

# *Basin Environmental Service Technologies, LLC*

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## **REMEDIATION SUMMARY & SITE CLOSURE REQUEST**

**SOUTHERN UNION GAS SERVICES  
FULLERTON 14-INCH (1RP-1608)  
HISTORICAL RELEASE SITE**

**Lea County, New Mexico**

**Unit Letter "P" (SE/SE), Section 36, Township 21 South, Range 36 East**

**Latitude 32° 25.691' North, Longitude 103° 12.721' West**

**NMOCD Reference # 1RP-1608**

Prepared For:

Southern Union Gas Services  
801 S. Loop 464  
Monahans, TX 79756

Prepared By:

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

**October 2012**

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Joel W. Lowry  
Project Manager

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## **1.0 INTRODUCTION & BACKGROUND INFORMATION**

Basin Environmental Service Technologies, LLC (Basin), on behalf of Southern Union Gas Services (Southern Union), has prepared this *Remediation Summary & Site Closure Request* for the Fullerton 14" Historical Release Site (1RP-1608). The legal description of the release site is Unit Letter "P" (SE/SE), Section 36, Township 21 South, Range 36 East, in Lea County, New Mexico. The geographic coordinates of the release site are 32° 25.691' North latitude and 103° 12.721' West longitude. The property affected by the release is owned by Southern Union Gas Services. Please reference Figure 1 for a "Site Location Map".

On September 24, 2007, Southern Union discovered a release had occurred on the Fullerton 14" Pipeline. The "Release Notification and Corrective Action Form" (Form C-141) indicated failure of a section of fourteen-inch (14") low-pressure pipeline resulted in the release of approximately one hundred barrels (100 bbls) of fluid and four hundred and five (405) mcf of natural gas. During initial response activities the pipeline was shut in and a vacuum truck was utilized to recover approximately sixty-five barrels (65 bbls) of free-standing fluid. The affected section of pipeline was repaired with a leak clamp. The release was reported to the New Mexico Oil Conservation Division (NMOCD) Hobbs District Office on September 24, 2007. The Form C-141 indicated the release affected approximately four thousand, one hundred eighty-four square feet (4,184 ft<sup>2</sup>) of lease road and pipeline right-of-way. General photographs of the release site are provided as Appendix A. The Form C-141 is provided as Appendix C.

Previous remediation activities were conducted at the Fullerton 14" Release Site by an environmental contractor that is no longer affiliated with Southern Union. The nature and extent of the aforementioned activities remains unclear, as environmental reports and work records are not readily available.

On June 22, 2012, at the request of Southern Union, Basin assumed remediation responsibilities at the Fullerton 14" Historical Release Site.

## **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 21 South, Range 36 East. An inferred depth to groundwater reference map utilized by the NMOCD indicated groundwater should be encountered at approximately one hundred fifteen feet (115') below ground surface (bgs). Previous environmental records indicated the depth to groundwater is approximately one hundred twenty-six feet (126') 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 Fullerton 14” Historical 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 xylene (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 October 1, 2007, four (4) soil samples (S-1 Surface, S-2 Surface, S-3 Surface and S-4 Surface) were collected from the release flowpath and pooling area. The soil samples were analyzed for concentrations of TPH and chloride. Chloride concentrations ranged from 42.5 mg/Kg for soil sample S-3 Surface to 468 mg/Kg for soil sample S-4 Surface. Laboratory analytical results and previous field notes suggest soil was not impacted beyond ten inches (10”) bgs in the release flowpath. Table 1 summarizes the “Concentrations of Benzene, BTEX, TPH & Chloride in Soil”. Soil sample locations are depicted in Figure 2, “Site & Sample Location Map”. Laboratory analytical reports are provided as Appendix B.

On August 30, 2012, Basin responded to the Fullerton 14” Historical Release Site. A hang-auger was utilized to advance a series of soil bores at the release point and within the inferred flowpath in an effort to determine if impacted soil containing BTEX, TPH and chloride concentrations above NMOCD regulatory standards remained in-situ.

Soil bore “R.P” was advanced to approximately two feet (2’) bgs at the release point. During the advancement of the soil bore, two (2) soil samples (R.P.a and R.P.b) were collected and submitted to Permian Basin Environmental Lab of Midland, Texas, for determination of BTEX, TPH and chloride concentrations in accordance with EPA Methods SW 846-8021B, SW 846-8015M and 300.0, respectively. Laboratory analytical results indicated benzene and BTEX concentrations were less than the appropriate laboratory method detection limit (MDL) for each of the soil samples submitted. Analytical results indicated TPH concentrations ranged from less than the appropriate laboratory MDL for soil sample R.P.a to 453 mg/Kg for soil sample R.P.b. Chloride concentrations ranged from 37.5 mg/Kg for soil sample R.P.a to 96.0 mg/Kg for soil sample R.P.b.

Soil bore “S.P #4” was located approximately one thousand feet (1000’) southeast of the release point within the inferred terminus of the release flowpath. The soil boring was advanced to approximately two feet (2’) bgs. During the advancement of the soil bore, two (2) soil samples (S.P. #4a and S.P. #4b) were collected and submitted to the laboratory for analysis. Laboratory analytical results indicated benzene and BTEX concentrations were less than the appropriate laboratory MDL for each of the soil samples submitted. Analytical results indicated TPH concentrations were less than the laboratory MDL for each of the soil samples submitted. Chloride concentrations ranged from 839 mg/Kg for soil sample S.P. #4b to 855 mg/Kg for soil

sample S.P. #4a. Based on laboratory analytical results, further delineation would be required in the area defined by soil samples S.P. #4a and S.P. #4b.

Soil bore "S.P #5" was located approximately one hundred twenty feet (120') northwest of S.P. #4 within the release flowpath. The soil boring was advanced to approximately two feet (2') bgs. During the advancement of the soil bore, two (2) soil samples (S.P. #5a and S.P. #5b) were collected and submitted to the laboratory for analysis. Laboratory analytical results indicated benzene concentrations were less than the appropriate laboratory MDL for each of the soil samples submitted. Analytical results indicated BTEX concentrations ranged from less than the laboratory MDL for soil sample S.P. #5b to 0.00651 mg/Kg for soil sample S.P. #5a. Analytical results indicated TPH concentrations ranged from less than the laboratory MDL for soil sample S.P. #5a to 21.3 mg/Kg for soil sample S.P. #5b. Chloride concentrations ranged from 4.56 mg/Kg for soil sample S.P. #5a to 80.6 mg/Kg for soil sample S.P. #5b.

Soil bore "S.P #6" was located approximately one hundred feet (100') northwest of S.P. #5 within the release flowpath. The soil boring was advanced to approximately two feet (2') bgs. During the advancement of the soil bore, two (2) soil samples (S.P. #6a and S.P. #6b) were collected and submitted to the laboratory for analysis. Laboratory analytical results indicated benzene and BTEX concentrations were less than the appropriate laboratory MDL for each of the soil samples submitted. Analytical results indicated TPH concentrations were less than the appropriate laboratory MDL for each of the soil samples submitted. Chloride concentrations ranged from 1.00 mg/Kg for soil sample S.P. #6a to 1.88 mg/Kg for soil sample S.P. #6b.

Soil bore "S.P #7" was located approximately one hundred feet (100') northwest of S.P. #6 within the release flowpath. The soil boring was advanced to approximately two feet (2') bgs. During the advancement of the soil bore, two (2) soil samples (S.P. #7a and S.P. #7b) were collected and submitted to the laboratory for analysis. Laboratory analytical results indicated benzene and BTEX concentrations were less than the appropriate laboratory MDL for each of the soil samples submitted. Analytical results indicated TPH concentrations were less than the appropriate laboratory MDL for each of the soil samples submitted. Chloride concentrations ranged from less than the laboratory MDL for soil sample S.P. #7b to 7.57 mg/Kg for soil sample S.P. #7a.

Soil bore "S.P #8" is located approximately one hundred feet (400') northwest of S.P. #7 within the release flowpath. The soil boring was advanced to approximately two feet (2') bgs. During the advancement of the soil bore, two (2) soil samples (S.P #8a and S.P. #8b) were collected and submitted to the laboratory for analysis. Laboratory analytical results indicated benzene and BTEX concentrations were less than the appropriate laboratory MDL for each of the soil samples submitted. Analytical results indicated TPH concentrations were less than the appropriate laboratory MDL for each of the soil samples submitted. Chloride concentrations ranged from 2.87 mg/Kg for soil sample S.P. #8a to 13.6 mg/Kg for soil sample S.P. #8b.

On September 31, 2012, delineation activities resumed at the Fullerton 14" Historical Release site in the area defined by soil samples R.P. #4a and R.P. #4b. The soil boring was advanced to approximately ten feet (10') bgs. During the advancement of the soil boring, select soil samples were field-screened using a photo-ionization detector (PID) and chloride field test kit. One (1) soil sample (S.P. #4c) was collected and submitted to the laboratory for analysis. Laboratory analytical results indicated benzene and BTEX concentrations were less than the appropriate

laboratory MDL. Analytical results indicated the TPH concentration was less than the appropriate laboratory MDL. The chloride concentration was 33.0 mg/Kg.

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

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

Soil samples were delivered to Permian Basin Environmental Lab, of Midland, Texas, 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 modified EPA Method SW-846 8015M
- Chloride concentrations in accordance with EPA Method 300.0

##### **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**

Laboratory analytical results from confirmation soil samples collected from the six (6) on-site soil borings indicated concentrations of benzene, BTEX, TPH and chloride were less than NMOCD regulatory remediation action levels. Based on these laboratory analytical results, Basin recommends Southern Union provide the NMOCD Hobbs District Office a copy of this *Remediation Summary & Site Closure Request* and request the NMOCD grant site closure to the Fullerton 14" Historical Release Site.

## 6.0 LIMITATIONS

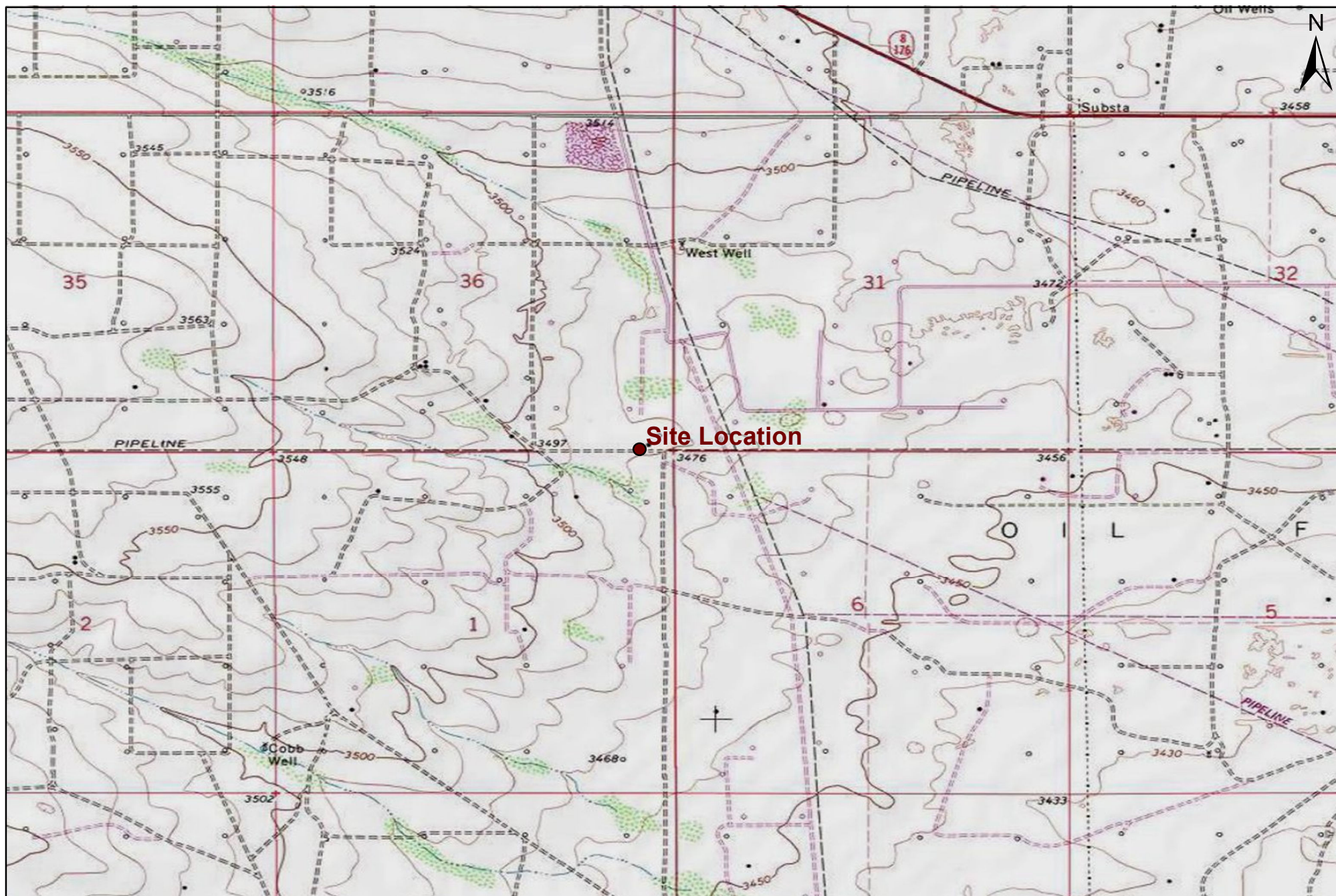
Basin Environmental Service Technologies, LLC, has prepared this *Remediation Summary & Site Closure Request* to the best of its ability. No other warranty, expressed or implied, is made or intended. Basin has examined and relied upon documents referenced in the report and on oral statements made by 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 Southern Union Gas Services. 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 Southern Union Gas Services.

## **7.0 DISTRIBUTION**

- Copy 1: Geoffrey Leking  
New Mexico Energy, Minerals and Natural Resources Department  
Oil Conservation Division (District 1)  
1625 French Drive  
Hobbs, NM 88240  
GeoffreyR.Leking@state.nm.us
- Copy 2: Rose Slade  
Southern Union Gas Services  
801 S. Loop 464  
Monahans, Texas 79756  
rose.slade@sug.com
- Copy 3: Basin Environmental Service Technologies, LLC  
P.O. Box 301  
Lovington, New Mexico 88260





1,000 500 0 1,000 2,000  
 Distance in Feet

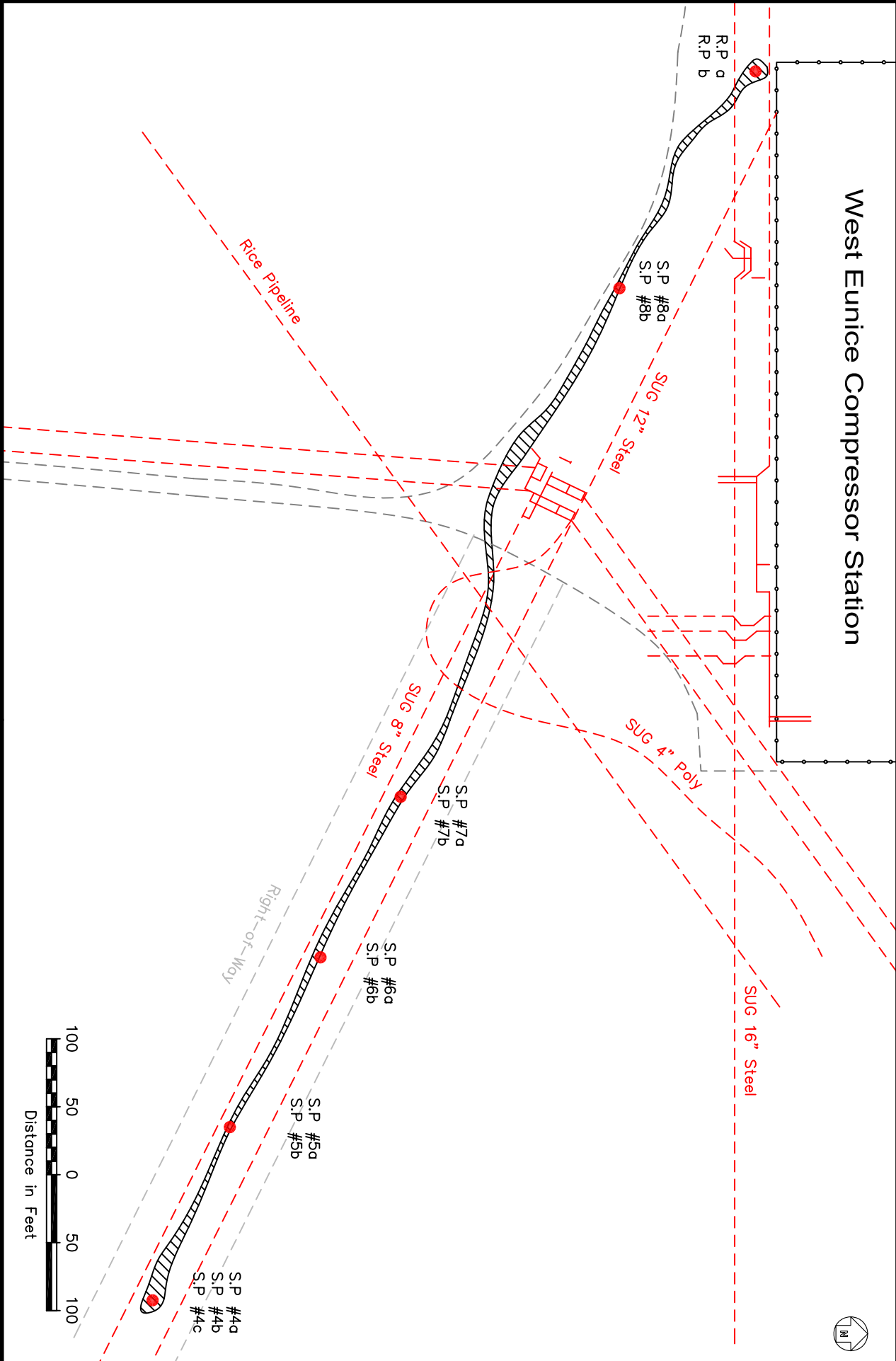
**Figure 1**  
**Site Location Map**  
 Southern Union Gas Services  
 Fullerton 14-Inch  
 Lea County, New Mexico  
 NMOCD Reference #: 1RP-1608



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

Drawn By: BJA	Checked By: JWL
September 26, 2012	Scale: 1" = 2000'

# West Eunice Compressor Station



## Legend

- Sample Location
- Pipeline
- - - Buried Pipeline
- Road
- Fence
- Flowpath

Figure 2

Site & Sample Location Map  
Southern Union Gas Services  
Fullerton 14"  
NMOCD Ref RP-1608  
Lea County, New Mexico

## Basin Environmental Services

Prep By: JWL

Checked By: BJA

September 5, 2012

Scale 1"=100'

TABLE 1

## CONCENTRATIONS OF BENZENE, BTEX, TPH &amp; CHLORIDE IN SOIL

SOUTHERN UNION GAS SERVICES  
 FULLERTON 14"  
 HISTORICAL RELEASE SITE  
 LEA COUNTY, NEW MEXICO  
 NMOCD REF# 1RP-1608

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)	METHOD: E300.0 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)		
S-1 Surface	Surface	10/1/2007	In-Situ	-	-	-	-	-	<12.4	19.5	<12.4	19.5	394*
S-2 Surface	Surface	10/1/2007	In-Situ	-	-	-	-	-	<11.3	33.9	<11.3	33.9	63.8*
S-3 Surface	Surface	10/1/2007	In-Situ	-	-	-	-	-	<11.1	17.0	<11.1	17.0	42.5*
S-4 Surface	Surface	10/1/2007	In-Situ	-	-	-	-	-	<11.3	38.4	<11.3	38.4	468*
R.P. a	Surface	8/30/2012	In-Situ	<0.00100	<0.00200	<0.00100	<0.00200	<0.00200	<15.5	<15.5	<15.5	<15.5	37.5
R.P. b	2'	8/30/2012	In-Situ	<0.00100	<0.00200	<0.00100	<0.00200	<0.00200	64.3	298	90.9	453	96.0
S.P. #4 a	Surface	8/30/2012	In-Situ	<0.00100	<0.00200	<0.00100	<0.00200	<0.00200	<16.0	<16.0	<16.0	<16.0	855
S.P. #4 b	2'	8/30/2012	In-Situ	<0.00100	<0.00200	<0.00100	<0.00200	<0.00200	<16.0	<16.0	<16.0	<16.0	839
S.P. #5 a	Surface	8/30/2012	In-Situ	<0.00100	<0.00200	0.00119	0.00532	0.00651	<15.0	<15.0	<15.0	<15.0	4.56
S.P. #5 b	2'	8/30/2012	In-Situ	<0.00100	<0.00200	<0.00100	<0.00200	<0.00200	21.3	<15.6	<15.6	21.3	80.6
S.P. #6 a	Surface	8/30/2012	In-Situ	<0.00100	<0.00200	<0.00100	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	1.00
S.P. #6 b	2'	8/30/2012	In-Situ	<0.00100	<0.00200	<0.00100	<0.00200	<0.00200	<15.8	<15.8	<15.8	<15.8	1.88
S.P. #7 a	Surface	8/30/2012	In-Situ	<0.00100	<0.00200	<0.00100	<0.00200	<0.00200	<16.0	<16.0	<16.0	<16.0	7.57
S.P. #7 b	2'	8/30/2012	In-Situ	<0.00100	<0.00200	<0.00100	<0.00200	<0.00200	<15.2	<15.2	<15.2	<15.2	<1.01
S.P. #8 a	Surface	8/30/2012	In-Situ	<0.00100	<0.00200	<0.00100	<0.00200	<0.00200	<15.3	<15.3	<15.3	<15.3	2.87
S.P. #8 b	2'	8/30/2012	In-Situ	<0.00100	<0.00200	<0.00100	<0.00200	<0.00200	<16.0	<16.0	<16.0	<16.0	13.6
S.P. #4 c	10'	8/31/2012	In-Situ	<0.00100	<0.00200	<0.00100	<0.00200	<0.00200	<15.6	<15.6	<15.6	<15.6	33.0
<b>NMOCD Standard</b>				<b>10</b>				<b>50</b>				<b>5,000</b>	<b>1,000</b>

- = Not analyzed.

\* Denotes results by EPA Method 325.3





Photograph of initial release at the Fullerton 14" Historical Release Site.



Photograph of initial release and affected right-of-way at the Fullerton 14" Historical Release Site.





Photograph the affected right-of-way at the Fullerton 14" Historical Release Site.



Photograph the affected right-of-way at the Fullerton 14" Historical Release Site.





Photograph of the advancement of soil boring S.P #4 at the Fullerton 14" Historical Release Site.



Photograph of sample point "S.P. #5" at the Fullerton 14" Historical Release Site.





Photograph of sample point "S.P. #6" at the Fullerton 14" Historical Release Site.



Photograph of sample point "S.P. #7" at the Fullerton 14" Historical Release Site.





Photograph of sample point "S.P. #8" at the Fullerton 14" Historical Release Site.



Photograph of sample point "R.P." at the Fullerton 14" Historical Release Site.



# **Analytical Report 290603**

**for**

## **Southern Union Gas Services-Jal**

**Project Manager: Tony Savoie**

**Fullerton/West Eunice**

**2007-049**

**03-OCT-07**



**12600 West I-20 East Odessa, Texas 79765**

**A Xenco Laboratories Company**

Texas certification numbers:  
Houston, TX T104704215

Florida certification numbers:  
Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675

Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America  
Midland - Corpus Christi - Atlanta



03-OCT-07

Project Manager: **Tony Savoie**  
**Southern Union Gas Services-Jal**  
610 Commerce  
Jal, NM 88252

Reference: XENCO Report No: **290603**  
**Fullerton/West Eunice**  
Project Address: West of Eunice NM

**Tony Savoie:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 290603. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 290603 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

**Brent Barron**

Odessa Laboratory Director

*Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.*

*Certified and approved by numerous States and Agencies.*

*A Small Business and Minority Status Company that delivers SERVICE and QUALITY*

Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America

**Sample Cross Reference 290603****Southern Union Gas Services-Jal, Jal, NM**

Fullerton/West Eunice

<b>Sample Id</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Sample Depth</b>	<b>Lab Sample Id</b>
S-1 Surface	S	Oct-01-07 07:20		290603-001
S-2 Surface	S	Oct-01-07 07:22		290603-002
S-3 Surface	S	Oct-01-07 07:25		290603-003
S-4 Surface	S	Oct-01-07 07:30		290603-004



# Certificate of Analysis Summary 290603

Southern Union Gas Services-Jal, Jal, NM

Project Name: Fullerton/West Eunice

Project Id: 2007-049

Contact: Tony Savoie

Project Location: West of Eunice NM

Date Received in Lab: Tue Oct-02-07 02:15 pm


Report Date: 03-OCT-07

Project Manager: Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b>	290603-001	290603-002	290603-003	290603-004		
	<b>Field Id:</b>	S-1 Surface	S-2 Surface	S-3 Surface	S-4 Surface		
	<b>Depth:</b>						
	<b>Matrix:</b>	SOIL	SOIL	SOIL	SOIL		
	<b>Sampled:</b>	Oct-01-07 07:20	Oct-01-07 07:22	Oct-01-07 07:25	Oct-01-07 07:30		
<b>Percent Moisture</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Oct-02-07 15:10	Oct-02-07 15:10	Oct-02-07 15:10	Oct-02-07 15:15		
	<b>Units/RL:</b>	% RL	% RL	% RL	% RL		
Percent Moisture		19.4 1.00	11.6 1.00	9.64 1.00	11.2 1.00		
<b>TPH by SW8015 Mod</b>	<b>Extracted:</b>	Oct-02-07 15:15	Oct-02-07 15:15	Oct-02-07 15:15	Oct-02-07 15:15		
	<b>Analyzed:</b>	Oct-02-07 19:29	Oct-02-07 19:54	Oct-02-07 20:19	Oct-02-07 20:44		
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
C6-C12 Gasoline Range Hydrocarbons		ND 12.4	ND 11.3	ND 11.1	ND 11.3		
C12-C28 Diesel Range Hydrocarbons		19.5 12.4	33.9 11.3	17.0 11.1	38.4 11.3		
C28-C35 Oil Range Hydrocarbons		ND 12.4	ND 11.3	ND 11.1	ND 11.3		
Total TPH		19.5	33.9	17	38.4		
<b>Total Chloride by EPA 325.3</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Oct-02-07 15:00	Oct-02-07 15:00	Oct-02-07 15:00	Oct-02-07 15:00		
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		394 5.00	63.8 5.00	42.5 5.00	468 5.00		

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Since 1990 Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America

  
Brent Barron  
Odessa Laboratory Director





## Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- \*** Outside XENCO'S scope of NELAC Accreditation

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(210) 509-3334	(201) 509-3335
(813) 620-2000	(813) 620-2033
(305) 823-8500	(305) 823-8555



## Form 2 - Surrogate Recoveries

Project Name: Fullerton/West Eunice

Work Order #: 290603

Project ID: 2007-049

Lab Batch #: 705612

Sample: 290603-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctadecane	37.7	50.0	75	70-135	
1-Chlorooctane	39.4	50.0	79	70-135	

Lab Batch #: 705612

Sample: 290603-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctadecane	38.1	50.0	76	70-135	
1-Chlorooctane	48.5	50.0	97	70-135	

Lab Batch #: 705612

Sample: 290603-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctadecane	42.0	50.0	84	70-135	
1-Chlorooctane	53.5	50.0	107	70-135	

Lab Batch #: 705612

Sample: 290603-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctadecane	46.6	50.0	93	70-135	
1-Chlorooctane	45.9	50.0	92	70-135	

Lab Batch #: 705612

Sample: 290603-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctadecane	39.9	50.0	80	70-135	
1-Chlorooctane	41.0	50.0	82	70-135	

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] =  $100 * A / B$

All results are based on MDL and validated for QC purposes.



## Form 2 - Surrogate Recoveries

Project Name: Fullerton/West Eunice

Work Order #: 290603

Project ID: 2007-049

Lab Batch #: 705612

Sample: 290603-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctadecane	41.3	50.0	83	70-135	
1-Chlorooctane	40.6	50.0	81	70-135	

Lab Batch #: 705612

Sample: 500026-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctadecane	38.5	50.0	77	70-135	
1-Chlorooctane	49.0	50.0	98	70-135	

Lab Batch #: 705612

Sample: 500026-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctadecane	39.3	50.0	79	70-135	
1-Chlorooctane	40.0	50.0	80	70-135	

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] =  $100 * A / B$

All results are based on MDL and validated for QC purposes.





## Blank Spike Recovery

Project Name: Fullerton/West Eunice

Work Order #: 290603

Project ID:

2007-049

Lab Batch #: 705612

Sample: 500026-1-BKS

Matrix: Solid

Date Analyzed: 10/02/2007

Date Prepared: 10/02/2007

Analyst: SHE

Reporting Units: mg/kg

Batch #: 1

### BLANK /BLANK SPIKE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
C6-C12 Gasoline Range Hydrocarbons	ND	500	473	95	70-135	
C12-C28 Diesel Range Hydrocarbons	ND	500	494	99	70-135	

Lab Batch #: 705533

Sample: 705533-1-BKS

Matrix: Solid

Date Analyzed: 10/02/2007

Date Prepared: 10/02/2007

Analyst: LATCOR

Reporting Units: mg/kg

Batch #: 1

### BLANK /BLANK SPIKE RECOVERY STUDY

Total Chloride by EPA 325.3 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Chloride	ND	100	95.7	96	75-125	

Blank Spike Recovery [D] =  $100 * [C] / [B]$

All results are based on MDL and validated for QC purposes.





### Form 3 - MS / MSD Recoveries

Project Name: Fullerton/West Eunice

Work Order #: 290603

Project ID: 2007-049

Lab Batch ID: 705612

QC- Sample ID: 290603-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 10/03/2007

Date Prepared: 10/02/2007

Analyst: SHE

Reporting Units: mg/kg

#### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	621	605	97	621	670	108	11	70-135	35	
C12-C28 Diesel Range Hydrocarbons	19.5	621	606	94	621	673	105	11	70-135	35	

Lab Batch ID: 705533

QC- Sample ID: 290562-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 10/02/2007

Date Prepared: 10/02/2007

Analyst: LATCOR

Reporting Units: mg/kg

#### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Total Chloride by EPA 325.3 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	138	1000	1150	101	1000	1170	103	2	75-125	30	

Matrix Spike Percent Recovery  $[D] = 100 \cdot (C-A)/B$   
Relative Percent Difference  $RPD = 200 \cdot (D-G)/(D+G)$

Matrix Spike Duplicate Percent Recovery  $[G] = 100 \cdot (F-A)/E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not  
ApplicableN = See Narrative, EQL = Estimated Quantitation Limit



## Sample Duplicate Recovery

Project Name: Fullerton/West Eunice

Work Order #: 290603

Lab Batch #: 705554

Date Analyzed: 10/02/2007

QC- Sample ID: 290564-001 D

Reporting Units: %

Date Prepared: 10/02/2007

Batch #: 1

Project ID: 2007-049

Analyst: RBA

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	3.34	2.94	13	20	

Spike Relative Difference RPD  $200 * |(B-A)/(B+A)|$

All Results are based on MDL and validated for QC purposes.

# Environmental Lab of Texas

## CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East  
Odessa, Texas 79765

Phone: 432-563-1800  
Fax: 432-663-1713

Project Manager: Tony Savoie  
Company Name: Southern Union Gas Services  
Company Address: 610 Commerce, P.O. Box 1226  
City/State/Zip: Jal, New Mexico 88252  
Telephone No: 505-631-9376  
Fax No: \_\_\_\_\_  
Sampler Signature: Tony Savoie  
e-mail: tony.savoie@SUG.com

Project Name: Fillerton/West Eunice  
Project #: 2007-049  
Project Loc: West of Eunice NM  
PO #: 61063

Report Format: ☒ Standard ☐ IRHP ☐ NPDES

(lab use only)

ORDER #: 290603

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	No. of Containers	Preservation & # of Containers										Matrix										Analyze For:	TCLP TOTAL	RUSH TAT (Pre-Schedule 24 hr. 72 hr. Standard TAT)
							Ice	HNO <sub>3</sub>	HCl	H <sub>2</sub> SO <sub>4</sub>	H <sub>2</sub> SCl	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>8</sub>	None	Other (Specify)	Chromatogram	GC/MS	GC/MS	GC/MS	GC/MS	GC/MS	GC/MS	GC/MS	GC/MS	GC/MS	GC/MS			
01	S-1	SURFACE		10/1/07	0720	1																							
02	S-2	"		"	0722	1																							
03	S-3	"		"	0725	1																							
04	S-4	"		"	0730	1																							

Special Instructions:

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
<u>Tony Savoie</u>	10/2/07	0550	<u>Don Green</u>	10-2-07	0550
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
<u>Don Green</u>	10-2-07	14:15	<u>Don Green</u>	10/2/07	14:15

Laboratory Comments:  
Sample Containers Intact? ☒ N  
VOCs Free of Headspace? ☒ N  
Custody seals on container(s) ☒ Y  
Custody seals on cooler(s) ☒ Y  
Sample Hand Delivered ☒ N  
by Sample/Client Rep. ? ☒ N  
by Courier? ☒ Y  
UPS ☒ DHL ☒ FedEx ☒ Lone Star  
422 Rose amber  
Temperature Upon Receipt: 7.0 °C

**Environmental Lab of Texas**  
Variance/ Corrective Action Report- Sample Log-In

Client: S.U.G.S.  
Date/ Time: 10.2.07 2:15  
Lab ID #: 290603  
Initials: AL

**Sample Receipt Checklist**

			Client Initials
#1 Temperature of container/ cooler?	<u>Yes</u>	No	<u>  </u> °C
#2 Shipping container in good condition?	<u>Yes</u>	No	
#3 Custody Seals intact on shipping container/ cooler?	Yes	No	<u>Not Present</u>
#4 Custody Seals intact on sample bottles/ container?	Yes	No	<u>Not Present</u>
#5 Chain of Custody present?	<u>Yes</u>	No	
#6 Sample instructions complete of Chain of Custody?	<u>Yes</u>	No	
#7 Chain of Custody signed when relinquished/ received?	<u>Yes</u>	No	
#8 Chain of Custody agrees with sample label(s)?	<u>Yes</u>	No	ID written on Cont./ Lid
#9 Container label(s) legible and intact?	<u>Yes</u>	No	Not Applicable
#10 Sample matrix/ properties agree with Chain of Custody?	<u>Yes</u>	No	
#11 Containers supplied by ELOT?	<u>Yes</u>	No	
#12 Samples in proper container/ bottle?	<u>Yes</u>	No	See Below
#13 Samples properly preserved?	<u>Yes</u>	No	See Below
#14 Sample bottles intact?	<u>Yes</u>	No	
#15 Preservations documented on Chain of Custody?	<u>Yes</u>	No	
#16 Containers documented on Chain of Custody?	<u>Yes</u>	No	
#17 Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No	See Below
#18 All samples received within sufficient hold time?	<u>Yes</u>	No	See Below
#19 Subcontract of sample(s)?	Yes	No	<u>Not Applicable</u>
#20 VOC samples have zero headspace?	<u>Yes</u>	No	Not Applicable

**Variance Documentation**

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/ Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken: \_\_\_\_\_

- Check all that Apply:
- ☐ See attached e-mail/ fax
  - ☐ Client understands and would like to proceed with analysis
  - ☐ Cooling process had begun shortly after sampling event

**PERMIAN BASIN  
ENVIRONMENTAL LAB, LP  
10014 SCR 1213  
Midland, TX 79706**



# Analytical Report

**Prepared for:**

Joel Lowry  
Basin Environmental Services  
P.O. Box 301  
Lovington, NM 88260

Project: Fullerton 14 in (RP-1608)  
Project Number: SUG Historical Releases  
Location: Lea County, New Mexico  
  
Lab Order Number: 2105002



**NELAP/TCEQ # T104704156-12-1**

Report Date: 09/07/12

Basin Environmental Services  
P.O. Box 301  
Lovington NM, 88260

Project: Fullerton 14 in (RP-1608)  
Project Number: SUG Historical Releases  
Project Manager: Joel Lowry

Fax: (505) 396-1429

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
R.P.a	2I05002-01	Soil	08/30/12 09:00	09-04-2012 17:12
R.P. b	2I05002-02	Soil	08/30/12 09:10	09-04-2012 17:12
S.P. #4 a	2I05002-03	Soil	08/30/12 09:40	09-04-2012 17:12
S.P. #4 b	2I05002-04	Soil	08/30/12 09:50	09-04-2012 17:12
S.P. #5 a	2I05002-05	Soil	08/30/12 10:10	09-04-2012 17:12
S.P. #5 b	2I05002-06	Soil	08/30/12 10:20	09-04-2012 17:12
S.P. #6 a	2I05002-07	Soil	08/30/12 10:40	09-04-2012 17:12
S.P. #6 b	2I05002-08	Soil	08/30/12 11:00	09-04-2012 17:12
S.P. #7 a	2I05002-09	Soil	08/30/12 11:20	09-04-2012 17:12
S.P. #7 b	2I05002-10	Soil	08/30/12 11:40	09-04-2012 17:12
S.P. #8 a	2I05002-11	Soil	08/30/12 13:20	09-04-2012 17:12
S.P. #8 b	2I05002-12	Soil	08/30/12 13:30	09-04-2012 17:12



Basin Environmental Services  
P.O. Box 301  
Lovington NM, 88260

Project: Fullerton 14 in (RP-1608)  
Project Number: SUG Historical Releases  
Project Manager: Joel Lowry

Fax: (505) 396-1429

**Organics by GC**  
**Permian Basin Environmental Lab**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>R.P.a (2105002-01) Soil</b>									
Benzene	ND	0.00100	mg/kg dry	1	EI20704	09/05/12	09/05/12	EPA 8021B	
Toluene	ND	0.00200	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00200	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		105 %	75-125		"	"	"	"	
<i>Surrogate: 1,4-Difluorobenzene</i>		99.2 %	75-125		"	"	"	"	
C6-C12	ND	15.5	mg/kg dry	"	EI20707	09/05/12	09/05/12	EPA 8015M	
>C12-C28	ND	15.5	"	"	"	"	"	"	
> <b>C28-C35</b>	<b>ND</b>	15.5	"	"	"	"	"	"	
Total Hydrocarbons	ND	15.5	"	"	"	"	"	"	
<i>Surrogate: 1-Chlorooctane</i>		94.2 %	70-130		"	"	"	"	
<i>Surrogate: o-Terphenyl</i>		105 %	70-130		"	"	"	"	
<b>R.P. b (2105002-02) Soil</b>									
Benzene	ND	0.00100	mg/kg dry	1	EI20704	09/05/12	09/05/12	EPA 8021B	
Toluene	ND	0.00200	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00200	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
<i>Surrogate: 1,4-Difluorobenzene</i>		100 %	75-125		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		104 %	75-125		"	"	"	"	
<b>C6-C12</b>	<b>64.3</b>	16.5	mg/kg dry	"	EI20707	09/05/12	09/05/12	EPA 8015M	
> <b>C12-C28</b>	<b>298</b>	16.5	"	"	"	"	"	"	
> <b>C28-C35</b>	<b>90.9</b>	16.5	"	"	"	"	"	"	
<b>Total Hydrocarbons</b>	<b>453</b>	16.5	"	"	"	"	"	"	
<i>Surrogate: 1-Chlorooctane</i>		98.2 %	70-130		"	"	"	"	
<i>Surrogate: o-Terphenyl</i>		113 %	70-130		"	"	"	"	
<b>S.P. #4 a (2105002-03) Soil</b>									
Benzene	ND	0.00100	mg/kg dry	1	EI20703	09/06/12	09/06/12	EPA 8021B	
Toluene	ND	0.00200	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00200	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
<i>Surrogate: 1,4-Difluorobenzene</i>		98.3 %	75-125		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		107 %	75-125		"	"	"	"	
<b>C6-C12</b>	<b>ND</b>	16.0	mg/kg dry	"	EI20707	09/05/12	09/05/12	EPA 8015M	

*The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Permian Basin Environmental Lab.*

Permian Basin Environmental Lab

Basin Environmental Services  
P.O. Box 301  
Lovington NM, 88260

Project: Fullerton 14 in (RP-1608)  
Project Number: SUG Historical Releases  
Project Manager: Joel Lowry

Fax: (505) 396-1429

**Organics by GC**  
**Permian Basin Environmental Lab**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>S.P. #4 a (2105002-03) Soil</b>									
>C12-C28	ND	16.0	mg/kg dry	1	EI20707	09/05/12	09/05/12	EPA 8015M	
>C28-C35	ND	16.0	"	"	"	"	"	"	
Total Hydrocarbons	ND	16.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		97.2 %	70-130		"	"	"	"	
Surrogate: o-Terphenyl		109 %	70-130		"	"	"	"	
<b>S.P. #4 b (2105002-04) Soil</b>									
Benzene	ND	0.00100	mg/kg dry	1	EI20704	09/05/12	09/05/12	EPA 8021B	
Toluene	ND	0.00200	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00200	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	75-125		"	"	"	"	
Surrogate: 1,4-Difluorobenzene		99.0 %	75-125		"	"	"	"	
C6-C12	ND	16.0	mg/kg dry	"	EI20707	09/05/12	09/05/12	EPA 8015M	
>C12-C28	ND	16.0	"	"	"	"	"	"	
>C28-C35	ND	16.0	"	"	"	"	"	"	
Total Hydrocarbons	ND	16.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		94.3 %	70-130		"	"	"	"	
Surrogate: o-Terphenyl		107 %	70-130		"	"	"	"	
<b>S.P. #5 a (2105002-05) Soil</b>									
Benzene	ND	0.00100	mg/kg dry	1	EI20703	09/06/12	09/06/12	EPA 8021B	
Toluene	ND	0.00200	"	"	"	"	"	"	
Ethylbenzene	0.00119	0.00100	"	"	"	"	"	"	
Xylene (p/m)	0.00405	0.00200	"	"	"	"	"	"	
Xylene (o)	0.00127	0.00100	"	"	"	"	"	"	
Surrogate: 1,4-Difluorobenzene		97.3 %	75-125		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	75-125		"	"	"	"	
C6-C12	ND	15.0	mg/kg dry	"	EI20707	09/05/12	09/05/12	EPA 8015M	
>C12-C28	ND	15.0	"	"	"	"	"	"	
>C28-C35	ND	15.0	"	"	"	"	"	"	
Total Hydrocarbons	ND	15.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		101 %	70-130		"	"	"	"	
Surrogate: o-Terphenyl		109 %	70-130		"	"	"	"	



Basin Environmental Services  
P.O. Box 301  
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Project: Fullerton 14 in (RP-1608)  
Project Number: SUG Historical Releases  
Project Manager: Joel Lowry

Fax: (505) 396-1429

**Organics by GC**  
**Permian Basin Environmental Lab**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>S.P. #5 b (2105002-06) Soil</b>									
Benzene	ND	0.00100	mg/kg dry	1	EI20703	09/06/12	09/06/12	EPA 8021B	
Toluene	ND	0.00200	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00200	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		106 %	75-125		"	"	"	"	
<i>Surrogate: 1,4-Difluorobenzene</i>		98.2 %	75-125		"	"	"	"	
<b>C6-C12</b>	<b>21.3</b>	15.6	mg/kg dry	"	EI20707	09/05/12	09/05/12	EPA 8015M	
<b>&gt;C12-C28</b>	<b>ND</b>	15.6	"	"	"	"	"	"	
<b>&gt;C28-C35</b>	<b>ND</b>	15.6	"	"	"	"	"	"	
<b>Total Hydrocarbons</b>	<b>21.3</b>	15.6	"	"	"	"	"	"	
<i>Surrogate: 1-Chlorooctane</i>		90.0 %	70-130		"	"	"	"	
<i>Surrogate: o-Terphenyl</i>		103 %	70-130		"	"	"	"	
<b>S.P. #6 a (2105002-07) Soil</b>									
Benzene	ND	0.00100	mg/kg dry	1	EI20703	09/06/12	09/06/12	EPA 8021B	
Toluene	ND	0.00200	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00200	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
<i>Surrogate: 1,4-Difluorobenzene</i>		100 %	75-125		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		77.3 %	75-125		"	"	"	"	
C6-C12	ND	15.0	mg/kg dry	"	EI20707	09/05/12	09/05/12	EPA 8015M	
>C12-C28	ND	15.0	"	"	"	"	"	"	
<b>&gt;C28-C35</b>	<b>ND</b>	15.0	"	"	"	"	"	"	
Total Hydrocarbons	ND	15.0	"	"	"	"	"	"	
<i>Surrogate: 1-Chlorooctane</i>		99.1 %	70-130		"	"	"	"	
<i>Surrogate: o-Terphenyl</i>		113 %	70-130		"	"	"	"	
<b>S.P. #6 b (2105002-08) Soil</b>									
Benzene	ND	0.00100	mg/kg dry	1	EI20704	09/05/12	09/05/12	EPA 8021B	
Toluene	ND	0.00200	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00200	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		106 %	75-125		"	"	"	"	
<i>Surrogate: 1,4-Difluorobenzene</i>		96.8 %	75-125		"	"	"	"	
C6-C12	ND	15.8	mg/kg dry	"	EI20707	09/05/12	09/05/12	EPA 8015M	

Permian Basin Environmental Lab

*The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Permian Basin Environmental Lab.*

Basin Environmental Services  
P.O. Box 301  
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Project: Fullerton 14 in (RP-1608)  
Project Number: SUG Historical Releases  
Project Manager: Joel Lowry

Fax: (505) 396-1429

**Organics by GC**  
**Permian Basin Environmental Lab**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>S.P. #6 b (2105002-08) Soil</b>									
>C12-C28	ND	15.8	mg/kg dry	1	EI20707	09/05/12	09/05/12	EPA 8015M	
>C28-C35	ND	15.8	"	"	"	"	"	"	
Total Hydrocarbons	ND	15.8	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		95.0 %	70-130		"	"	"	"	
Surrogate: o-Terphenyl		107 %	70-130		"	"	"	"	
<b>S.P. #7 a (2105002-09) Soil</b>									
Benzene	ND	0.00100	mg/kg dry	1	EI20704	09/05/12	09/05/12	EPA 8021B	
Toluene	ND	0.00200	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00200	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: 1,4-Difluorobenzene		96.5 %	75-125		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	75-125		"	"	"	"	
C6-C12	ND	16.0	mg/kg dry	"	EI20707	09/05/12	09/05/12	EPA 8015M	
>C12-C28	ND	16.0	"	"	"	"	"	"	
>C28-C35	ND	16.0	"	"	"	"	"	"	
Total Hydrocarbons	ND	16.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		102 %	70-130		"	"	"	"	
Surrogate: o-Terphenyl		115 %	70-130		"	"	"	"	
<b>S.P. #7 b (2105002-10) Soil</b>									
Benzene	ND	0.00100	mg/kg dry	1	EI20703	09/06/12	09/06/12	EPA 8021B	
Toluene	ND	0.00200	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00200	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: 1,4-Difluorobenzene		97.3 %	75-125		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	75-125		"	"	"	"	
C6-C12	ND	15.2	mg/kg dry	"	EI20707	09/05/12	09/05/12	EPA 8015M	
>C12-C28	ND	15.2	"	"	"	"	"	"	
>C28-C35	ND	15.2	"	"	"	"	"	"	
Total Hydrocarbons	ND	15.2	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		98.2 %	70-130		"	"	"	"	
Surrogate: o-Terphenyl		112 %	70-130		"	"	"	"	

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**Organics by GC**  
**Permian Basin Environmental Lab**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>S.P. #8 a (2105002-11) Soil</b>									
Benzene	ND	0.00100	mg/kg dry	1	EI20704	09/05/12	09/05/12	EPA 8021B	
Toluene	ND	0.00200	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00200	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
<i>Surrogate: 1,4-Difluorobenzene</i>		97.5 %	75-125		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		110 %	75-125		"	"	"	"	
<b>C6-C12</b>	<b>ND</b>	15.3	mg/kg dry	"	EI20707	09/05/12	09/06/12	EPA 8015M	
<b>&gt;C12-C28</b>	<b>ND</b>	15.3	"	"	"	"	"	"	
<b>&gt;C28-C35</b>	<b>ND</b>	15.3	"	"	"	"	"	"	
Total Hydrocarbons	ND	15.3	"	"	"	"	"	"	
<i>Surrogate: 1-Chlorooctane</i>		94.8 %	70-130		"	"	"	"	
<i>Surrogate: o-Terphenyl</i>		106 %	70-130		"	"	"	"	
<b>S.P. #8 b (2105002-12) Soil</b>									
Benzene	ND	0.00100	mg/kg dry	1	EI20704	09/05/12	09/05/12	EPA 8021B	
Toluene	ND	0.00200	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00200	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		108 %	75-125		"	"	"	"	
<i>Surrogate: 1,4-Difluorobenzene</i>		96.0 %	75-125		"	"	"	"	
<b>C6-C12</b>	<b>ND</b>	16.0	mg/kg dry	"	EI20707	09/05/12	09/06/12	EPA 8015M	
<b>&gt;C12-C28</b>	<b>ND</b>	16.0	"	"	"	"	"	"	
<b>&gt;C28-C35</b>	<b>ND</b>	16.0	"	"	"	"	"	"	
Total Hydrocarbons	ND	16.0	"	"	"	"	"	"	
<i>Surrogate: 1-Chlorooctane</i>		88.3 %	70-130		"	"	"	"	
<i>Surrogate: o-Terphenyl</i>		98.9 %	70-130		"	"	"	"	

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**General Chemistry Parameters by EPA / Standard Methods**  
**Permian Basin Environmental Lab**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>R.P.a (2105002-01) Soil</b>									
<b>Chloride</b>	<b>37.5</b>	1.03	mg/kg dry wt. dry	1	EI20702	09/06/12	09/07/12	EPA 300.0	
<b>% Moisture</b>	<b>3.0</b>	0.1	%	"	EI20701	09/06/12	09/07/12	% calculation	
<b>R.P. b (2105002-02) Soil</b>									
<b>Chloride</b>	<b>96.0</b>	2.75	mg/kg dry wt. dry	2.5	EI20702	09/06/12	09/07/12	EPA 300.0	
<b>% Moisture</b>	<b>9.0</b>	0.1	%	1	EI20701	09/06/12	09/07/12	% calculation	
<b>S.P. #4 a (2105002-03) Soil</b>									
<b>Chloride</b>	<b>855</b>	2.66	mg/kg dry wt. dry	2.5	EI20702	09/06/12	09/07/12	EPA 300.0	
<b>% Moisture</b>	<b>6.0</b>	0.1	%	1	EI20701	09/06/12	09/07/12	% calculation	
<b>S.P. #4 b (2105002-04) Soil</b>									
<b>Chloride</b>	<b>839</b>	2.66	mg/kg dry wt. dry	2.5	EI20702	09/06/12	09/07/12	EPA 300.0	
<b>% Moisture</b>	<b>4.0</b>	0.1	%	1	EI20701	09/06/12	09/07/12	% calculation	
<b>S.P. #5 a (2105002-05) Soil</b>									
<b>Chloride</b>	<b>4.56</b>	1.00	mg/kg dry wt. dry	1	EI20702	09/06/12	09/07/12	EPA 300.0	
<b>% Moisture</b>	<b>ND</b>	0.1	%	"	EI20701	09/06/12	09/07/12	% calculation	
<b>S.P. #5 b (2105002-06) Soil</b>									
<b>Chloride</b>	<b>80.6</b>	1.04	mg/kg dry wt. dry	1	EI20702	09/06/12	09/07/12	EPA 300.0	
<b>% Moisture</b>	<b>4.0</b>	0.1	%	"	EI20701	09/06/12	09/07/12	% calculation	
<b>S.P. #6 a (2105002-07) Soil</b>									
<b>Chloride</b>	<b>1.00</b>	1.00	mg/kg dry wt. dry	1	EI20702	09/06/12	09/07/12	EPA 300.0	
<b>% Moisture</b>	<b>ND</b>	0.1	%	"	EI20701	09/06/12	09/07/12	% calculation	
<b>S.P. #6 b (2105002-08) Soil</b>									
<b>Chloride</b>	<b>1.88</b>	1.05	mg/kg dry wt. dry	1	EI20702	09/06/12	09/07/12	EPA 300.0	
<b>% Moisture</b>	<b>5.0</b>	0.1	%	"	EI20701	09/06/12	09/07/12	% calculation	

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**General Chemistry Parameters by EPA / Standard Methods**  
**Permian Basin Environmental Lab**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>S.P. #7 a (2105002-09) Soil</b>									
<b>Chloride</b>	<b>7.57</b>	1.06	mg/kg dry wt. dry	1	EI20702	09/06/12	09/07/12	EPA 300.0	
<b>% Moisture</b>	<b>6.0</b>	0.1	%	"	EI20701	09/06/12	09/07/12	% calculation	
<b>S.P. #7 b (2105002-10) Soil</b>									
<b>Chloride</b>	<b>ND</b>	1.01	mg/kg dry wt. dry	1	EI20702	09/06/12	09/07/12	EPA 300.0	
<b>% Moisture</b>	<b>1.0</b>	0.1	%	"	EI20701	09/06/12	09/07/12	% calculation	
<b>S.P. #8 a (2105002-11) Soil</b>									
<b>Chloride</b>	<b>2.87</b>	1.02	mg/kg dry wt. dry	1	EI20702	09/06/12	09/07/12	EPA 300.0	
<b>% Moisture</b>	<b>2.0</b>	0.1	%	"	EI20701	09/06/12	09/07/12	% calculation	
<b>S.P. #8 b (2105002-12) Soil</b>									
<b>Chloride</b>	<b>13.6</b>	1.06	mg/kg dry wt. dry	1	EI20702	09/06/12	09/07/12	EPA 300.0	
<b>% Moisture</b>	<b>6.0</b>	0.1	%	"	EI20701	09/06/12	09/07/12	% calculation	

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**Organics by GC - Quality Control**  
**Permian Basin Environmental Lab**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EI20703 - General Preparation (GC)**

**Blank (EI20703-BLK1)**

Prepared & Analyzed: 09/06/12

Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00200	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 1,4-Difluorobenzene	57.5		ug/kg	60.0		95.8	75-125			
Surrogate: 4-Bromofluorobenzene	63.8		"	60.0		106	75-125			

**LCS (EI20703-BS1)**

Prepared & Analyzed: 09/06/12

Benzene	0.104	0.00100	mg/kg wet	0.100		104	80-120			
Toluene	0.108	0.00200	"	0.100		108	80-120			
Ethylbenzene	0.103	0.00100	"	0.100		103	80-120			
Xylene (p/m)	0.211	0.00200	"	0.200		106	80-120			
Xylene (o)	0.0970	0.00100	"	0.100		97.0	80-120			
Surrogate: 1,4-Difluorobenzene	55.3		ug/kg	60.0		92.2	75-125			
Surrogate: 4-Bromofluorobenzene	63.8		"	60.0		106	75-125			

**LCS Dup (EI20703-BSD1)**

Prepared & Analyzed: 09/06/12

Benzene	0.102	0.00100	mg/kg wet	0.100		102	80-120	1.94	20	
Toluene	0.108	0.00200	"	0.100		108	80-120	0.00	20	
Ethylbenzene	0.102	0.00100	"	0.100		102	80-120	0.976	20	
Xylene (p/m)	0.208	0.00200	"	0.200		104	80-120	1.90	20	
Xylene (o)	0.0959	0.00100	"	0.100		95.9	80-120	1.14	20	
Surrogate: 1,4-Difluorobenzene	54.9		ug/kg	60.0		91.5	75-125			
Surrogate: 4-Bromofluorobenzene	63.3		"	60.0		106	75-125			

**Matrix Spike (EI20703-MS1)**

Source: 2105002-10

Prepared & Analyzed: 09/06/12

Benzene	0.0751	0.00100	mg/kg dry	0.101	ND	74.4	80-120			QM-05
Toluene	0.0830	0.00200	"	0.101	ND	82.2	80-120			
Ethylbenzene	0.0745	0.00100	"	0.101	ND	73.8	80-120			QM-05
Xylene (p/m)	0.150	0.00200	"	0.202	ND	74.3	80-120			QM-05
Xylene (o)	0.0704	0.00100	"	0.101	ND	69.7	80-120			QM-05
Surrogate: 4-Bromofluorobenzene	66.5		ug/kg	60.0		111	75-125			
Surrogate: 1,4-Difluorobenzene	58.1		"	60.0		96.8	75-125			

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**Organics by GC - Quality Control**  
**Permian Basin Environmental Lab**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EI20703 - General Preparation (GC)**

Matrix Spike Dup (EI20703-MSD1)		Source: 2105002-10			Prepared & Analyzed: 09/06/12					
Benzene	0.0743	0.00100	mg/kg dry	0.101	ND	73.6	80-120	1.08	20	QM-05
Toluene	0.0805	0.00200	"	0.101	ND	79.7	80-120	3.09	20	QM-05
Ethylbenzene	0.0713	0.00100	"	0.101	ND	70.6	80-120	4.43	20	QM-05
Xylene (p/m)	0.142	0.00200	"	0.202	ND	70.3	80-120	5.53	20	QM-05
Xylene (o)	0.0667	0.00100	"	0.101	ND	66.0	80-120	5.45	20	QM-05
Surrogate: 1,4-Difluorobenzene		57.0	ug/kg	60.0		95.0	75-125			
Surrogate: 4-Bromofluorobenzene		65.6	"	60.0		109	75-125			

**Batch EI20704 - General Preparation (GC)**

Blank (EI20704-BLK1)		Prepared & Analyzed: 09/05/12								
Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00200	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 4-Bromofluorobenzene		62.3	ug/kg	60.0		104	75-125			
Surrogate: 1,4-Difluorobenzene		57.9	"	60.0		96.5	75-125			

LCS (EI20704-BS1)		Prepared & Analyzed: 09/05/12								
Benzene	0.0909	0.00100	mg/kg wet	0.100		90.9	80-120			
Toluene	0.102	0.00200	"	0.100		102	80-120			
Ethylbenzene	0.0977	0.00100	"	0.100		97.7	80-120			
Xylene (p/m)	0.198	0.00200	"	0.200		99.0	80-120			
Xylene (o)	0.0914	0.00100	"	0.100		91.4	80-120			
Surrogate: 4-Bromofluorobenzene		64.3	ug/kg	60.0		107	75-125			
Surrogate: 1,4-Difluorobenzene		58.7	"	60.0		97.8	75-125			

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**Organics by GC - Quality Control**  
**Permian Basin Environmental Lab**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EI20704 - General Preparation (GC)**

**LCS Dup (EI20704-BSD1)**

Prepared & Analyzed: 09/05/12

Benzene	0.0904	0.00100	mg/kg wet	0.100		90.4	80-120	0.552	20	
Toluene	0.101	0.00200	"	0.100		101	80-120	0.985	20	
Ethylbenzene	0.0969	0.00100	"	0.100		96.9	80-120	0.822	20	
Xylene (p/m)	0.197	0.00200	"	0.200		98.5	80-120	0.506	20	
Xylene (o)	0.0916	0.00100	"	0.100		91.6	80-120	0.219	20	
Surrogate: 1,4-Difluorobenzene	57.8		ug/kg	60.0		96.3	75-125			
Surrogate: 4-Bromofluorobenzene	64.5		"	60.0		108	75-125			

**Matrix Spike (EI20704-MS1)**

Source: 2105002-01

Prepared & Analyzed: 09/05/12

Benzene	0.0605	0.00100	mg/kg dry	0.103	ND	58.7	80-120			QM-05
Toluene	0.0553	0.00200	"	0.103	ND	53.7	80-120			QM-05
Ethylbenzene	0.0468	0.00100	"	0.103	ND	45.4	80-120			QM-05
Xylene (p/m)	0.0890	0.00200	"	0.206	ND	43.2	80-120			QM-05
Xylene (o)	0.0447	0.00100	"	0.103	ND	43.4	80-120			QM-05
Surrogate: 1,4-Difluorobenzene	59.4		ug/kg	60.0		99.0	75-125			
Surrogate: 4-Bromofluorobenzene	66.9		"	60.0		112	75-125			

**Matrix Spike Dup (EI20704-MSD1)**

Source: 2105002-01

Prepared & Analyzed: 09/05/12

Benzene	0.0567	0.00100	mg/kg dry	0.103	ND	55.0	80-120	6.51	20	QM-05
Toluene	0.0540	0.00200	"	0.103	ND	52.4	80-120	2.45	20	QM-05
Ethylbenzene	0.0452	0.00100	"	0.103	ND	43.9	80-120	3.36	20	QM-05
Xylene (p/m)	0.0855	0.00200	"	0.206	ND	41.5	80-120	4.01	20	QM-05
Xylene (o)	0.0422	0.00100	"	0.103	ND	41.0	80-120	5.69	20	QM-05
Surrogate: 1,4-Difluorobenzene	57.5		ug/kg	60.0		95.8	75-125			
Surrogate: 4-Bromofluorobenzene	67.1		"	60.0		112	75-125			

**Batch EI20707 - 8015M**

**Blank (EI20707-BLK1)**

Prepared & Analyzed: 09/05/12

C6-C12	ND	15.0	mg/kg wet							
>C12-C28	ND	15.0	"							
>C28-C35	ND	15.0	"							
Total Hydrocarbons	ND	15.0	"							
Surrogate: 1-Chlorooctane	105		"	100		105	70-130			
Surrogate: o-Terphenyl	60.7		"	50.0		121	70-130			



Basin Environmental Services  
P.O. Box 301  
Lovington NM, 88260

Project: Fullerton 14 in (RP-1608)  
Project Number: SUG Historical Releases  
Project Manager: Joel Lowry

Fax: (505) 396-1429

**Organics by GC - Quality Control**  
**Permian Basin Environmental Lab**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EI20707 - 8015M**

**LCS (EI20707-BS1)**

Prepared & Analyzed: 09/05/12

C6-C12	799	15.0	mg/kg wet	1000		79.9	75-125			
>C12-C28	854	15.0	"	1000		85.4	75-125			
>C28-C35	ND	15.0	"	0.00			75-125			
Total Hydrocarbons	ND	15.0	"	0.00			75-125			
Surrogate: 1-Chlorooctane	115		"	100		115	70-130			
Surrogate: o-Terphenyl	44.4		"	50.0		88.8	70-130			

**LCS Dup (EI20707-BSD1)**

Prepared & Analyzed: 09/05/12

C6-C12	822	15.0	mg/kg wet	1000		82.2	75-125	2.84	20	
>C12-C28	894	15.0	"	1000		89.4	75-125	4.58	20	
Total Hydrocarbons	ND	15.0	"	0.00			75-125		20	
Surrogate: 1-Chlorooctane	115		"	100		115	70-130			
Surrogate: o-Terphenyl	58.8		"	50.0		118	70-130			

**Matrix Spike (EI20707-MS1)**

Source: 2105002-01

Prepared: 09/05/12 Analyzed: 09/06/12

C6-C12	783	15.5	mg/kg dry	1030	ND	76.0	75-125			
>C12-C28	836	15.5	"	1030	ND	81.2	75-125			
Total Hydrocarbons	ND	15.5	"	0.00	ND		75-125			
Surrogate: 1-Chlorooctane	119		"	103		116	70-130			
Surrogate: o-Terphenyl	50.2		"	51.5		97.5	70-130			

**Matrix Spike Dup (EI20707-MSD1)**

Source: 2105002-01

Prepared: 09/05/12 Analyzed: 09/06/12

C6-C12	900	15.5	mg/kg dry	1030	ND	87.4	75-125	14.0	20	
>C12-C28	811	15.5	"	1030	ND	78.7	75-125	3.13	20	
Total Hydrocarbons	ND	15.5	"	0.00	ND		75-125		20	
Surrogate: 1-Chlorooctane	130		"	103		126	70-130			
Surrogate: o-Terphenyl	51.7		"	51.5		100	70-130			

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Project: Fullerton 14 in (RP-1608)  
Project Number: SUG Historical Releases  
Project Manager: Joel Lowry

Fax: (505) 396-1429

**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Permian Basin Environmental Lab**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch EI20701 - *** DEFAULT PREP ***</b>										
<b>Blank (EI20701-BLK1)</b>		Prepared: 09/06/12 Analyzed: 09/07/12								
% Moisture	ND	0.1	%							
<b>Duplicate (EI20701-DUP1)</b>		<b>Source: 2105001-01</b>		Prepared: 09/06/12 Analyzed: 09/07/12						
% Moisture	6.0	0.1	%		6.0			0.00	20	
<b>Batch EI20702 - *** DEFAULT PREP ***</b>										
<b>Blank (EI20702-BLK1)</b>		Prepared: 09/06/12 Analyzed: 09/07/12								
Chloride	ND	1.00	mg/kg dry wt. wet							
<b>LCS (EI20702-BS1)</b>		Prepared: 09/06/12 Analyzed: 09/07/12								
Chloride	10.4		mg/kg Wet	10.0		104	80-120			
<b>LCS Dup (EI20702-BSD1)</b>		Prepared: 09/06/12 Analyzed: 09/07/12								
Chloride	10.4		mg/kg Wet	10.0		104	80-120	0.00	20	
<b>Duplicate (EI20702-DUP1)</b>		<b>Source: 2105001-01</b>		Prepared: 09/06/12 Analyzed: 09/07/12						
Chloride	44.3	1.06	mg/kg dry wt. dry		43.5			1.82	20	
<b>Matrix Spike (EI20702-MS1)</b>		<b>Source: 2105001-01</b>		Prepared: 09/06/12 Analyzed: 09/07/12						
Chloride	152	1.06	mg/kg dry wt. dry	106	43.5	102	80-120			
<b>Matrix Spike (EI20702-MS2)</b>		<b>Source: 2105002-10</b>		Prepared: 09/06/12 Analyzed: 09/07/12						
Chloride	96.7	1.01	mg/kg dry wt. dry	101	ND	95.7	80-120			

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### Notes and Definitions

QM-05     The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.

DET        Analyte DETECTED

ND        Analyte NOT DETECTED at or above the reporting limit

NR        Not Reported

dry        Sample results reported on a dry weight basis

RPD        Relative Percent Difference

LCS        Laboratory Control Spike

MS        Matrix Spike

Dup        Duplicate

Report Approved By:



Date:

9/7/2012

Brent Barron, Laboratory Director/Technical Director

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If you have received this material in error, please notify us immediately at 432-661-4184.

ORIGINAL COPY

**PERMIAN BASIN  
ENVIRONMENTAL LAB, LP  
10014 SCR 1213  
Midland, TX 79706**



# Analytical Report

**Prepared for:**

Joel Lowry  
Basin Environmental Services  
P.O. Box 301  
Lovington, NM 88260

Project: Fullerton 14 in (RP-1608)  
Project Number: SUG Historical Releases  
Location: Lea County, New Mexico  
  
Lab Order Number: 2106001



**NELAP/TCEQ # T104704156-12-1**

Report Date: 09/07/12

Basin Environmental Services  
P.O. Box 301  
Lovington NM, 88260

Project: Fullerton 14 in (RP-1608)  
Project Number: SUG Historical Releases  
Project Manager: Joel Lowry

Fax: (505) 396-1429

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S.P. #4c	2106001-01	Soil	09/05/12 10:00	09-06-2012 12:14

Basin Environmental Services  
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Project Number: SUG Historical Releases  
Project Manager: Joel Lowry

Fax: (505) 396-1429

**Organics by GC**  
**Permian Basin Environmental Lab**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>S.P. #4c (2I06001-01) Soil</b>									
Benzene	ND	0.00100	mg/kg dry	1	EI20703	09/06/12	09/06/12	EPA 8021B	
Toluene	ND	0.00200	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00200	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		106 %	75-125		"	"	"	"	
<i>Surrogate: 1,4-Difluorobenzene</i>		96.0 %	75-125		"	"	"	"	
<b>C6-C12</b>	<b>ND</b>	15.6	mg/kg dry	"	EI20705	09/06/12	09/06/12	EPA 8015M	
>C12-C28	ND	15.6	"	"	"	"	"	"	
<b>&gt;C28-C35</b>	<b>ND</b>	15.6	"	"	"	"	"	"	
Total Hydrocarbons	ND	15.6	"	"	"	"	"	"	
<i>Surrogate: 1-Chlorooctane</i>		82.5 %	70-130		"	"	"	"	
<i>Surrogate: o-Terphenyl</i>		91.4 %	70-130		"	"	"	"	

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Project Manager: Joel Lowry

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**General Chemistry Parameters by EPA / Standard Methods**  
**Permian Basin Environmental Lab**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>S.P. #4c (2106001-01) Soil</b>									
<b>Chloride</b>	<b>33.0</b>	1.04	mg/kg dry wt. dry	1	EI20702	09/06/12	09/07/12	EPA 300.0	
<b>% Moisture</b>	<b>4.0</b>	0.1	%	"	EI20701	09/06/12	09/07/12	% calculation	



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**Organics by GC - Quality Control**  
**Permian Basin Environmental Lab**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EI20703 - General Preparation (GC)**

**Blank (EI20703-BLK1)**

Prepared & Analyzed: 09/06/12

Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00200	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 1,4-Difluorobenzene	57.5		ug/kg	60.0		95.8	75-125			
Surrogate: 4-Bromofluorobenzene	63.8		"	60.0		106	75-125			

**LCS (EI20703-BS1)**

Prepared & Analyzed: 09/06/12

Benzene	0.104	0.00100	mg/kg wet	0.100		104	80-120			
Toluene	0.108	0.00200	"	0.100		108	80-120			
Ethylbenzene	0.103	0.00100	"	0.100		103	80-120			
Xylene (p/m)	0.211	0.00200	"	0.200		106	80-120			
Xylene (o)	0.0970	0.00100	"	0.100		97.0	80-120			
Surrogate: 4-Bromofluorobenzene	63.8		ug/kg	60.0		106	75-125			
Surrogate: 1,4-Difluorobenzene	55.3		"	60.0		92.2	75-125			

**LCS Dup (EI20703-BSD1)**

Prepared & Analyzed: 09/06/12

Benzene	0.102	0.00100	mg/kg wet	0.100		102	80-120	1.94	20	
Toluene	0.108	0.00200	"	0.100		108	80-120	0.00	20	
Ethylbenzene	0.102	0.00100	"	0.100		102	80-120	0.976	20	
Xylene (p/m)	0.208	0.00200	"	0.200		104	80-120	1.90	20	
Xylene (o)	0.0959	0.00100	"	0.100		95.9	80-120	1.14	20	
Surrogate: 1,4-Difluorobenzene	54.9		ug/kg	60.0		91.5	75-125			
Surrogate: 4-Bromofluorobenzene	63.3		"	60.0		106	75-125			

**Matrix Spike (EI20703-MS1)**

Source: 2105002-10

Prepared & Analyzed: 09/06/12

Benzene	0.0751	0.00100	mg/kg dry	0.101	ND	74.4	80-120			QM-05
Toluene	0.0830	0.00200	"	0.101	ND	82.2	80-120			
Ethylbenzene	0.0745	0.00100	"	0.101	ND	73.8	80-120			QM-05
Xylene (p/m)	0.150	0.00200	"	0.202	ND	74.3	80-120			QM-05
Xylene (o)	0.0704	0.00100	"	0.101	ND	69.7	80-120			QM-05
Surrogate: 4-Bromofluorobenzene	66.5		ug/kg	60.0		111	75-125			
Surrogate: 1,4-Difluorobenzene	58.1		"	60.0		96.8	75-125			

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**Organics by GC - Quality Control**  
**Permian Basin Environmental Lab**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EI20703 - General Preparation (GC)**

Matrix Spike Dup (EI20703-MSD1)		Source: 2105002-10			Prepared & Analyzed: 09/06/12					
Benzene	0.0743	0.00100	mg/kg dry	0.101	ND	73.6	80-120	1.08	20	QM-05
Toluene	0.0805	0.00200	"	0.101	ND	79.7	80-120	3.09	20	QM-05
Ethylbenzene	0.0713	0.00100	"	0.101	ND	70.6	80-120	4.43	20	QM-05
Xylene (p/m)	0.142	0.00200	"	0.202	ND	70.3	80-120	5.53	20	QM-05
Xylene (o)	0.0667	0.00100	"	0.101	ND	66.0	80-120	5.45	20	QM-05
Surrogate: 4-Bromofluorobenzene		65.6	ug/kg	60.0		109	75-125			
Surrogate: 1,4-Difluorobenzene		57.0	"	60.0		95.0	75-125			

**Batch EI20705 - 8015M**

Blank (EI20705-BLK1)		Prepared & Analyzed: 09/06/12								
C6-C12	ND	15.0	mg/kg wet							
>C12-C28	ND	15.0	"							
Surrogate: 1-Chlorooctane		91.0	"	100		91.0	70-130			
Surrogate: o-Terphenyl		52.7	"	50.0		105	70-130			

LCS (EI20705-BS1)		Prepared & Analyzed: 09/06/12								
C6-C12	859	15.0	mg/kg wet	1000		85.9	75-125			
>C12-C28	859	15.0	"	1000		85.9	75-125			
Surrogate: 1-Chlorooctane		128	"	100		128	70-130			
Surrogate: o-Terphenyl		52.4	"	50.0		105	70-130			

LCS Dup (EI20705-BSD1)		Prepared & Analyzed: 09/06/12								
C6-C12	818	15.0	mg/kg wet	1000		81.8	75-125	4.89	20	
>C12-C28	778	15.0	"	1000		77.8	75-125	9.90	20	
Surrogate: 1-Chlorooctane		121	"	100		121	70-130			
Surrogate: o-Terphenyl		48.0	"	50.0		96.0	70-130			

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**Organics by GC - Quality Control**  
**Permian Basin Environmental Lab**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EI20705 - 8015M**

Matrix Spike (EI20705-MS1)				Source: 2106001-01		Prepared: 09/06/12		Analyzed: 09/07/12	
C6-C12	867	15.6	mg/kg dry	1040	ND	83.4	75-125		
>C12-C28	818	15.6	"	1040	ND	78.7	75-125		
Surrogate: 1-Chlorooctane	131		"	104		126	70-130		
Surrogate: o-Terphenyl	53.7		"	52.1		103	70-130		
Matrix Spike Dup (EI20705-MSD1)				Source: 2106001-01		Prepared: 09/06/12		Analyzed: 09/07/12	
C6-C12	801	15.6	mg/kg dry	1040	ND	77.0	75-125	7.98	20
>C12-C28	806	15.6	"	1040	ND	77.5	75-125	1.54	20
Surrogate: 1-Chlorooctane	120		"	104		115	70-130		
Surrogate: o-Terphenyl	47.6		"	52.1		91.4	70-130		

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**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Permian Basin Environmental Lab**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch EI20701 - *** DEFAULT PREP ***</b>										
<b>Blank (EI20701-BLK1)</b>				Prepared: 09/06/12 Analyzed: 09/07/12						
% Moisture	ND	0.1	%							
<b>Duplicate (EI20701-DUP1)</b>				Source: 2105001-01 Prepared: 09/06/12 Analyzed: 09/07/12						
% Moisture	6.0	0.1	%		6.0			0.00	20	
<b>Batch EI20702 - *** DEFAULT PREP ***</b>										
<b>Blank (EI20702-BLK1)</b>				Prepared: 09/06/12 Analyzed: 09/07/12						
Chloride	ND	1.00	mg/kg dry wt. wet							
<b>LCS (EI20702-BS1)</b>				Prepared: 09/06/12 Analyzed: 09/07/12						
Chloride	10.4		mg/kg Wet	10.0		104	80-120			
<b>LCS Dup (EI20702-BSD1)</b>				Prepared: 09/06/12 Analyzed: 09/07/12						
Chloride	10.4		mg/kg Wet	10.0		104	80-120	0.00	20	
<b>Duplicate (EI20702-DUP1)</b>				Source: 2105001-01 Prepared: 09/06/12 Analyzed: 09/07/12						
Chloride	44.3	1.06	mg/kg dry wt. dry		43.5			1.82	20	
<b>Matrix Spike (EI20702-MS1)</b>				Source: 2105001-01 Prepared: 09/06/12 Analyzed: 09/07/12						
Chloride	152	1.06	mg/kg dry wt. dry	106	43.5	102	80-120			
<b>Matrix Spike (EI20702-MS2)</b>				Source: 2105002-10 Prepared: 09/06/12 Analyzed: 09/07/12						
Chloride	96.7	1.01	mg/kg dry wt. dry	101	ND	95.7	80-120			

### Notes and Definitions

QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
LCS	Laboratory Control Spike
MS	Matrix Spike
Dup	Duplicate

Report Approved By:



Date:

9/7/2012

Brent Barron, Laboratory Director/Technical Director

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If you have received this material in error, please notify us immediately at 432-661-4184.

Fax: (505) 396-1429

[illegible]



District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

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

Form C-141  
Revised October 10, 2003

Submit 2 Copies to appropriate  
District Office in accordance  
with Rule 116 on back  
side of form

**Release Notification and Corrective Action**

**OPERATOR**

☒ Initial Report ☐ Final Report

Name of Company	Southern Union Gas Services, Ltd.	Contact	Tony Savoie
Address	P.O. Box 1226 Jal, N.M. 88252	Telephone No.	505-395-2116
Facility Name	Lea County Field Dept.	Facility Type	Natural Gas Gathering
Surface Owner: Southern Union Gas Services		Mineral Owner: Fee	Lease No.

**LOCATION OF RELEASE**

Unit Letter P	Section 36	Township 21S	Range 36E	Feet from the	North/South Line	Feet from the	East/West Line	County Lea
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Latitude N32 25.691 Longitude W103 12.721

**NATURE OF RELEASE**

Type of Release : Natural Gas and Produced water	Volume of Release: 100 Bbbls Fluid and 405 MCF Nat. Gas	Volume Recovered 65 Bbbls
Source of Release : 14" Natural Gas Pipeline	Date and Hour of Occurrence not known	Date and Hour of Discovery 9/24/07 Time: 9:03 a.m.
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Gary Wink On-call NMOCD	
By Whom? Tony Savoie	Date and Hour: 9/24/07 9:41 a.m.	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse	

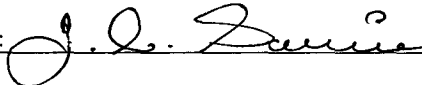
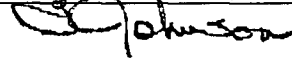

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*

A 14" Natural Gas gathering line operating at approximately 30 p.s.i. developed a leak. Repair crews arrived at the leak site with a vacuum truck and started containing and recovering the produced water. The leak area was excavated and the 16" natural gas line was temporarily repaired with a leak clamp.

Describe Area Affected and Cleanup Action Taken. Approximately 4,184 sq. ft. of lease road and pipeline right-of-way was affected by the leak and temporary repair. Approximately 65 Bbbls of produced water were recovered. Soil samples were collected at various locations within the spill site. The samples were analyzed for chloride and TPH, the analytical results are attached to this report. Final remediation will follow the NMOCD recommended guidelines for leaks and spills.

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: 		<b>OIL CONSERVATION DIVISION</b> 	
Printed Name: John A. Savoie		Approved by District <b>ENVIRONMENTAL ENGINEER</b>	
Title: Remediation Supervisor		Approval Date: 10.4.07	Expiration Date: 12.10.07
E-mail Address: tony.savoie@sug.com		Conditions of Approval:	
Date: 10/4/07 Phone: 505-395-2116		Attached <input type="checkbox"/> 	

\* Attach Additional Sheets If Necessary

SUBMIT FINAL C-141 w/ DOCUMENTATION 54

RP# 1608

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

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

Form C-141  
Revised October 10, 2003

Submit 2 Copies to appropriate  
District Office in accordance  
with Rule 116 on back  
side of form

## Release Notification and Corrective Action

### OPERATOR

Initial Report ☐ Final Report ☒

Name of Company	Southern Union Gas Services, Ltd.	Contact	Crystal Callaway
Address	801 S. Loop 464, Monahans, TX, 79756	Telephone No.	817-302-9407
Facility Name: Fullerton 14" (RP-1608) Lea County Field Dept.		Facility Type	Natural Gas Gathering
Surface Owner	Southern Union Gas Services	Mineral Owner: Fee	Lease No.

### LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	36	21S	36E					Lea

Latitude N32 25.691

Longitude W103 12.721

### NATURE OF RELEASE

Type of Release	Natural Gas and Produced Water	Volume of Release	100 Bbls Fluid and 405 MCF Nat. Gas	Volume Recovered	65 Bbls
Source of Release	14" Natural Gas Pipeline	Date and Hour of Occurrence	not known	Date and Hour of Discovery	9/24/07 Time: 9:03 a.m.
Was Immediate Notice Given?	X Yes No Not Required	If YES, To Whom?	Gary Wink On-Call NMOCD		
By Whom?	Tony Savoie	Date and Hour:	9/24/01 9:41 a.m.		
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:

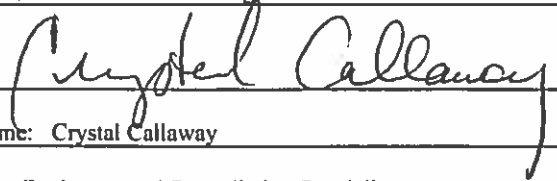
A 14" Natural Gas gathering line operating at approximately 30 p.s.i. developed a leak. Repair crews arrived at the leak site with a vacuum truck and started containing and recovering the produced water. The leak area was excavated and the pipeline was repaired with a temporary leak clamp.

Describe Area Affected and Cleanup Action Taken. Approximately 4,184 sq. ft. of lease road and pipeline right-of-way was affected by the leak and temporary repair. Approximately 65 Bbls of produced water were recovered. Previous soil samples were collected at various locations within the spill site. The samples were analyzed for chloride and TPH, the results of which were submitted to the NMOCD

On or around October 1, 2007, remediation activities were conducted at the Fullerton 14" Release Site by an environmental contractor that is no longer affiliated with the site. On August 30, 2012, the site was revisited in an effort to determine if soil exhibiting benzene, BTEX, TPH and chloride concentrations above NMOCD regulatory standards remained in-situ and collect confirmation soil samples. Laboratory analytical reports from the confirmation soil samples suggested previous remediation activities met the requirements of the NMOCD.

Please see the attached Basin Environmental Services Technologies Remediation Summary and Site Closure Request for details of remedial activities and the site investigation.

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: 	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Crystal Callaway	Approved by District Supervisor:	
Title: Senior Environmental Remediation Specialist	Approval Date:	Expiration Date:
E-mail Address: Crystal.Callaway@Regencygas.com	Conditions of Approval:	
Date: 10/13/2014	Phone: 817-302-9407	