

Site Investigation Report & Corrective Action Plan

Onsurez #2

Eddy County, New Mexico



Prepared for:

Rockcliff Energy LLC

1301 McKinney Street

Suite 1300

Houston, Texas 77010

Prepared by:



Kane Environmental Engineering Inc.

8816 Big View Drive

Austin, Texas 78730

Project: 17-389

June 2017

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Site Investigation Summary

Introduction:

On June 3rd, 2017 approximately 1 barrel of crude oil and produced water were released as a result of a leaking stuffing box. The release occurred during a rain event and impacted the area surrounding the well (**Figure 1**). Approximately 1 barrel was recovered. The impacted area was estimated to be about 17,955 square feet (**Appendix A**). A copy of the C-141 is provided as (**Figure 2**).

The Onsurez #2 well is located in rural Eddy County, near Loving New Mexico. Groundwater, based on information provided the New Mexico Office of the State Engineer (**Appendix B**) is likely to be encountered at a depth of approximately 28 ft below ground surface (bgs). The distance to the nearest surface water (Pecos River) is approximately 792 feet, east of the facility. A sample of the Pecos River was collected upstream of the site and the resulting analytical data is included in (**Appendix C**).

Site Evaluation Summary

1. Representatives of Kane Environmental (Kane) completed a New Mexico One Call (NM811) to verify clearance any utilities. Rockcliff operating personnel verified that these locations are clear of any underground equipment.
2. Kane personnel, Chris Elrod and Alan Kane, P.E. began the site investigation at 8:15am on June 29th, 2017 (**Appendix D**). Photographs were taken of the well and impacted areas (**Appendix A**).
3. Kane personnel identified and collected five (5) samples (Sample OS1, OS2, OS3, OS4 and OS5) that were taken in each cardinal direction of the impacted area (**Figure 1**). Soils were collected at depths of 1 ft, 3 ft, and 5 ft (bgs). The samples were placed in sealable plastic bags, allowed to reach temperature equilibrium and then screened for hydrocarbons using a MiniRae 2000 photoionization detector (PID). The samples were also screened for chlorides using a Spectrum Field Scout electrical conductivity (EC) meter. The results are provided in (**Table 1**) along with a description of the soils encountered. A composite background sample was also collected from the surface to a depth of 3 ft (bgs) from an area that based on historical aerial photographs has not been impacted (**Figure 1**). This soil was also screened using the PID and EC meter and the results are provided in (**Table 1**).

4. Kane personnel used an auger to collect each sample. After screening, each sample was then placed in appropriate containers, properly labeled, then on ice in a cooler and delivered to the Cardinal Laboratory located in Hobbs, New Mexico for analysis. All samples were analyzed for the following constituents:

Benzene, Toluene, Ethylbenzene and mixed isomer Xylenes (BTEX) - EPA Method 8021.

Total Petroleum Hydrocarbons; Gasoline Range Organics, Diesel Range Organics, and Oil Range Organics – (EPA Method 8105). Chlorides – (EPA Method 300 or equivalent).

5. The boreholes were backfilled with bentonite.
6. A summary of the analytical results for each sample is provided in (**Table 2**).

Corrective Action Plan

Based on the information obtained from the site investigation including the following;

- New Mexico State Engineers' Water Well information suggests that the depth to ground water in this area can be expected at depth of 28 ft (bgs).
- Distance to surface water evaluation - The Pecos River is approximately 792 feet east of the site.
- The analytical results of the soil samples along with the water sample from the Pecos River.
- Observations made at the site regarding the size of the impacted area.
- The suggested appropriate cleanup criteria for the following contaminants;
 - Benzene - 10 ppm
 - BTEX - 50 ppm
 - TPH - 100 ppm
 - Chlorides - 250 ppm – (Pecos River -1,320 ppm)

Some of the analytical results indicate that there are soils impacted above the suggested cleanup levels that will require remediation. As a result, the suggested corrective action plan includes the following;

- The soils around the wellhead and sample OS1 should be excavated to a depth of 5 ft (bgs) (approximately 125 cubic yards yd³). Then the area backfilled with clean soil.
- The soil in the area of sample OS2 will be excavated to a depth of 5 ft (bgs), then backfilled with clean soil (approximately 95 yd³).
- The soil in the area of sample OS3 will be excavated to a depth of 1 ft (bgs), then backfilled with clean soil (approximately 45 yd³).
- The soil in the area of sample OS4 will be excavated to a depth of 1 ft (bgs), then backfilled with clean soil (approximately 55 yd³).
- The soils around the wellhead and sample OS5 should be excavated to a depth of 5 ft (bgs). Then the area backfilled with clean soil (approximately 155 yd³).

Photographs will be taken of the excavated areas and a confirmation sample will be collected from each area. The samples will be field screened with a PID and EC meters. The samples will be sent to a certified lab for BTEX (EPA Method 8021), chloride (EPA Method 300 or equivalent), and TPH (EPA Method 8015) analysis.

A closure report will be prepared and submitted detailing the site activities and the final confirmation analytical results.

FIGURE 1

Impacted Area



OS3

Onsurez #2 ↓

OS1

OS 2

Background ○

OS 4 ○

OS 5 ○

84 ft

© 2017 Google

Goog

Imagery Date: 3/12/2016 32°19'19.57" N 104°03'36.18" W elev 2998

1997

FIGURE 2

C-141 Form

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

Form C-141
Revised April 3, 2017

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

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: Rockcliff Operating New Mexico, LLC	Contact: Nicholas Koch
Address: 1301 McKinney St. Suite 1300	Telephone No. (713)351-0549
Facility Name: Onsurez #2	Facility Type: Well

Surface Owner: Tony Onsurez	Mineral Owner: Tony Onsurez	API No.: 30-015-26472
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LOCATION OF RELEASE

Unit Letter: F	Section: 11	Township: 23S	Range: 28E	Feet from the: 1980	North/South Line: NORTH	Feet from the: 1980	East/West Line: WEST	County: Eddy
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Latitude: 32.3219452 Longitude: -104.0600967 NAD83

NATURE OF RELEASE

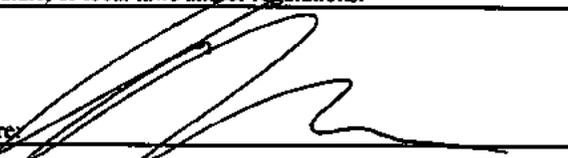
Type of Release: Produced Water & Oil	Volume of Release: 1 bbl	Volume Recovered: 1 bbl
Source of Release: Flowline to separator	Date and Hour of Occurrence: 6/3/17 7:00a	Date and Hour of Discovery: 6/3/17 9:30a
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom? N/A	
By Whom? N/A	Date and Hour: N/A	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*
N/A

Describe Cause of Problem and Remedial Action Taken.*
Cause: During heavy rain, high pressure on the tubing caused a release through the polish rod and packing. Approx. 1 bbl of produced water and oil was released onto the location and immediate surrounding area.
Action: Rockcliff Operating New Mexico, LLC representative immediately shut well in, changed out packing and visually inspected stuffing box to determine if repairs were needed before returning well to production. Proceeded to clean up affected area.

Describe Area Affected and Cleanup Action Taken.*
Much of the produced fluid was contained on location; however, a small amount of the land owner's Alfalfa, located immediately to the West of the location, was affected. A vac truck was called to remove oil and excess rain water deposited by the storm. Affected crops were removed and a backhoe was used to gather contaminated dirt onto plastic which was then hauled to a disposal facility. Ground samples were collected from around the location by APSI Environmental, reports pending.

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	
	Approved by Environmental Specialist:	
Printed Name: Nicholas Koch	Approval Date:	Expiration Date:
Title: Vice President - Operations	Conditions of Approval:	
E-mail Address: nkoch@rockcliffenergy.com	Attached <input type="checkbox"/>	
Date:	Phone: (281) 351-0549	

* Attach Additional Sheets If Necessary

TABLE 1

Field Soil Screening Data

Table 1

Sample Point	Depth (Bgs)	EC (mS/cm)	PID (ppm)	Soil Description
BKG	Surface to 3'	1.1	0.9	Tan, silty loam
OS1	1'	1.1	2.1	Limestone aggregate, tan/brown silty sand
	3'	2.92	0.9	Brown silty clay
	5'	2.1	1.5	Light tan, silty clay
OS2	1'	2.36	869	Tan/brown silty sand
	3'	19.5	33.8	Brown silty clay
	5'	3.47	14.7	Light tan, sandy clay
	8'	2.2	1.7	Light tan clay w/silt
OS3	1'	1.42	1.7	Limestone aggregate, tan/brown silty sand
	3'	0.55	0.7	Brown silty clay
	5'	2.2	0.3	Light tan, sandy clay
OS4	1'	2.3	16.6	Limestone aggregate, tan/brown silty sand
	3'	0.51	6.1	Tan/brown silty clay
	5'	0.52	1.8	Brown silty clay
OS5	1'	0.61	875	Tan/brown silty sand
	3'	2.01	190	Brown silty clay
	5'	0.44	32	Light tan, sandy clay

TABLE 2

Analytical Results Summary

Table 2

Sample	Benzene	Touene	Ethylbenzene	Xylenes	BTEX	Chlorides	TPH-GRO	TPH-DRO
OS 1-1'	<0.050	<0.050	<0.050	<0.150	<0.300	1800	<10.0	<10.0
OS 1-3'	<0.050	<0.050	<0.050	<0.150	<0.300	1120	<10.0	<10.0
OS 1-5'	<0.050	<0.050	<0.050	<0.150	<0.300	2080	<10.0	<10.0
OS 2-1'	0.475	5.84	6.42	25.8	38.5	5520	1630	14700
OS 2-3'	<0.050	<0.050	0.053	<0.150	<0.300	22000	<10.0	20.7
OS 2-5'	<0.050	<0.050	<0.050	<0.150	<0.300	2240	<10.0	<10.0
OS 2-8'	<0.050	<0.050	<0.050	<0.150	<0.300	192	<10.0	<10.0
OS 3-1'	<0.050	<0.050	<0.050	<0.150	<0.300	1920	<10.0	<10.0
OS 3-3'	<0.050	<0.050	<0.050	<0.150	<0.300	112	<10.0	<10.0
OS 3-5'	<0.050	<0.050	<0.050	<0.150	<0.300	96	<10.0	<10.0
OS 4-1'	<0.050	<0.050	<0.050	<0.150	<0.300	3040	<10.0	11.3
OS 4-3'	<0.050	<0.050	<0.050	<0.150	<0.300	128	<10.0	<10.0
OS 4-5'	<0.050	<0.050	<0.050	<0.150	<0.300	96	<10.0	<10.0
OS 5-1'	2.17	26.6	23.4	73.9	126	448	3760	12,400
OS 5-3'	<0.050	0.178	0.393	0.963	1.53	992	28.2	291
OS 5-5'	<0.050	<0.050	<0.050	<0.150	<0.300	464	<10.0	<10.0
Background	<0.050	<0.050	<0.050	<0.150	<0.300	176	<10.0	<10.0
River						1320		

*TPH 8015M, SM4500CI-B, BTEX 8021B

APPENDICES

APPENDIX A

Impacted Area Photographs

MANCHITO
ROCKCLIFF OPERATING ENERGY

EMERGENCY PH# (310) 310-3100

ONSUREZ #2

UNIT F, 1980 FNL, 1980 FWL

SEC.11-T23S-R28E

API #30-15-26472 EDDY CO., NM



UNIVERSITY OF
MICHIGAN
LANSING #2
UNIT F, 1000 FNL, 1980 FWL
SEC. 11-1235-R88E
MAY 1980-1987 EDDY CO. NM













015



0
25



0
5
3





□
55

APPENDIX B

Water Well Information



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced,
O=orphaned,
C=the file is closed)

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

(NAD83 UTM in meters)

(In feet)

POD Number	Code	Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	DepthWell	DepthWater	Water Column	
C 00315	C	ED	3	1	3	11	23S	28E	587973	3575995*		100	45	55	
C 00512	C	ED	4	1	1	11	23S	28E	588188	3576775		175	15	160	
C 00512 CLW198323	O	ED	4	1	1	11	23S	28E	588167	3576806*		100			
C 00512 EXPL	O	ED				1	11	23S	28E	588272	3576703*		200	16	184
C 00512 S	C	ED	4	1	1	11	23S	28E	588167	3576806*		100			
C 00608	C	ED	3	3	1	11	23S	28E	587970	3576401*		200			
C 03469 POD1	C	ED	3	4	3	11	23S	28E	588374	3575538		68	38	30	
C 03469 POD2	C	ED	3	4	3	11	23S	28E	588382	3575506		48			
C 03469 POD3	C	ED	3	4	3	11	23S	28E	588381	3575538		47			

Average Depth to Water: **28 feet**
 Minimum Depth: **15 feet**
 Maximum Depth: **45 feet**

Record Count: 9

Basin/County Search:

County: Eddy

PLSS Search:

Section(s): 11

Township: 23S

Range: 28E

*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

7/6/17 7:10 AM

WATER COLUMN/ AVERAGE DEPTH
TO WATER

APPENDIX C

Analytical Data



July 05, 2017

ALAN KANE

KANE ENVIROMENTAL

8816 BIG VIEW DRIVE

AUSTIN, TX 78730

RE: ONSUREZ #2

Enclosed are the results of analyses for samples received by the laboratory on 06/29/17 15:35.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style.

Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

 KANE ENVIROMENTAL
 ALAN KANE
 8816 BIG VIEW DRIVE
 AUSTIN TX, 78730
 Fax To:

Received:	06/29/2017	Sampling Date:	06/29/2017
Reported:	07/05/2017	Sampling Type:	Soil
Project Name:	ONSUREZ #2	Sampling Condition:	Cool & Intact
Project Number:	17-389	Sample Received By:	Tamara Oldaker
Project Location:	ROCKCLIFF OPERATING EDDY CO. NM		

Sample ID: OS 1 1' (H701716-01)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/30/2017	ND	2.03	101	2.00	1.74	
Toluene*	<0.050	0.050	06/30/2017	ND	1.95	97.5	2.00	2.08	
Ethylbenzene*	<0.050	0.050	06/30/2017	ND	2.13	106	2.00	1.26	
Total Xylenes*	<0.150	0.150	06/30/2017	ND	6.28	105	6.00	0.866	
Total BTEX	<0.300	0.300	06/30/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1800	16.0	07/03/2017	ND	448	112	400	3.51	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/30/2017	ND	196	98.0	200	2.17	
DRO >C10-C28	<10.0	10.0	06/30/2017	ND	208	104	200	2.05	

Surrogate: 1-Chlorooctane 103 % 28.3-164
Surrogate: 1-Chlorooctadecane 101 % 34.7-157

Cardinal Laboratories

* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 KANE ENVIROMENTAL
 ALAN KANE
 8816 BIG VIEW DRIVE
 AUSTIN TX, 78730
 Fax To:

Received:	06/29/2017	Sampling Date:	06/29/2017
Reported:	07/05/2017	Sampling Type:	Soil
Project Name:	ONSUREZ #2	Sampling Condition:	Cool & Intact
Project Number:	17-389	Sample Received By:	Tamara Oldaker
Project Location:	ROCKCLIFF OPERATING EDDY CO. NM		

Sample ID: OS 1 3' (H701716-02)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/30/2017	ND	2.03	101	2.00	1.74		
Toluene*	<0.050	0.050	06/30/2017	ND	1.95	97.5	2.00	2.08		
Ethylbenzene*	<0.050	0.050	06/30/2017	ND	2.13	106	2.00	1.26		
Total Xylenes*	<0.150	0.150	06/30/2017	ND	6.28	105	6.00	0.866		
Total BTEX	<0.300	0.300	06/30/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1120	16.0	07/03/2017	ND	448	112	400	3.51		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	06/30/2017	ND	196	98.0	200	2.17		
DRO >C10-C28	<10.0	10.0	06/30/2017	ND	208	104	200	2.05		

Surrogate: 1-Chlorooctane 90.8 % 28.3-164

Surrogate: 1-Chlorooctadecane 88.6 % 34.7-157

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 KANE ENVIROMENTAL
 ALAN KANE
 8816 BIG VIEW DRIVE
 AUSTIN TX, 78730
 Fax To:

Received:	06/29/2017	Sampling Date:	06/29/2017
Reported:	07/05/2017	Sampling Type:	Soil
Project Name:	ONSUREZ #2	Sampling Condition:	Cool & Intact
Project Number:	17-389	Sample Received By:	Tamara Oldaker
Project Location:	ROCKCLIFF OPERATING EDDY CO. NM		

Sample ID: OS 1 5' (H701716-03)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/30/2017	ND	2.03	101	2.00	1.74		
Toluene*	<0.050	0.050	06/30/2017	ND	1.95	97.5	2.00	2.08		
Ethylbenzene*	<0.050	0.050	06/30/2017	ND	2.13	106	2.00	1.26		
Total Xylenes*	<0.150	0.150	06/30/2017	ND	6.28	105	6.00	0.866		
Total BTEX	<0.300	0.300	06/30/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 100 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2080	16.0	07/03/2017	ND	448	112	400	3.51		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	06/30/2017	ND	196	98.0	200	2.17		
DRO >C10-C28	<10.0	10.0	06/30/2017	ND	208	104	200	2.05		

Surrogate: 1-Chlorooctane 98.7 % 28.3-164

Surrogate: 1-Chlorooctadecane 93.7 % 34.7-157

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 KANE ENVIROMENTAL
 ALAN KANE
 8816 BIG VIEW DRIVE
 AUSTIN TX, 78730
 Fax To:

Received:	06/29/2017	Sampling Date:	06/29/2017
Reported:	07/05/2017	Sampling Type:	Soil
Project Name:	ONSUREZ #2	Sampling Condition:	Cool & Intact
Project Number:	17-389	Sample Received By:	Tamara Oldaker
Project Location:	ROCKCLIFF OPERATING EDDY CO. NM		

Sample ID: OS 4 1' (H701716-04)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/30/2017	ND	2.03	101	2.00	1.74		
Toluene*	<0.050	0.050	06/30/2017	ND	1.95	97.5	2.00	2.08		
Ethylbenzene*	<0.050	0.050	06/30/2017	ND	2.13	106	2.00	1.26		
Total Xylenes*	<0.150	0.150	06/30/2017	ND	6.28	105	6.00	0.866		
Total BTEX	<0.300	0.300	06/30/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 100 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3040	16.0	07/03/2017	ND	448	112	400	3.51		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	06/30/2017	ND	196	98.0	200	2.17		
DRO >C10-C28	11.3	10.0	06/30/2017	ND	208	104	200	2.05		

Surrogate: 1-Chlorooctane 93.0 % 28.3-164
Surrogate: 1-Chlorooctadecane 96.0 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 KANE ENVIROMENTAL
 ALAN KANE
 8816 BIG VIEW DRIVE
 AUSTIN TX, 78730
 Fax To:

Received:	06/29/2017	Sampling Date:	06/29/2017
Reported:	07/05/2017	Sampling Type:	Soil
Project Name:	ONSUREZ #2	Sampling Condition:	Cool & Intact
Project Number:	17-389	Sample Received By:	Tamara Oldaker
Project Location:	ROCKCLIFF OPERATING EDDY CO. NM		

Sample ID: OS 4 3' (H701716-05)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/30/2017	ND	2.03	101	2.00	1.74		
Toluene*	<0.050	0.050	06/30/2017	ND	1.95	97.5	2.00	2.08		
Ethylbenzene*	<0.050	0.050	06/30/2017	ND	2.13	106	2.00	1.26		
Total Xylenes*	<0.150	0.150	06/30/2017	ND	6.28	105	6.00	0.866		
Total BTEX	<0.300	0.300	06/30/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	07/03/2017	ND	448	112	400	3.51		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	06/30/2017	ND	196	98.0	200	2.17		
DRO >C10-C28	<10.0	10.0	06/30/2017	ND	208	104	200	2.05		

Surrogate: 1-Chlorooctane 98.6 % 28.3-164
Surrogate: 1-Chlorooctadecane 101 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 KANE ENVIROMENTAL
 ALAN KANE
 8816 BIG VIEW DRIVE
 AUSTIN TX, 78730
 Fax To:

Received:	06/29/2017	Sampling Date:	06/29/2017
Reported:	07/05/2017	Sampling Type:	Soil
Project Name:	ONSUREZ #2	Sampling Condition:	Cool & Intact
Project Number:	17-389	Sample Received By:	Tamara Oldaker
Project Location:	ROCKCLIFF OPERATING EDDY CO. NM		

Sample ID: OS 4 5' (H701716-06)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/30/2017	ND	2.03	101	2.00	1.74		
Toluene*	<0.050	0.050	06/30/2017	ND	1.95	97.5	2.00	2.08		
Ethylbenzene*	<0.050	0.050	06/30/2017	ND	2.13	106	2.00	1.26		
Total Xylenes*	<0.150	0.150	06/30/2017	ND	6.28	105	6.00	0.866		
Total BTEX	<0.300	0.300	06/30/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	96.0	16.0	07/03/2017	ND	448	112	400	3.51		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	06/30/2017	ND	196	98.0	200	2.17		
DRO >C10-C28	<10.0	10.0	06/30/2017	ND	208	104	200	2.05		

Surrogate: 1-Chlorooctane 105 % 28.3-164

Surrogate: 1-Chlorooctadecane 106 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 KANE ENVIROMENTAL
 ALAN KANE
 8816 BIG VIEW DRIVE
 AUSTIN TX, 78730
 Fax To:

Received:	06/29/2017	Sampling Date:	06/29/2017
Reported:	07/05/2017	Sampling Type:	Soil
Project Name:	ONSUREZ #2	Sampling Condition:	Cool & Intact
Project Number:	17-389	Sample Received By:	Tamara Oldaker
Project Location:	ROCKCLIFF OPERATING EDDY CO. NM		

Sample ID: OS 5 1' (H701716-07)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	2.17	0.500	07/03/2017	ND	2.03	101	2.00	1.74	
Toluene*	26.6	0.500	07/03/2017	ND	1.95	97.5	2.00	2.08	
Ethylbenzene*	23.4	0.500	07/03/2017	ND	2.13	106	2.00	1.26	
Total Xylenes*	73.9	1.50	07/03/2017	ND	6.28	105	6.00	0.866	
Total BTEX	126	3.00	07/03/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 140 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	448	16.0	07/03/2017	ND	448	112	400	3.51	

TPH 8015M		mg/kg		Analyzed By: MS						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	3760	50.0	06/30/2017	ND	196	98.0	200	2.17		
DRO >C10-C28	12400	50.0	06/30/2017	ND	208	104	200	2.05		

Surrogate: 1-Chlorooctane 212 % 28.3-164

Surrogate: 1-Chlorooctadecane 274 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 KANE ENVIROMENTAL
 ALAN KANE
 8816 BIG VIEW DRIVE
 AUSTIN TX, 78730
 Fax To:

Received:	06/29/2017	Sampling Date:	06/29/2017
Reported:	07/05/2017	Sampling Type:	Soil
Project Name:	ONSUREZ #2	Sampling Condition:	Cool & Intact
Project Number:	17-389	Sample Received By:	Tamara Oldaker
Project Location:	ROCKCLIFF OPERATING EDDY CO. NM		

Sample ID: OS 5 3' (H701716-08)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/01/2017	ND	1.97	98.6	2.00	1.99	
Toluene*	0.178	0.050	07/01/2017	ND	1.91	95.4	2.00	0.490	
Ethylbenzene*	0.393	0.050	07/01/2017	ND	2.11	106	2.00	2.26	
Total Xylenes*	0.963	0.150	07/01/2017	ND	6.27	104	6.00	2.54	
Total BTEX	1.53	0.300	07/01/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 117 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	992	16.0	07/03/2017	ND	448	112	400	3.51	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	28.2	10.0	06/30/2017	ND	196	98.0	200	2.17	
DRO >C10-C28	291	10.0	06/30/2017	ND	208	104	200	2.05	

Surrogate: 1-Chlorooctane 91.0 % 28.3-164

Surrogate: 1-Chlorooctadecane 99.4 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 KANE ENVIROMENTAL
 ALAN KANE
 8816 BIG VIEW DRIVE
 AUSTIN TX, 78730
 Fax To:

Received:	06/29/2017	Sampling Date:	06/29/2017
Reported:	07/05/2017	Sampling Type:	Soil
Project Name:	ONSUREZ #2	Sampling Condition:	Cool & Intact
Project Number:	17-389	Sample Received By:	Tamara Oldaker
Project Location:	ROCKCLIFF OPERATING EDDY CO. NM		

Sample ID: OS 5 5' (H701716-09)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/01/2017	ND	1.97	98.6	2.00	1.99		
Toluene*	<0.050	0.050	07/01/2017	ND	1.91	95.4	2.00	0.490		
Ethylbenzene*	<0.050	0.050	07/01/2017	ND	2.11	106	2.00	2.26		
Total Xylenes*	<0.150	0.150	07/01/2017	ND	6.27	104	6.00	2.54		
Total BTEX	<0.300	0.300	07/01/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	464	16.0	07/03/2017	ND	448	112	400	3.51		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	06/30/2017	ND	196	98.0	200	2.17		
DRO >C10-C28	<10.0	10.0	06/30/2017	ND	208	104	200	2.05		

Surrogate: 1-Chlorooctane 108 % 28.3-164

Surrogate: 1-Chlorooctadecane 110 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 KANE ENVIROMENTAL
 ALAN KANE
 8816 BIG VIEW DRIVE
 AUSTIN TX, 78730
 Fax To:

Received:	06/29/2017	Sampling Date:	06/29/2017
Reported:	07/05/2017	Sampling Type:	Soil
Project Name:	ONSUREZ #2	Sampling Condition:	Cool & Intact
Project Number:	17-389	Sample Received By:	Tamara Oldaker
Project Location:	ROCKCLIFF OPERATING EDDY CO. NM		

Sample ID: OS 3 1' (H701716-10)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/01/2017	ND	1.97	98.6	2.00	1.99		
Toluene*	<0.050	0.050	07/01/2017	ND	1.91	95.4	2.00	0.490		
Ethylbenzene*	<0.050	0.050	07/01/2017	ND	2.11	106	2.00	2.26		
Total Xylenes*	<0.150	0.150	07/01/2017	ND	6.27	104	6.00	2.54		
Total BTEX	<0.300	0.300	07/01/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1920	16.0	07/03/2017	ND	448	112	400	3.51		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	07/01/2017	ND	208	104	200	1.99		
DRO >C10-C28	<10.0	10.0	07/01/2017	ND	222	111	200	2.41		

Surrogate: 1-Chlorooctane 100 % 28.3-164

Surrogate: 1-Chlorooctadecane 108 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 KANE ENVIROMENTAL
 ALAN KANE
 8816 BIG VIEW DRIVE
 AUSTIN TX, 78730
 Fax To:

Received:	06/29/2017	Sampling Date:	06/29/2017
Reported:	07/05/2017	Sampling Type:	Soil
Project Name:	ONSUREZ #2	Sampling Condition:	Cool & Intact
Project Number:	17-389	Sample Received By:	Tamara Oldaker
Project Location:	ROCKCLIFF OPERATING EDDY CO. NM		

Sample ID: OS 3 3' (H701716-11)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/01/2017	ND	1.97	98.6	2.00	1.99	
Toluene*	<0.050	0.050	07/01/2017	ND	1.91	95.4	2.00	0.490	
Ethylbenzene*	<0.050	0.050	07/01/2017	ND	2.11	106	2.00	2.26	
Total Xylenes*	<0.150	0.150	07/01/2017	ND	6.27	104	6.00	2.54	
Total BTEX	<0.300	0.300	07/01/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	07/03/2017	ND	448	112	400	3.51	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/01/2017	ND	208	104	200	1.99	
DRO >C10-C28	<10.0	10.0	07/01/2017	ND	222	111	200	2.41	

Surrogate: 1-Chlorooctane 105 % 28.3-164

Surrogate: 1-Chlorooctadecane 104 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 KANE ENVIROMENTAL
 ALAN KANE
 8816 BIG VIEW DRIVE
 AUSTIN TX, 78730
 Fax To:

Received:	06/29/2017	Sampling Date:	06/29/2017
Reported:	07/05/2017	Sampling Type:	Soil
Project Name:	ONSUREZ #2	Sampling Condition:	Cool & Intact
Project Number:	17-389	Sample Received By:	Tamara Oldaker
Project Location:	ROCKCLIFF OPERATING EDDY CO. NM		

Sample ID: OS 3 5' (H701716-12)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/01/2017	ND	1.97	98.6	2.00	1.99		
Toluene*	<0.050	0.050	07/01/2017	ND	1.91	95.4	2.00	0.490		
Ethylbenzene*	<0.050	0.050	07/01/2017	ND	2.11	106	2.00	2.26		
Total Xylenes*	<0.150	0.150	07/01/2017	ND	6.27	104	6.00	2.54		
Total BTEX	<0.300	0.300	07/01/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	96.0	16.0	07/03/2017	ND	448	112	400	3.51		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	07/01/2017	ND	208	104	200	1.99		
DRO >C10-C28	<10.0	10.0	07/01/2017	ND	222	111	200	2.41		

Surrogate: 1-Chlorooctane 106 % 28.3-164

Surrogate: 1-Chlorooctadecane 109 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 KANE ENVIROMENTAL
 ALAN KANE
 8816 BIG VIEW DRIVE
 AUSTIN TX, 78730
 Fax To:

Received:	06/29/2017	Sampling Date:	06/29/2017
Reported:	07/05/2017	Sampling Type:	Soil
Project Name:	ONSUREZ #2	Sampling Condition:	Cool & Intact
Project Number:	17-389	Sample Received By:	Tamara Oldaker
Project Location:	ROCKCLIFF OPERATING EDDY CO. NM		

Sample ID: OS 2 1' (H701716-13)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.476	0.050	07/01/2017	ND	1.97	98.6	2.00	1.99	
Toluene*	5.84	0.050	07/01/2017	ND	1.91	95.4	2.00	0.490	
Ethylbenzene*	6.42	0.050	07/01/2017	ND	2.11	106	2.00	2.26	
Total Xylenes*	25.8	0.150	07/01/2017	ND	6.27	104	6.00	2.54	
Total BTEX	38.5	0.300	07/01/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	5520	16.0	07/03/2017	ND	432	108	400	0.00	QM-07

TPH 8015M		mg/kg		Analyzed By: MS						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	1630	50.0	07/01/2017	ND	208	104	200	1.99		
DRO >C10-C28	14700	50.0	07/01/2017	ND	222	111	200	2.41		

Surrogate: 1-Chlorooctane 184 % 28.3-164

Surrogate: 1-Chlorooctadecane 357 % 34.7-157

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 KANE ENVIROMENTAL
 ALAN KANE
 8816 BIG VIEW DRIVE
 AUSTIN TX, 78730
 Fax To:

Received:	06/29/2017	Sampling Date:	06/29/2017
Reported:	07/05/2017	Sampling Type:	Soil
Project Name:	ONSUREZ #2	Sampling Condition:	Cool & Intact
Project Number:	17-389	Sample Received By:	Tamara Oldaker
Project Location:	ROCKCLIFF OPERATING EDDY CO. NM		

Sample ID: OS 2 3' (H701716-14)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/01/2017	ND	1.97	98.6	2.00	1.99		
Toluene*	<0.050	0.050	07/01/2017	ND	1.91	95.4	2.00	0.490		
Ethylbenzene*	0.053	0.050	07/01/2017	ND	2.11	106	2.00	2.26		
Total Xylenes*	<0.150	0.150	07/01/2017	ND	6.27	104	6.00	2.54		
Total BTEX	<0.300	0.300	07/01/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	22000	16.0	07/03/2017	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	07/01/2017	ND	208	104	200	1.99		
DRO >C10-C28	20.7	10.0	07/01/2017	ND	222	111	200	2.41		

Surrogate: 1-Chlorooctane 104 % 28.3-164

Surrogate: 1-Chlorooctadecane 106 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 KANE ENVIROMENTAL
 ALAN KANE
 8816 BIG VIEW DRIVE
 AUSTIN TX, 78730
 Fax To:

Received:	06/29/2017	Sampling Date:	06/29/2017
Reported:	07/05/2017	Sampling Type:	Soil
Project Name:	ONSUREZ #2	Sampling Condition:	Cool & Intact
Project Number:	17-389	Sample Received By:	Tamara Oldaker
Project Location:	ROCKCLIFF OPERATING EDDY CO. NM		

Sample ID: OS 2 5' (H701716-15)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/01/2017	ND	1.97	98.6	2.00	1.99		
Toluene*	<0.050	0.050	07/01/2017	ND	1.91	95.4	2.00	0.490		
Ethylbenzene*	<0.050	0.050	07/01/2017	ND	2.11	106	2.00	2.26		
Total Xylenes*	<0.150	0.150	07/01/2017	ND	6.27	104	6.00	2.54		
Total BTEX	<0.300	0.300	07/01/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2240	16.0	07/03/2017	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	07/01/2017	ND	208	104	200	1.99		
DRO >C10-C28	<10.0	10.0	07/01/2017	ND	222	111	200	2.41		

Surrogate: 1-Chlorooctane 96.8 % 28.3-164

Surrogate: 1-Chlorooctadecane 93.9 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 KANE ENVIROMENTAL
 ALAN KANE
 8816 BIG VIEW DRIVE
 AUSTIN TX, 78730
 Fax To:

Received:	06/29/2017	Sampling Date:	06/29/2017
Reported:	07/05/2017	Sampling Type:	Soil
Project Name:	ONSUREZ #2	Sampling Condition:	Cool & Intact
Project Number:	17-389	Sample Received By:	Tamara Oldaker
Project Location:	ROCKCLIFF OPERATING EDDY CO. NM		

Sample ID: BGK (H701716-16)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/01/2017	ND	1.97	98.6	2.00	1.99	
Toluene*	<0.050	0.050	07/01/2017	ND	1.91	95.4	2.00	0.490	
Ethylbenzene*	<0.050	0.050	07/01/2017	ND	2.11	106	2.00	2.26	
Total Xylenes*	<0.150	0.150	07/01/2017	ND	6.27	104	6.00	2.54	
Total BTEX	<0.300	0.300	07/01/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 112 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	07/03/2017	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/01/2017	ND	208	104	200	1.99	
DRO >C10-C28	<10.0	10.0	07/01/2017	ND	222	111	200	2.41	

Surrogate: 1-Chlorooctane 93.0 % 28.3-164
Surrogate: 1-Chlorooctadecane 89.1 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 KANE ENVIROMENTAL
 ALAN KANE
 8816 BIG VIEW DRIVE
 AUSTIN TX, 78730
 Fax To:

Received:	06/29/2017	Sampling Date:	06/29/2017
Reported:	07/05/2017	Sampling Type:	Soil
Project Name:	ONSUREZ #2	Sampling Condition:	Cool & Intact
Project Number:	17-389	Sample Received By:	Tamara Oldaker
Project Location:	ROCKCLIFF OPERATING EDDY CO. NM		

Sample ID: OS 2 8' (H701716-17)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/01/2017	ND	1.97	98.6	2.00	1.99		
Toluene*	<0.050	0.050	07/01/2017	ND	1.91	95.4	2.00	0.490		
Ethylbenzene*	<0.050	0.050	07/01/2017	ND	2.11	106	2.00	2.26		
Total Xylenes*	<0.150	0.150	07/01/2017	ND	6.27	104	6.00	2.54		
Total BTEX	<0.300	0.300	07/01/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	192	16.0	07/03/2017	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	07/01/2017	ND	208	104	200	1.99		
DRO >C10-C28	<10.0	10.0	07/01/2017	ND	222	111	200	2.41		

Surrogate: 1-Chlorooctane 95.5 % 28.3-164

Surrogate: 1-Chlorooctadecane 94.0 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 KANE ENVIROMENTAL
 ALAN KANE
 8816 BIG VIEW DRIVE
 AUSTIN TX, 78730
 Fax To:

Received:	06/29/2017	Sampling Date:	06/29/2017
Reported:	07/05/2017	Sampling Type:	Water
Project Name:	ONSUREZ #2	Sampling Condition:	Cool & Intact
Project Number:	17-389	Sample Received By:	Tamara Oldaker
Project Location:	ROCKCLIFF OPERATING EDDY CO. NM		

Sample ID: PECOS RIVER (H701716-18)

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride*	1320	4.00	06/30/2017	ND	108	108	100	3.77		

pH		pH Units		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
pH*	8.62	0.100	06/30/2017		7.12	102	7.00	1.04		

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

- S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- ** Samples not received at proper temperature of 6°C or below.
- *** Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
 (575) 393-2326 FAX (575) 393-2476

Company Name: Kane Environ mental	P.O. #: Kane	ANALYSIS REQUEST
Project Manager: Alan Kane	Company: Kane	
Address:	Attn:	
City:	Address:	
State:	City:	
Zip:	State:	
Phone #: 17-389	Zip:	
Fax #:	Phone #:	
Project #: 17-389	Project Owner: Rockcliff	
Project Name: Onsurz #2	State: NM	
Project Location: Eddy County, NM	City:	
Sampler Name: Chris Eddy	State:	
	Zip:	
	Phone #:	
	Fax #:	

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	B	T	C
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :					
H-101716	OS1 1st		1			X				6-29-17	9:10am	X		X
	OS1 3rd		1			X					9:10am	X		X
	OS1 5th		1			X					9:10am	X		X
	OS4 1st		1			X					9:15am	X		X
	OS4 3rd		1			X					9:15am	X		X
	OS4 5th		1			X					9:15am	X		X
	OS5 1st		1			X					10:15am	X		X
	OS5 3rd		1			X					10:15am	X		X
	OS5 5th		1			X					10:15am	X		X

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Relinquished By: *[Signature]* Date: 6-29-17 Received By: *[Signature]* Date: 6-29-17

Time: 3:35 PM

Received By: *[Signature]* Date: 6-29-17

Time: 8:35

Delivered By: (Circle One) UPS Bus Other

Sampler - UPS - Bus - Other

Sample Condition: Cool Intact Yes No

CHECKED BY: (Initials) *[Signature]*

REMARKS: *Email Alan*

* Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
 (575) 393-2326 FAX (575) 393-2476

BILL TO

ANALYSIS REQUEST

Company Name: Kane Environmental P.O. #: Kane
 Project Manager: Alan Kane Company: Kane
 Address: _____ Attn: _____
 City: _____ State: _____ Zip: _____
 Phone #: _____ Fax #: _____
 Project #: 17-389 Project Owner: Rock Cliffe
 Project Name: Onshore #2 City: _____ State: _____ Zip: _____
 Project Location: Eddy County, NM Phone #: _____
 Sampler Name: Chris Elwood Fax #: _____

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	B	T	C	P	C
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :							
<u>H201716</u>	<u>OS3 1F1</u>		<u>1</u>			<u>X</u>				<u>X</u>						
<u>11</u>	<u>OS3 3F1</u>		<u>1</u>			<u>X</u>			<u>6-29-17</u>	<u>10:55am</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>
<u>12</u>	<u>OS3 5F1</u>		<u>1</u>			<u>X</u>			<u>10:55am</u>	<u>10:55am</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>
<u>13</u>	<u>OS2 1F1</u>		<u>1</u>			<u>X</u>			<u>11:30am</u>	<u>11:30am</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>
<u>14</u>	<u>OS2 3F1</u>		<u>1</u>			<u>X</u>			<u>11:30am</u>	<u>11:30am</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>
<u>15</u>	<u>OS2 5F1</u>		<u>1</u>			<u>X</u>			<u>11:30am</u>	<u>11:30am</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>
<u>14</u>	<u>BKG</u>		<u>1</u>			<u>X</u>			<u>11:30am</u>	<u>11:30am</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>
<u>17</u>	<u>OS2 8F1</u>		<u>1</u>			<u>X</u>			<u>11:30am</u>	<u>11:30am</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>
<u>18</u>	<u>Pecos River</u>		<u>1</u>			<u>X</u>			<u>11:30am</u>	<u>11:30am</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>

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Relinquished By: _____ Date: 6-29-17 Received By: _____ Date: 6-29-17
 Time: 3:35pm Time: 3:35pm
 Delivered By: (Circle One) _____ Received By: _____
 Sampler - UPS - Bus - Other: 5.18 Sample Condition: Intact Checked By: _____ (Initials)
 Yes No Yes No

Phone Result: Yes No Add'l Phone #: _____
 Fax Result: Yes No Add'l Fax #: _____
 REMARKS: _____

APPENDIX D

Field Notes

Appendix D

Onsurez #2 Eddy County NM

32 19.330

104 03.595

8:15 AM

- Photographed site
- Determined sample location photographed & recorded latitude and longitude
- Diagrammed impacted area with approximate dimensions
- Calibrated PID and EC

9:10 AM **OS1**

- PID 2.1 PPM 1ft
- EC 1.1 mS/cm
- PID 0.9 PPM 3ft
- EC 2.92 mS/cm
- PID 1.5 PPM 5ft
- EC 2.1 mS/cm

Soil:

0-6 Limestone aggregate
6-12 tan/brown silty sand
12-18 same
18-24 same
24-30 same
30-36 light tan silty clay
36-42 same
42-48 same
48-54 same
54-60 silty clay

9:45 AM **OS4**

- PID 16.6 PPM 1ft
- EC 2.3 mS/cm
- PID 6.1 PPM 3ft
- EC 0.51 mS/cm
- PID 1.8 PPM 5ft
- EC 0.52 mS/cm

Soil:

0-6 limestone aggregate
1 ft brown silty sand
2 ft brown silty sand
3 ft tan/brown silty sand
4 ft tan/brown silty clay
5 ft brown silty clay

10:15 AM **OS5**

- PID 875 PPM 1ft

- EC 0.61 mS/cm
- PID 190 PPM 3ft
- EC 2.01 mS/cm
- PID 32 PPM 5ft
- EC 0.44 mS/cm

Soil:

0-6 tan silt
 6-12 tan silty sand
 1 ft strong odor
 2 ft odor slight
 3 ft tan/brown silty clay slight odor
 4 ft tan silty clay no odor
 5 ft tan sand clay no odor

10:55 AM **OS3**

- PID 1.7 PPM 1ft
- EC 1.42 mS/cm
- PID 0.7 PPM 3ft
- EC 0.55 mS/cm
- PID 0.3 PPM 5ft
- EC 2.2 mS/cm

Soil:

0-6 limestone aggregate
 1
 2
 3
 4 brown/tan silty clay
 5 tan sand clay

11:30 AM **OS2**

- PID 869 PPM 1ft
- EC 2.36 mS/cm
- PID 33.8 PPM 3ft
- EC 19.5 mS/cm
- PID 14.7 PPM 5ft
- EC 3.47 mS/cm
- PID 1.7 PPM 8ft

Soil:

0-6 Silt
 6-12 silt/sand
 1 ft tan/brown silty sand
 2 ft tan/brown silty sand
 3 ft brown silt/clay
 4 ft tan/brown silt/clay
 5 ft tan silty clay
 8 ft light tan sand clay