

# *Basin Environmental Service Technologies, LLC*

3100 Plains Highway  
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## **REMEDIATION SUMMARY & SITE CLOSURE REQUEST**

**BOPCO, LP**  
**POKER LAKE UNIT CRUDE OIL GATHERING SYSTEM**  
**Eddy County, New Mexico**  
**Unit Letter "M" (SW/SW), Section 29, Township 24 South, Range 30 East**  
**Latitude 32.181606° North, Longitude 103.909504° West**  
**NMOCD Reference #: 2RP-2102**

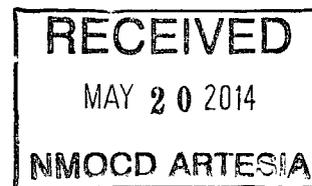
Prepared For:

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

February 2014



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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 & Site Closure Request* for the release site known as Poker Lake Unit (PLU) Crude Oil Gathering System. The legal description of the release site is Unit Letter "M" (SW/SW), Section 29, Township 24 South, Range 30 East, in Eddy County, New Mexico. The geographic coordinates of the release site are 32.181606° North latitude and 103.909504° West longitude. The property affected by the release is owned by the United States Department of the Interior - Bureau of Land Management (BLM). Please reference Figure 1 for a "Site Location Map".

On December 6, 2013, BOPCO discovered a release had occurred on the PLU Crude Oil Gathering System. A six-inch (6") gathering line was struck and ruptured by a track-hoe during excavation of an adjacent pipeline, resulting in a release of crude oil. During initial response activities, vacuum trucks were dispatched to the location, Lease Automatic Custody Transfer (LACT) units were shut down, and the damaged section of pipe was isolated. The track-hoe was utilized to excavate the impacted area, and a temporary repair clamp was employed to mitigate the release. The damaged section of pipe was replaced the following day.

The release was immediately reported to the New Mexico Oil Conservation Division (NMOCD) Artesia District Office. The "Release Notification and Corrective Action" (Form C-141) indicated approximately two hundred and seventy barrels (270 bbls) of crude oil were released, and approximately two hundred and twenty barrels (220 bbls) were recovered and placed back into production facilities at the nearby PLU #213 and PLU #227 locations. The release was contained within the excavation, which was located in the middle of a lease road, and measured approximately thirty feet (30') in length, ten feet (10') in width, and approximately six feet (6') in depth.

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 29, Township 24 South, Range 30 East. A depth-to-groundwater reference map utilized by the NMOCD indicates groundwater should be encountered at approximately two hundred and seventy-five feet (275') to two hundred and eighty feet (280') 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 Crude Oil Gathering System 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, ethylbenzene, toluene, 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 December 17, 2013, one (1) soil sample (Release Point 16') was collected from the floor of the excavation at the release point. The soil sample was submitted to Cardinal Laboratories in Hobbs, New Mexico, for analysis of BTEX, TPH, and chloride concentrations in accordance with Environmental Protection Agency (EPA) methods SW-846 8021b, SW-846 8015M, and 4500 Cl-B, respectively. Laboratory analytical results indicated BTEX constituent concentrations were less than the appropriate laboratory method detection limit (MDL), the TPH concentration was 49.5 mg/kg, and the chloride concentration was 192 mg/kg. Table 1 summarizes the "Concentrations of Benzene, BTEX, TPH & Chloride in Soil". A "Site & Sample Location Map" is provided as Figure 2. Laboratory analytical reports are provided as Appendix C.

On December 18, 2013, seven (7) soil samples (E Section - N Wall, E Section - E Wall, E Section - S Wall, E Section - Floor, W Section - N Wall, W Section - W Wall, and W Section - S Wall) were collected from the floor and sidewalls of the excavation and submitted to the laboratory for analysis of TPH and chloride concentrations. Laboratory analytical results indicated TPH concentrations ranged from less than the laboratory MDL in soil samples E Section - N Wall, E Section - S Wall, W Section - N Wall, W Section - W Wall, and W Section - S Wall to 1,447 mg/kg in soil sample E Section - Floor. Chloride concentrations ranged from 80.0 mg/kg in soil samples W Section - N Wall and W Section - S Wall to 272 mg/kg in soil samples E Section - N Wall, E Section - E Wall, and E Section - S Wall.

A composite sample (Stockpile) was also collected from the stockpiled soil and submitted to the laboratory for analysis of TPH and chloride concentrations. Laboratory analytical results indicated the TPH concentration in soil sample Stockpile was 5,810 mg/kg, and the chloride concentration was 320 mg/kg.

On December 23, 2013, one (1) composite sample (12/23 Stockpile) was collected from the stockpiled soil and submitted to the laboratory for analysis of TPH and chloride concentrations. Laboratory analytical results indicated the TPH concentration in soil sample 12/23 Stockpile was 25,030 mg/kg, and the chloride concentration was 336 mg/kg.

Soil represented by soil sample 12/23 Stockpile was left undisturbed for several days to facilitate bioremediation.

On January 10, 2014, approximately one hundred and forty cubic yards (140 yd<sup>3</sup>) of the stockpiled soil was transported to Lea Land, Inc. (NMOCD Permit # WM-01-035), for disposal. The remaining stockpiled soil was blended on-site with non-impacted soil.

On January 13, 2014, one (1) composite sample (1/13 Stockpile) was collected from the blended soil and submitted to the laboratory for analysis of BTEX, TPH, and chloride concentrations. Laboratory analytical results indicated the benzene concentration in soil sample 1/13 Stockpile was less than the laboratory MDL, and the total BTEX concentration was 35.2 mg/kg. The TPH concentration was 4,188 mg/kg, and the chloride concentration was 400 mg/kg. Soil represented by soil sample 1/13 Stockpile was deemed suitable for use as backfill material.

From January 27 through January 28, 2014, the excavation was backfilled, compacted, and contoured to fit the surrounding topography. The final dimensions of the excavation were approximately ninety feet (90') in length, varying in width from approximately ten feet (10') to approximately twenty feet (20'), and varying in depth from approximately eight feet (8') to approximately sixteen feet (16') bgs.

#### **4.0 QA/QC PROCEDURES**

##### **4.1 Soil Sampling**

Soil samples were delivered to Cardinal Laboratories 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 Methods 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**

Remediation activities conducted at the PLU Crude Oil Gathering System release site met the objectives set forth in the *Remediation Summary & Risk-Based Site Closure Proposal* dated December 2013. Soil samples collected from the floor and sidewalls of the excavation were analyzed by an NMOCD-approved laboratory, and concentrations of benzene, BTEX, TPH, and

chloride were below the regulatory remediation action levels established for the site by the NMOCD. Basin Environmental recommends BOPCO provide the NMOCD Artesia District Office and the BLM a copy of this *Remediation Summary & Site Closure Request* and request the NMOCD grant site closure to the PLU Crude Oil Gathering System release site.

## **6.0 LIMITATIONS**

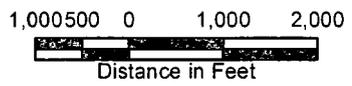
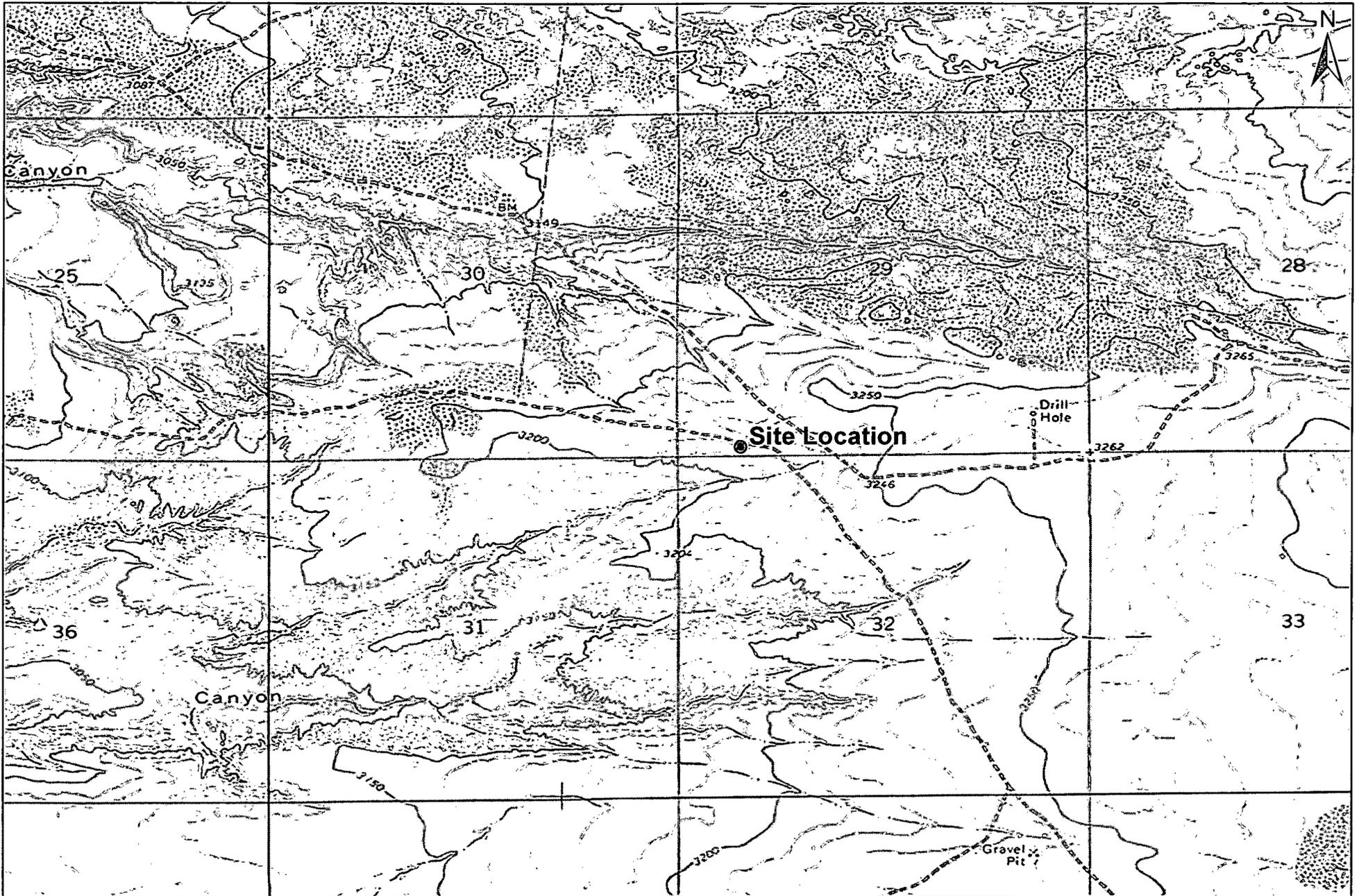
Basin Environmental Service Technologies, LLC, has prepared this *Remediation Summary & Site Closure Request* to the best of its ability. No other warranty, expressed or implied, is made or intended. Basin Environmental has examined and relied upon documents referenced in the report and on oral statements 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  
United States Department of the Interior  
Bureau of Land Management  
620 East Greene Street  
P.O. Box 1778  
Carlsbad, New Mexico 87220
- 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

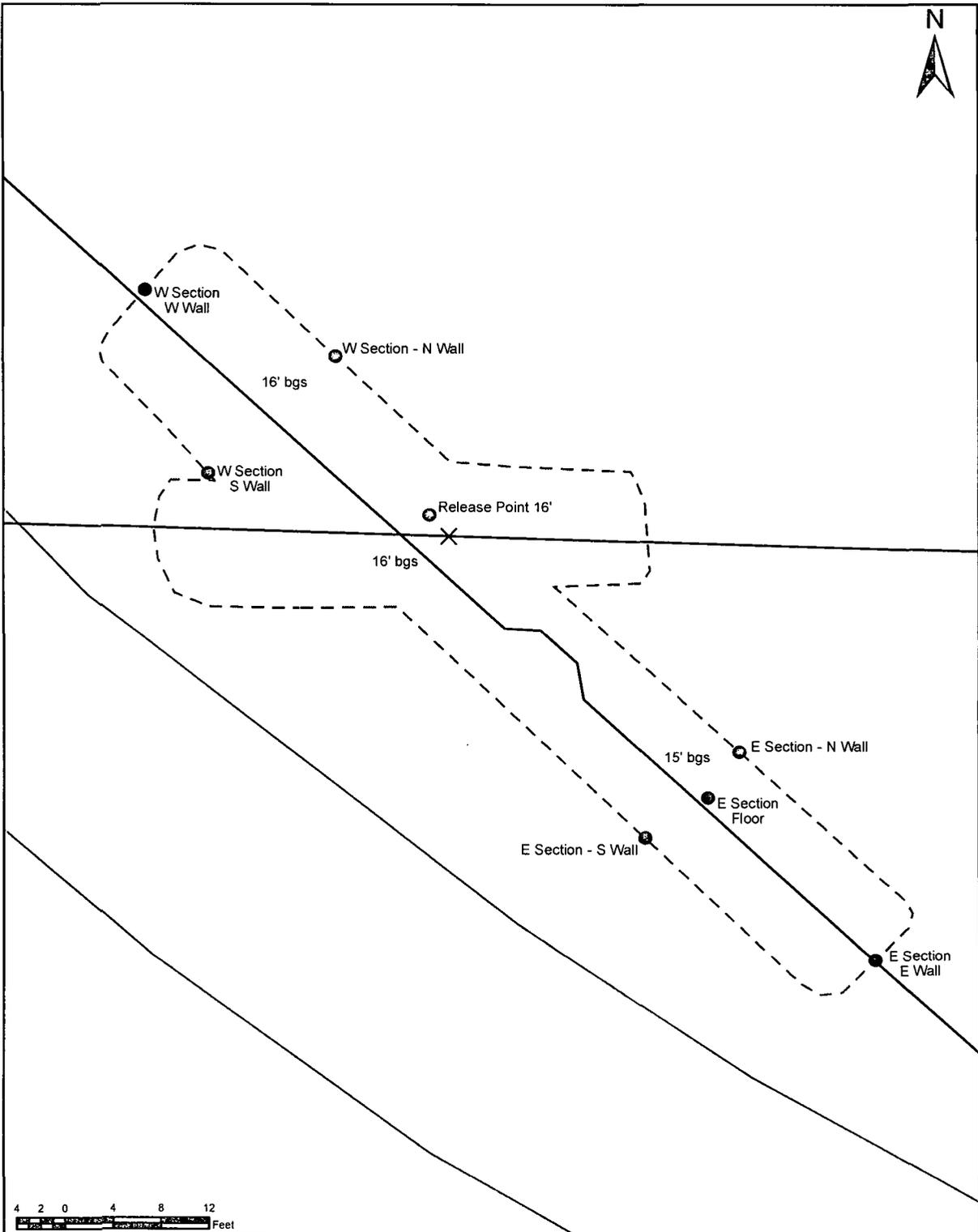


**Figure 1**  
**Site Location Map**  
**BOPCO, LP**  
**PLU Crude Oil Gathering System**  
**Eddy County, New Mexico**  
**NMOCD Reference #: 2RP-2102**



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

Drawn By: BJA	Checked By: BRB
December 12, 2013	Scale: 1" = 2,000'



**Legend:**

- - - -	Excavation
—	Pipeline
—	Road
●	Sample Location
×	Release Point

**Figure 2**  
**Site Location Map**  
**BOPCO, LP**  
**PLU Crude Oil Gathering System**  
**Eddy County, New Mexico**  
**NMOCD Reference #: 2RP-2102**

	Basin Environmental Service Technologies 3100 Plains Hwy. Lovington, NM 88260	
	Drawn By: BJA	Checked By: BRB
	Feb. 18, 2014	Scale: 1" = 12'

# Tables

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

BOPCO, LP  
POKER LAKE UNIT CRUDE OIL GATHERING SYSTEM  
EDDY COUNTY, NEW MEXICO  
NMOCD REFERENCE #: 2RP-2102

SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	METHOD: EPA SW 846-8021B, 5030					METHOD: 8015M			TOTAL TPH C <sub>6</sub> -C <sub>35</sub> (mg/Kg)	4500 Cl-B CHLORIDE (mg/Kg)
				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)		
Release Point 16'	16'	12/17/2013	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.150	<10.0	49.5	<10.0	49.5	192
E Section - N Wall	14'	12/18/2013	In-Situ	-	-	-	-	-	<10.0	<10.0	<10.0	<10.0	272
E Section - E Wall	14'	12/18/2013	In-Situ	-	-	-	-	-	<10.0	207	33.4	240	272
E Section - S Wall	14'	12/18/2013	In-Situ	-	-	-	-	-	<10.0	<10.0	<10.0	<10.0	272
E Section - Floor	15'	12/18/2013	In-Situ	-	-	-	-	-	279	1,240	207	1,447	240
W Section - N Wall	14'	12/18/2013	In-Situ	-	-	-	-	-	<10.0	<10.0	<10.0	<10.0	80.0
W Section - W Wall	14'	12/18/2013	In-Situ	-	-	-	-	-	<10.0	<10.0	<10.0	<10.0	160
W Section - S Wall	14'	12/18/2013	In-Situ	-	-	-	-	-	<10.0	<10.0	<10.0	<10.0	80.0
Stockpile	N/A	12/18/2013	Stockpiled	-	-	-	-	-	1,350	5,010	800	5,810	320
12/23 Stockpile	N/A	12/23/2013	Stockpiled	-	-	-	-	-	2,290	19,200	3,540	25,030	336
1/13 Stockpile	N/A	1/13/2014	Stockpiled	<0.500	3.89	8.31	23.0	35.2	712	2,960	516	4,188	400
<b>NMOCD Regulatory Standard</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

Form C-141  
Revised August 8, 2011

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**

*nJMW1334339872*

Name of Company: BOPCO, L.P. <i>260737</i>		Contact: Tony Savoie	<input checked="" type="checkbox"/> Initial Report	<input type="checkbox"/> Final Report
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220		Telephone No. 575-887-7329		
Facility Name: Poker Lake Unit Crude Oil Gathering System. Spill location 1400 ft. east of the PLU-227 Tank Battery		Facility Type: Exploration and Production		
Surface Owner: Federal		Mineral Owner: Federal	API No. 30-015-33929	

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
M	29	24S	30E	118	South	836	West	Eddy

Latitude N 32.181606 Longitude W 103.909504

**NATURE OF RELEASE**

Type of Release: Crude oil	Volume of Release: 270 bbls.	Volume Recovered: 220 bbls.
Source of Release: 6" Pipeline	Date and Hour of Occurrence: 12/6/13 at 12:15 p.m.	Date and Hour of Discovery: 12/6/13 at 12:15 p.m.
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? NMOCD Emergency #104 and the BLM	
By Whom? Tony Savoie	Date and Hour: 12/6/13 NMOCD at 12:28 p.m. BLM 12:30 p.m.	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

**RECEIVED**  
 DEC 09 2013  
**NMOCD ARTESIA**

If a Watercourse was Impacted, Describe Fully.\*  
*↓*

Describe Cause of Problem and Remedial Action Taken.\*  
The 6" crude oil gathering line was struck and ruptured by a track-hoe operated by New Mexico Rental while excavating a line operated by Enterprise. Vacuum trucks were immediately dispatched to the spill location, lact units were shut down and the damaged section of pipe was isolated. The track-hoe excavated the damaged area and a temporary repair clamp was used to stop the flow of oil. The line was permanently repaired on 12/7/13 by replacing the damaged section of pipe.

Describe Area Affected and Cleanup Action Taken.\*  
The spill was contained within the excavation which was in the middle of a lease road. The excavation measured approximately 30 ft. by 10 ft. by 6 ft. in depth. Approximately 220 bbls of crude oil was recovered from the excavation and placed back into the production facilities at the PLU-227 and PLU-213. The impacted area will be remediated in accordance to the NMOCD and BLM spill remediation 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.

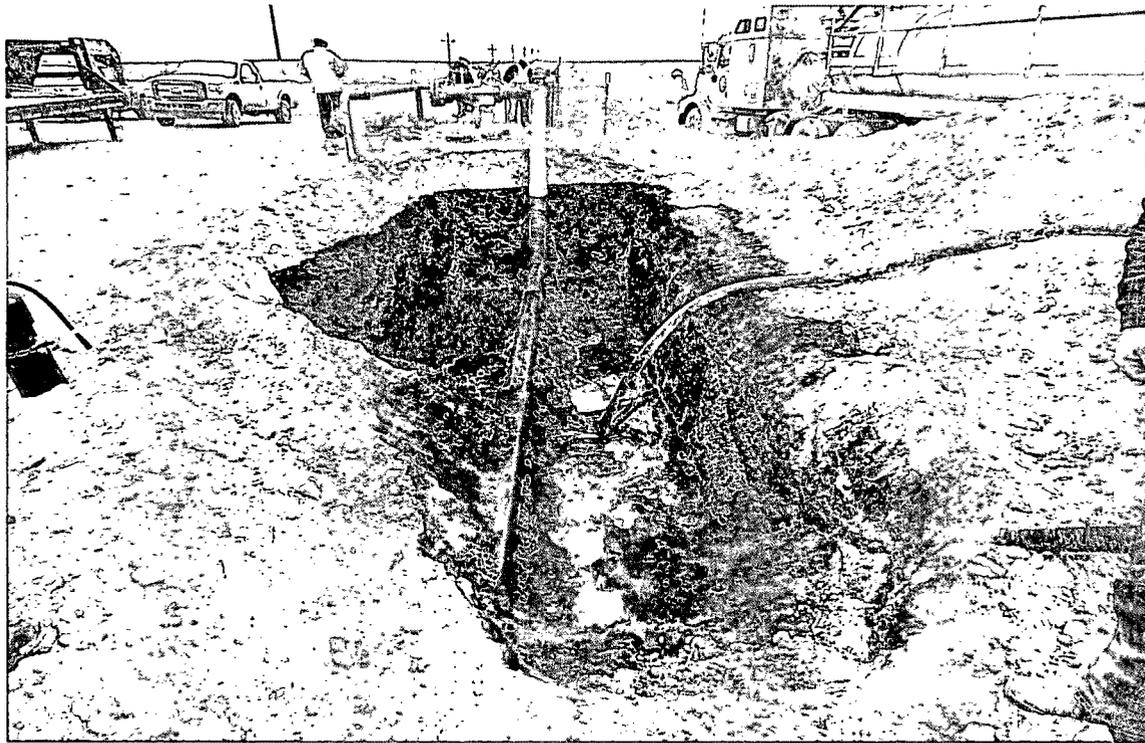
Signature: <i>Tony Savoie</i>	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Tony Savoie	Approved by Environmental Specialist	Signed By <i>Mike Beaman</i>
Title: Waste Management and Remediation Specialist	Approval Date: <b>DEC 09 2013</b>	Expiration Date:
E-mail Address: <i>tasavoie@basspet.com</i>	Conditions of Approval: Remediation per UCD Rule & Guidelines, & like approval by BLM. <b>SUBMIT REMEDIATION</b>	Attached <input type="checkbox"/>
Date: 12/9/13	Phone: 432-556-8730	

\* Attach Additional Sheets If Necessary

**PROPOSAL NO LATER THAN:**  
*January 9, 2013*

*2RP-2102*

**Appendix B**  
**Photographs**



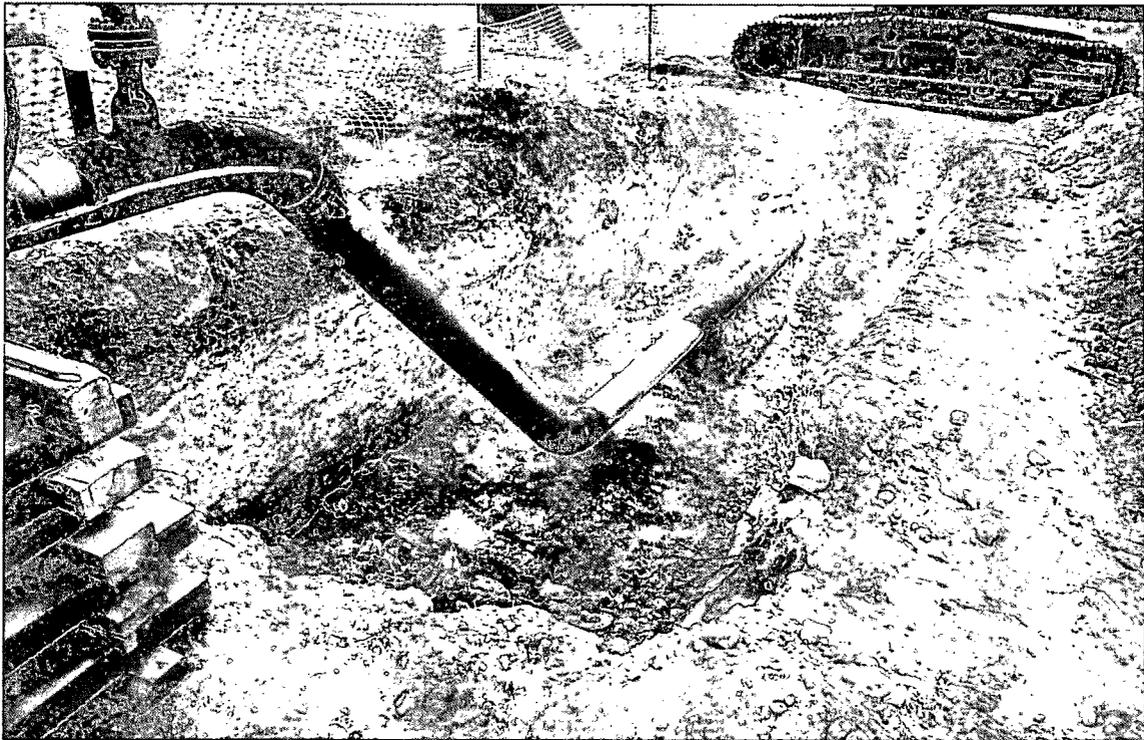
PLU Crude Oil Gathering System - Release Site



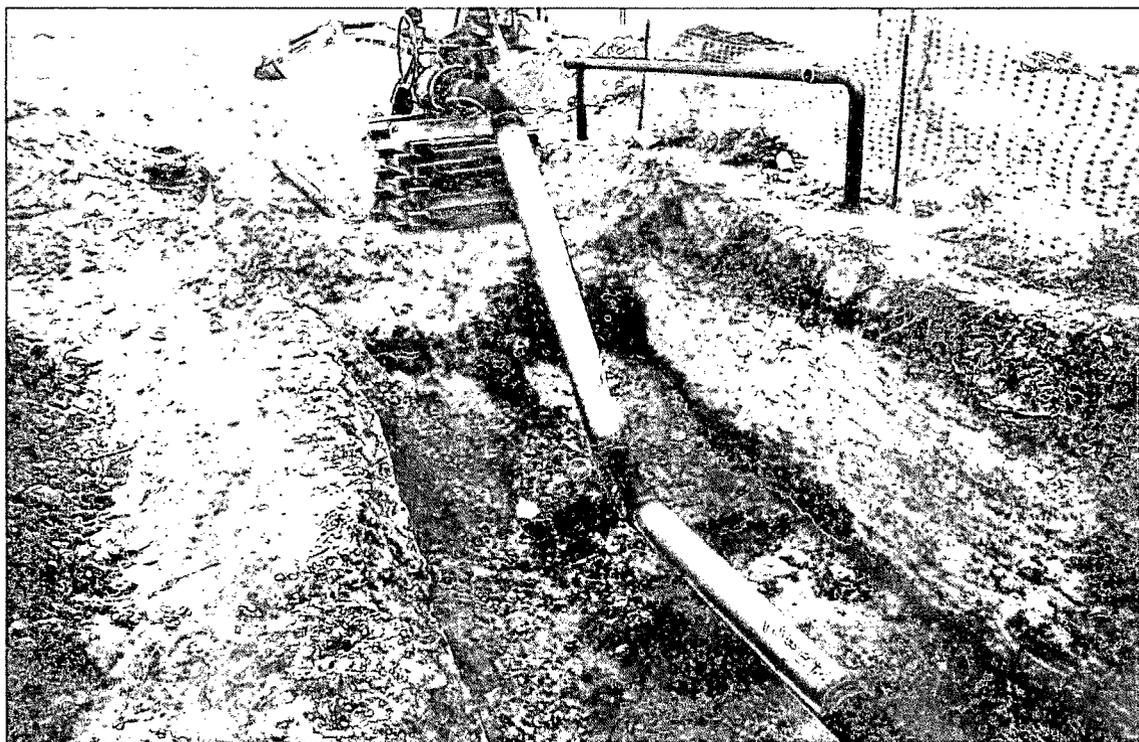
PLU Crude Oil Gathering System - Release Point



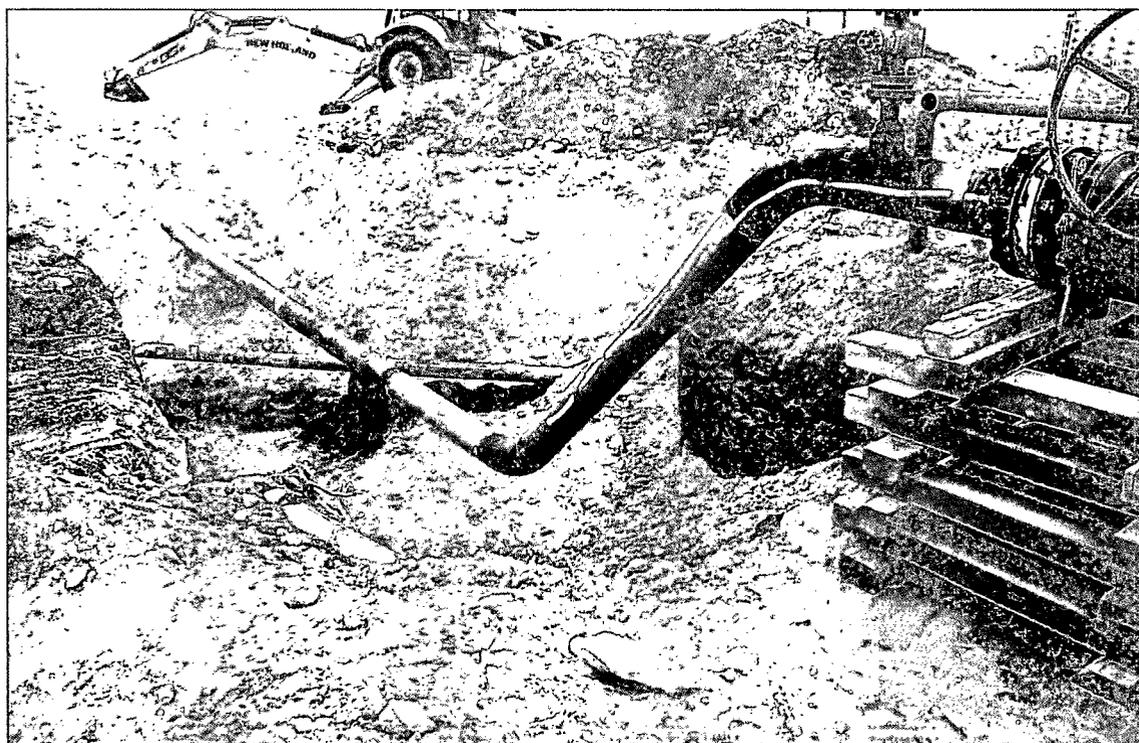
PLU Crude Oil Gathering System – Damaged Pipeline



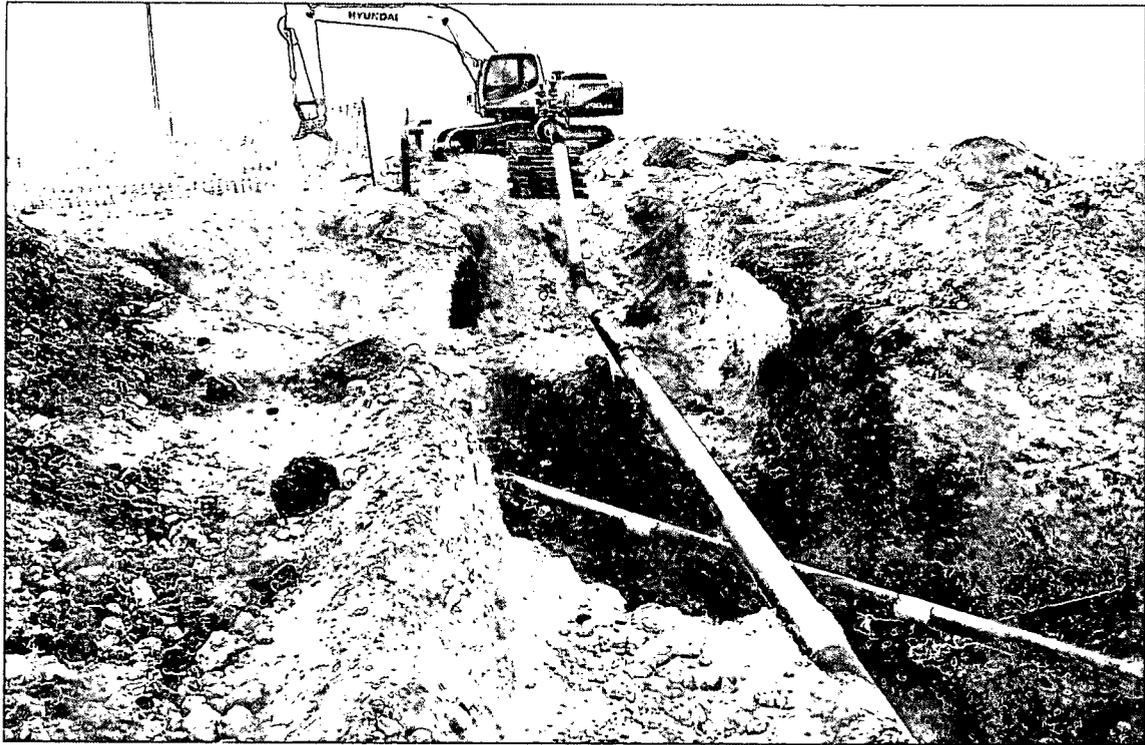
PLU Crude Oil Gathering System - Excavation



PLU Crude Oil Gathering System - Excavation



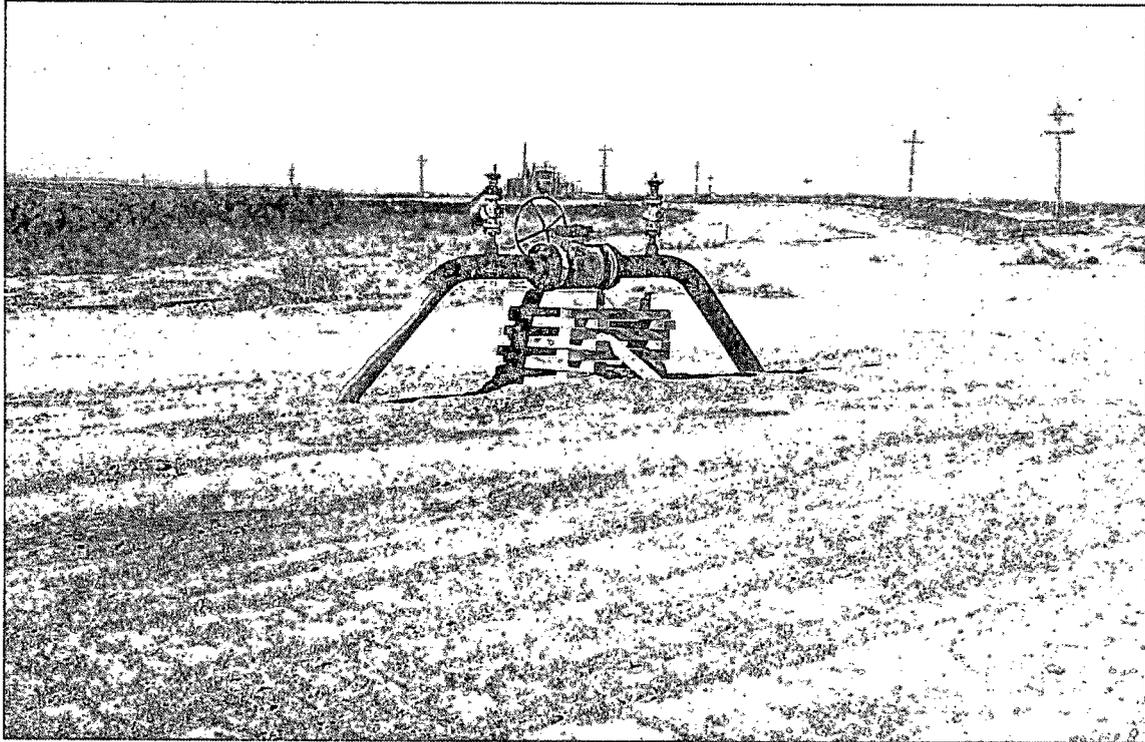
PLU Crude Oil Gathering System - Excavation



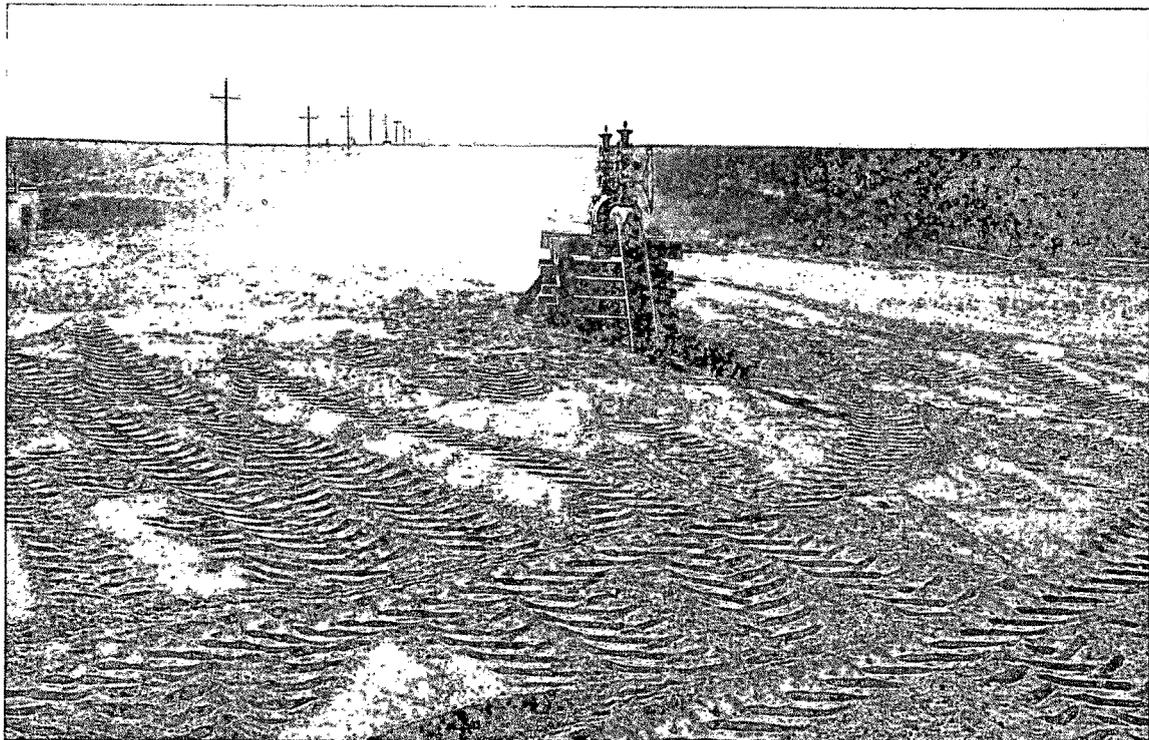
PLU Crude Oil Gathering System - Excavation



PLU Crude Oil Gathering System - Excavation



PLU Crude Oil Gathering System – Excavation (Following Backfill)



PLU Crude Oil Gathering System – Excavation (Following Backfill)

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

December 26, 2013

BEN J. ARGUIJO

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: PLU CRUDE OIL GATHERING SYSTEM

Enclosed are the results of analyses for samples received by the laboratory on 12/18/13 8:15.

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](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

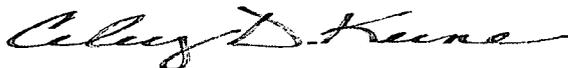
Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

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,



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:	12/18/2013	Sampling Date:	12/17/2013
Reported:	12/26/2013	Sampling Type:	Soil
Project Name:	PLU CRUDE OIL GATHERING SYSTEM	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Celey D. Keene
Project Location:	EDDY COUNTY, NM		

**Sample ID: RELEASE POINT @ 16' (H303059-01)**

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	12/26/2013	ND	1.70	84.9	2.00	1.99		
Toluene*	<0.050	0.050	12/26/2013	ND	1.69	84.6	2.00	1.61		
Ethylbenzene*	<0.050	0.050	12/26/2013	ND	1.67	83.6	2.00	0.763		
Total Xylenes*	<0.150	0.150	12/26/2013	ND	4.87	81.1	6.00	0.841		
Total BTEX	<0.300	0.300	12/26/2013	ND						

Surrogate: 4-Bromofluorobenzene (PIC) 101 % 89.4-126

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	192	16.0	12/23/2013	ND	400	100	400	3.92		

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	12/23/2013	ND	191	95.3	200	5.17		
DRO >C10-C28	49.5	10.0	12/23/2013	ND	191	95.6	200	8.25		
EXT DRO >C28-C35	<10.0	10.0	12/23/2013	ND						

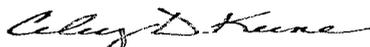
Surrogate: 1-Chlorooctane 101 % 65.2-140

Surrogate: 1-Chlorooctadecane 100 % 63.6-154

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

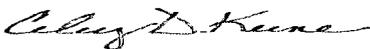
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- \*\* Samples not received at proper temperature of 6°C or below.
- \*\*\* Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported on an as received basis (wet) unless otherwise noted on report

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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

Company Name: Basin Environmental Service Technologies, LLC				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>																							
Project Manager: Ben Arguijo				P.O. #:				<div style="display: flex; justify-content: space-around;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Chloride</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TPH (8015M)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">BTEX (8021B)</div> </div>																							
Address: P.O. Box 301				Company: New Mexico Rental																											
City: Lovington		State: NM Zip: 88260		Attn: Dale Bettis																											
Phone #: (575)396-2378		Fax #: (575)396-1429		Address: P.O. Box 669																											
Project #:		Project Owner: BOPCO, LP		City: Eunice																											
Project Name: PLU Crude Oil Gathering System				State: NM Zip: 88231																											
Project Location: Eddy Co., NM				Phone #: (575)394-0463																											
Sampler Name: Ben Arguijo				Fax #:																											
FOR LAB USE ONLY																															
Lab I.D.		Sample I.D.		G/RAB OR (C)OMP.	# CONTAINERS	MATRIX					PRESERV.		SAMPLING																		
						GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME															
H303059-01		Release Point @ 16'		G	1			X				X			12/17/13	1315	X	X	X												

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 the client for the 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 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 services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:		Date: 12/18/13		Received By:		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No   Add'l Phone #:	
Time: 0:25		Date: 12/18/13		Received By:		Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No   Add'l Fax #:	
Relinquished By:		Date: 12/18/13		Received By:		REMARKS:	
Time: 8:15		Date: 12/18/13		Received By:		Please email results to bjarguijo@basinenv.com, TASavoie@BassPet.com & SJWalters@BassPet.com	
Delivered By: (Circle One)				Sample Condition		CHECKED BY: (Initials)	
Sampler - UPS - Bus - Other:				Cool Intact		cdh	
FORM-006				4.8°C			
				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
				<input type="checkbox"/> No <input type="checkbox"/> No			

#54



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

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December 26, 2013

BEN J. ARGUIJO

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: PLU CRUDE OIL GATHERING SYSTEM

Enclosed are the results of analyses for samples received by the laboratory on 12/19/13 8:10.

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, flowing 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:	12/19/2013	Sampling Date:	12/18/2013
Reported:	12/26/2013	Sampling Type:	Soil
Project Name:	PLU CRUDE OIL GATHERING SYSTEM	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: E SECTION - N WALL (H303077-01)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>272</b>	16.0	12/26/2013	ND	416	104	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	12/23/2013	ND	194	97.2	200	14.5		
DRO >C10-C28	<10.0	10.0	12/23/2013	ND	201	101	200	16.4		
EXT DRO >C28-C35	<10.0	10.0	12/23/2013	ND						
<i>Surrogate: 1-Chlorooctane</i>	<i>85.8 %</i>	<i>65.2-140</i>								
<i>Surrogate: 1-Chlorooctadecane</i>	<i>82.9 %</i>	<i>63.6-154</i>								

**Sample ID: E SECTION - E WALL (H303077-02)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>272</b>	16.0	12/26/2013	ND	416	104	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	12/23/2013	ND	194	97.2	200	14.5		
<b>DRO &gt;C10-C28</b>	<b>207</b>	10.0	12/23/2013	ND	201	101	200	16.4		
<b>EXT DRO &gt;C28-C35</b>	<b>33.4</b>	10.0	12/23/2013	ND						
<i>Surrogate: 1-Chlorooctane</i>	<i>82.6 %</i>	<i>65.2-140</i>								
<i>Surrogate: 1-Chlorooctadecane</i>	<i>82.0 %</i>	<i>63.6-154</i>								

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:	12/19/2013	Sampling Date:	12/18/2013
Reported:	12/26/2013	Sampling Type:	Soil
Project Name:	PLU CRUDE OIL GATHERING SYSTEM	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: E SECTION - S WALL (H303077-03)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>272</b>	16.0	12/26/2013	ND	416	104	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	12/23/2013	ND	194	97.2	200	14.5		
DRO >C10-C28	<10.0	10.0	12/23/2013	ND	201	101	200	16.4		
EXT DRO >C28-C35	<10.0	10.0	12/23/2013	ND						
<i>Surrogate: 1-Chlorooctane</i>	<i>84.9 %</i>	<i>65.2-140</i>								
<i>Surrogate: 1-Chlorooctadecane</i>	<i>83.4 %</i>	<i>63.6-154</i>								

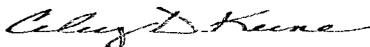
**Sample ID: E SECTION - FLOOR (H303077-04)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>240</b>	16.0	12/26/2013	ND	416	104	400	0.00		
TPH 8015M		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10</b>	<b>279</b>	10.0	12/24/2013	ND	194	97.2	200	14.5		
<b>DRO &gt;C10-C28</b>	<b>1240</b>	10.0	12/24/2013	ND	201	101	200	16.4		
<b>EXT DRO &gt;C28-C35</b>	<b>207</b>	10.0	12/24/2013	ND						
<i>Surrogate: 1-Chlorooctane</i>	<i>106 %</i>	<i>65.2-140</i>								
<i>Surrogate: 1-Chlorooctadecane</i>	<i>95.7 %</i>	<i>63.6-154</i>								

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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:	12/19/2013	Sampling Date:	12/18/2013
Reported:	12/26/2013	Sampling Type:	Soil
Project Name:	PLU CRUDE OIL GATHERING SYSTEM	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: W SECTION - N WALL (H303077-05)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>80.0</b>	16.0	12/26/2013	ND	416	104	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	12/24/2013	ND	194	97.2	200	14.5		
DRO >C10-C28	<10.0	10.0	12/24/2013	ND	201	101	200	16.4		
EXT DRO >C28-C35	<10.0	10.0	12/24/2013	ND						
<i>Surrogate: 1-Chlorooctane</i>	<i>84.9 %</i>	<i>65.2-140</i>								
<i>Surrogate: 1-Chlorooctadecane</i>	<i>80.0 %</i>	<i>63.6-154</i>								

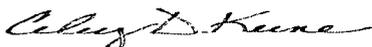
**Sample ID: W SECTION - W WALL (H303077-06)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>160</b>	16.0	12/26/2013	ND	416	104	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	12/24/2013	ND	194	97.2	200	14.5		
DRO >C10-C28	<10.0	10.0	12/24/2013	ND	201	101	200	16.4		
EXT DRO >C28-C35	<10.0	10.0	12/24/2013	ND						
<i>Surrogate: 1-Chlorooctane</i>	<i>89.5 %</i>	<i>65.2-140</i>								
<i>Surrogate: 1-Chlorooctadecane</i>	<i>84.1 %</i>	<i>63.6-154</i>								

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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:	12/19/2013	Sampling Date:	12/18/2013
Reported:	12/26/2013	Sampling Type:	Soil
Project Name:	PLU CRUDE OIL GATHERING SYSTEM	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: W SECTION - S WALL (H303077-07)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>80.0</b>	16.0	12/26/2013	ND	416	104	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	12/24/2013	ND	194	97.2	200	14.5		
DRO >C10-C28	<10.0	10.0	12/24/2013	ND	201	101	200	16.4		
EXT DRO >C28-C35	<10.0	10.0	12/24/2013	ND						
<i>Surrogate: 1-Chlorooctane</i>	<i>94.1 %</i>	<i>65.2-140</i>								
<i>Surrogate: 1-Chlorooctadecane</i>	<i>88.7 %</i>	<i>63.6-154</i>								

**Sample ID: STOCKPILE (H303077-08)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>320</b>	16.0	12/26/2013	ND	416	104	400	0.00		
TPH 8015M		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10</b>	<b>1350</b>	50.0	12/24/2013	ND	194	97.2	200	14.5		
<b>DRO &gt;C10-C28</b>	<b>5010</b>	50.0	12/24/2013	ND	201	101	200	16.4		
<b>EXT DRO &gt;C28-C35</b>	<b>800</b>	50.0	12/24/2013	ND						
<i>Surrogate: 1-Chlorooctane</i>	<i>151 %</i>	<i>65.2-140</i>								
<i>Surrogate: 1-Chlorooctadecane</i>	<i>143 %</i>	<i>63.6-154</i>								

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

### Notes and Definitions

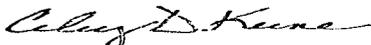
- S-06            The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
- ND             Analyte NOT DETECTED at or above the reporting limit
- RPD            Relative Percent Difference
- \*\*              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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Cardinal Laboratories

\*=Accredited Analyte

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---

Celey D. Keene, Lab Director/Quality Manager



January 03, 2014

BEN J. ARGUIJO

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: PLU CRUDE OIL GATHERING SYSTEM

Enclosed are the results of analyses for samples received by the laboratory on 12/26/13 9:15.

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](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

Received:	12/26/2013	Sampling Date:	12/23/2013
Reported:	01/03/2014	Sampling Type:	Soil
Project Name:	PLU CRUDE OIL GATHERING SYSTEM	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Kathy Perez
Project Location:	EDDY COUNTY, NM		

**Sample ID: 12/23 STOCKPILE (H303127-01)**

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>336</b>	16.0	01/02/2014	ND	400	100	400	3.92	

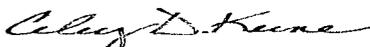
TPH 8015M	mg/kg	Analyzed By: ms								S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10</b>	<b>2290</b>	100	12/27/2013	ND	189	94.6	200	5.41		
<b>DRO &gt;C10-C28</b>	<b>19200</b>	100	12/27/2013	ND	184	91.9	200	10.3		
<b>EXT DRO &gt;C28-C35</b>	<b>3540</b>	100	12/27/2013	ND						

Surrogate: 1-Chlorooctane	207 %	65.2-140
Surrogate: 1-Chlorooctadecane	491 %	63.6-154

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

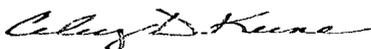
- S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- \*\* Samples not received at proper temperature of 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





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

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January 23, 2014

BEN J. ARGUIJO

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: PLU CRUDE OIL GATHERING SYSTEM

Enclosed are the results of analyses for samples received by the laboratory on 01/13/14 15:50.

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:	01/13/2014	Sampling Date:	01/13/2014
Reported:	01/23/2014	Sampling Type:	Soil
Project Name:	PLU CRUDE OIL GATHERING SYSTEM	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: 1/13 STOCKPILE (H400108-01)**

BTEX 8021B		mg/kg		Analyzed By: MS				S-04		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.500	0.500	01/22/2014	ND	2.05	102	2.00	0.955		
Toluene*	<b>3.89</b>	0.500	01/22/2014	ND	2.00	99.9	2.00	0.315		
Ethylbenzene*	<b>8.31</b>	0.500	01/22/2014	ND	2.01	101	2.00	1.95		
Total Xylenes*	<b>23.0</b>	1.50	01/22/2014	ND	5.85	97.5	6.00	2.62		
<b>Total BTEX</b>	<b>35.2</b>	3.00	01/22/2014	ND						

Surrogate: 4-Bromofluorobenzene (PIC) 171 % 89.4-126

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP				S-04		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>400</b>	16.0	01/17/2014	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: ms				S-04		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10</b>	<b>712</b>	10.0	01/14/2014	ND	209	105	200	6.89		
<b>DRO &gt;C10-C28</b>	<b>2960</b>	10.0	01/14/2014	ND	233	116	200	1.72		
<b>EXT DRO &gt;C28-C35</b>	<b>516</b>	10.0	01/14/2014	ND						

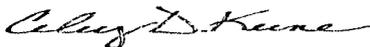
Surrogate: 1-Chlorooctane 141 % 65.2-140

Surrogate: 1-Chlorooctadecane 138 % 63.6-154

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

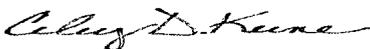
- S-04            The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- ND             Analyte NOT DETECTED at or above the reporting limit
- RPD            Relative Percent Difference
- \*\*              Samples not received at proper temperature 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  
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Celestine D. Keene, Lab Director/Quality Manager

