Remediation Completion Report

February 20, 2017

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

Prepared For:

INFORMATION ONLY

Mr. Phillip Sanders
Oilfield Water Logistics
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Dallas, Texas 75225

New Mexico Energy Minerals and Natural Resources Department (EMNRD)
Oil Conservation Division (OCD)
Ms. Olivia Yu
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Mr. Phillip Sanders
Oilfield Water Logistics
8214 Westchester Drive, Suite 850
Dallas, Texas 75225

RE: **Remediation Completion Report: Oilfield Water Logistics (OWL) Produced Water Pipeline Release Nearby OWL Red Hills SWD, Section 36, T25S, R36E, Lea County, New Mexico – Case No. 1RP 4498**

Dear Mr. Sanders:

KJ Environmental Mgt., Inc. (KJE) is pleased to submit this Remediation Completion report for the Produced Water Pipeline Release located near the Red Hills Salt-Water Disposal in Lea County, New Mexico. This report discusses background information, assessment purpose and scope of work, execution of work, and documents the corresponding results.

We appreciate your selection of KJE for this project and look forward to assisting you further on other projects. If you have any questions, please do not hesitate to contact either of the undersigned at 940-387-0805. Thank you for the opportunity to provide professional environmental consulting services. It has been a pleasure working with you.

Best Regards,

Heather Leven
Environmental Project Manager

Dena M. Vandenberg, REM, LEEP AP
Director of Environmental Services

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1.0 Summary

KJ Environmental Mgt., Inc. (KJE), was retained by Oilfield Water Logistics (OWL) to complete certain delineation and remediation activities for a produced water pipeline release to vacant land situated approximately five miles southwest of Jal in Lea County, New Mexico. The results of the delineation and remediation activities are summarized as follows:

- On October 28, 2016, KJE was notified by Mr. Phillip Sanders, Safety Director with OWL, regarding two spill occurrences at the above referenced location. Following the New Mexico Oil Conservation Division (NMOCD), part of the New Mexico Energy, Minerals, and Natural Resources Department (EMNRD) notification and approval, the two spills were assigned remediation case numbers and subsurface investigations to delineate the potential soil impacts ensued. Subsequent to soil delineation activities, soil exhibiting concentrations of chloride above the 600 parts per million (ppm), NMOCD approved action limit, were excavated to depths of four feet below ground surface (bgs). Excavated soil was stockpiled on poly liners and blended with soil deemed representative of clean, native soil. Following confirmatory sampling of the stockpiles, the soil stockpiles were backfilled into the excavations, the results of which are further summarized herein.

2.0 Introduction

On October 28, 2016, KJE was provided notification by Mr. Phillip Sanders, Safety Director with OWL, regarding two spill occurrences over a relatively short time frame. Mr. Sanders provided further notification to the Oil Conservation Division (OCD), part of The New Mexico Energy, Minerals, and Natural Resources Department (EMNRD), of the spill at 2:00 p.m. on October 28, 2016. KJE was notified of the second subsequent spill occurrence on November 2, 2016. Mr. Sanders notified OCD of this subsequent 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 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. A response received from the OCD on November 7, 2016, indicated that both incidents were assigned remediation case numbers RP-4497 (first spill event) and RP-4498 (second spill event). The latter spill event is the subject of this report. The general view of both spills is illustrated in Appendix A on Figure A1.

Subsequent to the NMOCD directive to complete division-approved corrective action, at the request of the NMOCD, KJE completed a delineation workplan detailing the collection of soil samples for analysis to delineate the vertical and horizontal extent of produced water impacted soil. This workplan was submitted by KJE and administratively approved by Mr. Tomas Oberding on November 30, 2016. The NMOCD approved Work Plan for the Characterization of Impacts is located in Appendix G of this report.

As such, following approval of the soil delineation workplan from December 5, 2016, through December 21, 2016, forty-nine (49) soil borings were advanced within Spill Area 2, one of which

(soil boring BG-2) was advanced outside of the affected soil areas nearby each spill area in an effort confirm soil background constituents. Soil samples collected were transferred to an accredited lab and analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX), total petroleum hydrocarbons (TPH), and chloride. Analytical soil data identified concentrations of TPH (maximum concentration of 818 milligrams per kilogram [mg/kg]) and chloride (maximum concentration of 11,900 mg/kg). The impacted soil depth was verified at depths of 0 to greater than 14 feet below ground surface (bgs) with an average depth of hydrocarbon and chloride impacted soil estimated to be 5.64 feet bgs, corresponding to an estimated volume of 21,656 cubic yards.

Subsequently, KJE submitted the Spill Delineation Report, Remediation Plan, and Addendum to the Remediation Plan to the NMOCD on February 17 and April 12, 2017, respectively, in an effort to detail planned remediation efforts. Based on the laboratory analytical data, TPH and BTEX were identified at concentrations below the applicable regulatory criteria and were eliminated as constituents of concern, leaving chloride as the only constituent of concern. Details of the remediation plan and addendum included excavation of soil in areas where chloride concentrations exceeded 1,000[1] parts per million (ppm) up to a depth of four feet bgs. Subsequent to excavation, soils were to be placed on poly liner and blended with soil deemed representative of clean, native soil. Following blending activities, soil stockpile confirmation samples were collected to confirm concentrations of chloride. Once concentrations were below the applicable criteria, soil was returned to the four foot poly-lined excavations. The Spill Delineation and Remediation Plan is located in Appendix G of this report. Implementation of the remediation plan and activities are further detailed below.

3.0 Environmental Assessment Activities

3.1 Delineation Activities

In accordance with the NMOCD Approved Remediation Plan, KJE personnel observed the drilling subcontractor advance seven soil borings (TSS-1 through TSS-6 and SS-02) along the southern boundary of the identified soil impact area in an attempt to further delineate the southern extent of impact and potential groundwater impacts. The locations of the soil borings are depicted on the Soil Boring Location Site Plan in Appendix A.

The subcontracted driller advanced the borings via truck-mounted backhoe/ excavator equipment. Soil borings TSS-1 through TSS-2 were advanced to a depth of four feet bgs with the intent to further delineate the southern boundary of the impacted soil area. Soil boring SS-02 was advanced to a maximum depth of 24 feet bgs, approximately 10 feet below the known vertical extent of soil impact, and intended to assess potential groundwater impacts in the area of soil impact. Water was not encountered during the drilling activities; therefore, water was not

[1] The NMOCD originally mandated a soil cleanup level of 600 ppm; however, the Workplan Addendum approved by the NMOCD increased the soil cleanup level to 1,000 ppm, based on the landfarm standard (Title 19, Chapter 15, Part 36.15).

developed nor sampled during the sampling event. In lieu of groundwater, soil samples were collected from SS-02 at the termination depth of the boring.

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 C. The soil boring lithology and field screening data table (Table 1) is included in Appendix D for review.

3.2 Remediation Activities

Based on prior delineation activities and KJE's NMOCD Approved Addendum to Remediation Plan, dated April 14, 2017, KJE conducted certain remediation activities that included the removal of chloride impacted soil to depths of four feet bgs, as depicted on Figure A2 located in Appendix A. Excavated soil was stockpiled on poly-liner and segregated into designated sections (A through F and M[2]) consisting of approximately 20 cubic yards of soil per stockpile. Stockpiles were field screened for Chlorides using the Horiba D-73 Portable Multiparamater Chloride Meter based on a frequency of approximately one sample for each 20 cubic yards of excavated soil. Per the NMOCD directive, every 10th soil sample was submitted to the laboratory for confirmation of analytical results.

Soil from stockpiles that exhibited chloride concentrations of 1,000 ppm or greater by field meter reading were blended with native soil representative of clean soil and field screened again. The results were recorded to confirm the accuracy of the meter. Field screening, laboratory analytical confirmatory data, and blended areas are provided in the table located in Appendix B. Subsequent to confirmatory analytical data, soil from stockpiles were backfilled and compacted into the poly-lined excavations.

Subsequent to backilling activities, the Revegetation and Noxious Weed Plan was implemented. Details of this plan included the broadcast application of BLM mix No. 2 (for sandy soil), on the remediation area outside of the road right-of-way in an effort to revegetate the impacted area. Further details regarding this plan are outlined in the Revegetation and Noxious Weed Plan located in Appendix G of this report.

As previously discussed, impacted soil located within the vicinity of the pipeline easements and in a 10 foot buffer zone, were left in place due to access and safety constraints.

[2] Stockpile samples are represented by the Section that they were designated. For example, soil samples from the Section A stockpiles were represented by ASP followed by the sample number (ASP1 through ASP62).

3.3 Deviations from the Scope

As indicated above, rather than advance a boring to groundwater depth (SS-02), KJE advanced a boring to ten feet below the known contamination (24 feet bgs), in response to NMOCD recommendations. Analytical data from this soil boring is discussed in Section 5.0 of this report.

4.0 Soil/Groundwater Sample Collection/Handling Procedures

Soil samples were collected based on field indicators, proximity to the boring termination depths, or depth of potential impact as noted above, and select samples were collected in 4 ounce laboratory supplied glass containers for laboratory analysis. The collected soil samples were placed in laboratory-supplied containers, labeled, placed in an insulated container with ice, providing a 4^{o}C environment for sufficient preservation until delivery to Xenco Laboratories (a third-party, independent, and licensed environmental laboratory in Midland, Texas) accompanied by completed chain-of-custody. The sample collection and handling activities were conducted in accordance with USEPA Standard Operating Procedures and strict chain-of-custody protocols. Before and after installation of each of the soil borings and construction of the temporary monitoring well, the drilling augers were decontaminated.

In lieu of available groundwater from SS-02 and based on the analytical data collected during the delineation phase of assessment, soil samples were submitted to the laboratory for analysis of chloride by EPA Method 300/300.1. Based on laboratory analytical data from the prior soil delineation investigation, soil samples collected from soil borings TSS-1 through TSS-6 were analyzed for chloride by SW-846 Method 300/300.1. Soil stockpile samples and confirmatory samples were analyzed for chloride by SW-846 Method 300/300.1. These analytical methods are the EPA, NMOCD, and industry-approved standards used to determine the potential for soil contamination.

The sample results were compared to the NMOCD approved applicable criteria, as detailed below and in Appendix B.

5.0 Summary of Analytical Results

Soil Action Limits

The NMOCD 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 NMOCD 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 area of the site. Verbal directives issued by NMOCD representatives Ms. Kristen Lynch and Mr. Tomáš Oberding were that horizontal delineation for chlorides is 600 ppm and vertical delineation is 250 ppm. However, Mr. Oberding approved the Addendum to the Remediation Workplan on April 18, 2017, increasing the chloride cleanup target concentrations

to 1,000 ppm. Additionally, under the NMOCD directive, soil was to be excavated from a depth of four feet bgs. Remaining soil was to be left in place. Figure A1 in Appendix A soil borings collected and areas of exceedances. Analytical results are included on Table 2 in Appendix B for review. Laboratory reports are also included in Appendix E.

Soil Delineation and Remediation Activities – Analytical Results

Based on prior soil delineation analytical data, TPH and BTEX were eliminated as constituents of concern. As such, chloride was the only constituent of concern requiring remediation. In an effort to further delineate impacted soils, soil samples (TSS-01 through TSS-06 and SS-02) were collected on the southern boundary of the spill area. Additionally, following soil stockpile blending, laboratory analytical confirmatory samples were collected. Laboratory analytical data did not identify the detectable presence of chloride above the NMOCD mandated applicable regulatory criteria. Based on the laboratory analytical results, delineation and remediation of impacted soils has been completed.

Analytical summary tables of the results are included in Appendix B. Copies of the laboratory analytical reports with chain-of-custody forms are included in Appendix E.

6.0 Photographs

Photo documentation of the drilling and sampling activities are included in Appendix C.

7.0 Conclusions/Recommendations

Based on laboratory analytical data, chloride was reported at concentrations above applicable NMOCD criteria. As such, following NMOCD directives, remedial activities ensued which effectively remediated chloride impacted soil to concentrations below applicable NMOCD criteria. While some areas of impact remain, KJE understands that these areas are located within the pipeline easements and buffer zones, and/or at depths greater than four feet bgs. 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, chloride impacts are not anticipated to be at depths greater than 24 feet bgs, and there are no buildings on site, these chloride considerations should not be a factor.

Although no environmental investigation can determine absolutely whether environmental risk exists on a particular property, based on the completed scope of work, KJE does not recommend additional remediation of the impacted on-site soil.

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 Remediation Completion report completed at the site located near the Red Hills Salt-Water Disposal in Lea County, New Mexico; was performed following EPA, NMOCD, and industry-approved standards/protocols. This work was conducted between November 2, 2016 and July 2017 for Mr. Phillip Sanders, and all field activities were completed under the supervision of Ms. Dena M. Vandenberg, REM, LEED AP. Ms. Vandenberg's credentials are included in Appendix F.

9.0 Signature of Environmental Professional

2/20/2018

Dena M. Vandenberg, REM, LEED AP — Date
Environmental Professional
Director of Environmental Services

APPENDIX A

Figure A1 – Boring Location Map
Figure A2 – Soil Excavation Map
Figure A3 – Detailed View of Blending Areas

Legend

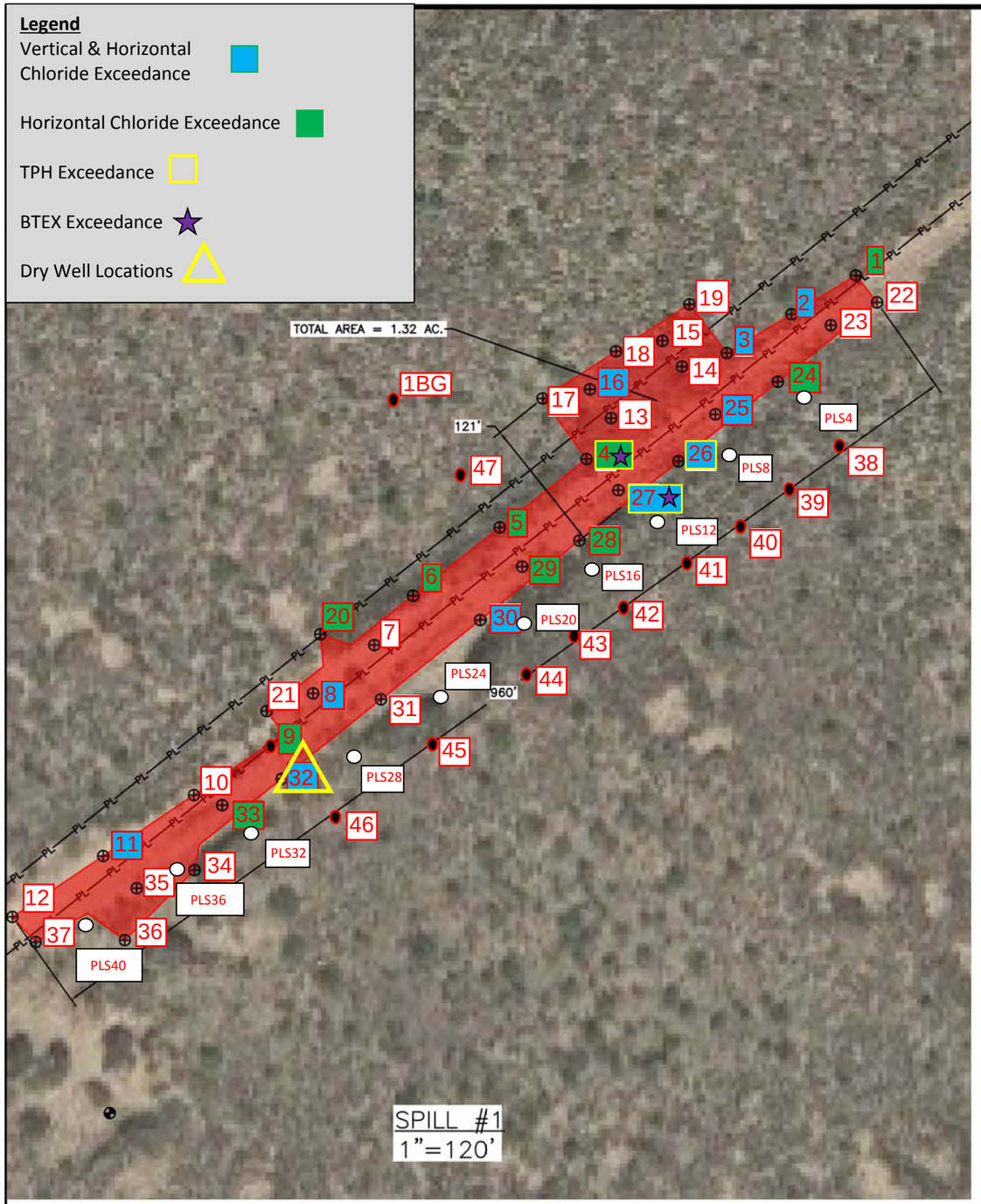
Vertical & Horizontal Chloride Exceedance

Horizontal Chloride Exceedance

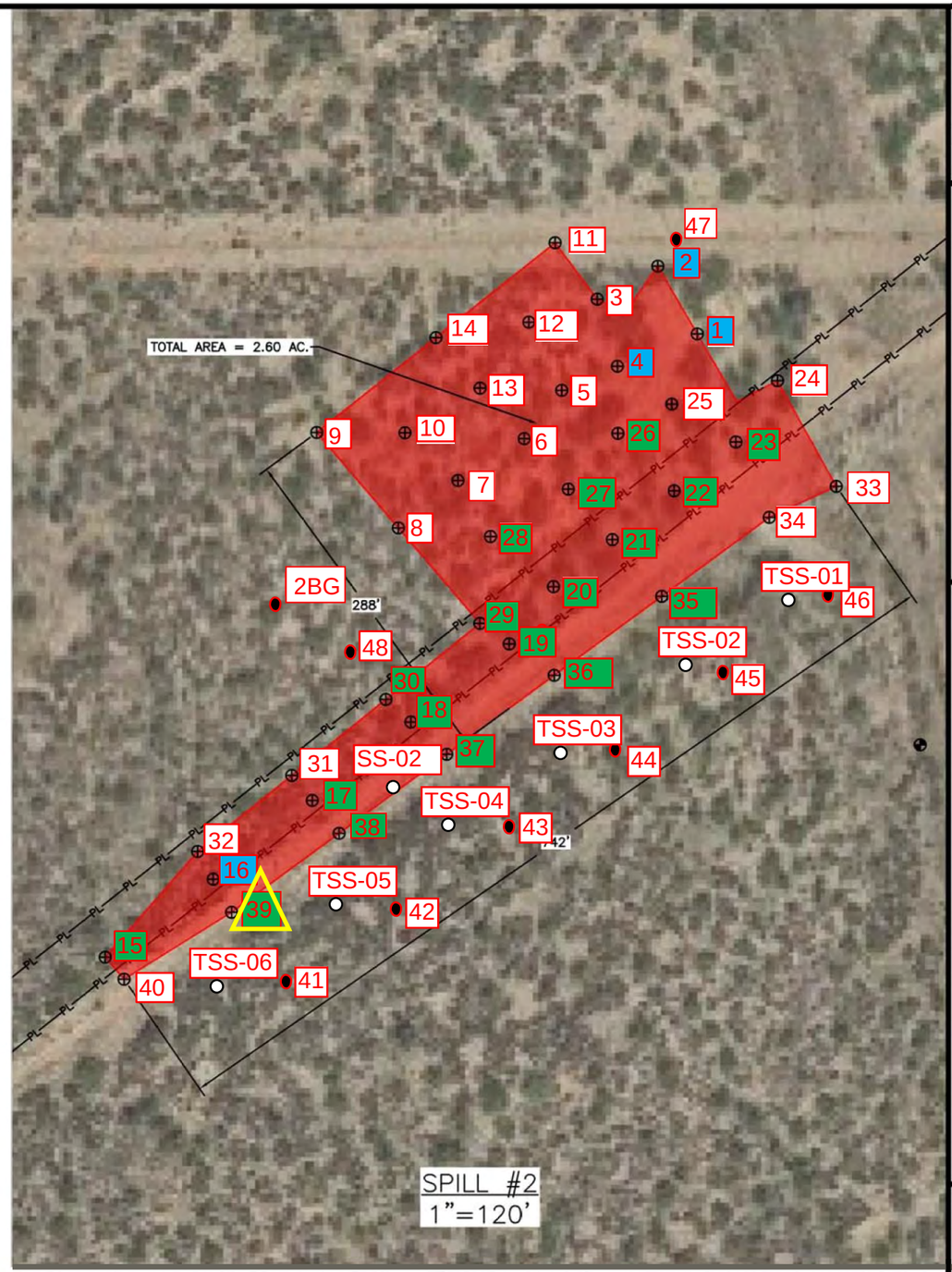
TPH Exceedance

BTEX Exceedance

Dry Well Locations



SPILL #1
1"=120'



SPILL #2
1"=120'

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.

SCALE: 1" 120'

N

REVISIONS:

THIS DRAWING IS TO BE USED FOR PERMIT INORMATION PURPOSES ONLY

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KJE ENVIRONMENTAL & CIVIL ENGINEERING

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

DATE: 12/2/2016

SHEET: A1

REVISIONS:

THIS DRAWING IS TO BE USED FOR PERMIT INFORMATION PURPOSES ONLY.

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DETAILED VIEW OF EXCEEDANCE AREAS TO BE EXCAVATED TO 4 FEET
NEARBY OWL RED HILL SWD SPILL
OILFIELD WATER LOGISTICS
JAL, NEW MEXICO

DATE:
2/20/2018

SHEET:
A2

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.

SPILL #2

100 0 50 100

SCALE: 1" = 100'

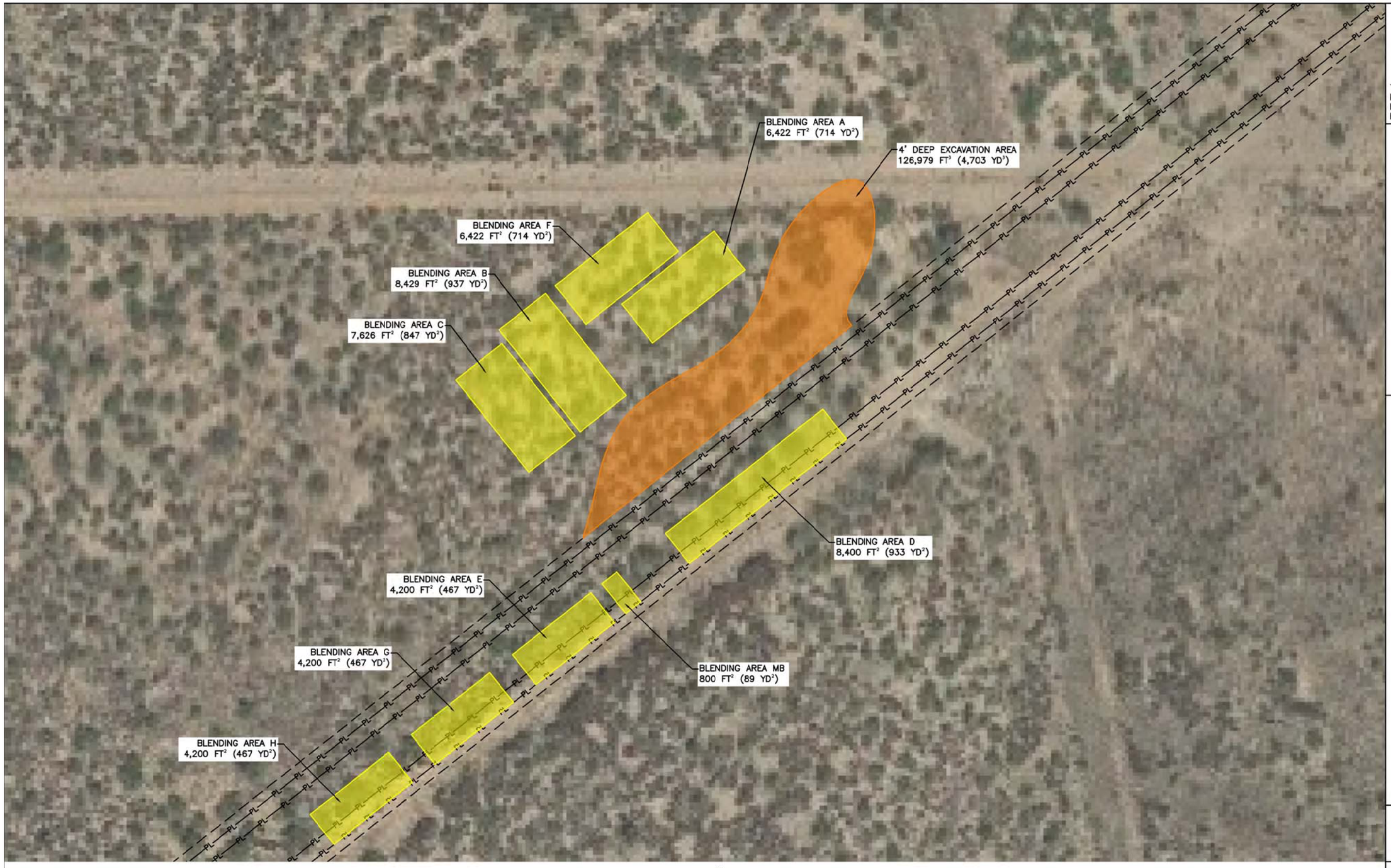
LEGEND

- - - - - 10' PIPELINE BUFFER

—PL—PL— PIPELINE LOCATIONS

AREAS TO BE EXCAVATED TO 4 FEET

N



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.

SPILL #2

100 0 50 100

SCALE: 1" = 100'

LEGEND

—PL—PL— PIPELINE LOCATIONS

– – – – – 10' PIPELINE BUFFER

N

REVISIONS:

THIS DRAWING IS TO BE USED FOR PERMIT INFORMATION PURPOSES ONLY.

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DETAILED VIEW OF BLENDING AREAS
NEARBY OWL RED HILL SWD SPILL
OILFIELD WATER LOGISTICS
JAL, NEW MEXICO

DATE:
2/20/2018

SHEET:
A3

APPENDIX B

Table 1 – Soil Analytical Data
Table 2 – Stockpile Field Screening and Analytical Data

Table 1: Soil Analytical Data
Produced Water Pipeline Release
Nearby Red Hills SWD
Lea County, New Mexico
New Mexico - Case No. 1RP 4498

Spill 2

Field Data									Laboratory Results			
									Benzene mg/kg	Total BTEX mg/kg	Chlorides mg/kg	Total TPH mg/kg
									Action Limits			
Soil Boring ID	Latitude	Longitude	Sample ID	Date Collected	Soil Type	Soil Color/Size	PID (PPM)	Chlorides (field screening)	10 mg/kg	50 mg/kg	Horizontal: 600 mg/kg Vertical: 250 mg/kg	5000 mg/kg
SB1	32.084175°	-103.224745°	SB1 (0'-2')	12/12/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine	10.2	165	<0.001	<0.001	353	<15.0
			SB1 (2'-4')	12/12/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	8.6	460	<0.001	<0.001	483	<15.0
			SB1 (4'-6')	12/12/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	8.7	440	<0.001	<0.001	800	<15.0
			SB1 (6'-8')	12/12/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	10.0	360	<0.001	<0.001	539	<15.0
			SB1 (8'-10')	12/12/2016	PR	PR	PR	PR	N/A	N/A	N/A	N/A
SB2	32.084335°	-103.224854°	SB2 (0'-2')	12/12/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	7.7	130	<0.001	<0.001	7.45	<15.0
			SB2 (2'-4')	12/12/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	8.4	62	<0.001	<0.001	639	<15.0
			SB2 (4'-6')	12/12/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine	12.7	550	<0.001	<0.001	592	<15.0
			SB2 (6'-8')	12/12/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light gray/Fine	45.7	75	<0.001	<0.001	728	<15.0
			SB2 (8'-10')	12/12/2016	PR	PR	PR	PR	N/A	N/A	N/A	N/A
SB3	32.084257°	-103.225022°	SB3 (0'-2')	12/12/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	8.0	85	<0.001	<0.001	414	<15.0
			SB3 (2'-4')	12/12/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	5.8	65	<0.001	<0.001	185	<15.0
			SB3 (4'-6')	12/12/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	7.3	10	<0.001	<0.001	8.85	<15.0
			SB3 (6'-8')	12/12/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	7.3	10	<0.001	<0.001	5.85	<15.0
SB4	32.084099°	-103.224966°	SB4 (0'-2')	12/12/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	48.4	270	<0.001	<0.001	1900	<15.0
			SB4 (2'-4')	12/12/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	4.9	515	<0.001	<0.001	3990	<15.0
			SB4 (4'-6')	12/12/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	6.1	540	<0.001	<0.001	5350	<15.0
			SB4 (6'-8')	12/12/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	6.9	425	<0.001	<0.001	6180	<15.0
			SB4 (8'-10')	12/12/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	4.7	335	<0.001	<0.001	4400	<15.0
			SB4 (10'-12')	12/12/2016	PR	PR	PR	PR	N/A	N/A	N/A	N/A
SB5	32.084042°	-103.225120°	SB5 (0'-2')	12/12/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	4.3	5	<0.001	<0.001	15	<15.0
			SB5 (2'-4')	12/12/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	2.4	5	<0.001	<0.001	<5.00	<15.0
			SB5 (4'-6')	12/12/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light gray/Fine	1.7	50	<0.001	<0.001	<5.00	<15.0
			SB5 (6'-8')	12/12/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	4.4	65	<0.001	<0.001	5.08	<15.0
			SB5 (8'-9.5')	12/12/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	3.4	10	<0.001	<0.001	<5.00	<15.0
			SB5 (9.5'-10')	12/12/2016	PR	PR	PR	PR	N/A	N/A	N/A	N/A
SB6	32.083929°	-103.225223°	SB6 (0'-2')	12/12/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	3.8	5	<0.001	<0.001	11.9	<15.0
			SB6 (2'-4')	12/12/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	3.9	10	<0.001	<0.001	<5.00	<15.0
			SB6 (4'-6')	12/12/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light gray/Fine	4.3	10	<0.001	<0.001	<5.00	<15.0
			SB6 (6'-8')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	4.2	40	<0.001	<0.001	7.28	<15.0
SB7	32.083830°	-103.225407°	SB7 (0'-2')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	2.2	5	<0.001	<0.001	6.22	<15.0
			SB7 (2'-4')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	2.8	10	<0.001	<0.001	<5.00	<15.0
			SB7 (4'-6')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	4.3	30	<0.001	<0.001	<5.00	<15.0
			SB7 (6'-8')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	3.0	20	<0.001	<0.001	<5.00	<15.0
			SB7 (8'-10')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	2.8	30	<0.001	<0.001	<5.00	<15.0
SB8	32.083719°	-103.225571°	SB8 (0'-2')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	6.6	0	<0.001	<0.001	<5.00	36.2
			SB8 (2'-4')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	7.2	5	<0.001	<0.001	<5.00	<15.0
			SB8 (4'-6')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	11.3	15	<0.001	<0.001	<5.00	<15.0
			SB8 (6'-8')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	8.1	25	<0.001	<0.001	6.08	<15.0
			SB8 (8'-10')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	8.3	45	<0.001	<0.001	5.85	<15.0
SB9	32.083943°	-103.225797°	SB9 (0'-2')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	14.3	10	<0.001	<0.001	11.2	<15.0
			SB9 (2'-4')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	15.4	30	<0.001	<0.001	18	97.7
			SB9 (4'-6')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	14.5	15	<0.001	<0.001	9.83	216
			SB9 (6'-8')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	13.8	15	<0.001	<0.001	6.36	<15.0
			SB9 (8'-10')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	15.1	25	<0.001	<0.001	7.45	<15.0
			SB9 (8'-10')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	15.1	25	<0.001	<0.001	7.7	<15.0
SB10	32.083942°	-103.225553°	SB10 (0'-2')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine	10.8	0	<0.001	<0.001	6.87	<15.0
			SB10 (2'-4')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	9.5	5	<0.001	<0.001	<5.00	<15.0
			SB10 (4'-6')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	10.6	10	<0.001	<0.001	5.31	<15.0
			SB10 (6'-8')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	15.8	40	<0.001	<0.001	<5.00	<15.0
			SB10 (8'-10')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	7.5	55	<0.001	<0.001	<5.00	<15.0
SB11	32.084390°	-103.225138°	SB11 (0'-2')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	6.8	0	<0.001	<0.001	<5.00	<15.0
			SB11 (2'-4')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	6.2	5	<0.001	<0.001	<5.00	<15.0
			SB11 (4'-6')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	5.8	15	<0.001	<0.001	<5.00	<15.0
			SB11 (6'-8')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	6.2	15	<0.001	<0.001	<5.00	<15.0
SB12	32.084203°	-103.225211°	SB12 (0'-2')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	7.6	5	<0.001	<0.001	25.3	<15.0
			SB12 (2'-4')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	6.1	5	<0.001	<0.001	5.02	<15.0
			SB12 (4'-6')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light gray/Fine	5.7	10	<0.001	<0.001	<5.00	<15.0
			SB12 (6'-8')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	5.3	30	<0.001	<0.001	<5.00	<15.0
SB13	32.084048°	-103.225345°	SB13 (0'-2')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	6.8	0	<0.001	<0.001	<5.00	<15.0
			SB13 (2'-4')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	7.6	5	<0.001	<0.001	<5.00	<15.0
			SB13 (4'-6')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	5.5	5	<0.001	<0.001	5.15	<15.0
			SB13 (6'-8')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	7.6	45	<0.001	<0.001	8.48	<15.0
SB14	32.084166°	-103.225467°	SB14 (0'-2')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	9.1	0	<0.001	<0.001	6.12	<15.0
			SB14 (2'-4')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	7.0	0	<0.001	<0.001	5.38	<15.0
			SB14 (4'-6')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	8.7	25	<0.001	<0.001	5.83	<15.0
			SB14 (4'-6')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	8.7	25	<0.001	<0.001	5.83	<15.0
			SB14 (6'-8')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	7.8	20	<0.001	<0.001	5.47	<15.0
SB15	32.082708°	-103.226382°	SB15 (0'-2')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	7.3	130	<0.001	<0.001	1840	<15.0
			SB15 (2'-4')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	7.8	90	<0.001	<0.001	869	<15.0
			SB15 (4'-6')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	9.4	105	<0.001	<0.001	1090	<15.0
			SB15 (6'-8')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	11.0	45	<0.001	<0.001	127	<15.0
			SB15 (8'-10')	12/13/2016	Caliche Rock	Light gray/Fine	12.7	10	<0.001	<0.001	15.1	<15.0
			SB15 (10'-12')	12/13/2016	PR	PR	PR	PR	N/A	N/A	N/A	N/A
SB16	32.082892°	-103.226083°	SB16 (0'-2')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	36.0	5	<0.001	<0.001	2130	<15.0
			SB16 (2'-4')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	46.9	540	<0.001	<0.001	<5.00	<15.0
			SB16 (4'-6')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	17.0	680	<0.001	<0.001	5910	<15.0
			SB16 (6'-8')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	46.3	480	<0.001	<0.001	5740	<15.0
			SB16 (8'-10')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	27.9	180	<0.001	<0.001	1300	<15.0
			SB16 (10'-12')	12/13/2016	PR	PR	PR	PR	N/A	N/A	N/A	N/A
SB17	32.083077°	-103.225809°	SB17 (0'-2')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	11.9	250	<0.001	<0.001	1960	<15.0
			SB17 (2'-4')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	9.9	570	<0.001	<0.001	3180	<15.0
			SB17 (4'-6')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	11.1	625	<0.001	<0.001	6420	<15.0
			SB17 (6'-8')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	13.5	310	<0.001	<0.001	4000	<15.0
			SB17 (8'-10')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	10.4	760	<0.001	<0.001	6640	<15.0
			SB17 (10'-12')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	7.8	100	<0.001	<0.001	913	<15.0
			SB17 (12'-14')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	8.2	30	<0.001	<0.001	11.8	<15.0
SB18	32.083262°	-103.225537°	SB18 (0'-2')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	51.3	230	<0.001	<0.001	1790	60
			SB18 (2'-4')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	10.5	635	<0.001	<0.001	4170	<15.0
			SB18 (2'-4')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	10.5	635	<0.001	<0.001	4200	<15.0
			SB18 (4'-6')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	8.7	740	<0.001	<0.001	4770	<15.0
			SB18 (6'-8')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	9.5	550	<0.001	<0.001	4120	<15.0
			SB18 (8'-10')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light gray/Fine	9.9	600	<0.001	<0.001	6350	<15.0
			SB18 (10'-12')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light gray/Fine	8.9	15	<0.001	<0.001	315	<15.0
			SB18 (12'-14')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light gray/Fine	7.5	30	<0.001	<0.001	21.5	<15.0
SB19	32.083446°	-103.225265°	SB19 (0'-2')	12/13/2016	NR	NR	NR	NR	N/A	N/A	N/A	N/A
			SB19 (2'-4')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine	6.5	535	<0.001	<0.001	317	<15.0
			SB19 (4'-6')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	6.5	495	<0.001	<0.001	4430	<15.0
			SB19 (6'-8')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	7.6	415	<0.001	<0.001	1750	<15.0
			SB19 (8'-10')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light gray/Fine	6.5	45	<0.001	<0.001	143	<15.0
			SB19 (10'-12')	12/13/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	6.5	20	<0.001	<0.001	16.6	<15.0
SB20	32.083581°	-103.225142°	SB20 (0'-2')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	29.5	415	<0.001	<0.001	4600	38.1
			SB20 (2'-4')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	2.6	800	<0.001	<0.001	5030	<15.0
			SB20 (4'-6')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	3.3	600	<0.001	<0.001	4000	68.8
			SB20 (6'-8')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	2.7	680	<0.001	<0.001	4670	<15.0
			SB20 (8'-10')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	3.3	120	<0.001	<0.001	159	<15.0
			SB20 (10'-12')	12/14/2016	Caliche Rock	Light gray/Fine	4.5	65	<0.001	<0.001	18.8	<15.0
SB21	32.083691°	-103.224979°	SB21 (0'-2')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	142.0	260	<0.001	<0.001	539	<15.0

Spill 2												
Field Data									Laboratory Results			
									Benzene mg/kg	Total BTEX mg/kg	Chlorides mg/kg	Total TPH mg/kg
									Action Limits			
Soil Boring ID	Latitude	Longitude	Sample ID	Date Collected	Soil Type	Soil Color/Size	PID (PPM)	Chlorides (field screening)	10 mg/kg	50 mg/kg	Horizontal: 600 mg/kg Vertical: 250 mg/kg	5000 mg/kg
			SB21 (2'-4')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	8.1	560	<0.001	<0.001	4210	<15.0
			SB21 (4'-6')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	7.3	100	<0.001	<0.001	646	<15.0
			SB21 (6'-8')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	5.8	25	<0.001	<0.001	<5.00	<15.0
			SB21 (6'-8')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	4.9	40	<0.001	<0.001	<5.00	<15.0
			SB21 (8'-10')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light gray/Fine	4.9	40	<0.001	<0.001	<5.00	<15.0
			SB21 (10'-11')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	4.8	15	<0.001	<0.001	6.5	<15.0
			SB21 (10'-11')	12/14/2016	PR	PR	PR	PR	N/A	N/A	N/A	N/A
SB22	32.083806°	-103.224809°	SB22 (0'-2')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	480.0	710	<0.001	<0.001	4160	818
			SB22 (2'-4')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	25.4	615	<0.001	<0.001	6570	<15.0
			SB22 (4'-6')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light brown/Fine	10.0	70	<0.001	<0.001	45	<15.0
			SB22 (6'-8')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Dark red/Fine	8.3	55	<0.001	<0.001	14.6	<15.0
			SB22 (8'-10')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	12.6	55	<0.001	<0.001	31.8	<15.0
SB23	32.083921°	-103.224638°	SB23 (0'-2')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	17.2	155	<0.001	<0.001	278	<15.0
			SB23 (2'-4')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	6.9	185	<0.001	<0.001	56.2	<15.0
			SB23 (4'-6')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	7.0	510	<0.001	<0.001	907	<15.0
			SB23 (6'-8')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	6.0	140	<0.001	<0.001	390	<15.0
			SB23 (8'-10')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	5.3	220	<0.001	<0.001	206	<15.0
SB24	32.084065°	-103.224523°	SB24 (0'-2')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	58.0	5	<0.001	<0.001	6.9	<15.0
			SB24 (2'-4')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	331.0	10	<0.001	<0.001	7.5	<15.0
			SB24 (4'-6')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	28.0	35	<0.001	<0.001	5.45	<15.0
			SB24 (6'-8')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	19.8	60	<0.001	<0.001	7.97	<15.0
			SB24 (8'-10')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	24.5	35	<0.001	<0.001	19.8	<15.0
SB25	32.084010°	-103.224815°	SB25 (0'-2')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	12.6	15	<0.001	<0.001	20.3	<15.0
			SB25 (2'-4')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	14.7	5	<0.001	<0.001	8.91	<15.0
			SB25 (4'-6')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	14.7	20	<0.001	<0.001	<5.00	<15.0
			SB25 (6'-8')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	11.9	50	<0.001	<0.001	<5.00	<15.0
			SB25 (8'-10')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	12.4	45	<0.001	<0.001	6.06	<15.0
SB26	32.083941°	-103.224964°	SB26 (0'-2')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	9.4	325	<0.001	<0.001	1470	<15.0
			SB26 (0'-2')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	9.4	325	<0.001	<0.001	1630	<15.0
			SB26 (2'-4')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	11.6	365	<0.001	<0.001	1940	<15.0
			SB26 (4'-6')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light brown/Fine	11.8	40	<0.001	<0.001	7.46	<15.0
			SB26 (6'-8')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine	12.7	50	<0.001	<0.001	7.44	<15.0
			SB26 (8'-10')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine	10.4	40	<0.001	<0.001	<5.00	<15.0
			SB26 (10'-12')	12/14/2016	PR	PR	PR	PR	N/A	N/A	N/A	N/A
SB27	32.083810°	-103.225101°	SB27 (0'-2')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine	5.6	415	<0.001	<0.001	1210	<15.0
			SB27 (2'-4')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	7.0	480	<0.001	<0.001	836	<15.0
			SB27 (4'-6')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine	6.5	80	<0.001	<0.001	14.8	<15.0
			SB27 (6'-8')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine	11.1	65	<0.001	<0.001	5.03	<15.0
			SB27 (8'-10')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine	5.8	25	<0.001	<0.001	12.1	<15.0
SB28	32.083698°	-103.225317°	SB28 (0'-2')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	5.3	435	<0.001	<0.001	2120	<15.0
			SB28 (2'-4')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	7.3	630	<0.001	<0.001	3610	<15.0
			SB28 (4'-6')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	5.5	755	<0.001	<0.001	6290	<15.0
			SB28 (6'-8')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	9.4	205	<0.001	<0.001	645	<15.0
			SB28 (8'-10')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	8.2	90	<0.001	<0.001	<5.00	<15.0
SB29	32.083494°	-103.225346°	SB29 (0'-2')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	5.3	95	<0.001	<0.001	28.4	<15.0
			SB29 (2'-4')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	6.7	625	<0.001	<0.001	5930	<15.0
			SB29 (4'-6')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	9.7	735	<0.001	<0.001	5800	<15.0
			SB29 (6'-8')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	7.1	355	<0.001	<0.001	1520	<15.0
			SB29 (8'-10')	12/14/2016	Caliche Rock	Light gray/Fine	7.0	120	<0.001	<0.001	216	<15.0
SB30	32.083315°	-103.225606°	SB30 (0'-2')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	6.2	195	<0.001	<0.001	266	<15.0
			SB30 (0'-2')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	6.2	195	<0.001	<0.001	526	<15.0
			SB30 (2'-4')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	6.1	745	<0.001	<0.001	4060	<15.0
			SB30 (4'-6')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	7.2	520	<0.001	<0.001	3120	<15.0
			SB30 (6'-8')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine	7.0	725	<0.001	<0.001	5050	<15.0
			SB30 (8'-10')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine	7.2	500	<0.001	<0.001	3200	<15.0
			SB30 (10'-12')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine	5.6	335	<0.001	<0.001	4890	<15.0
			SB30 (12'-14')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine	5.0	130	<0.001	<0.001	124	<15.0
SB31	32.083136°	-103.225866°	SB31 (0'-2')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	4.7	50	<0.001	<0.001	5.59	<15.0
			SB31 (2'-4')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	6.6	30	<0.001	<0.001	8.34	<15.0
			SB31 (4'-6')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	5.7	75	<0.001	<0.001	<5.00	<15.0
			SB31 (6'-8')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	6.1	35	<0.001	<0.001	<5.00	<15.0
			SB31 (8'-10')	12/14/2016	PR	PR	PR	PR	N/A	N/A	N/A	N/A
SB32	32.082957°	-103.226126°	SB32 (0'-2')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	3.5	0	<0.001	<0.001	5.43	<15.0
			SB32 (2'-4')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	4.3	5	<0.001	<0.001	<5.00	<15.0
			SB32 (4'-6')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	4.2	165	<0.001	<0.001	<5.00	<15.0
			SB32 (6'-8')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	4.7	50	<0.001	<0.001	<5.00	<15.0
			SB32 (8'-10')	12/14/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	4.0	55	<0.001	<0.001	12.8	<15.0
SB33	32.083817°	-103.224360°	SB33 (0'-2')	12/15/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	1.6	30	<0.001	<0.001	8.08	<15.0
			SB33 (2'-4')	12/15/2016	Caliche Rock	Light gray/Fine	1.2	5	<0.001	<0.001	<5.00	<15.0
			SB33 (4'-6')	12/15/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light brown/Fine	1.7	15	<0.001	<0.001	<5.00	<15.0
			SB33 (6'-8')	12/15/2016	Caliche Rock	Light gray/Fine	1.3	40	<0.001	<0.001	9.18	<15.0
			SB33 (8'-10')	12/15/2016	PR	PR	PR	PR	N/A	N/A	N/A	N/A
SB34	32.083744°	-103.224545°	SB34 (0'-2')	12/15/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	404.0	370	<0.001	<0.001	3690	<15.0
			SB34 (0'-2')	12/15/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	404.0	370	<0.001	<0.001	3110	<15.0
			SB34(2'-4')	12/15/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	11.6	950	<0.001	<0.001	4550	<15.0
			SB34 (4'-6')	12/15/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	4.0	775	<0.001	<0.001	4800	<15.0
			SB34 (6'-8')	12/15/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	4.5	885	<0.001	<0.001	4800	<15.0
			SB34 (8'-10')	12/15/2016	Caliche Rock	Light gray/Fine	2.9	895	<0.001	<0.001	3760	<15.0
			SB34 (10'-12')	12/15/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine	2.5	375	<0.001	<0.001	594	<15.0
			SB34 (12'-14')	12/15/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Red/Fine	2.5	185	<0.001	<0.001	10.6	<15.0
SB35	32.083558°	-103.224843°	SB35 (0'-2')	12/15/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	3.8	75	<0.001	<0.001	8.23	<15.0
			SB35(2'-4')	12/15/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	red/Fine	4.4	775	<0.001	<0.001	4790	<15.0
			SB35 (4'-6')	12/15/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	3.6	115	<0.001	<0.001	74.6	<15.0
			SB35 (6'-8')	12/15/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	4.5	840	<0.001	<0.001	5330	<15.0
			SB35 (8'-10')	12/15/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	6.4	1060	<0.001	<0.001	7670	<15.0
			SB35 (10'-10.6')	12/15/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	6.3	1205	<0.001	<0.001	4490	<15.0
			SB35 (10.6'-12')	12/15/2016	PR	PR	PR	PR	N/A	N/A	N/A	N/A
SB36	32.083372°	-103.225140°	SB36 (0'-2')	12/15/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	4.1	20	<0.001	<0.001	97.3	<15.0
			SB36 (2'-4')	12/15/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	3.5	595	<0.001	<0.001	2470	<15.0
			SB36 (4'-6')	12/15/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	3.3	320	<0.001	<0.001	3450	<15.0
			SB36 (6'-8')	12/15/2016	Caliche Rock	Light gray/Fine	4.0	780	<0.001	<0.001	2360	<15.0
			SB36 (8'-10')	12/15/2016	Caliche Rock	Light gray/Fine	3.6	45	<0.001	<0.001	9.91	<15.0
			SB36 (10'-12')	12/15/2016	Caliche Rock	Light gray/Fine	3.6	45	<0.001	<0.001	<5.00	<15.0
SB37	32.083186°	-103.225438°	SB37 (0'-2')	12/15/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	3.8	170	<0.001	<0.001	443	<15.0
			SB37 (2'-4')	12/15/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	3.3	640	<0.001	<0.001	2730	<15.0
			SB37 (2'-4')	12/15/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	3.3	640	<0.001	<0.001	3030	<15.0
			SB37 (4'-6')	12/15/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	4.0	680	<0.001	<0.001	4950	<15.0
			SB37 (6'-8')	12/15/2016	Caliche Rock	Light gray/Fine	4.1	1070	<0.001	<0.001	4590	<15.0
			SB37 (8'-10')	12/15/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	4.6	220	<0.001	<0.001	504	<15.0
			SB37 (10'-12')	12/15/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	2.1	25	<0.001	<0.001	9.86	<15.0
SB38	32.083000°	-103.225735°	SB38 (0'-2')	12/15/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	3.7	575	<0.001	<0.001	2880	<15.0
			SB38 (2'-4')	12/15/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	3.0	540	<0.001	<0.001	2570	<15.0
			SB38 (4'-6')	12/15/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	3.2	655	<0.001	<0.001	4950	<15.0
			SB38 (6'-8')	12/15/2016	Caliche Rock	Light gray/Fine	2.7	250	<0.001	<0.001	915	<15.0
			SB38 (8'-10')	12/15/2016	Caliche Rock	Light gray/Fine	2.7	70	<0.001	<0.001	15.8	<15.0
			SB38 (10'-12')	12/15/2016	PR	PR	PR	PR	N/A	N/A	N/A	N/A
SB39	32.082814°	-103.226032°	SB39 (0'-2')	12/15/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	5.0	900	<0.001	<0.001	2770	<15.0
			SB39 (2'-4')	12/15/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	2.7	785	<0.001	<0.001	516	<15.0
			SB39 (4'-6')	12/15/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	5.1	500	<0.001	<0.001	4090	<15.0
			SB39 (6'-8')	12/15/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	5.0	975	<0.001	<0.001	8790	<15.0
			SB39 (8'-10')	12/15/2016	Caliche Rock	Light gray/Fine	4.4	625	<0.001	<0.001	4640	<15.0
			SB39 (10'-12')	12/15/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	3.2	520	<0.001	<0.001	3180	<15.0
			SB39 (12'-14')	12/15/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	3.0	65	<0.001	<0.001	31.5	<15.0
SB40	32.082657°	-103.226330°	SB40 (0'-2')	12/15/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	4.2	10	<0.001	<0.001	7.61	<15.0

Spill 2												
Field Data									Laboratory Results			
									Benzene mg/kg	Total BTEX mg/kg	Chlorides mg/kg	Total TPH mg/kg
									Action Limits			
Soil Boring ID	Latitude	Longitude	Sample ID	Date Collected	Soil Type	Soil Color/Size	PID (PPM)	Chlorides (field screening)	10 mg/kg	50 mg/kg	Horizontal: 600 mg/kg Vertical: 250 mg/kg	5000 mg/kg
			SB40 (2'-4')	12/15/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	4.3	35	<0.001	<0.001	12.2	<15.0
			SB40 (4'-6')	12/15/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	5.5	35	<0.001	<0.001	5.42	<15.0
			SB40 (6'-7')	12/15/2016	Caliche Rock	Light gray/Fine	4.2	100	<0.001	<0.001	12.3	<15.0
			SB40 (6'-7')	12/15/2016	Caliche Rock	Light gray/Fine	4.2	100	<0.001	<0.001	12.7	<15.0
			SB40 (7'-8')	12/15/2016	PR	PR	PR	PR	N/A	N/A	N/A	N/A
SB41	32.082671°	-103.225939°	SB41 (0'-2')	12/20/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	12.2	0	<0.001	<0.001	5.71	<15.0
			SB41 (2'-4')	12/20/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	6.2	0	<0.001	<0.001	7.46	<15.0
			SB41 (4'-6')	12/20/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	7.8	5	<0.001	<0.001	7.04	<15.0
			SB41 (6'-8')	12/20/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	15.8	10	<0.001	<0.001	<5.00	<15.0
SB42	32.082864°	-103.225604°	SB42 (0'-2')	12/20/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	7.0	0	<0.001	<0.001	11.4	<15.0
			SB42 (2'-4')	12/20/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	5.4	0	<0.001	<0.001	6.32	<15.0
			SB42 (4'-6')	12/20/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	5.1	5	<0.001	<0.001	5.12	<15.0
			SB42 (6'-8')	12/20/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	4.5	95	<0.001	<0.001	6.11	<15.0
SB43	32.083057°	-103.225269°	SB43 (0'-2')	12/20/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	5.0	5	<0.001	<0.001	5.98	<15.0
			SB43 (2'-4')	12/20/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	5.2	5	<0.001	<0.001	5.37	165
			SB43 (4'-6')	12/20/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	5.1	25	<0.001	<0.001	<5.00	<15.0
			SB43 (6'-8')	12/20/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	6.6	130	<0.001	<0.001	7.11	<15.0
SB44	32.083250°	-103.224935°	SB44 (0'-2')	12/20/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	3.0	5	<0.001	<0.001	6.27	<15.0
			SB44 (2'-4')	12/20/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	2.9	15	<0.001	<0.001	5.57	<15.0
			SB44 (4'-6')	12/20/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	1.8	50	<0.001	<0.001	5.62	<15.0
			SB44 (6'-8')	12/20/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	2.9	30	<0.001	<0.001	6.49	<15.0
SB45	32.083414°	-103.224696°	SB45 (0'-2')	12/21/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	2.5	0	<0.001	<0.001	6.96	<15.0
			SB45 (2'-4')	12/21/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	3.2	0	<0.001	<0.001	5.9	<15.0
			SB45 (4'-6')	12/21/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	2.8	5	<0.001	<0.001	5.28	<15.0
			SB45 (6'-8')	12/21/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	2.3	10	<0.001	<0.001	<5.00	<15.0
SB46	32.083574°	-103.224391°	SB46 (0'-2')	12/21/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	2.8	0	<0.001	<0.001	<5.00	<15.0
			SB46 (0'-2')	12/21/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	2.8	0	<0.001	<0.001	5.4	<15.0
			SB46 (2'-4')	12/21/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	3.1	0	<0.001	<0.001	<5.00	<15.0
			SB46 (4'-6')	12/21/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	2.7	5	<0.001	<0.001	<5.00	<15.0
			SB46 (6'-8')	12/21/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	2.5	10	<0.001	<0.001	<5.00	<15.0
SB47	32.084402°	-103.224775°	SB47 (0'-2')	12/21/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	4.7	0	<0.001	<0.001	<5.00	<15.0
			SB47 (2'-4')	12/21/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	5.2	0	<0.001	<0.001	<5.00	<15.0
			SB47 (4'-6')	12/21/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	2.6	5	<0.001	<0.001	<5.00	<15.0
			SB47 (6'-8')	12/21/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	2.3	10	<0.001	<0.001	<5.00	<15.0
			SB47 (8'-10')	12/21/2016	PR	PR	PR	PR	N/A	N/A	N/A	N/A
SB48	32.083391°	-103.225705°	SB48 (0'-2')	12/21/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	5.1	5	<0.001	<0.001	<5.00	<15.0
			SB48 (2'-4')	12/21/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	8.7	15	<0.001	<0.001	<5.00	<15.0
			SB48 (4'-6')	12/21/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	6.5	15	<0.001	<0.001	<5.00	<15.0
			SB48 (6'-8')	12/21/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	6.9	20	<0.001	<0.001	<5.00	<15.0
			SB48 (8'-10')	12/21/2016	PR	PR	PR	PR	N/A	N/A	N/A	N/A
BG1	32.083537°	-103.225916°	BG (0'-2')	12/21/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	6.9	0	<0.001	<0.001	7.02	<15.0
			BG (2'-4')	12/21/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	6.1	0	<0.001	<0.001	5.69	<15.0
			BG (4'-6')	12/21/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	4.7	0	<0.001	<0.001	<5.00	<15.0
			BG (6'-8')	12/21/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	3.9	25	<0.001	<0.001	6.99	<15.0
			BG (8'-10')	12/21/2016	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	3.9	20	<0.001	<0.001	6.15	<15.0
SS-02	32.082988°	-103.225653°	SS-02 (21')	3/8/2017	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	N/A	N/A	N/A	N/A	13.1	N/A
TSS1	32.083656°	-103.224558°	TSS-01 (4')	4/22/2017	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	6.9	-	N/A	N/A	12.7	N/A
TSS2	32.083453°	-103.224893°	TSS-02 (4')	4/22/2017	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	6.0	-	N/A	N/A	21.9	N/A
TSS3	32.083242°	-103.225184°	TSS-03 (4')	4/22/2017	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	4.5	-	N/A	N/A	11	N/A
TSS4	32.083080°	-103.225468°	TSS-04 (4')	4/22/2017	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	3.7	-	N/A	N/A	9.03	N/A
TSS5	32.082855°	-103.225810°	TSS-05 (4')	4/22/2017	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	3.6	-	N/A	N/A	<4.09	N/A
TSS6	32.082696°	-103.226111°	TSS-06 (4')	4/22/2017	SP - Poorly - graded sands, gravelly sands, little or no fines	Light red/Fine	2.0	-	N/A	N/A	<5.00	N/A

(<) 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)

NOTE: NR=NO RECOVERY, PR=PROBE REFUSAL, SPLIT=SPLIT SAMPLE, N/A=NOT APPLICABLE

Table 2: Stockpile Soil Analytical Data
Produced Water Pipeline Release
Nearby Red Hills SWD
Lea County, New Mexico
New Mexico - Case No. 1RP 4498

KJ Environmental

LOCATION: OWL BOBCAT/REDHILLS PIPELINE RELEASE
Spill Area 2

DATE	Sample Pt.	DEPTH	SOIL	WATER	CF	$AgNO_3$	CL-	SOIL LITHOLOGY	FIELD SCREENING *HORIBA D-73*	LAB RESULTS CL-	BLENDED Y / N
	TSS1	1'	-	-	-	-	-	sandy sand damp	41.2	-	N
	TSS1	2'	-	-	-	-	-	sandy sand damp	49.6	-	N
	TSS1	3'	-	-	-	-	-	sandy sand damp	77.2	-	N
	TSS1	4'	19	44	2.32	0.05	116	sandy sand damp		12.7	N
	TSS2	1'	-	-	-	-	-	sandy sand damp	78.4	-	N
	TSS2	2'	-	-	-	-	-	sandy sand damp	85.6	-	N
	TSS2	3'	-	-	-	-	-	sandy sand damp	73.2	-	N
	TSS2	4'	18	45	2.50	0.05	125	sandy sand damp		21.9	N
	TSS3	1'	-	-	-	-	-	sandy sand damp	70.8	-	N
	TSS3	2'	-	-	-	-	-	sandy sand damp	79.2	-	N
	TSS3	3'	-	-	-	-	-	sandy sand damp	88.4	-	N
26-Apr-17	TSS3	4'	15	48	3.20	0.03	96	sandy sand damp		11	N
	TSS4	1'	-	-	-	-	-	sandy sand damp	57.6	-	N
	TSS4	2'	-	-	-	-	-	sandy sand damp	59.2	-	N
	TSS4	3'	-	-	-	-	-	sandy sand damp	54.4	-	N
	TSS4	4'	24	47	1.96	0.03	59	sandy sand damp		9.03	N
	TSS5	1'	-	-	-	-	-	sandy sand damp	55.6	-	N
	TSS5	2'	-	-	-	-	-	sandy sand damp	60.4	-	N
	TSS5	3'	-	-	-	-	-	sandy sand damp	61.2	-	N
	TSS5	4'	20	45	2.25	0.03	67	sandy sand damp		4.9	N

KJ Environmental

LOCATION: OWL BOBCAT/REDHILLS PIPELINE RELEASE

Spill Area 2

DATE	Sample Pt.	DEPTH	SOIL	WATER	CF	$AgNO_3$	CL-	SOIL LITHOLOGY	FIELD SCREENING *HORIBA D-73*	LAB RESULTS CL-	BLENDED Y / N
	TSS6	1'	-	-	-	-	-	sandy sand damp	44.8	-	N
	TSS6	2'	-	-	-	-	-	sandy sand damp	46.4	-	N
	TSS6	3'	-	-	-	-	-	sandy sand damp	38.8	-	N
	TSS6	4'	21	49	2.33	0.03	70	sandy sand damp		5	N
	ASP1	1'	18	45	2.50	0.16	400	sandy sand damp		-	N
	ASP2	1'	21	43	2.05	0.20	409	sandy sand damp		-	N
	ASP3	1'	22	44	2.00	0.19	380	sandy sand damp		-	N
	ASP4	1'	22	49	2.23	0.31	690	sandy sand damp		-	N
	ASP5	1'	19	45	2.37	0.24	568	sandy sand damp		-	N
	ASP6	1'	21	45	2.14	0.17	364	sandy sand damp		-	N
	ASP7	1'	20	48	2.40	0.16	384	sandy sand damp		-	N
	ASP8	1'	21	45	2.14	0.27	578	sandy sand damp		-	N
	ASP9	1'	21	45	2.14	0.34	728	sandy sand damp		-	N
	ASP10	1'	23	48	2.09	0.26	542	sandy sand damp		548	N
	ASP11	1'	-	-	-	-	-	sandy sand damp	400.0	-	N
	ASP12	1'	-	-	-	-	-	sandy sand damp	292.8	-	N
	ASP13	1'	-	-	-	-	-	sandy sand damp	432.0	-	N
	ASP14	1'	-	-	-	-	-	sandy sand damp	370.4	-	N
	ASP15	1'	-	-	-	-	-	sandy sand damp	334.4	-	N
	ASP16	1'	-	-	-	-	-	sandy sand damp	332.0	-	N
	ASP17	1'	-	-	-	-	-	sandy sand damp	393.2	-	N
	ASP18	1'	-	-	-	-	-	sandy sand damp	338.8	-	N
	ASP19	1'	-	-	-	-	-	sandy sand damp	644.0	-	N
31-May	ASP20	1'	-	-	-	-	-	sandy sand damp	334.0	316	N
	ASP21	1'	-	-	-	-	-	sandy sand damp	412.0	-	N
	ASP22	1'	-	-	-	-	-	sandy sand damp	321.6	-	N

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LOCATION: OWL BOBCAT/REDHILLS PIPELINE RELEASE

Spill Area 2

DATE	Sample Pt.	DEPTH	SOIL	WATER	CF	$AgNO_3$	CL-	SOIL LITHOLOGY	FIELD SCREENING *HORIBA D-73*	LAB RESULTS CL-	BLENDED Y / N
	ASP23	1'	-	-	-	-	-	sandy sand damp	548.0	-	N
	ASP24	1'	-	-	-	-	-	sandy sand damp	389.2	-	N
	ASP25	1'	-	-	-	-	-	sandy sand damp	96.0	-	N
	ASP26	1'	-	-	-	-	-	sandy sand damp	279.6	-	N
	ASP27	1'	-	-	-	-	-	sandy sand damp	424.0	-	N
	ASP28	1'	-	-	-	-	-	sandy sand damp	484.0	-	N
	ASP29	1'	-	-	-	-	-	sandy sand damp	372.8	-	N
	ASP30	1'	-	-	-	-	-	sandy sand damp	572.0	607	N
	ASP31	1'	-	-	-	-	-	sandy sand damp	195.2	-	N
	ASP32	1'	-	-	-	-	-	sandy sand damp	440.0	-	N
	ASP33	1'	-	-	-	-	-	sandy sand damp	393.6	-	N
	ASP34	1'	-	-	-	-	-	sandy sand damp	356.8	-	N
	ASP35	1'	-	-	-	-	-	sandy sand damp	314.8	-	N
	ASP36	1'	-	-	-	-	-	sandy sand damp	412.0	-	N
	ASP37	1'	-	-	-	-	-	sandy sand damp	387.2	-	N
	ASP38	1'	-	-	-	-	-	sandy sand damp	294.0	-	N
	ASP39	1'	-	-	-	-	-	sandy sand damp	397.6	-	N
	ASP40	1'	-	-	-	-	-	sandy sand damp	223.6	200	N
	ASP41	1'	-	-	-	-	-	sandy sand damp	118.0	180	N
	ASP42	1'	-	-	-	-	-	sandy sand damp	131.6	183	N
	ASP43	1'	-	-	-	-	-	sandy sand damp	266.0	380	N
	ASP44	1'	-	-	-	-	-	sandy sand damp	106.4	176	N
	ASP45	1'	-	-	-	-	-	sandy sand damp	293.2	388	N
	ASP46	1'	-	-	-	-	-	sandy sand damp	142.0	202	N
	ASP47	1'	-	-	-	-	-	sandy sand damp	98.0	163	N
	ASP48	1'	-	-	-	-	-	sandy sand damp	229.2	322	N

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LOCATION: OWL BOBCAT/REDHILLS PIPELINE RELEASE

Spill Area 2

DATE	Sample Pt.	DEPTH	SOIL	WATER	CF	$AgNO_3$	CL-	SOIL LITHOLOGY	FIELD SCREENING *HORIBA D-73*	LAB RESULTS CL-	BLENDED Y / N
	ASP49	1'	-	-	-	-	-	sandy sand damp	180.8	195	N
1-Jun	ASP50	1'	-	-	-	-	-	sandy sand damp	130.8	192	N
	ASP51	1'	-	-	-	-	-	sandy sand damp	113.6	-	N
	ASP52	1'	-	-	-	-	-	sandy sand damp	250.4	-	N
	ASP53	1'	-	-	-	-	-	sandy sand damp	280.4	-	N
	ASP54	1'	-	-	-	-	-	sandy sand damp	201.6	-	N
	ASP55	1'	-	-	-	-	-	sandy sand damp	209.2	-	N
	ASP56	1'	-	-	-	-	-	sandy sand damp	124.4	-	N
	ASP57	1'	-	-	-	-	-	sandy sand damp	117.6	-	N
	ASP58	1'	-	-	-	-	-	sandy sand damp	169.2	-	N
	ASP59	1'	-	-	-	-	-	sandy sand damp	197.6	-	N
	ASP60	1'	-	-	-	-	-	sandy sand damp	160.0	-	N
	ASP61	1'	-	-	-	-	-	sandy sand damp	448.0	-	N
	ASP62	1'	-	-	-	-	-	sandy sand damp	143.2	-	N
	BSP1	1'	19	49	2.58	0.07	180	sandy sand damp	260.0	-	N
	BSP2	1'	15	49	3.27	0.28	914	sandy sand damp	329.0	-	Y
	BSP3	1'	15	46	3.07	0.17	521	sandy sand damp	254.0	-	N
	BSP4	1'	16	42	2.63	0.19	499	sandy sand damp	138.0	-	N
	BSP5	1'	15	51	3.40	0.27	918	sandy sand damp	249.0	-	Y
6-Jun	BSP6	1'	18	51	2.83	0.53	**1501**	sandy sand damp	137.0	-	Y
	BSP7	1'	16	50	3.13	0.38	**1187**	sandy sand damp	291.0	-	Y
	BSP8	1'	15	50	3.33	0.26	866	sandy sand damp	580.0	-	Y
	BSP9	1'	20	54	2.70	0.29	783	sandy sand damp	428.0	-	Y
	BSP10	1'	19	49	2.58	0.27	696	sandy sand damp	291.0	296	N
	BSP11	1'	16	50	3.13	0.31	968	sandy sand damp	104.0	-	Y
	BSP12	1'	23	44	1.91	0.43	822	sandy sand damp	296.8	-	Y

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LOCATION: OWL BOBCAT/REDHILLS PIPELINE RELEASE

Spill Area 2

DATE	Sample Pt.	DEPTH	SOIL	WATER	CF	$AgNO_3$	CL-	SOIL LITHOLOGY	FIELD SCREENING *HORIBA D-73*	LAB RESULTS CL-	BLENDED Y / N
17-May	BSP13	1'	22	44	2.00	0.77	**1540**	sandy sand damp	277.6	-	Y
	BSP14	1'	18	44	2.44	0.62	**1515**	sandy sand damp	283.2	-	Y
	BSP15	1'	18	42	2.33	0.51	**1190**	sandy sand damp	452.0	-	Y
	BSP16	1'	19	43	2.26	0.57	**1290**	sandy sand damp	208.4	-	Y
	BSP17	1'	19	50	2.63	0.34	894	sandy sand damp	220.8	-	Y
	BSP18	1'	25	37	1.48	0.17	252	sandy sand damp	135.6	-	N
	BSP19	1'	17	43	2.53	0.48	**1214**	sandy sand damp	157.2	-	Y
	BSP20	1'	18	47	2.61	0.2	522	sandy sand damp	354.8	127	N
	BSP21	1'	15	45	3.00	0.15	450	sandy sand damp	243.6	-	N
	BSP22	1'	17	51	3.00	0.15	450	sandy sand damp	334.0	-	N
	BSP23	1'	19	45	2.37	0.09	213	sandy sand damp	456.0	-	N
	BSP24	1'	21	43	2.05	0.1	205	sandy sand damp	386.4	-	N
	BSP25	1'	23	42	1.83	0.18	329	sandy sand damp	1376.0	-	N
	BSP26	1'	24	47	1.96	0.28	548	sandy sand damp	524.0	-	N
	BSP27	1'	24	46	1.92	0.51	977	sandy sand damp	1016.0	-	Y
	BSP28	1'	18	47	2.61	0.18	470	sandy sand damp	296.0	-	N
	BSP29	1'	21	45	2.14	0.19	407	sandy sand damp	584.0	-	N
	BSP30	1'	19	44	2.32	0.4	926	sandy sand damp	257.6	266	Y
	BSP31	1'	18	45	2.50	0.46	**1150**	sandy sand damp	276.8	-	Y
	BSP32	1'	19	48	2.53	0.65	**1642**	sandy sand damp		-	Y
	BSP33	1'	19	46	2.42	0.36	871	sandy sand damp		-	Y
	BSP34	1'	19	48	2.53	0.34	859	sandy sand damp		-	Y
	BSP35	1'	22	46	2.09	0.75	**1568**	sandy sand damp		-	Y
	BSP36	1'	22	47	2.14	0.5	**1068**	sandy sand damp		-	Y
	BSP37	1'	19	43	2.26	0.84	**1900**	sandy sand damp		-	Y
	BSP38	1'	22	42	1.91	0.81	**1546**	sandy sand damp		-	Y

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Spill Area 2

DATE	Sample Pt.	DEPTH	SOIL	WATER	CF	$AgNO_3$	CL-	SOIL LITHOLOGY	FIELD SCREENING *HORIBA D-73*	LAB RESULTS CL-	BLENDED Y / N
	BSP39	1'	18	41	2.28	0.28	638	sandy sand damp		-	N
	BSP40	1'	24	44	1.83	0.75	**1375**	sandy sand damp		-	Y
	BSP41	1'	-	-	-	-	-	sandy sand damp	260.0	-	N
	BSP42	1'	-	-	-	-	-	sandy sand damp	329.6	-	N
	BSP43	1'	-	-	-	-	-	sandy sand damp	254.0	-	N
	BSP44	1'	-	-	-	-	-	sandy sand damp	138.0	-	N
	BSP45	1'	-	-	-	-	-	sandy sand damp	249.6	-	N
	BSP46	1'	-	-	-	-	-	sandy sand damp	137.6	-	N
	BSP47	1'	-	-	-	-	-	sandy sand damp	291.2	-	N
	BSP48	1'	-	-	-	-	-	sandy sand damp	580.0	-	N
	BSP49	1'	-	-	-	-	-	sandy sand damp	428.0	-	N
	BSP50	1'	-	-	-	-	-	sandy sand damp	260.4	-	N
	BSP51	1'	-	-	-	-	-	sandy sand damp	104.8	-	N
	BSP52	1'	-	-	-	-	-	sandy sand damp	296.8	-	N
5-Jun	BSP53	1'	-	-	-	-	-	sandy sand damp	277.6	-	N
	BSP54	1'	-	-	-	-	-	sandy sand damp	283.2	-	N
	BSP55	1'	-	-	-	-	-	sandy sand damp	452.0	-	N
	BSP56	1'	-	-	-	-	-	sandy sand damp	208.4	-	N
	BSP57	1'	-	-	-	-	-	sandy sand damp	220.8	-	N
	BSP58	1'	-	-	-	-	-	sandy sand damp	135.6	-	N
	BSP59	1'	-	-	-	-	-	sandy sand damp	157.2	-	N
	BSP60	1'	-	-	-	-	-	sandy sand damp	354.8	-	N
	BSP61	1'	-	-	-	-	-	sandy sand damp	243.6	-	N
	BSP62	1'	-	-	-	-	-	sandy sand damp	334.0	-	N
	BSP63	1'	-	-	-	-	-	sandy sand damp	456.0	-	N
	BSP64	1'	-	-	-	-	-	sandy sand damp	386.4	-	N

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LOCATION: OWL BOBCAT/REDHILLS PIPELINE RELEASE

Spill Area 2

DATE	Sample Pt.	DEPTH	SOIL	WATER	CF	$AgNO_3$	CL-	SOIL LITHOLOGY	FIELD SCREENING *HORIBA D-73*	LAB RESULTS CL-	BLENDED Y / N
27-Apr	BSP65	1'	-	-	-	-	-	sandy sand damp	**1376.0**	-	Y
	BSP66	1'	-	-	-	-	-	sandy sand damp	524.0	-	N
	BSP67	1'	-	-	-	-	-	sandy sand damp	**1016.0**	-	Y
	BSP68	1'	-	-	-	-	-	sandy sand damp	296.0	-	Y
	BSP69	1'	-	-	-	-	-	sandy sand damp	584.0	-	Y
	BSP70	1'	-	-	-	-	-	sandy sand damp	257.6	-	Y
	BSP71	1'	-	-	-	-	-	sandy sand damp	276.8	-	Y
	CSP1	1'	19	46	2.42	0.16	387	sandy sand damp		-	N
	CSP2	1'	17	46	2.71	0.15	406	sandy sand damp		-	N
	CSP3	1'	15	44	2.93	0.12	352	sandy sand damp		-	N
	CSP4	1'	12	48	4.00	0.2	800	sandy sand damp		-	N
	CSP5	1'	19	45	2.37	0.17	403	sandy sand damp		-	N
	CSP6	1'	14	43	3.07	0.3	921	sandy sand damp		-	N
	CSP7	1'	18	49	2.72	0.52	**1415**	sandy sand damp		-	Y
	CSP8	1'	17	48	2.82	0.3	847	sandy sand damp		-	N
	CSP9	1'	19	44	2.32	0.24	556	sandy sand damp		-	N
	CSP10	1'	22	47	2.14	0.46	982	sandy sand damp		-	N
	CSP11	1'	22	43	1.95	0.64	**1251**	sandy sand damp		-	Y
	CSP12	1'	17	43	2.53	0.39	986	sandy sand damp		-	N
	CSP13	1'	15	46	3.07	0.56	**1717**	sandy sand damp		-	Y
	CSP14	1'	19	46	2.42	0.27	653	sandy sand damp		-	N
	CSP15	1'	21	46	2.19	0.43	942	sandy sand damp		-	N
	CSP16	1'	24	41	1.71	0.44	751	sandy sand damp		-	N
	CSP17	1'	19	47	2.47	0.26	643	sandy sand damp		-	N
	CSP18	1'	18	46	2.56	0.3	766	sandy sand damp		-	N
	CSP19	1'	28	40	1.43	0.59	843	sandy sand damp		-	N

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LOCATION: OWL BOBCAT/REDHILLS PIPELINE RELEASE

Spill Area 2

DATE	Sample Pt.	DEPTH	SOIL	WATER	CF	$AgNO_3$	CL-	SOIL LITHOLOGY	FIELD SCREENING *HORIBA D-73*	LAB RESULTS CL-	BLENDED Y / N
	CSP20	1'	17	43	2.53	0.3	759	sandy sand damp		-	N
	CSP21	1'	14	41	2.93	0.18	527	sandy sand damp		-	N
	CSP22	1'	16	40	2.50	0.38	950	sandy sand damp		-	N
	CSP23	1'	15	46	3.07	0.15	460	sandy sand damp		-	N
	CSP24	1'	15	41	2.73	0.23	628	sandy sand damp		-	N
	CSP25	1'	16	41	2.56	0.28	717	sandy sand damp		-	N
	CSP26	1'	15	47	3.13	0.32	**1002**	sandy sand damp		-	Y
	CSP27	1'	-	-	-	-	-	sandy sand damp	496.0	-	N
	CSP28	1'	-	-	-	-	-	sandy sand damp	516.0	-	N
	CSP29	1'	-	-	-	-	-	sandy sand damp	664.0	-	N
	CSP30	1'	-	-	-	-	-	sandy sand damp	320.8	-	N
	CSP31	1'	-	-	-	-	-	sandy sand damp	456.0	-	N
	CSP32	1'	-	-	-	-	-	sandy sand damp	548.0	-	N
	CSP33	1'	-	-	-	-	-	sandy sand damp	391.2	-	N
	CSP34	1'	-	-	-	-	-	sandy sand damp	512.0	-	N
	CSP35	1'	-	-	-	-	-	sandy sand damp	576.0	-	N
	CSP36	1'	-	-	-	-	-	sandy sand damp	307.6	-	N
	CSP37	1'	-	-	-	-	-	sandy sand damp	159.2	-	N
	CSP38	1'	-	-	-	-	-	sandy sand damp	129.2	-	N
	CSP39	1'	-	-	-	-	-	sandy sand damp	266.4	-	N
	CSP40	1'	-	-	-	-	-	sandy sand damp	236.0	-	N
17-May	CSP41	1'	-	-	-	-	-	sandy sand damp	147.2	-	N
	CSP42	1'	-	-	-	-	-	sandy sand damp	226.8	-	N
	CSP43	1'	-	-	-	-	-	sandy sand damp	179.6	-	N
	CSP44	1'	-	-	-	-	-	sandy sand damp	242.8	-	N
	CSP45	1'	-	-	-	-	-	sandy sand damp	396.4	-	N

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Spill Area 2

DATE	Sample Pt.	DEPTH	SOIL	WATER	CF	$AgNO_3$	CL-	SOIL LITHOLOGY	FIELD SCREENING *HORIBA D-73*	LAB RESULTS CL-	BLENDED Y / N
	CSP46	1'	-	-	-	-	-	sandy sand damp	272.8	-	N
	CSP47	1'	-	-	-	-	-	sandy sand damp	780.0	-	Y
	CSP48	1'	-	-	-	-	-	sandy sand damp	354.8	-	N
	CSP49	1'	-	-	-	-	-	sandy sand damp	696.0	-	N
	CSP50	1'	-	-	-	-	-	sandy sand damp	500.0	-	N
	CSP51	1'	-	-	-	-	-	sandy sand damp	432.0	-	N
	CSP52	1'	-	-	-	-	-	sandy sand damp	500.0	-	N
	CSP53	1'	-	-	-	-	-	sandy sand damp	904.0	-	Y
	CSP54	1'	-	-	-	-	-	sandy sand damp	984.0	-	Y
	CSP55	1'	-	-	-	-	-	sandy sand damp	828.0	-	Y
	CSP56	1'	-	-	-	-	-	sandy sand damp	792.0	-	Y
	CSP57	1'	-	-	-	-	-	sandy sand damp	592.0	-	N
	CSP58	1'	-	-	-	-	-	sandy sand damp	472.0	-	N
	CSP59	1'	-	-	-	-	-	sandy sand damp	600.0	-	N
	CSP60	1'	-	-	-	-	-	sandy sand damp	916.0	-	Y
	CSP61	1'	-	-	-	-	-	sandy sand damp	816.0	-	Y
	CSP62	1'	-	-	-	-	-	sandy sand damp	1044.0	-	Y
	DSP1	1'	20	45	2.25	0.45	**1012**	sandy sand damp		-	Y
	DSP2	1'	19	49	2.58	0.37	954	sandy sand damp		-	N
	DSP3	1'	17	48	2.82	0.52	**1468**	sandy sand damp		-	Y
	DSP4	1'	20	46	2.30	0.5	**1150**	sandy sand damp		-	Y
27-Apr	DSP5	1'	17	46	2.71	0.52	**1407**	sandy sand damp		-	Y
	DSP6	1'	18	55	3.06	0.32	977	sandy sand damp		-	N
	DSP7	1'	16	49	3.06	0.53	**1623**	sandy sand damp		-	Y
	DSP8	1'	19	49	2.58	0.17	438	sandy sand damp		-	N
	DSP9	1'	22	48	2.18	0.26	567	sandy sand damp		-	N

KJ Environmental

LOCATION: OWL BOBCAT/REDHILLS PIPELINE RELEASE

Spill Area 2

DATE	Sample Pt.	DEPTH	SOIL	WATER	CF	$AgNO_3$	CL-	SOIL LITHOLOGY	FIELD SCREENING *HORIBA D-73*	LAB RESULTS CL-	BLENDED Y / N
	DSP10	1'	16	50	3.13	0.24	750	sandy sand damp		163	N
	DSP11	1'	17	49	2.88	0.25	720	sandy sand damp		-	N
	DSP12	1'	16	49	3.06	0.1	306	sandy sand damp		-	N
	DSP13	1'	16	44	2.75	0.13	357	sandy sand damp		-	N
	DSP14	1'	16	49	3.06	0.11	337	sandy sand damp		-	N
	DSP15	1'	19	45	2.37	0.4	947	sandy sand damp		-	N
	DSP16	1'	16	48	3.00	0.18	540	sandy sand damp		-	N
	DSP17	1'	17	52	3.06	0.07	214	sandy sand damp		-	N
	DSP18	1'	15	50	3.33	0.08	267	sandy sand damp		-	N
	DSP19	1'	16	48	3.00	0.17	510	sandy sand damp		-	N
	DSP20	1'	16	48	3.00	0.12	360	sandy sand damp		169	N
	DSP21	1'	22	48	2.18	0.12	262	sandy sand damp		-	N
	DSP22	1'	14	49	3.50	0.07	245	sandy sand damp		-	N
	DSP23	1'	19	47	2.47	0.1	247	sandy sand damp		-	N
	DSP24	1'	19	44	2.32	0.07	162	sandy sand damp		-	N
	DSP25	1'	22	45	2.05	0.13	266	sandy sand damp		-	N
	DSP26	1'	17	49	2.88	0.17	490	sandy sand damp		-	N
	DSP27	1'	16	48	3.00	0.34	**1020**	sandy sand damp		-	Y
	DSP28	1'	18	48	2.67	0.36	960	sandy sand damp		-	N
	DSP29	1'	19	46	2.42	0.14	339	sandy sand damp		-	N
	DSP30	1'	19	50	2.63	0.16	421	sandy sand damp		346	N
	DSP31	1'	26	42	1.62	0.57	920	sandy sand damp		-	N
	DSP32	1'	15	54	3.60	0.38	**1368**	sandy sand damp		-	Y
	DSP33	1'	15	45	3.00	0.16	480	sandy sand damp		-	N
	DSP34	1'	15	47	3.13	0.11	345	sandy sand damp		-	N
	DSP35	1'	15	54	3.60	0.18	648	sandy sand damp		-	N

KJ Environmental

LOCATION: OWL BOBCAT/REDHILLS PIPELINE RELEASE

Spill Area 2

DATE	Sample Pt.	DEPTH	SOIL	WATER	CF	$AgNO_3$	CL-	SOIL LITHOLOGY	FIELD SCREENING *HORIBA D-73*	LAB RESULTS CL-	BLENDED Y / N
28-Apr	DSP36	1'	14	47	3.36	0.46	**1544**	sandy sand damp		-	Y
	DSP37	1'	22	49	2.23	0.21	468	sandy sand damp		-	N
	DSP38	1'	23	47	2.04	0.13	266	sandy sand damp		-	N
	DSP39	1'	16	47	2.94	0.15	440	sandy sand damp		-	N
	DSP40	1'	14	49	3.50	0.11	385	sandy sand damp		284	N
	DSP41	1'	16	46	2.88	0.11	316	sandy sand damp		-	N
	DSP42	1'	16	51	3.19	0.1	319	sandy sand damp		-	N
	DSP43	1'	15	48	3.20	0.07	224	sandy sand damp		-	N
	DSP44	1'	19	43	2.26	0.12	271	sandy sand damp		-	N
	DSP45	1'	21	48	2.29	0.08	183	sandy sand damp		-	N
	DSP46	1'	17	45	2.65	0.11	291	sandy sand damp		-	N
	DSP47	1'	20	47	2.35	0.1	235	sandy sand damp		-	N
	DSP48	1'	21	39	1.86	0.26	483	sandy sand damp		-	N
	DSP49	1'	23	42	1.83	0.15	274	sandy sand damp		-	N
	DSP50	1'	17	46	2.71	0.16	433	sandy sand damp		232	N
	DSP51	1'	17	49	2.88	0.13	375	sandy sand damp		-	N
	DSP52	1'	17	45	2.65	0.1	265	sandy sand damp		-	N
	DSP53	1'	14	46	3.29	0.08	263	sandy sand damp		-	N
	DSP54	1'	19	42	2.21	0.07	155	sandy sand damp		-	N
	DSP55	1'	16	45	2.81	0.07	197	sandy sand damp		381	N
	DSP56	1'	15	50	3.33	0.06	200	sandy sand damp		154	N
	DSP57	1'	13	48	3.69	0.07	258	sandy sand damp		155	N
	DSP58	1'	16	45	2.81	0.09	253	sandy sand damp		178	N
	DSP59	1'	14	47	3.36	0.09	302	sandy sand damp		145	N
	DSP60	1'	15	49	3.27	0.07	229	sandy sand damp		151	N
	DSP61	1'	19	47	2.47	0.03	74	sandy sand damp		156	N

KJ Environmental

LOCATION: OWL BOBCAT/REDHILLS PIPELINE RELEASE

Spill Area 2

DATE	Sample Pt.	DEPTH	SOIL	WATER	CF	$AgNO_3$	CL-	SOIL LITHOLOGY	FIELD SCREENING *HORIBA D-73*	LAB RESULTS CL-	BLENDED Y / N
16-May	DSP62	1'	16	48	3.00	0.1	300	sandy sand damp		157	N
	DSP63	1'	17	47	2.76	0.08	221	sandy sand damp		139	N
	DSP64	1'	17	49	2.88	0.1	288	sandy sand damp		99.5	N
	ESP1	1'	*	*	*	*	*	sandy sand damp	*	-	N
	ESP2	1'	*	*	*	*	*	sandy sand damp	*	-	N
	ESP3	1'	*	*	*	*	*	sandy sand damp	*	-	N
	ESP4	1'	*	*	*	*	*	sandy sand damp	*	-	N
	ESP5	1'	*	*	*	*	*	sandy sand damp	*	-	N
	ESP6	1'	*	*	*	*	*	sandy sand damp	*	-	N
	ESP7	1'	*	*	*	*	*	sandy sand damp	*	-	N
	ESP8	1'	*	*	*	*	*	sandy sand damp	*	-	N
	ESP9	1'	*	*	*	*	*	sandy sand damp	*	-	N
	ESP10	1'	*	*	*	*	*	sandy sand damp	*	**1400**	Y
	FSP1	1'	19	43	2.26	0.18	407	sandy sand damp		-	N
	FSP2	1'	15	45	3.00	0.23	690	sandy sand damp		-	N
	FSP3	1'	18	50	2.78	0.26	722	sandy sand damp		-	N
	FSP4	1'	17	48	2.82	0.33	931	sandy sand damp		-	N
	FSP5	1'	18	45	2.50	0.38	950	sandy sand damp		-	N
	FSP6	1'	18	44	2.44	0.38	929	sandy sand damp		-	N
	FSP7	1'	18	49	2.72	0.3	816	sandy sand damp		-	N
	FSP8	1'	16	44	2.75	0.21	577	sandy sand damp		-	N
	FSP9	1'	15	46	3.07	0.16	491	sandy sand damp		-	N
	FSP10	1'	24	42	1.75	0.22	385	sandy sand damp		-	N
	FSP11	1'	20	45	2.25	0.18	405	sandy sand damp		-	N
	FSP12	1'	21	46	2.19	0.38	832	sandy sand damp		-	N
	FSP13	1'	17	46	2.71	0.35	947	sandy sand damp		-	N

KJ Environmental

LOCATION: OWL BOBCAT/REDHILLS PIPELINE RELEASE

Spill Area 2

DATE	Sample Pt.	DEPTH	SOIL	WATER	CF	$AgNO_3$	CL-	SOIL LITHOLOGY	FIELD SCREENING *HORIBA D-73*	LAB RESULTS CL-	BLENDED Y / N
3-May	FSP14	1'	19	45	2.37	0.17	403	sandy sand damp		-	N
	FSP15	1'	21	43	2.05	0.47	962	sandy sand damp		-	N
	FSP16	1'	23	43	1.87	0.11	206	sandy sand damp		-	N
	FSP17	1'	20	44	2.20	0.15	330	sandy sand damp		-	N
	FSP18	1'	17	47	2.76	0.25	691	sandy sand damp		-	N
	FSP19	1'	19	46	2.42	0.09	218	sandy sand damp		-	N
	FSP20	1'	16	48	3.00	0.19	570	sandy sand damp		-	N
	FSP21	1'	19	41	2.16	0.18	388	sandy sand damp		-	N
	FSP22	1'	16	49	3.06	0.25	765	sandy sand damp		-	N
	FSP23	1'	17	48	2.82	0.33	931	sandy sand damp		-	N
	FSP24	1'	15	45	3.00	0.22	660	sandy sand damp		-	N
	FSP25	1'	21	51	2.43	0.08	194	sandy sand damp		-	N
	FSP26	1'	19	46	2.42	0.21	508	sandy sand damp		-	N
	FSP27	1'	15	47	3.13	0.12	376	sandy sand damp		-	N
	FSP28	1'	20	43	2.15	0.2	430	sandy sand damp		-	N
	FSP29	1'	15	49	3.27	0.25	816	sandy sand damp		-	N
	FSP30	1'	14	50	3.57	0.23	821	sandy sand damp		-	N
	FSP31	1'	19	47	2.47	0.39	964	sandy sand damp		-	N
	FSP32	1'	22	49	2.23	0.15	334	sandy sand damp		-	N
	FSP33	1'	21	48	2.29	0.21	480	sandy sand damp		-	N
4-May	FSP34	1'	15	47	3.13	0.24	752	sandy sand damp		-	N
	FSP35	1'	15	47	3.13	0.37	**1159**	sandy sand damp		-	Y
	FSP36	1'	17	48	2.82	0.4	**1129**	sandy sand damp		-	Y
	FSP37	1'	16	47	2.94	0.23	675	sandy sand damp		-	N
	FSP38	1'	18	45	2.50	0.08	200	sandy sand damp		-	N
	FSP39	1'	22	47	2.14	0.67	**1431**	sandy sand damp		-	Y

KJ Environmental

LOCATION: OWL BOBCAT/REDHILLS PIPELINE RELEASE

Spill Area 2

DATE	Sample Pt.	DEPTH	SOIL	WATER	CF	$AgNO_3$	CL-	SOIL LITHOLOGY	FIELD SCREENING *HORIBA D-73*	LAB RESULTS CL-	BLENDED Y / N
	FSP40	1'	15	49	3.27	0.07	229	sandy sand damp		-	N
	FSP41	1'	19	48	2.53	0.28	707	sandy sand damp		-	N
	MB1	1'	18	44	2.44	0.04	98	sandy sand damp		-	N
	MB2	1'	23	44	1.91	0.07	134	sandy sand damp		-	N
	MB3	1'	22	49	2.23	0.01	22	sandy sand damp		-	N
8-May	MB4	1'	15	46	3.07	0.02	61	sandy sand damp		-	N
	MB5	1'	15	51	3.40	0.05	170	sandy sand damp		-	N
	MB6	1'	19	41	2.16	0.05	108	sandy sand damp		-	N
	MB7	1'	18	41	2.28	0.07	159	sandy sand damp		-	N
	MB8	1'	20	42	2.10	0.08	168	sandy sand damp		-	N
	MB9	1'	18	45	2.50	0.03	75	sandy sand damp		-	N
	MB10	1'	16	46	2.88	0.38	**1092**	sandy sand damp		64.7	Y
	MB11	1'	17	46	2.71	0.16	433	sandy sand damp		-	N
10-May	MB12	1'	20	52	2.60	0.06	156	sandy sand damp		-	N
	DMB2	1'	20	42	2.10	0.4	840	sandy sand damp		-	N
	DMB3	1'	21	42	2.00	0.28	560	sandy sand damp		-	N
6-Jun	DMB4	1'	17	46	2.71	0.56	**1515**	sandy sand damp		-	Y
	DMB5	1'	17	50	2.94	0.27	794	sandy sand damp		-	N

* Blending Area E was consolidated into Blending Area B

Notes:

1. TSS samples are delineation samples for the southern extent of impact.
2. Remaining samples are stockpiles samples from Bledning Areas. Refer to Figure for locations.

APPENDIX C

Photography Exhibits

Site Photographs

Photo 1: View of the excavation area.

Photo 2: View of sampling area with plastic sheeting.

Photo 3: Additional view of the excavation areas being constructed.

Photo 4: View of completed excavation area.

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Site Photographs

Photo 5: View of the soil stockpiles and blending areas.

Photo 6: View of the soil stockpiles and blending areas.

Photo 7: View of the BLM reseeding.

Photo 4: View watering of the reseeded area.

APPENDIX D

Representative Logs – Spill 2 Area

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 #**	(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-				
	-3-	2.0-4.0			
	-4-				
	-5-	4.0-6.0			
Red/light red SAND, (SP), poorly graded, dry	-6-				
	-7-	6.0-8.0			
Depth of average probe refusal	-8-				
Caliche Rock, Light Gray, dry	-9-	8.0-10.0			
Depth of average borings	-10-				
	-11-	10.0-12.0			
	-12-				
	-13-	12.0-14.0			
Depth of deepest boring	-14-				
	-15-	14.0-16.0			
	-16-				
	-17-	16.0-18.0			
	-18-				
	-19-	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	-20-				
	-21-	20.0-22.0			
	-22-				
	-23-	22.0-24.0			
	-24-				
	-25-	24.0-26.0			
	-26-				
	-27-	26.0-28.0			
	-28-				
	-29-	28.0-30.0			
These logs should not be used separately from the original report.	-30-				

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 #**	002	**Date Drilled:**	3/8/2017
Client Address:	Spill Area 2	**Depth of Boring:**	24'8''	**Diameter of Boring:**	2''
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:	Enviro-Drill	**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-				
	-2-				
	-3-				
	-4-				
	-5-				
Red/light red SAND, (SP), poorly graded, dry	-6-				
	-7-				
	-8-				
	-9-				
	-10-				
Red/light red SAND, (SP), poorly graded, dry	-11-				
	-12-				
	-13-				
	-14-				
	-15-				
Red/light red SAND, (SP), poorly graded, dry	-16-				
	-17-				
	-18-				
	-19-				
	-20-				
Red/light red SAND, (SP), poorly graded, dry	-21-				
	-22-				
	-23-				
	-24-				
Depth of Boring: 24'8'' One sample (SS002) was collected at bottom of boring for Chlorides. Red/light red SAND, (SP), poorly graded, dry	-25-				
	-26-				
	-27-				
NOTE: No water was encountered throughout installation of the boring.	-28-				
	-29-				
These logs should not be used separately from the original report.	-30-				

APPENDIX E

Laboratory Analytical Reports

Certificate of Analysis Summary 551956

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills

Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Apr-27-17 07:04 pm

Report Date: 03-MAY-17

Project Manager: Holly Taylor

Analysis Requested													
	Lab Id:	551956-001		551956-002		551956-003		551956-004		551956-005		551956-006	
	Field Id:	ASP 10		TSS 1		TSS 2		TSS 3		TSS 4		TSS 5	
	Depth:			4 ft		4 ft		4 ft		4 ft		4 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Apr-22-17 14:00		Apr-27-17 14:15		Apr-27-17 14:20		Apr-27-17 14:25		Apr-27-17 14:30		Apr-27-17 14:35	
Inorganic Anions by EPA 300/300.1	***Extracted:***	May-01-17 11:00		May-01-17 11:00		May-01-17 11:00		May-01-17 11:00		May-01-17 11:00		May-01-17 11:00	
	Analyzed:	May-01-17 12:21		May-01-17 13:29		May-01-17 13:37		May-01-17 13:45		May-01-17 13:52		May-01-17 14:15	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		548	4.94	12.7	4.93	21.9	4.94	11.0	4.94	9.03	4.99	<4.90	4.90

Holly Taylor
Project Manager

Certificate of Analysis Summary 551956

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills

Project Id:
Contact: James Fox
Project Location: Jal, NM

Date Received in Lab: Thu Apr-27-17 07:04 pm
Report Date: 03-MAY-17
Project Manager: Holly Taylor

Analysis Requested							
	Lab Id:	551956-007					
	Field Id:	TSS 6					
	Depth:	4 ft					
	Matrix:	SOIL					
	Sampled:	Apr-27-17 14:40					
Inorganic Anions by EPA 300/300.1	***Extracted:***	May-01-17 11:00					
	Analyzed:	May-01-17 14:23					
	Units/RL:	mg/kg	RL				
Chloride		<5.00	5.00				

Holly Taylor
Project Manager

Analytical Report 551956

for

KJE Enviromental & Civil Engineering

Project Manager: James Fox

OWL Bobcat/Red Hills

03-MAY-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)

03-MAY-17

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

Reference: XENCO Report No(s): **551956**
OWL Bobcat/Red Hills
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) 551956. 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. 551956 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,

Holly Taylor

Holly Taylor
Project Manager

Sample Cross Reference 551956

KJE Enviromental & Civil Engineering, Aubrey, TX

OWL Bobcat/Red Hills

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
ASP 10	S	04-22-17 14:00	N/A	551956-001
TSS 1	S	04-27-17 14:15	- 4 ft	551956-002
TSS 2	S	04-27-17 14:20	- 4 ft	551956-003
TSS 3	S	04-27-17 14:25	- 4 ft	551956-004
TSS 4	S	04-27-17 14:30	- 4 ft	551956-005
TSS 5	S	04-27-17 14:35	- 4 ft	551956-006
TSS 6	S	04-27-17 14:40	- 4 ft	551956-007

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analytical Results 551956

KJE Enviromental & Civil Engineering, Aubrey, TX

OWL Bobcat/Red Hills

Sample Id:	**ASP 10**	Matrix:	Soil	Date Received:	04.27.17 19.04
Lab Sample Id:	551956-001	Date Collected:	04.22.17 14.00		
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	05.01.17 11.00	Basis:	Wet Weight
Seq Number:	3016246				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**548**	4.94	mg/kg	05.01.17 12.21		1

Certificate of Analytical Results 551956

KJE Enviromental & Civil Engineering, Aubrey, TX

OWL Bobcat/Red Hills

Sample Id:	**TSS 1**	Matrix:	Soil	Date Received:	04.27.17 19.04
Lab Sample Id:	551956-002	Date Collected:	04.27.17 14.15	Sample Depth:	4 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	05.01.17 11.00	Basis:	Wet Weight
Seq Number:	3016246				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**12.7**	4.93	mg/kg	05.01.17 13.29		1

Certificate of Analytical Results 551956

KJE Enviromental & Civil Engineering, Aubrey, TX

OWL Bobcat/Red Hills

Sample Id:	**TSS 2**	Matrix:	Soil	Date Received:	04.27.17 19.04
Lab Sample Id:	551956-003	Date Collected:	04.27.17 14.20	Sample Depth:	4 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	05.01.17 11.00	Basis:	Wet Weight
Seq Number:	3016246				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**21.9**	4.94	mg/kg	05.01.17 13.37		1

Certificate of Analytical Results 551956

KJE Enviromental & Civil Engineering, Aubrey, TX

OWL Bobcat/Red Hills

Sample Id:	**TSS 3**	Matrix:	Soil	Date Received:	04.27.17 19.04
Lab Sample Id:	551956-004	Date Collected:	04.27.17 14.25	Sample Depth:	4 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	05.01.17 11.00	Basis:	Wet Weight
Seq Number:	3016246				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**11.0**	4.94	mg/kg	05.01.17 13.45		1

Certificate of Analytical Results 551956

KJE Enviromental & Civil Engineering, Aubrey, TX

OWL Bobcat/Red Hills

Sample Id:	**TSS 4**	Matrix:	Soil	Date Received:	04.27.17 19.04
Lab Sample Id:	551956-005	Date Collected:	04.27.17 14.30	Sample Depth:	4 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	05.01.17 11.00	Basis:	Wet Weight
Seq Number:	3016246				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**9.03**	4.99	mg/kg	05.01.17 13.52		1

Certificate of Analytical Results 551956

KJE Enviromental & Civil Engineering, Aubrey, TX

OWL Bobcat/Red Hills

Sample Id:	**TSS 5**	Matrix:	Soil	Date Received:	04.27.17 19.04
Lab Sample Id:	551956-006	Date Collected:	04.27.17 14.35	Sample Depth:	4 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	05.01.17 11.00	Basis:	Wet Weight
Seq Number:	3016246				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.90	4.90	mg/kg	05.01.17 14.15	U	1

Certificate of Analytical Results 551956

KJE Enviromental & Civil Engineering, Aubrey, TX

OWL Bobcat/Red Hills

Sample Id:	**TSS 6**	Matrix:	Soil	Date Received:	04.27.17 19.04
Lab Sample Id:	551956-007	Date Collected:	04.27.17 14.40	Sample Depth:	4 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	05.01.17 11.00	Basis:	Wet Weight
Seq Number:	3016246				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	05.01.17 14.23	U	1

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

QC Summary 551956

KJE Enviromental & Civil Engineering

OWL Bobcat/Red Hills

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P

Seq Number: 3016246 Matrix: Solid Date Prep: 05.01.17

MB Sample Id: 723865-1-BLK LCS Sample Id: 723865-1-BKS LCSD Sample Id: 723865-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	259	104	258	103	90-110	0	20	mg/kg	05.01.17 12:06	

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P

Seq Number: 3016246 Matrix: Soil Date Prep: 05.01.17

Parent Sample Id: 551956-001 MS Sample Id: 551956-001 S MSD Sample Id: 551956-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	548	247	798	101	798	101	90-110	0	20	mg/kg	05.01.17 12:29	

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P

Seq Number: 3016246 Matrix: Soil Date Prep: 05.01.17

Parent Sample Id: 551997-004 MS Sample Id: 551997-004 S MSD Sample Id: 551997-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<4.91	246	253	103	251	102	90-110	1	20	mg/kg	05.01.17 15:01	

CHAIN OF CUSTODY

Page 1 Of 1

XENCO LABORATORIES

Setting the Standard since 1990

Stafford,Texas (281-240-4200) | San Antonio, Texas (210-509-3334) | Phoenix, Arizona (480-355-0900)

Dallas Texas (214-902-0300) | Midland, Texas (432-704-5251)

www.xenco.com

Xenco Quote # | Xenco Job # 551956

Client / Reporting Information

Company Name / Branch: KJE

Company Address: 500 Moseley Road, Cross Roads, TX, 76227

Email: Tanner@kjenvironmental.com, James@kjenvironmental.com | Phone No:

Project Contact: James Fox

Samplers's Name

Project Information

Project Name/Number: OWL Bobcat / Redhills

Project Location: Jal, NM

Invoice To:

PO Number:

Analytical Information

Matrix Codes

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

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	X Chloride	Field Comments
1	ASP 10		4/26	1400	G										X	
2	TSS 1	4ft	4/27	1415	G											
3	TSS 2			1420	G											
4	TSS 3			1425												
5	TSS 4			1430												
6	TSS 5			1435												
7	TSS 6			1440												
8																
9																
10																

Turnaround Time (Business days)

- [ ] Same Day TAT
- [x] 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

Data Deliverable Information

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

Notes:

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	Tanner Evans	4/27	1 Julian Martinez			2
3	Relinquished by:	Date Time: 19:04	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
5	Relinquished by:	Date Time:	Received By: 5	Custody Seal #	Preserved where applicable	On Ice ✓

Temp: 4.4 IR ID:R-9
CF:(0-6: 0.0°C) (6-23: +0.1°C)
Corrected Temp: 4.4

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: KJE Enviromental & Civil Engineering

Date/ Time Received: 04/27/2017 07:04:00 PM

Work Order #: 551956

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

Temperature Measuring device used : R9

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	4.4
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seal present on shipping container/ cooler?	**N/A**
#5 *Custody Seals intact on shipping container/ cooler?	**N/A**
#6 Custody Seals intact on sample bottles?	**N/A**
#7 *Custody Seals Signed and dated?	**N/A**
#8 *Chain of Custody present?	**Yes**
#9 Sample instructions complete on Chain of Custody?	**Yes**
#10 Any missing/extra samples?	**No**
#11 Chain of Custody signed when relinquished/ received?	**Yes**
#12 Chain of Custody agrees with sample label(s)?	**Yes**
#13 Container label(s) legible and intact?	**Yes**
#14 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#15 Samples in proper container/ bottle?	**Yes**
#16 Samples properly preserved?	**Yes**
#17 Sample container(s) intact?	**Yes**
#18 Sufficient sample amount for indicated test(s)?	**Yes**
#19 All samples received within hold time?	**Yes**
#20 Subcontract of sample(s)?	**N/A**
#21 VOC samples have zero headspace?	**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: 04/28/2017

Checklist reviewed by: Holly Taylor
Holly Taylor
Date: 04/28/2017

Certificate of Analysis Summary 554471

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: Bobcat/Red Hills Pipeline Release

Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Jun-01-17 03:00 pm

Report Date: 07-JUN-17

Project Manager: Holly Taylor

Analysis Requested													
	Lab Id:	554471-001		554471-002		554471-003		554471-004		554471-005		554471-006	
	Field Id:	ASP20		ASP30		ASP40		ASP41		ASP42		ASP43	
	Depth:	1 ft		1 ft		1 ft		1 ft		1 ft		1 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-31-17 10:00		May-31-17 12:00		May-31-17 14:00		Jun-01-17 09:00		Jun-01-17 09:05		Jun-01-17 09:10	
Inorganic Anions by EPA 300/300.1	***Extracted:***	Jun-06-17 15:15		Jun-06-17 15:15		Jun-06-17 15:15		Jun-06-17 15:15		Jun-06-17 15:15		Jun-06-17 15:15	
	Analyzed:	Jun-06-17 15:53		Jun-06-17 16:16		Jun-06-17 16:24		Jun-06-17 16:31		Jun-06-17 16:39		Jun-06-17 17:02	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		316	4.94	607	4.96	200	4.90	180	4.88	183	4.94	380	4.96

Holly Taylor
Project Manager

Certificate of Analysis Summary 554471

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: Bobcat/Red Hills Pipeline Release

Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Jun-01-17 03:00 pm

Report Date: 07-JUN-17

Project Manager: Holly Taylor

Analysis Requested													
	Lab Id:	554471-007		554471-008		554471-009		554471-010		554471-011		554471-012	
	Field Id:	ASP44		ASP45		ASP46		ASP47		ASP48		ASP49	
	Depth:	1 ft		1 ft		1 ft		1 ft		1 ft		1 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-01-17 09:15		Jun-01-17 10:00		Jun-01-17 10:15		Jun-01-17 10:30		Jun-01-17 12:00		Jun-01-17 13:00	
Inorganic Anions by EPA 300/300.1	***Extracted:***	Jun-06-17 15:15		Jun-06-17 15:15		Jun-06-17 15:15		Jun-06-17 15:15		Jun-06-17 15:15		Jun-06-17 15:15	
	Analyzed:	Jun-06-17 17:09		Jun-06-17 17:17		Jun-06-17 17:24		Jun-06-17 17:32		Jun-06-17 17:40		Jun-06-17 18:02	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		176	4.95	388	5.00	202	4.90	163	4.88	322	4.99	195	4.94

Holly Taylor
Project Manager

Certificate of Analysis Summary 554471

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: Bobcat/Red Hills Pipeline Release

Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Jun-01-17 03:00 pm

Report Date: 07-JUN-17

Project Manager: Holly Taylor

Analysis Requested							
	Lab Id:	554471-013					
	Field Id:	ASP50					
	Depth:	1 ft					
	Matrix:	SOIL					
	Sampled:	Jun-01-17 14:00					
Inorganic Anions by EPA 300/300.1	***Extracted:***	Jun-06-17 15:15					
	Analyzed:	Jun-06-17 18:10					
	Units/RL:	mg/kg	RL				
Chloride		192	4.98				

Analytical Report 554471

for

KJE Enviromental & Civil Engineering

Project Manager: James Fox

Bobcat/Red Hills Pipeline Release

07-JUN-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)

07-JUN-17

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

Reference: XENCO Report No(s): **554471**
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) 554471. 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. 554471 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,

Holly Taylor

Holly Taylor
Project Manager

Sample Cross Reference 554471

KJE Enviromental & Civil Engineering, Aubrey, TX

Bobcat/Red Hills Pipeline Release

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
ASP20	S	05-31-17 10:00	- 1 ft	554471-001
ASP30	S	05-31-17 12:00	- 1 ft	554471-002
ASP40	S	05-31-17 14:00	- 1 ft	554471-003
ASP41	S	06-01-17 09:00	- 1 ft	554471-004
ASP42	S	06-01-17 09:05	- 1 ft	554471-005
ASP43	S	06-01-17 09:10	- 1 ft	554471-006
ASP44	S	06-01-17 09:15	- 1 ft	554471-007
ASP45	S	06-01-17 10:00	- 1 ft	554471-008
ASP46	S	06-01-17 10:15	- 1 ft	554471-009
ASP47	S	06-01-17 10:30	- 1 ft	554471-010
ASP48	S	06-01-17 12:00	- 1 ft	554471-011
ASP49	S	06-01-17 13:00	- 1 ft	554471-012
ASP50	S	06-01-17 14:00	- 1 ft	554471-013

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analytical Results 554471

KJE Enviromental & Civil Engineering, Aubrey, TX

Bobcat/Red Hills Pipeline Release

Sample Id:	**ASP20**	Matrix:	Soil	Date Received:	06.01.17 15.00
Lab Sample Id:	554471-001	Date Collected:	05.31.17 10.00	Sample Depth:	1 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	06.06.17 15.15	Basis:	Wet Weight
Seq Number:	3019052				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**316**	4.94	mg/kg	06.06.17 15.53		1

Certificate of Analytical Results 554471

KJE Enviromental & Civil Engineering, Aubrey, TX

Bobcat/Red Hills Pipeline Release

Sample Id:	**ASP30**	Matrix:	Soil	Date Received:	06.01.17 15.00
Lab Sample Id:	554471-002	Date Collected:	05.31.17 12.00	Sample Depth:	1 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	06.06.17 15.15	Basis:	Wet Weight
Seq Number:	3019052				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**607**	4.96	mg/kg	06.06.17 16.16		1

Certificate of Analytical Results 554471

KJE Enviromental & Civil Engineering, Aubrey, TX

Bobcat/Red Hills Pipeline Release

Sample Id:	**ASP40**	Matrix:	Soil	Date Received:	06.01.17 15.00
Lab Sample Id:	554471-003	Date Collected:	05.31.17 14.00	Sample Depth:	1 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	06.06.17 15.15	Basis:	Wet Weight
Seq Number:	3019052				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**200**	4.90	mg/kg	06.06.17 16.24		1

Certificate of Analytical Results 554471

KJE Enviromental & Civil Engineering, Aubrey, TX

Bobcat/Red Hills Pipeline Release

Sample Id:	**ASP41**	Matrix:	Soil	Date Received:	06.01.17 15.00
Lab Sample Id:	554471-004	Date Collected:	06.01.17 09.00	Sample Depth:	1 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	06.06.17 15.15	Basis:	Wet Weight
Seq Number:	3019052				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**180**	4.88	mg/kg	06.06.17 16.31		1

Certificate of Analytical Results 554471

KJE Enviromental & Civil Engineering, Aubrey, TX

Bobcat/Red Hills Pipeline Release

Sample Id:	**ASP42**	Matrix:	Soil	Date Received:	06.01.17 15.00
Lab Sample Id:	554471-005	Date Collected:	06.01.17 09.05	Sample Depth:	1 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	06.06.17 15.15	Basis:	Wet Weight
Seq Number:	3019052				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**183**	4.94	mg/kg	06.06.17 16.39		1

Certificate of Analytical Results 554471

KJE Enviromental & Civil Engineering, Aubrey, TX

Bobcat/Red Hills Pipeline Release

Sample Id:	**ASP43**	Matrix:	Soil	Date Received:	06.01.17 15.00
Lab Sample Id:	554471-006	Date Collected:	06.01.17 09.10	Sample Depth:	1 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	06.06.17 15.15	Basis:	Wet Weight
Seq Number:	3019052				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**380**	4.96	mg/kg	06.06.17 17.02		1

Certificate of Analytical Results 554471

KJE Enviromental & Civil Engineering, Aubrey, TX

Bobcat/Red Hills Pipeline Release

Sample Id:	**ASP44**	Matrix:	Soil	Date Received:	06.01.17 15.00
Lab Sample Id:	554471-007	Date Collected:	06.01.17 09.15	Sample Depth:	1 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	06.06.17 15.15	Basis:	Wet Weight
Seq Number:	3019052				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**176**	4.95	mg/kg	06.06.17 17.09		1

Certificate of Analytical Results 554471

KJE Enviromental & Civil Engineering, Aubrey, TX

Bobcat/Red Hills Pipeline Release

Sample Id:	**ASP45**	Matrix:	Soil	Date Received:	06.01.17 15.00
Lab Sample Id:	554471-008	Date Collected:	06.01.17 10.00	Sample Depth:	1 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	06.06.17 15.15	Basis:	Wet Weight
Seq Number:	3019052				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**388**	5.00	mg/kg	06.06.17 17.17		1

Certificate of Analytical Results 554471

KJE Enviromental & Civil Engineering, Aubrey, TX

Bobcat/Red Hills Pipeline Release

Sample Id:	**ASP46**	Matrix:	Soil	Date Received:	06.01.17 15.00
Lab Sample Id:	554471-009	Date Collected:	06.01.17 10.15	Sample Depth:	1 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	06.06.17 15.15	Basis:	Wet Weight
Seq Number:	3019052				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**202**	4.90	mg/kg	06.06.17 17.24		1

Certificate of Analytical Results 554471

KJE Enviromental & Civil Engineering, Aubrey, TX

Bobcat/Red Hills Pipeline Release

Sample Id:	**ASP47**	Matrix:	Soil	Date Received:	06.01.17 15.00
Lab Sample Id:	554471-010	Date Collected:	06.01.17 10.30	Sample Depth:	1 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	06.06.17 15.15	Basis:	Wet Weight
Seq Number:	3019052				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**163**	4.88	mg/kg	06.06.17 17.32		1

Certificate of Analytical Results 554471

KJE Enviromental & Civil Engineering, Aubrey, TX

Bobcat/Red Hills Pipeline Release

Sample Id:	**ASP48**	Matrix:	Soil	Date Received:	06.01.17 15.00
Lab Sample Id:	554471-011	Date Collected:	06.01.17 12.00	Sample Depth:	1 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	06.06.17 15.15	Basis:	Wet Weight
Seq Number:	3019052				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**322**	4.99	mg/kg	06.06.17 17.40		1

Certificate of Analytical Results 554471

KJE Enviromental & Civil Engineering, Aubrey, TX

Bobcat/Red Hills Pipeline Release

Sample Id:	**ASP49**	Matrix:	Soil	Date Received:	06.01.17 15.00
Lab Sample Id:	554471-012	Date Collected:	06.01.17 13.00	Sample Depth:	1 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	06.06.17 15.15	Basis:	Wet Weight
Seq Number:	3019052				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**195**	4.94	mg/kg	06.06.17 18.02		1

Certificate of Analytical Results 554471

KJE Enviromental & Civil Engineering, Aubrey, TX

Bobcat/Red Hills Pipeline Release

Sample Id:	**ASP50**	Matrix:	Soil	Date Received:	06.01.17 15.00
Lab Sample Id:	554471-013	Date Collected:	06.01.17 14.00	Sample Depth:	1 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	06.06.17 15.15	Basis:	Wet Weight
Seq Number:	3019052				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**192**	4.98	mg/kg	06.06.17 18.10		1

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

QC Summary 554471

KJE Enviromental & Civil Engineering

Bobcat/Red Hills Pipeline Release

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P

Seq Number: 3019052 Matrix: Solid Date Prep: 06.06.17

MB Sample Id: 725682-1-BLK LCS Sample Id: 725682-1-BKS LCSD Sample Id: 725682-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	250	100	248	99	90-110	1	20	mg/kg	06.06.17 13:53	

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P

Seq Number: 3019052 Matrix: Soil Date Prep: 06.06.17

Parent Sample Id: 554471-001 MS Sample Id: 554471-001 S MSD Sample Id: 554471-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	316	247	572	104	563	100	90-110	2	20	mg/kg	06.06.17 16:01	

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P

Seq Number: 3019052 Matrix: Soil Date Prep: 06.06.17

Parent Sample Id: 554471-011 MS Sample Id: 554471-011 S MSD Sample Id: 554471-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	322	250	565	97	565	97	90-110	0	20	mg/kg	06.06.17 17:47	

CHAIN OF CUSTODY

Page 1 Of 2

XENCO LABORATORIES

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Dallas Texas (214-902-0300) | Midland, Texas (432-704-5251)

www.xenco.com

Xenco Quote # | Xenco Job # 554471

Client / Reporting Information

Company Name / Branch: KJE

Company Address: 500 Moseley, Cross Roads, TX

Email: tanner@kjenvironmental.com | Phone No:

Project Contact: Tanner Evans 940-368-3535

Samplers's Name

Project Information

Project Name/Number: Bobcat/Redhills Pipeline Release

Project Location: Jal, NM

Invoice To: OWL - Oilfield Water Logistics

PO Number:

Analytical Information

Matrix Codes

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

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Chlorides	Field Comments
1	ASP 20	1'	5/31	1000										X	X	
2	ASP30		5/31	1200												
3	ASP40		5/31	1400												
4	ASP41		6/1	0900												
5	ASP42			0905												
6	ASP43			0910												
7	ASP44			0915												
8	ASP45			1000												
9	ASP46			1015												
10	ASP47			1030												

Turnaround Time (Business days)

- ☐ 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

Data Deliverable Information

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

Notes:

FED-EX / UPS: Tracking

Temp: 2.3 IR ID:R-8

CF:(0-6: -0.2°C)

(6-23: +0.2°C)

Corrected Temp: 2.1

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	6/1 1500	1	2		2
3	Relinquished by:	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By 4
5	Relinquished by:	Date Time:	Received By: 5	Custody Seal #	Preserved where applicable	On Ice ☒ Cooler Temp. Thermo. Corr.

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

Final 1.000

Page 23 of 25

XENCO LABORATORIES

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Dallas Texas (214-902-0300) | Midland, Texas (432-704-5251)

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CHAIN OF CUSTODY

Page 2 Of 2

Xenco Quote #

Xenco Job # 554471

Client / Reporting Information	Project Information
Company Name / Branch: ICJE	Project Name/Number: Bobcat/Redhills Pipeline Release
Company Address: 500 Moseley Road, Cross Roads, TX	Project Location: Jal, NM
Email: tanner@kjenvironmental.com Phone No:	Invoice To: OWL - Oilfield Logistics
Project Contact: Tanner Evans 940-368-3355	PO Number:
Samplers's Name	

Analytical Information

Matrix Codes

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

No.	Field ID / Point of Collection	Collection: Sample Depth	Date	Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Chlorides	Field Comments
1	ASP48	1'	6/1	1200	S	1								X	X	
2	ASP49	↓		1300	↓	↓								↓	↓	
3	ASP50			1400												
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: Track

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	6/1	1	2		2
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice

Temp: 2.3 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 2.1

Cooler Temp. Thermo. Corr. Factor

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

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: KJE Enviromental & Civil Engineering

Date/ Time Received: 06/01/2017 03:00:00 PM

Work Order #: 554471

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)?	2.1
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seal present on shipping container/ cooler?	**N/A**
#5 *Custody Seals intact on shipping container/ cooler?	**N/A**
#6 Custody Seals intact on sample bottles?	**N/A**
#7 *Custody Seals Signed and dated?	**N/A**
#8 *Chain of Custody present?	**Yes**
#9 Sample instructions complete on Chain of Custody?	**Yes**
#10 Any missing/extra samples?	**No**
#11 Chain of Custody signed when relinquished/ received?	**Yes**
#12 Chain of Custody agrees with sample label(s)?	**Yes**
#13 Container label(s) legible and intact?	**Yes**
#14 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#15 Samples in proper container/ bottle?	**Yes**
#16 Samples properly preserved?	**Yes**
#17 Sample container(s) intact?	**Yes**
#18 Sufficient sample amount for indicated test(s)?	**Yes**
#19 All samples received within hold time?	**Yes**
#20 Subcontract of sample(s)?	**N/A**
#21 VOC samples have zero headspace?	**N/A**

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

Analyst: PH Device/Lot#:

Checklist completed by: Jessica Kramer Date: 06/02/2017
Jessica Kramer

Checklist reviewed by: Holly Taylor Date: 06/05/2017
Holly Taylor

Certificate of Analysis Summary 554912

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: Bobcat/Red Hills Pipeline Release

Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Jun-08-17 02:45 pm

Report Date: 12-JUN-17

Project Manager: Holly Taylor

Analysis Requested											
	Lab Id:	554912-001		554912-002		554912-003					
	Field Id:	B10		B20		B30					
	Depth:	1 ft		1 ft		1 ft					
	Matrix:	SOIL		SOIL		SOIL					
	Sampled:	Jun-08-17 13:00		Jun-08-17 13:00		Jun-08-17 13:00					
Inorganic Anions by EPA 300/300.1	***Extracted:***	Jun-09-17 14:42		Jun-09-17 14:42		Jun-09-17 14:42					
	Analyzed:	Jun-09-17 19:56		Jun-09-17 20:03		Jun-09-17 20:26					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		296	4.93	127	4.89	266	4.96				

Holly Taylor
Project Manager

Analytical Report 554912

for

KJE Enviromental & Civil Engineering

Project Manager: James Fox

Bobcat/Red Hills Pipeline Release

12-JUN-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)

12-JUN-17

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

Reference: XENCO Report No(s): **554912**
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) 554912. 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. 554912 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,

Holly Taylor

Holly Taylor
Project Manager

Sample Cross Reference 554912

KJE Enviromental & Civil Engineering, Aubrey, TX

Bobcat/Red Hills Pipeline Release

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
B10	S	06-08-17 13:00	- 1 ft	554912-001
B20	S	06-08-17 13:00	- 1 ft	554912-002
B30	S	06-08-17 13:00	- 1 ft	554912-003

CASE NARRATIVE

Client Name: KJE Enviromental & Civil Engineering

Project Name: Bobcat/Red Hills Pipeline Release

Project ID:
Work Order Number(s): *554912*

Report Date: *12-JUN-17*
Date Received: *06/08/2017*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analytical Results 554912

KJE Enviromental & Civil Engineering, Aubrey, TX

Bobcat/Red Hills Pipeline Release

Sample Id:	**B10**	Matrix:	Soil	Date Received:	06.08.17 14.45
Lab Sample Id:	554912-001	Date Collected:	06.08.17 13.00	Sample Depth:	1 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	06.09.17 14.42	Basis:	Wet Weight
Seq Number:	3019449				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**296**	4.93	mg/kg	06.09.17 19.56		1

Certificate of Analytical Results 554912

KJE Enviromental & Civil Engineering, Aubrey, TX

Bobcat/Red Hills Pipeline Release

Sample Id:	**B20**	Matrix:	Soil	Date Received:	06.08.17 14.45
Lab Sample Id:	554912-002	Date Collected:	06.08.17 13.00	Sample Depth:	1 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	06.09.17 14.42	Basis:	Wet Weight
Seq Number:	3019449				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**127**	4.89	mg/kg	06.09.17 20.03		1

Certificate of Analytical Results 554912

KJE Enviromental & Civil Engineering, Aubrey, TX

Bobcat/Red Hills Pipeline Release

Sample Id:	**B30**	Matrix:	Soil	Date Received:	06.08.17 14.45
Lab Sample Id:	554912-003	Date Collected:	06.08.17 13.00	Sample Depth:	1 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	06.09.17 14.42	Basis:	Wet Weight
Seq Number:	3019449				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**266**	4.96	mg/kg	06.09.17 20.26		1

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

QC Summary 554912

KJE Enviromental & Civil Engineering

Bobcat/Red Hills Pipeline Release

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P

Seq Number: 3019449 Matrix: Solid Date Prep: 06.09.17

MB Sample Id: 725871-1-BLK LCS Sample Id: 725871-1-BKS LCSD Sample Id: 725871-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	258	103	256	102	90-110	1	20	mg/kg	06.09.17 17:39	

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P

Seq Number: 3019449 Matrix: Soil Date Prep: 06.09.17

Parent Sample Id: 554810-031 MS Sample Id: 554810-031 S MSD Sample Id: 554810-031 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	38.7	248	298	105	297	104	90-110	0	20	mg/kg	06.09.17 19:41	

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P

Seq Number: 3019449 Matrix: Soil Date Prep: 06.12.17

Parent Sample Id: 554810-018 MS Sample Id: 554810-018 S MSD Sample Id: 554810-018 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	28.9	244	277	102	271	99	90-110	2	20	mg/kg	06.12.17 13:32	

CHAIN OF CUSTODY

Page 1 Of 1

XENCO LABORATORIES

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Stafford,Texas (281-240-4200) | San Antonio, Texas (210-509-3334) | Phoenix, Arizona (480-355-0900)

Dallas Texas (214-902-0300) | Midland, Texas (432-704-5251)

www.xenco.com

Xenco Quote # | Xenco Job # 554912

Client / Reporting Information

Company Name / Branch: KJ Environmental

Company Address: 500 Moseley Rd, Cross Roads, TX

Email: james@kjenvironmental.com | Phone No:

Project Contact: J. Fox 940-368-3535

Samplers's Name JAMES FOX

Project Information

Project Name/Number: Bobcat/Redhills Pipeline Release

Project Location: Jal, NM

Invoice To: Phillip Sanders - OWL

PO Number:

Analytical Information

Chlorides

Matrix Codes

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

No.	Field ID / Point of Collection	Collection: Sample Depth	Date	Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Chlorides	Field Comments
1	B10	1'	6/8	1300	S	1								X	X	
2	B20	1'	↓	↓	↓	1								↓	↓	
3	B30	1'	↓	↓	↓	1								↓	↓	
4																
5																
6																
7																
8																
9																
10																

Turnaround Time (Business days)

- [ ] Same Day TAT
- [x] 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

Data Deliverable Information

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

Notes:

FED-EX / UPS: Tracl

Temp: 4.4 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 4.4

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
1	J. Fox	6/8 1445		2		2
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received
			3	4		4
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. / Thermo. Corr. Factor
			5			

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

Final 1.000

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: KJE Enviromental & Civil Engineering

Date/ Time Received: 06/08/2017 02:45:00 PM

Work Order #: 554912

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)?	4.4
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seal present on shipping container/ cooler?	**N/A**
#5 *Custody Seals intact on shipping container/ cooler?	**N/A**
#6 Custody Seals intact on sample bottles?	**N/A**
#7 *Custody Seals Signed and dated?	**N/A**
#8 *Chain of Custody present?	**Yes**
#9 Sample instructions complete on Chain of Custody?	**Yes**
#10 Any missing/extra samples?	**No**
#11 Chain of Custody signed when relinquished/ received?	**Yes**
#12 Chain of Custody agrees with sample label(s)?	**Yes**
#13 Container label(s) legible and intact?	**Yes**
#14 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#15 Samples in proper container/ bottle?	**Yes**
#16 Samples properly preserved?	**Yes**
#17 Sample container(s) intact?	**Yes**
#18 Sufficient sample amount for indicated test(s)?	**Yes**
#19 All samples received within hold time?	**Yes**
#20 Subcontract of sample(s)?	**N/A**
#21 VOC samples have zero headspace?	**N/A**

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

Analyst: PH Device/Lot#:

Checklist completed by: Marithza Anaya Date: 06/08/2017
Marithza Anaya

Checklist reviewed by: Holly Taylor Date: 06/08/2017
Holly Taylor

Certificate of Analysis Summary 552683

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: Bobcat/Red Hills Pipeline Release

Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Mon May-08-17 03:00 pm

Report Date: 18-MAY-17

Project Manager: Holly Taylor

Analysis Requested													
	Lab Id:	552683-001		552683-002		552683-003		552683-004		552683-005		552683-006	
	Field Id:	D64		D63		D62		D61		D60		D59	
	Depth:	1 N/A		1 N/A		1 N/A		1 N/A		1 N/A		1 N/A	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-04-17 13:00		May-04-17 13:05		May-04-17 13:10		May-04-17 13:15		May-04-17 13:20		May-04-17 13:25	
Inorganic Anions by EPA 300/300.1	***Extracted:***	May-17-17 08:00		May-17-17 08:00		May-17-17 08:00		May-17-17 08:00		May-17-17 08:00		May-17-17 08:00	
	Analyzed:	May-17-17 12:52		May-17-17 13:15		May-17-17 13:22		May-17-17 13:30		May-17-17 13:37		May-17-17 14:00	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		99.5	5.00	139	5.00	157	5.00	156	5.00	151	5.00	145	5.00

Holly Taylor
Project Manager

Certificate of Analysis Summary 552683

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: Bobcat/Red Hills Pipeline Release

Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Mon May-08-17 03:00 pm

Report Date: 18-MAY-17

Project Manager: Holly Taylor

Analysis Requested													
	Lab Id:	552683-007		552683-008		552683-009		552683-010					
	Field Id:	D58		D57		D56		D55					
	Depth:	1 N/A		1 N/A		1 N/A		1 N/A					
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	May-04-17 13:30		May-04-17 13:35		May-04-17 13:40		May-04-17 13:45					
Inorganic Anions by EPA 300/300.1	***Extracted:***	May-17-17 08:00		May-17-17 08:00		May-17-17 08:00		May-17-17 08:00					
	Analyzed:	May-17-17 14:08		May-17-17 14:15		May-17-17 14:23		May-17-17 14:31					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		178	5.00	155	5.00	154	5.00	381	5.00				

Holly Taylor
Project Manager

Analytical Report 552683

for

KJE Enviromental & Civil Engineering

Project Manager: James Fox

Bobcat/Red Hills Pipeline Release

18-MAY-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)

18-MAY-17

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

Reference: XENCO Report No(s): **552683**
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) 552683. 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. 552683 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,

Holly Taylor

Holly Taylor
Project Manager

Sample Cross Reference 552683

KJE Enviromental & Civil Engineering, Aubrey, TX

Bobcat/Red Hills Pipeline Release

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
D64	S	05-04-17 13:00	- 1 N/A	552683-001
D63	S	05-04-17 13:05	- 1 N/A	552683-002
D62	S	05-04-17 13:10	- 1 N/A	552683-003
D61	S	05-04-17 13:15	- 1 N/A	552683-004
D60	S	05-04-17 13:20	- 1 N/A	552683-005
D59	S	05-04-17 13:25	- 1 N/A	552683-006
D58	S	05-04-17 13:30	- 1 N/A	552683-007
D57	S	05-04-17 13:35	- 1 N/A	552683-008
D56	S	05-04-17 13:40	- 1 N/A	552683-009
D55	S	05-04-17 13:45	- 1 N/A	552683-010

CASE NARRATIVE

Client Name: KJE Enviromental & Civil Engineering

Project Name: Bobcat/Red Hills Pipeline Release

Project ID:
Work Order Number(s): *552683*

Report Date: *18-MAY-17*
Date Received: *05/08/2017*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analytical Results 552683

KJE Enviromental & Civil Engineering, Aubrey, TX

Bobcat/Red Hills Pipeline Release

Sample Id:	**D64**	Matrix:	Soil	Date Received:	05.08.17 15.00
Lab Sample Id:	552683-001	Date Collected:	05.04.17 13.00	Sample Depth:	1 N/A
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	05.17.17 08.00	Basis:	Wet Weight
Seq Number:	3017517				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**99.5**	5.00	mg/kg	05.17.17 12.52		1

Certificate of Analytical Results 552683

KJE Enviromental & Civil Engineering, Aubrey, TX

Bobcat/Red Hills Pipeline Release

Sample Id:	**D63**	Matrix:	Soil	Date Received:	05.08.17 15.00
Lab Sample Id:	552683-002	Date Collected:	05.04.17 13.05	Sample Depth:	1 N/A
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	05.17.17 08.00	Basis:	Wet Weight
Seq Number:	3017517				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**139**	5.00	mg/kg	05.17.17 13.15		1

Certificate of Analytical Results 552683

KJE Enviromental & Civil Engineering, Aubrey, TX

Bobcat/Red Hills Pipeline Release

Sample Id:	**D62**	Matrix:	Soil	Date Received:	05.08.17 15.00
Lab Sample Id:	552683-003	Date Collected:	05.04.17 13.10	Sample Depth:	1 N/A
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	05.17.17 08.00	Basis:	Wet Weight
Seq Number:	3017517				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**157**	5.00	mg/kg	05.17.17 13.22		1

Certificate of Analytical Results 552683

KJE Enviromental & Civil Engineering, Aubrey, TX

Bobcat/Red Hills Pipeline Release

Sample Id:	**D61**	Matrix:	Soil	Date Received:	05.08.17 15.00
Lab Sample Id:	552683-004	Date Collected:	05.04.17 13.15	Sample Depth:	1 N/A
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	05.17.17 08.00	Basis:	Wet Weight
Seq Number:	3017517				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**156**	5.00	mg/kg	05.17.17 13.30		1

Certificate of Analytical Results 552683

KJE Enviromental & Civil Engineering, Aubrey, TX

Bobcat/Red Hills Pipeline Release

Sample Id:	**D60**	Matrix:	Soil	Date Received:	05.08.17 15.00
Lab Sample Id:	552683-005	Date Collected:	05.04.17 13.20	Sample Depth:	1 N/A
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	05.17.17 08.00	Basis:	Wet Weight
Seq Number:	3017517				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**151**	5.00	mg/kg	05.17.17 13.37		1

Certificate of Analytical Results 552683

KJE Enviromental & Civil Engineering, Aubrey, TX

Bobcat/Red Hills Pipeline Release

Sample Id:	**D59**	Matrix:	Soil	Date Received:	05.08.17 15.00
Lab Sample Id:	552683-006	Date Collected:	05.04.17 13.25	Sample Depth:	1 N/A
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	05.17.17 08.00	Basis:	Wet Weight
Seq Number:	3017517				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**145**	5.00	mg/kg	05.17.17 14.00		1

Certificate of Analytical Results 552683

KJE Enviromental & Civil Engineering, Aubrey, TX

Bobcat/Red Hills Pipeline Release

Sample Id:	**D58**	Matrix:	Soil	Date Received:	05.08.17 15.00
Lab Sample Id:	552683-007	Date Collected:	05.04.17 13.30	Sample Depth:	1 N/A
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	05.17.17 08.00	Basis:	Wet Weight
Seq Number:	3017517				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**178**	5.00	mg/kg	05.17.17 14.08		1

Certificate of Analytical Results 552683

KJE Enviromental & Civil Engineering, Aubrey, TX

Bobcat/Red Hills Pipeline Release

Sample Id:	**D57**	Matrix:	Soil	Date Received:	05.08.17 15.00
Lab Sample Id:	552683-008	Date Collected:	05.04.17 13.35	Sample Depth:	1 N/A
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	05.17.17 08.00	Basis:	Wet Weight
Seq Number:	3017517				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**155**	5.00	mg/kg	05.17.17 14.15		1

Certificate of Analytical Results 552683

KJE Enviromental & Civil Engineering, Aubrey, TX

Bobcat/Red Hills Pipeline Release

Sample Id:	**D56**	Matrix:	Soil	Date Received:	05.08.17 15.00
Lab Sample Id:	552683-009	Date Collected:	05.04.17 13.40	Sample Depth:	1 N/A
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	05.17.17 08.00	Basis:	Wet Weight
Seq Number:	3017517				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**154**	5.00	mg/kg	05.17.17 14.23		1

Certificate of Analytical Results 552683

KJE Enviromental & Civil Engineering, Aubrey, TX

Bobcat/Red Hills Pipeline Release

Sample Id:	**D55**	Matrix:	Soil	Date Received:	05.08.17 15.00
Lab Sample Id:	552683-010	Date Collected:	05.04.17 13.45	Sample Depth:	1 N/A
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	05.17.17 08.00	Basis:	Wet Weight
Seq Number:	3017517				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**381**	5.00	mg/kg	05.17.17 14.31		1

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

	Phone	Fax
4147 Greenbriar Dr, Stafford, TX 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
1211 W Florida Ave, Midland, TX 79701	(432) 563-1800	(432) 563-1713
2525 W. Huntington Dr. - Suite 102, Tempe AZ 85282	(602) 437-0330	

QC Summary 552683

KJE Enviromental & Civil Engineering

Bobcat/Red Hills Pipeline Release

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P

Seq Number: 3017517 Matrix: Solid Date Prep: 05.17.17

MB Sample Id: 724743-1-BLK LCS Sample Id: 724743-1-BKS LCSD Sample Id: 724743-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	267	107	249	100	90-110	7	20	mg/kg	05.17.17 12:37	

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P

Seq Number: 3017517 Matrix: Soil Date Prep: 05.17.17

Parent Sample Id: 552656-001 MS Sample Id: 552656-001 S MSD Sample Id: 552656-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	6.24	250	285	112	327	128	90-110	14	20	mg/kg	05.17.17 14:46	X

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P

Seq Number: 3017517 Matrix: Soil Date Prep: 05.17.17

Parent Sample Id: 552683-001 MS Sample Id: 552683-001 S MSD Sample Id: 552683-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	99.5	250	362	105	363	105	90-110	0	20	mg/kg	05.17.17 12:59	

CHAIN OF CUSTODY

Page 1 Of 1

XENCO LABORATORIES

Setting the Standard since 1990

Stafford,Texas (281-240-4200) | San Antonio, Texas (210-509-3334) | Phoenix, Arizona (480-355-0900)

Dallas Texas (214-902-0300) | Midland, Texas (432-704-5251)

www.xenco.com

Xenco Quote # | Xenco Job # 552083

Client / Reporting Information

Company Name / Branch: KJE

Company Address: 500 Mosley Rd, Cross Roads, TX 76266

Email: james2[redacted]kjenvironmental.com | Phone No:

Project Contact: James Fox - 940-387-0805

Samplers's Name

Project Information

Project Name/Number: Bobcat/Redhills Pipeline Release

Project Location: Jal, NM

Invoice To: oilwater logistics (owl)

PO Number:

Matrix Codes

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

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Analytical Information: Chlorides	Field Comments
1	D64	1'	5/4	1300	S	1								✓	✓	
2	D63			1305												
3	D62			1310												
4	D61			1315												
5	D60			1320												
6	D59			1325												
7	D58			1330												
8	D57			1335												
9	D56			1340												
10	D55	↓	↓	1345	↓	↓								↓	↓	

Turnaround Time (Business days)

- ☐ 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

Data Deliverable Information

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

Notes:

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	5/8 1500	Julian Martinez	2		2
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable ☐	On Ice ✓

Temp: 11.3 IR ID:R-9
CF (0-6° 0.0°C) (6-23° +0.1°C)
Corrected Temp: 11.4

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: KJE Enviromental & Civil Engineering

Date/ Time Received: 05/08/2017 03:00:00 PM

Work Order #: 552683

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

Temperature Measuring device used :

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	11.4	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seal present on shipping container/ cooler?	**N/A**	
#5 *Custody Seals intact on shipping container/ cooler?	**N/A**	
#6 Custody Seals intact on sample bottles?	**N/A**	
#7 *Custody Seals Signed and dated?	**N/A**	
#8 *Chain of Custody present?	**Yes**	
#9 Sample instructions complete on Chain of Custody?	**Yes**	
#10 Any missing/extra samples?	**No**	
#11 Chain of Custody signed when relinquished/ received?	**Yes**	
#12 Chain of Custody agrees with sample label(s)?	**Yes**	
#13 Container label(s) legible and intact?	**Yes**	R9
#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)?	**N/A**	
#21 VOC samples have zero headspace?	**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: Marithza Anaya Date: 05/09/2017

Checklist reviewed by: Holly Taylor Date: 05/09/2017

Certificate of Analysis Summary 553327

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: Bobcat/Red Hills Pipeline Release

Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Wed May-17-17 08:19 am

Report Date: 19-MAY-17

Project Manager: Holly Taylor

Analysis Requested													
	Lab Id:	553327-001		553327-002		553327-003		553327-004		553327-005		553327-006	
	Field Id:	MB 10		E 10		D 10		D 20		D 30		D 40	
	Depth:	1 ft		1 ft		1 ft		1 ft		1 ft		1 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-16-17 15:00		May-16-17 15:05		May-16-17 15:10		May-16-17 15:15		May-16-17 15:20		May-16-17 15:25	
Inorganic Anions by EPA 300/300.1 SUB: TX104704215	***Extracted:***	May-18-17 19:50		May-18-17 19:50		May-19-17 11:47		May-19-17 11:47		May-19-17 11:47		May-19-17 11:47	
	Analyzed:	May-18-17 21:05		May-18-17 21:14		May-19-17 12:53		May-19-17 13:02		May-19-17 13:11		May-19-17 14:13	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		64.7	9.98	1400	9.88	163	9.77	169	9.75	346	9.71	284	9.60

Holly Taylor
Project Manager

Certificate of Analysis Summary 553327

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: Bobcat/Red Hills Pipeline Release

Project Id:
Contact: James Fox
Project Location: Jal, NM

Date Received in Lab: Wed May-17-17 08:19 am
Report Date: 19-MAY-17
Project Manager: Holly Taylor

Analysis Requested							
	Lab Id:	553327-007					
	Field Id:	D 50					
	Depth:	1 ft					
	Matrix:	SOIL					
	Sampled:	May-16-17 15:30					
Inorganic Anions by EPA 300/300.1 SUB: TX104704215	***Extracted:***	May-19-17 11:47					
	Analyzed:	May-19-17 14:23					
	Units/RL:	mg/kg	RL				
Chloride		232	9.62				

Holly Taylor
Project Manager

Analytical Report 553327

for

KJE Enviromental & Civil Engineering

Project Manager: James Fox

Bobcat/Red Hills Pipeline Release

19-MAY-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)

19-MAY-17

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

Reference: XENCO Report No(s): **553327**
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) 553327. 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. 553327 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,

Holly Taylor

Holly Taylor
Project Manager

Sample Cross Reference 553327

KJE Enviromental & Civil Engineering, Aubrey, TX

Bobcat/Red Hills Pipeline Release

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MB 10	S	05-16-17 15:00	- 1 ft	553327-001
E 10	S	05-16-17 15:05	- 1 ft	553327-002
D 10	S	05-16-17 15:10	- 1 ft	553327-003
D 20	S	05-16-17 15:15	- 1 ft	553327-004
D 30	S	05-16-17 15:20	- 1 ft	553327-005
D 40	S	05-16-17 15:25	- 1 ft	553327-006
D 50	S	05-16-17 15:30	- 1 ft	553327-007

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analytical Results 553327

KJE Enviromental & Civil Engineering, Aubrey, TX

Bobcat/Red Hills Pipeline Release

Sample Id:	**MB 10**	Matrix:	Soil	Date Received:	05.17.17 08.19
Lab Sample Id:	553327-001	Date Collected:	05.16.17 15.00	Sample Depth:	1 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	DHE			% Moisture:	
Analyst:	DHE	Date Prep:	05.18.17 19.50	Basis:	Wet Weight
Seq Number:	3017719			SUB:	TX104704215

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**64.7**	9.98	mg/kg	05.18.17 21.05		1

Certificate of Analytical Results 553327

KJE Enviromental & Civil Engineering, Aubrey, TX

Bobcat/Red Hills Pipeline Release

Sample Id:	**E 10**	Matrix:	Soil	Date Received:	05.17.17 08.19
Lab Sample Id:	553327-002	Date Collected:	05.16.17 15.05	Sample Depth:	1 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	DHE			% Moisture:	
Analyst:	DHE	Date Prep:	05.18.17 19.50	Basis:	Wet Weight
Seq Number:	3017719			SUB:	TX104704215

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1400**	9.88	mg/kg	05.18.17 21.14		1

Certificate of Analytical Results 553327

KJE Enviromental & Civil Engineering, Aubrey, TX

Bobcat/Red Hills Pipeline Release

Sample Id:	**D 10**	Matrix:	Soil	Date Received:	05.17.17 08.19
Lab Sample Id:	553327-003	Date Collected:	05.16.17 15.10	Sample Depth:	1 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	DHE			% Moisture:	
Analyst:	DHE	Date Prep:	05.19.17 11.47	Basis:	Wet Weight
Seq Number:	3017764			SUB:	TX104704215

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**163**	9.77	mg/kg	05.19.17 12.53		1

Certificate of Analytical Results 553327

KJE Enviromental & Civil Engineering, Aubrey, TX

Bobcat/Red Hills Pipeline Release

Sample Id:	**D 20**	Matrix:	Soil	Date Received:	05.17.17 08.19
Lab Sample Id:	553327-004	Date Collected:	05.16.17 15.15	Sample Depth:	1 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	DHE			% Moisture:	
Analyst:	DHE	Date Prep:	05.19.17 11.47	Basis:	Wet Weight
Seq Number:	3017764			SUB:	TX104704215

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**169**	9.75	mg/kg	05.19.17 13.02		1

Certificate of Analytical Results 553327

KJE Enviromental & Civil Engineering, Aubrey, TX

Bobcat/Red Hills Pipeline Release

Sample Id:	**D 30**	Matrix:	Soil	Date Received:	05.17.17 08.19
Lab Sample Id:	553327-005	Date Collected:	05.16.17 15.20	Sample Depth:	1 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	DHE			% Moisture:	
Analyst:	DHE	Date Prep:	05.19.17 11.47	Basis:	Wet Weight
Seq Number:	3017764			SUB:	TX104704215

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**346**	9.71	mg/kg	05.19.17 13.11		1

Certificate of Analytical Results 553327

KJE Enviromental & Civil Engineering, Aubrey, TX

Bobcat/Red Hills Pipeline Release

Sample Id:	**D 40**	Matrix:	Soil	Date Received:	05.17.17 08.19
Lab Sample Id:	553327-006	Date Collected:	05.16.17 15.25	Sample Depth:	1 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	DHE			% Moisture:	
Analyst:	DHE	Date Prep:	05.19.17 11.47	Basis:	Wet Weight
Seq Number:	3017764			SUB:	TX104704215

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**284**	9.60	mg/kg	05.19.17 14.13		1

Certificate of Analytical Results 553327

KJE Enviromental & Civil Engineering, Aubrey, TX

Bobcat/Red Hills Pipeline Release

Sample Id:	**D 50**	Matrix:	Soil	Date Received:	05.17.17 08.19
Lab Sample Id:	553327-007	Date Collected:	05.16.17 15.30	Sample Depth:	1 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	DHE			% Moisture:	
Analyst:	DHE	Date Prep:	05.19.17 11.47	Basis:	Wet Weight
Seq Number:	3017764			SUB:	TX104704215

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**232**	9.62	mg/kg	05.19.17 14.23		1

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

QC Summary 553327

KJE Enviromental & Civil Engineering

Bobcat/Red Hills Pipeline Release

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P
Seq Number: 3017719 Matrix: Solid Date Prep: 05.18.17
MB Sample Id: 724873-1-BLK LCS Sample Id: 724873-1-BKS LCSD Sample Id: 724873-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<1.00	10.0	9.99	100	9.92	99	80-120	1	20	mg/kg	05.18.17 20:00	

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P
Seq Number: 3017764 Matrix: Solid Date Prep: 05.19.17
MB Sample Id: 724904-1-BLK LCS Sample Id: 724904-1-BKS LCSD Sample Id: 724904-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<1.00	10.0	10.1	101	10.0	100	80-120	1	20	mg/kg	05.19.17 11:57	

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P
Seq Number: 3017719 Matrix: Soil Date Prep: 05.18.17
Parent Sample Id: 553187-001 MS Sample Id: 553187-001 S MSD Sample Id: 553187-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	771	100	860	89	857	86	80-120	0	20	mg/kg	05.18.17 20:28	

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: SW9056P
Seq Number: 3017764 Matrix: Soil Date Prep: 05.19.17
Parent Sample Id: 553317-001 MS Sample Id: 553317-001 S MSD Sample Id: 553317-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	19600	106	19300	0	19500	0	80-120	1	20	mg/kg	05.19.17 14:42	X

CHAIN OF CUSTODY

Page 1 Of 1

XENCO LABORATORIES

Setting the Standard since 1990

Stafford,Texas (281-240-4200) | San Antonio, Texas (210-509-3334) | Phoenix, Arizona (480-355-0900)

Dallas Texas (214-902-0300) | Midland, Texas (432-704-5251)

www.xenco.com

Xenco Quote # | Xenco Job # 553327

Client / Reporting Information

Company Name / Branch: KJ Environmental

Company Address: 500 Moseley Rd, Cross Roads, TX

Email: james@kjenvironmental.com

Phone No:

Project Contact: James Fox 940-368-3535

Samplers's Name

Project Information

Project Name/Number: Bobcat/Redhills Pipeline Release

Project Location: Jal, NM

Invoice To: OWL - oilfield Water Logistics

PO Number:

Analytical Information

Matrix Codes

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

No.	Field ID / Point of Collection	Collection: Sample Depth	Date	Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Chlorides	Field Comments
1	MB 10	1'	5/16	1500	S	1								X	X	
2	E 10	1'	↓	1505	↓	↓								↓	↓	
3	D 10	1'		1510												
4	D 20	1'		1515												
5	D 30	1'		1520												
6	D 40	1'		1525												
7	D 50	1'	↓	1530	↓	↓								↓	↓	
8																
9																
10																

Turnaround Time (Business days)

- ☐ 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

Data Deliverable Information

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

Notes:

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	5/17 815	Manaya 5/17/17 08:19	2		2
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable ☐	On Ice ☒ Cooler Temp. Thermo. Corr. Factor

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

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 1043851

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

Sent By: Jessica Kramer **Date Sent:** 05/17/2017 11:30 AM

Received By: Maria Paula Guerra **Date Received:** 05/18/2017 09:30 AM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	2.6	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received with appropriate temperature?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**	
#5 *Custody Seals Signed and dated for Containers/coolers	**N/A**	
#6 *IOS present?	**Yes**	
#7 Any missing/extra samples?	**No**	
#8 IOS agrees with sample label(s)/matrix?	**Yes**	
#9 Sample matrix/ properties agree with IOS?	**Yes**	
#10 Samples in proper container/ bottle?	**Yes**	
#11 Samples properly preserved?	**Yes**	
#12 Sample container(s) intact?	**N/A**	
#13 Sufficient sample amount for indicated test(s)?	**Yes**	
#14 All samples received within hold time?	**Yes**	

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

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

Checklist reviewed by: mPaula Guerra Date: 05/18/2017

Maria Paula Guerra

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: KJE Enviromental & Civil Engineering

Date/ Time Received: 05/17/2017 08:19:00 AM

Work Order #: 553327

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)?	3.1	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seal present on shipping container/ cooler?	**N/A**	
#5 *Custody Seals intact on shipping container/ cooler?	**N/A**	
#6 Custody Seals intact on sample bottles?	**N/A**	
#7 *Custody Seals Signed and dated?	**N/A**	
#8 *Chain of Custody present?	**Yes**	
#9 Sample instructions complete on Chain of Custody?	**Yes**	
#10 Any missing/extra samples?	**No**	
#11 Chain of Custody signed when relinquished/ received?	**Yes**	
#12 Chain of Custody agrees with sample label(s)?	**Yes**	
#13 Container label(s) legible and intact?	**Yes**	
#14 Sample matrix/ properties agree with Chain of Custody?	**Yes**	
#15 Samples in proper container/ bottle?	**Yes**	
#16 Samples properly preserved?	**Yes**	
#17 Sample container(s) intact?	**Yes**	
#18 Sufficient sample amount for indicated test(s)?	**Yes**	
#19 All samples received within hold time?	**Yes**	
#20 Subcontract of sample(s)?	**Yes**	Houston
#21 VOC samples have zero headspace?	**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: 05/17/2017
Jessica Kramer

Checklist reviewed by: Holly Taylor Date: 05/17/2017
Holly Taylor

Certificate of Analysis Summary 548179

KJE Enviromental & Civil Engineering, Aubrey, TX

Project Name: OWL102816D

Project Id:
Contact: James Fox
Project Location: Owl Bobcat/Redhills Pipeline

Date Received in Lab: Wed Mar-08-17 04:40 pm
Report Date: 15-MAR-17
Project Manager: Holly Taylor

Analysis Requested							
	Lab Id:	548179-001		548179-002			
	Field Id:	SS001		SS002			
	Depth:	21 ft		296 In			
	Matrix:	SOIL		SOIL			
	Sampled:	Mar-08-17 12:15		Mar-08-17 08:45			
BTEX by SW 8260B SUB: TX104704215	***Extracted:***	Mar-14-17 12:45					
	Analyzed:	Mar-14-17 15:24					
	Units/RL:	mg/kg	RL				
Benzene		<0.00109	0.00109				
Toluene		<0.00109	0.00109				
Ethylbenzene		<0.00109	0.00109				
m,p-Xylenes		<0.00218	0.00218				
o-Xylene		<0.00109	0.00109				
Total Xylenes		<0.00109	0.00109				
Total BTEX		<0.00109	0.00109				
Inorganic Anions by EPA 300/300.1	***Extracted:***	Mar-10-17 14:20		Mar-10-17 14:20			
	Analyzed:	Mar-10-17 14:53		Mar-10-17 15:29			
	Units/RL:	mg/kg	RL	mg/kg	RL		
Chloride		93.5	5.00	13.1	4.91		
Percent Moisture	***Extracted:***						
	Analyzed:	Mar-10-17 11:48					
	Units/RL:	%	RL				
Percent Moisture		7.90	1.00				
TPH by Texas1005	***Extracted:***	Mar-09-17 14:00					
	Analyzed:	Mar-10-17 08:22					
	Units/RL:	mg/kg	RL				
C6-C12 Gasoline Range Hydrocarbons		<25.4	25.4				
C12-C28 Diesel Range Hydrocarbons		<25.4	25.4				
C28-C35 Oil Range Hydrocarbons		<25.4	25.4				
Total TPH 1005		<25.4	25.4				

Holly Taylor
Project Manager

Analytical Report 548179

for

KJE Enviromental & Civil Engineering

Project Manager: James Fox

OWL102816D

15-MAR-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)

15-MAR-17

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

Reference: XENCO Report No(s): **548179**
OWL102816D
Project Address: Owl Bobcat/Redhills Pipeline

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) 548179. 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. 548179 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,

Holly Taylor
Project Manager

Sample Cross Reference 548179

KJE Enviromental & Civil Engineering, Aubrey, TX

OWL102816D

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS001	S	03-08-17 12:15	- 21 ft	548179-001
SS002	S	03-08-17 08:45	- 296 In	548179-002

CASE NARRATIVE

Client Name: KJE Enviromental & Civil Engineering
Project Name: OWL102816D

Project ID:
Work Order Number(s): *548179*

Report Date: *15-MAR-17*
Date Received: *03/08/2017*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analytical Results 548179

KJE Enviromental & Civil Engineering, Aubrey, TX

OWL102816D

Sample Id:	**SS001**	Matrix:	Soil	Date Received:	03.08.17 16.40
Lab Sample Id:	548179-001	Date Collected:	03.08.17 12.15	Sample Depth:	21 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	03.10.17 14.20	Basis:	Wet Weight
Seq Number:	3012195				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**93.5**	5.00	mg/kg	03.10.17 14.53		1

Analytical Method:	TPH by Texas1005			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	7.9
Analyst:	ARM	Date Prep:	03.09.17 14.00	Basis:	Dry Weight
Seq Number:	3012071				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C12 Gasoline Range Hydrocarbons	PHC612	<25.4	25.4	mg/kg	03.10.17 08.22	U	1
C12-C28 Diesel Range Hydrocarbons	PHCG1228	<25.4	25.4	mg/kg	03.10.17 08.22	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<25.4	25.4	mg/kg	03.10.17 08.22	U	1
Total TPH 1005	PHC635	<25.4	25.4	mg/kg	03.10.17 08.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	03.10.17 08.22	
o-Terphenyl	84-15-1	107	%	70-130	03.10.17 08.22	

Certificate of Analytical Results 548179

KJE Enviromental & Civil Engineering, Aubrey, TX

OWL102816D

Sample Id:	**SS001**	Matrix:	Soil	Date Received:	03.08.17 16.40
Lab Sample Id:	548179-001	Date Collected:	03.08.17 12.15	Sample Depth:	21 ft
Analytical Method:	BTEX by SW 8260B			Prep Method:	SW5035
Tech:	JTR			% Moisture:	7.9
Analyst:	JTR	Date Prep:	03.14.17 12.45	Basis:	Dry Weight
Seq Number:	3012380			SUB:	TX104704215

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00109	0.00109	mg/kg	03.14.17 15.24	U	1
Toluene	108-88-3	<0.00109	0.00109	mg/kg	03.14.17 15.24	U	1
Ethylbenzene	100-41-4	<0.00109	0.00109	mg/kg	03.14.17 15.24	U	1
m,p-Xylenes	179601-23-1	<0.00218	0.00218	mg/kg	03.14.17 15.24	U	1
o-Xylene	95-47-6	<0.00109	0.00109	mg/kg	03.14.17 15.24	U	1
Total Xylenes	1330-20-7	<0.00109	0.00109	mg/kg	03.14.17 15.24	U	1
Total BTEX		<0.00109	0.00109	mg/kg	03.14.17 15.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	107	%	74-126	03.14.17 15.24	
1,2-Dichloroethane-D4	17060-07-0	106	%	80-120	03.14.17 15.24	
Toluene-D8	2037-26-5	94	%	73-132	03.14.17 15.24	

Certificate of Analytical Results 548179

KJE Enviromental & Civil Engineering, Aubrey, TX

OWL102816D

Sample Id:	**SS002**	Matrix:	Soil	Date Received:	03.08.17 16.40
Lab Sample Id:	548179-002	Date Collected:	03.08.17 08.45	Sample Depth:	296 In
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	03.10.17 14.20	Basis:	Wet Weight
Seq Number:	3012195				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**13.1**	4.91	mg/kg	03.10.17 15.29		1

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

QC Summary 548179

KJE Enviromental & Civil Engineering

OWL102816D

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P
Seq Number: 3012195 Matrix: Solid Date Prep: 03.10.17
MB Sample Id: 721309-1-BLK LCS Sample Id: 721309-1-BKS LCSD Sample Id: 721309-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<4.98	249	243	98	251	101	90-110	3	20	mg/kg	03.10.17 14:38	

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P
Seq Number: 3012195 Matrix: Soil Date Prep: 03.10.17
Parent Sample Id: 547991-007 MS Sample Id: 547991-007 S MSD Sample Id: 547991-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	21.8	247	272	101	274	102	90-110	1	20	mg/kg	03.10.17 16:43	

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P
Seq Number: 3012195 Matrix: Soil Date Prep: 03.10.17
Parent Sample Id: 548179-001 MS Sample Id: 548179-001 S MSD Sample Id: 548179-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	93.5	250	341	99	340	99	90-110	0	20	mg/kg	03.10.17 15:00	

Analytical Method: **Percent Moisture**
Seq Number: 3012308 Matrix: Solid
MB Sample Id: 3012308-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Percent Moisture	<1.00	%	03.10.17 11:48	

Analytical Method: **Percent Moisture**
Seq Number: 3012308 Matrix: Soil
Parent Sample Id: 548179-001 MD Sample Id: 548179-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	7.90	7.76	2	20	%	03.10.17 11:48	

QC Summary 548179

KJE Enviromental & Civil Engineering

OWL102816D

Analytical Method: TPH by Texas1005 | Prep Method: TX1005P
Seq Number: 3012071 | Matrix: Solid | Date Prep: 03.09.17
MB Sample Id: 721306-1-BLK | LCS Sample Id: 721306-1-BKS | LCSD Sample Id: 721306-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
C6-C12 Gasoline Range Hydrocarbons	<25.0	1000	1000	100	1010	101	70-135	1	35	mg/kg	03.10.17 00:05	
C12-C28 Diesel Range Hydrocarbons	<25.0	1000	1030	103	1040	104	70-135	1	35	mg/kg	03.10.17 00:05	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	105		124		126		70-135	%	03.10.17 00:05
o-Terphenyl	111		127		126		70-130	%	03.10.17 00:05

Analytical Method: TPH by Texas1005 | Prep Method: TX1005P
Seq Number: 3012071 | Matrix: Soil | Date Prep: 03.09.17
Parent Sample Id: 548133-005 | MS Sample Id: 548133-005 S | MSD Sample Id: 548133-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
C6-C12 Gasoline Range Hydrocarbons	<25.0	999	862	86	851	85	70-135	1	35	mg/kg	03.10.17 01:44	
C12-C28 Diesel Range Hydrocarbons	<25.0	999	860	86	862	86	70-135	0	35	mg/kg	03.10.17 01:44	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	109		101		70-135	%	03.10.17 01:44
o-Terphenyl	106		97		70-130	%	03.10.17 01:44

Analytical Method: BTEX by SW 8260B | Prep Method: SW5035
Seq Number: 3012380 | Matrix: Solid | Date Prep: 03.14.17
MB Sample Id: 721516-1-BLK | LCS Sample Id: 721516-1-BKS | LCSD Sample Id: 721516-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0918	92	0.0926	93	62-132	1	25	mg/kg	03.14.17 08:32	
Toluene	<0.00100	0.100	0.0851	85	0.0895	90	66-124	5	25	mg/kg	03.14.17 08:32	
Ethylbenzene	<0.00100	0.100	0.0905	91	0.0922	92	71-134	2	25	mg/kg	03.14.17 08:32	
m,p-Xylenes	<0.00200	0.200	0.182	91	0.193	97	69-128	6	25	mg/kg	03.14.17 08:32	
o-Xylene	<0.00100	0.100	0.0871	87	0.0914	91	72-131	5	25	mg/kg	03.14.17 08:32	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	102		96		99		74-126	%	03.14.17 08:32
1,2-Dichloroethane-D4	119		86		89		80-120	%	03.14.17 08:32
Toluene-D8	95		96		103		73-132	%	03.14.17 08:32

QC Summary 548179

KJE Enviromental & Civil Engineering

OWL102816D

Analytical Method: **BTEX by SW 8260B** Prep Method: SW5035

Seq Number: 3012380 Matrix: Soil Date Prep: 03.14.17

Parent Sample Id: 548079-001 MS Sample Id: 548079-001 S

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	Limits	Units	Analysis Date	Flag
Benzene	<0.000759	0.0759	0.0773	102	62-132	mg/kg	03.14.17 12:28	
Toluene	<0.000759	0.0759	0.0683	90	66-124	mg/kg	03.14.17 12:28	
Ethylbenzene	<0.000759	0.0759	0.0717	94	71-134	mg/kg	03.14.17 12:28	
m,p-Xylenes	<0.00152	0.152	0.151	99	69-128	mg/kg	03.14.17 12:28	
o-Xylene	<0.000759	0.0759	0.0703	93	72-131	mg/kg	03.14.17 12:28	

Surrogate	MS %Rec	MS Flag	Limits	Units	Analysis Date
Dibromofluoromethane	96		74-126	%	03.14.17 12:28
1,2-Dichloroethane-D4	93		80-120	%	03.14.17 12:28
Toluene-D8	90		73-132	%	03.14.17 12:28

CHAIN OF CUSTODY

Page 1 Of 1

XENCO LABORATORIES

Setting the Standard since 1990

Stafford,Texas (281-240-4200)

Dallas Texas (214-902-0300)

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

Odessa, Texas (432-563-1800)

Norcross, Georgia (770-449-8800)

Lakeland, Florida (863-646-8526)

Tampa, Florida (813-620-2000)

www.xenco.com

Xenco Quote #

Xenco Job # 548179

Client / Reporting Information

Company Name / Branch: KJE, Enviromental & Civil Engineering

Company Address: 500 Mosely Road, Cross Roads, Texas 76227

Email: james@kjenviromental.com Phone No: (940)387-0805

dena@kjenvironmentalco m

Project Contact: James Fox

Samplers's Name

Project Information

Project Name/Number: OWL102816D

Project Location: OWL Bobcat/Redhills Pipeline

Invoice To: Oilfield Water Logistics

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

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX 8260 (5035)	TPH	CHLORIDES	Field Comments
1	SS001	21'	3/8	1215	S	6	X						X		X	X	X	
2	SS002	24'8"	3/8	845	S	1								X			X	
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Turnaround Time (Business days)

- [ ] Same Day TAT
- [x] 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

Data Deliverable Information

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

Notes:

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	3/8/17 1040	1	2		2
3			3	4		4
5			5	Custody Seal #	Preserved where applicable	On Ice

Temp: IR ID:R-8
CF:+ 0.1
Corrected Temp: 5.2

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 negic

Final 1.000

Page 13 of 14

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: KJE Enviromental & Civil Engineering

Date/ Time Received: 03/08/2017 04:40:00 PM

Work Order #: 548179

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

Temperature Measuring device used : R8

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	5.2	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seal present on shipping container/ cooler?	**N/A**	
#5 *Custody Seals intact on shipping container/ cooler?	**N/A**	
#6 Custody Seals intact on sample bottles?	**N/A**	
#7 *Custody Seals Signed and dated?	**N/A**	
#8 *Chain of Custody present?	**Yes**	
#9 Sample instructions complete on Chain of Custody?	**Yes**	
#10 Any missing/extra samples?	**No**	
#11 Chain of Custody signed when relinquished/ received?	**Yes**	
#12 Chain of Custody agrees with sample label(s)?	**Yes**	
#13 Container label(s) legible and intact?	**Yes**	
#14 Sample matrix/ properties agree with Chain of Custody?	**Yes**	
#15 Samples in proper container/ bottle?	**Yes**	
#16 Samples properly preserved?	**Yes**	
#17 Sample container(s) intact?	**Yes**	
#18 Sufficient sample amount for indicated test(s)?	**Yes**	
#19 All samples received within hold time?	**Yes**	
#20 Subcontract of sample(s)?	**Yes**	Houston
#21 VOC samples have zero headspace?	**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: 03/09/2017
Jessica Kramer

Checklist reviewed by: Holly Taylor Date: 03/09/2017
Holly Taylor

APPENDIX F

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 (I*ps 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 Devise (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

Activites 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

Email: jfox3549@yahoo.com
Phone: (940) 368 - 3535

Stanley "Gregg" Bessire, P.E., P.G.

940-387-0805 gregg@kjenvironmental.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., Fugro Consultants, Inc., Geoscience Consultants International, and Mas-Tek Engineering, Inc., Dallas/Fort Worth, TX 2009 - 2011

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 mulitmillion 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

Email: denavandenberg@yahoo.com
Phone: (214) 364-7627

APPENDIX G

OCD Approved Pertinent Information and Workplans

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company – Oilfield Water Logistics (OWL)	Contact – Mr. Phillip Sanders
Address	Telephone No. – 210-906-3551
Facility Name – One mile east of OWL Red Hills SWD	Facility Type – Pipeline one mile east of Red Hills SWD Facility

Surface Owner	Mineral Owner	API No. – 30-025-09806

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County

Latitude 32.095190° **Longitude** -103.201991

NATURE OF RELEASE

Type of Release – Produced Salt Water and Crude Oil	Volume of Release – 418 bbls	Volume Recovered – In progress
Source of Release – 2" Ball Valve on pipeline	Date and Hour of Occurrence – N/A	Date and Hour of Discovery – 11/2/16 at 8:11 a.m.
Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required	If YES, To Whom? Unknown truck driver notified Phillip Sanders with OWL at 8:11 a.m. on 11/2/16	
By Whom? Unknown truck driver contacted Phillip Sanders with OWL	Date and Hour – 11/2/16 at 8:11 a.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* - A 2" Ball Valve on an 8 inch diameter vertical riser was accidentally left open after pressure was bled off during the 16 inch diameter transmission pipeline shutdown, and when pipeline operation was restarted spill began to occur. Pipeline was restarted on 11/1/16 at approximately 9:30 p.m.. The 2" Ball Valve was closed this morning to prevent additional spill.

Describe Area Affected and Cleanup Action Taken.* - Excavation and dirt moving equipment currently onsite and constructing a berm to contain fluids and prevent further spreading of the fluids. Vacuum truck onsite removing as much fluids as possible.

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

Signature:	OIL CONSERVATION DIVISION
Printed Name: PHILLIP SANDERS	Approved by Environmental Specialist:
Title: SAFETY DIRECTOR	Approval Date: 11/7/2016 Expiration Date: 1/7/2016
E-mail Address: psanders@oilfieldwaterlogistics.com	Conditions of Approval: Please see attached directive Attached ☐ 1RP 4498
Date: 11-2-16 Phone: 432-349-3235	

* Attach Additional Sheets If Necessary

nKL1631253063
pKL1631255685

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 11/2/2016 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number RP 4498 has been assigned. **Please refer to this case number in all future correspondence.**

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

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

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District1 office in Hobbs on or before 12/7/2016. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.**

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

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

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

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

● Composite sampling is not generally allowed.

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

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

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

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

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

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

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

KJE
ENVIRONMENTAL & CIVIL ENGINEERING
500 Moseley Road
Cross Roads, Texas 76227
Phone 940-387-0805
Fax 940-387-0830

December 2, 2016

New Mexico Energy Minerals and Natural Resources Department (NM EMNRD)
Oil Conservation Division (OCD)
Ms. Kristen Lynch
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505

Re: Work Plan for the Characterization of Impacts Due to Two Pipeline Releases 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 Ms. Lynch:

KJE understands that the goals of the characterization effort are: 1) determination of the lateral and vertical extents along with the magnitude of soil contamination. 2) determine if groundwater or surface waters have been impacted. 3) If groundwater or surface waters have been impacted, what are the extents and magnitude of that impact 4) The characterization of any other adverse impacts that may have occurred (ex. Impacts on vegetation, impacts on wildlife, air quality, loss of use of property, etc.).

KJE is pleased to provide the attached Work Plan for the characterization of Impacts due to two pipeline releases associated with Oilfield Water Logistics' (OWL's) Red Hills SWD Facility, located in Lea County, New Mexico.

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.

Kevin J. Ware, QEP / REM
Principal

Gregg Bessire, P.E., P.G.
Senior Project Manager

Dena M. Vandenberg, REM, LEED AP
Director of Environmental Services

ENVIRONMENTAL & CIVIL ENGINEERING
500 Moseley Road
Cross Roads, Texas 76227
Phone 940-387-0805
Fax 940-387-0830

December 2, 2016

New Mexico, Energy Minerals and Natural Resources (EMNRD)
Oil Conservation Division (OCD)
Ms. Kristen Lynch
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505

Re: Work Plan for the Characterization of Impacts Due to Two Pipeline Releases 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 Ms. Lynch:

KJE proposes to perform the following environmental consulting services for OWL for the delineation portion of the project.

Environmental Investigation

The proposed scope of work will consist of performing an Environmental Investigation to evaluate the presence/absence of environmental contaminants in the soil at the two above-referenced produced water release locations. In addition, OCD has requested that KJE attempt to delineate any on-site soil contamination for future remediation efforts.

KJE understands that the goals of this workplan and characterization effort are: 1) determination of the lateral and vertical extents along with the magnitude of soil contamination. 2) determine if groundwater or surface waters have been impacted. 3) If groundwater or surface waters have been impacted, what are the extents and magnitude of that impact 4) The characterization of any other adverse impacts that may have occurred (ex. Impacts on vegetation, impacts on wildlife, air quality, loss of use of property, etc.).

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.

- Multiple soil borings will be installed to a maximum depth to reach chloride and other constituent delineation levels as noted below (horizontal and vertical delineation), by Geoprobe. A site map (Figure A1) is attached showing the general locations and areal extent of both release locations. The proposed soil boring locations are illustrated on attached Figure A2, but the quantity of borings and boring locations may be field adjusted due to onsite conditions. The drilling contractor will be using a five (5) foot split-spoon continuous sampling device to allow for sampling of soil at two and one half (2.5) foot intervals for laboratory analysis. The actual number of borings and number of samples collected for analysis will be determined in the field based on assessment of release areas and Geoprobe access points available.

- Note that the OWL pipeline and the City of Jal Municipal Water Supply pipeline should both be excavated near proposed soil boring locations prior to installing soil borings nearby either of the pipelines.

- Horizontal delineation of soil impacts will be attempted in each of the four cardinal compass directions. Adsorbed soil contamination will be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes (BTEX) by either Method 8260 or 8021, total petroleum hydrocarbons (TPH) by Method 8015 extended range (GRO+DRO+MRO; C6 thru C36), and for chloride by Method 300. KJE understands that delineation to 10 ppm Benzene, 50 ppm BTEX, 5,000 ppm TPH, and 600 ppm chlorides horizontally is required. Soil sampling will be both within the impacted area and beyond as field determined.

- Vertical delineation of soil impacts will also be attempted. Adsorbed soil contamination will be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes (BTEX) by either Method 8260 or 8021, total petroleum hydrocarbons (TPH) by Method 8015 extended range (GRO+DRO+MRO; C6 thru C36), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified if required by OCD. Vertical characterization samples should be taken at depth intervals no greater than five (5) feet apart. Lithologic description of encountered soils will also be provided. KJE understands that delineation to 10 ppm Benzene, 50 ppm BTEX, 5,000 ppm TPH, and 250 ppm chlorides vertically is required. At least ten (10) vertical feet of soils with contaminant concentrations at or below these values will be demonstrated as existing above the water table.

- In addition to the horizontal and vertical delineation borings, KJE will install one (1) soil boring upgradient of each release area to a depth of ten (10) feet and collect background samples at two and one half (2.5) foot intervals for laboratory analysis.

- Discrete, grab soil samples will be collected from each of the two and one half (2.5) foot intervals for laboratory analysis. A clean, decontaminated sampling trowel will be used to sample from each depth interval selected. For each soil boring, soil samples will be field screened using a calibrated Photo-ionization Detector (PID) (Model RAE MINIRAE 3000 Lite 0-15K ppm) for the highest reading for each boring. The sample with the highest PID reading and the sample collected at the bottom of each boring will be submitted for laboratory analysis.

- A statistically significant set of split samples will be submitted for confirmatory laboratory analysis, including the laterally farthest from the release sites and vertically deepest set of soil samples collected. In addition we will ensure that there are at least two samples submitted for laboratory analysis from each boring (highest contamination from PID and deepest depth investigated).

- Each soil sample will be handled with nitrile-gloved hands. The samples will be placed in clean, dedicated, laboratory-supplied, 4-ounce glass containers, and labeled with pertinent sampling information. The soil samples 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.

- For this investigation, groundwater is not anticipated to be encountered during environmental drilling. According to records obtained from the New Mexico Office of the State Engineer's office Hydrology Bureau records, the minimum depth to water for water wells located in the same Township and Range as where the releases occurred is 200 feet.

- If groundwater is encountered in any of the soil borings, the boring will be left open for twenty-four (24) hours to determine if substantial water accumulates for sample collection and lab analysis. After 24 hours KJE will attempt to collect a groundwater sample using a new disposable bailer and submit the samples for laboratory analysis of BTEX, TPH, and Chloride if possible.

Report of Findings

KJE will prepare and provide an electronic copy of the final report describing the findings, conclusions, and recommendations from the Environmental Investigation. KJE will present the laboratory analytical results in a tabular format and compare these levels to the OCD specified delineation levels. Accurately scaled and well-drafted site maps will be provided showing the location of all borings, test pits, monitoring wells, potentially impacted areas, and significant surface features including roads and site infrastructure that might limit either the release characterization or remedial efforts. Digital photographic documentation of the release locations and 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,

Kevin J. Ware, QEP / REM
Principal

Gregg Bessire, P.E., P.G.
Senior Project Manager

Dena M. Vandenberg, REM / LEED AP Director of
Director of Environmental Services

Attachments: Figure A1 – General View of Releases
Figure A2 – Detailed View of Releases

REVISIONS:

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(TBPE #F-12214)

KJE ENVIRONMENTAL & CIVIL ENGINEERING

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

DATE:
12/2/2016

SHEET:
A1

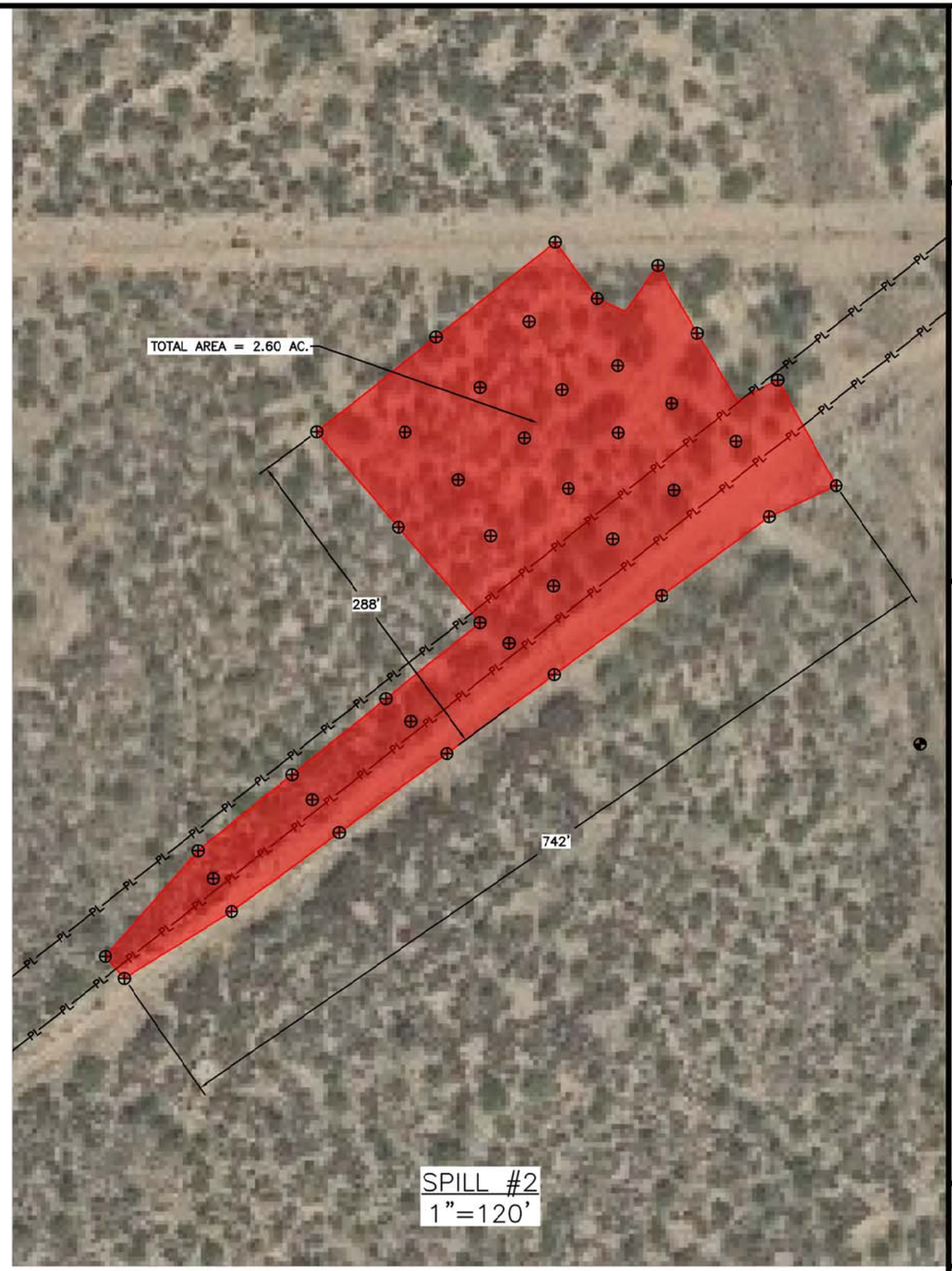
NOTES:
1. GOOGLE EARTH WAS USED AS AN UNDERLAY IMAGE FOR THIS MAP. (http://earth.google.com/)
2. SURVEY OF SPILL EXTENTS PROVIDED BY FIELD SURVEY DATED 11/08/2016 FROM JAMES E. TOMPKINS, N.M. P.L.S.

300 0 150 300
SCALE: 1" = 300'

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

N

SPILL #1
1"=120'



SPILL #2
1"=120'

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120 0 60 120
SCALE: 1" = 120'

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

DATE:
12/2/2016

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A2

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:

Mr. Phillip Sanders
Oilfield Water Logistics
8214 Westchester Drive, Suite 850
Dallas, Texas 75225

New Mexico Energy Minerals and Natural Resources Department (EMNRD)
Oil Conservation Division (OCD)
Mr. Tomáš Oberding
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505

Prepared By:

KJE
ENVIRONMENTAL & CIVIL ENGINEERING

500 Moseley Road
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Table of Contents

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KJE was retained by Oilfield Water Logistics (OWL) to complete delineations of the two produced water spill sites located approximately five miles 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.

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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') Split	1.38 0.247	42.5 13.8	17.0 9.63	79.3 49.3	140 73	2,460 2,050	4,460 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 — Date
Environmental Professional

2/16/2017

Kevin J. Ware, QEP, REM — Date
Principal

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

REVISIONS:

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KJE ENVIRONMENTAL & CIVIL ENGINEERING

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

DATE:
12/2/2016

SHEET:
A1

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.

300 0 150 300
SCALE: 1" = 300'

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

N

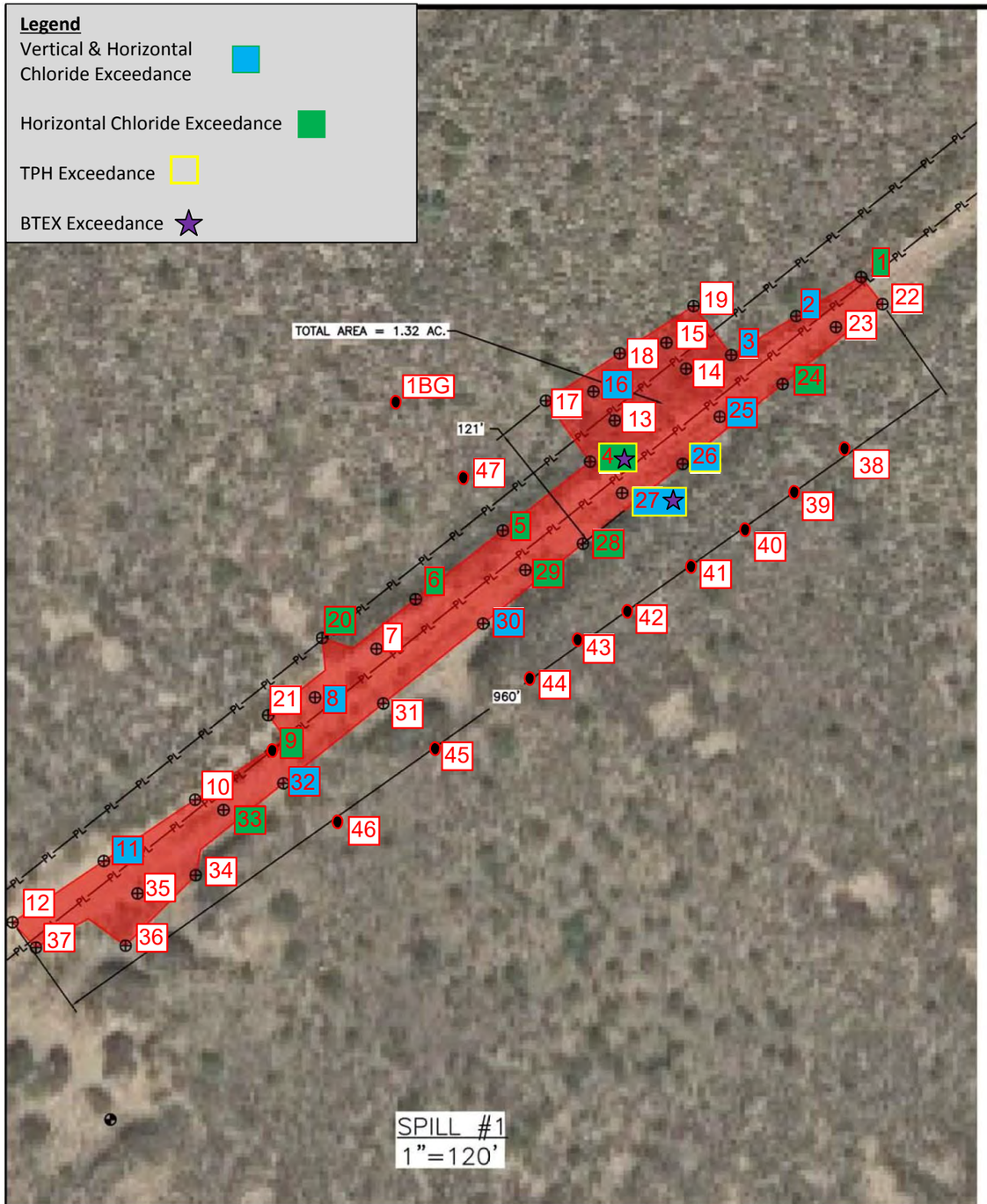
Legend

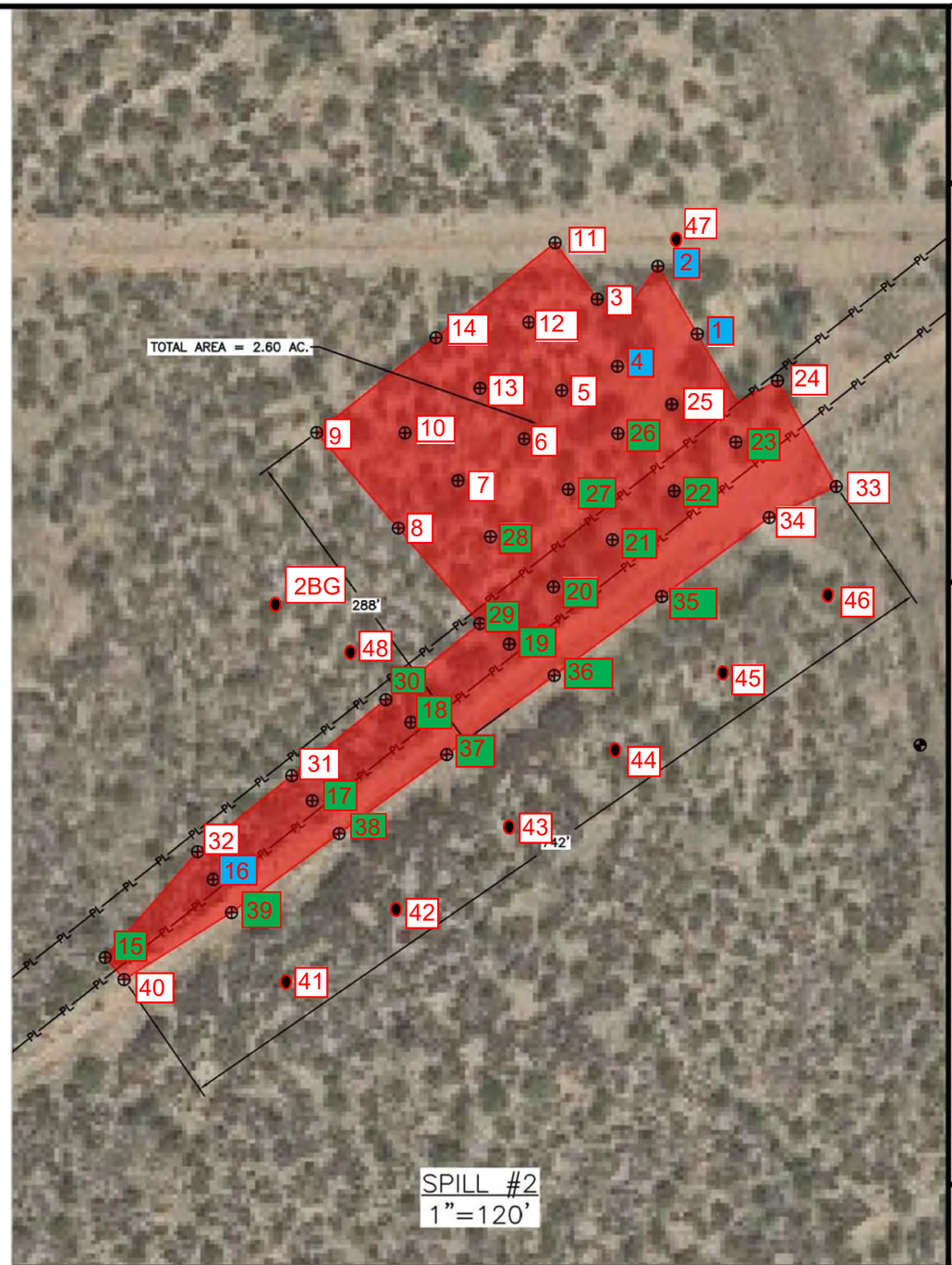
Vertical & Horizontal Chloride Exceedance

Horizontal Chloride Exceedance

TPH Exceedance

BTEX Exceedance





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N

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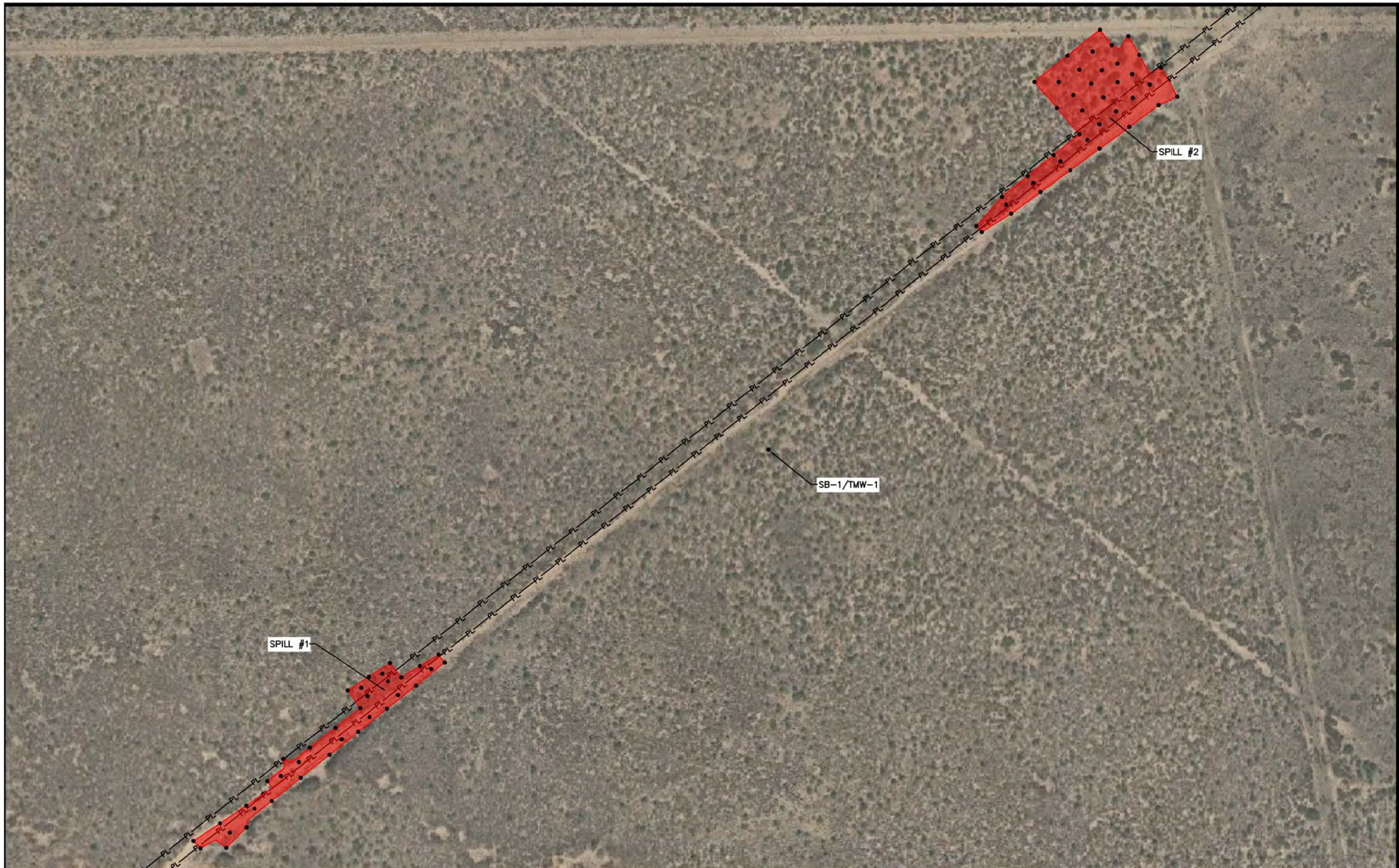

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KJE
ENVIRONMENTAL & CIVIL ENGINEERING

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

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Prepared For:

Mr. Phillip Sanders
Oilfield Water Logistics
8214 Westchester Drive, Suite 850
Dallas, Texas 75225

New Mexico Energy Minerals and Natural Resources Department (EMNRD)
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Prepared By:

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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') Split	1.38 0.247	42.5 13.8	17.0 9.63	79.3 49.3	140 73	2,460 2,050	4,460 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 — Date
Environmental Professional

2/16/2017

Kevin J. Ware, QEP, REM — Date
Principal

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

REVISIONS:

THIS DRAWING IS TO BE USED FOR PERMIT INFORMATION PURPOSES ONLY.

500 Moseley Road
Cross Roads, TX 76227
Phone (940) 387-0805
Fax (940) 387-0830
(TBPE #F-12214)

KJE 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.

300 0 150 300
SCALE: 1" = 300'

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

N

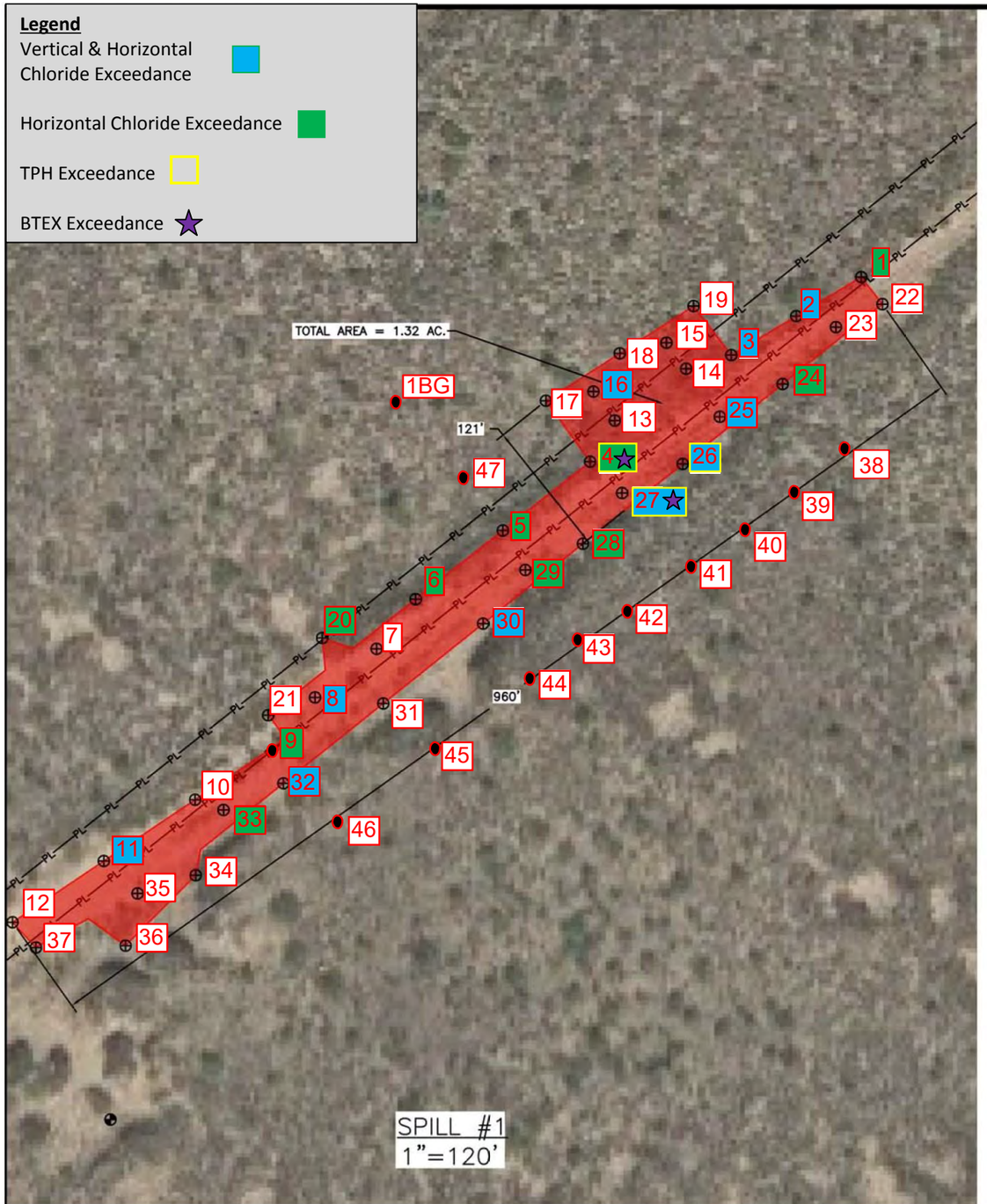
Legend

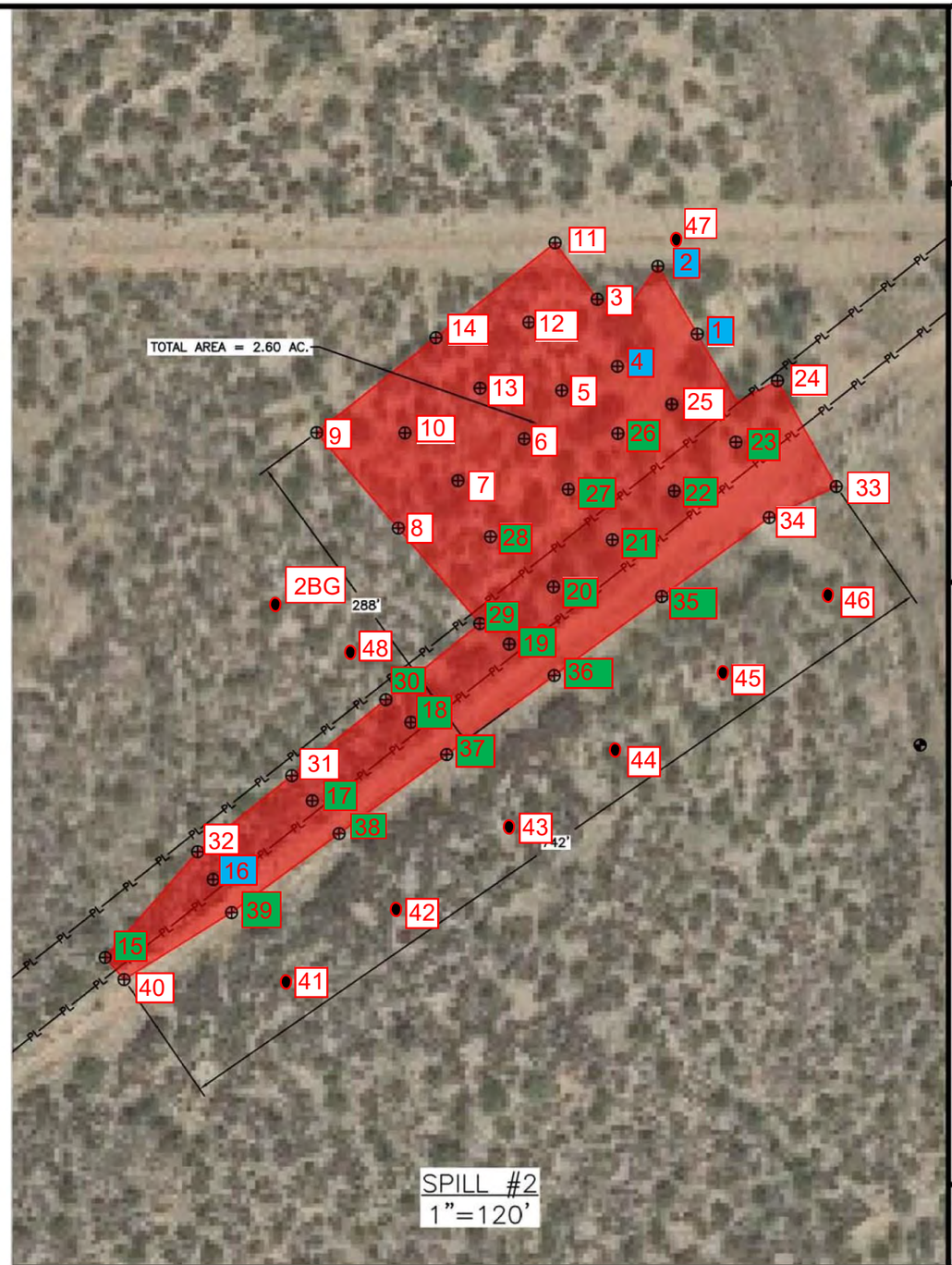
Vertical & Horizontal Chloride Exceedance

Horizontal Chloride Exceedance

TPH Exceedance

BTEX Exceedance





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.

SCALE: 1" 120'

LEGEND

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

◕ PROPOSED BACKGROUND SOIL BORING (TOTAL: 2)

N

REVISIONS:

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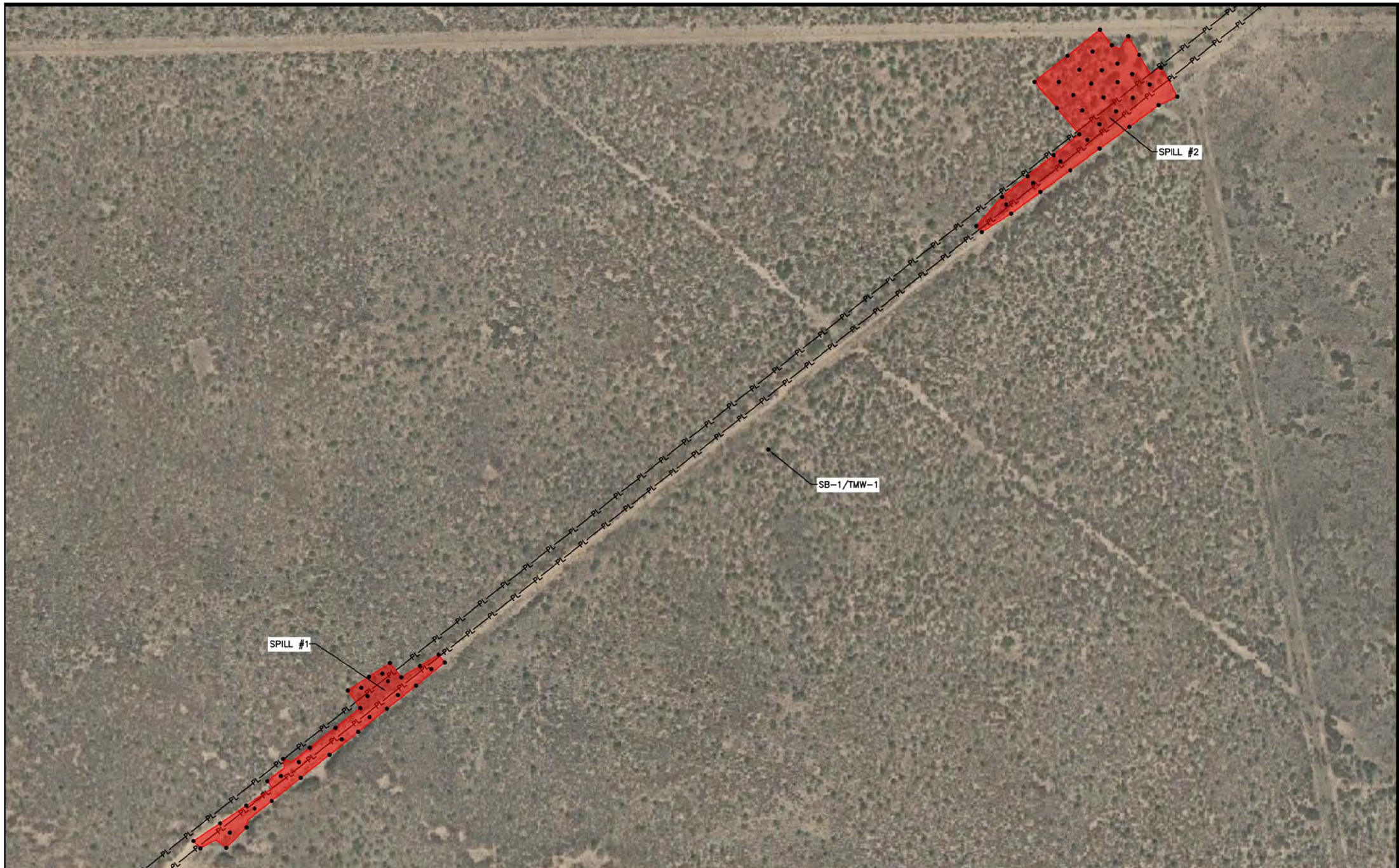
KJE ENVIRONMENTAL & CIVIL ENGINEERING

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

DATE: 12/2/2016

SHEET: A2



REVISIONS:

THIS DRAWING IS TO BE USED FOR PERMIT INFORMATION PURPOSES ONLY.

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(TBPE #F-12214)

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:
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.

300 0 150 300
SCALE: 1" = 300'

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

N

KJE
ENVIRONMENTAL & CIVIL ENGINEERING
500 Moseley Road
Cross Roads, Texas 76227
Phone: 940-387-0805
Fax :940-387-0830

April 14, 2017

Tomáš 'Doc' Oberding, PhD
Hydrologist, Adv-District 1
Oil Conservation Division, EMNRD

Phone: (505) 476-3403
E-Mail: tomas.oberding@state.nm.us

RE: Addendum to Remediation Plan – Oilfield Water Logistics (OWL) Produced Water Pipeline Release (Spill Delineation Report & Remediation Plan - Case Nos. 1RP 4497 & 1RP 4498)

KJ Environmental Management, Inc. (KJE) is pleased to submit the following Addendum to the Spill Delineation Report & Remediation Plan - Case Nos. 4497 & 4498, to summarize the plan of action discussed on our conference call on April 12, 2017.

Per your verbal authorization over our conference call on April 12, 2017, OWL has begun excavation of the soil in the areas where chlorides exceed 600 ppm up to a depth of four (4) feet. The affected soil is being placed on poly liner, and OWL is laying 20 mil poly sheeting in the 4-foot deep excavation to block the wicking-up of Chlorides. Trench anchors will be used to secure the poly sheeting.

No excavation will be completed of the soil located above, beneath, between, and extending ten (10) feet horizontally from the extents of the pipelines, in order to maintain structural stability of the pipelines in the spill areas.

OWL will blend the affected soil with clean native soil by either skid steer or pug mill, and KJE will collect one sample for every 20 cubic yards of blended soil to demonstrate the effectiveness of the remediation. Each sample will be field-screened with a Horiba D-73 Portable Multiparameter Chloride Meter, for chloride content. Every 10^{th} sample will be submitted for laboratory analysis. KJE will submit to NMOCD field meter readings for the first ten (10) soil samples sent for laboratory analysis, to confirm the accuracy of the meter. After that time, NMOCD will evaluate the meter readings and the laboratory analytical results to determine the appropriateness for lessening the required frequency of sampling.

The field screening and laboratory sampling will be completed to ensure compliance with landfarm standards per Title 19, Chapter 15, Part 36.15, for landfarms where groundwater is 100 feet or more below the lowest elevation at which the operator will place oilfield waste, which states that Chloride levels may not exceed 1,000 mg/kg.

OWL will return the blended soil to the poly-lined excavation. Any additional blended soil will be used for berm construction at OWL's nearby SWD facilities.

Disturbed areas outside of the easement will be reseeded with BLM mix to reestablish growth; however, due to vegetative growth restrictions imposed by the pipeline owners, the pipeline easement will not be seeded.

April 14, 2017

Should you have any questions regarding this Amendment, please do not hesitate to contact us at your first convenience.

Sincerely,

Dena M. Vandenberg, REM, LEED AP
Director of Environmental Services

Heather Leven

From: Oberding, Tomas, EMNRD <Tomas.Oberding@state.nm.us>
Sent: Tuesday, April 18, 2017 4:31 PM
To: Dena Vandenberg
Cc: 'Kevin Ware'; 'Prefontaine, Aaron'; Phillip Sanders; 'Nevin Bannister'; james@kjenvironmental.com
Subject: RE: Addendum to Remediation Plan- Case Nos. 4497 & 4498

Aloha all,

Thank you for the addendum.

Based upon the discussion and the documentation provided, the OCD approved the remediation plan.

Please keep us informed and let me know if you have further questions.
Mahalo
-Doc

Tomáš 'Doc' Oberding PhD
Hydrologist, Adv-District 1
Oil Conservation Division, EMNRD
(505) 476-3403
E-Mail: tomas.oberding@state.nm.us
一期一会

From: Dena Vandenberg [mailto:dena@kjenvironmental.com]
Sent: Monday, April 17, 2017 3:53 PM
To: Oberding, Tomas, EMNRD <Tomas.Oberding@state.nm.us>
Cc: 'Kevin Ware' <kevin@kjenvironmental.com>; 'Prefontaine, Aaron' <Aaron.Prefontaine@yorkrsg.com>; Phillip Sanders <psanders@oilfieldwaterlogistics.com>; 'Nevin Bannister' <nbannister@oilfieldwaterlogistics.com>; james@kjenvironmental.com
Subject: Addendum to Remediation Plan- Case Nos. 4497 & 4498

Good afternoon, Doc!

Attached is the Addendum to the Remediation Plan for OWL (Case Nos. 4497 & 4498). Please let me know if you have any questions. Thank you!

KJE ENVIRONMENTAL & CIVIL ENGINEERING

DENA M. VANDENBERG, REM, LEED AP
Director of Environmental Services
500 Moseley Road Cross Roads, Texas 76227
M (214)364-7627 O (940)387-0805 F (940)387-0830

KJE
ENVIRONMENTAL & CIVIL ENGINEERING
500 Moseley Road
Cross Roads, Texas 76227
Phone: 940-387-0805
Fax: 940-387-0830

Ms. Amber Groves
New Mexico State Land Office
2827 North Dal Paso, Suite 117
Hobbs, New Mexico 88260

Re: OWL SWD Operating, LLC
October 28, 2016 Spill
Jal, New Mexico
1RP 4497

At the SLO's request, in an effort to "achieve native plant cover and diversity levels equal to or exceeding the natural potential levels in undisturbed soils adjacent to the project area", OWL will comply with the following Revegetation and Noxious Weed Plan.

Revegetation and Noxious Weed Plan

OWL, or their contractor, will broadcast apply BLM mix No. 2, for sandy soil, on the remediation area outside of the road right-of-way. The mix will be modified to replace the Lovegrass and will include Sand Dropseed, Plains Bristlegrass, and Sideoats Grama. The seed mix will be applied at the rate specified by the supplier (8 lbs of seed/acre; consisting of 2 lbs Sand Dropseed, 2 lbs Sideoats Grama, and 4 lbs Plains Bristlegrass). A certification of purity from Curtis & Curtis, Inc. is being submitted concurrently with this Plan for your review. OWL will complete a one-time watering with a water truck to help establish growth, if a sufficient rainfall event is not forecast within 72 hours after application. The site will be monitored on a monthly basis to visually assess the establishment of growth and the absence of noxious weeds. The seed mix will contain no primary or secondary noxious weeds; however, if noxious weeds are observed during the monitoring events, the weeds will be mechanically removed. Pictures will be taken for documentation of the monitoring. If no growth is present after one year, the site will be reseeded and monitored until revegetation is achieved. A final report will be submitted once revegetation is complete, which will document the seeding and monitoring efforts and will include pictures of the seeding process, monitoring efforts, and revegetated area.

If we can be of further assistance, please do not hesitate to contact us at 940-387-0805. We look forward to proceeding with the remediation efforts and site closure.

Regards,

Dena M. Vandenberg, REM, LEED AP
Director of Environmental Services

Kevin J. Ware, QEP, REM
Principal

Curtis & Curtis, Inc.

4500 N. Prince St.
PHONE (575) 762-4759 / FAX (575) 763-4213
seed@curtisseed.com
www.curtisseed.com
CLOVIS, NEW MEXICO 88101

IRRIGATED PASTURE GRASSES
MOUNTAIN PASTURE GRASSES
NATIVE PASTURE GRASSES
SORGHUMS

GRASS SEED SPECIALISTS

YARD AND PLAYGROUND GRASSES
GOLF COURSE GRASSES
ALFALFA / CLOVERS
FORAGES

SUBMITTAL

November 16, 2017
KI Environmental

3.5 Acre Modified BLM #2

To Whom It May Concern:

Curtis & Curtis, Inc certifies that each container of seed is mixed and labeled in accordance with the Federal Seed Act and is at least equal to the requirements indicated below.

Kind	Origin	Lot #	Purity	X	Germ & Dormant	=	PLS %
Sand Dropseed Not Stated	Colorado	19557	99.44%		90.00%		89.50%
Sideoats Grama El Reno	Texas	18990	85.69%		98.00%		83.98%
Plains Bristlegrass Not Stated	Oklahoma	19495	90.60%		98.00%		88.79%

Sincerely,

Tyler Stuemky

CURTIS & CURTIS, INC.

4500 North Prince, Clovis, New Mexico 88101
PH: 575-762-4759 FAX: 575-763-4213

Irrigated Pasture Grasses
Mountain Pasture Grasses
Native Pasture Grasses

Yard and Playground Grasses
Golf Course Grasses
Alfalfa/Clovers

PRICE QUOTATION

TO:	KJ Environmental	DATE:	November 16, 2017
ATTENTION:	Dena	SALESPERSON:	Tyler Stuemky
PHONE:	940-387-0805	SHIPPING DATE:	As Directed
EMAIL:	dena@kjenvironmental.com	FOB:	Clovis
PROJECT:	3.5 Acre Modified BLM #2	TERMS:	TBD

DESCRIPTION	PRICE	AMOUNT
Modified BLM #2:	$100.00/Acre	$350.00

Broadcast Rates

COMMON NAME	BOTANICAL NAME	PLS/ACRE
Sand Dropseed	*Sporobolus cryptandrus*	2.0
~~Sand Lovegrass~~ Sub. Sideoats Grama	*Bouteloua curtipendula*	2.0
Plains Bristlegrass	*Setaria leucopila*	4.0

*****THIS QUOTE IS GOOD FOR 10 DAYS*****
*****ALL PRICES SUBJECT TO AVAILABILITY**SUBJECT TO BEING UNSOLD*****

Here is our quotation on the goods named, subject to the conditions noted:

The prices and terms on this quotation are not subject to verbal changes or other agreements unless approved in writing by the Home Office of the Seller. All quotations and agreements are contingent upon strikes, accidents, fires, availability of materials and all other causes beyond our control. Prices are based on costs and conditions existing on date of quotation and are subject to change by the Seller before final acceptance.

Typographical and stenographic errors are subject to correction. Purchaser agrees to accept either overage or shortage not in excess of ten percent to be charged for pro-rata. Purchaser assumes liability for patent and copyright infringement when goods are made to Purchaser's specifications. When quotation specifies material to be furnished by the purchaser, ample allowance must be made for reasonable spoilage and material must be of suitable quality to facilitate efficient production. Conditions not specifically stated herein shall be governed by established trade customs. Terms inconsistent with those stated herein, which may appear on Purchaser's formal order will not be binding on the Seller.

THIS AGREEMENT IS BETWEEN:

Buyer: _____ Date: _____ Seller: _____ Date: November 16, 2017