

# *Basin Environmental Service Technologies, LLC*

3100 Plains Highway  
P. O. Box 301  
Lovington, New Mexico 88260

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## **REMEDIATION SUMMARY & RISK-BASED SITE CLOSURE REQUEST**

**BOPCO, LP**  
**POKER LAKE UNIT #212 Flow Line Release**  
**Eddy County, New Mexico**  
**API 30-015-33915**  
**Unit Letter "P" (SE/SE), Section 18, Township 24 South, Range 30**  
**East Latitude 32.212869° North, Longitude 103.914300° West**  
**NMOCD Reference #2RP-2871**

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

**September 2015**

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Ben J. Arguijo  
Project Manager

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## **1.0 INTRODUCTION & BACKGROUND INFORMATION**

Basin Environmental Service Technologies, LLC (Basin Environmental), on behalf of BOPCO, LP (BOPCO), has prepared this *Remediation Summary & Risk-Based Site Closure Request* for the release site known as Poker Lake Unit (PLU) #212. The legal description of the release site is Unit Letter "P" (SE/SE), Section 18, Township 24 South, Range 30 East, in Eddy County, New Mexico. The geographic coordinates of the release site are 32.212869° North latitude and 103.914300° West longitude. The property affected by the release is owned by the United States Department of the Interior – Bureau of Land Management (BLM). A "Site Location Map" is provided as Figure 1.

On March 14, 2015, BOPCO discovered a release had occurred along a two and seven-eighths-inch (2 7/8") flow line associated with the PLU #212 pumping well. A leak in the steel flow line (attributed to internal and external corrosion) resulted in a release of crude oil and produced water. During initial response activities, a temporary clamp was utilized to mitigate the release, and two sections of the damaged pipeline were replaced.

The release was reported to the New Mexico Oil Conservation Division's (NMOCD) Artesia District Office on March 10, 2015. The "Release Notification and Corrective Action" (Form C-141) indicated approximately six barrels (6 bbls) of crude oil and six barrels (6 bbls) of produced water released, with no recovery. The release affected an area of pastureland north of the PLU #213 Salt Water Disposal (SWD) system measuring approximately one thousand, fifty square feet (1,050 ft<sup>2</sup>). The release was located near the re-vegetated area of the original reserve pit.

Remedial activities at the PLU #212 release site were conducted in conjunction with ongoing remediation on the adjacent PLU #213 SWD caliche pad.

The Form C-141 is provided as Appendix A. General photographs of the release site are provided in 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 18, Township 24 South, Range 30 East. A depth to groundwater reference map utilized by the NMOCD indicates groundwater should be encountered approximately two hundred feet fifteen (215') 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') 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 PLU #212 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
- Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) – 50 mg/kg
- Total Petroleum Hydrocarbons (TPH) – 5,000 mg/kg

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 March 27, 2015, Basin Environmental commenced excavation of impacted soil at the site. Olfactory and visual senses were utilized to determine the vertical and horizontal extent of impacted soil and to guide the excavation. Excavated soil was stockpiled on plastic adjacent to the excavation, pending final disposition.

On March 30, 2015, six (6) soil samples (RP @ 18", RP @ 3', #2, #3, #4, and #5) were collected from the floor and sidewalls of the excavation and submitted to Cardinal Laboratories in Hobbs, New Mexico, for analysis of chloride concentrations using the Environmental Protection Agency (EPA) analytical methods listed in Section 4.1, "Soil Sampling", below. Soil sample RP @ 3' was also analyzed for concentrations of TPH and BTEX. Laboratory analytical results indicated chloride concentrations ranged from 16.0 mg/kg in sample #2 to 9,200 mg/kg near the release point, represented by soil sample RP @ 3'. BTEX constituent concentrations in sample RP @ 3' were less than the appropriate laboratory method detection limit (MDL), and the TPH concentration was 22.6 mg/kg.

A summary of "Concentrations of Benzene, BTEX, TPH & Chloride in Soil" is provided in Table 1. A "Sample Location Map" is provided as Figure 2. Laboratory analytical reports are provided in Appendix C.

From March 30 through April 1, 2015, approximately one hundred twenty cubic yards (140 yd<sup>3</sup>) of impacted soil was transported to Lea Land, Inc. (NMOCD Permit # WM-01-035), for disposal.

From March 30 through April 1, 2015, the excavation was backfilled with locally acquired, non-impacted material, compacted, and contoured to fit the surrounding topography. Prior to backfilling, a twenty (20) mil, polyethylene liner measuring approximately thirty feet (30') by twenty feet (20') was installed on the floor excavation. The final dimensions of the excavation were approximately forty-two feet (42') in length, sixteen (16) to thirty feet (30') in width, and three feet (3') in depth.

The site will be seeded with a BLM-approved seed mix at a time conducive to germination.

## **4.0 QUALITY ASSURANCE/QUALITY CONTROL (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**

Due to its proximity to the reserve pit associated with the PLU #213 pumping unit and the presence of numerous pipes, appurtenances, and electrical lines, the PLU #212 release site was excavated to the extent practicable. Soil samples collected from the floors and sidewalls of the excavation were analyzed by an NMOCD-approved laboratory, and concentrations of benzene, BTEX, and TPH were below the recommended remediation action levels (RRAL's) established for the site by the NMOCD.

A twenty (20) mil, impermeable, plastic liner was installed on the floor of the excavation prior to backfilling. This engineered control will help mitigate potential releases and effectively inhibit vertical migration of contaminants to groundwater. In-situ soil exhibiting chloride concentrations above the RRAL established for the site will be remediated upon decommission and/or abandonment of the currently active SWD system, pipelines, and/or electrical utilities.

Basin Environmental recommends BOPCO provide the NMOCD Artesia District Office and the NMSLO a copy of this *Remediation Summary & Risk-Based Site Closure Request* and request the NMOCD grant site closure to the PLU #212 release site.

## 6.0 LIMITATIONS

Basin Environmental Service Technologies, LLC, has prepared this *Remediation Summary & Risk-Based Site Closure Request* to the best of its ability. No other warranty, expressed or implied, is made or intended. Basin Environmental has examined and relied upon documents referenced in the report and on oral statements made by certain individuals. Basin Environmental has not conducted an independent examination of the facts contained in referenced materials and statements. Basin Environmental has presumed the genuineness of these documents and statements and that the information provided therein is true and accurate. Basin Environmental has prepared this report in a professional manner, using the degree of skill and care exercised by similar environmental consultants. Basin Environmental 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.

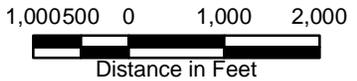
## **7.0 DISTRIBUTION:**

- 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: James Amos  
Bureau of Land Management  
602 E. Greene Street  
Carlsbad, NM 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

# Figures



**Figure 1**  
**Site Location Map**  
**BOPCO, LP**  
**Poker Lake Unit #212**  
**Eddy County, New Mexico**  
**NMOC Reference #: 2RP-2871**



Basin Environmental Service Technologies, LLC  
 3100 Plains Hwy.  
 Lovington, NM 88260

Drawn By: BJA	Checked By: BRB
June 1, 2015	Scale: 1" = 2,000'



**Legend**

- Excavation
- Liner
- Sample Location

**Figure 2**  
**Sample Location Map**  
**BOPCO, LP**  
**Poker Lake Unit #212**  
**Eddy County, New Mexico**  
**NMOC Reference #: 2RP-2871**



Basin Environmental Service Technologies, LLC  
 3100 Plains Hwy.  
 Lovington, NM 88260

Drawn By: BJA	Checked By: BRB
Sept. 25, 2015	Scale: 1" = 25'

# Tables

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

**BOPCO, LP  
POKER LAKE UNIT #212  
EDDY COUNTY, NEW MEXICO  
NMOCD REFERENCE #: 2RP-2871**

SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	METHOD: EPA SW 846-8021B, 5030					METHOD: 8015M			4500 CI-B	
				BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL-BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)	TOTAL BTEX (mg/Kg)	GRO C <sub>6</sub> -C <sub>12</sub> (mg/Kg)	DRO C <sub>12</sub> -C <sub>28</sub> (mg/Kg)	ORO C <sub>28</sub> -C <sub>35</sub> (mg/Kg)	TPH C <sub>6</sub> -C <sub>35</sub> (mg/Kg)	CHLORIDE (mg/Kg)
RP @ 18"	1.5'	3/30/2015	Excavated	-	-	-	-	-	-	-	-	-	2,680
RP @ 3'	3'	3/30/2015	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	22.6	<10.0	22.6	9,200
#2	3'	3/30/2015	In-Situ	-	-	-	-	-					16.0
#3	3'	3/30/2015	In-Situ	-	-	-	-	-					720
#4	3'	3/30/2015	In-Situ	-	-	-	-	-					80.0
#5	3'	3/30/2015	In-Situ	-	-	-	-	-					3,520
<b>NMOCD Criteria</b>				<b>10</b>				<b>50</b>				<b>5,000</b>	<b>1,000</b>

- = Not analyzed.

# **Appendices**

**Appendix A**  
**Release Notification &**  
**Corrective Action (Form C-141)**

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

MAR 9 2015

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

RECEIVED

**Release Notification and Corrective Action**

NAB1506928926 OPERATOR  Initial Report  Final Report

Name of Company: BOPCO, L.P. <u>2100737</u>	Contact: Tony Savoie
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 575-887-7329
Facility Name: PLU-212, the leak is 1350 east of the well on the north edge of the PLU-213 Tank Btry. And SWD	Facility Type: Exploration and Production
Surface Owner: Federal	Mineral Owner: Federal
API No. 30-015-33915	

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	18	24S	30E					Eddy

Latitude N 32.212869 Longitude W 103.914300

**NATURE OF RELEASE**

Type of Release: Crude oil and produced water	Volume of Release: 6 bbls crude oil and 6 bbls produced water	Volume Recovered: None
Source of Release: 27/8" flow line	Date and Hour of Occurrence: 3/4/15 time unknown	Date and Hour of Discovery: 3/14/15 at approximately 5:00 a.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 flow line developed a leak due to external and internal corrosion. An emergency repair clamp was placed on the leak area. On 3/5/15, two joints of pipe were replaced.

Describe Area Affected and Cleanup Action Taken.\*

The spill impacted approximately 1050 sq. ft. of pasture area just north of the PLU-213 Tank battery and SWD. The spill location is near the re-vegetated area from the original reserve pit. All of the fluid soaked into the ground. The stained area was left as is pending the final remediation. There is an on-going remediation plan being developed for the pad and surrounding area.

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: <u>Tony Savoie</u>	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Tony Savoie	Approved by Environmental Specialist: <u>[Signature]</u>	
Title: Waste Management and Remediation Specialist	Approval Date: <u>3/10/15</u>	Expiration Date: <u>N/A</u>
E-mail Address: <u>tasavoie@basspet.com</u>	Conditions of Approval: Remediation per O.C.D. Rules & Guidelines Attached <input type="checkbox"/>	
Date: <u>3/9/15</u> Phone: 432-556-8730	<b>SUBMIT REMEDIATION PROPOSAL NO</b>	

\* Attach Additional Sheets If Necessary

LATER THAN: 4/10/15

2RP-2871

# **Appendix B**

## **Photographs**



Poker Lake Unit #212 - Release Site



Poker Lake Unit #212 - Release Site



Poker Lake Unit #212 - Release Site



Poker Lake Unit #212 - Release Site



Poker Lake Unit #212 - Excavation



Poker Lake Unit #212 - Excavation

**Appendix C**  
**Laboratory Analytical Reports**



April 06, 2015

BEN J. ARGUIJO

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: PLU #212 FLOW LINE SPILL

Enclosed are the results of analyses for samples received by the laboratory on 03/31/15 16:05.

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](http://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:**

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

Received:	03/31/2015	Sampling Date:	03/30/2015
Reported:	04/06/2015	Sampling Type:	Soil
Project Name:	PLU #212 FLOW LINE SPILL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: RP @ 18" (H500854-01)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>2680</b>	16.0	04/01/2015	ND	400	100	400	0.00	

**Sample ID: RP @ 3' (H500854-02)**

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	04/02/2015	ND	1.83	91.5	2.00	13.1	
Toluene*	<0.050	0.050	04/02/2015	ND	1.67	83.4	2.00	13.0	
Ethylbenzene*	<0.050	0.050	04/02/2015	ND	1.65	82.4	2.00	13.7	
Total Xylenes*	<0.150	0.150	04/02/2015	ND	5.04	84.0	6.00	14.1	
Total BTEX	<0.300	0.300	04/02/2015	ND					

*Surrogate: 4-Bromofluorobenzene (PID) 104 % 61-154*

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>9200</b>	16.0	04/01/2015	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	04/01/2015	ND	195	97.6	200	1.27	
<b>DRO &gt;C10-C28</b>	<b>22.6</b>	10.0	04/01/2015	ND	198	99.2	200	4.70	
EXT DRO >C28-C35	<10.0	10.0	04/01/2015	ND					

*Surrogate: 1-Chlorooctane 102 % 47.2-157*

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	03/31/2015	Sampling Date:	03/30/2015
Reported:	04/06/2015	Sampling Type:	Soil
Project Name:	PLU #212 FLOW LINE SPILL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: RP @ 3' (H500854-02)**

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<i>Surrogate: 1-Chlorooctadecane</i>	104 %	52.1-176							

**Sample ID: #2 (H500854-03)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>16.0</b>	16.0	04/01/2015	ND	400	100	400	0.00	

**Sample ID: #3 (H500854-04)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>720</b>	16.0	04/01/2015	ND	400	100	400	0.00	

**Sample ID: #4 (H500854-05)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>80.0</b>	16.0	04/01/2015	ND	400	100	400	0.00	

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	03/31/2015	Sampling Date:	03/30/2015
Reported:	04/06/2015	Sampling Type:	Soil
Project Name:	PLU #212 FLOW LINE SPILL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: #5 (H500854-06)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>3520</b>	16.0	04/01/2015	ND	400	100	400	0.00	

Cardinal Laboratories

\*=Accredited Analyte

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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



---

Celey D. Keene, Lab Director/Quality Manager

