☐ Level III Std QC+ Forms				☐ TRRP Level IV											
☐ 2 Day EMERGENCY				☐ Contract TAT				☐ Level 3 (CLP Forms)				☐ UST / RG 411											
☐ 3 Day EMERGENCY				☐ TRRP Checklist																			
TAT Starts Day received by Lab, if received by 5:00 pm																							
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																							
Relinquished by Sampler:				Date Time:				Received By:				Date Time:											
1. <u>Tanner Evans - KJE</u>				12/22/16				1. <u>Samuel 945</u>				2. <u></u>											
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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: KJE Enviromental & Civil Engineering

Date/ Time Received: 12/22/2016 09:45:00 AM

Work Order #: 542784

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	.8
#2 *Shipping container in good condition?	N/A
#3 *Samples received on ice?	Yes
#4 *Custody Seal present on shipping container/ cooler?	N/A
#5 *Custody Seals intact on shipping container/ cooler?	N/A
#6 Custody Seals intact on sample bottles?	N/A
#7 *Custody Seals Signed and dated?	N/A
#8 *Chain of Custody present?	Yes
#9 Sample instructions complete on Chain of Custody?	Yes
#10 Any missing/extra samples?	No
#11 Chain of Custody signed when relinquished/ received?	Yes
#12 Chain of Custody agrees with sample label(s)?	Yes
#13 Container label(s) legible and intact?	Yes
#14 Sample matrix/ properties agree with Chain of Custody?	Yes
#15 Samples in proper container/ bottle?	Yes
#16 Samples properly preserved?	Yes
#17 Sample container(s) intact?	Yes
#18 Sufficient sample amount for indicated test(s)?	Yes
#19 All samples received within hold time?	Yes
#20 Subcontract of sample(s)?	Yes Houston
#21 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#22 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	N/A
#23 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by: Jessica Kramer
Jessica Kramer

Date: 12/22/2016

Checklist reviewed by: Kelsey Brooks
Kelsey Brooks

Date: 12/23/2016

Analytical Report 542785
for
KJE Enviromental & Civil Engineering

Project Manager: James Fox
OWL Bobcat/Red Hills Pipeline Release

06-JAN-17

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

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

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



06-JAN-17

Project Manager: **James Fox**
KJE Enviromental & Civil Engineering
500 Mosley Rd
Aubrey, TX 76227

Reference: XENCO Report No(s): **542785**
OWL Bobcat/Red Hills Pipeline Release
Project Address: Jal, NM

James Fox:

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) 542785. 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. 542785 will be filed for 60 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

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Odessa - San Antonio - Tampa - Lakeland - Atlanta - Phoenix - Oklahoma - Latin America

KJE Enviromental & Civil Engineering, Aubrey, TX

OWL Bobcat/Red Hills Pipeline Release

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
(1) SB 22 6-8	S	12-19-16 13:00	6 - 8	542785-001
(1) SB 23 0-2	S	12-19-16 13:10	0 - 2	542785-002
(1) SB 23 2-4	S	12-19-16 13:20	2 - 4	542785-003
(1) SB 23 4-6	S	12-19-16 13:40	4 - 6	542785-004
(1) SB 23 6-8	S	12-19-16 14:00	6 - 8	542785-005
(1) SB 24 0-2	S	12-19-16 14:20	0 - 2	542785-006
(1) SB 24 2-4	S	12-19-16 14:25	2 - 4	542785-007
(1) SB 24 4-6	S	12-19-16 14:30	4 - 6	542785-008
(1) SB 24 6-8	S	12-19-16 14:33	6 - 8	542785-009
(1) SB 24 8-10	S	12-19-16 14:35	8 - 10	542785-010
(1) SB 24 10-12	S	12-19-16 14:40	10 - 12	542785-011
(1) SB 24 12-14	S	12-19-16 14:45	12 - 14	542785-012
(1) SB 24 14-16	S	12-19-16 14:55	14 - 16	542785-013
(1) SB 25 0-2	S	12-19-16 15:20	0 - 2	542785-014
(1) SB 25 2-4	S	12-19-16 15:25	2 - 4	542785-015
(1) SB 25 4-6	S	12-19-16 15:30	4 - 6	542785-016
(1) SB 25 4-6 Split	S	12-19-16 15:30	4 - 6	542785-017
(1) SB 25 6-8	S	12-19-16 15:35	6 - 8	542785-018
(1) SB 26 0-2	S	12-19-16 15:40	0 - 2	542785-019
(1) SB 26 2-4	S	12-19-16 15:45	2 - 4	542785-020
(1) SB 26 4-6	S	12-19-16 15:47	4 - 6	542785-021
(1) SB 26 6-8	S	12-19-16 15:50	6 - 8	542785-022
(1) SB 26 8-10	S	12-19-16 15:55	8 - 10	542785-023
(1) SB 26 10-12	S	12-19-16 16:00	10 - 12	542785-024
(1) SB 27 0-2	S	12-19-16 16:30	0 - 2	542785-025
(1) SB 27 2-4	S	12-19-16 16:35	2 - 4	542785-026
(1) SB 27 4-6	S	12-19-16 16:45	4 - 6	542785-027
(1) SB 28 0-2	S	12-20-16 07:00	0 - 2	542785-028
(1) SB 28 2-4	S	12-20-16 07:10	2 - 4	542785-029
(1) SB 28 4-6	S	12-20-16 07:15	4 - 6	542785-030
(1) SB 28 6-8	S	12-20-16 07:30	6 - 8	542785-031
(1) SB 28 8-10	S	12-20-16 07:40	8 - 10	542785-032
(1) SB 29 0-2	S	12-20-16 07:55	0 - 2	542785-033
(1) SB 29 2-4	S	12-20-16 08:00	2 - 4	542785-034
(1) SB 29 4-6	S	12-20-16 08:05	4 - 6	542785-035
(1) SB 29 6-8	S	12-20-16 08:10	6 - 8	542785-036
(1) SB 29 8-10	S	12-20-16 08:15	8 - 10	542785-037
(1) SB 29 8-10 Split	S	12-20-16 08:20	8 - 10	542785-038
(1) SB 30 0-2	S	12-20-16 08:25	0 - 2	542785-039
(1) SB 30 2-4	S	12-20-16 08:30	2 - 4	542785-040
(1) SB 30 4-6	S	12-20-16 08:35	4 - 6	542785-041
(1) SB 30 6-8	S	12-20-16 08:40	6 - 8	542785-042
(1) SB 31 0-2	S	12-20-16 08:45	0 - 2	542785-043

KJE Enviromental & Civil Engineering, Aubrey, TX

OWL Bobcat/Red Hills Pipeline Release

(1) SB 31 2-4	S	12-20-16 08:50	2 - 4	542785-044
(1) SB 31 4-6	S	12-20-16 09:00	4 - 6	542785-045
(1) SB 31 6-8	S	12-20-16 09:10	6 - 8	542785-046
(1) SB 31 8-10	S	12-20-16 09:20	8 - 10	542785-047
(1) SB 31 10-12	S	12-20-16 09:45	10 - 12	542785-048
(1) SB 32 0-2	S	12-20-16 10:00	0 - 2	542785-049
(1) SB 32 2-4	S	12-20-16 10:05	2 - 4	542785-050
(1) SB 32 4-6	S	12-20-16 10:30	4 - 6	542785-051
(1) SB 32 6-8	S	12-20-16 10:45	6 - 8	542785-052
(1) SB 33 0-2	S	12-20-16 11:30	0 - 2	542785-053
(1) SB 33 2-4	S	12-20-16 11:35	2 - 4	542785-054
(1) SB 33 4-6	S	12-20-16 11:45	4 - 6	542785-055
(1) SB 33 6-8	S	12-20-16 12:00	6 - 8	542785-056
(1) SB 34 0-2	S	12-20-16 12:05	0 - 2	542785-057
(1) SB 34 2-4	S	12-20-16 12:10	2 - 4	542785-058
(1) SB 34 2-4 Split	S	12-20-16 12:15	2 - 4	542785-059
(1) SB 34 4-6	S	12-20-16 12:20	4 - 6	542785-060
(1) SB 34 6-8	S	12-20-16 12:30	6 - 8	542785-061
(1) SB 35 0-2	S	12-20-16 12:35	0 - 2	542785-062
(1) SB 35 2-4	S	12-20-16 12:45	2 - 4	542785-063
(1) SB 35 4-6	S	12-20-16 12:50	4 - 6	542785-064
(1) SB 36 0-2	S	12-20-16 13:00	0 - 2	542785-065
(1) SB 36 2-4	S	12-20-16 13:10	2 - 4	542785-066
(1) SB 36 4-6	S	12-20-16 13:15	4 - 6	542785-067
(1) SB 37 0-2	S	12-20-16 13:20	0 - 2	542785-068
(1) SB 37 2-4	S	12-20-16 13:25	2 - 4	542785-069
(1) SB 37 4-6	S	12-20-16 13:30	4 - 6	542785-070
(1) SB 37 6-8	S	12-20-16 13:50	6 - 8	542785-071
(1) SB 38 0-2	S	12-21-16 11:00	0 - 2	542785-072
(1) SB 38 2-4	S	12-21-16 11:10	2 - 4	542785-073
(1) SB 38 4-6	S	12-21-16 11:15	4 - 6	542785-074
(1) SB 38 6-8	S	12-21-16 11:20	6 - 8	542785-075
(1) SB 39 0-2	S	12-21-16 11:25	0 - 2	542785-076
(1) SB 39 2-4	S	12-21-16 11:30	2 - 4	542785-077
(1) SB 39 4-6	S	12-21-16 11:35	4 - 6	542785-078
(1) SB 39 6-8	S	12-21-16 11:37	6 - 8	542785-079
(1) SB 39 6-8 SPLIT	S	12-21-16 11:40	6 - 8	542785-080
(1) SB 40 0-2	S	12-21-16 11:50	0 - 2	542785-081
(1) SB 40 2-4	S	12-21-16 11:55	2 - 4	542785-082
(1) SB 40 4-6	S	12-21-16 12:00	4 - 6	542785-083
(1) SB 40 6-8	S	12-21-16 12:10	6 - 8	542785-084
(1) SB 41 0-2	S	12-21-16 12:15	0 - 2	542785-085
(1) SB 41 2-4	S	12-21-16 12:20	2 - 4	542785-086
(1) SB 41 4-6	S	12-21-16 12:25	4 - 6	542785-087

KJE Enviromental & Civil Engineering, Aubrey, TX

OWL Bobcat/Red Hills Pipeline Release

(1) SB 41 6-8	S	12-21-16 12:30	6 - 8	542785-088
(1) SB 42 0-2	S	12-21-16 12:35	0 - 2	542785-089
(1) SB 42 2-4	S	12-21-16 12:37	2 - 4	542785-090
(1) SB 42 4-6	S	12-21-16 12:40	4 - 6	542785-091
(1) SB 42 6-8	S	12-21-16 12:45	6 - 8	542785-092
(1) SB 43 0-2	S	12-21-16 12:50	0 - 2	542785-093
(1) SB 43 2-4	S	12-21-16 12:55	2 - 4	542785-094
(1) SB 43 4-6	S	12-21-16 12:57	4 - 6	542785-095
(1) SB 43 6-8	S	12-21-16 13:00	6 - 8	542785-096
(1) SB 44 0-2	S	12-21-16 13:05	0 - 2	542785-097
(1) SB 44 2-4	S	12-21-16 00:00	2 - 4	542785-098
(1) SB 44 4-6	S	12-21-16 00:00	4 - 6	542785-099
(1) SB 44 6-8	S	12-21-16 13:15	6 - 8	542785-100
(1) SB 44 6-8 Split	S	12-21-16 13:15	6 - 8	542785-101
(1) SB 45 0-2	S	12-21-16 13:25	0 - 2	542785-102
(1) SB 45 2-4	S	12-21-16 13:30	2 - 4	542785-103
(1) SB 45 4-6	S	12-21-16 13:35	4 - 6	542785-104
(1) SB 45 6-8	S	12-21-16 13:40	6 - 8	542785-105
(1) SB 46 0-2	S	12-21-16 13:45	0 - 2	542785-106
(1) SB 46 2-4	S	12-21-16 13:50	2 - 4	542785-107
(1) SB 46 4-6	S	12-21-16 13:53	4 - 6	542785-108
(1) SB 46 6-8	S	12-21-16 13:55	6 - 8	542785-109
(1) SB 47 0-2	S	12-21-16 14:35	0 - 2	542785-110
(1) SB 47 2-4	S	12-21-16 14:40	2 - 4	542785-111
(1) SB 47 4-6	S	12-21-16 14:50	4 - 6	542785-112
(1) SB 47 6-8	S	12-21-16 14:55	6 - 8	542785-113
(1) BG 0-2	S	12-21-16 15:05	0 - 2	542785-114
(1) BG 2-4	S	12-21-16 15:10	2 - 4	542785-115
(1) BG 4-6	S	12-21-16 15:15	4 - 6	542785-116
(1) BG 6-8	S	12-21-16 15:20	6 - 8	542785-117
(1) BG 8-10	S	12-21-16 15:25	8 - 10	542785-118



CASE NARRATIVE



Client Name: KJE Enviromental & Civil Engineering

Project Name: OWL Bobcat/Red Hills Pipeline Release

Project ID:

Work Order Number(s): 542785

Report Date: 06-JAN-17

Date Received: 12/22/2016

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3006752 BTEX by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3006757 BTEX by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3006852 BTEX by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Samples 542785-019, -025, -026, -027 were analyzed within hold time but could not be reported because of carryover from sample 542785-025.

Batch: LBA-3006858 BTEX by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3006864 Inorganic Anions by EPA 300/300.1

Lab Sample ID 542785-071 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 542785-061, -062, -063, -064, -065, -066, -067, -068, -069, -070, -071, -072, -073, -074, -075, -076, -077, -078, -079, -080.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3006935 BTEX by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3006968 BTEX by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.



CASE NARRATIVE



Client Name: KJE Enviromental & Civil Engineering

Project Name: OWL Bobcat/Red Hills Pipeline Release

Project ID:
Work Order Number(s): 542785

Report Date: 06-JAN-17
Date Received: 12/22/2016

Batch: LBA-3006989 BTEX by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3007037 BTEX by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3007061 BTEX by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3007078 BTEX by SW 8260B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.



Hits Summary 542785



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB 23 0-2**

Lab Sample Id : 542785-002

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.19.16 13.10

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006792

Prep Method: E300P

Date Prep: 12.30.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	39.5	mg/kg	12.30.16 19.52		1

Sample Id : **(1) SB 23 2-4**

Lab Sample Id : 542785-003

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.19.16 13.20

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006792

Prep Method: E300P

Date Prep: 12.30.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.13	mg/kg	12.30.16 19.59		1

Sample Id : **(1) SB 23 4-6**

Lab Sample Id : 542785-004

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.19.16 13.40

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006792

Prep Method: E300P

Date Prep: 12.30.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.92	mg/kg	12.30.16 20.06		1

Sample Id : **(1) SB 24 0-2**

Lab Sample Id : 542785-006

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.19.16 14.20

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006792

Prep Method: E300P

Date Prep: 12.30.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	740	mg/kg	12.30.16 20.34		1

KJE Enviromental & Civil Engineering, Aubrey, TX

OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB 24 2-4**

Lab Sample Id : 542785-007

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.19.16 14.25

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006792

Prep Method: E300P

Date Prep: 12.30.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	872	mg/kg	12.30.16 20.41		1

Sample Id : **(1) SB 24 4-6**

Lab Sample Id : 542785-008

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.19.16 14.30

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006792

Prep Method: E300P

Date Prep: 12.30.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	672	mg/kg	12.30.16 20.48		1

Sample Id : **(1) SB 24 6-8**

Lab Sample Id : 542785-009

Sample Depth : 6 - 8

Matrix : Soil

Date Collected : 12.19.16 14.33

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006792

Prep Method: E300P

Date Prep: 12.30.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	840	mg/kg	12.30.16 20.55		1

Sample Id : **(1) SB 24 8-10**

Lab Sample Id : 542785-010

Sample Depth : 8 - 10

Matrix : Soil

Date Collected : 12.19.16 14.35

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006792

Prep Method: E300P

Date Prep: 12.30.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	594	mg/kg	12.30.16 21.02		1



Hits Summary 542785



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB 24 10-12**

Matrix : Soil

% Moisture :

Lab Sample Id : 542785-011

Date Collected : 12.19.16 14.40

Basis : Wet Weight

Sample Depth : 10 - 12

Date Received : 12.22.16 09.45

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006792

Date Prep: 12.30.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	676	mg/kg	12.30.16 21.09		1

Sample Id : **(1) SB 24 12-14**

Matrix : Soil

% Moisture :

Lab Sample Id : 542785-012

Date Collected : 12.19.16 14.45

Basis : Wet Weight

Sample Depth : 12 - 14

Date Received : 12.22.16 09.45

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006792

Date Prep: 12.30.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	274	mg/kg	12.30.16 21.44		1

Sample Id : **(1) SB 24 14-16**

Matrix : Soil

% Moisture :

Lab Sample Id : 542785-013

Date Collected : 12.19.16 14.55

Basis : Wet Weight

Sample Depth : 14 - 16

Date Received : 12.22.16 09.45

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006792

Date Prep: 12.30.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.69	mg/kg	12.30.16 21.51		1

Sample Id : **(1) SB 25 0-2**

Matrix : Soil

% Moisture :

Lab Sample Id : 542785-014

Date Collected : 12.19.16 15.20

Basis : Wet Weight

Sample Depth : 0 - 2

Date Received : 12.22.16 09.45

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006792

Date Prep: 12.30.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1140	mg/kg	12.30.16 21.58		1



Hits Summary 542785



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB 25 2-4**

Lab Sample Id : 542785-015

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.19.16 15.25

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006792

Prep Method: E300P

Date Prep: 12.30.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	809	mg/kg	12.30.16 22.05		1

Sample Id : **(1) SB 25 4-6**

Lab Sample Id : 542785-016

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.19.16 15.30

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006792

Prep Method: E300P

Date Prep: 12.30.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	570	mg/kg	12.30.16 22.13		1

Sample Id : **(1) SB 25 4-6 Split**

Lab Sample Id : 542785-017

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.19.16 15.30

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006792

Prep Method: E300P

Date Prep: 12.30.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	972	mg/kg	12.30.16 22.20		1

Sample Id : **(1) SB 25 6-8**

Lab Sample Id : 542785-018

Sample Depth : 6 - 8

Matrix : Soil

Date Collected : 12.19.16 15.35

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006792

Prep Method: E300P

Date Prep: 12.30.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	563	mg/kg	12.30.16 22.27		1

KJE Enviromental & Civil Engineering, Aubrey, TX

OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB 26 0-2**

Lab Sample Id : 542785-019

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.19.16 15.40

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : BTEX by SW 8260B

Seq Number 3006852

Prep Method: SW5030B

Date Prep: 01.03.17 12.06

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
m,p-Xylenes	179601-23-1	1.71	mg/kg	01.03.17 14.43	K	25
o-Xylene	95-47-6	3.03	mg/kg	01.03.17 14.43	K	25
Total Xylenes	1330-20-7	4.74	mg/kg	01.03.17 14.43	K	25
Total BTEX		4.74	mg/kg	01.03.17 14.43	K	25

Analytical Method : TPH By SW8015 Mod

Seq Number 3006616

Prep Method: TX1005P

Date Prep: 12.22.16 10.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC612	1220	mg/kg	12.25.16 00.23		1
C10-C28 Diesel Range Hydrocarbons	PHCG1228	4170	mg/kg	12.25.16 00.23		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	79.5	mg/kg	12.25.16 00.23		1
Total TPH	PHC635	5470	mg/kg	12.25.16 00.23		1

Sample Id : **(1) SB 26 0-2**

Lab Sample Id : 542785-019

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.19.16 15.40

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006792

Prep Method: E300P

Date Prep: 12.30.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	519	mg/kg	12.30.16 22.34		1

Sample Id : **(1) SB 26 2-4**

Lab Sample Id : 542785-020

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.19.16 15.45

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006792

Prep Method: E300P

Date Prep: 12.30.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	823	mg/kg	12.30.16 22.41		1



Hits Summary 542785



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB 26 4-6**

Lab Sample Id : 542785-021

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.19.16 15.47

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006841

Prep Method: E300P

Date Prep: 01.03.17 08.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6840	mg/kg	01.03.17 11.15		10

Sample Id : **(1) SB 26 6-8**

Lab Sample Id : 542785-022

Sample Depth : 6 - 8

Matrix : Soil

Date Collected : 12.19.16 15.50

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006841

Prep Method: E300P

Date Prep: 01.03.17 08.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2690	mg/kg	01.03.17 11.36		5

Sample Id : **(1) SB 26 8-10**

Lab Sample Id : 542785-023

Sample Depth : 8 - 10

Matrix : Soil

Date Collected : 12.19.16 15.55

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006841

Prep Method: E300P

Date Prep: 01.03.17 08.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2780	mg/kg	01.03.17 11.43		5

Sample Id : **(1) SB 26 10-12**

Lab Sample Id : 542785-024

Sample Depth : 10 - 12

Matrix : Soil

Date Collected : 12.19.16 16.00

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006841

Prep Method: E300P

Date Prep: 01.03.17 08.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1380	mg/kg	01.03.17 11.50		1



Hits Summary 542785



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB 27 0-2**

Lab Sample Id : 542785-025

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.19.16 16.30

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : BTEX by SW 8260B

Seq Number 3006852

Prep Method: SW5030B

Date Prep: 01.03.17 12.05

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Toluene	108-88-3	0.768	mg/kg	01.03.17 14.24	K	25

Analytical Method : BTEX by SW 8260B

Seq Number 3006852

Prep Method: SW5030B

Date Prep: 01.03.17 14.01

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
m,p-Xylenes	179601-23-1	27.9	mg/kg	01.03.17 15.01	KD	100
o-Xylene	95-47-6	22.1	mg/kg	01.03.17 15.01	KD	100
Total Xylenes	1330-20-7	50.0	mg/kg	01.03.17 15.01	K	100
Total BTEX		50.8	mg/kg	01.03.17 15.01	K	100

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006841

Prep Method: E300P

Date Prep: 01.03.17 08.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1270	mg/kg	01.03.17 11.57		1

Analytical Method : TPH By SW8015 Mod

Seq Number 3006619

Prep Method: TX1005P

Date Prep: 12.22.16 10.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC612	2060	mg/kg	12.25.16 05.51		1
C10-C28 Diesel Range Hydrocarbons	PHCG1228	3960	mg/kg	12.25.16 05.51		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	128	mg/kg	12.25.16 05.51		1
Total TPH	PHC635	6150	mg/kg	12.25.16 05.51		1

Sample Id : **(1) SB 27 2-4**

Lab Sample Id : 542785-026

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.19.16 16.35

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006841

Prep Method: E300P

Date Prep: 01.03.17 08.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6310	mg/kg	01.03.17 12.18		10



Hits Summary 542785



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB 27 4-6**

Lab Sample Id : 542785-027

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.19.16 16.45

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006841

Prep Method: E300P

Date Prep: 01.03.17 08.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7500	mg/kg	01.03.17 12.25		10

Sample Id : **(1) SB 28 0-2**

Lab Sample Id : 542785-028

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.20.16 07.00

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006841

Prep Method: E300P

Date Prep: 01.03.17 08.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2700	mg/kg	01.03.17 12.32		5

Analytical Method : TPH By SW8015 Mod

Seq Number 3006619

Prep Method: TX1005P

Date Prep: 12.22.16 10.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C10-C28 Diesel Range Hydrocarbons	PHCG1228	21.1	mg/kg	12.25.16 07.11		1
Total TPH	PHC635	21.1	mg/kg	12.25.16 07.11		1

Sample Id : **(1) SB 28 2-4**

Lab Sample Id : 542785-029

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.20.16 07.10

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006841

Prep Method: E300P

Date Prep: 01.03.17 08.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6190	mg/kg	01.03.17 12.39		10



Hits Summary 542785



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB 28 4-6**

Lab Sample Id : 542785-030

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.20.16 07.15

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006841

Prep Method: E300P

Date Prep: 01.03.17 08.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9950	mg/kg	01.03.17 12.46		10

Sample Id : **(1) SB 28 6-8**

Lab Sample Id : 542785-031

Sample Depth : 6 - 8

Matrix : Soil

Date Collected : 12.20.16 07.30

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006841

Prep Method: E300P

Date Prep: 01.03.17 08.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1220	mg/kg	01.03.17 12.53		1

Sample Id : **(1) SB 29 0-2**

Lab Sample Id : 542785-033

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.20.16 07.55

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006841

Prep Method: E300P

Date Prep: 01.03.17 08.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	309	mg/kg	01.03.17 13.22		1

Sample Id : **(1) SB 29 2-4**

Lab Sample Id : 542785-034

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.20.16 08.00

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006841

Prep Method: E300P

Date Prep: 01.03.17 08.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4680	mg/kg	01.03.17 13.43		10



Hits Summary 542785



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB 29 4-6**

Lab Sample Id : 542785-035

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.20.16 08.05

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : BTEX by SW 8260B

Seq Number 3006764

Prep Method: SW5030B

Date Prep: 12.31.16 10.14

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Toluene	108-88-3	0.00442	mg/kg	12.31.16 16.14		1
m,p-Xylenes	179601-23-1	0.0397	mg/kg	12.31.16 16.14		1
o-Xylene	95-47-6	0.0145	mg/kg	12.31.16 16.14		1
Total Xylenes	1330-20-7	0.0542	mg/kg	12.31.16 16.14		1
Total BTEX		0.0586	mg/kg	12.31.16 16.14		1

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006841

Prep Method: E300P

Date Prep: 01.03.17 08.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9830	mg/kg	01.03.17 13.50		20

Sample Id : **(1) SB 29 6-8**

Lab Sample Id : 542785-036

Sample Depth : 6 - 8

Matrix : Soil

Date Collected : 12.20.16 08.10

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006841

Prep Method: E300P

Date Prep: 01.03.17 08.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3920	mg/kg	01.03.17 13.57		5

Sample Id : **(1) SB 29 8-10**

Lab Sample Id : 542785-037

Sample Depth : 8 - 10

Matrix : Soil

Date Collected : 12.20.16 08.15

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006841

Prep Method: E300P

Date Prep: 01.03.17 08.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9.72	mg/kg	01.03.17 14.04		1



Hits Summary 542785



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB 29 8-10 Split**

Lab Sample Id : 542785-038

Sample Depth : 8 - 10

Matrix : Soil

Date Collected : 12.20.16 08.20

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006841

Prep Method: E300P

Date Prep: 01.03.17 08.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9.48	mg/kg	01.03.17 14.11		1

Sample Id : **(1) SB 30 0-2**

Lab Sample Id : 542785-039

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.20.16 08.25

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006841

Prep Method: E300P

Date Prep: 01.03.17 08.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5700	mg/kg	01.03.17 14.18		10

Sample Id : **(1) SB 30 2-4**

Lab Sample Id : 542785-040

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.20.16 08.30

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006841

Prep Method: E300P

Date Prep: 01.03.17 08.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6040	mg/kg	01.03.17 14.25		10

Sample Id : **(1) SB 30 4-6**

Lab Sample Id : 542785-041

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.20.16 08.35

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006846

Prep Method: E300P

Date Prep: 01.03.17 10.24

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2150	mg/kg	01.03.17 15.21		5



Hits Summary 542785



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB 30 6-8**

Matrix : Soil

% Moisture :

Lab Sample Id : 542785-042

Date Collected : 12.20.16 08.40

Basis : Wet Weight

Sample Depth : 6 - 8

Date Received : 12.22.16 09.45

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006846

Date Prep: 01.03.17 10.24

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8580	mg/kg	01.03.17 15.42		10

Sample Id : **(1) SB 31 0-2**

Matrix : Soil

% Moisture :

Lab Sample Id : 542785-043

Date Collected : 12.20.16 08.45

Basis : Wet Weight

Sample Depth : 0 - 2

Date Received : 12.22.16 09.45

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006846

Date Prep: 01.03.17 10.24

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	30.4	mg/kg	01.03.17 15.49		1

Sample Id : **(1) SB 31 2-4**

Matrix : Soil

% Moisture :

Lab Sample Id : 542785-044

Date Collected : 12.20.16 08.50

Basis : Wet Weight

Sample Depth : 2 - 4

Date Received : 12.22.16 09.45

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006846

Date Prep: 01.03.17 10.24

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	118	mg/kg	01.03.17 16.25		1

Analytical Method : TPH By SW8015 Mod

Prep Method: TX1005P

Seq Number 3006620

Date Prep: 12.22.16 10.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C10-C28 Diesel Range Hydrocarbons	PHCG1228	50.8	mg/kg	12.27.16 11.07		1
Total TPH	PHC635	50.8	mg/kg	12.27.16 11.07		1



Hits Summary 542785



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB 31 6-8**

Lab Sample Id : 542785-046

Sample Depth : 6 - 8

Matrix : Soil

Date Collected : 12.20.16 09.10

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006846

Prep Method: E300P

Date Prep: 01.03.17 10.24

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7860	mg/kg	01.03.17 16.39		10

Sample Id : **(1) SB 31 8-10**

Lab Sample Id : 542785-047

Sample Depth : 8 - 10

Matrix : Soil

Date Collected : 12.20.16 09.20

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006846

Prep Method: E300P

Date Prep: 01.03.17 10.24

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7260	mg/kg	01.03.17 16.46		10

Sample Id : **(1) SB 31 10-12**

Lab Sample Id : 542785-048

Sample Depth : 10 - 12

Matrix : Soil

Date Collected : 12.20.16 09.45

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006846

Prep Method: E300P

Date Prep: 01.03.17 10.24

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	16.0	mg/kg	01.03.17 16.53		1

Sample Id : **(1) SB 32 0-2**

Lab Sample Id : 542785-049

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.20.16 10.00

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006846

Prep Method: E300P

Date Prep: 01.03.17 10.24

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6010	mg/kg	01.03.17 17.00		10



Hits Summary 542785



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB 32 2-4**

Lab Sample Id : 542785-050

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.20.16 10.05

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006846

Prep Method: E300P

Date Prep: 01.03.17 10.24

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3650	mg/kg	01.03.17 17.07		5

Sample Id : **(1) SB 32 4-6**

Lab Sample Id : 542785-051

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.20.16 10.30

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006846

Prep Method: E300P

Date Prep: 01.03.17 10.24

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3020	mg/kg	01.03.17 17.14		5

Sample Id : **(1) SB 32 6-8**

Lab Sample Id : 542785-052

Sample Depth : 6 - 8

Matrix : Soil

Date Collected : 12.20.16 10.45

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006846

Prep Method: E300P

Date Prep: 01.03.17 10.24

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11900	mg/kg	01.03.17 17.49		20

Sample Id : **(1) SB 33 0-2**

Lab Sample Id : 542785-053

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.20.16 11.30

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006846

Prep Method: E300P

Date Prep: 01.03.17 10.24

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	542	mg/kg	01.03.17 18.10		1



Hits Summary 542785



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB 33 2-4**

Lab Sample Id : 542785-054

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.20.16 11.35

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006846

Prep Method: E300P

Date Prep: 01.03.17 10.24

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4700	mg/kg	01.03.17 18.17		10

Sample Id : **(1) SB 33 4-6**

Lab Sample Id : 542785-055

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.20.16 11.45

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006846

Prep Method: E300P

Date Prep: 01.03.17 10.24

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	816	mg/kg	01.03.17 18.24		1

Sample Id : **(1) SB 33 6-8**

Lab Sample Id : 542785-056

Sample Depth : 6 - 8

Matrix : Soil

Date Collected : 12.20.16 12.00

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006846

Prep Method: E300P

Date Prep: 01.03.17 10.24

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	136	mg/kg	01.03.17 18.32		1

Sample Id : **(1) SB 34 0-2**

Lab Sample Id : 542785-057

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.20.16 12.05

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006846

Prep Method: E300P

Date Prep: 01.03.17 10.24

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.37	mg/kg	01.03.17 18.53		1



Hits Summary 542785



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB 34 2-4**

Lab Sample Id : 542785-058

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.20.16 12.10

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006846

Prep Method: E300P

Date Prep: 01.03.17 10.24

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.9	mg/kg	01.03.17 19.00		1

Sample Id : **(1) SB 34 2-4 Split**

Lab Sample Id : 542785-059

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.20.16 12.15

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006846

Prep Method: E300P

Date Prep: 01.03.17 10.24

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.76	mg/kg	01.03.17 19.07		1

Sample Id : **(1) SB 34 4-6**

Lab Sample Id : 542785-060

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.20.16 12.20

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006846

Prep Method: E300P

Date Prep: 01.03.17 10.24

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.73	mg/kg	01.03.17 19.14		1

Sample Id : **(1) SB 34 6-8**

Lab Sample Id : 542785-061

Sample Depth : 6 - 8

Matrix : Soil

Date Collected : 12.20.16 12.30

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006864

Prep Method: E300P

Date Prep: 01.03.17 10.32

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.45	mg/kg	01.03.17 19.56		1



Hits Summary 542785



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB 35 0-2**

Lab Sample Id : 542785-062

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.20.16 12.35

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006864

Prep Method: E300P

Date Prep: 01.03.17 10.32

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11.9	mg/kg	01.03.17 20.17		1

Sample Id : **(1) SB 35 2-4**

Lab Sample Id : 542785-063

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.20.16 12.45

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006864

Prep Method: E300P

Date Prep: 01.03.17 10.32

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.64	mg/kg	01.03.17 20.24		1

Sample Id : **(1) SB 35 4-6**

Lab Sample Id : 542785-064

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.20.16 12.50

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006864

Prep Method: E300P

Date Prep: 01.03.17 10.32

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	16.4	mg/kg	01.03.17 20.31		1

Sample Id : **(1) SB 36 0-2**

Lab Sample Id : 542785-065

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.20.16 13.00

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006864

Prep Method: E300P

Date Prep: 01.03.17 10.32

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	157	mg/kg	01.03.17 20.38		1



Hits Summary 542785



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB 36 2-4**

Lab Sample Id : 542785-066

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.20.16 13.10

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006864

Prep Method: E300P

Date Prep: 01.03.17 10.32

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.62	mg/kg	01.03.17 21.00		1

Sample Id : **(1) SB 36 4-6**

Lab Sample Id : 542785-067

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.20.16 13.15

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006864

Prep Method: E300P

Date Prep: 01.03.17 10.32

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.70	mg/kg	01.03.17 21.07		1

Sample Id : **(1) SB 37 0-2**

Lab Sample Id : 542785-068

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.20.16 13.20

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006864

Prep Method: E300P

Date Prep: 01.03.17 10.32

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.80	mg/kg	01.03.17 21.14		1

Sample Id : **(1) SB 37 2-4**

Lab Sample Id : 542785-069

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.20.16 13.25

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006864

Prep Method: E300P

Date Prep: 01.03.17 10.32

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.47	mg/kg	01.03.17 21.21		1



Hits Summary 542785



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB 37 4-6**

Lab Sample Id : 542785-070

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.20.16 13.30

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006864

Prep Method: E300P

Date Prep: 01.03.17 10.32

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.10	mg/kg	01.03.17 21.28		1

Sample Id : **(1) SB 38 0-2**

Lab Sample Id : 542785-072

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.21.16 11.00

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006864

Prep Method: E300P

Date Prep: 01.03.17 10.32

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.12	mg/kg	01.03.17 22.10		1

Sample Id : **(1) SB 38 2-4**

Lab Sample Id : 542785-073

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.21.16 11.10

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006864

Prep Method: E300P

Date Prep: 01.03.17 10.32

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.36	mg/kg	01.03.17 22.17		1

Sample Id : **(1) SB 38 4-6**

Lab Sample Id : 542785-074

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.21.16 11.15

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006864

Prep Method: E300P

Date Prep: 01.03.17 10.32

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.87	mg/kg	01.03.17 22.24		1



Hits Summary 542785



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB 38 4-6**

Lab Sample Id : 542785-074

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.21.16 11.15

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : TPH By SW8015 Mod

Seq Number 3006634

Prep Method: TX1005P

Date Prep: 12.27.16 16.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	86.4	mg/kg	12.28.16 02.44		1

Sample Id : **(1) SB 38 6-8**

Lab Sample Id : 542785-075

Sample Depth : 6 - 8

Matrix : Soil

Date Collected : 12.21.16 11.20

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006864

Prep Method: E300P

Date Prep: 01.03.17 10.32

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.44	mg/kg	01.03.17 22.31		1

Sample Id : **(1) SB 39 0-2**

Lab Sample Id : 542785-076

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.21.16 11.25

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006864

Prep Method: E300P

Date Prep: 01.03.17 10.32

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.80	mg/kg	01.03.17 22.38		1

Sample Id : **(1) SB 39 2-4**

Lab Sample Id : 542785-077

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.21.16 11.30

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006864

Prep Method: E300P

Date Prep: 01.03.17 10.32

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.90	mg/kg	01.03.17 22.45		1



Hits Summary 542785



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB 39 4-6**

Lab Sample Id : 542785-078

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.21.16 11.35

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006864

Prep Method: E300P

Date Prep: 01.03.17 10.32

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.19	mg/kg	01.03.17 22.52		1

Sample Id : **(1) SB 39 6-8**

Lab Sample Id : 542785-079

Sample Depth : 6 - 8

Matrix : Soil

Date Collected : 12.21.16 11.37

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006864

Prep Method: E300P

Date Prep: 01.03.17 10.32

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.39	mg/kg	01.03.17 22.59		1

Sample Id : **(1) SB 39 6-8 SPLIT**

Lab Sample Id : 542785-080

Sample Depth : 6 - 8

Matrix : Soil

Date Collected : 12.21.16 11.40

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006864

Prep Method: E300P

Date Prep: 01.03.17 10.32

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.76	mg/kg	01.03.17 23.06		1

Sample Id : **(1) SB 40 0-2**

Lab Sample Id : 542785-081

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.21.16 11.50

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006893

Prep Method: E300P

Date Prep: 01.03.17 10.36

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11.4	mg/kg	01.04.17 00.45		1



Hits Summary 542785



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB 41 2-4**

Lab Sample Id : 542785-086

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.21.16 12.20

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006893

Prep Method: E300P

Date Prep: 01.03.17 10.36

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.80	mg/kg	01.04.17 01.48		1

Sample Id : **(1) SB 41 4-6**

Lab Sample Id : 542785-087

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.21.16 12.25

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006893

Prep Method: E300P

Date Prep: 01.03.17 10.36

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.26	mg/kg	01.04.17 01.56		1

Sample Id : **(1) SB 41 6-8**

Lab Sample Id : 542785-088

Sample Depth : 6 - 8

Matrix : Soil

Date Collected : 12.21.16 12.30

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006893

Prep Method: E300P

Date Prep: 01.03.17 10.36

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.37	mg/kg	01.04.17 02.03		1

Sample Id : **(1) SB 42 0-2**

Lab Sample Id : 542785-089

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.21.16 12.35

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006893

Prep Method: E300P

Date Prep: 01.03.17 10.36

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.69	mg/kg	01.04.17 02.10		1



Hits Summary 542785



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB 42 2-4**

Lab Sample Id : 542785-090

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.21.16 12.37

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006893

Prep Method: E300P

Date Prep: 01.03.17 10.36

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.10	mg/kg	01.04.17 02.17		1

Sample Id : **(1) SB 42 4-6**

Lab Sample Id : 542785-091

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.21.16 12.40

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006893

Prep Method: E300P

Date Prep: 01.03.17 10.36

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.54	mg/kg	01.04.17 02.24		1

Sample Id : **(1) SB 42 6-8**

Lab Sample Id : 542785-092

Sample Depth : 6 - 8

Matrix : Soil

Date Collected : 12.21.16 12.45

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006893

Prep Method: E300P

Date Prep: 01.03.17 10.36

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.57	mg/kg	01.04.17 02.45		1

Sample Id : **(1) SB 43 0-2**

Lab Sample Id : 542785-093

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.21.16 12.50

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006893

Prep Method: E300P

Date Prep: 01.03.17 10.36

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.76	mg/kg	01.04.17 03.06		1



Hits Summary 542785



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Sample Id : **(1) SB 43 2-4**

Lab Sample Id : 542785-094

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.21.16 12.55

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006893

Prep Method: E300P

Date Prep: 01.03.17 10.36

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.37	mg/kg	01.04.17 03.13		1

Sample Id : **(1) SB 43 4-6**

Lab Sample Id : 542785-095

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.21.16 12.57

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006893

Prep Method: E300P

Date Prep: 01.03.17 10.36

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.29	mg/kg	01.04.17 03.20		1

Sample Id : **(1) SB 43 6-8**

Lab Sample Id : 542785-096

Sample Depth : 6 - 8

Matrix : Soil

Date Collected : 12.21.16 13.00

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006893

Prep Method: E300P

Date Prep: 01.03.17 10.36

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.30	mg/kg	01.04.17 03.27		1

Sample Id : **(1) SB 44 0-2**

Lab Sample Id : 542785-097

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.21.16 13.05

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006893

Prep Method: E300P

Date Prep: 01.03.17 10.36

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.7	mg/kg	01.04.17 03.34		1



Hits Summary 542785



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB 44 2-4**

Lab Sample Id : 542785-098

Sample Depth : 2 - 4

Matrix : Soil

Date Collected : 12.21.16 00.00

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006893

Prep Method: E300P

Date Prep: 01.03.17 10.36

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.19	mg/kg	01.04.17 03.41		1

Sample Id : **(1) SB 44 4-6**

Lab Sample Id : 542785-099

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.21.16 00.00

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006893

Prep Method: E300P

Date Prep: 01.03.17 10.36

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.13	mg/kg	01.04.17 03.48		1

Sample Id : **(1) SB 44 6-8**

Lab Sample Id : 542785-100

Sample Depth : 6 - 8

Matrix : Soil

Date Collected : 12.21.16 13.15

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006893

Prep Method: E300P

Date Prep: 01.03.17 10.36

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.06	mg/kg	01.04.17 03.55		1

Sample Id : **(1) SB 44 6-8 Split**

Lab Sample Id : 542785-101

Sample Depth : 6 - 8

Matrix : Soil

Date Collected : 12.21.16 13.15

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006895

Prep Method: E300P

Date Prep: 01.04.17 10.38

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.06	mg/kg	01.04.17 11.57		1

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OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB 45 0-2**

Matrix : Soil

% Moisture :

Lab Sample Id : 542785-102

Date Collected : 12.21.16 13.25

Basis : Wet Weight

Sample Depth : 0 - 2

Date Received : 12.22.16 09.45

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006895

Date Prep: 01.04.17 10.38

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8.51	mg/kg	01.04.17 12.18		1

Analytical Method : TPH By SW8015 Mod

Prep Method: TX1005P

Seq Number 3006647

Date Prep: 12.27.16 16.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C12-C28 Diesel Range Hydrocarbons	PHCG1228	33.5	mg/kg	12.28.16 12.13		1
Total TPH	PHC635	33.5	mg/kg	12.28.16 12.13		1

Sample Id : **(1) SB 45 2-4**

Matrix : Soil

% Moisture :

Lab Sample Id : 542785-103

Date Collected : 12.21.16 13.30

Basis : Wet Weight

Sample Depth : 2 - 4

Date Received : 12.22.16 09.45

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006895

Date Prep: 01.04.17 10.38

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.29	mg/kg	01.04.17 12.25		1

Sample Id : **(1) SB 45 4-6**

Matrix : Soil

% Moisture :

Lab Sample Id : 542785-104

Date Collected : 12.21.16 13.35

Basis : Wet Weight

Sample Depth : 4 - 6

Date Received : 12.22.16 09.45

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006895

Date Prep: 01.04.17 10.38

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.13	mg/kg	01.04.17 12.32		1



Hits Summary 542785



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB 45 6-8**

Matrix : Soil

% Moisture :

Lab Sample Id : 542785-105

Date Collected : 12.21.16 13.40

Basis : Wet Weight

Sample Depth : 6 - 8

Date Received : 12.22.16 09.45

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006895

Date Prep: 01.04.17 10.38

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.43	mg/kg	01.04.17 12.39		1

Sample Id : **(1) SB 46 0-2**

Matrix : Soil

% Moisture :

Lab Sample Id : 542785-106

Date Collected : 12.21.16 13.45

Basis : Wet Weight

Sample Depth : 0 - 2

Date Received : 12.22.16 09.45

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006895

Date Prep: 01.04.17 10.38

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.32	mg/kg	01.04.17 13.00		1

Sample Id : **(1) SB 46 2-4**

Matrix : Soil

% Moisture :

Lab Sample Id : 542785-107

Date Collected : 12.21.16 13.50

Basis : Wet Weight

Sample Depth : 2 - 4

Date Received : 12.22.16 09.45

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006895

Date Prep: 01.04.17 10.38

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.00	mg/kg	01.04.17 13.07		1



Hits Summary 542785



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB 46 4-6**

Matrix : Soil

% Moisture :

Lab Sample Id : 542785-108

Date Collected : 12.21.16 13.53

Basis : Wet Weight

Sample Depth : 4 - 6

Date Received : 12.22.16 09.45

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006895

Date Prep: 01.04.17 10.38

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.86	mg/kg	01.04.17 13.14		1

Analytical Method : TPH By SW8015 Mod

Prep Method: TX1005P

Seq Number 3006647

Date Prep: 12.27.16 16.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C12-C28 Diesel Range Hydrocarbons	PHCG1228	21.2	mg/kg	12.28.16 15.26		1
Total TPH	PHC635	21.2	mg/kg	12.28.16 15.26		1

Sample Id : **(1) SB 46 6-8**

Matrix : Soil

% Moisture :

Lab Sample Id : 542785-109

Date Collected : 12.21.16 13.55

Basis : Wet Weight

Sample Depth : 6 - 8

Date Received : 12.22.16 09.45

Analytical Method : Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 3006895

Date Prep: 01.04.17 10.38

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.46	mg/kg	01.04.17 13.21		1

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OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) SB 47 0-2**

Lab Sample Id : 542785-110

Sample Depth : 0 - 2

Matrix : Soil

Date Collected : 12.21.16 14.35

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006895

Prep Method: E300P

Date Prep: 01.04.17 10.38

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.24	mg/kg	01.04.17 13.28		1

Analytical Method : TPH By SW8015 Mod

Seq Number 3006647

Prep Method: TX1005P

Date Prep: 12.27.16 16.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C12-C28 Diesel Range Hydrocarbons	PHCG1228	16.7	mg/kg	12.28.16 16.28		1
Total TPH	PHC635	16.7	mg/kg	12.28.16 16.28		1

Sample Id : **(1) SB 47 4-6**

Lab Sample Id : 542785-112

Sample Depth : 4 - 6

Matrix : Soil

Date Collected : 12.21.16 14.50

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006895

Prep Method: E300P

Date Prep: 01.04.17 10.38

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.82	mg/kg	01.04.17 13.57		1

Sample Id : **(1) SB 47 6-8**

Lab Sample Id : 542785-113

Sample Depth : 6 - 8

Matrix : Soil

Date Collected : 12.21.16 14.55

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006895

Prep Method: E300P

Date Prep: 01.04.17 10.38

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.94	mg/kg	01.04.17 14.04		1



Hits Summary 542785



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) BG 0-2**
Lab Sample Id : 542785-114
Sample Depth : 0 - 2

Matrix : Soil
Date Collected : 12.21.16 15.05
Date Received : 12.22.16 09.45

% Moisture :
Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1
Seq Number 3006895

Prep Method: E300P
Date Prep: 01.04.17 10.38

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.54	mg/kg	01.04.17 14.53		1

Sample Id : **(1) BG 2-4**
Lab Sample Id : 542785-115
Sample Depth : 2 - 4

Matrix : Soil
Date Collected : 12.21.16 15.10
Date Received : 12.22.16 09.45

% Moisture :
Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1
Seq Number 3006895

Prep Method: E300P
Date Prep: 01.04.17 10.38

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.02	mg/kg	01.04.17 15.00		1

Sample Id : **(1) BG 4-6**
Lab Sample Id : 542785-116
Sample Depth : 4 - 6

Matrix : Soil
Date Collected : 12.21.16 15.15
Date Received : 12.22.16 09.45

% Moisture :
Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1
Seq Number 3006895

Prep Method: E300P
Date Prep: 01.04.17 10.38

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.79	mg/kg	01.04.17 15.07		1



Hits Summary 542785



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills Pipeline Release

Sample Id : **(1) BG 6-8**

Lab Sample Id : 542785-117

Sample Depth : 6 - 8

Matrix : Soil

Date Collected : 12.21.16 15.20

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006895

Prep Method: E300P

Date Prep: 01.04.17 10.38

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.52	mg/kg	01.04.17 15.14		1

Analytical Method : TPH By SW8015 Mod

Seq Number 3006647

Prep Method: TX1005P

Date Prep: 12.27.16 16.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C12-C28 Diesel Range Hydrocarbons	PHCG1228	18.8	mg/kg	12.29.16 08.06		1
Total TPH	PHC635	18.8	mg/kg	12.29.16 08.06		1

Sample Id : **(1) BG 8-10**

Lab Sample Id : 542785-118

Sample Depth : 8 - 10

Matrix : Soil

Date Collected : 12.21.16 15.25

Date Received : 12.22.16 09.45

% Moisture :

Basis : Wet Weight

Analytical Method : Inorganic Anions by EPA 300/300.1

Seq Number 3006895

Prep Method: E300P

Date Prep: 01.04.17 10.38

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.75	mg/kg	01.04.17 15.21		1



Certificate of Analysis Summary 542785

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	542785-001	542785-002	542785-003	542785-004	542785-005	542785-006
	<i>Field Id:</i>	(1) SB 22 6-8	(1) SB 23 0-2	(1) SB 23 2-4	(1) SB 23 4-6	(1) SB 23 6-8	(1) SB 24 0-2
	<i>Depth:</i>	6-8	0-2	2-4	4-6	6-8	0-2
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-19-16 13:00	Dec-19-16 13:10	Dec-19-16 13:20	Dec-19-16 13:40	Dec-19-16 14:00	Dec-19-16 14:20
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-22-16 10:00	Dec-22-16 10:00	Dec-22-16 10:00	Dec-22-16 10:00	Dec-22-16 10:00	Dec-22-16 10:00
	<i>Analyzed:</i>	Dec-24-16 14:50	Dec-24-16 16:37	Dec-24-16 17:02	Dec-24-16 17:28	Dec-24-16 17:54	Dec-24-16 18:20
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542785

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542785-001	542785-002	542785-003	542785-004	542785-005	542785-006
	Field Id:	(1) SB 22 6-8	(1) SB 23 0-2	(1) SB 23 2-4	(1) SB 23 4-6	(1) SB 23 6-8	(1) SB 24 0-2
	Depth:	6-8	0-2	2-4	4-6	6-8	0-2
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-19-16 13:00	Dec-19-16 13:10	Dec-19-16 13:20	Dec-19-16 13:40	Dec-19-16 14:00	Dec-19-16 14:20
BTEX by SW 8260B SUB: TX104704215	Extracted:	Dec-30-16 12:01	Dec-30-16 12:03	Dec-30-16 12:04	Dec-30-16 12:05	Dec-30-16 12:06	Dec-30-16 12:07
	Analyzed:	Dec-30-16 12:24	Dec-30-16 13:03	Dec-30-16 13:22	Dec-30-16 13:41	Dec-30-16 14:00	Dec-30-16 14:19
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000998 0.000998	<0.000996 0.000996	<0.000990 0.000990	<0.00100 0.00100	<0.00101 0.00101	<0.00100 0.00100
Toluene		<0.000998 0.000998	<0.000996 0.000996	<0.000990 0.000990	<0.00100 0.00100	<0.00101 0.00101	<0.00100 0.00100
Ethylbenzene		<0.000998 0.000998	<0.000996 0.000996	<0.000990 0.000990	<0.00100 0.00100	<0.00101 0.00101	<0.00100 0.00100
m,p-Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200
o-Xylene		<0.000998 0.000998	<0.000996 0.000996	<0.000990 0.000990	<0.00100 0.00100	<0.00101 0.00101	<0.00100 0.00100
Total Xylenes		<0.000998 0.000998	<0.000996 0.000996	<0.000990 0.000990	<0.00100 0.00100	<0.00101 0.00101	<0.00100 0.00100
Total BTEX		<0.000998 0.000998	<0.000996 0.000996	<0.000990 0.000990	<0.00100 0.00100	<0.00101 0.00101	<0.00100 0.00100
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-30-16 12:00	Dec-30-16 12:00	Dec-30-16 12:00	Dec-30-16 12:00	Dec-30-16 12:00	Dec-30-16 12:00
	Analyzed:	Dec-30-16 19:30	Dec-30-16 19:52	Dec-30-16 19:59	Dec-30-16 20:06	Dec-30-16 20:13	Dec-30-16 20:34
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<5.00 5.00	39.5 5.00	7.13 5.00	6.92 5.00	<5.00 5.00	740 5.00

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542785

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	542785-007	542785-008	542785-009	542785-010	542785-011	542785-012
	<i>Field Id:</i>	(1) SB 24 2-4	(1) SB 24 4-6	(1) SB 24 6-8	(1) SB 24 8-10	(1) SB 24 10-12	(1) SB 24 12-14
	<i>Depth:</i>	2-4	4-6	6-8	8-10	10-12	12-14
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-19-16 14:25	Dec-19-16 14:30	Dec-19-16 14:33	Dec-19-16 14:35	Dec-19-16 14:40	Dec-19-16 14:45
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-22-16 10:00	Dec-22-16 10:00	Dec-22-16 10:00	Dec-22-16 10:00	Dec-22-16 10:00	Dec-22-16 10:00
	<i>Analyzed:</i>	Dec-24-16 18:46	Dec-24-16 19:12	Dec-24-16 19:37	Dec-24-16 20:03	Dec-24-16 20:54	Dec-24-16 21:20
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542785

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542785-007	542785-008	542785-009	542785-010	542785-011	542785-012
	Field Id:	(1) SB 24 2-4	(1) SB 24 4-6	(1) SB 24 6-8	(1) SB 24 8-10	(1) SB 24 10-12	(1) SB 24 12-14
	Depth:	2-4	4-6	6-8	8-10	10-12	12-14
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-19-16 14:25	Dec-19-16 14:30	Dec-19-16 14:33	Dec-19-16 14:35	Dec-19-16 14:40	Dec-19-16 14:45
BTEX by SW 8260B SUB: TX104704215	Extracted:	Dec-30-16 12:08	Dec-30-16 12:09	Dec-30-16 12:10	Dec-30-16 12:11	Dec-30-16 12:12	Dec-30-16 12:13
	Analyzed:	Dec-30-16 14:38	Dec-30-16 14:57	Dec-30-16 15:16	Dec-30-16 15:35	Dec-30-16 15:54	Dec-30-16 16:13
	Units/RL:		mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Benzene	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.000998 0.000998	<0.000998 0.000998
	Toluene	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.000998 0.000998	<0.000998 0.000998
	Ethylbenzene	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.000998 0.000998	<0.000998 0.000998
	m,p-Xylenes	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
	o-Xylene	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.000998 0.000998	<0.000998 0.000998
	Total Xylenes	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.000998 0.000998	<0.000998 0.000998
	Total BTEX	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.000998 0.000998	<0.000998 0.000998
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-30-16 12:00	Dec-30-16 12:00	Dec-30-16 12:00	Dec-30-16 12:00	Dec-30-16 12:00	Dec-30-16 12:00
	Analyzed:	Dec-30-16 20:41	Dec-30-16 20:48	Dec-30-16 20:55	Dec-30-16 21:02	Dec-30-16 21:09	Dec-30-16 21:44
	Units/RL:		mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Chloride	872 5.00	672 5.00	840 5.00	594 5.00	676 5.00	274 5.00

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542785

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	542785-013	542785-014	542785-015	542785-016	542785-017	542785-018
	<i>Field Id:</i>	(1) SB 24 14-16	(1) SB 25 0-2	(1) SB 25 2-4	(1) SB 25 4-6	(1) SB 25 4-6 Split	(1) SB 25 6-8
	<i>Depth:</i>	14-16	0-2	2-4	4-6	4-6	6-8
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-19-16 14:55	Dec-19-16 15:20	Dec-19-16 15:25	Dec-19-16 15:30	Dec-19-16 15:30	Dec-19-16 15:35
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-22-16 10:00	Dec-22-16 10:00	Dec-22-16 10:00	Dec-22-16 10:00	Dec-22-16 10:00	Dec-22-16 10:00
	<i>Analyzed:</i>	Dec-24-16 21:46	Dec-24-16 22:11	Dec-24-16 22:36	Dec-24-16 23:02	Dec-24-16 23:28	Dec-24-16 23:55
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Project Manager



Certificate of Analysis Summary 542785

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

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Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	542785-013	542785-014	542785-015	542785-016	542785-017	542785-018
	<i>Field Id:</i>	(1) SB 24 14-16	(1) SB 25 0-2	(1) SB 25 2-4	(1) SB 25 4-6	(1) SB 25 4-6 Split	(1) SB 25 6-8
	<i>Depth:</i>	14-16	0-2	2-4	4-6	4-6	6-8
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-19-16 14:55	Dec-19-16 15:20	Dec-19-16 15:25	Dec-19-16 15:30	Dec-19-16 15:30	Dec-19-16 15:35
BTEX by SW 8260B SUB: TX104704215	<i>Extracted:</i>	Dec-30-16 12:14	Dec-30-16 12:15	Dec-30-16 12:16	Dec-30-16 12:17	Dec-31-16 10:07	Dec-31-16 10:08
	<i>Analyzed:</i>	Dec-30-16 16:31	Dec-30-16 16:50	Dec-30-16 17:09	Dec-30-16 17:27	Dec-31-16 14:01	Dec-31-16 14:20
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00101 0.00101	<0.000990 0.000990	<0.000992 0.000992	<0.000994 0.000994	<0.000992 0.000992	<0.00101 0.00101
Toluene		<0.00101 0.00101	<0.000990 0.000990	<0.000992 0.000992	<0.000994 0.000994	<0.000992 0.000992	<0.00101 0.00101
Ethylbenzene		<0.00101 0.00101	<0.000990 0.000990	<0.000992 0.000992	<0.000994 0.000994	<0.000992 0.000992	<0.00101 0.00101
m,p-Xylenes		<0.00202 0.00202	<0.00198 0.00198	<0.00198 0.00198	<0.00199 0.00199	<0.00198 0.00198	<0.00201 0.00201
o-Xylene		<0.00101 0.00101	<0.000990 0.000990	<0.000992 0.000992	<0.000994 0.000994	<0.000992 0.000992	<0.00101 0.00101
Total Xylenes		<0.00101 0.00101	<0.000990 0.000990	<0.000992 0.000992	<0.000994 0.000994	<0.000992 0.000992	<0.00101 0.00101
Total BTEX		<0.00101 0.00101	<0.000990 0.000990	<0.000992 0.000992	<0.000994 0.000994	<0.000992 0.000992	<0.00101 0.00101

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542785

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	542785-013	542785-014	542785-015	542785-016	542785-017	542785-018
	<i>Field Id:</i>	(1) SB 24 14-16	(1) SB 25 0-2	(1) SB 25 2-4	(1) SB 25 4-6	(1) SB 25 4-6 Split	(1) SB 25 6-8
	<i>Depth:</i>	14-16	0-2	2-4	4-6	4-6	6-8
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-19-16 14:55	Dec-19-16 15:20	Dec-19-16 15:25	Dec-19-16 15:30	Dec-19-16 15:30	Dec-19-16 15:35
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Dec-30-16 12:00	Dec-30-16 12:00	Dec-30-16 12:00	Dec-30-16 12:00	Dec-30-16 12:00	Dec-30-16 12:00
	<i>Analyzed:</i>	Dec-30-16 21:51	Dec-30-16 21:58	Dec-30-16 22:05	Dec-30-16 22:13	Dec-30-16 22:20	Dec-30-16 22:27
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		5.69 5.00	1140 5.00	809 5.00	570 5.00	972 5.00	563 5.00

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542785

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	542785-019		542785-020		542785-021		542785-022		542785-023		542785-024	
	<i>Field Id:</i>	(1) SB 26 0-2		(1) SB 26 2-4		(1) SB 26 4-6		(1) SB 26 6-8		(1) SB 26 8-10		(1) SB 26 10-12	
	<i>Depth:</i>	0-2		2-4		4-6		6-8		8-10		10-12	
	<i>Matrix:</i>	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	<i>Sampled:</i>	Dec-19-16 15:40		Dec-19-16 15:45		Dec-19-16 15:47		Dec-19-16 15:50		Dec-19-16 15:55		Dec-19-16 16:00	
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-22-16 10:00		Dec-22-16 10:00		Dec-22-16 10:00		Dec-22-16 10:00		Dec-22-16 10:00		Dec-22-16 10:00	
	<i>Analyzed:</i>	Dec-25-16 00:23		Dec-25-16 00:50		Dec-25-16 03:07		Dec-25-16 04:27		Dec-25-16 04:55		Dec-25-16 05:22	
	<i>Units/RL:</i>	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C10 Gasoline Range Hydrocarbons		1220	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
C10-C28 Diesel Range Hydrocarbons		4170	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
C28-C35 Oil Range Hydrocarbons		79.5	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		5470	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542785

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	542785-019	542785-020	542785-021	542785-022	542785-023	542785-024
	<i>Field Id:</i>	(1) SB 26 0-2	(1) SB 26 2-4	(1) SB 26 4-6	(1) SB 26 6-8	(1) SB 26 8-10	(1) SB 26 10-12
	<i>Depth:</i>	0-2	2-4	4-6	6-8	8-10	10-12
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-19-16 15:40	Dec-19-16 15:45	Dec-19-16 15:47	Dec-19-16 15:50	Dec-19-16 15:55	Dec-19-16 16:00
BTEX by SW 8260B SUB: TX104704215	<i>Extracted:</i>	Jan-03-17 12:06	Dec-30-16 19:01	Dec-30-16 19:02	Dec-30-16 19:03	Dec-31-16 10:02	Dec-31-16 10:03
	<i>Analyzed:</i>	Jan-03-17 14:43	Dec-31-16 00:56	Dec-31-16 01:15	Dec-31-16 01:34	Dec-31-16 12:26	Dec-31-16 12:45
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.0250 0.0250	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.000992 0.000992
Toluene		<0.0250 0.0250	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.000992 0.000992
Ethylbenzene		<0.0250 0.0250	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.000992 0.000992
m,p-Xylenes		1.71 K 0.0500	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
o-Xylene		3.03 K 0.0250	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.000992 0.000992
Total Xylenes		4.74 K 0.0250	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.000992 0.000992
Total BTEX		4.74 K 0.0250	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.000992 0.000992

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542785

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	542785-019	542785-020	542785-021	542785-022	542785-023	542785-024
	<i>Field Id:</i>	(1) SB 26 0-2	(1) SB 26 2-4	(1) SB 26 4-6	(1) SB 26 6-8	(1) SB 26 8-10	(1) SB 26 10-12
	<i>Depth:</i>	0-2	2-4	4-6	6-8	8-10	10-12
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-19-16 15:40	Dec-19-16 15:45	Dec-19-16 15:47	Dec-19-16 15:50	Dec-19-16 15:55	Dec-19-16 16:00
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Dec-30-16 12:00	Dec-30-16 12:00	Jan-03-17 08:00	Jan-03-17 08:00	Jan-03-17 08:00	Jan-03-17 08:00
	<i>Analyzed:</i>	Dec-30-16 22:34	Dec-30-16 22:41	Jan-03-17 11:15	Jan-03-17 11:36	Jan-03-17 11:43	Jan-03-17 11:50
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		519 5.00	823 5.00	6840 50.0	2690 25.0	2780 25.0	1380 5.00

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Project Manager



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KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542785-025	542785-026	542785-027	542785-028	542785-029	542785-030
	Field Id:	(1) SB 27 0-2	(1) SB 27 2-4	(1) SB 27 4-6	(1) SB 28 0-2	(1) SB 28 2-4	(1) SB 28 4-6
	Depth:	0-2	2-4	4-6	0-2	2-4	4-6
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-19-16 16:30	Dec-19-16 16:35	Dec-19-16 16:45	Dec-20-16 07:00	Dec-20-16 07:10	Dec-20-16 07:15
BTEX by SW 8260B SUB: TX104704215	Extracted:	Jan-03-17 12:05	Jan-03-17 12:02	Jan-03-17 12:03	Dec-31-16 10:18	Dec-31-16 10:19	Dec-31-16 10:20
	Analyzed:	Jan-03-17 14:24	Jan-03-17 13:27	Jan-03-17 13:46	Dec-31-16 17:29	Dec-31-16 17:48	Dec-31-16 18:07
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.0249 0.0249	<0.00100 0.00100	<0.000990 0.000990	<0.000998 0.000998	<0.000990 0.000990	<0.000998 0.000998
Toluene		0.768 K 0.0249	<0.00100 0.00100	<0.000990 0.000990	<0.000998 0.000998	<0.000990 0.000990	<0.000998 0.000998
Ethylbenzene		<0.0249 0.0249	<0.00100 0.00100	<0.000990 0.000990	<0.000998 0.000998	<0.000990 0.000990	<0.000998 0.000998
m,p-Xylenes		27.9 KD 0.199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
o-Xylene		22.1 KD 0.0996	<0.00100 0.00100	<0.000990 0.000990	<0.000998 0.000998	<0.000990 0.000990	<0.000998 0.000998
Total Xylenes		50.0 K 0.0996	<0.00100 0.00100	<0.000990 0.000990	<0.000998 0.000998	<0.000990 0.000990	<0.000998 0.000998
Total BTEX		50.8 K 0.0249	<0.00100 0.00100	<0.000990 0.000990	<0.000998 0.000998	<0.000990 0.000990	<0.000998 0.000998
Inorganic Anions by EPA 300/300.1	Extracted:	Jan-03-17 08:00	Jan-03-17 08:00	Jan-03-17 08:00	Jan-03-17 08:00	Jan-03-17 08:00	Jan-03-17 08:00
	Analyzed:	Jan-03-17 11:57	Jan-03-17 12:18	Jan-03-17 12:25	Jan-03-17 12:32	Jan-03-17 12:39	Jan-03-17 12:46
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1270 5.00	6310 50.0	7500 50.0	2700 25.0	6190 50.0	9950 50.0
TPH By SW8015 Mod	Extracted:	Dec-22-16 10:00	Dec-22-16 10:00	Dec-22-16 10:00	Dec-22-16 10:00	Dec-22-16 10:00	Dec-22-16 10:00
	Analyzed:	Dec-25-16 05:51	Dec-25-16 06:18	Dec-25-16 06:44	Dec-25-16 07:11	Dec-25-16 07:38	Dec-25-16 08:04
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		2060 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
C10-C28 Diesel Range Hydrocarbons		3960 15.0	<15.0 15.0	<15.0 15.0	21.1 15.0	<15.0 15.0	<14.9 14.9
C28-C35 Oil Range Hydrocarbons		128 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
Total TPH		6150 15.0	<15.0 15.0	<15.0 15.0	21.1 15.0	<15.0 15.0	<14.9 14.9

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542785

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	542785-031	542785-032	542785-033	542785-034	542785-035	542785-036
	<i>Field Id:</i>	(1) SB 28 6-8	(1) SB 28 8-10	(1) SB 29 0-2	(1) SB 29 2-4	(1) SB 29 4-6	(1) SB 29 6-8
	<i>Depth:</i>	6-8	8-10	0-2	2-4	4-6	6-8
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-20-16 07:30	Dec-20-16 07:40	Dec-20-16 07:55	Dec-20-16 08:00	Dec-20-16 08:05	Dec-20-16 08:10
BTEX by SW 8260B SUB: TX104704215	<i>Extracted:</i>	Jan-03-17 12:04	Dec-31-16 10:11	Dec-31-16 10:12	Dec-31-16 10:13	Dec-31-16 10:14	Dec-31-16 10:15
	<i>Analyzed:</i>	Jan-03-17 14:05	Dec-31-16 15:17	Dec-31-16 15:36	Dec-31-16 15:55	Dec-31-16 16:14	Dec-31-16 16:32
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00101 0.00101	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
Toluene		<0.00101 0.00101	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	0.00442 0.00100	<0.00100 0.00100
Ethylbenzene		<0.00101 0.00101	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
m,p-Xylenes		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	0.0397 0.00200	<0.00200 0.00200
o-Xylene		<0.00101 0.00101	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	0.0145 0.00100	<0.00100 0.00100
Total Xylenes		<0.00101 0.00101	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	0.0542 0.00100	<0.00100 0.00100
Total BTEX		<0.00101 0.00101	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	0.0586 0.00100	<0.00100 0.00100
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Jan-03-17 08:00	Jan-03-17 08:00	Jan-03-17 08:00	Jan-03-17 08:00	Jan-03-17 08:00	Jan-03-17 08:00
	<i>Analyzed:</i>	Jan-03-17 12:53	Jan-03-17 13:14	Jan-03-17 13:22	Jan-03-17 13:43	Jan-03-17 13:50	Jan-03-17 13:57
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1220 5.00	<5.00 5.00	309 5.00	4680 50.0	9830 100	3920 25.0
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-22-16 10:00	Dec-22-16 10:00	Dec-22-16 10:00	Dec-22-16 10:00	Dec-22-16 10:00	Dec-22-16 10:00
	<i>Analyzed:</i>	Dec-25-16 08:58	Dec-25-16 09:25	Dec-29-16 08:57	Dec-25-16 10:16	Dec-25-16 10:43	Dec-27-16 08:23
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542785

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542785-037	542785-038	542785-039	542785-040	542785-041	542785-042
	Field Id:	(1) SB 29 8-10	(1) SB 29 8-10 Split	(1) SB 30 0-2	(1) SB 30 2-4	(1) SB 30 4-6	(1) SB 30 6-8
	Depth:	8-10	8-10	0-2	2-4	4-6	6-8
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-20-16 08:15	Dec-20-16 08:20	Dec-20-16 08:25	Dec-20-16 08:30	Dec-20-16 08:35	Dec-20-16 08:40
BTEX by SW 8260B SUB: TX104704215	Extracted:	Jan-03-17 14:06	Jan-03-17 14:07	Jan-03-17 14:08	Dec-31-16 10:01	Dec-31-16 10:16	Dec-31-16 10:17
	Analyzed:	Jan-03-17 16:55	Jan-03-17 17:13	Jan-03-17 17:33	Dec-31-16 12:07	Dec-31-16 16:52	Dec-31-16 17:10
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Benzene	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100	<0.00100 0.00100	<0.000990 0.000990	<0.00101 0.00101
	Toluene	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100	<0.00100 0.00100	<0.000990 0.000990	<0.00101 0.00101
Ethylbenzene		<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100	<0.00100 0.00100	<0.000990 0.000990	<0.00101 0.00101
m,p-Xylenes		<0.00200 0.00200	<0.00198 0.00198	<0.00201 0.00201	<0.00200 0.00200	<0.00198 0.00198	<0.00202 0.00202
o-Xylene		<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100	<0.00100 0.00100	<0.000990 0.000990	<0.00101 0.00101
Total Xylenes		<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100	<0.00100 0.00100	<0.000990 0.000990	<0.00101 0.00101
Total BTEX		<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100	<0.00100 0.00100	<0.000990 0.000990	<0.00101 0.00101
Inorganic Anions by EPA 300/300.1	Extracted:	Jan-03-17 08:00	Jan-03-17 08:00	Jan-03-17 08:00	Jan-03-17 08:00	Jan-03-17 10:24	Jan-03-17 10:24
	Analyzed:	Jan-03-17 14:04	Jan-03-17 14:11	Jan-03-17 14:18	Jan-03-17 14:25	Jan-03-17 15:21	Jan-03-17 15:42
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Chloride	9.72 5.00	9.48 5.00	5700 50.0	6040 50.0	2150 25.0	8580 50.0
TPH By SW8015 Mod	Extracted:	Dec-22-16 10:00	Dec-22-16 10:00	Dec-22-16 10:00	Dec-22-16 10:00	Dec-22-16 10:00	Dec-22-16 10:00
	Analyzed:	Dec-25-16 11:37	Dec-27-16 08:48	Dec-25-16 12:29	Dec-25-16 12:56	Dec-25-16 15:42	Dec-25-16 17:11
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	C6-C10 Gasoline Range Hydrocarbons	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
	C10-C28 Diesel Range Hydrocarbons	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



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KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	542785-043	542785-044	542785-045	542785-046	542785-047	542785-048
	<i>Field Id:</i>	(1) SB 31 0-2	(1) SB 31 2-4	(1) SB 31 4-6	(1) SB 31 6-8	(1) SB 31 8-10	(1) SB 31 10-12
	<i>Depth:</i>	0-2	2-4	4-6	6-8	8-10	10-12
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-20-16 08:45	Dec-20-16 08:50	Dec-20-16 09:00	Dec-20-16 09:10	Dec-20-16 09:20	Dec-20-16 09:45
BTEX by SW 8260B SUB: TX104704215	<i>Extracted:</i>	Jan-03-17 20:02	Jan-03-17 20:03	Jan-03-17 20:04	Jan-03-17 20:05	Jan-03-17 20:06	Jan-03-17 14:11
	<i>Analyzed:</i>	Jan-03-17 22:21	Jan-03-17 22:40	Jan-03-17 22:59	Jan-03-17 23:18	Jan-03-17 23:37	Jan-03-17 18:48
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100
Toluene		<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100
Ethylbenzene		<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100
m,p-Xylenes		<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200
o-Xylene		<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100
Total Xylenes		<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100
Total BTEX		<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101	<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Jan-03-17 10:24	Jan-03-17 10:24	Jan-03-17 10:24	Jan-03-17 10:24	Jan-03-17 10:24	Jan-03-17 10:24
	<i>Analyzed:</i>	Jan-03-17 15:49	Jan-03-17 16:25	Jan-03-17 16:32	Jan-03-17 16:39	Jan-03-17 16:46	Jan-03-17 16:53
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		30.4 5.00	118 5.00	<5.00 5.00	7860 50.0	7260 50.0	16.0 5.00
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-22-16 10:00	Dec-22-16 10:00	Dec-22-16 10:00	Dec-22-16 10:00	Dec-22-16 10:00	Dec-22-16 10:00
	<i>Analyzed:</i>	Dec-25-16 17:39	Dec-27-16 11:07	Dec-25-16 18:34	Dec-25-16 19:00	Dec-25-16 19:27	Dec-25-16 19:54
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	50.8 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	50.8 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542785

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542785-049		542785-050		542785-051		542785-052		542785-053		542785-054		
	Field Id:	(1) SB 32 0-2		(1) SB 32 2-4		(1) SB 32 4-6		(1) SB 32 6-8		(1) SB 33 0-2		(1) SB 33 2-4		
	Depth:	0-2		2-4		4-6		6-8		0-2		2-4		
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL		
	Sampled:	Dec-20-16 10:00		Dec-20-16 10:05		Dec-20-16 10:30		Dec-20-16 10:45		Dec-20-16 11:30		Dec-20-16 11:35		
BTEX by SW 8260B SUB: TX104704215		Extracted:	Jan-03-17 14:10		Jan-03-17 14:09		Jan-03-17 20:08		Jan-03-17 20:09		Jan-03-17 14:09		Jan-04-17 10:02	
		Analyzed:	Jan-03-17 18:29		Jan-03-17 18:10		Jan-04-17 00:15		Jan-04-17 00:35		Jan-03-17 17:52		Jan-04-17 11:08	
		Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene			<0.00101	0.00101	<0.00100	0.00100	<0.00101	0.00101	<0.000994	0.000994	<0.000990	0.000990	<0.000992	0.000992
Toluene			<0.00101	0.00101	<0.00100	0.00100	<0.00101	0.00101	<0.000994	0.000994	<0.000990	0.000990	<0.000992	0.000992
Ethylbenzene			<0.00101	0.00101	<0.00100	0.00100	<0.00101	0.00101	<0.000994	0.000994	<0.000990	0.000990	<0.000992	0.000992
m,p-Xylenes			<0.00201	0.00201	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00198	0.00198	<0.00198	0.00198
o-Xylene			<0.00101	0.00101	<0.00100	0.00100	<0.00101	0.00101	<0.000994	0.000994	<0.000990	0.000990	<0.000992	0.000992
Total Xylenes			<0.00101	0.00101	<0.00100	0.00100	<0.00101	0.00101	<0.000994	0.000994	<0.000990	0.000990	<0.000992	0.000992
Total BTEX			<0.00101	0.00101	<0.00100	0.00100	<0.00101	0.00101	<0.000994	0.000994	<0.000990	0.000990	<0.000992	0.000992
Inorganic Anions by EPA 300/300.1		Extracted:	Jan-03-17 10:24		Jan-03-17 10:24		Jan-03-17 10:24		Jan-03-17 10:24		Jan-03-17 10:24		Jan-03-17 10:24	
		Analyzed:	Jan-03-17 17:00		Jan-03-17 17:07		Jan-03-17 17:14		Jan-03-17 17:49		Jan-03-17 18:10		Jan-03-17 18:17	
		Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride			6010	50.0	3650	25.0	3020	25.0	11900	100	542	5.00	4700	50.0
TPH By SW8015 Mod		Extracted:	Dec-22-16 10:00		Dec-22-16 10:00		Dec-22-16 10:00		Dec-22-16 10:00		Dec-22-16 10:00		Dec-22-16 10:00	
		Analyzed:	Dec-27-16 11:31		Dec-25-16 20:47		Dec-25-16 21:40		Dec-27-16 11:56		Dec-25-16 22:32		Dec-27-16 13:19	
		Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C10 Gasoline Range Hydrocarbons			<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
C10-C28 Diesel Range Hydrocarbons			<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
C28-C35 Oil Range Hydrocarbons			<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH			<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542785

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542785-055		542785-056		542785-057		542785-058		542785-059		542785-060					
	Field Id:	(1) SB 33 4-6		(1) SB 33 6-8		(1) SB 34 0-2		(1) SB 34 2-4		(1) SB 34 2-4 Split		(1) SB 34 4-6					
	Depth:	4-6		6-8		0-2		2-4		2-4		4-6					
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL					
	Sampled:	Dec-20-16 11:45		Dec-20-16 12:00		Dec-20-16 12:05		Dec-20-16 12:10		Dec-20-16 12:15		Dec-20-16 12:20					
BTEX by SW 8260B SUB: TX104704215		Extracted:	Jan-04-17 10:01		Jan-03-17 20:07		Jan-04-17 10:03		Jan-04-17 10:04		Jan-04-17 10:05		Jan-04-17 10:06				
		Analyzed:	Jan-04-17 10:49		Jan-03-17 23:56		Jan-04-17 11:27		Jan-04-17 11:46		Jan-04-17 12:05		Jan-04-17 12:24				
		Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL			
Benzene		<0.000998		0.000998		<0.00100		0.00100		<0.000998		0.000998		<0.000998		0.000998	
Toluene		<0.000998		0.000998		<0.00100		0.00100		<0.000998		0.000998		<0.000998		0.000998	
Ethylbenzene		<0.000998		0.000998		<0.00100		0.00100		<0.000998		0.000998		<0.000998		0.000998	
m,p-Xylenes		<0.00200		0.00200		<0.00201		0.00201		<0.00200		0.00200		<0.00200		0.00200	
o-Xylene		<0.000998		0.000998		<0.00100		0.00100		<0.000998		0.000998		<0.000998		0.000998	
Total Xylenes		<0.000998		0.000998		<0.00100		0.00100		<0.000998		0.000998		<0.000998		0.000998	
Total BTEX		<0.000998		0.000998		<0.00100		0.00100		<0.000998		0.000998		<0.000998		0.000998	
Inorganic Anions by EPA 300/300.1		Extracted:	Jan-03-17 10:24		Jan-03-17 10:24		Jan-03-17 10:24		Jan-03-17 10:24		Jan-03-17 10:24		Jan-03-17 10:24				
		Analyzed:	Jan-03-17 18:24		Jan-03-17 18:32		Jan-03-17 18:53		Jan-03-17 19:00		Jan-03-17 19:07		Jan-03-17 19:14				
		Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL			
Chloride		816		5.00		136		5.00		6.37		5.00		12.9		5.00	
7.76		5.00		5.73		5.00		TPH By SW8015 Mod		Extracted:		Dec-22-16 10:00		Dec-22-16 10:00		Dec-22-16 10:00	
Dec-25-16 23:26		Dec-25-16 23:51		Dec-26-16 00:17		Dec-26-16 00:43		Dec-26-16 01:10		Dec-26-16 01:37		Dec-26-16 01:37		Dec-26-16 01:37		Dec-26-16 01:37	
mg/kg		RL		mg/kg		RL		mg/kg		RL		mg/kg		RL		mg/kg	
RL		mg/kg		RL		mg/kg		RL		mg/kg		RL		mg/kg		RL	
C6-C10 Gasoline Range Hydrocarbons		<15.0		15.0		<15.0		15.0		<15.0		15.0		<15.0		15.0	
C10-C28 Diesel Range Hydrocarbons		<15.0		15.0		<15.0		15.0		<15.0		15.0		<15.0		15.0	
C28-C35 Oil Range Hydrocarbons		<15.0		15.0		<15.0		15.0		<15.0		15.0		<15.0		15.0	
Total TPH		<15.0		15.0		<15.0		15.0		<15.0		15.0		<15.0		15.0	

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542785

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542785-061	542785-062	542785-063	542785-064	542785-065	542785-066
	Field Id:	(1) SB 34 6-8	(1) SB 35 0-2	(1) SB 35 2-4	(1) SB 35 4-6	(1) SB 36 0-2	(1) SB 36 2-4
	Depth:	6-8	0-2	2-4	4-6	0-2	2-4
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-20-16 12:30	Dec-20-16 12:35	Dec-20-16 12:45	Dec-20-16 12:50	Dec-20-16 13:00	Dec-20-16 13:10
BTEX by SW 8260B SUB: TX104704215	Extracted:	Jan-04-17 15:40	Jan-04-17 10:08	Jan-04-17 10:09	Jan-04-17 10:10	Jan-04-17 10:11	Jan-04-17 10:12
	Analyzed:	Jan-04-17 16:49	Jan-04-17 13:02	Jan-04-17 13:20	Jan-04-17 13:40	Jan-04-17 13:59	Jan-04-17 14:18
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Benzene	<0.000994 0.000994	<0.000994 0.000994	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100
	Toluene	<0.000994 0.000994	<0.000994 0.000994	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100
Ethylbenzene		<0.000994 0.000994	<0.000994 0.000994	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100
m,p-Xylenes		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
o-Xylene		<0.000994 0.000994	<0.000994 0.000994	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100
Total Xylenes		<0.000994 0.000994	<0.000994 0.000994	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100
Total BTEX		<0.000994 0.000994	<0.000994 0.000994	<0.00100 0.00100	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100
Inorganic Anions by EPA 300/300.1	Extracted:	Jan-03-17 10:32	Jan-03-17 10:32	Jan-03-17 10:32	Jan-03-17 10:32	Jan-03-17 10:32	Jan-03-17 10:32
	Analyzed:	Jan-03-17 19:56	Jan-03-17 20:17	Jan-03-17 20:24	Jan-03-17 20:31	Jan-03-17 20:38	Jan-03-17 21:00
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		6.45 5.00	11.9 5.00	6.64 5.00	16.4 5.00	157 5.00	7.62 5.00

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542785

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	542785-061		542785-062		542785-063		542785-064		542785-065		542785-066	
	<i>Field Id:</i>	(1) SB 34 6-8		(1) SB 35 0-2		(1) SB 35 2-4		(1) SB 35 4-6		(1) SB 36 0-2		(1) SB 36 2-4	
	<i>Depth:</i>	6-8		0-2		2-4		4-6		0-2		2-4	
	<i>Matrix:</i>	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	<i>Sampled:</i>	Dec-20-16 12:30		Dec-20-16 12:35		Dec-20-16 12:45		Dec-20-16 12:50		Dec-20-16 13:00		Dec-20-16 13:10	
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-27-16 16:00		Dec-27-16 16:00		Dec-27-16 16:00		Dec-27-16 16:00		Dec-27-16 16:00		Dec-27-16 16:00	
	<i>Analyzed:</i>	Dec-27-16 20:09		Dec-29-16 10:51		Dec-27-16 21:49		Dec-27-16 22:14		Dec-27-16 22:37		Dec-27-16 23:01	
	<i>Units/RL:</i>	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C10 Gasoline Range Hydrocarbons		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
C10-C28 Diesel Range Hydrocarbons		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
C28-C35 Oil Range Hydrocarbons		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542785

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542785-067	542785-068	542785-069	542785-070	542785-071	542785-072
	Field Id:	(1) SB 36 4-6	(1) SB 37 0-2	(1) SB 37 2-4	(1) SB 37 4-6	(1) SB 37 6-8	(1) SB 38 0-2
	Depth:	4-6	0-2	2-4	4-6	6-8	0-2
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-20-16 13:15	Dec-20-16 13:20	Dec-20-16 13:25	Dec-20-16 13:30	Dec-20-16 13:50	Dec-21-16 11:00
BTEX by SW 8260B SUB: TX104704215	Extracted:	Jan-04-17 10:13	Jan-04-17 10:14	Jan-04-17 10:15	Jan-04-17 10:16	Jan-04-17 10:17	Jan-04-17 21:59
	Analyzed:	Jan-04-17 14:37	Jan-04-17 14:56	Jan-04-17 15:15	Jan-04-17 15:34	Jan-04-17 15:53	Jan-05-17 05:56
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000994 0.000994	<0.000996 0.000996	<0.00100 0.00100	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100
Toluene		<0.000994 0.000994	<0.000996 0.000996	<0.00100 0.00100	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100
Ethylbenzene		<0.000994 0.000994	<0.000996 0.000996	<0.00100 0.00100	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100
m,p-Xylenes		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	<0.00201 0.00201
o-Xylene		<0.000994 0.000994	<0.000996 0.000996	<0.00100 0.00100	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100
Total Xylenes		<0.000994 0.000994	<0.000996 0.000996	<0.00100 0.00100	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100
Total BTEX		<0.000994 0.000994	<0.000996 0.000996	<0.00100 0.00100	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100
Inorganic Anions by EPA 300/300.1	Extracted:	Jan-03-17 10:32	Jan-03-17 10:32	Jan-03-17 10:32	Jan-03-17 10:32	Jan-03-17 10:32	Jan-03-17 10:32
	Analyzed:	Jan-03-17 21:07	Jan-03-17 21:14	Jan-03-17 21:21	Jan-03-17 21:28	Jan-03-17 21:35	Jan-03-17 22:10
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		7.70 5.00	5.80 5.00	6.47 5.00	7.10 5.00	<5.00 5.00	6.12 5.00

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542785

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	542785-067	542785-068	542785-069	542785-070	542785-071	542785-072
	<i>Field Id:</i>	(1) SB 36 4-6	(1) SB 37 0-2	(1) SB 37 2-4	(1) SB 37 4-6	(1) SB 37 6-8	(1) SB 38 0-2
	<i>Depth:</i>	4-6	0-2	2-4	4-6	6-8	0-2
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-20-16 13:15	Dec-20-16 13:20	Dec-20-16 13:25	Dec-20-16 13:30	Dec-20-16 13:50	Dec-21-16 11:00
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-27-16 16:00	Dec-27-16 16:00	Dec-27-16 16:00	Dec-27-16 16:00	Dec-27-16 16:00	Dec-27-16 16:00
	<i>Analyzed:</i>	Dec-28-16 20:58	Dec-27-16 23:50	Dec-28-16 00:15	Dec-28-16 00:40	Dec-28-16 01:30	Dec-28-16 01:55
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542785

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542785-073	542785-074	542785-075	542785-076	542785-077	542785-078
	Field Id:	(1) SB 38 2-4	(1) SB 38 4-6	(1) SB 38 6-8	(1) SB 39 0-2	(1) SB 39 2-4	(1) SB 39 4-6
	Depth:	2-4	4-6	6-8	0-2	2-4	4-6
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-21-16 11:10	Dec-21-16 11:15	Dec-21-16 11:20	Dec-21-16 11:25	Dec-21-16 11:30	Dec-21-16 11:35
BTEX by SW 8260B SUB: TX104704215	Extracted:	Jan-05-17 12:24	Jan-05-17 12:22	Jan-05-17 15:42	Jan-05-17 12:26	Jan-05-17 12:27	Jan-04-17 21:53
	Analyzed:	Jan-05-17 13:39	Jan-05-17 12:54	Jan-05-17 16:38	Jan-05-17 14:24	Jan-05-17 14:47	Jan-05-17 04:23
	Units/RL:		mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Benzene	<0.00101 0.00101	<0.00100 0.00100	<0.00101 0.00101	<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100
	Toluene	<0.00101 0.00101	<0.00100 0.00100	<0.00101 0.00101	<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100
	Ethylbenzene	<0.00101 0.00101	<0.00100 0.00100	<0.00101 0.00101	<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100
	m,p-Xylenes	<0.00201 0.00201	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200
	o-Xylene	<0.00101 0.00101	<0.00100 0.00100	<0.00101 0.00101	<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100
	Total Xylenes	<0.00101 0.00101	<0.00100 0.00100	<0.00101 0.00101	<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100
	Total BTEX	<0.00101 0.00101	<0.00100 0.00100	<0.00101 0.00101	<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100
Inorganic Anions by EPA 300/300.1	Extracted:	Jan-03-17 10:32	Jan-03-17 10:32	Jan-03-17 10:32	Jan-03-17 10:32	Jan-03-17 10:32	Jan-03-17 10:32
	Analyzed:	Jan-03-17 22:17	Jan-03-17 22:24	Jan-03-17 22:31	Jan-03-17 22:38	Jan-03-17 22:45	Jan-03-17 22:52
	Units/RL:		mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Chloride	6.36 5.00	5.87 5.00	7.44 5.00	5.80 5.00	5.90 5.00	6.19 5.00

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542785

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542785-073	542785-074	542785-075	542785-076	542785-077	542785-078
	Field Id:	(1) SB 38 2-4	(1) SB 38 4-6	(1) SB 38 6-8	(1) SB 39 0-2	(1) SB 39 2-4	(1) SB 39 4-6
	Depth:	2-4	4-6	6-8	0-2	2-4	4-6
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-21-16 11:10	Dec-21-16 11:15	Dec-21-16 11:20	Dec-21-16 11:25	Dec-21-16 11:30	Dec-21-16 11:35
TPH By SW8015 Mod	Extracted:	Dec-27-16 16:00	Dec-27-16 16:00	Dec-27-16 16:00	Dec-27-16 16:00	Dec-27-16 16:00	Dec-27-16 16:00
	Analyzed:	Dec-28-16 02:20	Dec-28-16 02:44	Dec-28-16 03:09	Dec-28-16 03:34	Dec-28-16 03:58	Dec-28-16 06:52
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	86.4 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542785-079	542785-080	542785-081	542785-082	542785-083	542785-084
	Field Id:	(1) SB 39 6-8	(1) SB 39 6-8 SPLIT	(1) SB 40 0-2	(1) SB 40 2-4	(1) SB 40 4-6	(1) SB 40 6-8
	Depth:	6-8	6-8	0-2	2-4	4-6	6-8
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-21-16 11:37	Dec-21-16 11:40	Dec-21-16 11:50	Dec-21-16 11:55	Dec-21-16 12:00	Dec-21-16 12:10
BTEX by SW 8260B SUB: TX104704215	Extracted:	Jan-04-17 17:53	Jan-04-17 17:54	Jan-05-17 12:23	Jan-04-17 17:56	Jan-04-17 17:57	Jan-04-17 17:58
	Analyzed:	Jan-04-17 21:26	Jan-04-17 21:49	Jan-05-17 13:16	Jan-04-17 22:34	Jan-04-17 22:57	Jan-04-17 23:19
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000990 0.000990	<0.000994 0.000994	<0.000990 0.000990	<0.000990 0.000990	<0.00100 0.00100	<0.00100 0.00100
Toluene		<0.000990 0.000990	<0.000994 0.000994	<0.000990 0.000990	<0.000990 0.000990	<0.00100 0.00100	<0.00100 0.00100
Ethylbenzene		<0.000990 0.000990	<0.000994 0.000994	<0.000990 0.000990	<0.000990 0.000990	<0.00100 0.00100	<0.00100 0.00100
m,p-Xylenes		<0.00198 0.00198	<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198	<0.00201 0.00201	<0.00200 0.00200
o-Xylene		<0.000990 0.000990	<0.000994 0.000994	<0.000990 0.000990	<0.000990 0.000990	<0.00100 0.00100	<0.00100 0.00100
Total Xylenes		<0.000990 0.000990	<0.000994 0.000994	<0.000990 0.000990	<0.000990 0.000990	<0.00100 0.00100	<0.00100 0.00100
Total BTEX		<0.000990 0.000990	<0.000994 0.000994	<0.000990 0.000990	<0.000990 0.000990	<0.00100 0.00100	<0.00100 0.00100
Inorganic Anions by EPA 300/300.1	Extracted:	Jan-03-17 10:32	Jan-03-17 10:32	Jan-03-17 10:36	Jan-03-17 10:36	Jan-03-17 10:36	Jan-03-17 10:36
	Analyzed:	Jan-03-17 22:59	Jan-03-17 23:06	Jan-04-17 00:45	Jan-04-17 01:06	Jan-04-17 01:13	Jan-04-17 01:20
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		5.39 5.00	5.76 5.00	11.4 5.00	<5.00 5.00	<5.00 5.00	<5.00 5.00

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542785

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542785-079	542785-080	542785-081	542785-082	542785-083	542785-084
	Field Id:	(1) SB 39 6-8	(1) SB 39 6-8 SPLIT	(1) SB 40 0-2	(1) SB 40 2-4	(1) SB 40 4-6	(1) SB 40 6-8
	Depth:	6-8	6-8	0-2	2-4	4-6	6-8
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-21-16 11:37	Dec-21-16 11:40	Dec-21-16 11:50	Dec-21-16 11:55	Dec-21-16 12:00	Dec-21-16 12:10
TPH By SW8015 Mod	Extracted:	Dec-27-16 16:00	Dec-27-16 16:00	Dec-27-16 18:00	Dec-27-16 18:00	Dec-27-16 18:00	Dec-27-16 18:00
	Analyzed:	Dec-28-16 07:15	Dec-28-16 07:39	Dec-28-16 09:50	Dec-28-16 11:07	Dec-28-16 11:32	Dec-28-16 11:58
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542785-085	542785-086	542785-087	542785-088	542785-089	542785-090
	Field Id:	(1) SB 41 0-2	(1) SB 41 2-4	(1) SB 41 4-6	(1) SB 41 6-8	(1) SB 42 0-2	(1) SB 42 2-4
	Depth:	0-2	2-4	4-6	6-8	0-2	2-4
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-21-16 12:15	Dec-21-16 12:20	Dec-21-16 12:25	Dec-21-16 12:30	Dec-21-16 12:35	Dec-21-16 12:37
BTEX by SW 8260B SUB: TX104704215	Extracted:	Jan-04-17 17:59	Jan-04-17 18:00	Jan-04-17 18:01	Jan-04-17 18:02	Jan-04-17 18:03	Jan-04-17 18:04
	Analyzed:	Jan-04-17 23:42	Jan-05-17 00:05	Jan-05-17 00:27	Jan-05-17 00:50	Jan-05-17 01:13	Jan-05-17 01:35
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000994 0.000994	<0.00101 0.00101	<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
Toluene		<0.000994 0.000994	<0.00101 0.00101	<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
Ethylbenzene		<0.000994 0.000994	<0.00101 0.00101	<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
m,p-Xylenes		<0.00199 0.00199	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
o-Xylene		<0.000994 0.000994	<0.00101 0.00101	<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
Total Xylenes		<0.000994 0.000994	<0.00101 0.00101	<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
Total BTEX		<0.000994 0.000994	<0.00101 0.00101	<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
Inorganic Anions by EPA 300/300.1	Extracted:	Jan-03-17 10:36	Jan-03-17 10:36	Jan-03-17 10:36	Jan-03-17 10:36	Jan-03-17 10:36	Jan-03-17 10:36
	Analyzed:	Jan-04-17 01:27	Jan-04-17 01:48	Jan-04-17 01:56	Jan-04-17 02:03	Jan-04-17 02:10	Jan-04-17 02:17
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<5.00 5.00	5.80 5.00	5.26 5.00	6.37 5.00	5.69 5.00	5.10 5.00

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542785

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	542785-085	542785-086	542785-087	542785-088	542785-089	542785-090
	<i>Field Id:</i>	(1) SB 41 0-2	(1) SB 41 2-4	(1) SB 41 4-6	(1) SB 41 6-8	(1) SB 42 0-2	(1) SB 42 2-4
	<i>Depth:</i>	0-2	2-4	4-6	6-8	0-2	2-4
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-21-16 12:15	Dec-21-16 12:20	Dec-21-16 12:25	Dec-21-16 12:30	Dec-21-16 12:35	Dec-21-16 12:37
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-27-16 18:00	Dec-27-16 18:00	Dec-27-16 18:00	Dec-27-16 18:00	Dec-27-16 18:00	Dec-27-16 18:00
	<i>Analyzed:</i>	Dec-28-16 12:24	Dec-28-16 12:48	Dec-28-16 13:15	Dec-28-16 13:40	Dec-28-16 14:07	Dec-28-16 14:31
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
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Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542785-091	542785-092	542785-093	542785-094	542785-095	542785-096
	Field Id:	(1) SB 42 4-6	(1) SB 42 6-8	(1) SB 43 0-2	(1) SB 43 2-4	(1) SB 43 4-6	(1) SB 43 6-8
	Depth:	4-6	6-8	0-2	2-4	4-6	6-8
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-21-16 12:40	Dec-21-16 12:45	Dec-21-16 12:50	Dec-21-16 12:55	Dec-21-16 12:57	Dec-21-16 13:00
BTEX by SW 8260B SUB: TX104704215	Extracted:	Jan-04-17 18:05	Jan-04-17 18:06	Jan-04-17 18:07	Jan-04-17 21:54	Jan-04-17 21:55	Jan-04-17 21:56
	Analyzed:	Jan-05-17 01:58	Jan-05-17 02:21	Jan-05-17 02:44	Jan-05-17 04:39	Jan-05-17 04:54	Jan-05-17 05:10
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
		<0.000996 0.000996	<0.000992 0.000992	<0.000998 0.000998	<0.00101 0.00101	<0.000998 0.000998	<0.00101 0.00101
Benzene		<0.000996 0.000996	<0.000992 0.000992	<0.000998 0.000998	<0.00101 0.00101	<0.000998 0.000998	<0.00101 0.00101
Toluene		<0.000996 0.000996	<0.000992 0.000992	<0.000998 0.000998	<0.00101 0.00101	<0.000998 0.000998	<0.00101 0.00101
Ethylbenzene		<0.000996 0.000996	<0.000992 0.000992	<0.000998 0.000998	<0.00101 0.00101	<0.000998 0.000998	<0.00101 0.00101
m,p-Xylenes		<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00201 0.00201
o-Xylene		<0.000996 0.000996	<0.000992 0.000992	<0.000998 0.000998	<0.00101 0.00101	<0.000998 0.000998	<0.00101 0.00101
Total Xylenes		<0.000996 0.000996	<0.000992 0.000992	<0.000998 0.000998	<0.00101 0.00101	<0.000998 0.000998	<0.00101 0.00101
Total BTEX		<0.000996 0.000996	<0.000992 0.000992	<0.000998 0.000998	<0.00101 0.00101	<0.000998 0.000998	<0.00101 0.00101
Inorganic Anions by EPA 300/300.1	Extracted:	Jan-03-17 10:36	Jan-03-17 10:36	Jan-03-17 10:36	Jan-03-17 10:36	Jan-03-17 10:36	Jan-03-17 10:36
	Analyzed:	Jan-04-17 02:24	Jan-04-17 02:45	Jan-04-17 03:06	Jan-04-17 03:13	Jan-04-17 03:20	Jan-04-17 03:27
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		5.54 5.00	6.57 5.00	5.76 5.00	5.37 5.00	5.29 5.00	5.30 5.00

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542785

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	542785-091	542785-092	542785-093	542785-094	542785-095	542785-096
	<i>Field Id:</i>	(1) SB 42 4-6	(1) SB 42 6-8	(1) SB 43 0-2	(1) SB 43 2-4	(1) SB 43 4-6	(1) SB 43 6-8
	<i>Depth:</i>	4-6	6-8	0-2	2-4	4-6	6-8
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-21-16 12:40	Dec-21-16 12:45	Dec-21-16 12:50	Dec-21-16 12:55	Dec-21-16 12:57	Dec-21-16 13:00
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-27-16 18:00	Dec-27-16 18:00	Dec-27-16 18:00	Dec-27-16 18:00	Dec-27-16 18:00	Dec-27-16 18:00
	<i>Analyzed:</i>	Dec-28-16 15:21	Dec-28-16 15:46	Dec-28-16 16:11	Dec-28-16 16:38	Dec-28-16 17:05	Dec-28-16 17:30
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

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Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542785-097	542785-098	542785-099	542785-100	542785-101	542785-102
	Field Id:	(1) SB 44 0-2	(1) SB 44 2-4	(1) SB 44 4-6	(1) SB 44 6-8	(1) SB 44 6-8 Split	(1) SB 45 0-2
	Depth:	0-2	2-4	4-6	6-8	6-8	0-2
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Dec-21-16 13:05	Dec-21-16 00:00	Dec-21-16 00:00	Dec-21-16 13:15	Dec-21-16 13:15	Dec-21-16 13:25
BTEX by SW 8260B SUB: TX104704215	Extracted:	Jan-05-17 12:28	Jan-05-17 12:29	Jan-05-17 12:30	Jan-05-17 20:05	Jan-05-17 12:32	Jan-05-17 12:33
	Analyzed:	Jan-05-17 15:10	Jan-05-17 15:32	Jan-05-17 15:55	Jan-05-17 22:46	Jan-05-17 16:42	Jan-05-17 17:04
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Benzene	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100	<0.000998 0.000998
	Toluene	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100	<0.000998 0.000998
Ethylbenzene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100	<0.000998 0.000998
m,p-Xylenes		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200
o-Xylene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100	<0.000998 0.000998
Total Xylenes		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100	<0.000998 0.000998
Total BTEX		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.000990 0.000990	<0.00100 0.00100	<0.000998 0.000998
Inorganic Anions by EPA 300/300.1	Extracted:	Jan-03-17 10:36	Jan-03-17 10:36	Jan-03-17 10:36	Jan-03-17 10:36	Jan-04-17 10:38	Jan-04-17 10:38
	Analyzed:	Jan-04-17 03:34	Jan-04-17 03:41	Jan-04-17 03:48	Jan-04-17 03:55	Jan-04-17 11:57	Jan-04-17 12:18
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		12.7 5.00	6.19 5.00	5.13 5.00	5.06 5.00	6.06 5.00	8.51 5.00

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542785

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	542785-097	542785-098	542785-099	542785-100	542785-101	542785-102
	<i>Field Id:</i>	(1) SB 44 0-2	(1) SB 44 2-4	(1) SB 44 4-6	(1) SB 44 6-8	(1) SB 44 6-8 Split	(1) SB 45 0-2
	<i>Depth:</i>	0-2	2-4	4-6	6-8	6-8	0-2
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-21-16 13:05	Dec-21-16 00:00	Dec-21-16 00:00	Dec-21-16 13:15	Dec-21-16 13:15	Dec-21-16 13:25
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-27-16 18:00	Dec-27-16 18:00	Dec-27-16 18:00	Dec-27-16 18:00	Dec-27-16 16:00	Dec-27-16 16:00
	<i>Analyzed:</i>	Dec-29-16 07:35	Dec-28-16 18:21	Dec-29-16 07:59	Dec-29-16 08:27	Dec-28-16 10:30	Dec-28-16 12:13
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	33.5 15.0
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-27-16 18:00	Dec-27-16 18:00	Dec-27-16 18:00	Dec-27-16 18:00		
	<i>Analyzed:</i>	Dec-29-16 07:35	Dec-28-16 18:21	Dec-29-16 07:59	Dec-29-16 08:27		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
TPH By SW8015 Mod	<i>Extracted:</i>					Dec-27-16 16:00	Dec-27-16 16:00
	<i>Analyzed:</i>					Dec-28-16 10:30	Dec-28-16 12:13
	<i>Units/RL:</i>					mg/kg RL	mg/kg RL
C6-C12 Gasoline Range Hydrocarbons						<15.0 15.0	<15.0 15.0
C12-C28 Diesel Range Hydrocarbons						<15.0 15.0	33.5 15.0

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Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

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<i>Analysis Requested</i>	<i>Lab Id:</i>	542785-103	542785-104	542785-105	542785-106	542785-107	542785-108
	<i>Field Id:</i>	(1) SB 45 2-4	(1) SB 45 4-6	(1) SB 45 6-8	(1) SB 46 0-2	(1) SB 46 2-4	(1) SB 46 4-6
	<i>Depth:</i>	2-4	4-6	6-8	0-2	2-4	4-6
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-21-16 13:30	Dec-21-16 13:35	Dec-21-16 13:40	Dec-21-16 13:45	Dec-21-16 13:50	Dec-21-16 13:53
BTEX by SW 8260B SUB: TX104704215	<i>Extracted:</i>	Jan-05-17 12:34	Jan-05-17 12:35	Jan-05-17 12:36	Jan-05-17 12:37	Jan-05-17 12:38	Jan-05-17 20:06
	<i>Analyzed:</i>	Jan-05-17 17:27	Jan-05-17 17:50	Jan-05-17 18:12	Jan-05-17 18:34	Jan-05-17 18:57	Jan-05-17 23:06
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000992 0.000992	<0.000992 0.000992	<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101
Toluene		<0.000992 0.000992	<0.000992 0.000992	<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101
Ethylbenzene		<0.000992 0.000992	<0.000992 0.000992	<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101
m,p-Xylenes		<0.00198 0.00198	<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
o-Xylene		<0.000992 0.000992	<0.000992 0.000992	<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101
Total Xylenes		<0.000992 0.000992	<0.000992 0.000992	<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101
Total BTEX		<0.000992 0.000992	<0.000992 0.000992	<0.00101 0.00101	<0.00100 0.00100	<0.00100 0.00100	<0.00101 0.00101
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Jan-04-17 10:38	Jan-04-17 10:38	Jan-04-17 10:38	Jan-04-17 10:38	Jan-04-17 10:38	Jan-04-17 10:38
	<i>Analyzed:</i>	Jan-04-17 12:25	Jan-04-17 12:32	Jan-04-17 12:39	Jan-04-17 13:00	Jan-04-17 13:07	Jan-04-17 13:14
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		6.29 5.00	6.13 5.00	5.43 5.00	7.32 5.00	6.00 5.00	5.86 5.00
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-27-16 16:00	Dec-27-16 16:00	Dec-27-16 16:00	Dec-27-16 16:00	Dec-27-16 16:00	Dec-27-16 16:00
	<i>Analyzed:</i>	Dec-28-16 12:45	Dec-28-16 13:18	Dec-28-16 13:50	Dec-28-16 14:24	Dec-28-16 14:56	Dec-28-16 15:26
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C12 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C12-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	21.2 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	21.2 15.0

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Kelsey Brooks
Project Manager



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Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

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Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	542785-109	542785-110	542785-111	542785-112	542785-113	542785-114
	<i>Field Id:</i>	(1) SB 46 6-8	(1) SB 47 0-2	(1) SB 47 2-4	(1) SB 47 4-6	(1) SB 47 6-8	(1) BG 0-2
	<i>Depth:</i>	6-8	0-2	2-4	4-6	6-8	0-2
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-21-16 13:55	Dec-21-16 14:35	Dec-21-16 14:40	Dec-21-16 14:50	Dec-21-16 14:55	Dec-21-16 15:05
BTEX by SW 8260B SUB: TX104704215	<i>Extracted:</i>	Jan-05-17 12:40	Jan-06-17 14:55	Jan-05-17 12:07	Jan-05-17 12:08	Jan-05-17 12:09	Jan-04-17 18:08
	<i>Analyzed:</i>	Jan-05-17 19:42	Jan-06-17 15:13	Jan-05-17 13:19	Jan-05-17 13:38	Jan-05-17 13:57	Jan-05-17 03:06
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00101 0.00101	<0.00500 0.00500	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.000992 0.000992
Toluene		<0.00101 0.00101	<0.00500 0.00500	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.000992 0.000992
Ethylbenzene		<0.00101 0.00101	<0.00500 0.00500	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.000992 0.000992
m,p-Xylenes		<0.00202 0.00202	<0.0100 0.0100	<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00198 0.00198
o-Xylene		<0.00101 0.00101	<0.00500 0.00500	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.000992 0.000992
Total Xylenes		<0.00101 0.00101	<0.00500 0.00500	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.000992 0.000992
Total BTEX		<0.00101 0.00101	<0.00500 0.00500	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101	<0.000992 0.000992
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Jan-04-17 10:38	Jan-04-17 10:38	Jan-04-17 10:38	Jan-04-17 10:38	Jan-04-17 10:38	Jan-04-17 10:38
	<i>Analyzed:</i>	Jan-04-17 13:21	Jan-04-17 13:28	Jan-04-17 13:35	Jan-04-17 13:57	Jan-04-17 14:04	Jan-04-17 14:53
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		7.46 5.00	5.24 5.00	<5.00 5.00	5.82 5.00	5.94 5.00	6.54 5.00
TPH By SW8015 Mod	<i>Extracted:</i>	Dec-27-16 16:00	Dec-27-16 16:00	Dec-27-16 16:00	Dec-27-16 16:00	Dec-27-16 16:00	Dec-27-16 16:00
	<i>Analyzed:</i>	Dec-28-16 15:58	Dec-28-16 16:28	Dec-28-16 17:30	Dec-28-16 18:02	Dec-28-16 18:35	Dec-28-16 19:06
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C12 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C12-C28 Diesel Range Hydrocarbons		<15.0 15.0	16.7 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	16.7 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 542785

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills Pipeline Release



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Dec-22-16 09:45 am

Report Date: 06-JAN-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	542785-115	542785-116	542785-117	542785-118		
	Field Id:	(1) BG 2-4	(1) BG 4-6	(1) BG 6-8	(1) BG 8-10		
	Depth:	2-4	4-6	6-8	8-10		
	Matrix:	SOIL	SOIL	SOIL	SOIL		
	Sampled:	Dec-21-16 15:10	Dec-21-16 15:15	Dec-21-16 15:20	Dec-21-16 15:25		
BTEX by SW 8260B SUB: TX104704215	Extracted:	Jan-04-17 18:09	Jan-04-17 18:10	Jan-04-17 18:11	Jan-04-17 17:52		
	Analyzed:	Jan-05-17 03:28	Jan-05-17 03:50	Jan-05-17 04:13	Jan-04-17 21:03		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00100 0.00100	<0.000992 0.000992	<0.00100 0.00100	<0.000998 0.000998		
Toluene		<0.00100 0.00100	<0.000992 0.000992	<0.00100 0.00100	<0.000998 0.000998		
Ethylbenzene		<0.00100 0.00100	<0.000992 0.000992	<0.00100 0.00100	<0.000998 0.000998		
m,p-Xylenes		<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200		
o-Xylene		<0.00100 0.00100	<0.000992 0.000992	<0.00100 0.00100	<0.000998 0.000998		
Total Xylenes		<0.00100 0.00100	<0.000992 0.000992	<0.00100 0.00100	<0.000998 0.000998		
Total BTEX		<0.00100 0.00100	<0.000992 0.000992	<0.00100 0.00100	<0.000998 0.000998		
Inorganic Anions by EPA 300/300.1	Extracted:	Jan-04-17 10:38	Jan-04-17 10:38	Jan-04-17 10:38	Jan-04-17 10:38		
	Analyzed:	Jan-04-17 15:00	Jan-04-17 15:07	Jan-04-17 15:14	Jan-04-17 15:21		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		6.02 5.00	5.79 5.00	5.52 5.00	5.75 5.00		
TPH By SW8015 Mod	Extracted:	Dec-27-16 16:00	Dec-27-16 16:00	Dec-27-16 16:00	Dec-27-16 16:00		
	Analyzed:	Dec-28-16 19:38	Dec-29-16 07:33	Dec-29-16 08:06	Dec-29-16 08:36		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
C6-C12 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
C12-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	18.8 15.0	<15.0 15.0		
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Total TPH		<15.0 15.0	<15.0 15.0	18.8 15.0	<15.0 15.0		

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Kelsey Brooks
Project Manager

- 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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(432) 563-1800	(432) 563-1713
(602) 437-0330	



Form 2 - Surrogate Recoveries

Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006616

Sample: 542785-001 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/24/16 14:50

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	99.8	115	70-135	
o-Terphenyl	54.9	49.9	110	70-135	

Lab Batch #: 3006616

Sample: 542785-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/24/16 16:37

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.8	99.9	83	70-135	
o-Terphenyl	40.5	50.0	81	70-135	

Lab Batch #: 3006616

Sample: 542785-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/24/16 17:02

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.9	99.7	83	70-135	
o-Terphenyl	37.1	49.9	74	70-135	

Lab Batch #: 3006616

Sample: 542785-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/24/16 17:28

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.0	99.7	85	70-135	
o-Terphenyl	40.7	49.9	82	70-135	

Lab Batch #: 3006616

Sample: 542785-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/24/16 17:54

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.8	99.6	83	70-135	
o-Terphenyl	40.6	49.8	82	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006616

Sample: 542785-006 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/24/16 18:20

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.0	99.8	84	70-135	
o-Terphenyl	41.4	49.9	83	70-135	

Lab Batch #: 3006616

Sample: 542785-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/24/16 18:46

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.8	99.8	86	70-135	
o-Terphenyl	40.0	49.9	80	70-135	

Lab Batch #: 3006616

Sample: 542785-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/24/16 19:12

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.8	99.8	86	70-135	
o-Terphenyl	40.6	49.9	81	70-135	

Lab Batch #: 3006616

Sample: 542785-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/24/16 19:37

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.8	100	95	70-135	
o-Terphenyl	44.8	50.0	90	70-135	

Lab Batch #: 3006616

Sample: 542785-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/24/16 20:03

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.4	99.9	82	70-135	
o-Terphenyl	39.0	50.0	78	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006616

Sample: 542785-011 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/24/16 20:54

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.2	100	86	70-135	
o-Terphenyl	41.7	50.0	83	70-135	

Lab Batch #: 3006616

Sample: 542785-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/24/16 21:20

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	75.2	99.7	75	70-135	
o-Terphenyl	36.6	49.9	73	70-135	

Lab Batch #: 3006616

Sample: 542785-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/24/16 21:46

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.4	99.7	79	70-135	
o-Terphenyl	38.4	49.9	77	70-135	

Lab Batch #: 3006616

Sample: 542785-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/24/16 22:11

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	81.4	99.6	82	70-135	
o-Terphenyl	37.6	49.8	76	70-135	

Lab Batch #: 3006616

Sample: 542785-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/24/16 22:36

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.1	99.8	85	70-135	
o-Terphenyl	40.4	49.9	81	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006616

Sample: 542785-016 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/24/16 23:02

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	81.9	99.8	82	70-135	
o-Terphenyl	39.2	49.9	79	70-135	

Lab Batch #: 3006616

Sample: 542785-017 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/24/16 23:28

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.1	99.9	78	70-135	
o-Terphenyl	38.6	50.0	77	70-135	

Lab Batch #: 3006616

Sample: 542785-018 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/24/16 23:55

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	79.2	99.9	79	70-135	
o-Terphenyl	38.2	50.0	76	70-135	

Lab Batch #: 3006616

Sample: 542785-019 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/25/16 00:23

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	99.7	101	70-135	
o-Terphenyl	39.6	49.9	79	70-135	

Lab Batch #: 3006616

Sample: 542785-020 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/25/16 00:50

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	79.0	99.8	79	70-135	
o-Terphenyl	39.3	49.9	79	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006619

Sample: 542785-021 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/25/16 03:07

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	76.8	99.9	77	70-135	
o-Terphenyl	37.8	50.0	76	70-135	

Lab Batch #: 3006619

Sample: 542785-022 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/25/16 04:27

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.4	99.7	81	70-135	
o-Terphenyl	39.2	49.9	79	70-135	

Lab Batch #: 3006619

Sample: 542785-023 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/25/16 04:55

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	73.5	99.8	74	70-135	
o-Terphenyl	36.6	49.9	73	70-135	

Lab Batch #: 3006619

Sample: 542785-024 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/25/16 05:22

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.0	99.8	78	70-135	
o-Terphenyl	37.3	49.9	75	70-135	

Lab Batch #: 3006619

Sample: 542785-025 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/25/16 05:51

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	100	108	70-135	
o-Terphenyl	39.0	50.0	78	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006619

Sample: 542785-026 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/25/16 06:18

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	81.5	99.8	82	70-135	
o-Terphenyl	39.2	49.9	79	70-135	

Lab Batch #: 3006619

Sample: 542785-027 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/25/16 06:44

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.7	99.9	83	70-135	
o-Terphenyl	39.5	50.0	79	70-135	

Lab Batch #: 3006619

Sample: 542785-028 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/25/16 07:11

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	77.9	99.7	78	70-135	
o-Terphenyl	37.4	49.9	75	70-135	

Lab Batch #: 3006619

Sample: 542785-029 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/25/16 07:38

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.3	99.7	79	70-135	
o-Terphenyl	37.8	49.9	76	70-135	

Lab Batch #: 3006619

Sample: 542785-030 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/25/16 08:04

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.8	99.6	85	70-135	
o-Terphenyl	39.5	49.8	79	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006619

Sample: 542785-031 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/25/16 08:58

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.2	99.8	87	70-135	
o-Terphenyl	40.7	49.9	82	70-135	

Lab Batch #: 3006619

Sample: 542785-032 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/25/16 09:25

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.2	99.8	87	70-135	
o-Terphenyl	40.7	49.9	82	70-135	

Lab Batch #: 3006619

Sample: 542785-034 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/25/16 10:16

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.5	100	85	70-135	
o-Terphenyl	39.0	50.0	78	70-135	

Lab Batch #: 3006619

Sample: 542785-035 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/25/16 10:43

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.7	99.8	88	70-135	
o-Terphenyl	41.7	49.9	84	70-135	

Lab Batch #: 3006619

Sample: 542785-037 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/25/16 11:37

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	81.6	99.7	82	70-135	
o-Terphenyl	38.8	49.9	78	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006619

Sample: 542785-039 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/25/16 12:29

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.2	100	83	70-135	
o-Terphenyl	38.3	50.0	77	70-135	

Lab Batch #: 3006619

Sample: 542785-040 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/25/16 12:56

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.1	99.8	82	70-135	
o-Terphenyl	37.6	49.9	75	70-135	

Lab Batch #: 3006620

Sample: 542785-041 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/25/16 15:42

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.9	99.7	94	70-135	
o-Terphenyl	45.1	49.9	90	70-135	

Lab Batch #: 3006620

Sample: 542785-042 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/25/16 17:11

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.6	99.8	87	70-135	
o-Terphenyl	41.0	49.9	82	70-135	

Lab Batch #: 3006620

Sample: 542785-043 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/25/16 17:39

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.4	99.7	87	70-135	
o-Terphenyl	40.9	49.9	82	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006620

Sample: 542785-045 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/25/16 18:34

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.9	99.8	83	70-135	
o-Terphenyl	38.6	49.9	77	70-135	

Lab Batch #: 3006620

Sample: 542785-046 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/25/16 19:00

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.4	99.9	89	70-135	
o-Terphenyl	42.2	50.0	84	70-135	

Lab Batch #: 3006620

Sample: 542785-047 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/25/16 19:27

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.0	99.8	86	70-135	
o-Terphenyl	39.6	49.9	79	70-135	

Lab Batch #: 3006620

Sample: 542785-048 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/25/16 19:54

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.0	99.8	86	70-135	
o-Terphenyl	41.4	49.9	83	70-135	

Lab Batch #: 3006620

Sample: 542785-050 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/25/16 20:47

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.0	100	83	70-135	
o-Terphenyl	39.3	50.0	79	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006620

Sample: 542785-051 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/25/16 21:40

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.5	99.7	86	70-135	
o-Terphenyl	38.5	49.9	77	70-135	

Lab Batch #: 3006620

Sample: 542785-053 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/25/16 22:32

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.4	99.7	92	70-135	
o-Terphenyl	42.5	49.9	85	70-135	

Lab Batch #: 3006620

Sample: 542785-055 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/25/16 23:26

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.5	99.9	85	70-135	
o-Terphenyl	39.7	50.0	79	70-135	

Lab Batch #: 3006620

Sample: 542785-056 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/25/16 23:51

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.4	99.8	95	70-135	
o-Terphenyl	46.2	49.9	93	70-135	

Lab Batch #: 3006620

Sample: 542785-057 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/26/16 00:17

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.7	99.8	83	70-135	
o-Terphenyl	37.9	49.9	76	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006620

Sample: 542785-058 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/26/16 00:43

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.1	99.9	78	70-135	
o-Terphenyl	37.6	50.0	75	70-135	

Lab Batch #: 3006620

Sample: 542785-059 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/26/16 01:10

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.0	99.7	87	70-135	
o-Terphenyl	41.4	49.9	83	70-135	

Lab Batch #: 3006620

Sample: 542785-060 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/26/16 01:37

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	75.1	99.7	75	70-135	
o-Terphenyl	36.4	49.9	73	70-135	

Lab Batch #: 3006619

Sample: 542785-036 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/27/16 08:23

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	99.9	102	70-135	
o-Terphenyl	45.0	50.0	90	70-135	

Lab Batch #: 3006619

Sample: 542785-038 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/27/16 08:48

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	99.8	106	70-135	
o-Terphenyl	47.8	49.9	96	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006620

Sample: 542785-044 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/27/16 11:07

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	128	99.7	128	70-135	
o-Terphenyl	59.5	49.9	119	70-135	

Lab Batch #: 3006620

Sample: 542785-049 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/27/16 11:31

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.9	103	70-135	
o-Terphenyl	49.0	50.0	98	70-135	

Lab Batch #: 3006620

Sample: 542785-052 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/27/16 11:56

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	99.8	104	70-135	
o-Terphenyl	47.9	49.9	96	70-135	

Lab Batch #: 3006620

Sample: 542785-054 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/27/16 13:19

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.3	99.7	93	70-135	
o-Terphenyl	41.6	49.9	83	70-135	

Lab Batch #: 3006634

Sample: 542785-061 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/27/16 20:09

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	240	200	120	70-135	
o-Terphenyl	111	99.8	111	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006634

Sample: 542785-063 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/27/16 21:49

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	233	200	117	70-135	
o-Terphenyl	110	99.9	110	70-135	

Lab Batch #: 3006634

Sample: 542785-064 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/27/16 22:14

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	246	199	124	70-135	
o-Terphenyl	109	99.7	109	70-135	

Lab Batch #: 3006634

Sample: 542785-065 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/27/16 22:37

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	251	200	126	70-135	
o-Terphenyl	114	100	114	70-135	

Lab Batch #: 3006634

Sample: 542785-066 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/27/16 23:01

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	233	200	117	70-135	
o-Terphenyl	107	99.9	107	70-135	

Lab Batch #: 3006634

Sample: 542785-068 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/27/16 23:50

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	221	200	111	70-135	
o-Terphenyl	96.7	99.8	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006634

Sample: 542785-069 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 00:15

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	256	200	128	70-135	
o-Terphenyl	127	99.8	127	70-135	

Lab Batch #: 3006634

Sample: 542785-070 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 00:40

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	122	99.8	122	70-135	
o-Terphenyl	57.1	49.9	114	70-135	

Lab Batch #: 3006634

Sample: 542785-071 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 01:30

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	128	99.6	129	70-135	
o-Terphenyl	61.4	49.8	123	70-135	

Lab Batch #: 3006634

Sample: 542785-072 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 01:55

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	99.7	120	70-135	
o-Terphenyl	55.0	49.9	110	70-135	

Lab Batch #: 3006634

Sample: 542785-073 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 02:20

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	130	99.9	130	70-135	
o-Terphenyl	58.3	50.0	117	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006634

Sample: 542785-074 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 02:44

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	99.9	124	70-135	
o-Terphenyl	56.2	50.0	112	70-135	

Lab Batch #: 3006634

Sample: 542785-075 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 03:09

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	114	99.8	114	70-135	
o-Terphenyl	53.0	49.9	106	70-135	

Lab Batch #: 3006634

Sample: 542785-076 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 03:34

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	99.8	111	70-135	
o-Terphenyl	50.8	49.9	102	70-135	

Lab Batch #: 3006634

Sample: 542785-077 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 03:58

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.3	99.8	99	70-135	
o-Terphenyl	43.5	49.9	87	70-135	

Lab Batch #: 3006634

Sample: 542785-078 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 06:52

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	99.7	125	70-135	
o-Terphenyl	56.6	49.9	113	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006634

Sample: 542785-079 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 07:15

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	100	125	70-135	
o-Terphenyl	57.1	50.0	114	70-135	

Lab Batch #: 3006634

Sample: 542785-080 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 07:39

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	99.9	129	70-135	
o-Terphenyl	56.7	50.0	113	70-135	

Lab Batch #: 3006639

Sample: 542785-081 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 09:50

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	122	99.7	122	70-135	
o-Terphenyl	54.6	49.9	109	70-135	

Lab Batch #: 3006647

Sample: 542785-101 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 10:30

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.6	99.7	100	70-135	
o-Terphenyl	47.3	49.9	95	70-135	

Lab Batch #: 3006639

Sample: 542785-082 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 11:07

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.8	103	70-135	
o-Terphenyl	44.7	49.9	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006639

Sample: 542785-083 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 11:32

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	99.7	105	70-135	
o-Terphenyl	45.3	49.9	91	70-135	

Lab Batch #: 3006639

Sample: 542785-084 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 11:58

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	99.7	121	70-135	
o-Terphenyl	54.2	49.9	109	70-135	

Lab Batch #: 3006647

Sample: 542785-102 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 12:13

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	99.9	109	70-135	
o-Terphenyl	52.2	50.0	104	70-135	

Lab Batch #: 3006639

Sample: 542785-085 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 12:24

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	117	99.9	117	70-135	
o-Terphenyl	53.2	50.0	106	70-135	

Lab Batch #: 3006647

Sample: 542785-103 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 12:45

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	99.8	106	70-135	
o-Terphenyl	50.4	49.9	101	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006639

Sample: 542785-086 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 12:48

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	99.8	125	70-135	
o-Terphenyl	56.8	49.9	114	70-135	

Lab Batch #: 3006639

Sample: 542785-087 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 13:15

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	99.8	109	70-135	
o-Terphenyl	48.5	49.9	97	70-135	

Lab Batch #: 3006647

Sample: 542785-104 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 13:18

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	99.8	107	70-135	
o-Terphenyl	51.3	49.9	103	70-135	

Lab Batch #: 3006639

Sample: 542785-088 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 13:40

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	128	100	128	70-135	
o-Terphenyl	62.5	50.0	125	70-135	

Lab Batch #: 3006647

Sample: 542785-105 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 13:50

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	99.8	104	70-135	
o-Terphenyl	49.2	49.9	99	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006639

Sample: 542785-089 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 14:07

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	117	99.8	117	70-135	
o-Terphenyl	51.6	49.9	103	70-135	

Lab Batch #: 3006647

Sample: 542785-106 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 14:24

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.2	99.7	97	70-135	
o-Terphenyl	45.7	49.9	92	70-135	

Lab Batch #: 3006639

Sample: 542785-090 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 14:31

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	99.7	109	70-135	
o-Terphenyl	47.6	49.9	95	70-135	

Lab Batch #: 3006647

Sample: 542785-107 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 14:56

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	99.9	108	70-135	
o-Terphenyl	51.6	50.0	103	70-135	

Lab Batch #: 3006639

Sample: 542785-091 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 15:21

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	118	100	118	70-135	
o-Terphenyl	49.9	50.0	100	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006647

Sample: 542785-108 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 15:26

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	100	110	70-135	
o-Terphenyl	51.7	50.0	103	70-135	

Lab Batch #: 3006639

Sample: 542785-092 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 15:46

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	119	99.9	119	70-135	
o-Terphenyl	53.2	50.0	106	70-135	

Lab Batch #: 3006647

Sample: 542785-109 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 15:58

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	99.8	108	70-135	
o-Terphenyl	52.1	49.9	104	70-135	

Lab Batch #: 3006639

Sample: 542785-093 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 16:11

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	99.7	115	70-135	
o-Terphenyl	53.7	49.9	108	70-135	

Lab Batch #: 3006647

Sample: 542785-110 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 16:28

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	100	111	70-135	
o-Terphenyl	52.5	50.0	105	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006639

Sample: 542785-094 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 16:38

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.7	99.7	99	70-135	
o-Terphenyl	42.1	49.9	84	70-135	

Lab Batch #: 3006639

Sample: 542785-095 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 17:05

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	99.8	104	70-135	
o-Terphenyl	46.3	49.9	93	70-135	

Lab Batch #: 3006639

Sample: 542785-096 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 17:30

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	99.7	121	70-135	
o-Terphenyl	52.3	49.9	105	70-135	

Lab Batch #: 3006647

Sample: 542785-111 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 17:30

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	99.9	108	70-135	
o-Terphenyl	51.8	50.0	104	70-135	

Lab Batch #: 3006647

Sample: 542785-112 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 18:02

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	99.9	101	70-135	
o-Terphenyl	46.8	50.0	94	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006639

Sample: 542785-098 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 18:21

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	99.9	120	70-135	
o-Terphenyl	52.4	50.0	105	70-135	

Lab Batch #: 3006647

Sample: 542785-113 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 18:35

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	99.7	104	70-135	
o-Terphenyl	49.9	49.9	100	70-135	

Lab Batch #: 3006647

Sample: 542785-114 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 19:06

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.0	99.7	98	70-135	
o-Terphenyl	45.9	49.9	92	70-135	

Lab Batch #: 3006647

Sample: 542785-115 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 19:38

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.1	99.8	92	70-135	
o-Terphenyl	41.8	49.9	84	70-135	

Lab Batch #: 3006634

Sample: 542785-067 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 20:58

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	200	200	100	70-135	
o-Terphenyl	100	100	100	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006647

Sample: 542785-116 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/29/16 07:33

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	79.0	99.9	79	70-135	
o-Terphenyl	35.9	50.0	72	70-135	

Lab Batch #: 3006639

Sample: 542785-097 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/29/16 07:35

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	99.9	121	70-135	
o-Terphenyl	53.6	50.0	107	70-135	

Lab Batch #: 3006639

Sample: 542785-099 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/29/16 07:59

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	99.8	106	70-135	
o-Terphenyl	42.0	49.9	84	70-135	

Lab Batch #: 3006647

Sample: 542785-117 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/29/16 08:06

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	99.8	125	70-135	
o-Terphenyl	59.2	49.9	119	70-135	

Lab Batch #: 3006639

Sample: 542785-100 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/29/16 08:27

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	42.1	50.0	84	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006647

Sample: 542785-118 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/29/16 08:36

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	119	99.8	119	70-135	
o-Terphenyl	56.3	49.9	113	70-135	

Lab Batch #: 3006619

Sample: 542785-033 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/29/16 08:57

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.9	99.9	86	70-135	
o-Terphenyl	36.3	50.0	73	70-135	

Lab Batch #: 3006634

Sample: 542785-062 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/29/16 10:51

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	246	200	123	70-135	
o-Terphenyl	111	99.8	111	70-135	

Lab Batch #: 3006752

Sample: 542785-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/30/16 12:24

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	0.0479	0.0500	96	80-120	
Toluene-D8	0.0542	0.0500	108	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006752

Sample: 542785-002 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/30/16 13:03

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0521	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0502	0.0500	100	80-120	
Toluene-D8	0.0467	0.0500	93	73-132	

Lab Batch #: 3006752

Sample: 542785-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/30/16 13:22

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0547	0.0500	109	74-126	
1,2-Dichloroethane-D4	0.0501	0.0500	100	80-120	
Toluene-D8	0.0495	0.0500	99	73-132	

Lab Batch #: 3006752

Sample: 542785-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/30/16 13:41

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0535	0.0500	107	74-126	
1,2-Dichloroethane-D4	0.0499	0.0500	100	80-120	
Toluene-D8	0.0480	0.0500	96	73-132	

Lab Batch #: 3006752

Sample: 542785-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/30/16 14:00

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0541	0.0500	108	74-126	
1,2-Dichloroethane-D4	0.0514	0.0500	103	80-120	
Toluene-D8	0.0453	0.0500	91	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006752

Sample: 542785-006 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/30/16 14:19

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0532	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0542	0.0500	108	80-120	
Toluene-D8	0.0478	0.0500	96	73-132	

Lab Batch #: 3006752

Sample: 542785-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/30/16 14:38

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0539	0.0500	108	74-126	
1,2-Dichloroethane-D4	0.0493	0.0500	99	80-120	
Toluene-D8	0.0463	0.0500	93	73-132	

Lab Batch #: 3006752

Sample: 542785-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/30/16 14:57

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	0.0500	0.0500	100	80-120	
Toluene-D8	0.0470	0.0500	94	73-132	

Lab Batch #: 3006752

Sample: 542785-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/30/16 15:16

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0542	0.0500	108	74-126	
1,2-Dichloroethane-D4	0.0542	0.0500	108	80-120	
Toluene-D8	0.0463	0.0500	93	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006752

Sample: 542785-010 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/30/16 15:35

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0518	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0500	0.0500	100	80-120	
Toluene-D8	0.0492	0.0500	98	73-132	

Lab Batch #: 3006752

Sample: 542785-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/30/16 15:54

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0519	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0516	0.0500	103	80-120	
Toluene-D8	0.0461	0.0500	92	73-132	

Lab Batch #: 3006752

Sample: 542785-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/30/16 16:13

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0542	0.0500	108	74-126	
1,2-Dichloroethane-D4	0.0543	0.0500	109	80-120	
Toluene-D8	0.0479	0.0500	96	73-132	

Lab Batch #: 3006752

Sample: 542785-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/30/16 16:31

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	0.0502	0.0500	100	80-120	
Toluene-D8	0.0467	0.0500	93	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006752

Sample: 542785-014 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/30/16 16:50

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	0.0493	0.0500	99	80-120	
Toluene-D8	0.0472	0.0500	94	73-132	

Lab Batch #: 3006752

Sample: 542785-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/30/16 17:09

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0546	0.0500	109	74-126	
1,2-Dichloroethane-D4	0.0515	0.0500	103	80-120	
Toluene-D8	0.0456	0.0500	91	73-132	

Lab Batch #: 3006752

Sample: 542785-016 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/30/16 17:27

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0546	0.0500	109	74-126	
1,2-Dichloroethane-D4	0.0515	0.0500	103	80-120	
Toluene-D8	0.0456	0.0500	91	73-132	

Lab Batch #: 3006757

Sample: 542785-020 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/31/16 00:56

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	0.0550	0.0500	110	80-120	
Toluene-D8	0.0478	0.0500	96	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006757

Sample: 542785-021 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/31/16 01:15

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0539	0.0500	108	74-126	
1,2-Dichloroethane-D4	0.0502	0.0500	100	80-120	
Toluene-D8	0.0457	0.0500	91	73-132	

Lab Batch #: 3006757

Sample: 542785-022 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/31/16 01:34

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0512	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0538	0.0500	108	80-120	
Toluene-D8	0.0452	0.0500	90	73-132	

Lab Batch #: 3006764

Sample: 542785-040 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/31/16 12:07

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	0.0526	0.0500	105	80-120	
Toluene-D8	0.0472	0.0500	94	73-132	

Lab Batch #: 3006764

Sample: 542785-023 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/31/16 12:26

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0545	0.0500	109	74-126	
1,2-Dichloroethane-D4	0.0504	0.0500	101	80-120	
Toluene-D8	0.0468	0.0500	94	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006764

Sample: 542785-024 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/31/16 12:45

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0525	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0484	0.0500	97	80-120	
Toluene-D8	0.0481	0.0500	96	73-132	

Lab Batch #: 3006764

Sample: 542785-017 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/31/16 14:01

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	0.0463	0.0500	93	80-120	
Toluene-D8	0.0466	0.0500	93	73-132	

Lab Batch #: 3006764

Sample: 542785-018 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/31/16 14:20

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0555	0.0500	111	74-126	
1,2-Dichloroethane-D4	0.0544	0.0500	109	80-120	
Toluene-D8	0.0462	0.0500	92	73-132	

Lab Batch #: 3006764

Sample: 542785-032 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/31/16 15:17

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0527	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0533	0.0500	107	80-120	
Toluene-D8	0.0471	0.0500	94	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006764

Sample: 542785-033 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/31/16 15:36

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	0.0502	0.0500	100	80-120	
Toluene-D8	0.0468	0.0500	94	73-132	

Lab Batch #: 3006764

Sample: 542785-034 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/31/16 15:55

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0512	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0520	0.0500	104	80-120	
Toluene-D8	0.0453	0.0500	91	73-132	

Lab Batch #: 3006764

Sample: 542785-035 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/31/16 16:14

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	0.0508	0.0500	102	80-120	
Toluene-D8	0.0479	0.0500	96	73-132	

Lab Batch #: 3006764

Sample: 542785-036 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/31/16 16:32

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0562	0.0500	112	74-126	
1,2-Dichloroethane-D4	0.0489	0.0500	98	80-120	
Toluene-D8	0.0468	0.0500	94	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006764

Sample: 542785-041 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/31/16 16:52

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0509	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0501	0.0500	100	80-120	
Toluene-D8	0.0475	0.0500	95	73-132	

Lab Batch #: 3006764

Sample: 542785-042 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/31/16 17:10

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0529	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0475	0.0500	95	80-120	
Toluene-D8	0.0470	0.0500	94	73-132	

Lab Batch #: 3006764

Sample: 542785-028 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/31/16 17:29

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0507	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0505	0.0500	101	80-120	
Toluene-D8	0.0461	0.0500	92	73-132	

Lab Batch #: 3006764

Sample: 542785-029 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/31/16 17:48

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0518	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0506	0.0500	101	80-120	
Toluene-D8	0.0485	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006764

Sample: 542785-030 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/31/16 18:07

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0516	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0444	0.0500	89	80-120	
Toluene-D8	0.0452	0.0500	90	73-132	

Lab Batch #: 3006852

Sample: 542785-026 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/17 13:27

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0527	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0507	0.0500	101	80-120	
Toluene-D8	0.0472	0.0500	94	73-132	

Lab Batch #: 3006852

Sample: 542785-027 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/17 13:46

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0532	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0475	0.0500	95	80-120	
Toluene-D8	0.0468	0.0500	94	73-132	

Lab Batch #: 3006852

Sample: 542785-031 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/17 14:05

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0511	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0511	0.0500	102	80-120	
Toluene-D8	0.0478	0.0500	96	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006852

Sample: 542785-025 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/17 14:24

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0466	0.0500	93	74-126	
1,2-Dichloroethane-D4	0.0465	0.0500	93	80-120	
Toluene-D8	0.0416	0.0500	83	73-132	

Lab Batch #: 3006852

Sample: 542785-019 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/17 14:43

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0536	0.0500	107	74-126	
1,2-Dichloroethane-D4	0.0537	0.0500	107	80-120	
Toluene-D8	0.0421	0.0500	84	73-132	

Lab Batch #: 3006852

Sample: 542785-025 / DL

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/17 15:01

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	0.0516	0.0500	103	80-120	
Toluene-D8	0.0454	0.0500	91	73-132	

Lab Batch #: 3006852

Sample: 542785-037 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/17 16:55

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	0.0477	0.0500	95	80-120	
Toluene-D8	0.0446	0.0500	89	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006852

Sample: 542785-038 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/17 17:13

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0507	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0535	0.0500	107	80-120	
Toluene-D8	0.0466	0.0500	93	73-132	

Lab Batch #: 3006852

Sample: 542785-039 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/17 17:33

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0508	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0440	0.0500	88	80-120	
Toluene-D8	0.0488	0.0500	98	73-132	

Lab Batch #: 3006852

Sample: 542785-053 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/17 17:52

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0522	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0500	0.0500	100	80-120	
Toluene-D8	0.0470	0.0500	94	73-132	

Lab Batch #: 3006852

Sample: 542785-050 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/17 18:10

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0527	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0496	0.0500	99	80-120	
Toluene-D8	0.0422	0.0500	84	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006852

Sample: 542785-049 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/17 18:29

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0511	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0511	0.0500	102	80-120	
Toluene-D8	0.0453	0.0500	91	73-132	

Lab Batch #: 3006852

Sample: 542785-048 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/17 18:48

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0511	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0476	0.0500	95	80-120	
Toluene-D8	0.0459	0.0500	92	73-132	

Lab Batch #: 3006858

Sample: 542785-043 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/17 22:21

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0494	0.0500	99	74-126	
1,2-Dichloroethane-D4	0.0495	0.0500	99	80-120	
Toluene-D8	0.0456	0.0500	91	73-132	

Lab Batch #: 3006858

Sample: 542785-044 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/17 22:40

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0511	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0489	0.0500	98	80-120	
Toluene-D8	0.0457	0.0500	91	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006858

Sample: 542785-045 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/17 22:59

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0513	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0476	0.0500	95	80-120	
Toluene-D8	0.0443	0.0500	89	73-132	

Lab Batch #: 3006858

Sample: 542785-046 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/17 23:18

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0515	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0512	0.0500	102	80-120	
Toluene-D8	0.0453	0.0500	91	73-132	

Lab Batch #: 3006858

Sample: 542785-047 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/17 23:37

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0521	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0515	0.0500	103	80-120	
Toluene-D8	0.0458	0.0500	92	73-132	

Lab Batch #: 3006858

Sample: 542785-056 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/17 23:56

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0532	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0467	0.0500	93	80-120	
Toluene-D8	0.0442	0.0500	88	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006858

Sample: 542785-051 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 00:15

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0541	0.0500	108	74-126	
1,2-Dichloroethane-D4	0.0517	0.0500	103	80-120	
Toluene-D8	0.0464	0.0500	93	73-132	

Lab Batch #: 3006858

Sample: 542785-052 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 00:35

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0517	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0511	0.0500	102	80-120	
Toluene-D8	0.0468	0.0500	94	73-132	

Lab Batch #: 3006968

Sample: 542785-055 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 10:49

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0540	0.0500	108	74-126	
1,2-Dichloroethane-D4	0.0527	0.0500	105	80-120	
Toluene-D8	0.0441	0.0500	88	73-132	

Lab Batch #: 3006968

Sample: 542785-054 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 11:08

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0535	0.0500	107	74-126	
1,2-Dichloroethane-D4	0.0486	0.0500	97	80-120	
Toluene-D8	0.0455	0.0500	91	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006968

Sample: 542785-057 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 11:27

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0525	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0478	0.0500	96	80-120	
Toluene-D8	0.0467	0.0500	93	73-132	

Lab Batch #: 3006968

Sample: 542785-058 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 11:46

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0530	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0503	0.0500	101	80-120	
Toluene-D8	0.0480	0.0500	96	73-132	

Lab Batch #: 3006968

Sample: 542785-059 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 12:05

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0512	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0500	0.0500	100	80-120	
Toluene-D8	0.0503	0.0500	101	73-132	

Lab Batch #: 3006968

Sample: 542785-060 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 12:24

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0545	0.0500	109	74-126	
1,2-Dichloroethane-D4	0.0533	0.0500	107	80-120	
Toluene-D8	0.0452	0.0500	90	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006968

Sample: 542785-062 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 13:02

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0523	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0493	0.0500	99	80-120	
Toluene-D8	0.0480	0.0500	96	73-132	

Lab Batch #: 3006968

Sample: 542785-063 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 13:20

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0517	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0489	0.0500	98	80-120	
Toluene-D8	0.0499	0.0500	100	73-132	

Lab Batch #: 3006968

Sample: 542785-064 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 13:40

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0519	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0485	0.0500	97	80-120	
Toluene-D8	0.0447	0.0500	89	73-132	

Lab Batch #: 3006968

Sample: 542785-065 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 13:59

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0538	0.0500	108	74-126	
1,2-Dichloroethane-D4	0.0556	0.0500	111	80-120	
Toluene-D8	0.0445	0.0500	89	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006968

Sample: 542785-066 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 14:18

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0555	0.0500	111	74-126	
1,2-Dichloroethane-D4	0.0496	0.0500	99	80-120	
Toluene-D8	0.0457	0.0500	91	73-132	

Lab Batch #: 3006968

Sample: 542785-067 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 14:37

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0492	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0456	0.0500	91	80-120	
Toluene-D8	0.0451	0.0500	90	73-132	

Lab Batch #: 3006968

Sample: 542785-068 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 14:56

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0504	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0463	0.0500	93	80-120	
Toluene-D8	0.0462	0.0500	92	73-132	

Lab Batch #: 3006968

Sample: 542785-069 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 15:15

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0541	0.0500	108	74-126	
1,2-Dichloroethane-D4	0.0513	0.0500	103	80-120	
Toluene-D8	0.0477	0.0500	95	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006968

Sample: 542785-070 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 15:34

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0532	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0495	0.0500	99	80-120	
Toluene-D8	0.0460	0.0500	92	73-132	

Lab Batch #: 3006968

Sample: 542785-071 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 15:53

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0510	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0474	0.0500	95	80-120	
Toluene-D8	0.0456	0.0500	91	73-132	

Lab Batch #: 3006968

Sample: 542785-061 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 16:49

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0524	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0503	0.0500	101	80-120	
Toluene-D8	0.0476	0.0500	95	73-132	

Lab Batch #: 3006958

Sample: 542785-118 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 21:03

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0492	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0515	0.0500	103	80-120	
Toluene-D8	0.0499	0.0500	100	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006958

Sample: 542785-079 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 21:26

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0489	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0528	0.0500	106	80-120	
Toluene-D8	0.0493	0.0500	99	73-132	

Lab Batch #: 3006958

Sample: 542785-080 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 21:49

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0491	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0487	0.0500	97	80-120	
Toluene-D8	0.0502	0.0500	100	73-132	

Lab Batch #: 3006958

Sample: 542785-082 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 22:34

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0503	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0499	0.0500	100	80-120	
Toluene-D8	0.0497	0.0500	99	73-132	

Lab Batch #: 3006958

Sample: 542785-083 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 22:57

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0517	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0478	0.0500	96	80-120	
Toluene-D8	0.0497	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006958

Sample: 542785-084 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 23:19

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	0.0493	0.0500	99	80-120	
Toluene-D8	0.0494	0.0500	99	73-132	

Lab Batch #: 3006958

Sample: 542785-085 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 23:42

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	0.0500	0.0500	100	80-120	
Toluene-D8	0.0499	0.0500	100	73-132	

Lab Batch #: 3006958

Sample: 542785-086 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 00:05

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	0.0519	0.0500	104	80-120	
Toluene-D8	0.0490	0.0500	98	73-132	

Lab Batch #: 3006958

Sample: 542785-087 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 00:27

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0505	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0493	0.0500	99	80-120	
Toluene-D8	0.0499	0.0500	100	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006958

Sample: 542785-088 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 00:50

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0504	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0522	0.0500	104	80-120	
Toluene-D8	0.0501	0.0500	100	73-132	

Lab Batch #: 3006958

Sample: 542785-089 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 01:13

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0514	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0507	0.0500	101	80-120	
Toluene-D8	0.0489	0.0500	98	73-132	

Lab Batch #: 3006958

Sample: 542785-090 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 01:35

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	0.0478	0.0500	96	80-120	
Toluene-D8	0.0498	0.0500	100	73-132	

Lab Batch #: 3006958

Sample: 542785-091 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 01:58

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	0.0524	0.0500	105	80-120	
Toluene-D8	0.0488	0.0500	98	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006958

Sample: 542785-092 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 02:21

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0510	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0488	0.0500	98	80-120	
Toluene-D8	0.0495	0.0500	99	73-132	

Lab Batch #: 3006958

Sample: 542785-093 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 02:44

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0522	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0532	0.0500	106	80-120	
Toluene-D8	0.0495	0.0500	99	73-132	

Lab Batch #: 3006958

Sample: 542785-114 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 03:06

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0506	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0473	0.0500	95	80-120	
Toluene-D8	0.0502	0.0500	100	73-132	

Lab Batch #: 3006958

Sample: 542785-115 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 03:28

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0511	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0497	0.0500	99	80-120	
Toluene-D8	0.0488	0.0500	98	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006958

Sample: 542785-116 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 03:50

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0521	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0514	0.0500	103	80-120	
Toluene-D8	0.0493	0.0500	99	73-132	

Lab Batch #: 3006958

Sample: 542785-117 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 04:13

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0506	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0495	0.0500	99	80-120	
Toluene-D8	0.0489	0.0500	98	73-132	

Lab Batch #: 3006935

Sample: 542785-078 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 04:23

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0456	0.0500	91	74-126	
1,2-Dichloroethane-D4	0.0444	0.0500	89	80-120	
Toluene-D8	0.0463	0.0500	93	73-132	

Lab Batch #: 3006935

Sample: 542785-094 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 04:39

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0532	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0461	0.0500	92	80-120	
Toluene-D8	0.0441	0.0500	88	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006935

Sample: 542785-095 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 04:54

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0529	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0449	0.0500	90	80-120	
Toluene-D8	0.0461	0.0500	92	73-132	

Lab Batch #: 3006935

Sample: 542785-096 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 05:10

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0521	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0417	0.0500	83	80-120	
Toluene-D8	0.0446	0.0500	89	73-132	

Lab Batch #: 3006935

Sample: 542785-072 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 05:56

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0545	0.0500	109	74-126	
1,2-Dichloroethane-D4	0.0430	0.0500	86	80-120	
Toluene-D8	0.0444	0.0500	89	73-132	

Lab Batch #: 3007061

Sample: 542785-074 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 12:54

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0513	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0490	0.0500	98	80-120	
Toluene-D8	0.0500	0.0500	100	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3007061

Sample: 542785-081 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 13:16

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0512	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0498	0.0500	100	80-120	
Toluene-D8	0.0488	0.0500	98	73-132	

Lab Batch #: 3006989

Sample: 542785-111 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 13:19

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0505	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0475	0.0500	95	80-120	
Toluene-D8	0.0433	0.0500	87	73-132	

Lab Batch #: 3006989

Sample: 542785-112 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 13:38

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	0.0476	0.0500	95	80-120	
Toluene-D8	0.0461	0.0500	92	73-132	

Lab Batch #: 3007061

Sample: 542785-073 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 13:39

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	0.0499	0.0500	100	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006989

Sample: 542785-113 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 13:57

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0546	0.0500	109	74-126	
1,2-Dichloroethane-D4	0.0549	0.0500	110	80-120	
Toluene-D8	0.0459	0.0500	92	73-132	

Lab Batch #: 3007061

Sample: 542785-076 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 14:24

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0518	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0519	0.0500	104	80-120	
Toluene-D8	0.0492	0.0500	98	73-132	

Lab Batch #: 3007061

Sample: 542785-077 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 14:47

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0525	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0506	0.0500	101	80-120	
Toluene-D8	0.0487	0.0500	97	73-132	

Lab Batch #: 3007061

Sample: 542785-097 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 15:10

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0522	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0496	0.0500	99	80-120	
Toluene-D8	0.0493	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3007061

Sample: 542785-098 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 15:32

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0518	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0487	0.0500	97	80-120	
Toluene-D8	0.0500	0.0500	100	73-132	

Lab Batch #: 3007061

Sample: 542785-099 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 15:55

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0515	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0493	0.0500	99	80-120	
Toluene-D8	0.0499	0.0500	100	73-132	

Lab Batch #: 3006989

Sample: 542785-075 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 16:38

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0531	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0503	0.0500	101	80-120	
Toluene-D8	0.0434	0.0500	87	73-132	

Lab Batch #: 3007061

Sample: 542785-101 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 16:42

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0528	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0510	0.0500	102	80-120	
Toluene-D8	0.0488	0.0500	98	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3007061

Sample: 542785-102 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 17:04

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0523	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0501	0.0500	100	80-120	
Toluene-D8	0.0489	0.0500	98	73-132	

Lab Batch #: 3007061

Sample: 542785-103 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 17:27

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0522	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0506	0.0500	101	80-120	
Toluene-D8	0.0490	0.0500	98	73-132	

Lab Batch #: 3007061

Sample: 542785-104 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 17:50

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0522	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0503	0.0500	101	80-120	
Toluene-D8	0.0498	0.0500	100	73-132	

Lab Batch #: 3007061

Sample: 542785-105 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 18:12

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0521	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0518	0.0500	104	80-120	
Toluene-D8	0.0494	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3007061

Sample: 542785-106 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 18:34

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0542	0.0500	108	74-126	
1,2-Dichloroethane-D4	0.0527	0.0500	105	80-120	
Toluene-D8	0.0496	0.0500	99	73-132	

Lab Batch #: 3007061

Sample: 542785-107 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 18:57

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0532	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0520	0.0500	104	80-120	
Toluene-D8	0.0494	0.0500	99	73-132	

Lab Batch #: 3007061

Sample: 542785-109 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 19:42

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	0.0517	0.0500	103	80-120	
Toluene-D8	0.0501	0.0500	100	73-132	

Lab Batch #: 3007037

Sample: 542785-100 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 22:46

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0541	0.0500	108	74-126	
1,2-Dichloroethane-D4	0.0488	0.0500	98	80-120	
Toluene-D8	0.0426	0.0500	85	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3007037

Sample: 542785-108 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 23:06

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0504	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0462	0.0500	92	80-120	
Toluene-D8	0.0430	0.0500	86	73-132	

Lab Batch #: 3007078

Sample: 542785-110 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/06/17 15:13

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0561	0.0500	112	74-126	
1,2-Dichloroethane-D4	0.0574	0.0500	115	80-120	
Toluene-D8	0.0423	0.0500	85	73-132	

Lab Batch #: 3006616

Sample: 717861-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/24/16 13:33

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	91.9	100	92	70-135	
o-Terphenyl	44.9	50.0	90	70-135	

Lab Batch #: 3006619

Sample: 717862-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/25/16 01:44

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	97.5	100	98	70-135	
o-Terphenyl	47.4	50.0	95	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006620

Sample: 717863-1-BLK / BLK

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/25/16 14:20

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.6	100	96	70-135	
o-Terphenyl	44.7	50.0	89	70-135	

Lab Batch #: 3006634

Sample: 717868-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/27/16 18:55

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	100	107	70-135	
o-Terphenyl	50.0	50.0	100	70-135	

Lab Batch #: 3006639

Sample: 717869-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/28/16 08:32

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	100	121	70-135	
o-Terphenyl	52.6	50.0	105	70-135	

Lab Batch #: 3006647

Sample: 717867-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/28/16 08:49

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.2	100	98	70-135	
o-Terphenyl	49.7	50.0	99	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006752

Sample: 717975-1-BLK / BLK

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/30/16 12:06

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0501	0.0500	100	74-126	
1,2-Dichloroethane-D4	0.0511	0.0500	102	80-120	
Toluene-D8	0.0496	0.0500	99	73-132	

Lab Batch #: 3006757

Sample: 717980-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/31/16 00:37

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	0.0498	0.0500	100	80-120	
Toluene-D8	0.0459	0.0500	92	73-132	

Lab Batch #: 3006764

Sample: 717982-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/31/16 11:48

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0491	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0514	0.0500	103	80-120	
Toluene-D8	0.0518	0.0500	104	73-132	

Lab Batch #: 3006852

Sample: 718028-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/03/17 12:30

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0495	0.0500	99	74-126	
1,2-Dichloroethane-D4	0.0503	0.0500	101	80-120	
Toluene-D8	0.0462	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.



Form 2 - Surrogate Recoveries

Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006858

Sample: 718031-1-BLK / BLK

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/03/17 21:43

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	0.0498	0.0500	100	80-120	
Toluene-D8	0.0447	0.0500	89	73-132	

Lab Batch #: 3006968

Sample: 718110-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/04/17 10:28

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	0.0520	0.0500	104	80-120	
Toluene-D8	0.0452	0.0500	90	73-132	

Lab Batch #: 3006958

Sample: 718105-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/04/17 20:41

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0488	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0479	0.0500	96	80-120	
Toluene-D8	0.0491	0.0500	98	73-132	

Lab Batch #: 3006935

Sample: 718082-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/05/17 00:03

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	0.0472	0.0500	94	80-120	
Toluene-D8	0.0443	0.0500	89	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006989

Sample: 718120-1-BLK / BLK

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/05/17 12:21

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	0.0476	0.0500	95	80-120	
Toluene-D8	0.0455	0.0500	91	73-132	

Lab Batch #: 3007061

Sample: 718164-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/05/17 12:31

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0497	0.0500	99	74-126	
1,2-Dichloroethane-D4	0.0494	0.0500	99	80-120	
Toluene-D8	0.0492	0.0500	98	73-132	

Lab Batch #: 3007037

Sample: 718157-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/05/17 22:27

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	0.0439	0.0500	88	80-120	
Toluene-D8	0.0445	0.0500	89	73-132	

Lab Batch #: 3007078

Sample: 718170-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/06/17 14:28

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0521	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0469	0.0500	94	80-120	
Toluene-D8	0.0452	0.0500	90	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006616

Sample: 717861-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/24/16 13:58

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	100	116	70-135	
o-Terphenyl	49.2	50.0	98	70-135	

Lab Batch #: 3006619

Sample: 717862-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/25/16 02:12

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	42.2	50.0	84	70-135	

Lab Batch #: 3006620

Sample: 717863-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/25/16 14:48

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	100	108	70-135	
o-Terphenyl	43.3	50.0	87	70-135	

Lab Batch #: 3006634

Sample: 717868-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/27/16 19:20

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	127	100	127	70-135	
o-Terphenyl	49.0	50.0	98	70-135	

Lab Batch #: 3006639

Sample: 717869-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/28/16 08:58

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	130	100	130	70-135	
o-Terphenyl	59.2	50.0	118	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006647

Sample: 717867-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/28/16 09:23

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	100	109	70-135	
o-Terphenyl	53.2	50.0	106	70-135	

Lab Batch #: 3006752

Sample: 717975-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/30/16 10:13

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	0.0498	0.0500	100	80-120	
Toluene-D8	0.0457	0.0500	91	73-132	

Lab Batch #: 3006757

Sample: 717980-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/30/16 18:22

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	0.0526	0.0500	105	80-120	
Toluene-D8	0.0435	0.0500	87	73-132	

Lab Batch #: 3006764

Sample: 717982-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/31/16 09:54

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	0.0509	0.0500	102	80-120	
Toluene-D8	0.0445	0.0500	89	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006852

Sample: 718028-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/03/17 10:32

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0518	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0523	0.0500	105	80-120	
Toluene-D8	0.0442	0.0500	88	73-132	

Lab Batch #: 3006858

Sample: 718031-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/03/17 19:50

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0501	0.0500	100	74-126	
1,2-Dichloroethane-D4	0.0499	0.0500	100	80-120	
Toluene-D8	0.0465	0.0500	93	73-132	

Lab Batch #: 3006968

Sample: 718110-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/04/17 08:34

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0486	0.0500	97	74-126	
1,2-Dichloroethane-D4	0.0493	0.0500	99	80-120	
Toluene-D8	0.0448	0.0500	90	73-132	

Lab Batch #: 3006958

Sample: 718105-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/04/17 18:25

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0494	0.0500	99	74-126	
1,2-Dichloroethane-D4	0.0493	0.0500	99	80-120	
Toluene-D8	0.0500	0.0500	100	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006935

Sample: 718082-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/04/17 21:59

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0521	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0555	0.0500	111	80-120	
Toluene-D8	0.0492	0.0500	98	73-132	

Lab Batch #: 3006989

Sample: 718120-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/05/17 09:49

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0533	0.0500	107	74-126	
1,2-Dichloroethane-D4	0.0513	0.0500	103	80-120	
Toluene-D8	0.0440	0.0500	88	73-132	

Lab Batch #: 3007061

Sample: 718164-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/05/17 10:09

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	0.0489	0.0500	98	80-120	
Toluene-D8	0.0491	0.0500	98	73-132	

Lab Batch #: 3007037

Sample: 718157-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/05/17 19:35

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0503	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0482	0.0500	96	80-120	
Toluene-D8	0.0421	0.0500	84	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3007078

Sample: 718170-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/06/17 11:52

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0495	0.0500	99	74-126	
1,2-Dichloroethane-D4	0.0526	0.0500	105	80-120	
Toluene-D8	0.0451	0.0500	90	73-132	

Lab Batch #: 3006616

Sample: 717861-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/24/16 14:24

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	114	100	114	70-135	
o-Terphenyl	46.4	50.0	93	70-135	

Lab Batch #: 3006619

Sample: 717862-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/25/16 02:39

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	109	100	109	70-135	
o-Terphenyl	44.4	50.0	89	70-135	

Lab Batch #: 3006620

Sample: 717863-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/25/16 15:14

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	114	100	114	70-135	
o-Terphenyl	44.9	50.0	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006634

Sample: 717868-1-BSD / BSD

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/27/16 19:46

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	126	100	126	70-135	
o-Terphenyl	50.6	50.0	101	70-135	

Lab Batch #: 3006639

Sample: 717869-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/28/16 09:24

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	130	100	130	70-135	
o-Terphenyl	60.6	50.0	121	70-135	

Lab Batch #: 3006647

Sample: 717867-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/28/16 09:54

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	100	109	70-135	
o-Terphenyl	53.0	50.0	106	70-135	

Lab Batch #: 3006752

Sample: 717975-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/30/16 10:32

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0503	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0522	0.0500	104	80-120	
Toluene-D8	0.0455	0.0500	91	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006757

Sample: 717980-1-BSD / BSD

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/30/16 18:41

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0503	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0534	0.0500	107	80-120	
Toluene-D8	0.0461	0.0500	92	73-132	

Lab Batch #: 3006764

Sample: 717982-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/31/16 10:13

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0503	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0532	0.0500	106	80-120	
Toluene-D8	0.0469	0.0500	94	73-132	

Lab Batch #: 3006852

Sample: 718028-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/03/17 10:51

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0519	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0526	0.0500	105	80-120	
Toluene-D8	0.0467	0.0500	93	73-132	

Lab Batch #: 3006858

Sample: 718031-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/03/17 20:09

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0505	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0498	0.0500	100	80-120	
Toluene-D8	0.0463	0.0500	93	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006968

Sample: 718110-1-BSD / BSD

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/04/17 08:53

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0492	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0485	0.0500	97	80-120	
Toluene-D8	0.0461	0.0500	92	73-132	

Lab Batch #: 3006958

Sample: 718105-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/04/17 18:48

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0497	0.0500	99	74-126	
1,2-Dichloroethane-D4	0.0484	0.0500	97	80-120	
Toluene-D8	0.0488	0.0500	98	73-132	

Lab Batch #: 3006935

Sample: 718082-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/04/17 22:15

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0430	0.0500	86	74-126	
1,2-Dichloroethane-D4	0.0515	0.0500	103	80-120	
Toluene-D8	0.0489	0.0500	98	73-132	

Lab Batch #: 3006989

Sample: 718120-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/05/17 10:08

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0492	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0473	0.0500	95	80-120	
Toluene-D8	0.0470	0.0500	94	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3007061

Sample: 718164-1-BSD / BSD

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/05/17 10:31

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0506	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0502	0.0500	100	80-120	
Toluene-D8	0.0491	0.0500	98	73-132	

Lab Batch #: 3007037

Sample: 718157-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/05/17 19:54

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0507	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0463	0.0500	93	80-120	
Toluene-D8	0.0451	0.0500	90	73-132	

Lab Batch #: 3007078

Sample: 718170-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/06/17 12:11

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0489	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0488	0.0500	98	80-120	
Toluene-D8	0.0520	0.0500	104	73-132	

Lab Batch #: 3006616

Sample: 542785-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/24/16 15:16

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	102	99.8	102	70-135	
o-Terphenyl	42.0	49.9	84	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006619

Sample: 542785-021 S / MS

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/25/16 03:32

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	99.9	110	70-135	
o-Terphenyl	52.8	50.0	106	70-135	

Lab Batch #: 3006620

Sample: 542785-041 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/25/16 16:12

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	99.9	108	70-135	
o-Terphenyl	44.9	50.0	90	70-135	

Lab Batch #: 3006634

Sample: 542785-061 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/27/16 20:34

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	246	200	123	70-135	
o-Terphenyl	101	99.8	101	70-135	

Lab Batch #: 3006639

Sample: 542785-081 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 10:15

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	99.9	129	70-135	
o-Terphenyl	59.4	50.0	119	70-135	

Lab Batch #: 3006647

Sample: 542785-101 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 11:06

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	99.8	115	70-135	
o-Terphenyl	55.0	49.9	110	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006752

Sample: 542785-001 S / MS

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/30/16 10:51

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0501	0.0500	100	74-126	
1,2-Dichloroethane-D4	0.0500	0.0500	100	80-120	
Toluene-D8	0.0454	0.0500	91	73-132	

Lab Batch #: 3006757

Sample: 542785-020 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/30/16 19:00

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0546	0.0500	109	74-126	
1,2-Dichloroethane-D4	0.0515	0.0500	103	80-120	
Toluene-D8	0.0474	0.0500	95	73-132	

Lab Batch #: 3006764

Sample: 542785-040 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/31/16 10:32

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0508	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0481	0.0500	96	80-120	
Toluene-D8	0.0451	0.0500	90	73-132	

Lab Batch #: 3006852

Sample: 542784-014 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/17 11:10

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0507	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0476	0.0500	95	80-120	
Toluene-D8	0.0450	0.0500	90	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006858

Sample: 542784-013 S / MS

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/17 20:28

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0481	0.0500	96	74-126	
1,2-Dichloroethane-D4	0.0477	0.0500	95	80-120	
Toluene-D8	0.0454	0.0500	91	73-132	

Lab Batch #: 3006968

Sample: 542785-055 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 09:12

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0505	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0480	0.0500	96	80-120	
Toluene-D8	0.0463	0.0500	93	73-132	

Lab Batch #: 3006958

Sample: 542785-118 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 19:10

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	0.0520	0.0500	104	80-120	
Toluene-D8	0.0491	0.0500	98	73-132	

Lab Batch #: 3006935

Sample: 542784-024 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 22:31

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0439	0.0500	88	74-126	
1,2-Dichloroethane-D4	0.0473	0.0500	95	80-120	
Toluene-D8	0.0513	0.0500	103	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006989

Sample: 543133-001 S / MS

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 10:27

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0523	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0444	0.0500	89	80-120	
Toluene-D8	0.0457	0.0500	91	73-132	

Lab Batch #: 3007061

Sample: 542785-074 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 10:57

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0509	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0508	0.0500	102	80-120	
Toluene-D8	0.0492	0.0500	98	73-132	

Lab Batch #: 3006616

Sample: 542785-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/24/16 16:10

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	108	100	108	70-135	
o-Terphenyl	43.7	50.0	87	70-135	

Lab Batch #: 3006620

Sample: 542785-041 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/25/16 16:43

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	106	99.9	106	70-135	
o-Terphenyl	41.4	50.0	83	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006619

Sample: 542785-021 SD / MSD

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/27/16 07:34

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	126	99.8	126	70-135	
o-Terphenyl	55.5	49.9	111	70-135	

Lab Batch #: 3006634

Sample: 542785-061 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/27/16 20:59

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	257	199	129	70-135	
o-Terphenyl	110	99.7	110	70-135	

Lab Batch #: 3006639

Sample: 542785-081 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 10:40

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	119	99.9	119	70-135	
o-Terphenyl	55.4	50.0	111	70-135	

Lab Batch #: 3006647

Sample: 542785-101 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/28/16 11:40

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	99.7	115	70-135	
o-Terphenyl	53.8	49.9	108	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006752

Sample: 542785-001 SD / MSD

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/30/16 11:10

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0533	0.0500	107	74-126	
1,2-Dichloroethane-D4	0.0518	0.0500	104	80-120	
Toluene-D8	0.0490	0.0500	98	73-132	

Lab Batch #: 3006757

Sample: 542785-020 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/30/16 19:18

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0554	0.0500	111	74-126	
1,2-Dichloroethane-D4	0.0547	0.0500	109	80-120	
Toluene-D8	0.0467	0.0500	93	73-132	

Lab Batch #: 3006764

Sample: 542785-040 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/31/16 10:51

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	0.0507	0.0500	101	80-120	
Toluene-D8	0.0456	0.0500	91	73-132	

Lab Batch #: 3006852

Sample: 542784-014 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/17 11:29

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0511	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0501	0.0500	100	80-120	
Toluene-D8	0.0465	0.0500	93	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006858

Sample: 542784-013 SD / MSD

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/17 20:47

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0493	0.0500	99	74-126	
1,2-Dichloroethane-D4	0.0479	0.0500	96	80-120	
Toluene-D8	0.0453	0.0500	91	73-132	

Lab Batch #: 3006968

Sample: 542785-055 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 09:31

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0514	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0447	0.0500	89	80-120	
Toluene-D8	0.0457	0.0500	91	73-132	

Lab Batch #: 3006958

Sample: 542785-118 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 19:33

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0505	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0509	0.0500	102	80-120	
Toluene-D8	0.0502	0.0500	100	73-132	

Lab Batch #: 3006935

Sample: 542784-024 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/17 22:46

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0474	0.0500	95	74-126	
1,2-Dichloroethane-D4	0.0453	0.0500	91	80-120	
Toluene-D8	0.0518	0.0500	104	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: OWL Bobcat/Red Hills Pipeline Release

Work Orders : 542785,

Lab Batch #: 3006989

Sample: 543133-001 SD / MSD

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 10:46

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	0.0511	0.0500	102	80-120	
Toluene-D8	0.0448	0.0500	90	73-132	

Lab Batch #: 3007061

Sample: 542785-074 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 11:20

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0523	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0493	0.0500	99	80-120	
Toluene-D8	0.0490	0.0500	98	73-132	

Lab Batch #: 3007037

Sample: 542988-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/17 20:52

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0625	0.0500	125	74-126	
1,2-Dichloroethane-D4	0.0533	0.0500	107	80-120	
Toluene-D8	0.0519	0.0500	104	73-132	

Lab Batch #: 3007078

Sample: 543062-001 SD / MSD

Batch: 1 Matrix: Sludge

Units: mg/kg

Date Analyzed: 01/06/17 12:50

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0545	0.0500	109	74-126	
1,2-Dichloroethane-D4	0.0458	0.0500	92	80-120	
Toluene-D8	0.0430	0.0500	86	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: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 542785

Project ID:

Analyst: JTR

Date Prepared: 12/30/2016

Date Analyzed: 12/30/2016

Lab Batch ID: 3006752

Sample: 717975-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.0886	89	0.100	0.0888	89	0	62-132	25	
Toluene	<0.00100	0.100	0.0828	83	0.100	0.0849	85	3	66-124	25	
Ethylbenzene	<0.00100	0.100	0.0918	92	0.100	0.0913	91	1	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.184	92	0.200	0.186	93	1	69-128	25	
o-Xylene	<0.00100	0.100	0.0883	88	0.100	0.0906	91	3	72-131	25	

Analyst: JTR

Date Prepared: 12/30/2016

Date Analyzed: 12/30/2016

Lab Batch ID: 3006757

Sample: 717980-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.0846	85	0.100	0.0854	85	1	62-132	25	
Toluene	<0.00100	0.100	0.0761	76	0.100	0.0816	82	7	66-124	25	
Ethylbenzene	<0.00100	0.100	0.0854	85	0.100	0.0889	89	4	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.174	87	0.200	0.177	89	2	69-128	25	
o-Xylene	<0.00100	0.100	0.0871	87	0.100	0.0833	83	4	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: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 542785

Analyst: JTR

Date Prepared: 12/31/2016

Project ID:

Date Analyzed: 12/31/2016

Lab Batch ID: 3006764

Sample: 717982-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.0806	81	0.100	0.0796	80	1	62-132	25	
Toluene	<0.00100	0.100	0.0749	75	0.100	0.0782	78	4	66-124	25	
Ethylbenzene	<0.00100	0.100	0.0832	83	0.100	0.0828	83	0	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.172	86	0.200	0.166	83	4	69-128	25	
o-Xylene	<0.00100	0.100	0.0818	82	0.100	0.0758	76	8	72-131	25	

Analyst: JTR

Date Prepared: 01/03/2017

Date Analyzed: 01/03/2017

Lab Batch ID: 3006852

Sample: 718028-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.0990	99	0.100	0.104	104	5	62-132	25	
Toluene	<0.00100	0.100	0.0890	89	0.100	0.101	101	13	66-124	25	
Ethylbenzene	<0.00100	0.100	0.0984	98	0.100	0.105	105	6	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.207	104	0.200	0.220	110	6	69-128	25	
o-Xylene	<0.00100	0.100	0.0959	96	0.100	0.0978	98	2	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: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 542785

Analyst: JTR

Date Prepared: 01/03/2017

Project ID:

Date Analyzed: 01/03/2017

Lab Batch ID: 3006858

Sample: 718031-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.103	103	0.100	0.107	107	4	62-132	25	
Toluene	<0.00100	0.100	0.0986	99	0.100	0.100	100	1	66-124	25	
Ethylbenzene	<0.00100	0.100	0.105	105	0.100	0.110	110	5	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.221	111	0.200	0.224	112	1	69-128	25	
o-Xylene	<0.00100	0.100	0.0995	100	0.100	0.102	102	2	72-131	25	

Analyst: SAD

Date Prepared: 01/04/2017

Date Analyzed: 01/04/2017

Lab Batch ID: 3006935

Sample: 718082-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.103	103	0.100	0.0941	94	9	62-132	25	
Toluene	<0.00100	0.100	0.103	103	0.100	0.0842	84	20	66-124	25	
Ethylbenzene	<0.00100	0.100	0.105	105	0.100	0.108	108	3	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.210	105	0.200	0.221	111	5	69-128	25	
o-Xylene	<0.00100	0.100	0.108	108	0.100	0.113	113	5	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: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 542785

Project ID:

Analyst: MCH

Date Prepared: 01/04/2017

Date Analyzed: 01/04/2017

Lab Batch ID: 3006958

Sample: 718105-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.0500	0.0503	101	0.0500	0.0464	93	8	62-132	25	
Toluene	<0.00100	0.0500	0.0494	99	0.0500	0.0452	90	9	66-124	25	
Ethylbenzene	<0.00100	0.0500	0.0517	103	0.0500	0.0478	96	8	71-134	25	
m,p-Xylenes	<0.00200	0.100	0.107	107	0.100	0.0991	99	8	69-128	25	
o-Xylene	<0.00100	0.0500	0.0541	108	0.0500	0.0500	100	8	72-131	25	

Analyst: SAD

Date Prepared: 01/04/2017

Date Analyzed: 01/04/2017

Lab Batch ID: 3006968

Sample: 718110-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.102	102	0.100	0.101	101	1	62-132	25	
Toluene	<0.00100	0.100	0.0923	92	0.100	0.0955	96	3	66-124	25	
Ethylbenzene	<0.00100	0.100	0.103	103	0.100	0.102	102	1	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.205	103	0.200	0.202	101	1	69-128	25	
o-Xylene	<0.00100	0.100	0.101	101	0.100	0.0948	95	6	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: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 542785

Project ID:

Analyst: SAD

Date Prepared: 01/05/2017

Date Analyzed: 01/05/2017

Lab Batch ID: 3006989

Sample: 718120-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.100	100	0.100	0.111	111	10	62-132	25	
Toluene	<0.00100	0.100	0.0945	95	0.100	0.106	106	11	66-124	25	
Ethylbenzene	<0.00100	0.100	0.105	105	0.100	0.115	115	9	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.211	106	0.200	0.232	116	9	69-128	25	
o-Xylene	<0.00100	0.100	0.0962	96	0.100	0.106	106	10	72-131	25	

Analyst: SAD

Date Prepared: 01/05/2017

Date Analyzed: 01/05/2017

Lab Batch ID: 3007037

Sample: 718157-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.103	103	0.100	0.0983	98	5	62-132	25	
Toluene	<0.00100	0.100	0.0894	89	0.100	0.0972	97	8	66-124	25	
Ethylbenzene	<0.00100	0.100	0.106	106	0.100	0.104	104	2	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.210	105	0.200	0.208	104	1	69-128	25	
o-Xylene	<0.00100	0.100	0.0970	97	0.100	0.0908	91	7	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: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 542785

Analyst: MCH

Date Prepared: 01/05/2017

Project ID:

Date Analyzed: 01/05/2017

Lab Batch ID: 3007061

Sample: 718164-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.0500	0.0493	99	0.0500	0.0496	99	1	62-132	25	
Toluene	<0.00100	0.0500	0.0479	96	0.0500	0.0493	99	3	66-124	25	
Ethylbenzene	<0.00100	0.0500	0.0509	102	0.0500	0.0518	104	2	71-134	25	
m,p-Xylenes	<0.00200	0.100	0.105	105	0.100	0.106	106	1	69-128	25	
o-Xylene	<0.00100	0.0500	0.0526	105	0.0500	0.0539	108	2	72-131	25	

Analyst: SAD

Date Prepared: 01/06/2017

Date Analyzed: 01/06/2017

Lab Batch ID: 3007078

Sample: 718170-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	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
Analytes											
Benzene	<0.00100	0.100	0.111	111	0.100	0.0990	99	11	62-132	25	
Toluene	<0.00100	0.100	0.0918	92	0.100	0.109	109	17	66-124	25	
Ethylbenzene	<0.00100	0.100	0.104	104	0.100	0.108	108	4	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.231	116	0.200	0.205	103	12	69-128	25	
o-Xylene	<0.00100	0.100	0.112	112	0.100	0.0912	91	20	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: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 542785

Analyst: MNR

Lab Batch ID: 3006792

Units: mg/kg

Date Prepared: 12/30/2016

Sample: 717955-1-BKS

Batch #: 1

Project ID:

Date Analyzed: 12/30/2016

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Inorganic Anions by EPA 300/300.1	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
Analytes											
Chloride	<5.00	250	262	105	250	264	106	1	90-110	20	

Analyst: MNR

Date Prepared: 01/03/2017

Date Analyzed: 01/03/2017

Lab Batch ID: 3006841

Sample: 718014-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Inorganic Anions by EPA 300/300.1	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
Analytes											
Chloride	<5.00	250	263	105	250	264	106	0	90-110	20	

Analyst: MNR

Date Prepared: 01/03/2017

Date Analyzed: 01/03/2017

Lab Batch ID: 3006846

Sample: 718015-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Inorganic Anions by EPA 300/300.1	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
Analytes											
Chloride	<5.00	250	261	104	250	260	104	0	90-110	20	

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

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries



Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 542785

Analyst: MNR

Lab Batch ID: 3006864

Units: mg/kg

Date Prepared: 01/03/2017

Sample: 718016-1-BKS

Batch #: 1

Project ID:

Date Analyzed: 01/03/2017

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Inorganic Anions by EPA 300/300.1	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
Analytes											
Chloride	<5.00	250	271	108	250	275	110	1	90-110	20	

Analyst: MNR

Date Prepared: 01/03/2017

Date Analyzed: 01/04/2017

Lab Batch ID: 3006893

Sample: 718017-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Inorganic Anions by EPA 300/300.1	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
Analytes											
Chloride	<5.00	250	260	104	250	252	101	3	90-110	20	

Analyst: MNR

Date Prepared: 01/04/2017

Date Analyzed: 01/04/2017

Lab Batch ID: 3006895

Sample: 718018-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Inorganic Anions by EPA 300/300.1	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
Analytes											
Chloride	<5.00	250	262	105	250	261	104	0	90-110	20	

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

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries



Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 542785

Project ID:

Analyst: ARM

Date Prepared: 12/22/2016

Date Analyzed: 12/24/2016

Lab Batch ID: 3006616

Sample: 717861-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	934	93	1000	950	95	2	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	955	96	1000	1020	102	7	70-135	35	

Analyst: ARM

Date Prepared: 12/22/2016

Date Analyzed: 12/25/2016

Lab Batch ID: 3006619

Sample: 717862-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	878	88	1000	882	88	0	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	971	97	1000	1010	101	4	70-135	35	

Analyst: ARM

Date Prepared: 12/22/2016

Date Analyzed: 12/25/2016

Lab Batch ID: 3006620

Sample: 717863-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	893	89	1000	909	91	2	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	1040	104	1000	1030	103	1	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



BS / BSD Recoveries



Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Order #: 542785

Project ID:

Analyst: ARM

Date Prepared: 12/27/2016

Date Analyzed: 12/28/2016

Lab Batch ID: 3006647

Sample: 717867-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C12 Gasoline Range Hydrocarbons	<15.0	1000	897	90	1000	937	94	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	1030	103	1000	1040	104	1	70-135	35	

Analyst: ARM

Date Prepared: 12/27/2016

Date Analyzed: 12/27/2016

Lab Batch ID: 3006634

Sample: 717868-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	1040	104	1000	1020	102	2	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	1050	105	1000	1060	106	1	70-135	35	

Analyst: ARM

Date Prepared: 12/27/2016

Date Analyzed: 12/28/2016

Lab Batch ID: 3006639

Sample: 717869-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	1200	120	1000	1090	109	10	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	1200	120	1000	1140	114	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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542785

Project ID:

Lab Batch ID: 3006752

QC- Sample ID: 542785-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/30/2016

Date Prepared: 12/30/2016

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	<0.000996	0.0996	0.0831	83	0.0994	0.0873	88	5	62-132	25	
Toluene	<0.000996	0.0996	0.0786	79	0.0994	0.0860	87	9	66-124	25	
Ethylbenzene	<0.000996	0.0996	0.0838	84	0.0994	0.0916	92	9	71-134	25	
m,p-Xylenes	<0.00199	0.199	0.176	88	0.199	0.185	93	5	69-128	25	
o-Xylene	<0.000996	0.0996	0.0821	82	0.0994	0.0922	93	12	72-131	25	

Lab Batch ID: 3006757

QC- Sample ID: 542785-020 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/30/2016

Date Prepared: 12/30/2016

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	<0.00100	0.100	0.0843	84	0.101	0.0900	89	7	62-132	25	
Toluene	<0.00100	0.100	0.0805	81	0.101	0.0877	87	9	66-124	25	
Ethylbenzene	<0.00100	0.100	0.0851	85	0.101	0.0909	90	7	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.174	87	0.202	0.181	90	4	69-128	25	
o-Xylene	<0.00100	0.100	0.0824	82	0.101	0.0884	88	7	72-131	25	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542785

Project ID:

Lab Batch ID: 3006764

QC- Sample ID: 542785-040 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/31/2016

Date Prepared: 12/31/2016

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	0.0900	90	0.0992	0.0862	87	4	62-132	25	
Toluene	<0.000998	0.0998	0.0837	84	0.0992	0.0793	80	5	66-124	25	
Ethylbenzene	<0.000998	0.0998	0.0910	91	0.0992	0.0876	88	4	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.184	92	0.198	0.181	91	2	69-128	25	
o-Xylene	<0.000998	0.0998	0.0869	87	0.0992	0.0837	84	4	72-131	25	

Lab Batch ID: 3006852

QC- Sample ID: 542784-014 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/03/2017

Date Prepared: 01/03/2017

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	0.100	100	0.0996	0.0975	98	3	62-132	25	
Toluene	<0.000998	0.0998	0.0942	94	0.0996	0.0941	94	0	66-124	25	
Ethylbenzene	<0.000998	0.0998	0.101	101	0.0996	0.0956	96	5	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.209	105	0.199	0.200	101	4	69-128	25	
o-Xylene	<0.000998	0.0998	0.0964	97	0.0996	0.0891	89	8	72-131	25	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542785

Project ID:

Lab Batch ID: 3006858

QC- Sample ID: 542784-013 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/03/2017

Date Prepared: 01/03/2017

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	0.102	102	0.100	0.107	107	5	62-132	25	
Toluene	<0.000998	0.0998	0.0976	98	0.100	0.0955	96	2	66-124	25	
Ethylbenzene	<0.000998	0.0998	0.101	101	0.100	0.101	101	0	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.214	107	0.200	0.210	105	2	69-128	25	
o-Xylene	<0.000998	0.0998	0.102	102	0.100	0.0963	96	6	72-131	25	

Lab Batch ID: 3006935

QC- Sample ID: 542784-024 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/04/2017

Date Prepared: 01/04/2017

Analyst: SAD

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	0.0947	95	0.0990	0.0945	95	0	62-132	25	
Toluene	<0.000998	0.0998	0.0975	98	0.0990	0.0992	100	2	66-124	25	
Ethylbenzene	<0.000998	0.0998	0.0932	93	0.0990	0.0948	96	2	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.187	94	0.198	0.189	95	1	69-128	25	
o-Xylene	<0.000998	0.0998	0.0944	95	0.0990	0.0934	94	1	72-131	25	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542785

Project ID:

Lab Batch ID: 3006958

QC- Sample ID: 542785-118 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/04/2017

Date Prepared: 01/04/2017

Analyst: MCH

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	<0.00100	0.0500	0.0481	96	0.0499	0.0472	95	2	62-132	25	
Toluene	<0.00100	0.0500	0.0468	94	0.0499	0.0473	95	1	66-124	25	
Ethylbenzene	<0.00100	0.0500	0.0487	97	0.0499	0.0494	99	1	71-134	25	
m,p-Xylenes	<0.00200	0.100	0.100	100	0.0998	0.102	102	2	69-128	25	
o-Xylene	<0.00100	0.0500	0.0517	103	0.0499	0.0523	105	1	72-131	25	

Lab Batch ID: 3006968

QC- Sample ID: 542785-055 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/04/2017

Date Prepared: 01/04/2017

Analyst: SAD

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	<0.00100	0.100	0.0950	95	0.100	0.0963	96	1	62-132	25	
Toluene	<0.00100	0.100	0.0889	89	0.100	0.0893	89	0	66-124	25	
Ethylbenzene	<0.00100	0.100	0.0969	97	0.100	0.0991	99	2	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.195	98	0.200	0.194	97	1	69-128	25	
o-Xylene	<0.00100	0.100	0.0924	92	0.100	0.0950	95	3	72-131	25	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542785

Project ID:

Lab Batch ID: 3006989

QC- Sample ID: 543133-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/05/2017

Date Prepared: 01/05/2017

Analyst: SAD

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	<0.000996	0.0996	0.0932	94	0.0994	0.0952	96	2	62-132	25	
Toluene	<0.000996	0.0996	0.0908	91	0.0994	0.0874	88	4	66-124	25	
Ethylbenzene	<0.000996	0.0996	0.0990	99	0.0994	0.0987	99	0	71-134	25	
m,p-Xylenes	<0.00199	0.199	0.198	99	0.199	0.196	98	1	69-128	25	
o-Xylene	<0.000996	0.0996	0.0935	94	0.0994	0.0880	89	6	72-131	25	

Lab Batch ID: 3007061

QC- Sample ID: 542785-074 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/05/2017

Date Prepared: 01/05/2017

Analyst: MCH

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	<0.00100	0.0500	0.0469	94	0.0500	0.0462	92	2	62-132	25	
Toluene	<0.00100	0.0500	0.0462	92	0.0500	0.0455	91	2	66-124	25	
Ethylbenzene	<0.00100	0.0500	0.0485	97	0.0500	0.0480	96	1	71-134	25	
m,p-Xylenes	<0.00200	0.100	0.0995	100	0.100	0.0987	99	1	69-128	25	
o-Xylene	<0.00100	0.0500	0.0505	101	0.0500	0.0506	101	0	72-131	25	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542785

Project ID:

Lab Batch ID: 3006792

QC- Sample ID: 542785-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/30/2016

Date Prepared: 12/30/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	265	106	250	267	107	1	90-110	20	

Lab Batch ID: 3006792

QC- Sample ID: 542785-011 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/30/2016

Date Prepared: 12/30/2016

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	676	250	901	90	250	918	97	2	90-110	20	

Lab Batch ID: 3006841

QC- Sample ID: 542785-021 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/03/2017

Date Prepared: 01/03/2017

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	6840	2500	9430	104	2500	9410	103	0	90-110	20	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542785

Project ID:

Lab Batch ID: 3006841

QC- Sample ID: 542785-031 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/03/2017

Date Prepared: 01/03/2017

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	1220	250	1460	96	250	1470	100	1	90-110	20	

Lab Batch ID: 3006846

QC- Sample ID: 542785-041 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/04/2017

Date Prepared: 01/03/2017

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	2150	1250	3450	104	1250	3420	102	1	90-110	20	

Lab Batch ID: 3006846

QC- Sample ID: 542785-051 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/04/2017

Date Prepared: 01/03/2017

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	3020	1250	4310	103	1250	4320	104	0	90-110	20	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542785

Project ID:

Lab Batch ID: 3006864

QC- Sample ID: 542785-061 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/03/2017

Date Prepared: 01/03/2017

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	6.45	250	268	105	250	258	101	4	90-110	20	

Lab Batch ID: 3006864

QC- Sample ID: 542785-071 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/03/2017

Date Prepared: 01/03/2017

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	281	112	250	269	108	4	90-110	20	X

Lab Batch ID: 3006893

QC- Sample ID: 542785-081 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/04/2017

Date Prepared: 01/03/2017

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	11.4	250	273	105	250	269	103	1	90-110	20	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542785

Project ID:

Lab Batch ID: 3006893

QC- Sample ID: 542785-091 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/04/2017

Date Prepared: 01/03/2017

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	5.54	250	268	105	250	260	102	3	90-110	20	

Lab Batch ID: 3006895

QC- Sample ID: 542785-101 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/04/2017

Date Prepared: 01/04/2017

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	6.06	250	270	106	250	271	106	0	90-110	20	

Lab Batch ID: 3006895

QC- Sample ID: 542785-111 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/04/2017

Date Prepared: 01/04/2017

Analyst: MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	267	107	250	263	105	2	90-110	20	

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

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

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

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



Form 3 - MS / MSD Recoveries



Project Name: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542785

Project ID:

Lab Batch ID: 3006616

QC- Sample ID: 542785-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/24/2016

Date Prepared: 12/22/2016

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	998	839	84	1000	923	92	10	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	998	948	95	1000	1000	100	5	70-135	35	

Lab Batch ID: 3006619

QC- Sample ID: 542785-021 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/25/2016

Date Prepared: 12/22/2016

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	999	922	92	998	1010	101	9	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	999	991	99	998	1030	103	4	70-135	35	

Lab Batch ID: 3006620

QC- Sample ID: 542785-041 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/25/2016

Date Prepared: 12/22/2016

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	999	893	89	999	888	89	1	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	999	976	98	999	977	98	0	70-135	35	

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

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

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: OWL Bobcat/Red Hills Pipeline Release

Work Order # : 542785

Project ID:

Lab Batch ID: 3006634

QC- Sample ID: 542785-061 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/27/2016

Date Prepared: 12/27/2016

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	998	1040	104	997	1110	111	7	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	998	1070	107	997	1160	116	8	70-135	35	

Lab Batch ID: 3006639

QC- Sample ID: 542785-081 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/28/2016

Date Prepared: 12/27/2016

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	999	1190	119	999	1080	108	10	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	999	1200	120	999	1160	116	3	70-135	35	

Lab Batch ID: 3006647

QC- Sample ID: 542785-101 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/28/2016

Date Prepared: 12/27/2016

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.0	998	951	95	997	920	92	3	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	998	1020	102	997	998	100	2	70-135	35	

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

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

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.



XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: KJE Enviromental & Civil Engineering

Date/ Time Received: 12/22/2016 09:45:00 AM

Work Order #: 542785

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	.8
#2 *Shipping container in good condition?	N/A
#3 *Samples received on ice?	Yes
#4 *Custody Seal present on shipping container/ cooler?	N/A
#5 *Custody Seals intact on shipping container/ cooler?	N/A
#6 Custody Seals intact on sample bottles?	N/A
#7 *Custody Seals Signed and dated?	N/A
#8 *Chain of Custody present?	Yes
#9 Sample instructions complete on Chain of Custody?	Yes
#10 Any missing/extra samples?	No
#11 Chain of Custody signed when relinquished/ received?	Yes
#12 Chain of Custody agrees with sample label(s)?	Yes
#13 Container label(s) legible and intact?	Yes
#14 Sample matrix/ properties agree with Chain of Custody?	Yes
#15 Samples in proper container/ bottle?	Yes
#16 Samples properly preserved?	Yes
#17 Sample container(s) intact?	Yes
#18 Sufficient sample amount for indicated test(s)?	Yes
#19 All samples received within hold time?	Yes
#20 Subcontract of sample(s)?	Yes Houston
#21 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#22 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	N/A
#23 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Jessica Kramer

Jessica Kramer

Date: 12/22/2016

Checklist reviewed by:

Kelsey Brooks

Kelsey Brooks

Date: 12/23/2016



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Xenco Quote #

Xenco Job #

542705

Final 1.000



CHAIN OF CUSTODY

Page 2 of 12

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Norcross, Georgia (770-449-8800)

Xenco Quote #

Xenco Job #

Lakeland, Florida (883-646-8526)

Tampa, Florida (813-620-2000)

542785

Client / Reporting Information

Project Information

Analytical Information

Matrix Codes

Company Name / Branch:

KJE, Environmental & Civil Engineering

Project Name/Number:

OWL Bobcat/Red Hills Pipeline Release

Company Address:

Project Location:

Jal, NM

500 Mosely Road, Cross Roads, Texas 76227

Phone No: (940)387-0905

Invoice To:

Jal, NM

Project Contact:

PO Number:

James Fox

Samplers Name

No. Field ID / Point of Collection

1 SB24 10-12

Sample Depth

Collection

Date

Time

Matrix

of bottles

HCl

NaOH/Zn Acetate

HNO3

H2SO4

NaOH

NaHSO4

MeOH

NONE

X BTEX

X TPH

X CHLORIDES

(8260)

Field Comments

2 SB24 12-14

12/19

1440

5

2

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

3 SB24 14-16

1455

1520

1525

1530

1535

1540

1545

1545

1545

1545

1545

1545

1545

1545

1545

1545

1545

1545

1545

4 SB25 0-2

1525

1530

1535

1540

1545

1545

1545

1545

1545

1545

1545

1545

1545

1545

1545

1545

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1545

1545

5 SB25 2-4

1525

1530

1535

1540

1545

1545

1545

1545

1545

1545

1545

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1545

1545

1545

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1545

1545

1545

6 SB25 4-6

1530

1535

1540

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1545

7 SB25 4-6 split

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1535

1540

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1545

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1545

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8 SB25 6-8

1535

1540

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9 SB26 0-2

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10 SB26 2-4

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1545

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1545

1545

1545

1545

1545

1545

1545

1545

1545

1545

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

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

Relinquished by Sampler:

Date Time:

Received By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

1 James Fox

945

12/22/16

12/22/16

12/22/16

12/22/16

12/22/16

12/22/16

12/22/16

12/22/16

12/22/16

12/22/16

12/22/16

12/22/16

12/22/16

3 Relinquished by:

Date Time:

Received By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

5

Date Time:

Received By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Relinquished By:

Date Time:

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to XENCO Laboratories and its affiliates, subcontractors and assigns XENCO's standard terms and conditions of service unless previously negotiated.

Temp: IR ID: R-8
CF: + 0.1 0.7 6.8
Corrected Temp:



CHAIN OF CUSTODY

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Lakeland, Florida (883-646-8526)
Tampa, Florida (813-620-2000)

Client / Reporting Information

Project Information

Analytical Information

Matrix Codes

Company Name / Branch:

KJE, Environmental & Civil Engineering

Project Name/Number:

OWL Bobcat/Red Hills Pipeline Release

Company Address:

500 Mosely Road, Cross Roads, Texas 75227

Project Location:

Jal. NM

Email: james@kjenvironmental.com

Phone No: (940)387-0805

Invoice To:

Jal. NM

Project Contact:

James Fox

PO Number:

Samplers Name

Field Comments

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

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

Relinquished by Sampler:

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

FED-EX / UPS: Tracking #

On Ice

Temp: IR ID:R-8

CF: + 0.1 D. 7

Corrected Temp: 0.2

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to XENCO Laboratories and its affiliates, subcontractors and assigns XENCO's standard terms and conditions of service unless previously me



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Service Center - San Antonio, Texas (210-509-3334)

CHAIN OF CUSTODY

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Norcross, Georgia (770-449-8800)
Lakeland, Florida (863-646-8526)
Tampa, Florida (813-620-2000)

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Client / Reporting Information

Company Name / Branch:
KJE, Environmental & Civil Engineering
Company Address:
500 Mosely Road, Cross Roads, Texas 76227
Email: james@kjenvironmental.com Phone No: (940)387-0805

Project Name/Number:
OWL Bobcat/Red Hills Pipeline Release
Project Location:
Jal, NM
Invoice To:

Project Contact:
James Fox
Samplers Name

PO Number:

Analytical Information

Matrix Codes

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

Field ID / Point of Collection

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection

Matrix

Number of preserved bottles

BTEX 8260
TPH
CHLORIDES

Notes:

Field Comments

Collection



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Norcross, Georgia (770-449-8800)

Lakeland, Florida (863-646-8526)
Tampa, Florida (813-620-2000)

Xenco Quote #

Xenco Job #

542705

Matrix Codes

Client / Reporting Information			Project Information			Analytical Information			Matrix Codes												
Company Name / Branch: KJE, Environmental & Civil Engineering			Project Name/Number: OWL Bobcat/Red Hills Pipeline Release																		
Company Address: 500 Mosely Road, Cross Roads, Texas 76227			Project Location: Jal, NM																		
Email: james@kjeenvironmental.com			Invoice To:																		
Phone No: (940)387-0905																					
Project Contact: James Fox			PO Number:																		
Sampler's Name																					
No.			Field ID / Point of Collection																		
			Collection			Number of preserved bottles															
			Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX	TPH	CHLORIDES			
1			SB30	4-6																	
2			SB30	6-8																	
3			SB31	0-2																	
4			SB31	2-4																	
5			SB31	4-6																	
6			SB31	6-8																	
7			SB31	8-10																	
8			SB31	10-12																	
9			SB32	0-2																	
10			SB32	2-4																	
Turnaround Time (Business days)									Data Deliverable Information						Notes:						
☐ Same Day TAT			☒ 5 Day TAT						☐ Level II Std QC			☐ Level IV (Full Data Pkg/raw data)									
☐ Next Day EMERGENCY			☐ 7 Day TAT						☐ Level III Std QC+ Forms			☐ TRRP Level IV									
☐ 2 Day EMERGENCY			☐ Contract TAT						☐ Level 3 (CLP Forms)			☐ UST / RG 411									
☐ 3 Day EMERGENCY									☐ TRRP Checklist												
TAT Starts Day received by Lab, if received by 5:00 pm																					
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			Tanner Evans - KJE			12/24/16			JAMES FOX			9/25			2						
Relinquished by:			Date Time:			Received By:			Relinquished By:			Date Time:			Received By:						
3						3			4			4			4						
Relinquished by:			Date Time:			Received By:			Relinquished By:			Date Time:			Received By:						
5						5															
Relinquished by:			Date Time:			Received By:			Relinquished By:			Date Time:			Received By:						
5						5															
Temp: IR ID:R-8																					
CF: + 0.1 0.7																					

Page 6 of 12

Lakeland, Florida (863-646-8526)

Tampa, Florida (813-620-2000)

542785

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



Lakeland, Florida (863-646-8526)

Tampa, Florida (813-620-2000)

542785

Client / Reporting Information						Project Information							Analytical Information								Matrix Codes				
Company Name / Branch: K.J.E. Environmental & Civil Engineering Company Address: 500 Moseley Road Cross Roads, Texas 76227 Email: james@kjeenvironmental.com Phone No: (940)387-0805 Project Contact: James Fox Samplers Name						Project Name/Number: OWL Bobcat/Red Hills Pipeline Release Project Location: Jal, NM Invoice To:																			
Field ID / Point of Collection						Collection		Number of preserved bottles																	
No.	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX	TPH	CHLORIDES									
1	SB34	6-8												X	X	X									
2	SB35	0-2												X	X	X									
3	SB35	2-4												X	X	X									
4	SB35	4-6												X	X	X									
5	SB36	0-2												X	X	X									
6	SB36	2-4												X	X	X									
7	SB36	4-6												X	X	X									
8	SB37	0-2												X	X	X									
9	SB37	2-4												X	X	X									
10	SB37	4-6												X	X	X									
Turnaround Time (Business days)						Data Deliverable Information												Notes:							
☐ Same Day TAT						☒ 5 Day TAT						☐ Level II Std QC						☐ Level IV (Full Data Pkg / raw data)							
☐ Next Day EMERGENCY						☐ 7 Day TAT						☐ Level III Std QC+ Forms						☐ TRRP Level IV							
☐ 2 Day EMERGENCY						☐ Contract TAT						☐ Level 3 (CLP Forms)						☐ UST / RG 411							
☐ 3 Day EMERGENCY												☐ TRRP Checklist													
TAT Starts Day received by Lab, if received by 5:00 pm																		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:		Date Time:		Relinquished By:		Date Time:		Received By:									
1 Tammy Evans - KJE						12/02/16		JAMES FOX		9435		RECEIVED BY:		12/02/16		2									
Relinquished by:						Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:									
3						3		3		4		4		4		4									
Relinquished by:						Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:									
5						5		5		5		5		5		5									
On Ice						Temp:		Thermo, Corr. Factor		IR ID:R-8															

Final 1.000

* Tamn	Thermo. Corr. Factor
Temp:	IR ID: R-8
CF: + 0.1	0.7
Corrected Temp:	0.



Lakeland, Florida (863-646-8526)

Tampa, Florida (813-620-2000)

542785

Final 1.000



CHAIN OF CUSTODY

Page 9 of 12

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Odessa, Texas (432-563-1800)

Norcross, Georgia (770-449-8800)

Lakeland, Florida (863-546-8526)
Tampa, Florida (813-620-2000)

Client / Reporting Information		Project Information		Analytical Information		Matrix Codes													
Company Name / Branch: KJE Environmental & Civil Engineering		Project Name/Number: OWL Bobcat/Red Hills Pipeline Release																	
Company Address: 500 Mosely Road, Cross Roads, Texas 76227		Project Location: Jal. NM																	
Email: james@kjenvironmental.com		Invoice To:																	
Phone No: (940)387-0805																			
Project Contact: James Fox		PO Number:																	
Samplers Name																			
No.	Field ID / Point of Collection	Sample Depth	Collection Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX	TPH	CHLORIDES	Field Comments	
1	SB40 0-2		12/21	1150	5	1									X	X	X		
2	SB40 2-4														X	X	X		
3	SB40 4-6														X	X	X		
4	SB40 6-8														X	X	X		
5	SB41 0-2														X	X	X		
6	SB41 2-4														X	X	X		
7	SB41 4-6														X	X	X		
8	SB41 6-8														X	X	X		
9	SB42 0-2														X	X	X		
10	SB42 2-4														X	X	X		
Turnaround Time (Business days)																		Notes:	
☐ Same Day TAT		☒ 5 Day TAT																	
☐ Next Day EMERGENCY		☐ 7 Day TAT																	
☐ 2 Day EMERGENCY		☐ Contract TAT																	
☐ 3 Day EMERGENCY																			
TAT Starts Day received by Lab, if received by 5:00 pm																			
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:		Date Time:		Received By:		Date Time:		Received By:	
1 Tamm Evans - KJE		12/22/16		Tamm Evans		Tamm Evans		12/22/16		Tamm Evans		Tamm Evans		Tamm Evans		Tamm Evans		Tamm Evans	
Relinquished by:		Date Time:		Received By:		Relinquished By:		Date Time:		Received By:		Date Time:		Received By:		Date Time:		Received By:	
3																			
Relinquished by:		Date Time:		Received By:		Relinquished By:		Date Time:		Received By:		Date Time:		Received By:		Date Time:		Received By:	
5																			



CHAIN OF CUSTODY

Page 10 of 12

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Norcross, Georgia (770-449-8800)
Lakeland, Florida (853-646-8526)
Tampa, Florida (813-620-2000)

Client / Reporting Information		Project Information		Analytical Information		Matrix Codes	
Company Name / Branch: KJE Environmental & Civil Engineering		Project Name/Number: OWL Bobcat/Red Hills Pipeline Release					
Company Address: 500 Mosely Road, Cross Roads, Texas 76227		Project Location: Jal NM					
Email: james@kjenvironmental.com		Invoice To:					
Phone No: (940)387-0805							
Project Contact: James Fox		PO Number:					
Sampler's Name							
No.	Field ID / Point of Collection	Collection		Number of preserved bottles		Field Comments	
		Sample Depth	Date	Time	Matrix	# of bottles	
1	SB42 4-6		12/21	1240	S	2	
2	SB42 6-8			1245			
3	SB43 6-2			1250			
4	SB43 2-4			1255			
5	SB43 4-6			1257			
6	SB43 6-8			1300			
7	SB44 0-2			1305			
8	SB44 2-4						
9	SB44 4-6						
10	SB44 6-8			1315			
Turnaround Time (Business days)				Data Deliverable Information		Notes:	
☐ Same Day TAT		☒ 5 Day TAT		☐ Level II Std QC		☐ Level IV (Full Data Pkg /raw data)	
☐ Next Day EMERGENCY		☐ 7 Day TAT		☐ Level III Std QC+ Forms		☐ TRRP Level IV	
☐ 2 Day EMERGENCY		☐ Contract TAT		☐ Level 3 (CLP Forms)		☐ UST / RG 411	
☐ 3 Day EMERGENCY				☐ TRRP Checklist			
TAT Starts Day received by Lab, if received by 5:00 pm							
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY							
Relinquished by Sampler:		Date Time:	Received By:	Date Time:	Received By:		
1 James Fox		12/22/16	James Fox	945	2		
Relinquished by:		Date Time:	Received By:	Date Time:	Received By:		
3			3		4		
Relinquished by:		Date Time:	Received By:	Date Time:	Received By:		
5			5		4		
FED-EX / UPS: Tracking #							
On Ice							
Cooler Temp.							
Thermo Corr. Factor							
Temp: IR ID:R-8							
CF: + 0.1							
Corrected Temp: 0.708							



CHAIN OF CUSTODY

Page 12 of 12

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Lakeland, Florida (883-646-8526)
Tampa, Florida (813-620-2000)

Xenco Quote #

Xenco Job #

542785

Client / Reporting Information

Project Information

Company Name / Branch: KJE, Environmental & Civil Engineering
Project Name/Number: OWL Bobcat/Red Hills Pipeline Release
Company Address: 500 Moseley Road, Cross Roads, Texas 76227
Project Location: Jal, NM
Email: james@kjenvironmental.com Phone No: (940)387-0905
Invoice To: Jai, NM

Project Contact: James FOX

PO Number:

Samplers Name

Field ID / Point of Collection

Collection

Number of preserved bottles

Field Comments

No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MeOH	NONE	BTEX	TPH	CHLORIDES
1	SB44 6-8 split		12/21	1315	S	1									X	X	X
2	SB45 0-2			1325											X	X	X
3	SB45 2-4			1330											X	X	X
4	SB45 4-6			1335											X	X	X
5	SB45 6-8			1340											X	X	X
6	SB46 0-2			1345											X	X	X
7	SB46 2-4			1350											X	X	X
8	SB46 4-6			1353											X	X	X
9	SB46 6-8			1355											X	X	X
10	SB47 0-2			1435											X	X	X

Turnaround Time (Business days)

Data Deliverable Information

Notes:

☐ Same Day TAT ☒ 5 Day TAT ☐ Level II Std QC ☐ Level IV (Full Data Pkg /raw data)

☐ Next Day EMERGENCY ☐ 7 Day TAT ☐ Level III Std QC + Forms ☐ TRRP Level IV

☐ 2 Day EMERGENCY ☐ Contract TAT ☐ Level 3 (CLP Forms) ☐ UST / RG -411

☐ 3 Day EMERGENCY ☐ TRRP Checklist

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

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

FED-EX / UPS: Tracking #

Relinquished by Sampler:

Date Time:

Received By:

Date Time:

Relinquished By:

Date Time:

Received By:

Relinquished by:

Date Time:

Received By:

Date Time:

Relinquished By:

Date Time:

Received By:

Relinquished by:

Date Time:

Received By:

Date Time:

Relinquished By:

Date Time:

Received By:

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to XENCO Laboratories and its affiliates, subcontractors and assigns XENCO's standard terms and conditions of service unless previously in

Temp: IR ID:R-8
CF: + 0.1 0.7 0.2
Corrected Temp: 0.2



CHAIN OF CUSTODY

Page 12 of 12

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Lakeland, Florida (883-646-8526)
Tampa, Florida (813-620-2000)

Xenco Quote #

Xenco Job #

542785

Client / Reporting Information				Project Information										Analytical Information				Matrix Codes	
Company Name / Branch: KJE Environmental & Civil Engineering Company Address: 500 Mosely Road, Cross Roads, Texas 76227 Email: james@kjenvironmental.com Phone No: (940)387-9805 Project Contact: James Fox Samplers Name				Project Name/Number: OWL Bobcat/Red Hills Pipeline Release Project Location: Jal. NM Invoice To: Jal. NM PO Number:															
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX	TPH	CHLORIDES	Field Comments	
1	SB47 2-4			1440	S	2									X	X	X		
2	SB47 4-6			1450											X	X	X		
3	SB47 6-8			1455											X	X	X		
4	(1) BL 0-2			1505											X	X	X		
5	(1) BL 2-4			1510											X	X	X		
6	(1) BL 4-6			1515											X	X	X		
7	(1) BL 6-8			1520											X	X	X		
8	(1) BL 8-10			1525											X	X	X		
9																			
10																			
Turnaround Time (Business days)				Data Deliverable Information										Notes:					
☐ Same Day TAT				☒ 5 Day TAT				☐ Level II Std QC				☐ Level IV (Full Data Pkg / raw data)							
☐ Next Day EMERGENCY				☐ 7 Day TAT				☐ Level III Std QC+ Forms				☐ TRRP Level IV							
☐ 2 Day EMERGENCY				☐ Contract TAT				☐ Level 3 (CLP Forms)				☐ UST / RG -411							
☐ 3 Day EMERGENCY								☐ TRRP Checklist											
TAT Starts Day received by Lab, if received by 5:00 pm																			
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																			
Relinquished by Sampler:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		Relinquished By:			
1 James Fox		12/22/16		T. H. Hines		12/22/16		T. H. Hines		12/22/16		T. H. Hines		12/22/16		T. H. Hines			
3 Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		Relinquished By:			
5 Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		Relinquished By:			

Temp: IR ID-R-8
CF: + 0.1 0.7
Corrected Temp: 0.8



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: KJE Enviromental & Civil Engineering

Date/ Time Received: 12/22/2016 09:45:00 AM

Work Order #: 542785

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	.8
#2 *Shipping container in good condition?	N/A
#3 *Samples received on ice?	Yes
#4 *Custody Seal present on shipping container/ cooler?	N/A
#5 *Custody Seals intact on shipping container/ cooler?	N/A
#6 Custody Seals intact on sample bottles?	N/A
#7 *Custody Seals Signed and dated?	N/A
#8 *Chain of Custody present?	Yes
#9 Sample instructions complete on Chain of Custody?	Yes
#10 Any missing/extra samples?	No
#11 Chain of Custody signed when relinquished/ received?	Yes
#12 Chain of Custody agrees with sample label(s)?	Yes
#13 Container label(s) legible and intact?	Yes
#14 Sample matrix/ properties agree with Chain of Custody?	Yes
#15 Samples in proper container/ bottle?	Yes
#16 Samples properly preserved?	Yes
#17 Sample container(s) intact?	Yes
#18 Sufficient sample amount for indicated test(s)?	Yes
#19 All samples received within hold time?	Yes
#20 Subcontract of sample(s)?	Yes Houston
#21 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#22 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	N/A
#23 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Jessica Kramer

Jessica Kramer

Date: 12/22/2016

Checklist reviewed by:

Kelsey Brooks

Kelsey Brooks

Date: 12/23/2016

APPENDIX E

Environmental Professional's Credentials

Kevin J. Ware
109 South Oakland Street
Denton, Texas 76201
Phone: 940-387-0805
Fax: 940-387-0830
Cell: 469-487-6083
kevin@kjenvironmental.com

EDUCATION

M.S., Environmental Engineering

Oklahoma State University, Stillwater, Oklahoma

B.S., Environmental Science

University of Oklahoma, Norman, Oklahoma

WORK EXPERIENCE

KJ Environmental Mgt., Inc.

Denton, Texas

President – (December 2005 to Present)

- Environmental compliance audits of large scale industrial and manufacturing plants
 - Air, water, waste, EPA reporting, etc....
- Hazardous Waste Management
 - Hazardous waste audits & management plans for thirty different industries
 - Designing process modifications for industrial clients to reduce waste (P2)
- Hazardous waste remediation
 - Soil & groundwater cleanup
(Chlorinated solvents -lumber treating operation, Broken Bow, OK)
 - Soil & surface water cleanup
(Lead contamination - natural gas pipeline, Madill, OK)
- Air permitting
 - Major source air permit applications for several large industries
- Phase I and Phase II Environmental Site Assessments
- Wetland delineation studies
- Storm water pollution prevention management (construction and industrial facilities)
- Expert witness

GaiaTech, Inc.

Irving, Texas

Senior Environmental Consultant – (August 2005 to December 2005)

- Performed Environmental Compliance, safety and engineering audits for various large-scale industrial/commercial clients
 - air, water, hazardous waste, safety, etc.
- Designed waste minimization system to lower operating costs for businesses
 - i.e., wastewater recycling project

Isbell Engineering Group, Inc.
Sanger, Texas

Senior Environmental Engineer – (July 2003 to August 2005)

- Completed environmental compliance and safety audits for industrial clients
- Performed Phase I Environmental Site Assessments – Due Diligence
- Reviewed engineering designs for a fire suppression system at a FEMA facility
- Directed environmental investigations for waste dump sites
- Designed utility (water/sanitary sewer) lines for subdivisions and other developments
- Assisted in the development of civil engineering construction plans for small medical offices/facilities
- Assisted in the review of City Engineering plans for small municipalities
- Assisted in the design and construction management of a 200,000 gal/day municipal-related wastewater treatment plant

Science Applications International (SAIC)
Midwest City, Oklahoma

Environmental Engineer – (May 2003 to July 2003)

- **Created Site Health & Safety Plan for Air Force Remediation Project (Tinker AFB)**
- **Field Safety Manager for groundwater monitoring project (Tinker AFB)**

Marshall Environmental Management, Inc.
Oklahoma City, Oklahoma

Environmental Specialist – (November 1999 to May 2003)

- **Facility-wide noise survey (FAA Facility- Will Rogers Airport, Oklahoma)**
- **Industrial Hygiene Studies – Tinker, AFB**
- **Lead-based paint analysis & remediation design of base housing (Vance AFB, OK)**
- Project Supervisor for cleanup and disposal of hazardous material spills
 - Emergency Response situations

Department of Environmental Quality (Oklahoma)
Oklahoma City, Oklahoma

Environmental Specialist – (July 1999 to November 1999)

- Trained and informed businesses of pollution prevention techniques
- Explained the applicability of environmental regulations to specific industrial sectors and regulated entities

CERTIFICATIONS AND LICENSES

- Engineer-In-Training (EIT)
- Qualified Environmental Professional – (Institute of Professional Practice)
- Registered Professional Environmental Specialist (Oklahoma)

OTHER

- **Routine Guest Lecturer for Southwest Oklahoma State Aviation Safety Classes at Tinker AFB, Midwest City, OK**

James Lawrence Fox

PROJECT MANAGER

WORK HISTORY

Project Manager

KJ Environmental Management, Inc.

2014 – Present

I am currently working as a Project Manager at KJ Environmental in Cross Roads, Texas. I have over three years of experience in the environmental field. I provide regulatory compliance services for various industries including oil and gas storage and trucking facilities, sand and gravel mining facilities, and manufacturing facilities. My areas of expertise include project management, wetland determination and delineation, construction and industrial storm water pollution prevention plans (SWPPP), management of PST tank pulls, oil pollution prevention compliance (SPCC), asbestos sampling and assessments, Phase I Environmental Site Assessments, Limited Phase II Environmental Site Assessments, and Naturally Occurring Radioactive Material (NORM) surveys. I have also served as the Project Manager for oil & gas production and commercial saltwater disposal clients in handling multiple produced water spill investigations and remediation activities completed under the jurisdiction of the Railroad Commission of Texas. I currently work as a Project Manager to complete projects for a variety of industries, while ensuring the delivery of the highest quality work product, customer service, and professionalism.

Environmental Scientist

Trinity River Authority of Texas (TRA)

2013 - 2014

At TRA, I conducted surface water sampling throughout the Trinity River Basin. Under the Planning and Environmental Services Special Studies and Assessments Manager, I handled a variety of tasks related to field data collection, field gear and sampling equipment preparation/maintenance, and data quality assurance/analysis. I worked within an interdisciplinary scientific team in both field and office settings. The job was physically demanding in harsh, outdoor environments. Main field studies included biological surveys, water quality sampling, geomorphological and hydrological surveys.

Field Technician

Texas Forest Service (TFS)

2009-2013

At TFS, I conducted various types of tree surveys for exotic invasive trees and insects throughout east Texas. I became very experienced in identifying woody plants and herbaceous species of Texas. I was certified for Wildland firefighting and assisted the U.S. Forest Service in prescribed burnings. I specifically aided in research and control of the southern pine beetle (*Dendroctonus frontalis*), Ips bark beetle (*Ips grandicollis*, *calligraphus* and *avulsus*), Nantucket pine tip moth (*Rhyacionia frustrana*) for the Texas Forest Service.

Military Service
United States Marine Corps

2004-2010

I served in Fallujah, Iraq with the 14th Marines in 2006 - 2007. During that time, I was awarded medals of combat action, Marine Corps Reserve select, Global war on terrorism, Iraq campaign medal, Sea service deployment, national defense service, Navy unit commendation, and armed forces reserve. My occupational specialty was an Automotive Maintenance Technician for the High Mobility Multipurpose Wheeled Vehicle (HMMWV), and the Medium Tactical Vehicle Replacement (MTVR). During my time in Fallujah, I assisted in planning and security of hundreds of convoys for multiple platoons of infantry Marines. I also routinely drove the lead patrol vehicle with an Improvised Explosive Device (IED) / Mine sweeper attachment on a 7-ton vehicle.

EDUCATION

University of Stephen F. Austin
Bachelor of Science in Forestry with a focus in Wildlife Management
2009 – 2013

Activities and Societies:

Ducks Unlimited

Wildlife Society

ADDITIONAL INFORMATION

Professional Education & Certifications:

HAZWOPER 40 HR Certification
Certified Asbestos Inspector (Certificate No. 15039)
Certified NORM Surveyor
USACE Wetland Delineation 40 HR Training Course
Red Card certified for Wildland firefighting
SPCC/FRP Compliance Workshop, EPA Region 6

Affiliations:

Planning and Zoning Committee member for the City of Sanger, Texas
Parks and Recreation Committee member for the City of Sanger, Texas
Society of Texas Environmental Professionals

CONTACT INFORMATION

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Phone: (940) 368 - 3535

Stanley "Gregg" Bessire, P.E., P.G.

940-387-0805

gregg@kienvironmental.com

PROFESSIONAL EXPERIENCE:

KJE Environmental & Civil Engineering

2016 – Present

KJ Environmental Management, Inc. (KJE) is a dedicated, full-service environmental and civil engineering consulting firm located on the north side of the Dallas-Fort Worth metroplex. KJE is comprised of a team of professionals who strive to provide creative and cost effective solutions for today's multi-faceted environmental and civil engineering issues.

Senior Project Manager – Primary projects include Phase II Environmental Site Assessments, SPCC Plans, Stormwater Pollution Prevention Plans, and Oil and Gas Permitting.

Sage Environmental Consulting, L.P., Richardson, TX

2011 - 2016

Sage Environmental Consulting provides environmental project management and consulting services nationwide. Role was to manage soil and groundwater investigation projects and remediation, Due Diligence projects, Spill Prevention, Control, and Countermeasure (SPCC) Plans, and Storm Water Pollution Prevention Plans (SWPPP).

Senior Project Manager

- Developed and managed a fugitive gas emissions program for all New Source Performance Standard (NSPS) OOOO and Subpart W regulated equipment. The client was a Major Global Oil Company and project sites consisted of their Onshore USA Assets.
- Implemented best practices using Optical Gas Imaging (OGI) and FLIR GF320 Infrared Cameras to inspect all onshore equipment to identify any fugitive gas emission leak sources.
- Developed a Master Fugitive Emissions Program Plan and provided to all the assets, which included procedures, training, and methods for maintaining the program. Managed implementation by client supervisors at various locations throughout Texas and Louisiana.

Due Diligence Manager

- Managed teams of personnel who conducted due diligence site inspections for over 1,200 oil and gas wells and 67 tank batteries in less than two weeks across four separate regions of Texas.
- Reviewed Texas Commission on Environmental Quality (TCEQ) and Railroad Commission of Texas (RRCT) records, and aerial and site photographs for details and/or evidence of site contamination.
- Calculated estimated remediation costs for 49 separate tank batteries and well locations.

Senior Project Manager

- Proposed, Conducted, and Managed surface and subsurface spill investigations and remediation, and completed over 1,000 SWPPP and SPCC Plans.

Senior Project Manager

- Scheduled, Managed, and Performed Optical Gas Imaging (OGI) inspections utilizing FLIR (Forward Looking Infrared Radiometer) GF320 infrared cameras on offshore oil platforms in The Gulf of Mexico near Texas and Louisiana coasts.

Terracon Consultants, Inc., Enercon Services, Inc., Cirrus Associates, LLC., 2009 - 2011
Fugro Consultants, Inc., Geoscience Consultants International,
and Mas-Tek Engineering, Inc., Dallas/Fort Worth, TX

Civil Engineer / Professional Geoscientist / Project Manager: (Independent Consultant)

Primary projects included The North Tarrant Expressway in Fort Worth; the LBJ Freeway Managed Lanes in Dallas; and The Trinity River Levee and Floodplain investigation for The US Army Corp of Engineers.

- Conducted logging of drill holes and core holes to determine site specific lithology.
- Installed piezometers, developed monitor wells, and performed slug tests to determine the aquifer transmissivity and storativity for multiple monitoring wells.
- Conducted field soil tests, performed packer tests, installed piezometers, and recorded data from downhole pressure transducers.
- Assisted with CPT (Cone Penetrometer Testing) operator performing seismic survey tests, pore pressure dissipation tests, and dilatometer tests.
- Performed various other engineering projects on a contract basis. SPCC Plans, SWPPP, and Phase I or Phase II Environmental Site Assessments (ESAs) were additional responsibilities.

Talon/LPE, Inc., Carrollton, TX

2008 – 2009

Senior Engineer / Project Manager

- Managed, supervised, and conducted all project activities, including well/boring logging, development and sampling of groundwater monitoring wells; soil sample collection; waste classification and disposal; hydrogeologic characterizations; and preparing groundwater monitoring and corrective action plans.
- Designing, installed, and monitored the effectiveness of remediation systems. Performed these projects, as well as Phase I and II ESAs, for major oil, communication, utility, real estate, municipal, retail, and financial clients.
- Performed site visits and prepared SWPPP/SPCC Plans to maintain clients' regulatory compliance.

Terra-Solve, Inc., Carrollton, TX

1996 - 2008

Project Manager / Civil Engineer

- Managed, supervised, and conducted over 550 projects in 16 states. Coordinated field investigation activities, including scheduling and procurement of subcontract labor and necessary materials.
- Conducted well and boring logging at numerous sites in Texas, New Mexico, Oklahoma, and Arkansas. For these projects the lithologic units were described using the Unified Soil Classification System (USCS), conducted field screening for various geotechnical and analytical parameters, and prepared soil samples for shipping to testing laboratories in various states.
- Conducted Dual-Phase Extraction and aquifer tests, analyzed the recorded data and completed the required analytical reports. Performed these projects, as well as Phase I and II Environmental Site Assessments (ESAs), for major oil, communication, utility, real estate, municipal, retail, and financial clients.
- Designed remediation systems, supervised system installations, and monitored the effectiveness of various types of remediation systems.
- Performed site visits and prepared SWPPP/SPCC Plans to maintain clients' regulatory compliance.
- Provided construction management and engineering/construction inspection services over a five year period for a local municipality and Habitat For Humanity which included asphalt and concrete roadway construction, railroad crossings, utility installations, bridge construction, and sanitary sewer lift station construction.

EDUCATION, PROFESSIONAL REGISTRATIONS & TRAINING:

Education: B.S. *Petroleum Engineering*, **Texas Tech University**, Lubbock, TX

Professional Registrations:

- Licensed Professional Engineer (P.E.), (License No. 88441), Texas
- Licensed Professional Engineering Firm, (License No. 17779), Texas
- Licensed Professional Engineer (P.E.), (License No. 21593), New Mexico
- Licensed Professional Geoscientist (P.G.), (License No. 6264), Texas
- Licensed Professional Geoscientist (P.G.), (License No. 1051), Louisiana
- UST Remediation Consultant (License No. 60), Oklahoma
- Corrective Action Project Manager (CAPM No. 799), TCEQ
- Transportation Worker Identification Credential (TWIC), Transportation Safety Administration (TSA)

Certifications and Continuing Education:

- Occupational Safety and Health Administration (OSHA) Training for Hazardous Waste Operations, Supervisor Level, (40 Hour Course and Annual Refreshers)
- Basic Plus Safety and Annual Refreshers
- Wastewater and Stormwater Permitting and Compliance Seminars, TCEQ
- Produced Water Production Conference, Society of Petroleum Engineers
- Air Permitting Basics and Advanced Air Permitting, Sage Environmental Consulting
- Helicopter Underwater Egress Training (HUET), Falck Safety Training
- Oil and Gas Essentials, Sage Environmental Consulting
- Environmental Chemistry, Oklahoma State University
- Management of Solid and Hazardous Waste (RCRA), Oklahoma State University
- Pollution Prevention (P2) Plan and Waste Management Workshop, TCEQ
- Project Manager Professional Training (PMP), D and L Training

Dena Marie Vandenberg, REM, LEED AP

ENVIRONMENTAL PROFESSIONAL

WORK HISTORY

Chief Operating Officer / Director of Environmental Services

KJ Environmental Management, Inc.

June 2011 – Present (5 years, 2 months)

I am currently working as the Chief Operating Officer / Director of Environmental Services at KJ Environmental in Cross Roads, Texas. I have over eleven years of experience as an environmental professional in consulting. I lead a team of Engineers and Scientists to complete projects for a variety of industries, while ensuring the delivery of the highest quality work product, customer service, and professionalism.

Project Manager

KJ Environmental Management, Inc.

April 2010 – June 2011 (1 year 3 months)

When I began working at KJ Environmental in Denton, Texas as a Project Manager, I provided regulatory compliance services for various industries including oil and gas storage and trucking facilities, sand and cement handling facilities, manufacturing facilities, and municipal agencies. My areas of expertise included project management, construction and industrial storm water pollution prevention plans (SWPPP), NPDES/TPDES permit applications, management of PST tank pulls, oil pollution prevention compliance (SPCC), Permit-By-Rule (PBR) Applications, New Source Review (NSR) Applications, Barnett Shale Phase I & Phase II Special Emissions Inventories, Saltwater Disposal Well Permitting, Underground Injection Control Permitting, TCEQ Public Water System compliance, drinking water, storm water, ground water, and waste sampling, asbestos sampling, mold assessments, radon testing, lead-based paint sampling, lead in drinking water sampling, Phase I Environmental Site Assessments, Limited Phase II Environmental Site Assessments, noise monitoring, and brownfield redevelopment. I have also served as the Environmental Professional on record for oil & gas production and commercial saltwater disposal clients in handling multiple produced water spill investigations and remediation activities completed under the jurisdiction of the Railroad Commission of Texas.

Environmental Scientist

Terracon

Privately Held; 1001-5000 employees; Civil Engineering industry

April 2006 – February 2010 (3 years 11 months)

At Terracon, I conducted hundreds of Phase I ESAs for various types of properties from vacant land to industrial/manufacturing facilities and gas stations. I also did regulatory compliance consulting for oil & gas clients, industrial/manufacturing facilities, and municipalities. I completed SWPPPs and SPCCs, conducted storm water sampling, and operated a public water system on behalf of a municipality. I became a licensed Asbestos Inspector, Mold Assessment Technician, and LEED Accredited Professional.

Environmental Geologist

Cirrus Associates

March 2006 – March 2006 (1 month)

At Cirrus Associates, I acted as a contract employee on a VCP project for a client in Odessa, Texas. I conducted sampling of groundwater monitoring wells using low-flow sampling techniques.

Environmental Scientist

Delta Environmental

August 2004 – December 2005 (1 year 5 months)

At Delta Environmental, I worked conducted public drinking water sampling under a multimillion dollar TCEQ contract. I collected over 3,000 drinking water samples with a 99.8% laboratory acceptance rate. I was recognized as one of the top 5 samplers in the state for productivity and was trusted with the responsibility of training other samplers associated with the project. In addition, I conducted several ESAs to obtain more experience, when time would allow.

EDUCATION

University of North Texas

Bachelor of Science in Geography with a focus in Earth Science, Geology Minor

1999 – 2004

Activities and Societies:

Vice Chairman of the Planning & Zoning Commission for the Town of Providence Village, Texas

Delta Zeta Sorority

ADDITIONAL INFORMATION

Professional Education & Certifications:

National Registry of Environmental Professionals (NREP) Registered Environmental Manager (REM)

OSHA 29 CFR 1910.120 HAZWOPER 40 HR Certification

EPA Accredited Asbestos Inspector

TDSHS License Asbestos Inspector (License No. 602837)

TDSHS Licensed Mold Assessment Technician (License No. MAT1011)

TCEQ Class C Water Distribution Operator (License No. WD0007445)

Leadership in Energy and Environmental Design (LEED) Accredited Professional

Texas Commission on Environmental Quality (TCEQ) Certified Water Sampler under the Safe Drinking Water Act and State Regulations (ID No. 2005-006)

ORIS-Enviromod University- AERMOD Modeling For Permits Certification

Certified NORM Surveyor

Affiliations:

The North Texas Association of Environmental Professionals

Society of Texas Environmental Professionals

Association of American Geographers

U.S. Green Building Council

CONTACT INFORMATION

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APPENDIX F

Workplan to Install One Soil Boring (SB) / Temporary Monitoring Well (TMW)



February 16, 2017

New Mexico, Energy Minerals and Natural Resources (EMNRD)
Oil Conservation Division (OCD)
Mr. Tomas Oberding
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505

**Re: *Work Plan to Determine Presence and Depth of Groundwater in Spill Area
Oilfield Water Logistics Produced Water Pipeline Nearby OWL Red Hills SWD
Section 2, T26S, R36E, Lea County, New Mexico – Case No. 1RP 4497 and
Section 36, T25S, R36E, Lea County, New Mexico – Case No. 1RP 4498***

Dear Mr. Oberding:

KJE proposes to perform the following environmental consulting services for OWL for the groundwater presence and depth investigation portion of the project.

Environmental Investigation

The proposed scope of work will consist of installing one (1) 100-foot soil boring between the two spill locations. This soil boring will be logged using the Unified Soil Classification System (USCS) and left open for twenty-four (24) hours to determine if substantial water accumulates for sample collection and lab analysis. If substantial water is detected after 24 hours the boring will be converted to a 2-inch monitoring well.

KJE will attempt the collection of water utilizing an eco-bailer. A clean, unused eco-bailer will be used to first purge the well, and a second clean, unused eco-bailer will be used to collect the groundwater for sample analyses. If the bailer proves infeasible then a dedicated pump will be used to collect the water sample. Analytical methods for each constituent are listed on the following page. Each water sample will be handled with nitrile-gloved hands. Copies of the actual laboratory results will be provided including chain of custody documentation with the investigation report.

The Investigation will consist of the following activities:

- KJE will contact New Mexico 811 to request that they communicate with underground utility companies in the site area for location of their pipelines beneath the site and the site area.

- Note that the OWL pipeline and the City of Jal Municipal Water Supply pipeline should both be excavated near the proposed soil boring location prior to installing the soil boring nearby either of the pipelines.
- Each groundwater sample will be handled with nitrile-gloved hands. The samples will be placed in clean, dedicated, laboratory-supplied, glass or plastic containers, and labeled with pertinent sampling information. The groundwater sample will be then placed in a cooling chest with adequate ice, providing a 4°C environment for sufficient preservation until delivery to Xenco Laboratory (a third-party, NELAP Certified, independent, and licensed environmental laboratory in Midland, Texas). The sample collection and handling activities will be conducted in accordance with USEPA Standard Operating Procedures and strict chain-of-custody protocols. The drilling equipment, sampling equipment, and tools will be decontaminated before and between each sampling location. All personnel used dedicated nitrile gloves that will be changed frequently during the drilling activities.
- Groundwater samples, if any, will be analyzed for the following constituents using the associated laboratory methods: Volatile Organic Compounds (VOCs) Method 8260 full list, (TPH) by Method 8015 extended range (GRO+DRO+MRO; C6 thru C36), Total Dissolved Solids (TDS) by Method 2540, pH by Method 9040, major anions and cations including chloride and sulfate by Method 9056, dissolved iron and manganese by Method 6010. Copies of the actual laboratory results will be provided including chain of custody documentation with the investigation report.
- Areas with TPH exceedances in soil will be monitored quarterly and resampled until the levels reach OCD action limits.

Report of Findings

KJE will prepare and provide an electronic copy of the final report describing the findings, conclusions, and recommendations from the investigation. KJE will present the laboratory analytical results in a tabular format and compare these levels to the OCD specified delineation levels. An accurately scaled and well-drafted site map will be provided showing the location of the boring and significant surface features including roads and site infrastructure that might limit this investigation. Digital photographic documentation of the field work will also be included.

If we can be of further assistance, please do not hesitate to contact us at 940-387-0805. We look forward to receiving comments in order to proceed with the project and closure.

Sincerely,

A handwritten signature in blue ink, appearing to read "Kevin J. Ware".

Kevin J. Ware, QEP, REM
Principal

A handwritten signature in blue ink, appearing to read "Gregg Bessire".

Gregg Bessire, P.E., P.G.
Senior Project Manager

A handwritten signature in blue ink, appearing to read "Dena M. Vandenberg".

Dena M. Vandenberg, REM, LEED AP Director of
Director of Environmental Services