Basin Environmental Service Technologies, LLC

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Effective Solutions

REMEDIATION SUMMARY &

SITE CLOSURE REQUEST

SOUTHERN UNION GAS SERVICES
6" LATERAL (1RP-1877)
HISTORICAL RELEASE SITE
Lea County, New Mexico
Unit Letter "G" (SW/NE), Section 15, Township 22 South, Range 37 East
Latitude 32° 23.667' North, Longitude 103° 08.939' West
NMOCD Reference # 1RP-1877

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

January 2013

Joel W. Lowry
Project Manager

TABLE OF CONTENTS

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 6-Inch Lateral Historical Release Site (1RP-1877). The legal description of the release site is Unit Letter "G" (SW/NE), Section 15, Township 22 South, Range 37 East, in Lea County, New Mexico. The geographic coordinates of the release site are 32° 23.667' North latitude and 103° 08.939' West longitude. The property affected by the release is owned by Mr. Irwin Boyd. Please reference Figure 1 for a "Site Location Map".

On May 22, 2008, Southern Union discovered a release had occurred on the 6" Lateral Pipeline. The "Release Notification and Corrective Action Form" (Form C-141) indicated a six-inch (6") natural gas pipeline had released an unknown volume of natural gas sometime prior to the construction of a caliche well pad over the leak location. During the removal of the caliche well pad, discolored soil was noted and brought to the attention of Southern Union. The release was reported to the New Mexico Oil Conservation Division (NMOCD) Hobbs District Office on June 11, 2008. The Form C-141 indicated the release affected approximately three thousand, and eighty square feet (3,080 ft^2) of pasture land. General photographs of the release site are provided as Appendix A. The Form C-141 is provided as Appendix C.

Between June 12 and 26, 2008, remediation activities were conducted at the 6" Lateral Historical Release Site by an environmental contractor that is no longer affiliated with the site. Work records indicate at least three hundred and ninety-six cubic yards (396 yd^3) of impacted material was transported to Southern Union Gas Services' Landfarm (Discharge Permit # NM-02-0019) for treatment during this time.

On June 22, 2012, at the request of Southern Union, Basin assumed remediation responsibilities at the 6" Lateral 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 the average depth to groundwater for Section 15, Township 22 South, Range 37 East is approximately one hundred and twenty-five feet (125') 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 6" Lateral 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 or around June 12, 2008, excavation activities began at the 6" Lateral Historical Release Site. Two (2) soil samples (PR @ Surface and PR @ 2') were collected near the release point and submitted to Cardinal Laboratories of Hobbs, NM, for analysis of TPH and Chloride concentrations. Laboratory analytical results indicated TPH concentrations ranged from less than the laboratory method detection limit (MDL) for soil sample PR @ 2' to 67.4 mg/Kg for soil sample PR @ Surface. Chloride concentrations ranged from 64 mg/Kg for soil sample PR @ 2' to 96 mg/Kg for soil sample PR @ Surface. 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 June 18, 2008, one (1) soil sample (PR @ 5') was collected near the release point at approximately five feet (5') bgs and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated the chloride concentration was 1,470 mg/Kg.

On June 20, 2008, six (6) soil samples (PR @ 7', PR @ 9', PR @ 11', PR @ 13', PR @ 14'6" and 14'S of PR @ 5') were collected from the remediation site and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations ranged from 96 mg/Kg for soil sample PR @ 11' to 272 mg/Kg for soil sample PR @ 7'.

Work records and field observations suggests the final dimensions of the former excavation were approximately fifty-five feet (55') in length, thirty feet (30') in width and five feet (5') to eight feet (8') in depth. On or around June 23, 2008, approximately three hundred ninety-six cubic yards (396 yd3) of impacted material was transported to Southern Union Gas Services' Landfarm (Discharge Permit # NM-02-0019) for treatment.

On December 7, 2012, Basin responded to the 6" Lateral Historical Release Site. An initial investigation was conducted to determine the extent of previous remediation activities.

On December 13, 2012, a series of test trenches were advanced in the disturbed area in an effort to determine if soil containing BTEX, TPH and chloride concentrations above NMOCD regulatory standards remained in-situ, and collect confirmation soil samples. Test trenches were advanced to the north, south, east and west from the inferred release point until native soil had been reached. Five (5) confirmation soil samples (Northeast SW @ 5', Northwest SW @ 3', Southeast SW @ 5', Southwest SW @ 8' and 14' South of PR @ 7') were collected and

submitted to Xenco Laboratories, of Odessa, Texas, for determination of TPH and chloride concentrations in accordance with EPA Methods SW 846-8015M and 300.1, respectively.

Laboratory analytical results indicated TPH concentrations were less than the appropriate laboratory method detection limit (MDL) for each of the samples submitted, with the exception of soil sample Southeast SW @ 5', which had a TPH concentration of 965 mg/Kg. Analytical results indicated chloride concentrations ranged from 20.0 mg/Kg for soil sample Southeast SW @ 3' to 65.8 mg/Kg for soil sample 14' South of PR @ 7'. Soil samples Southeast SW @ 5' and 14' South of PR @ 7' were also analyzed for concentrations of BTEX in accordance with EPA Method SW-846-8021B. The concentrations of BTEX was less than the laboratory MDL for each of the submitted soil samples.

4.0 QA/QC PROCEDURES

4.1 Soil Sampling

Soil samples were delivered to Xenco Laboratories, of Odessa, Texas, and/or Cardinal Laboratories, of 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 modified EPA Method SW-846 8015M
- Chloride concentrations in accordance with EPA Method 300/300.1 and/or 4500 Cl- B

4.2 Decontamination of Equipment

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

4.3 Laboratory Protocol

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

5.0 SITE CLOSURE REQUEST

Confirmation soil samples collected from the 6" Lateral Historical Release Site excavation were analyzed by and NMOCD-approved laboratory. Laboratory analytical results indicated benzene, BTEX, TPH and chloride concentrations were less than NMOCD regulatory remediation action levels in each of the submitted soil samples. 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 6" Lateral 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.

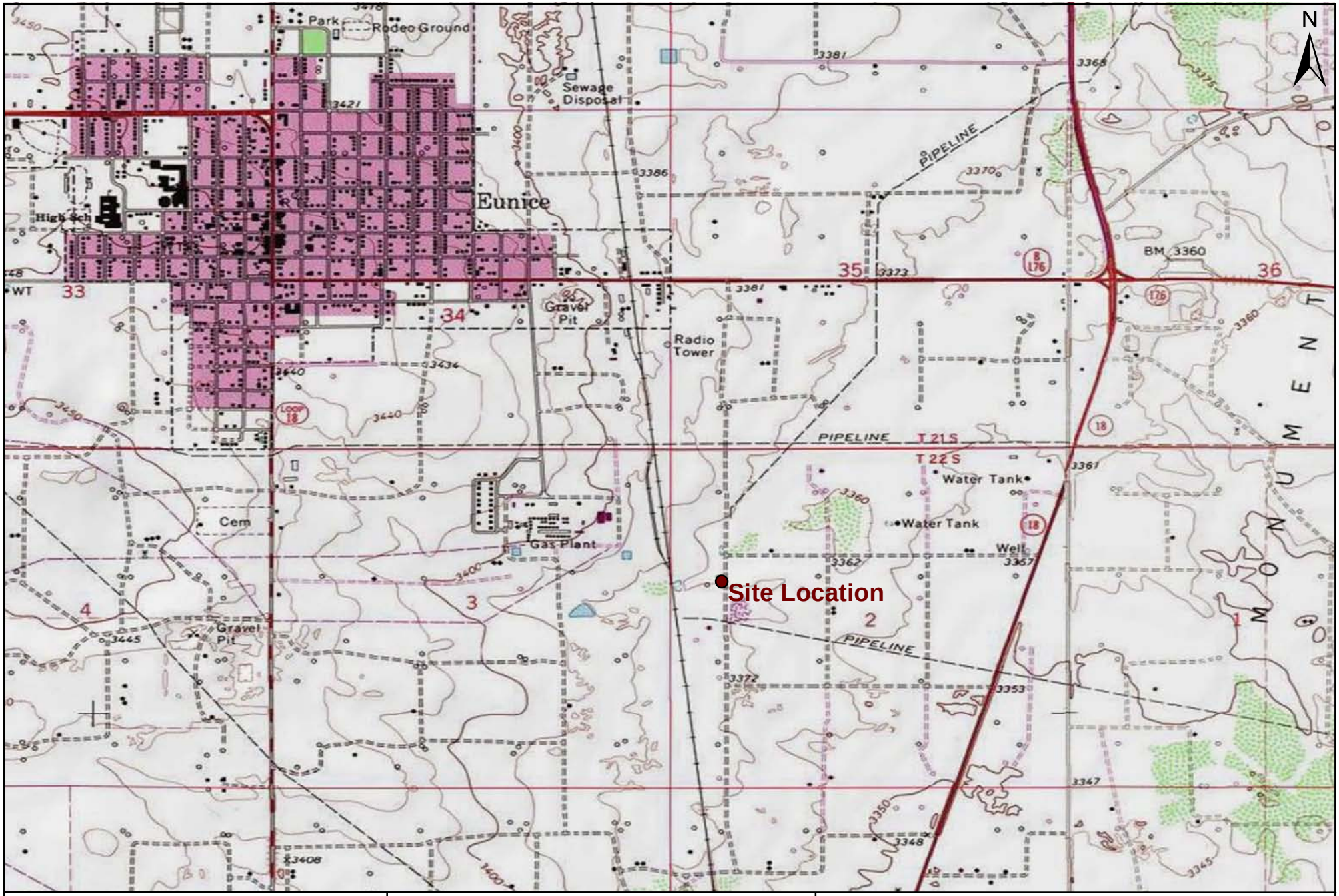
This report has been prepared for the benefit of Southern Union Gas Services. The information contained in this report, including all exhibits and attachments, may not be used by any other party without the express consent of Basin Environmental Service Technologies, LLC, and/or Southern Union Gas Services.

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

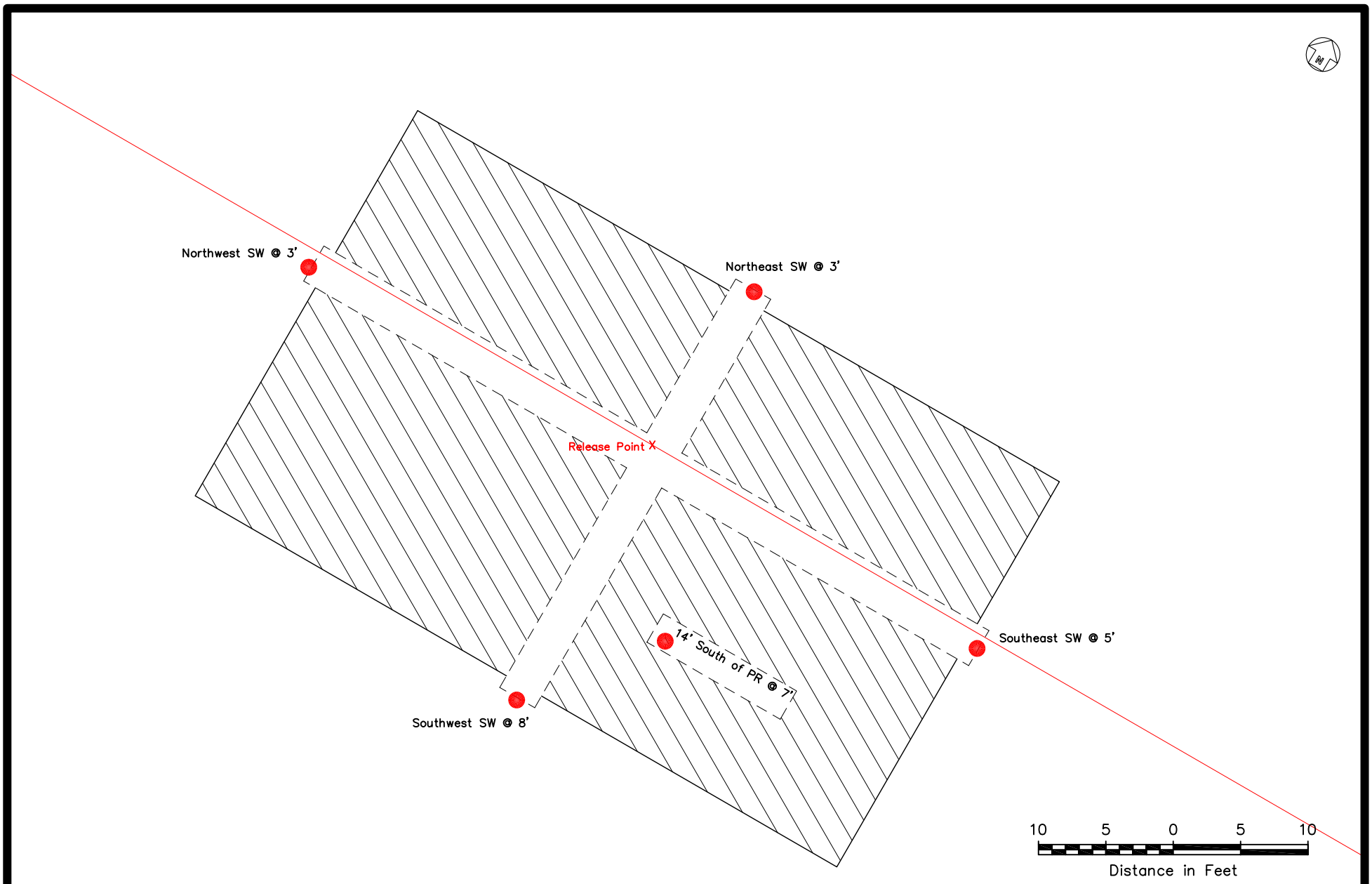
Distance in Feet

Figure 1
Site Location Map
Southern Union Gas Services
6" Lateral
Lea County, New Mexico
NMOCD Reference #: 1RP-1877

Basin Environmental Service Technologies
Effective Solutions

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

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



Legend

- Sample Location
- Test Trench
- Excavation Extent
- Pipeline
- Disturbed Area

Figure 2
Site & Sample Location Map
Southern Union Gas Services
6" Lateral
NMOCD Ref RP-1877
Lea County, New Mexico

Basin Environmental Services

Prep By: JWL	Checked By: BJA
December 18, 2012	Scale 1"=10'

TABLE 1

CONCENTRATIONS OF BENZENE, BTEX, TPH & CHLORIDE IN SOIL

SOUTHERN UNION GAS SERVICES
6" LATERAL
HISTORICAL RELEASE SITE
LEA COUNTY, NEW MEXICO
NMOCD REF# 1RP-1877

SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL-BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)	TOTAL BTEX (mg/Kg)	GRO C_6-C_{12} (mg/Kg)	DRO C_{12}-C_{28} (mg/Kg)	ORO C_{28}-C_{35} (mg/Kg)	TOTAL TPH C_6-C_{28} (mg/Kg)	CHLORIDE (mg/Kg)
PR @ Surface	Surface	6/12/2008	Excavated	-	-	-	-	-	<10.0	67.4	-	-	96
PR @ 2'	2'	6/12/2008	Excavated	-	-	-	-	-	<10.0	<10.0	-	-	64
PR @ 5'	5'	6/18/2008	N/A	<0.001	<0.001	<0.001	<0.003	<0.003	<10.0	<10.0	-	-	1,470
PR @ 7'	7'	6/20/2008	N/A	-	-	-	-	-	-	-	-	-	272
PR @ 9'	9'	6/20/2008	N/A	-	-	-	-	-	-	-	-	-	128
PR @ 11'	11'	6/20/2008	N/A	-	-	-	-	-	-	-	-	-	96
PR @ 13'	13'	6/20/2008	N/A	-	-	-	-	-	-	-	-	-	160
PR @ 14' 6"	14.5'	6/20/2008	N/A	-	-	-	-	-	-	-	-	-	112
14' S of PR @ 5'	5'	6/20/2008	N/A	-	-	-	-	-	-	-	-	-	448
Northeast SW @ 5'	5'	12/13/2012	In-Situ	-	-	-	-	-	<20.2	<20.2	<20.2	<20.2	31.1
Northwest SW @ 3'	3'	12/13/2012	In-Situ	-	-	-	-	-	<20.3	<20.3	<20.3	<20.3	59.1
Southeast SW @ 5'	5'	12/13/2012	In-Situ	<0.00122	<0.00243	<0.00122	<0.00243	<0.00243	34.4	900	30.8	965	20.0
Southwest SW @ 8'	8'	12/13/2012	In-Situ	-	-	-	-	-	<20.8	<20.8	<20.8	<20.8	26.3
14' South of PR @ 7'	7'	12/13/2012	In-Situ	<0.00130	<0.00261	<0.00130	<0.00261	<0.00261	<19.4	<19.4	<19.4	<19.4	65.8
NMOCD Standard				**10**				**50**				**5,000**	**1,000**

- = Not analyzed.

Photograph of the initial release at the 6” Lateral Historical Release Site.

Photograph of the initial release at the 6” Lateral Historical Release Site.

Photograph of delineation activities and confirmation sampling at the 6” Lateral Historical Release Site.

Photograph of delineation activities and confirmation sampling at the 6” Lateral Historical Release Site.

Photograph of delineation activities and confirmation sampling at the 6” Lateral Historical Release Site.

. Photograph of 6” Lateral Historical Release Site after delineation activities and confirmation sampling.

CARDINAL LABORATORIES

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

ANALYTICAL RESULTS FOR
SOUTHERN UNION GAS SERVICES
ATTN: TONY SAVOIE
P.O. BOX 1226
JAL, NM 88252
FAX TO: (575) 395-2092

Receiving Date: 06/12/08
Reporting Date: 06/13/08
Project Number: 2008-016
Project Name: BOYD 6" LATERAL
Project Location: I. BOYD RANCH

Sampling Date: 06/12/08
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: KS
Analyzed By: CK/KS

LAB NUMBER	SAMPLE ID	GRO (C_6-C_{10}) (mg/kg)	DRO (>C_{10}-C_{28}) (mg/kg)	Cl* (mg/kg)
ANALYSIS DATE		06/12/08	06/12/08	06/12/08
H14973-1	PR @ SURFACE	<10.0	67.4	96
H14973-2	PR @ 2'	<10.0	<10.0	64
Quality Control		569	584	490
True Value QC		500	500	500
% Recovery		114	117	98.0
Relative Percent Difference		2.6	4.9	2.0

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; Std. Methods 4500-Cl^-B
*Analyses performed on 1:4 w:v aqueous extracts.

Chemist

06/13/08
Date

H14973TCL SUG

CARDINAL LABORATORIES

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

Company Name:	S.U.G.S.
Project Manager:	Tony SAVOIE
Address:	610 COMMERCE P.O. Box 1226
City:	JAL State: NM Zip: 88252
Phone #:	575-395-2116 Fax #:
Project #:	2008-016 Project Owner: S.U.G.S
Project Name:	Boyd 6" LATERAL
Project Location:	E. Boyd RANCH
Sampler Name:	Don Green

BILL TO

P.O. #:	
Company:	SAME
Attn:	
Address:	
City:	
State:	Zip:
Phone #:	
Fax #:	

ANALYSIS REQUEST

TPH 8015M
Cl

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME
H14973-1	PR@ SURFACE	G	1			✓					✓		6/12/08	10:30
-2	PR@ 2'	G	1			✓					✓		11	11

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 consequental 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.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished: Don Green	Date: 6/12/08 Time: 12:04	Received By: Kristin Snyder	
Relinquished By:	Date: Time:	Received By:	
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Temp.	Sample Condition Cool: ☑ Yes ☐ No Intact: ☑ Yes ☐ No	CHECKED BY: (Initials) KS

Phone Result: ☐ No Add'l Phone #:
Fax Result: ☐ No Add'l Fax #:
REMARKS:

ASAP

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

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ANALYTICAL RESULTS FOR
SOUTHERN UNION GAS SERVICES
ATTN: TONY SAVOIE
P.O. BOX 1226
JAL, NM 88252
FAX TO: (575) 395-2092

Receiving Date: 06/18/08
Reporting Date: 06/19/08
Project Number: 2008-016
Project Name: BOYD 6" LAT.
Project Location: I. BOYD RANCH

Sampling Date: 06/18/08
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: AB
Analyzed By: CK/KS

LAB NUMBER SAMPLE ID	GRO (C_6-C_{10}) (mg/kg)	DRO (>C_{10}-C_{28}) (mg/kg)	Cl* (mg/kg)
ANALYSIS DATE	06/18/08	06/18/08	06/18/08
H15003-1 PR @ 5'	<10.0	<10.0	1,470
Quality Control	584	460	500
True Value QC	500	500	500
% Recovery	117	92.0	100
Relative Percent Difference	16.1	3.2	<0.1

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; Std. Methods 4500-Cl⁻B
*Analysis performed on a 1:4 w:v aqueous extract.

Chemist

06/19/08
Date

H15003TCL SUG

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ANALYTICAL RESULTS FOR
SOUTHERN UNION GAS SERVICES
ATTN: TONY SAVOIE
P.O. BOX 1226
JAL, NM 88252
FAX TO: (575) 395-2092

Receiving Date: 06/18/08
Reporting Date: 06/19/08
Project Number: 2008-016
Project Name: BOYD 6" LAT.
Project Location: I. BOYD RANCH

Sampling Date: 06/18/08
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: AB
Analyzed By: CK/AB

LAB NUMBER SAMPLE ID	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL BENZENE (mg/kg)	TOTAL XYLENES (mg/kg)
ANALYSIS DATE:	06/18/08	06/18/08	06/18/08	06/18/08
H15003-1 PR @ 5'	<0.001	<0.001	<0.001	<0.003
Quality Control	0.083	0.082	0.083	0.251
True Value QC	0.100	0.100	0.100	0.300
% Recovery	82.8	82.5	82.7	83.5
Relative Percent Difference	0.5	1.0	1.0	2.2

METHOD: EPA SW-846 8021B

Chemist

06/19/08
Date

H15003B.SUG

CARDINAL LABORATORIES

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

Company Name:	S.W.G.S.
Project Manager:	TONY SAVOIE
Address:	610 COMMERCE P.O. BOX 1226
City:	JAL State: N.M. Zip: 88252
Phone #:	575-395-2116 Fax #:
Project #:	2008-016 Project Owner: S.W.G.S.
Project Name:	Boyd 6" LAT.
Project Location:	J. Boyd RANCH
Sampler Name:	Don Green

BILL TO

P.O. #:	
Company:	SAME
Attn:	
Address:	
City:	
State:	Zip:
Phone #:	
Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	TPH 8015 M	BTEX 8021B/5030	CL
H15003-1	PRG 5'	G	1			✓					✓		6/18/08	8:20	✓	✓	✓

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 consequental 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.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished:	Date: 6/18/08	Received By:	
D Green	Time: 9:18		
Relinquished By:	Date:	Received By:	
	Time:		

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:

Temp.	Sample Condition Cool	Sample Condition Intact	CHECKED BY: (Initials)
	☒ Yes ☐ No	☒ Yes ☐ No	TB

Phone Result: ☐ No Add'l Phone #:
Fax Result: ☐ No Add'l Fax #:
REMARKS: ASAP

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

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ANALYTICAL RESULTS FOR
SOUTHERN UNION GAS SERVICES
ATTN: TONY SAVOIE
P.O. BOX 1226
JAL, NM 88252
FAX TO: (575) 395-2092

Receiving Date: 06/20/08
Reporting Date: 06/20/08
Project Number: 2008-016
Project Name: BOYD 6" LAT.
Project Location: I. BOYD RANCH

Analysis Date: 06/20/08
Sampling Date: 06/20/08
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: AB
Analyzed By: KS

LAB NO.	SAMPLE ID	Cl^- (mg/kg)
H15028-1	PR @ 7'	272
H15028-2	PR @ 9'	128
H15028-3	PR @ 11'	96
H15028-4	PR @ 13'	160
H15028-5	PR @ 14' 6"	112
H15028-6	14' S of RR @ 5'	448
Quality Control		510
True Value QC		500
% Recovery		102
Relative Percent Difference		2.0

METHOD: Standard Methods	4500-Cl^-B

Note: Analyses performed on 1:4 w:v aqueous extracts.

Kristen Sparks
Chemist

06/20/08
Date

H15028 SUGS

CARDINAL LABORATORIES

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

Company Name:	S.U.G.S.
Project Manager:	TONY SAVOIE
Address:	610 COMMERCE P.O. Box 1226
City:	JAL State: NM Zip: 88252
Phone #:	575-395-2116 Fax #:
Project #:	2008-016 Project Owner:
Project Name:	BOYD 6" LAT.
Project Location:	T. Boyd RANCH
Sampler Name:	Don Green

BILL TO

P.O. #:	
Company:	SAME
Attn:	
Address:	
City:	
State:	Zip:
Phone #:	
Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	CL
H15028-1	PR.@7'	G	1			✓					✓		6/24/08	9:00	✓
-2	PR@9'	G	1			✓					✓		"	"	✓
-3	PR@11'	G	1			✓					✓		"	"	✓
-4	PR@13'	G	1			✓					✓		"	"	✓
-5	PR@14'6"	G	1			✓					✓		"	"	✓
-6	14'S OF PR@5'	G	1			✓					✓		"	"	✓

Sampler Relinquished: Don Green	Date: 9/20/08 Time: 10:24	Received By:	
Relinquished By:	Date: Time:	Received By:	
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Temp.	Sample Condition Cool: ☒ Yes ☐ No Intact: ☒ Yes ☐ No	CHECKED BY: (Initials)

Phone Result:	☐	No	Add'l Phone #:
Fax Result:	☐	No	Add'l Fax #:

REMARKS: ASAP

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

Analytical Report 454258

for

Southern Union Gas Services- Monahans

Project Manager: Ben Arguijo

6-Inch Lateral

(RP-1877)

27-DEC-12

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Lakeland: Florida (E84098)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

27-DEC-12

Project Manager: **Ben Arguijo**
Southern Union Gas Services- Monahans
801 South Loop 464
Monahans, TX 79756

Reference: XENCO Report No(s): **454258**
6-Inch Lateral
Project Address: Lea County, NM

Ben Arguijo:

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(s) 454258. 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. The uncertainty of measurement associated with the results of analysis reported is available upon request. 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. 454258 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,

Nicholas Straccione
Project Manager

Sample Cross Reference 454258

Southern Union Gas Services- Monahans, Monahans, TX

6-Inch Lateral

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Northeast SW @ 5'	S	12-13-12 13:00		454258-001
Northwest SW @ 3'	S	12-13-12 13:20		454258-002
Southeast SW @5'	S	12-13-12 13:50		454258-003
Southwest SW @8'	S	12-13-12 14:10		454258-004
14' South of PR @ 7'	S	12-13-12 15:00		454258-005

CASE NARRATIVE

Client Name: Southern Union Gas Services- Monahans
Project Name: 6-Inch Lateral

Project ID:	*(RP-1877)*	*Report Date:*	*27-DEC-12*
Work Order Number(s):	*454258*	*Date Received:*	*12/17/2012*

Sample receipt non conformances and comments:
None

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 454258

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: 6-Inch Lateral

Project Id: (RP-1877)
Contact: Ben Arguijo
Project Location: Lea County, NM

Date Received in Lab: Mon Dec-17-12 09:40 am
Report Date: 27-DEC-12
Project Manager: Nicholas Straccione

Analysis Requested											
	Lab Id:	454258-001		454258-002		454258-003		454258-004		454258-005	
	Field Id:	Northeast SW @ 5'		Northwest SW @ 3'		Southeast SW @5'		Southwest SW @8'		14' South of PR @ 7'	
	Depth:										
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Dec-13-12 13:00		Dec-13-12 13:20		Dec-13-12 13:50		Dec-13-12 14:10		Dec-13-12 15:00	
BTEX by EPA 8021B	***Extracted:***					Dec-21-12 14:30				Dec-17-12 10:20	
	Analyzed:					Dec-21-12 19:38				Dec-17-12 11:56	
	Units/RL:					mg/kg	RL			mg/kg	RL
Benzene						ND	0.00122			ND	0.00130
Toluene						ND	0.00243			ND	0.00261
Ethylbenzene						ND	0.00122			ND	0.00130
m_p-Xylenes						ND	0.00243			ND	0.00261
o-Xylene						ND	0.00122			ND	0.00130
Total Xylenes						ND	0.00122			ND	0.00130
Total BTEX						ND	0.00122			ND	0.00130
Inorganic Anions by EPA 300/300.1 SUB: TX104704215	***Extracted:***	Dec-18-12 15:29		Dec-18-12 16:03		Dec-18-12 16:21		Dec-18-12 16:38		Dec-18-12 16:56	
	Analyzed:	Dec-18-12 15:29		Dec-18-12 16:03		Dec-18-12 16:21		Dec-18-12 16:38		Dec-18-12 16:56	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		31.1	1.38	59.1	1.36	20.0	1.21	26.3	1.39	65.8	1.31
Percent Moisture	***Extracted:***										
	Analyzed:	Dec-17-12 15:00		Dec-17-12 15:00		Dec-17-12 15:00		Dec-17-12 15:08		Dec-17-12 15:08	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		26.0	1.00	26.4	1.00	17.7	1.00	27.9	1.00	23.2	1.00
TPH By SW8015 Mod	***Extracted:***	Dec-18-12 14:00		Dec-18-12 14:00		Dec-18-12 14:00		Dec-18-12 14:00		Dec-18-12 14:00	
	Analyzed:	Dec-18-12 17:13		Dec-18-12 17:44		Dec-18-12 18:14		Dec-18-12 18:47		Dec-18-12 19:20	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		ND	20.2	ND	20.3	34.4	18.2	ND	20.8	ND	19.4
C12-C28 Diesel Range Hydrocarbons		ND	20.2	ND	20.3	900	18.2	ND	20.8	ND	19.4
C28-C35 Oil Range Hydrocarbons		ND	20.2	ND	20.3	30.8	18.2	ND	20.8	ND	19.4
Total TPH		ND	20.2	ND	20.3	965	18.2	ND	20.8	ND	19.4

Nicholas Straccione
Project Manager

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 affect the recovery of the spike concentration. This condition could also affect 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 quantiation limit and above the detection limit.

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.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
6017 Financial Drive, Norcross, GA 30071	(770) 449-8800	(770) 449-5477
3725 E. Atlanta Ave, Phoenix, AZ 85040	(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: 6-Inch Lateral

Work Orders : 454258, 454258 **Project ID:** (RP-1877)

Lab Batch #: 903016 **Sample:** 454258-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/17/12 11:56

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0276	0.0300	92	80-120	
4-Bromofluorobenzene	0.0258	0.0300	86	80-120	

Lab Batch #: 903201 **Sample:** 454258-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/18/12 17:13

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.5	99.7	90	70-135	
o-Terphenyl	44.2	49.9	89	70-135	

Lab Batch #: 903201 **Sample:** 454258-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/18/12 17:44

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.7	99.6	87	70-135	
o-Terphenyl	43.1	49.8	87	70-135	

Lab Batch #: 903201 **Sample:** 454258-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/18/12 18:14

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.9	100	88	70-135	
o-Terphenyl	48.5	50.1	97	70-135	

Lab Batch #: 903201 **Sample:** 454258-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/18/12 18:47

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.5	99.8	87	70-135	
o-Terphenyl	43.1	49.9	86	70-135	

* Surrogate outside of Laboratory QC limits

** 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: 6-Inch Lateral

Work Orders : 454258, 454258 **Project ID:** (RP-1877)

Lab Batch #: 903201 **Sample:** 454258-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/18/12 19:20

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.0	99.5	88	70-135	
o-Terphenyl	43.0	49.8	86	70-135	

Lab Batch #: 903510 **Sample:** 454258-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/21/12 19:38

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0250	0.0300	83	80-120	
4-Bromofluorobenzene	0.0245	0.0300	82	80-120	

Lab Batch #: 903016 **Sample:** 631322-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/17/12 09:54

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0271	0.0300	90	80-120	

Lab Batch #: 903201 **Sample:** 631430-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/18/12 16:44

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.7	99.8	94	70-135	
o-Terphenyl	45.7	49.9	92	70-135	

Lab Batch #: 903510 **Sample:** 631627-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/21/12 16:18

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0258	0.0300	86	80-120	
4-Bromofluorobenzene	0.0304	0.0300	101	80-120	

* Surrogate outside of Laboratory QC limits

** 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: 6-Inch Lateral

Work Orders : 454258, 454258 **Project ID:** (RP-1877)

Lab Batch #: 903016 **Sample:** 631322-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/17/12 09:26

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0305	0.0300	102	80-120	
4-Bromofluorobenzene	0.0268	0.0300	89	80-120	

Lab Batch #: 903201 **Sample:** 631430-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/18/12 15:40

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.9	99.8	97	70-135	
o-Terphenyl	56.8	49.9	114	70-135	

Lab Batch #: 903510 **Sample:** 631627-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/21/12 15:10

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0309	0.0300	103	80-120	
4-Bromofluorobenzene	0.0346	0.0300	115	80-120	

Lab Batch #: 903016 **Sample:** 631322-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/17/12 09:38

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0345	0.0300	115	80-120	
4-Bromofluorobenzene	0.0312	0.0300	104	80-120	

Lab Batch #: 903201 **Sample:** 631430-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/18/12 16:15

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.9	99.9	89	70-135	
o-Terphenyl	52.8	50.0	106	70-135	

* Surrogate outside of Laboratory QC limits

** 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: 6-Inch Lateral

Work Orders : 454258, 454258 **Project ID:** (RP-1877)

Lab Batch #: 903510 **Sample:** 631627-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/21/12 15:27

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0294	0.0300	98	80-120	
4-Bromofluorobenzene	0.0248	0.0300	83	80-120	

Lab Batch #: 903016 **Sample:** 454259-002 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/17/12 15:19

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0322	0.0300	107	80-120	
4-Bromofluorobenzene	0.0283	0.0300	94	80-120	

Lab Batch #: 903201 **Sample:** 454258-005 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/19/12 02:09

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.3	99.8	94	70-135	
o-Terphenyl	55.6	49.9	111	70-135	

Lab Batch #: 903510 **Sample:** 454482-028 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/21/12 20:11

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0304	0.0300	101	80-120	

Lab Batch #: 903016 **Sample:** 454259-002 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/17/12 15:36

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0356	0.0300	119	80-120	
4-Bromofluorobenzene	0.0325	0.0300	108	80-120	

* Surrogate outside of Laboratory QC limits

** 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: 6-Inch Lateral

Work Orders : 454258, 454258 **Project ID:** (RP-1877)

Lab Batch #: 903201 **Sample:** 454258-005 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/19/12 02:39

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.7	99.9	96	70-135	
o-Terphenyl	51.7	50.0	103	70-135	

Lab Batch #: 903510 **Sample:** 454482-028 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/21/12 20:27

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0307	0.0300	102	80-120	
4-Bromofluorobenzene	0.0297	0.0300	99	80-120	

* Surrogate outside of Laboratory QC limits

** 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.

BS / BSD Recoveries

Project Name: 6-Inch Lateral

Work Order #: 454258, 454258 **Project ID:** (RP-1877)

Analyst: KEB **Date Prepared:** 12/17/2012 **Date Analyzed:** 12/17/2012

Lab Batch ID: 903016 **Sample:** 631322-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00101	0.101	0.0876	87	0.0996	0.110	110	23	70-130	35	
Toluene	<0.00201	0.101	0.0888	88	0.0996	0.111	111	22	70-130	35	
Ethylbenzene	<0.00101	0.101	0.0872	86	0.0996	0.107	107	20	71-129	35	
m_p-Xylenes	<0.00201	0.201	0.187	93	0.199	0.227	114	19	70-135	35	
o-Xylene	<0.00101	0.101	0.0906	90	0.0996	0.113	113	22	71-133	35	

Analyst: KEB **Date Prepared:** 12/21/2012 **Date Analyzed:** 12/21/2012

Lab Batch ID: 903510 **Sample:** 631627-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000996	0.0996	0.111	111	0.0998	0.0918	92	19	70-130	35	
Toluene	<0.00199	0.0996	0.113	113	0.0998	0.0966	97	16	70-130	35	
Ethylbenzene	<0.000996	0.0996	0.111	111	0.0998	0.0913	91	19	71-129	35	
m_p-Xylenes	<0.00199	0.199	0.238	120	0.200	0.193	97	21	70-135	35	
o-Xylene	<0.000996	0.0996	0.114	114	0.0998	0.0891	89	25	71-133	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: 6-Inch Lateral

Work Order #: 454258, 454258 **Project ID:** (RP-1877)

Analyst: JOL **Date Prepared:** 12/18/2012 **Date Analyzed:** 12/18/2012

Lab Batch ID: 903211 **Sample:** 631436-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.500	50.0	52.7	105	50.0	52.7	105	0	80-120	20	

Analyst: KEB **Date Prepared:** 12/18/2012 **Date Analyzed:** 12/18/2012

Lab Batch ID: 903201 **Sample:** 631430-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.0	998	1030	103	999	949	95	8	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	998	999	100	999	930	93	7	70-135	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS Recoveries

Project Name: 6-Inch Lateral

Work Order #: 454258
Lab Batch #: 903211
Project ID: (RP-1877)
Date Analyzed: 12/18/2012
Date Prepared: 12/18/2012
Analyst: JOL
QC- Sample ID: 454258-001 S
Batch #: 1
Matrix: Soil
Reporting Units: mg/kg

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	31.1	138	172	102	80-120	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

Form 3 - MS / MSD Recoveries

Project Name: 6-Inch Lateral

Work Order # : 454258 **Project ID:** (RP-1877)

Lab Batch ID: 903016 **QC- Sample ID:** 454259-002 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 12/17/2012 **Date Prepared:** 12/17/2012 **Analyst:** KEB

Reporting Units: mg/kg

BTEX by EPA 8021B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	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
Benzene	<0.00114	0.114	0.108	95	0.114	0.111	97	3	70-130	35	
Toluene	<0.00227	0.114	0.109	96	0.114	0.114	100	4	70-130	35	
Ethylbenzene	<0.00114	0.114	0.101	89	0.114	0.107	94	6	71-129	35	
m_p-Xylenes	<0.00227	0.227	0.213	94	0.228	0.223	98	5	70-135	35	
o-Xylene	<0.00114	0.114	0.100	88	0.114	0.118	104	17	71-133	35	

Lab Batch ID: 903510 **QC- Sample ID:** 454482-028 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 12/21/2012 **Date Prepared:** 12/21/2012 **Analyst:** KEB

Reporting Units: mg/kg

BTEX by EPA 8021B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	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
Benzene	<0.00108	0.108	0.0910	84	0.108	0.102	94	11	70-130	35	
Toluene	<0.00216	0.108	0.0942	87	0.108	0.104	96	10	70-130	35	
Ethylbenzene	<0.00108	0.108	0.0863	80	0.108	0.0973	90	12	71-129	35	
m_p-Xylenes	<0.00216	0.216	0.180	83	0.216	0.206	95	13	70-135	35	
o-Xylene	<0.00108	0.108	0.0882	82	0.108	0.0993	92	12	71-133	35	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(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

Form 3 - MS / MSD Recoveries

Project Name: 6-Inch Lateral

Work Order # : 454258 **Project ID:** (RP-1877)

Lab Batch ID: 903201 **QC- Sample ID:** 454258-005 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 12/19/2012 **Date Prepared:** 12/18/2012 **Analyst:** KEB

Reporting Units: mg/kg

TPH By SW8015 Mod Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	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	<19.5	1300	1400	108	1300	1320	102	6	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<19.5	1300	1350	104	1300	1300	100	4	70-135	35	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

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

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

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: 6-Inch Lateral

Work Order #: 454258

Lab Batch #: 903085 **Project ID:** (RP-1877)

Date Analyzed: 12/17/2012 11:55 **Date Prepared:** 12/17/2012 **Analyst:** WRU

QC- Sample ID: 454205-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	1.16	1.11	4	20	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Xenco Laboratories

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

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

Project Manager: Ben J. Arguijo; Joel Lowry
Project Name: 6-Inch Lateral

Company Name: Basin Environmental Service Technologies, LLC
Project #: (RP-1877)

Company Address: P.O. Box 301
Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260
PO #: Bill Southern Union Gas

Telephone No: (575)396-2378
Fax No: (575) 396-1429
Report Format: [X] Standard [ ] TRRP [ ] NPDES

Sampler Signature: Joel Lowry
e-mail: pm@basinenv.com

(lab use only)
ORDER #: 454258

Analyze For: TCLP: / TOTAL: X (BTEX)

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix (DW=Drinking Water SL=Sludge; GW=Groundwater S=Soil/Solid; NP=Non-Potable Specify Other)	TPH: 418.1 8015M 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	CHLORIDES	Total Dissolved Solids		RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT 4 DAY
01	Northeast SW @ 5'			12/13/2012	1300		1	X								Soil	X											X				X
02	Northwest SW @ 3'			12/13/2012	1320		1	X								Soil	X											X				X
03	Southeast SW @ 5'			12/13/2012	1350		1	X								Soil	X											X				X
04	Southwest SW @ 8'			12/13/2012	1410		1	X								Soil	X											X				X
05	14' South of PR @ 7'			12/13/2012	1500		1	X								Soil	X								X			X				X

Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
Joel Lowry	12/14/12	1105	[signature]	12/14/12	1105
[signature]	12/14/12	1405	[signature]	12.14.12	14:45
[signature]	12.14.12	15:40	Received by ELOT: Steve Butler	12-14-12	1541

Laboratory Comments:
Sample Containers Intact? (Y) N
VOCs Free of Headspace? (Y) N
Labels on container(s) (Y) N
Custody seals on container(s) Y (N)
Custody seals on cooler(s) Y (N)
Sample Hand Delivered (Y) N
by Sampler/Client Rep. ? Y N
by Courier? UPS DHL (FedEx) Lone Star
Temperature Upon Receipt: 1.1 °C 1.5

Shaune Smith 12/17/12 9:40

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Southern Union Gas Services- Monahan

Date/ Time Received: 12/17/2012 09:40:00 AM

Work Order #: 454258

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	-1.5
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**
#5 Custody Seals intact on sample bottles?	**Yes**
#6 *Custody Seals Signed and dated?	**Yes**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**Yes**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**Yes**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	**Yes**
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**Yes**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:	PH Device/Lot#:

Checklist completed by: _____ Date: _____

Checklist reviewed by: _____ Date: _____

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

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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	Contact	Curt Stanley
Address	801 S. Loop 464, Monahans, TX 79756	Telephone No.	575-390-7595
Facility Name	6 inch Lateral	Facility Type	Natural Gas Pipeline

Surface Owner State of New Mexico		Lease No. 30-025-38822

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	2	22S	37E					Lea

Latitude 32 degrees 25.341' North **Longitude** 103 degrees 08.405 West

NATURE OF RELEASE

Type of Release Natural Gas, Crude Oil and Produced Water	Volume of Release 7 BBLS	Volume Recovered None
Source of Release Natural Gas Pipeline	Date and Hour of Occurrence February 23, 2011 – Time Unknown	Date and Hour of Discovery February 23, 2011 – 0700 hours
Was Immediate Notice Given? ☒ Yes ☐ No ☒ Not Required	If YES, To Whom? Geoffrey Leking – NMOCD Hobbs District Office	
By Whom? Curt Stanley	Date and Hour February 23, 2011 – 1554 hours	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
A six (6)-inch low pressure natural gas pipeline developed a leak due to internal corrosion of the pipeline, resulting in a release of natural gas, crude oil and produced water. During initial response activities the pipeline was fitted with a temporary pipeline clamp to mitigate the release. Following initial response activities, the affected pipeline segment will be slip lined.

Describe Area Affected and Cleanup Action Taken.*
The affected area is approximately 1,500 square feet and occupies a caliche well pad. The release will be remediated according to NMOCD regulatory 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: Curt D. Stanley

Printed Name: Curt D. Stanley

Title: EHS Compliance Specialist

E-mail Address: curt.stanley@sug.com

Date: February 28, 2011 Phone: 575-390-7595

OIL CONSERVATION DIVISION

Approved by ~~District Supervisor:~~ ENVENGINEER: Geoffrey Leking

Approval Date: 03/08/11 Expiration Date: 05/08/11

Conditions of Approval: SUBMIT FINAL C-141 BY 05/08/11.

Attached ☐ IRP-03-11-2690

* Attach Additional Sheets If Necessary

District I
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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:	6" Lateral (RP-1877)	Facility Type	Natural Gas Gathering

Surface Owner Irwin Boyd	Mineral Owner: Federal	Lease No. 30-025-10277

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
G	15	22S	37E					Lea

Latitude N32 23.667 **Longitude W103 08.939**

NATURE OF RELEASE

Type of Release: Natural Gas	Volume of Release Unknown	Volume Recovered None
Source of Release: 12" Natural Gas Pipeline	Date and Hour of Occurrence Unknown	Date and Hour of Discovery 5/22/08 Time: 8:00 a.m.
Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required	If YES, To Whom?	
By Whom?	Date and Hour:	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken:
A 6" natural gas pipeline had apparently leaked at sometime prior to the construction of a caliche well pad over the leak location. Chesapeake Company employed EPI to remove the caliche pad and restore the surface back to pasture land under the direction of the BLM. While removing the caliche the discolored soil was discovered and reported to Southern Union Gas Services.

Describe Area Affected and Cleanup Action Taken.* On 5/29/08 a Site Assessment was performed to determine if the pipeline was still active or leaking. It was determined that the affected area of leaking pipe had previously been repaired. Approximately 3080 sq. ft. of pasture was affected by the release. Remediation activities will follow the NMOCD Guidelines.

Between June 12 and 26, 2008, remediation activities were conducted at the 6" Lateral Release Site by an environmental contractor that is no longer affiliated with the site. Environmental Records indicate 396 yd^3 of impacted material was transported to the SUG Landfarm during this time. On December 7, 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 results from the confirmation soil samples suggested previous remediation activities met the requirements of the NMOCD.

Please reference 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: Crystal Callaway	OIL CONSERVATION DIVISION	
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: 10/32/14 Phone: (817) 302-9407		