

Basin Environmental Service Technologies, LLC

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REMEDIATION SUMMARY AND SITE CLOSURE REQUEST

**BOPCO, LP
JAMES RANCH UNIT WELL #16
Eddy County, New Mexico
Unit Letter "H" (SE/NE), Section 36, Township 22 South, Range 30 East
Latitude 32.350408° North, Longitude 103.826691° West
NMOCD Reference #2RP-2488**

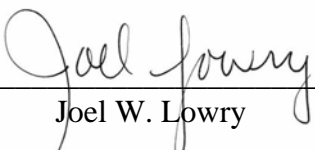
Prepared For:

**BOPCO, LP
522 W. Mermod, Suite 704
Carlsbad, New Mexico 88220**

Prepared By:

**Basin Environmental Service Technologies, LLC
3100 Plains Highway
Lovington, New Mexico 88260**

January 2015



Joel W. Lowry
Project Manager

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1.0 INTRODUCTION & BACKGROUND INFORMATION

Basin Environmental Service Technologies, LLC (Basin), on behalf of BOPCO, LP (BOPCO), has prepared this *Remediation Summary and Site Closure Request* for the release site known as James Ranch Unit Well #16 (JRU #16). The legal description of the release site is Unit Letter "H" (SE/NE), Section 36, Township 22 South, Range 30 East, in Eddy County, New Mexico. The geographic coordinates of the release site are 32.350408° North latitude and 103.826691° West longitude. The property affected by the release is owned by the State of New Mexico. A "Site Location Map" is provided as Figure 1.

On September 14, 2014, BOPCO discovered a release had occurred on the JRU #16 well pad. The release was attributed to failure of stuffing box packing due to high pressure on the flow line. It is estimated that approximately one barrel (1 bbl) of crude oil and seven barrels (7) of produced water were released. The "Release Notification and Corrective Action" (Form C-141) indicated approximately 3,525 ft² of caliche well pad were affected by the release. The Form C-141 is provided as Appendix A. General photographs of the release site are provided as Appendix B.

2.0 NMOCD SITE CLASSIFICATION

A search of the New Mexico Water Rights Reporting System (NMWRRS) database maintained by the New Mexico Office of the State Engineer (NMOSE) indicated information was unavailable for Section 36, Township 22 South, Range 30 East. A depth to groundwater reference map utilized by the New Mexico Oil Conservation Division (NMOCD) indicates groundwater should be encountered at approximately two hundred feet (200') below ground surface (bgs). Based on the NMOCD ranking system, zero (0) points will be assigned to the site as a result of this criterion.

A search of the NMWRRS database indicated there are no water wells within one thousand feet (1,000') of the release. Based on the NMOCD ranking system, zero (0) points will be assigned to the site as a result of this criterion.

There are no surface water bodies within one thousand feet (1,000') feet of the release. Based on the NMOCD ranking system, zero (0) points will be assigned to the site as a result of this criterion.

NMOCD guidelines indicate the JRU #16 release site has an initial ranking score of zero (0) points. The soil remediation levels for a site with a ranking score of zero (0) points are as follows:

- Benzene – 10 mg/Kg (ppm)
- Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) – 50 mg/Kg (ppm)
- Total Petroleum Hydrocarbons (TPH) – 5,000 mg/Kg (ppm)

The New Mexico Administrative Code (NMAC) does not currently specify a remediation level for chloride concentrations in soil. Chloride remediation levels are set by the NMOCD on a site-specific basis.

3.0 SUMMARY OF SOIL REMEDIATION ACTIVITIES

On November 25, 2014, Basin conducted an initial investigation at the release site. During the investigation, eleven (11) soil samples (SP #1 @ Surf., SP #1 @ 1', SP #1 @ 3', SP #2 @ Surf., SP #2 @ 1', SP #2 @ 3', SP #3 @ Surf., SP #3 @ 1', SP #3 @ 3', SP #4 @ Surf. and SP #5 @ Surf.) were collected from within the release margins and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations ranged from 1,340 ppm for soil sample SP #1 @ 1' to 32.0 ppm for soil sample SP #3 @ 1'. Soil samples SP #1 @ Surf., SP #2 @ Surf., SP #3 @ Surf., SP #4 @ Surf. and SP #5 @ Surf. were also analyzed for concentrations of TPH. Analytical results indicated TPH concentrations ranged from 29,070 ppm for soil sample SP #1 @ Surf. to 3,054 ppm for soil sample SP #5 @ Surf. A summary of "Concentrations of Benzene, BTEX, TPH & Chloride in Soil" is provided in Table 1. A "Site & Sample Location Map" is provided as Figure 2. Laboratory analytical reports are provided as Appendix C.

On January 8, 2015, Basin began excavating impacted soil at the release site. The floor and sidewalls of the excavation were advanced until field tests suggested concentrations of BTEX, TPH and chloride were below NMOCD regulatory standards. Excavated soil was stockpiled on-site, pending final disposition. Fifteen (15) confirmation soil samples (ESW #1, WSW #1, WSW #2, NSW #1, NSW #2, NSW #3, NSW #4, SSW #1, SSW #2, SSW #3, Floor #1, Floor #2, Floor #3, Floor #4 and Floor #5) were collected from the excavation floor and sidewalls and submitted to the laboratory for analysis of TPH concentrations. Laboratory analytical results indicated TPH concentrations were less than the appropriate laboratory MDL in each of the submitted soil samples with the exception of soil samples ESW #1, WSW #2, SSW #1 and Floor #1, which exhibited TPH concentrations of 11.9 ppm, 16.3 ppm, 222 ppm and 60.0 ppm, respectively. Soil samples Floor #1, Floor #2, Floor #3, Floor #4 and Floor #5 were also analyzed for concentrations of chloride. Laboratory analytical results indicated chloride concentrations ranged from 304 ppm for soil sample Floor #2 to 16.0 ppm for soil sample Floor #1. Soil samples Floor #1, Floor #3 and Floor #5 were also analyzed for concentrations of BTEX, which were determined to be less than the appropriate laboratory MDL in each of the submitted soil samples. In addition, one (1) five-point composite soil sample (1/8 Stockpile) was collected from the stockpiled material and submitted to the laboratory for analysis of BTEX, TPH and chloride concentrations. Laboratory analytical results indicated the BTEX concentrations was less than the appropriate laboratory MDL, the TPH concentration was 756 ppm and the chloride concentration was 288 ppm.

On January 9, 2015, the stockpiled material was blended. Upon blending the stockpile, one (1) five-point composite soil sample (1/9 Stockpile) was collected from the stockpiled material and submitted to the laboratory for analysis of TPH concentrations. Laboratory analytical results indicated the TPH concentration was 581 ppm.

On January 12, 2015, stockpiled material was blended a final time before being used as backfill material. Following backfilling, areas affected by the remediation activities were compacted and graded to match the surrounding well pad.

Prior to backfilling, the final dimensions of the excavation were approximately twelve (12) to forty feet (40') in width, seventy feet (70') in length and four feet (4') in depth.

4.0 QA/QC PROCEDURES

4.1 Soil Sampling

Soil samples were delivered to Cardinal Laboratories, Inc., in Hobbs, New Mexico, for BTEX, TPH and/or chloride analyses using the methods described below:

- BTEX concentrations in accordance with EPA Method SW-846 8021b
- TPH concentrations in accordance with EPA Method SW-846 8015M
- Chloride concentrations in accordance with EPA Method 4500 Cl-B

4.2 Decontamination of Equipment

Cleaning of the sampling equipment was the responsibility of the environmental technician. Prior to use, and between each sample, the sampling equipment was cleaned with Liqui-Nox® detergent and rinsed with distilled water.

4.3 Laboratory Protocol

The laboratory was responsible for proper QA/QC procedures after signing the chain-of-custody form(s). These procedures were either transmitted with the laboratory reports or are on file at the laboratory.

5.0 SITE CLOSURE REQUEST

Confirmation soil samples collected from the JRU #16 release site were submitted to an NMOCD-approved laboratory which determined concentrations of BTEX, TPH and chloride were less than NMOCD regulatory guidelines. Based on these laboratory analytical results, Basin recommends BOPCO provide the NMOCD-Artesia District Office and the BLM a copy of this *Remediation Summary and Site Closure Request* and request the NMOCD grant site closure to the JRU #16 release site.

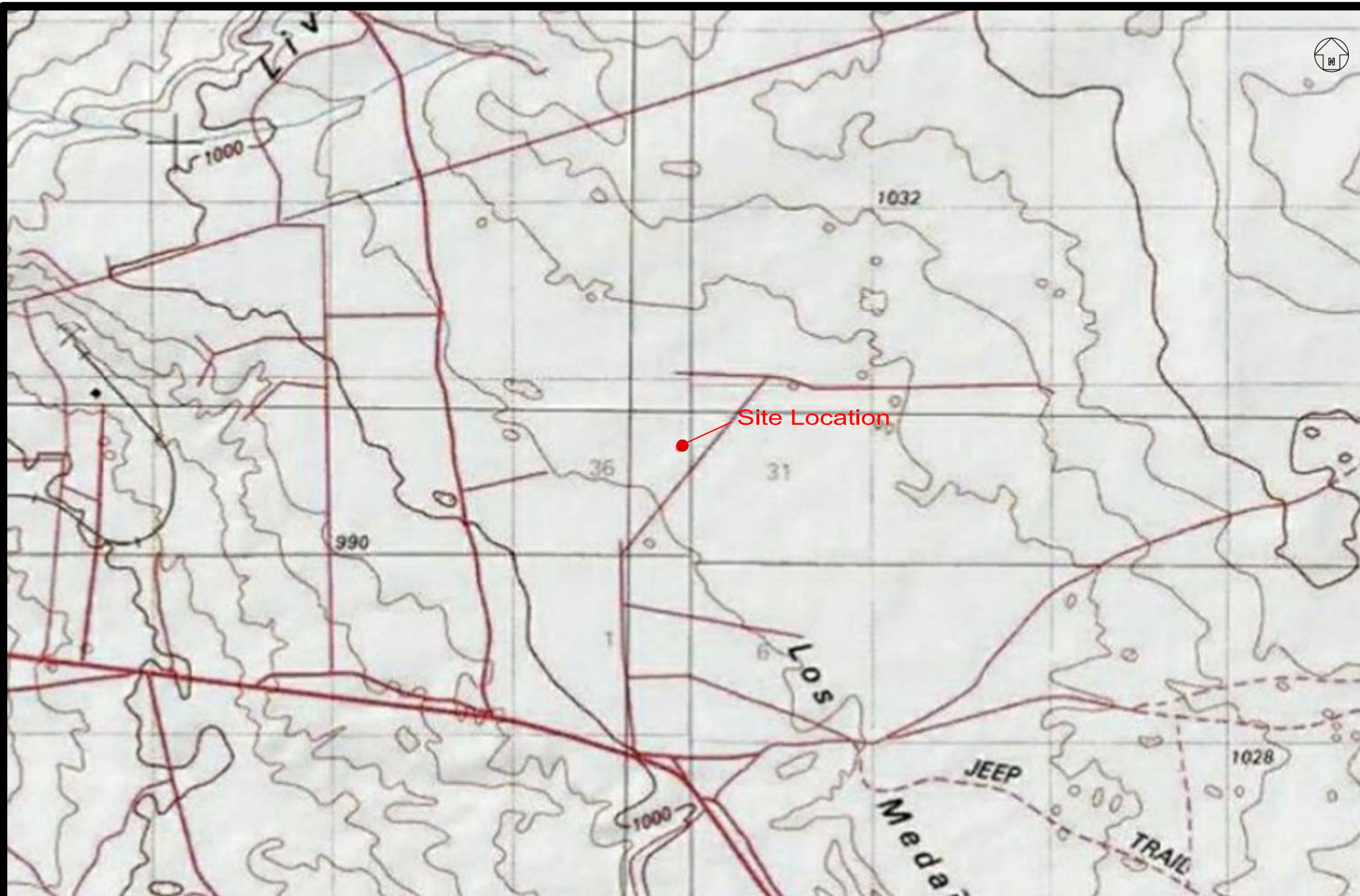
6.0 LIMITATIONS

Basin Environmental Service Technologies, LLC, has prepared this *Remediation Summary and Site Closure Request* to the best of its ability. No other warranty, expressed or implied, is made or intended. Basin has examined and relied upon documents referenced in the report and on oral statements made by certain individuals. Basin has not conducted an independent examination of the facts contained in referenced materials and statements. Basin has presumed the genuineness of these documents and statements and that the information provided therein is true and accurate. Basin has prepared this report in a professional manner, using the degree of skill and care exercised by similar environmental consultants. Basin notes that the facts and conditions referenced in this report may change over time, and the conclusions and recommendations set forth herein are applicable only to the facts and conditions as described at the time of this report.

This report has been prepared for the benefit of BOPCO, LP. The information contained in this report, including all exhibits and attachments, may not be used by any other party without the express consent of Basin Environmental Service Technologies, LLC, and/or BOPCO, LP.

7.0 DISTRIBUTION:

- Copy 1: Mike Bratcher
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division (District 2)
1301 E. Grand Avenue
Artesia, NM 88210
- Copy 2: Ian Dolly
New Mexico State Land Office
602 N. Canal, Suite B
Carlsbad, New Mexico 88220
- Copy 3: Tony Savoie
BOPCO, LP
522 W. Mermod, Suite 704
Carlsbad, NM 88220
- Copy 4: Basin Environmental Service Technologies, LLC
P.O. Box 301
Lovington, NM 88260



4000 2000 0 2000 4000
Distance in Feet

Figure 1
Site Location Map
BOPCO, LP
James Ranch Unit Well #16
Eddy County, New Mexico

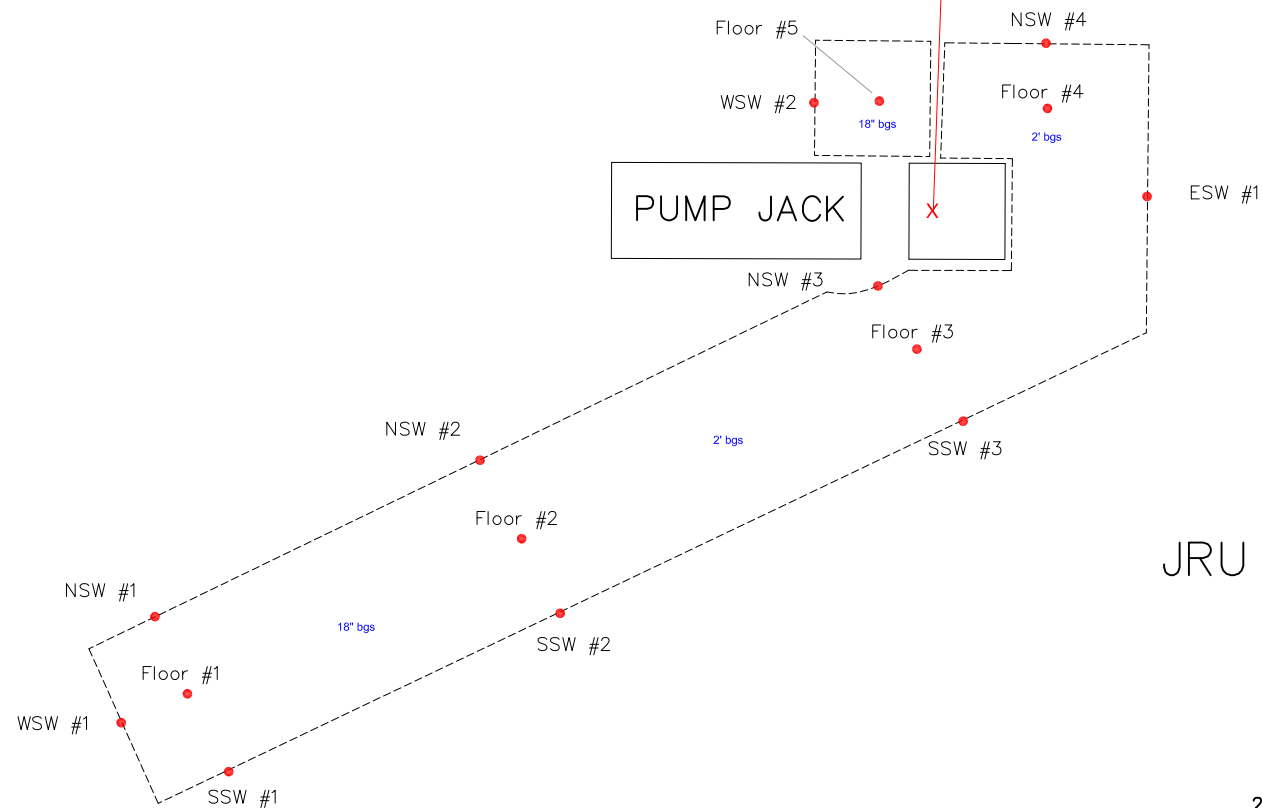
Basin Environmental Service Technologies

Prep By: JWL

Checked By: BJA

January 16, 2015

Scale 1"=4000'



JRU #16 WELL PAD



Legend:

- | | | | |
|--------|-------------------|---|----------------|
| ----- | Excavation Extent | — | Well Pad |
| • | Sample Location | — | Steel Pipeline |
| 2' bgs | Grade | X | Release Point |

Figure 2
Site & Sample Location Map
BOPCO, L.P.
James Ranch Unit Well #16
Eddy County, New Mexico
NMOCD Ref# 2RP-2488

Basin Environmental Services

Prep By: JWL

Checked By: BJA

January 15, 2014

Scale 1"=20'

TABLE 1
CONCENTRATIONS OF BENZENE, BTEX, TPH & CHLORIDE IN SOIL

BOPCO, LP
JAMES RANCH UNIT WELL #16
EDDY COUNTY, NEW MEXICO
NMOCD REFERENCE #: 2RP-2488

SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	METHOD: EPA SW 846-8021B, 5030					METHOD: 8015M			TOTAL	4500 Cl-B
				BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL-BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)	TOTAL BTEX (mg/Kg)	GRO C ₆ -C ₁₂ (mg/Kg)	DRO C ₁₂ -C ₂₈ (mg/Kg)	ORO C ₂₈ -C ₃₅ (mg/Kg)	TPH C ₆ -C ₃₅ (mg/Kg)	CHLORIDE (mg/Kg)
SP #1 @ Surf.	Surface	11/25/2014	In-Situ	<0.200	<0.200	<0.200	<0.600	<1.20	<50.0	22400	6670	29,070	448
SP #1 @ 1'	1'	11/25/2014	In-Situ	-	-	-	-	-	-	-	-	-	1,340
SP #1 @ 3'	3'	11/25/2014	In-Situ	-	-	-	-	-	-	-	-	-	624
SP #2 @ Surf.	Surface	11/25/2014	In-Situ	-	-	-	-	-	<50.0	16400	4000	20,400	688
SP #2 @ 1'	1'	11/25/2014	In-Situ	-	-	-	-	-	-	-	-	-	192
SP #2 @ 3'	3'	11/25/2014	In-Situ	-	-	-	-	-	-	-	-	-	144
SP #3 @ Surf.	Surface	11/25/2014	In-Situ	-	-	-	-	-	<50.0	9100	1800	10,900	432
SP #3 @ 1'	1'	11/25/2014	In-Situ	-	-	-	-	-	-	-	-	-	32.0
SP #3 @ 3'	3'	11/25/2014	In-Situ	-	-	-	-	-	-	-	-	-	112
SP #4 @ Surf.	Surface	11/25/2014	In-Situ	-	-	-	-	-	29.5	5680	1190	6,900	48.0
SP #5 @ Surf.	Surface	11/25/2014	In-Situ	-	-	-	-	-	<10.0	2320	734	3,054	48.0
ESW #1	12"	1/8/2015	In-Situ	-	-	-	-	-	<10.0	11.9	<10.0	11.9	-
WSW #1	6"	1/8/2015	In-Situ	-	-	-	-	-	<10.0	<10.0	<10.0	<10.0	-
WSW #2	6"	1/8/2015	In-Situ	-	-	-	-	-	<10.0	16.3	<10.0	16.3	-
NSW #1	6"	1/8/2015	In-Situ	-	-	-	-	-	<10.0	<10.0	<10.0	<10.0	-
NSW #2	6"	1/8/2015	In-Situ	-	-	-	-	-	<10.0	<10.0	<10.0	<10.0	-
NSW #3	12"	1/8/2015	In-Situ	-	-	-	-	-	<10.0	<10.0	<10.0	<10.0	-
NSW #4	12"	1/8/2015	In-Situ	-	-	-	-	-	<10.0	<10.0	<10.0	<10.0	-
SSW #1	6"	1/8/2015	In-Situ	-	-	-	-	-	<10.0	199	23.5	222	-
SSW #2	6"	1/8/2015	In-Situ	-	-	-	-	-	<10.0	<10.0	<10.0	<10.0	-
SSW #3	12"	1/8/2015	In-Situ	-	-	-	-	-	<10.0	<10.0	<10.0	<10.0	-
Floor #1	18"	1/8/2015	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<60.0	<10.0	60.0	16.0
Floor #2	18"	1/8/2015	In-Situ	-	-	-	-	-	<10.0	<10.0	<10.0	<10.0	304
Floor #3	2'	1/8/2015	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	128
Floor #4	2'	1/8/2015	In-Situ	-	-	-	-	-	<10.0	<10.0	<10.0	<10.0	176
Floor #5	18"	1/8/2015	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	128
1-8 Stockpile	N/A	1/8/2015	Stockpiled	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	650	106	756	288
1/9 Stockpile	N/A	1/9/2015	Stockpiled	-	-	-	-	-	<10.0	457	124	581	-
NMOCD Criteria				10				50				5,000	1,000

- = Not analyzed.

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

NM OIL CONSERVATION

ARTESIA DISTRICT

Form C-141

Revised August 8, 2011

SEP 16 2014

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

RECEIVED

Release Notification and Corrective Action

NAB1425954810

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: BOPCO, L.P. <i>260737</i>	Contact: Tony Savoie
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 575-887-7329
Facility Name: James Ranch Unit Well #16	Facility Type: Exploration and Production

Surface Owner: State of New Mexico	Mineral Owner: State of New Mexico	API No. 30-015-28623
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LOCATION OF RELEASE

Unit Letter H	Section 36	Township 22S	Range 30E	Feet from the 1980	North/South Line North	Feet from the 660	East/West Line East	County: Eddy
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Latitude N 32.350408 Longitude W 103.826691

NATURE OF RELEASE

Type of Release: Crude oil and produced water	Volume of Release: 1 bbl. of crude oil and 7 bbls produced water	Volume Recovered: None
Source of Release: Wellhead stuffing box	Date and Hour of Occurrence: Date 9/14/14 time Unknown	Date and Hour of Discovery: Date 9/14/14 at 2:03 p.m.
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
The stuffing box packing failed due to high pressure on the flow line. The wellhead is equipped with an E-pot, the float switch in the E-pot shut down the well however the gas pressure continued to blow oil and water out of the failed packing. The stuffing box packing was replaced.

Describe Area Affected and Cleanup Action Taken.*
The release impacted approximately 3,525 sq.ft of caliche well pad. The fluid soaked into the ground. Due to the heavy rains in the area a portion of the impacted area was also rain water.
The spill area was left as is to reveal the stained area. Basin Environmental will remediate the area.
The impacted area will be cleaned up in accordance to the NMOCD guidelines.

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: <i>Tony Savoie</i>	OIL CONSERVATION DIVISION	
Printed Name: Tony Savoie	Approved by Environmental Specialist: <i>[Signature]</i>	
Title: Waste Management and Remediation Specialist	Approval Date: <i>9/16/14</i>	Expiration Date: <i>NA</i>
E-mail Address: <i>tasavoie@basspet.com</i>	Conditions of Approval: Remediation per OCD Rule & Guidelines.	Attached <input type="checkbox"/>
Date: <i>9/16/14</i> Phone: 432-556-8730	SUBMIT REMEDIATION PROPOSAL NO LATER THAN: <i>10/16/14</i>	

* Attach Additional Sheets If Necessary

2BP-2488



Photograph of surface staining from the initial release at the JRU #16 release site.



Photograph of surface staining from the initial release at the JRU #16 release site.



Photograph of the excavated area at the JRU #16 release site.



Photograph of the excavated area at the JRU #16 release site.



Photograph of the JRU #16 release site after remediation activities.



Photograph of the JRU #16 release site after remediation activities.



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

December 04, 2014

JOEL LOWRY

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: JRU #16 WELL PAD (2RP-2488)

Enclosed are the results of analyses for samples received by the laboratory on 11/26/14 15:05.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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 with a large, stylized 'C' and 'K'.

Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

 Basin Environmental Service
 JOEL LOWRY
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

 Received: 11/26/2014
 Reported: 12/04/2014
 Project Name: JRU #16 WELL PAD (2RP-2488)
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

 Sampling Date: 11/25/2014
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Kathy Perez

Sample ID: SP #1 @ SURFACE (H403653-01)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	12/03/2014	ND	1.96	97.8	2.00	2.18	
Toluene*	<0.200	0.200	12/03/2014	ND	1.93	96.5	2.00	1.89	
Ethylbenzene*	<0.200	0.200	12/03/2014	ND	1.83	91.7	2.00	1.94	
Total Xylenes*	<0.600	0.600	12/03/2014	ND	5.63	93.8	6.00	2.05	
Total BTEX	<1.20	1.20	12/03/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.2 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	448	16.0	12/01/2014	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: CK						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<50.0	50.0	12/01/2014	ND	194	97.1	200	3.40		
DRO >C10-C28	22400	50.0	12/01/2014	ND	193	96.6	200	4.16		
EXT DRO >C28-C35	6670	50.0	12/01/2014	ND						

Surrogate: 1-Chlorooctane 123 % 47.2-157

Surrogate: 1-Chlorooctadecane 922 % 52.1-176

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

Basin Environmental Service
JOEL LOWRY
P.O. Box 301
Lovington NM, 88260
Fax To: (575) 396-1429

Received:	11/26/2014	Sampling Date:	11/25/2014
Reported:	12/04/2014	Sampling Type:	Soil
Project Name:	JRU #16 WELL PAD (2RP-2488)	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Kathy Perez
Project Location:	EDDY COUNTY, NM		

Sample ID: SP #1 @ 1' (H403653-02)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1340	16.0	12/01/2014	ND	416	104	400	3.77	

Sample ID: SP #1 @ 3' (H403653-03)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	624	16.0	12/01/2014	ND	416	104	400	3.77	

Sample ID: SP #2 @ SURFACE (H403653-04)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	688	16.0	12/01/2014	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: CK				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<50.0	50.0	12/01/2014	ND	194	97.1	200	3.40	
DRO >C10-C28	16400	50.0	12/01/2014	ND	193	96.6	200	4.16	
EXT DRO >C28-C35	4000	50.0	12/01/2014	ND					

Surrogate: 1-Chlorooctane 137 % 47.2-157
Surrogate: 1-Chlorooctadecane 504 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

Basin Environmental Service
JOEL LOWRY
P.O. Box 301
Lovington NM, 88260
Fax To: (575) 396-1429

Received:	11/26/2014	Sampling Date:	11/25/2014
Reported:	12/04/2014	Sampling Type:	Soil
Project Name:	JRU #16 WELL PAD (2RP-2488)	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Kathy Perez
Project Location:	EDDY COUNTY, NM		

Sample ID: SP #2 @ 1' (H403653-05)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	192	16.0	12/01/2014	ND	416	104	400	3.77		

Sample ID: SP #2 @ 3' (H403653-06)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	12/01/2014	ND	416	104	400	3.77	

Sample ID: SP #3 @ SURFACE (H403653-07)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	432	16.0	12/01/2014	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: CK				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<50.0	50.0	12/01/2014	ND	194	97.1	200	3.40	
DRO >C10-C28	9100	50.0	12/01/2014	ND	193	96.6	200	4.16	
EXT DRO >C28-C35	1800	50.0	12/01/2014	ND					

Surrogate: 1-Chlorooctane 141 % 47.2-157
Surrogate: 1-Chlorooctadecane 319 % 52.1-176

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Analytical Results For:

Basin Environmental Service
JOEL LOWRY
P.O. Box 301
Lovington NM, 88260
Fax To: (575) 396-1429

Received:	11/26/2014	Sampling Date:	11/25/2014
Reported:	12/04/2014	Sampling Type:	Soil
Project Name:	JRU #16 WELL PAD (2RP-2488)	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Kathy Perez
Project Location:	EDDY COUNTY, NM		

Sample ID: SP #3 @ 1' (H403653-08)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	12/01/2014	ND	416	104	400	3.77		

Sample ID: SP #3 @ 3' (H403653-09)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	112	16.0	12/01/2014	ND	416	104	400	3.77		

Sample ID: SP #4 @ SURFACE (H403653-10)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	12/01/2014	ND	432	108	400	0.00		

TPH 8015M	mg/kg		Analyzed By: CK					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	29.5	10.0	12/01/2014	ND	194	97.1	200	3.40	
DRO >C10-C28	5680	10.0	12/01/2014	ND	193	96.6	200	4.16	
EXT DRO >C28-C35	1190	10.0	12/01/2014	ND					

Surrogate: 1-Chlorooctane 135 % 47.2-157

Surrogate: 1-Chlorooctadecane 248 % 52.1-176

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Analytical Results For:

 Basin Environmental Service
 JOEL LOWRY
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	11/26/2014	Sampling Date:	11/25/2014
Reported:	12/04/2014	Sampling Type:	Soil
Project Name:	JRU #16 WELL PAD (2RP-2488)	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Kathy Perez
Project Location:	EDDY COUNTY, NM		

Sample ID: SP #5 @ SURFACE (H403653-11)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	12/01/2014	ND	432	108	400	0.00		
TPH 8015M		mg/kg		Analyzed By: CK						S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	12/01/2014	ND	194	97.1	200	3.40		
DRO >C10-C28	2320	10.0	12/01/2014	ND	193	96.6	200	4.16		
EXT DRO >C28-C35	734	10.0	12/01/2014	ND						
Surrogate: 1-Chlorooctane	126 %	47.2-157								
Surrogate: 1-Chlorooctadecane	202 %	52.1-176								

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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.
S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
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

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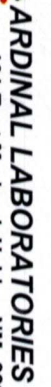
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 $2 + G1$

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

 $2 + 2$ Page 9 of 9

January 12, 2015

JOEL LOWRY

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: JRU #16 (9/14)

Enclosed are the results of analyses for samples received by the laboratory on 01/09/15 11:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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,



Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

Basin Environmental Service
JOEL LOWRY
P.O. Box 301
Lovington NM, 88260
Fax To: (575) 396-1429

Received:	01/09/2015	Sampling Date:	01/08/2015
Reported:	01/12/2015	Sampling Type:	Soil
Project Name:	JRU #16 (9/14)	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

Sample ID: ESW #1 (H500065-01)

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	01/09/2015	ND	193	96.6	200	9.38	
DRO >C10-C28	11.9	10.0	01/09/2015	ND	197	98.6	200	7.67	
EXT DRO >C28-C35	<10.0	10.0	01/09/2015	ND					
<hr/>									
Surrogate: 1-Chlorooctane	84.8 %	47.2-157							
Surrogate: 1-Chlorooctadecane	86.5 %	52.1-176							

Sample ID: WSW #1 (H500065-02)

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	01/09/2015	ND	193	96.6	200	9.38	
DRO >C10-C28	<10.0	10.0	01/09/2015	ND	197	98.6	200	7.67	
EXT DRO >C28-C35	<10.0	10.0	01/09/2015	ND					
<hr/>									
Surrogate: 1-Chlorooctane	84.8 %	47.2-157							
Surrogate: 1-Chlorooctadecane	89.6 %	52.1-176							

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Analytical Results For:

Basin Environmental Service
JOEL LOWRY
P.O. Box 301
Lovington NM, 88260
Fax To: (575) 396-1429

Received: 01/09/2015
Reported: 01/12/2015
Project Name: JRU #16 (9/14)
Project Number: NONE GIVEN
Project Location: EDDY COUNTY, NM

Sampling Date: 01/08/2015
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: WSW #2 (H500065-03)

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	01/09/2015	ND	193	96.6	200	9.38	
DRO >C10-C28	16.3	10.0	01/09/2015	ND	197	98.6	200	7.67	
EXT DRO >C28-C35	<10.0	10.0	01/09/2015	ND					
Surrogate: 1-Chlorooctane	88.5 %	47.2-157							
Surrogate: 1-Chlorooctadecane	92.8 %	52.1-176							

Sample ID: NSW #1 (H500065-04)

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	01/09/2015	ND	193	96.6	200	9.38	
DRO >C10-C28	<10.0	10.0	01/09/2015	ND	197	98.6	200	7.67	
EXT DRO >C28-C35	<10.0	10.0	01/09/2015	ND					
Surrogate: 1-Chlorooctane	88.6 %	47.2-157							
Surrogate: 1-Chlorooctadecane	98.6 %	52.1-176							

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Basin Environmental Service
JOEL LOWRY
P.O. Box 301
Lovington NM, 88260
Fax To: (575) 396-1429

Received: 01/09/2015
Reported: 01/12/2015
Project Name: JRU #16 (9/14)
Project Number: NONE GIVEN
Project Location: EDDY COUNTY, NM

Sampling Date: 01/08/2015
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: NSW #2 (H500065-05)

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	01/09/2015	ND	193	96.6	200	9.38	
DRO >C10-C28	<10.0	10.0	01/09/2015	ND	197	98.6	200	7.67	
EXT DRO >C28-C35	<10.0	10.0	01/09/2015	ND					
Surrogate: 1-Chlorooctane	90.5 %	47.2-157							
Surrogate: 1-Chlorooctadecane	105 %	52.1-176							

Sample ID: NSW #3 (H500065-06)

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	01/09/2015	ND	193	96.6	200	9.38	
DRO >C10-C28	<10.0	10.0	01/09/2015	ND	197	98.6	200	7.67	
EXT DRO >C28-C35	<10.0	10.0	01/09/2015	ND					
Surrogate: 1-Chlorooctane	90.9 %	47.2-157							
Surrogate: 1-Chlorooctadecane	91.2 %	52.1-176							

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 Basin Environmental Service
 JOEL LOWRY
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

 Received: 01/09/2015
 Reported: 01/12/2015
 Project Name: JRU #16 (9/14)
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

 Sampling Date: 01/08/2015
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: NSW #4 (H500065-07)

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	01/09/2015	ND	193	96.6	200	9.38	
DRO >C10-C28	<10.0	10.0	01/09/2015	ND	197	98.6	200	7.67	
EXT DRO >C28-C35	<10.0	10.0	01/09/2015	ND					
Surrogate: 1-Chlorooctane	85.3 %	47.2-157							
Surrogate: 1-Chlorooctadecane	87.3 %	52.1-176							

Sample ID: SSW #1 (H500065-08)

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	01/09/2015	ND	193	96.6	200	9.38	
DRO >C10-C28	199	10.0	01/09/2015	ND	197	98.6	200	7.67	
EXT DRO >C28-C35	23.5	10.0	01/09/2015	ND					
Surrogate: 1-Chlorooctane	87.5 %	47.2-157							
Surrogate: 1-Chlorooctadecane	96.4 %	52.1-176							

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P.O. Box 301
Lovington NM, 88260
Fax To: (575) 396-1429

Received: 01/09/2015
Reported: 01/12/2015
Project Name: JRU #16 (9/14)
Project Number: NONE GIVEN
Project Location: EDDY COUNTY, NM

Sampling Date: 01/08/2015
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: SSW #2 (H500065-09)

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	01/09/2015	ND	193	96.6	200	9.38	
DRO >C10-C28	<10.0	10.0	01/09/2015	ND	197	98.6	200	7.67	
EXT DRO >C28-C35	<10.0	10.0	01/09/2015	ND					
Surrogate: 1-Chlorooctane	94.0 %	47.2-157							
Surrogate: 1-Chlorooctadecane	89.0 %	52.1-176							

Sample ID: SSW #3 (H500065-10)

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	01/09/2015	ND	193	96.6	200	9.38	
DRO >C10-C28	<10.0	10.0	01/09/2015	ND	197	98.6	200	7.67	
EXT DRO >C28-C35	<10.0	10.0	01/09/2015	ND					
Surrogate: 1-Chlorooctane	92.9 %	47.2-157							
Surrogate: 1-Chlorooctadecane	95.0 %	52.1-176							

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Analytical Results For:

Basin Environmental Service
JOEL LOWRY
P.O. Box 301
Lovington NM, 88260
Fax To: (575) 396-1429

Received: 01/09/2015
Reported: 01/12/2015
Project Name: JRU #16 (9/14)
Project Number: NONE GIVEN
Project Location: EDDY COUNTY, NM

Sampling Date: 01/08/2015
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: FLOOR #1 (H500065-11)

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	01/10/2015	ND	1.67	83.6	2.00	9.49		
Toluene*	<0.050	0.050	01/10/2015	ND	1.66	83.2	2.00	9.72		
Ethylbenzene*	<0.050	0.050	01/10/2015	ND	1.61	80.5	2.00	9.92		
Total Xylenes*	<0.150	0.150	01/10/2015	ND	4.89	81.5	6.00	10.2		
Total BTEX	<0.300	0.300	01/10/2015	ND						

Surrogate: 4-Bromofluorobenzene (PID) 93.8 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	01/09/2015	ND	400	100	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	01/09/2015	ND	193	96.6	200	9.38	
DRO >C10-C28	60.0	10.0	01/09/2015	ND	197	98.6	200	7.67	
EXT DRO >C28-C35	<10.0	10.0	01/09/2015	ND					

Surrogate: 1-Chlorooctane 90.5 % 47.2-157

Surrogate: 1-Chlorooctadecane 101 % 52.1-176

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

Basin Environmental Service
JOEL LOWRY
P.O. Box 301
Lovington NM, 88260
Fax To: (575) 396-1429

Received: 01/09/2015
Reported: 01/12/2015
Project Name: JRU #16 (9/14)
Project Number: NONE GIVEN
Project Location: EDDY COUNTY, NM

Sampling Date: 01/08/2015
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: FLOOR #2 (H500065-12)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	304	16.0	01/09/2015	ND	400	100	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	01/09/2015	ND	193	96.6	200	9.38	
DRO >C10-C28	<10.0	10.0	01/09/2015	ND	197	98.6	200	7.67	
EXT DRO >C28-C35	<10.0	10.0	01/09/2015	ND					
Surrogate: 1-Chlorooctane	91.1 %	47.2-157							
Surrogate: 1-Chlorooctadecane	97.4 %	52.1-176							

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

Basin Environmental Service
JOEL LOWRY
P.O. Box 301
Lovington NM, 88260
Fax To: (575) 396-1429

Received: 01/09/2015
Reported: 01/12/2015
Project Name: JRU #16 (9/14)
Project Number: NONE GIVEN
Project Location: EDDY COUNTY, NM

Sampling Date: 01/08/2015
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: FLOOR #3 (H500065-13)

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	01/10/2015	ND	1.67	83.6	2.00	9.49		
Toluene*	<0.050	0.050	01/10/2015	ND	1.66	83.2	2.00	9.72		
Ethylbenzene*	<0.050	0.050	01/10/2015	ND	1.61	80.5	2.00	9.92		
Total Xylenes*	<0.150	0.150	01/10/2015	ND	4.89	81.5	6.00	10.2		
Total BTEX	<0.300	0.300	01/10/2015	ND						

Surrogate: 4-Bromofluorobenzene (PID) 94.0 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	01/09/2015	ND	400	100	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	01/09/2015	ND	193	96.6	200	9.38	
DRO >C10-C28	<10.0	10.0	01/09/2015	ND	197	98.6	200	7.67	
EXT DRO >C28-C35	<10.0	10.0	01/09/2015	ND					

Surrogate: 1-Chlorooctane 90.1 % 47.2-157

Surrogate: 1-Chlorooctadecane 101 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 Basin Environmental Service
 JOEL LOWRY
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

 Received: 01/09/2015
 Reported: 01/12/2015
 Project Name: JRU #16 (9/14)
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

 Sampling Date: 01/08/2015
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: FLOOR #4 (H500065-14)

Chloride, SM4500CI-B			mg/kg							
			Analyzed By: CK							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	176	16.0	01/09/2015	ND	400	100	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	01/09/2015	ND	193	96.6	200	9.38		
DRO >C10-C28	<10.0	10.0	01/09/2015	ND	197	98.6	200	7.67		
EXT DRO >C28-C35	<10.0	10.0	01/09/2015	ND						
Surrogate: 1-Chlorooctane	91.1 %	47.2-157								
Surrogate: 1-Chlorooctadecane	88.8 %	52.1-176								

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Analytical Results For:

Basin Environmental Service
JOEL LOWRY
P.O. Box 301
Lovington NM, 88260
Fax To: (575) 396-1429

Received: 01/09/2015
Reported: 01/12/2015
Project Name: JRU #16 (9/14)
Project Number: NONE GIVEN
Project Location: EDDY COUNTY, NM

Sampling Date: 01/08/2015
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: FLOOR #5 (H500065-15)

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	01/10/2015	ND	1.67	83.6	2.00	9.49	
Toluene*	<0.050	0.050	01/10/2015	ND	1.66	83.2	2.00	9.72	
Ethylbenzene*	<0.050	0.050	01/10/2015	ND	1.61	80.5	2.00	9.92	
Total Xylenes*	<0.150	0.150	01/10/2015	ND	4.89	81.5	6.00	10.2	
Total BTEx	<0.300	0.300	01/10/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 94.9 % 61-154

Chloride, SM4500CI-B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	01/09/2015	ND	400	100	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	01/09/2015	ND	193	96.6	200	9.38	
DRO >C10-C28	<10.0	10.0	01/09/2015	ND	197	98.6	200	7.67	
EXT DRO >C28-C35	<10.0	10.0	01/09/2015	ND					

Surrogate: 1-Chlorooctane 86.1 % 47.2-157

Surrogate: 1-Chlorooctadecane 86.4 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 Basin Environmental Service
 JOEL LOWRY
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

 Received: 01/09/2015
 Reported: 01/12/2015
 Project Name: JRU #16 (9/14)
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

 Sampling Date: 01/08/2015
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: 1-8 STOCKPILE (H500065-16)

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	01/10/2015	ND	1.67	83.6	2.00	9.49		
Toluene*	<0.050	0.050	01/10/2015	ND	1.66	83.2	2.00	9.72		
Ethylbenzene*	<0.050	0.050	01/10/2015	ND	1.61	80.5	2.00	9.92		
Total Xylenes*	<0.150	0.150	01/10/2015	ND	4.89	81.5	6.00	10.2		
Total BTEx	<0.300	0.300	01/10/2015	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.6 % 61-154

Chloride, SM4500CI-B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	288	16.0	01/09/2015	ND	400	100	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	01/10/2015	ND	193	96.6	200	9.38	
DRO >C10-C28	650	10.0	01/10/2015	ND	197	98.6	200	7.67	
EXT DRO >C28-C35	106	10.0	01/10/2015	ND					

Surrogate: 1-Chlorooctane 94.2 % 47.2-157

Surrogate: 1-Chlorooctadecane 109 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

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

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Celey D. Keene, Lab Director/Quality Manager



ARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240

(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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Page 14 of 15

Company Name:		Project Manager:		Address:		City:		State:		Zip:		Phone #:		Fax #:		Project #:		Project Owner:		Project Name:		Project Location:		Sampler Name:	
Joel Lowry		P.O. Box 301		Lovington		NM		88260		(575)396-2378		(575)396-1429				JRUI #16 (9/14)		Eddy Co., NM		Matt Taylor					

Lab I.D.		Sample I.D.		G/RAB OR (C)OMP.		# CONTAINERS		MATRIX		PRESERV.		SAMPLING		DATE		TIME		Chloride		TPH (8015M)		BTEX (8021B)		HOLD FOR TPH		
H500065																										
1	ESW #1	g	1												1/8/15											
2	WSW #1	g	1												1/8/15											
3	WSW #2	g	1												1/8/15											
4	NSW #1	g	1												1/8/15											
5	NSW #2	g	1												1/8/15											
6	NSW #3	g	1												1/8/15											
7	NSW #4	g	1												1/8/15											
8	SSW #1	g	1												1/8/15											
9	SSW #2	g	1												1/8/15											
10	SSW #3	g	1												1/8/15											

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Relinquished By:	Date:	Received By:	Phone Result:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Add'l Phone #:
M. Taylor	1/8/15		Fax Result:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS:			
	1/9/15	Joedi Benson				
Delivered By: (Circle One)	Time:	Sample Condition	Please email results to pm@basinenv.com, TASavoie@BassPet.com, acruith@basspet.com			
Sampler - UPS - Bus - Other:	6:30	Cool Intact				
	1100	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				
		<input type="checkbox"/> Yes <input type="checkbox"/> No				

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476

#54

 20 ± 2

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Relinquished By: <i>Mr. Taylor</i>		Date: <i>8/9/15</i>	Received By: <i>[Signature]</i>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
Time: <i>0830</i>				Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Relinquished By: <i>[Signature]</i>		Date: <i>8/9/15</i>	Received By: <i>Jodi Benson</i>	REMARKS:	
Time: <i>1100</i>				Please email results to pm@basinenv.com, TASavoie@BassPet.com, acruith@basspet.com	
Delivered By: (Circle One)		Sample Condition	CHECKED BY:		
Sampler - UPS - Bus - Other:		Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>3.22</i>	(Initials) <i>[Signature]</i>		

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476

#54

January 14, 2015

JOEL LOWRY

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: JRU #16

Enclosed are the results of analyses for samples received by the laboratory on 01/13/15 13:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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,



Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

Basin Environmental Service
JOEL LOWRY
P.O. Box 301
Lovington NM, 88260
Fax To: (575) 396-1429

Received: 01/13/2015
Reported: 01/14/2015
Project Name: JRU #16
Project Number: NONE GIVEN
Project Location: EDDY COUNTY, NM

Sampling Date: 01/09/2015
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: 1/9 STOCKPILE (H500120-01)

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	01/14/2015	ND	194	97.2	200	2.02	
DRO >C10-C28	457	10.0	01/14/2015	ND	193	96.5	200	1.82	
EXT DRO >C28-C35	124	10.0	01/14/2015	ND					
<hr/>									
Surrogate: 1-Chlorooctane	89.8 %	47.2-157							
Surrogate: 1-Chlorooctadecane	96.1 %	52.1-176							

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

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

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ANALYSIS REQUEST

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