recommended guidelines.

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

100

			OPERATOR	Initial Report	🛛 Final Repor
Name of Company	Southern Unior	n Gas Services, Ltd.	Contact		Rose Slade
Address	801 S. Loop 464, Mor	nahans, TX, 79756	Telephone No.		432-940-5147
Facility Name: S &	W 4" Lateral (RP-1018) Lea Co. Field Dept.	Facility Type	Natu	ral Gas Gathering
r					
Surface Owner Sta	te of New Mexico	Mineral Owner:	State of New Mexico	Lease No.	

LOCATION OF RELEASE

Ur		Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	J	16	20S	37E					Lea

Latitude N32 34.160 Longitude W103 15.249

NATURE OF RELEASE Type of Release Natural Gas, gas liquids and iron sulfide Volume of Release 22.5 mcf nat. Volume Recovered 0 bbls gas, 15 bbls nat. gas liquids Source of Release Date and Hour of Occurrence Date and Hour of Discovery 5/27/06 Pipeline 5/27/06 Hour unknown. Hour unknown If YES, To Whom? Was Immediate Notice Given? Yes No Not Required Date and Hour: 7/21/07 By Whom? Tony Savoie Was a Watercourse Reached? If YES, Volume Impacting the Watercourse. 🗌 Yes 🛛 No If a Watercourse was Impacted, Describe Fully.* Describe Cause of Problem and Remedial Action Taken: The 4" steel gathering pipeline, operating at 20 psi developed a leak, the line was blocked in and allowed to blow down on 5/27/06. Repair crews replaced the affected area of pipe by replacing approximately 400 ft. of steel pipe with poly-pipe on 8/11/06. Normal operating pressure on the line is 20 psi to 30 psi, with a potential H_2S content of 4000 ppm. Describe Area Affected and Cleanup Action Taken. An area measuring approximately 2175 ft² of pasture land was affected around the immediate leak area with a mist of iron sulfide and natural gas liquids. No immediate cleanup action was taken. The impacted soil will be remediated using the NMOCD

On or around August 14, 2006, remediation activities were conducted at the S & W 4" Lateral Release Site by an environmental contractor that is no longer affiliated with the site. During remediation activities at least 132 yd³ of impacted material was excavated from the release site and hauled to SUGs Landfarm. On December 20, 2012, the site was revisited in an effort to determine if soil exhibiting sulfide, 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.

reactar, signe, or local lans and of	- egulations:			
Signature: ADSe &	Dade	OIL CONSER	Bless	LeRmy
Printed Name: Rose L. Slade		Approved by District Superviso	vironmenta	l Specialist U
Title: EHS Compliance Specialis	st	Approval Date: 3/1/13	Expiration D	Date:
E-mail Address: rose.slade@sug.	com	Conditions of Approval:		
Date:	Phone: 432-940-5147(cell)		2013	IRP-1018
		MAR U 4		

Basin Environmental Service Technologies, LLC

3100 Plains Highway P. O. Box 301 Lovington, New Mexico 88260 jwlowry@basinenv.com Office: (575) 396-2378 Fax: (575) 396-1429

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ß **Effective Solutions**

REMEDIATION SUMMARY &

SITE CLOSURE REQUEST

SOUTHERN UNION GAS SERVICES S & W 4" LATERAL (1RP-1018) HISTORICAL RELEASE SITE Lea County, New Mexico Unit Letter "J" (NW/SE), Section 16, Township 20 South, Range 37 East Latitude 32° 34.160' North, Longitude 103° 15.249' West NMOCD Reference # 1RP-1018

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

HOBBS OCD

February 2013

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wrv Project Manager

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2.0	NMOCD SITE CLASSIFICATION	1
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TABLES

Table 1 – Concentrations of Benzene, BTEX, TPH & Chloride in Soil

APPENDICES

Appendix A – Photographs

Appendix B – Laboratory Analytical Reports

Appendix C – Release Notification and Corrective Action (Form C-141)

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 S & W 4" Lateral Historical Release Site (1RP-1018). The legal description of the release site is Unit Letter "J" (NW/SE), Section 16, Township 20 South, Range 37 East, in Lea County, New Mexico. The geographic coordinates of the release site are 32° 34.160' North latitude and 103° 15.249' West longitude. The property affected by the release is owned by the State of New Mexico and administered by the New Mexico State Land Office (NMSLO). Please reference Figure 1 for a "Site Location Map".

On May 22, 2008, Southern Union discovered a release had occurred on the S & W 4" Lateral Pipeline. The "Release Notification and Corrective Action Form" (Form C-141) indicated failure of a section of four-inch (4") steel natural gas gathering pipeline resulted in the release of twenty-two and one half (22.5) Mcf of natural gas and fifteen barrels (15 bbls) of natural gas liquids, including iron sulfide. The release was reported to the New Mexico Oil Conservation Division (NMOCD) Hobbs District Office on August 28, 2006. During initial response activites, the line was blocked in and allowed to blow down. The affected segmet of pipe was replaced on September 11, 2006. The Form C-141 indicated a mist of iron sulfide and natural gas liquids affected approximately two thousand, one hundred and seventy-five square feet (2,175 ft²) of pasture land. General photographs of the release site are provided as Appendix A. The Form C-141 is provided as Appendix C.

Between August 4 and September 18, 2006, remediation activities were conducted at the S & W 4" Lateral Historical Release Site by an environmental contractor that is no longer affiliated with the site. Work records indicate at least one hundred and thirty-two cubic yards (132 yd³) of impacted material was transported to Southern Union's 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 S & W 4" 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 information was unavailable for Section 16, Township 20 South, Range 37 East. An inferred depth to groundwater gradient map utilized by the NMOCD indicated groundwater should be encountered at approximately twenty-five feet (25') below ground surface (bgs). Based on the NMOCD ranking system, twenty (20) 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 S & W 4" Lateral Historical Release Site has an initial ranking score of twenty (20) points. The soil remediation levels for a site with a ranking score of greater than nineteen (>19) points are as follows:

- Benzene -10 mg/Kg (ppm)
- Benzene, toluene, ethylbenzene and xylene (BTEX) 50 mg/Kg (ppm)
- Total petroleum hydrocarbons (TPH) 100 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 August 14, 2006, excavation activities began at the S & W 4" Lateral Historical Release Site. Eight (8) initial soil samples (Release Point Surface, Release Point 4' BGS, Release Point 6' BGS, West Bell Hole 1' BGS, West Bell Hole 4' BGS, West Ponded Area 6" BGS, West Ponded Area 1' BGS and West Ponded Area Surface) were collected near the release point and submitted to the Environmental Lab of Texas, of Odessa, Texas, for analysis of TPH concentrations. Laboratory analytical results indicated TPH concentrations ranged from 17.5 mg/Kg for soil sample West Ponded Area 1' BGS and West Ponded Area 1' BGS to 4,020 mg/Kg for soil sample Release Point 6' BGS and West Ponded Area 1' BGS were also analyzed for concentrations of BTEX, which were determined to be less than the laboratory method detection limit (MDL). 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 September 7, 2006, one (1) confirmation soil sample (SW-1) was collected from excavated area for analysis of TPH concentrations. Laboratory analytical results indicated TPH concentration was less than the laboratory MDL.

On September 18, 2006, seven (7) confirmation soil samples (PR @ 9', B-Comp., S-Comp., NW-Copm., SW-Comp., P-Comp. and S-5) were collected from the floor and sidewalls of the excavated area for analysis of TPH concentrations. Laboratory analytical results indicated TPH concentrations were less than the laboratory MDL for each of the submitted soil samples, with the exception of soil sample S-5, which exhibited a concentration of 10.3 mg/Kg. Soil sample S-5 was also analyxed for concentrations of BTEX, which were determined to be less than the laboratory MDL. Confirmation soil samples were not analyzed for concentrations of sulfide or chloride

On December 20, 2012, Basin responded to the S & W 4" Lateral Historical Release Site. During the initial investigation, a series of test trenches (TT-1 through TT-7) were advanced in the disturbed areas in an effort to determine if soil containing sulfide, BTEX, TPH and chloride concentrations above NMOCD regulatory standards remained in-situ, and to collect confirmation soil samples. During the advancement of the test trenches, soil samples were collected from the surface, four feet (4') and six feet (6') bgs and submitted to Xenco Laboratories, of Odessa, Texas, for determination of TPH and chloride concentrations. Laboratory analytical results

indicated TPH concentrations were less than the appropriate laboratory MDL for each of the submitted soil samples. with the exception of soil sample TT-3 @ 6', which had a concentration of 74.1 mg/Kg. Chloride concentrations were less than 10 mg/Kg for each of the submitted soil samples with the exception of soil sample TT-5 @ Surface which had a concentration of 10.7 mg/Kg. Soil samples TT-2 @ 6', TT-3 @ 6' and TT-4 @ 6' were also analyzed for concentrations of BTEX, which were determined to be less than the appropriate laboratory MDL for each of the soil samples. Soil samples TT-2 @ 6', TT-3 @ 6' and TT-4 @ 6' were also analyzed for concentrations of sulfide, which were determined to be less than the laboratory MDL for each of the soil samples with the exception of soil samples TT-2 @ 6', TT-3 @ 6' and TT-4 @ 6', which had a concentration of 64.0 mg/Kg. Concentrations of BTEX, TPH, chloride and sulfide were below NMOCD regulatory standards for each of the submitted soil samples.

On January 24, 2012, upon receiving analytical results from the initial investigation, a handauger was utlizied to advance a soil bore in the area represented by test trench TT-3. During the advancement of the soil bore, two (2) soil samples (SB#1 @ 8' and SB#1 @ 10') were collected and submitted to the laboratory for analysis of TPH concentrations. Laboratory analytical results indicated TPH concentrations were 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 Environmental Labs of Texas, of Odessa, Texas, for BTEX, TPH, chloride, and/or sulfide 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
- Sulfide concentrations in accordance with EPA Method SW-846 9030B

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 S & W 4" Lateral Historical Release Site were analyzed by an NMOCD-approved laboratory, which determined that benzene, BTEX, TPH, chloride and sulfide concentrations were less than NMOCD regulatory remediation action levels for each of the submitted soil samples. Based on these laboratory analytical results, Basin recommends Southern Union provide the NMOCD Hobbs District Office and the NMSLO a copy of this *Remediation Summary & Site Closure Request* and request the NMOCD grant site closure to the S & W 4" 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: Bill Sonnamaker New Mexico State Land Office 2702-D North Grimes Hobbs, NM 88240
- Copy 3: Rose Slade Southern Union Gas Services 801 S. Loop 464 Monahans, Texas 79756 rose.slade@sug.com
- Copy 4: Basin Environmental Service Technologies, LLC P.O. Box 301 Lovington, New Mexico 88260

FIGURES

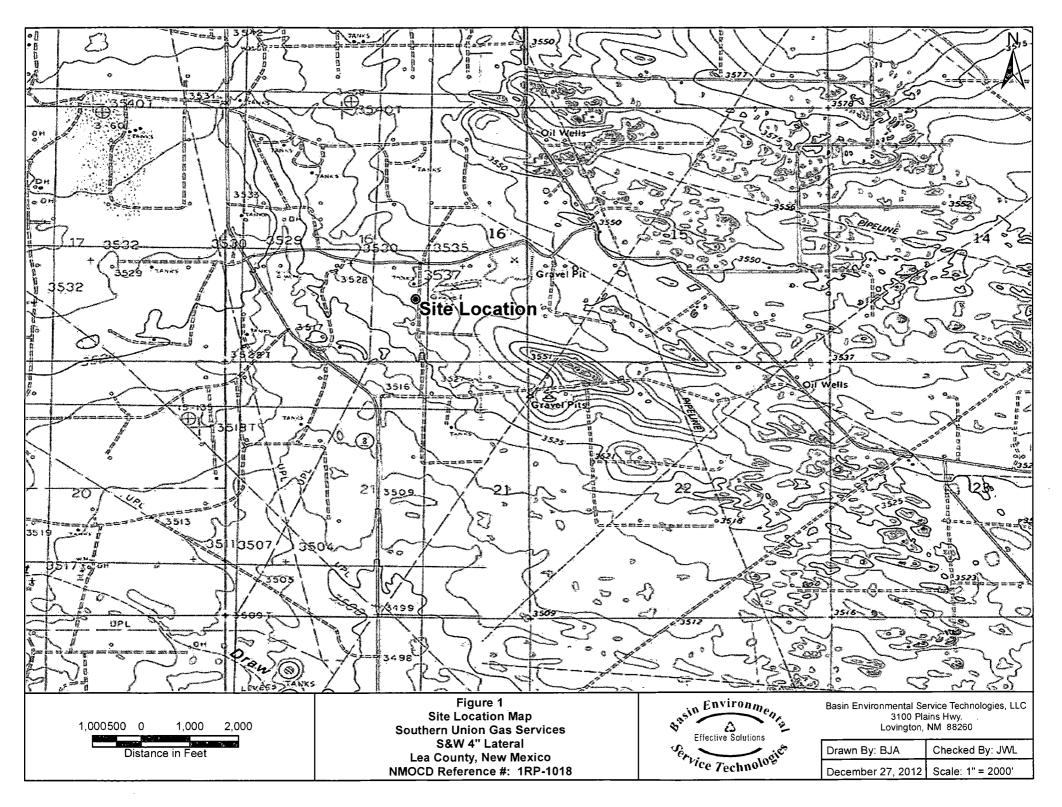
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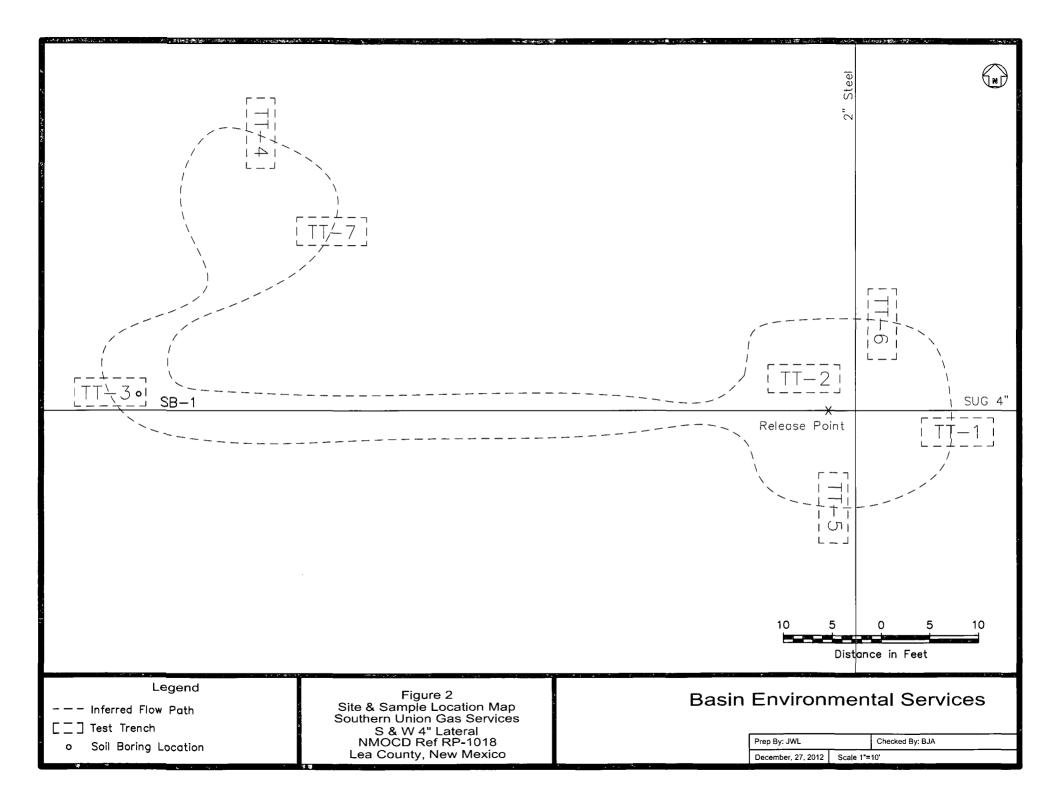
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TABLES

TABLE 1

CONCENTRATIONS OF BENZENE, BTEX, TPH & CHLORIDE IN SOIL

SOUTHERN UNION GAS SERVICES S & W 4" LATERAL HISTORICAL RELEASE SITE LEA COUNTY, NEW MEXICO NMOCD REF# 1RP-1018

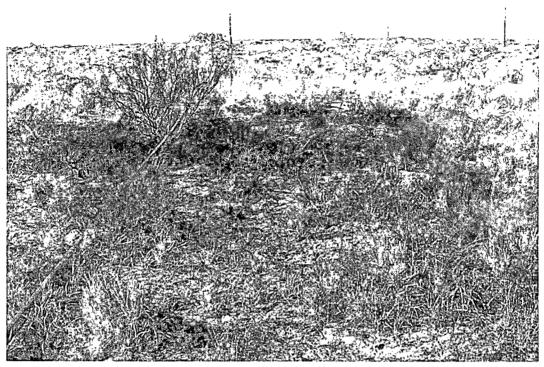
SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	SULFIDE (mg/Kg)	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL- BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)	TOTAL BTEX (mg/Kg)	GRO C6-C12 (mg/Kg)	DRO C ₁₂ -C ₂₈ (mg/Kg)	ORO C ₂₈ -C ₃₆ (mg/Kg)	TOTAL TPH C ₆ -C ₂₈ (mg/Kg)	CHLORIDE (mg/Kg)
Release Point Surface	Surface	8/14/2006	Excavated	-	-	-	-	-	-	344.0	2,770.0	903.0	4,020.0	-
Release Point 4' BGS	4'	8/14/2006	Excavated		-	-	-	-	-	11.4	18.7	<10.0	30.1	-
Release Point 6' BGS	6'	8/14/2006	Excavated		< 0.0250	<0.0250	< 0.0250	<0.0250	<0.0250	-	-	-	-	-
West Bell Hole 1' BGS	1'	8/14/2006	Excavated	-	-	-	-	-	-	37.8	39.6	<10.0	77.4	-
West Bell Hole 4' BGS	4'	8/14/2006	Excavated	-	-	-	-	-	-	1,490.0	354.0	67.3	1,910.0	-
West Ponded Area 6" BGS	6"	8/14/2006	Excavated	-	-	-	-	-		639.0	638.0	162.0	1,440.0	-
West Ponded Area 1' BGS	1'	8/14/2006	Excavated	-	<0.0250	<0.0250	< 0.0250	<0.0250	< 0.0250	<10.0	17.5	<10.0	17.5	-
West Ponded Area Surface	3'	8/14/2006	Excavated	-	•		-	-	-	129.0	2,100.0	429.0	2,660.0	
		1												
SW-1	N/A	9/7/2006	N/A		-	-	-	-	-	<10.0	<10.0	<10.0	<10.0	-
		1												L
P.R. @ 9'	9'	9/18/2006	N/A		-	-	-	-	· ·	<10.0	<10.0	<10.0	<10.0	<u> </u>
B-Comp.	N/A	9/18/2006	N/A		-	-	-	·	-	<10.0	<10.0	<10.0	<10.0	
S-Comp.	N/A	9/18/2006	N/A		-	-	-	•	-	<10.0	<10.0	<10.0	<10.0	·
NW-Comp.	N/A	9/18/2006	N/A		-	-	-	-	-	<10.0	<10.0	<10.0	<10.0	<u>-</u>
SW-Comp.	N/A	9/18/2006	N/A		-	-	-	-	-	<10.0	<10.0	<10.0	<10.0	·
P-Comp.	N/A	9/18/2006	N/A		-	-	-	-	-	<10.0	<10.0	<10.0	<10.0	· .
S-5	N/A	9/18/2006	N/A	. <u> </u>	<0.025	<0.025	<0.025	<0.025	<0.025	10.3	<10.0	<10.0	10.3	<u> </u>
	-	12/20/2012	In-Situ							<19.7	<19.7	<19.7	<19.7	4.26
TT-1 @ Surface	Surface 4'				-	-		-		<18.0	<18.0	<18.0	<18.0	2.36
TT-1 @ 4' TT-1 @ 6'	6'	12/20/2012	In-Situ In-Situ	:	-		-			<19.0	<19.0	<19.0	<19.0	1.79
TT-2 @ Surface	Surface	12/20/2012	In-Situ	<u>`</u>	-					<15.4	<15.4	<15.0	<15.4	<1.03
TT-2 @ 4'	Surface 4'	12/20/2012	In-Situ		•			-		<17.2	<17.2	<17.2	<17.2	1.28
TT-2@6'	6'	12/20/2012	In-Situ	<50.0	<0.00103	<0.00206	<0.00103	<0.00206	<0.00206	<15.4	<15.4	<15.4	<15.4	<1.03
TT-3 @ Surface	Surface	12/20/2012	In-Situ	< <u>50.0</u>	<0.00103	~0.00200		~0.00200		<18.7	<18.7	<18.7	<18.7	1.54
TT-3 @ 4'	4'	12/20/2012	In-Situ							<18.5	<18.5	<18.5	<18.5	1.31
TT-3@6'	6'	12/20/2012	In-Situ	<50.0	<0.00116	<0.00232	<0.00116	<0.00232	< 0.00232	<17.5	74.1	<17.5	74.1	4.16
TT-4 @ Surface	Surface	12/20/2012	In-Situ	<50.0	-		-	~0.00232		<19.5	<19.5	<19.5	<19.5	<1.31
TT-4 @ 4'	4'	12/20/2012	In-Situ						-	<15.4	<15.4	<15.4	<15.4	<1.03
Π-4@6	6'	12/20/2012	In-Situ	64.0	< 0.00122	< 0.00244	< 0.00122	<0.00244	<0.00244	<18.3	<18.3	<18.3	<18.3	<1.22
TT-5 @ Surface	Surface	12/20/2012	In-Situ	04.0	-0.00122	-0.00244	-0.00122	-0.002-11	-0.00244	<21.2	<21.2	<21.2	<21.2	10.9
Π-5@4'	<u>3unace</u> 4'	12/20/2012	In-Situ		-			-		<19.8	<19.8	<19.8	<19.8	4.10
Π-5@6	6'	12/20/2012	In-Situ				-			<18.3	<18.3	<18.3	<18.3	3.60
TT-6 @ Surface	Surface	12/20/2012	In-Situ			-	-		-	<19.8	<19.8	<19.8	<19.8	<1.32
TT-6 @ 4'	4'	12/20/2012	In-Situ							<17.1	<17.1	<17.1	<17.1	<1.14
Π-6@6	6'	12/20/2012	In-Situ					-		<18.0	<18.0	<18.0	<18.0	<1.20
TT-7 @ Surface	Surface	12/20/2012	In-Situ	<u>-</u>						<19.3	<19.3	<19.3	<19.3	<1.28
TT-7 @ 4'	4'	12/20/2012	In-Situ		-				-	<20.3	<20.3	<20.3	<20.3	2.16
TT-7 @ 6'	6'	12/20/2012	In-Situ					-		<15.3	<15.3	<15.3	<15.3	<1.02
·····		12/20/2012	11-010				<u> </u>	1			-10.0	10.0		
SB#1 @ 8'	- 8'	1/24/2013	In-Situ	-	-	-	-	-	-	<16.0	<16.0	<16.0	<16.0	-
SB#1 @ 10'	10'	1/24/2013	In-Situ		-	-	-	-	•	<15.4	<15.4	<15.4	<15.4	-
NMOCD Standard					10				50				100	250

APPENDICES

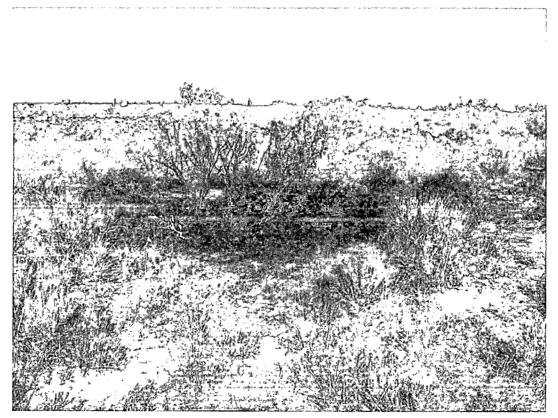
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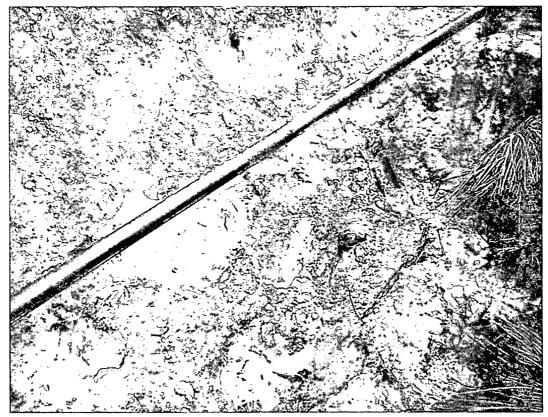
Appendix A Photographs



Photograph of the initial release at the S & W 4" Historical Release Site.



Photograph of the initial release at the S & W 4" Historical Release Site.



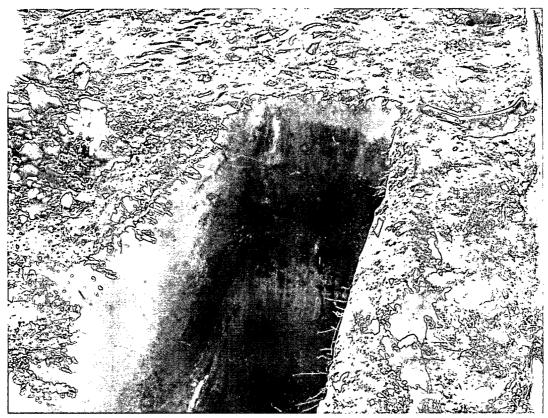
Photograph of the pipeline replacement and excavation activities at the S & W 4" Historical Release Site.



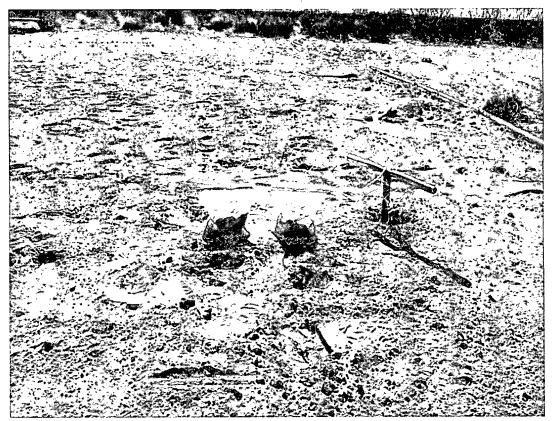
Photograph of the pipeline replacement and excavation activities at the S & W 4" Historical Release Site.



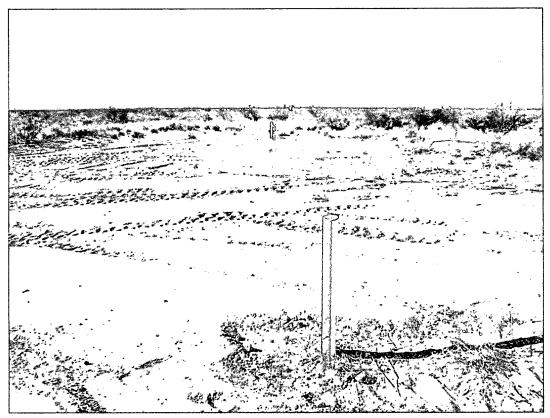
Photograph of delineation activities at the S & W 4" Historical Release Site.



Photograph of delineation activities at the S & W 4" Historical Release Site.



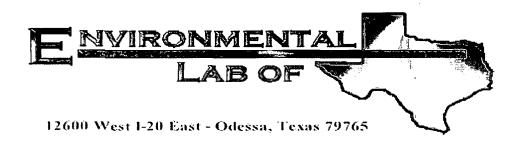
Photograph of the advancement of Soil Boring SB-1 at the S & W 4" Historical Release Site.



Photograph of the S & W 4" Historical Release Site after delineation activities.

Appendix B

Laboratory Analytical Reports



Analytical Report

Prepared for:

Tony Savoie Southern Union Gas Services- Jal P.O. Box 1226 Jal, NM 88252

Project: S & W 4" Lateral Project Number: 2006-036 Location: North of Oil Center

Lab Order Number: 6H15006

Report Date: 08/18/06

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Release Point Surface	6H15006-01	Soil	08/14/06 08:50	08-15-2006 09:35
Release Point 4' BGS	6H15006-02	Soil	08/14/06 08:53	08-15-2006 09:35
Release Point 6' BGS	6H15006-03	Soil	08/14/06 08:57	08-15-2006 09:35
West Bellhole I' BGS	6H15006-04	Soil	08/14/06 09:00	08-15-2006 09:35
West Bellhole 4' BGS	6H15006-05	Soil	08/14/06 09:05	08-15-2006 09:35
West Ponded area 6" BGS	6H15006-06	Soil	08/14/06 09:10	08-15-2006 09:35
West Ponded area 1' BGS	6H15006-07	Soil	08/14/06 09:12	08-15-2006 09:35
West Ponded area Surface	6H15006-08	Soil	08/14/06 09:08	08-15-2006 09:35

Organics by GC

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Release Point Surface (6H15006-01) Soil				Brittion	Baten	Tepared			
Carbon Ranges C6-C12	344	100	mg/kg dry	10	EH61508	08/15/06	08/15/06	EPA 8015M	
Carbon Ranges C12-C28	2770	100	"		"	11	"	"	
Carbon Ranges C28-C35	903	100	"	"		н	н	"	
Total Hydrocarbons	4020	100	"	"		н	"	"	
Surrogate: 1-Chlorooctane		9.40 %	70-1.	30	n	"	n	"	S-0
Surrogate: 1-Chlorooctadecane		11.4 %	70-1.	30	"	"	"	"	S-0
Release Point 4' BGS (6H15006-02) Soil									
Carbon Ranges C6-C12	11.4	10.0	mg/kg dry	1	EH61508	08/15/06	08/16/06	EPA 8015M	
Carbon Ranges C12-C28	18.7	10.0	"	п	**	"	11	"	
Carbon Ranges C28-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbons	30.1	10.0	"		"	"	11	11	
Surrogate: 1-Chlorooctane		101 %	70-1.	30	"	"	"	"	
Surrogate: 1-Chlorooctadecane		92.6 %	70-1.	30	"	"	"	n	
Release Point 6' BGS (6H15006-03) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EH61514	08/15/06	08/16/06	EPA 8021B	
Toluene	ND	0.0250					"	51	
Ethylbenzene	ND	0.0250			"	"	"	11	
Xylene (p/m)	ND	0.0250	"		**	"	11	n	
Xylene (0)	ND	0.0250	"		'n	"		"	
Surrogate: a.a.a-Trifluorotoluene		92.8 %	80-1	20	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.5 %	80-1	20	"	"	"	"	
Carbon Ranges C6-C12	ND	10.0	mg/kg dry	1	EH61508	08/15/06	08/16/06	EPA 8015M	
Carbon Ranges C12-C28	ND	10.0	н	"	u	н			
Carbon Ranges C28-C35	ND	10.0	"		"		"	"	
Total Hydrocarbons	ND	10.0	n	"	"	н	"		
Surrogate: 1-Chlorooctane		104 %	70-1	30	11	"	"	"	
Surrogate: 1-Chlorooctadecane		95.6 %	70-1	30	"	"	"	"	

Organics by GC

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Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
West Bellhole 1' BGS (6H15006-04) Soi	1								
Carbon Ranges C6-C12	37.8	10.0	mg/kg dry	1	EH61508	08/15/06	08/16/06	EPA 8015M	
Carbon Ranges C12-C28	39.6	10.0	n	"	"	"	"	**	
Carbon Ranges C28-C35	ND	10.0	н	"		"	"	**	
Total Hydrocarbons	77.4	10.0	н		"	11	"	11	
Surrogate: 1-Chlorooctane		107 %	70-13	0	"	"	"	"	
Surrogate: 1-Chlorooctadecane		95.0%	70-13	80	"	"	"	u	
West Bellhole 4' BGS (6H15006-05) Soi	1								
Carbon Ranges C6-C12	1490	10.0	mg/kg dry	1	EH61508	08/15/06	08/16/06	EPA 8015M	
Carbon Ranges C12-C28	354	10.0	"		"	"	н	**	
Carbon Ranges C28-C35	67.3	10.0			"		"	**	
Total Hydrocarbons	1910	10.0	"	"	"	n	n	н	
Surrogate: 1-Chlorooctane		133 %	70-13	80	"	"	"	"	S-0
Surrogate: 1-Chlorooctadecane		99.0 %	70-13	80	"	"	"	"	
West Ponded area 6" BGS (6H15006-0	6) Soil								
Carbon Ranges C6-C12	639	10.0	mg/kg dry	1	EH61508	08/15/06	08/16/06	EPA 8015M	
Carbon Ranges C12-C28	638	10.0	"			"	"	*	
Carbon Ranges C28-C35	162	10.0	**	"	"			11	
Total Hydrocarbons	1440	10.0	"			"	n	11	
Surrogate: 1-Chlorooctane		117 %	70-13	80	"	"	"	"	
Surrogate: 1-Chlorooctadecane		97.4 %	70-13	80	"	"	"	"	
West Ponded area 1' BGS (6H15006-07	') Soil								
Benzene	ND	0.0250	mg/kg dry	25	EH61514	08/15/06	08/16/06	EPA 8021B	
Toluene	ND	0.0250	"	н	"	"	"	"	
Ethylbenzene	ND	0.0250	11	"	11	п	**	"	
Xylenc (p/m)	ND	0.0250	"	"			"	**	
Xylene (o)	ND	0.0250	"	"	н	u	"	"	
Surrogate: a,a,a-Trifluorotoluene		103 %	80-12	20	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.2 %	80-12	20	"	"	"	"	
Carbon Ranges C6-C12	J [9.82]	10.0	mg/kg dry	1	EH61508	08/15/06	08/16/06	EPA 8015M	
Carbon Ranges C12-C28	17.5	10.0	"			"	"	11	
Carbon Ranges C28-C35	ND	10.0	"	u	н	"	"	"	
Total Hydrocarbons	17.5	10.0	"	н	"	"	"	11	
Surrogate: 1-Chlorooctane		103 %	70-13	80	"	"	"	"	
Surrogate: 1-Chlorooctadecane		93.2 %	70-13	:0	"	"	"	"	

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Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
West Ponded area Surface (6H15006-0	8) Soil						-		
Carbon Ranges C6-C12	129	10.0	mg/kg dry	1	EH61508	08/15/06	08/16/06	EPA 8015M	
Carbon Ranges C12-C28	2100	10.0	"	"	"	n	u	11	
Carbon Ranges C28-C35	429	10.0	"	"	"	"	"	"	
Total Hydrocarbons	2660	10.0	"	"	"	"	н	"	
Surrogate: 1-Chlorooctane		110 %	70-1	30	n	"	"	rr	
Surrogate: 1-Chlorooctadecane		99.0 %	70-1	30	"	"	"	n	

General Chemistry Parameters by EPA / Standard Methods

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Release Point Surface (6H150	06-01) Soil			Difference	Butch		7 maiy 200		
% Moisture	7.3	0.1	%	1	EH61601	08/15/06	08/16/06	% calculation	
Release Point 4' BGS (6H1500	06-02) Soil								
% Moisture	19.2	0.1	%	1	EH61601	08/15/06	08/16/06	% calculation	
Release Point 6' BGS (6H1500	06-03) Soil								
Chloride	J [1.90]	5.00	mg/kg	10	EH61511	08/15/06	08/15/06	EPA 300.0	J
% Moisture	17.1	0.1	%	I	EH61601	08/15/06	08/16/06	% calculation	
West Bellhole 1' BGS (6H1500	06-04) Soil								
% Moisture	14.1	0.1	%	I	EH61601	08/15/06	08/16/06	% calculation	
West Bellhole 4' BGS (6H1500	06-05) Soil								
% Moisture	17.0	0.1	%	1	EH61601	08/15/06	08/16/06	% calculation	.
West Ponded area 6" BGS (61	H15006-06) Soil								
% Moisture	17.5	0.1	%	1	EH61601	08/15/06	08/16/06	% calculation	
West Ponded area 1' BGS (6H	115006-07) Soil								
Chloride	J [2.16]	5.00	mg/kg	10	EH61511	08/15/06	08/15/06	EPA 300.0	J
% Moisture	17.2	0.1	%	1	EH61601	08/15/06	08/16/06	% calculation	
West Ponded area Surface (61	H15006-08) Soil								
% Moisture	24.8	0.1	%	ł	EH61601	08/15/06	08/16/06	% calculation	

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Organics by GC - Quality Control

Environmental Lab of Texas

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EH61508 - EPA 5030C (GC)										
Blank (EH61508-BLK1)				Prepared &	Analyzed:	08/15/06				
Carbon Ranges C6-C12	ND	10.0	mg/kg wet							
Carbon Ranges C12-C28	ND	10.0	"							
Carbon Ranges C28-C35	ND	10.0	"							
Total Hydrocarbons	ND	10.0	**							
Surrogate: 1-Chlorooctane	50.5		mg/kg	50.0		101	70-130			
Surrogate: 1-Chlorooctadecane	48.3		п	50.0		96.6	70-130			
LCS (EH61508-BS1)				Prepared &	z Analyzed:	08/15/06				
Carbon Ranges C6-C12	470	10.0	mg/kg wet	500		94.0	75-125			
Carbon Ranges C12-C28	481	10.0	11	500		96.2	75-125			
Carbon Ranges C28-C35	ND	10.0	Ħ	0.00			75-125		•	
Total Hydrocarbons	951	10.0	"	1000		95.1	75-125			
Surrogate: 1-Chlorooctane	54.0	· · ·	mg/kg	50.0		108	70-130			
Surrogate: 1-Chlorooctadecane	46.8		"	50.0		93.6	70-130			
Calibration Check (EH61508-CCV1)				Prepared: ()8/15/06 A	nalyzed: 08	/16/06			
Carbon Ranges C6-C12	236		mg/kg	250		94.4	80-120			
Carbon Ranges C12-C28	273		11	250		109	80-120			
Total Hydrocarbons	509		11	500		102	80-120			
Surrogate: 1-Chlorooctane	63.4		"	50.0		127	70-130			
Surrogate: 1-Chlorooctadecane	56.9		n	50.0		114	70-130			
Matrix Spike (EH61508-MS1)	Sou	rce: 6H15006	5-03	Prepared: ()8/15/06 A	nalyzed: 08	/16/06			
Carbon Ranges C6-C12	559	10.0	mg/kg dry	603	ND	92.7	75-125			
Carbon Ranges C12-C28	572	10.0	11	603	ND	94.9	75-125			
Carbon Ranges C28-C35	ND	10.0	**	0.00	ND		75-125			
Total Hydrocarbons	1130	10.0	п	1210	ND	93.4	75-125			
Surrogate: 1-Chlorooctane	56.0		mg/kg	50.0		112	70-130			
Surrogate: 1-Chlorooctadecane	48.3		"	50.0		96.6	70-130			

Organics by GC - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Límits	RPD	RPD Limit	Notes
Batch EH61508 - EPA 5030C (GC)										
Matrix Spike Dup (EH61508-MSD1)	Sour	ce: 6H15006-	-03	Prepared: ()8/15/06 A	nalyzed: 08	/16/06			

Carbon Ranges C6-C12	578	10.0 mg/kg dry	603	ND	95.9	75-125	3.34	20	
Carbon Ranges C12-C28	589	10.0 "	603	ND	97.7	75-125	2.93	20	
Carbon Ranges C28-C35	ND	10.0 "	0.00	ND		75-125		20	
Total Hydrocarbons	1170	10.0 "	1210	ND	96.7	75-125	3.48	20	
Surrogate: 1-Chlorooctane	58.1	mg/kg	50.0		116	70-130			
Surrogate: 1-Chlorooctadecane	49.2	и	50.0		98.4	70-130			

Batch EH61514 - EPA 5030C (GC)

Blank (EH61514-BLK1)				Prepared: 08/15/	06 Analyzed: 08	8/16/06	
Benzene	ND	0.0250	mg/kg wet				
Toluene	ND	0.0250	*				
Ethylbenzene	ND	0.0250	"				
Xylene (p/m)	ND	0.0250	"				
Xylene (o)	ND	0.0250	"				
Surrogate: a,a,a-Trifluorotoluene	38.1		ug/kg	40.0	95.2	80-120	
Surrogate: 4-Bromofluorobenzene	41.0		"	40.0	102	80-120	
LCS (EH61514-BS1)				Prepared & Ana	lyzed: 08/15/06		
Benzene	1.21	0.0250	mg/kg wet	1.25	96.8	80-120	
Toluene	1.38	0.0250		1.25	110	80-120	
Ethylbenzene	1.22	0.0250		1.25	97.6	80-120	
Xylene (p/m)	2.97	0.0250	"	2.50	119	80-120	
Xylene (0)	1.38	0.0250	"	1.25	110	80-120	
Surrogate: a,a,a-Trifluorotoluene	39.6		ug/kg	40.0	99.0	80-120	
Surrogate: 4-Bromofluorobenzene	47.8		"	40.0	120	80-120	

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Organics by GC - Quality Control

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH61514 - EPA 5030C (GC)										
Calibration Check (EH61514-CCV1)				Prepared: (08/15/06 A	nalyzed: 08	/17/06			
Benzene	47.2		ug/kg	50.0		94.4	80-120			
Toluene	51.8		"	50.0		104	80-120			
Ethylbenzene	55.0		"	50.0		110	80-120			
Xylene (p/m)	112		"	100		112	80-120			
Xylene (o)	55.2			50.0		110	80-120			
Surrogate: a,a,a-Trifluorotoluene	45.7		"	40.0		114	80-120			
Surrogate: 4-Bromofluorobenzene	44.5		"	40.0		111	80-120			
Matrix Spike (EH61514-MS1)	Sou	rce: 6H15008	8-01	Prepared: (08/15/06 A	nalyzed: 08	3/17/06			
Benzene	1.33	0.0250	mg/kg dry	1.35	ND	98.5	80-120			
Toluene	1.54	0.0250	п	1.35	ND	114	80-120			
Ethylbenzene	1.30	0.0250	п	1.35	ND	96.3	80-120			
Xylene (p/m)	3.19	0.0250		2.71	ND	118	80-120			
Xylene (0)	1.45	0.0250	н	1.35	ND	107	80-120			
Surrogate: a,a,a-Trifluorotoluene	84.1		ug/kg	80.0		105	80-120			
Surrogate: 4-Bromofluorobenzene	84.0		"	80.0		105	80-120			
Matrix Spike Dup (EH61514-MSD1)	Sou	irce: 6H15008	8-01	Prepared: (08/15/06 A	nalyzed: 08	3/17/06			
Benzene	1.28	0.0250	mg/kg dry	1.35	ND	94.8	80-120	3.83	20	
Toluene	1.56	0.0250	"	1.35	ND	116	80-120	1.74	20	
Ethylbenzene	1.53	0.0250	"	1.35	ND	113	80-120	16.0	20	
Xylene (p/m)	3.24	0.0250		2.71	ND	120	80-120	1.68	20	
Xylene (o)	1.58	0.0250	"	1.35	ND	117	80-120	8.93	20	
Surrogate: a,a,a-Trifluorotoluene	44.4		ug/kg	40.0		Ш	80-120			
Surrogate: 4-Bromofluorohenzene	47.6		"	40.0		119	80-120			

General Chemistry Parameters by EPA / Standard Methods - Quality Control

Environmental Lab of Texas

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		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EH61511 - Water Extraction					<u></u>					
Blank (EH61511-BLK1)				Prepared &	k Analyzed	: 08/15/06				
Chloride	ND	0.500	mg/kg							
LCS (EH61511-BS1)				Prepared &	k Analyzed	: 08/15/06				
Chloride	9.79	0.500	mg/kg	10.0		97.9	80-120			
Calibration Check (EH61511-CCV1)				Prepared &	د Analyzed	: 08/15/06				
Chloride	9.49		mg/L	10.0		94.9	80-120			
Duplicate (EH61511-DUP1)	Sou	rce: 6H15002	-02	Prepared &	k Analyzed	: 08/15/06				
Chloride	42.2	5.00	mg/kg		43.4			2.80	20	
Duplicate (EH61511-DUP2)	Sou	rce: 6H15010	-01	Prepared &	k Analyzed	: 08/15/06				
Chloride	647	10.0	mg/kg		642			0.776	20	
Matrix Spike (EH61511-MS1)	Sou	rce: 6H15002	-02	Prepared &	k Analyzed	: 08/15/06				
Chloride	149	5.00	mg/kg	100	43.4	106	80-120			
Matrix Spike (EH61511-MS2)	Sou	rce: 6H15010	-01	Prepared &	k Analyzed	: 08/15/06				
Chloride	900	10.0	mg/kg	200	642	129	80-120			S-01
Batch EH61601 - General Preparation (Prep)										
Blank (EH61601-BLK1)				Prepared: (08/15/06 A	nalyzed: 08	8/16/06			
% Solids	100		%							
Duplicate (EH61601-DUP1)	Sou	irce: 6H15002	-01	Prepared: (08/15/06 A	nalyzed: 08	8/16/06			
% Solids	90.3		%		89.0			1.45	20	

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General Chemistry Parameters by EPA / Standard Methods - Quality Control

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH61601 - General Preparation	n (Prep)									
Duplicate (EH61601-DUP2)	Source	: 6H15007-0)4	Prepared: 08	s/15/06 A	Analyzed: 08	/16/06			
% Solids	97.3		%		96.9			0.412	20	
Duplicate (EH61601-DUP3)	Source	e: 6H15013-0)1	Prepared: 08	s/15/06 A	Analyzed: 08	/16/06			
% Solids	90.1		%		90.1			0.00	20	

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Notes and Definitions

S-07	Recovery outside Laboratory historical or method prescribed limits.
S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
J	Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
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:

Raland K. Tuttle, Lab Manager Celey D. Keene, Lab Director, Org. Tech Director Peggy Allen, QA Officer Jeanne Mc Murrey, Inorg. Tech Director LaTasha Cornish, Chemist Sandra Sanchez, Lab Tech.

Date:

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Raland K Jut

If you have received this material in error, please notify us immediately at 432-563-1800.

Environmental Lab of Texas

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 Environmental Lab of Texas.

8/18/2006

Environmental Lab of Texas

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CHAIN OF CUSTODY RECORD	AND ANALYSIS REQUES	т
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Phone: 432-563-1800

12600 West I-20 East Odessa Texas 79765

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

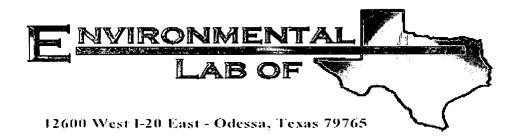
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te/ Time:	8/15/06 9:35	
o ID # :	6415006	
ials:	CK	

Sample Receipt Checklist

			Client Initials
Temperature of container/ cooler?	Yes	No	1,5 °C
Shipping container in good condition?	XES .	No	
Custody Seals intact on shipping container/ cooler?	Yes	No	< <u>Not Present</u>
Custody Seals intact on sample bottles/ container?	(es	No	Not Present
Chain of Custody present?	Kes I	No	
Sample instructions complete of Chain of Custody?	(e)	No	
Chain of Custody signed when relinquished/ received?	(øş	No	
Chain of Custody agrees with sample label(s)?	Xēs	No	ID written on Cont./ Lid
Container label(s) legible and intact?	Yes	No	Not Applicable
0 Sample matrix/ properties agree with Chain of Custody?	Yas	No	
11 Containers supplied by ELOT?	Yes	No	
12 Samples in proper container/ bottle?	Yes	No	See Below
13 Samples properly preserved?	Yes	No	See Below
14 Sample bottles intact?	E s	No	
15 Preservations documented on Chain of Custody?	Yeş	No	
16 Containers documented on Chain of Custody?	YES	No	
17 Sufficient sample amount for indicated test(s)?	Yeş	No	See Below
18 All samples received within sufficient hold time?	Yes	No	See Below
19 VOC samples have zero headspace?	Yes	No	Not Applicable

Variance Documentation

Contact:	 Contacted by:	Date/ Time:	
<pre>cegarding:</pre>			
Corrective Action Taken			
Check all that Apply:	See attached e-mail/ fax Client understands and would like to pro Cooling process had begun shortly after	-	



Analytical Report

Prepared for:

Tony Savoie Southern Union Gas Services- Jal P.O. Box 1226 Jal, NM 88252

Project: S & W 4" Lateral Project Number: 2006-036 Location: SE of Monument

Lab Order Number: 6108004

Report Date: 09/11/06

Southern Union Gas Services- Jal	Project:	S & W 4" Lateral	Fax: 505-395-2326
P.O. Box 1226	Project Number:	2006-036	
Jal NM, 88252	Project Manager:	Tony Savoie	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SW-1	6108004-01	Soil	09/07/06 15:20	09-08-2006 09:55

Southern Union Gas Services- Jal	Project:	S & W 4" Lateral	Fax: 505-395-2326
P.O. Box 1226	Project Number:	2006-036	
Jal NM, 88252	Project Manager:	Tony Savoie	

Organics by GC

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SW-1 (6108004-01) Soil									
Carbon Ranges C6-C12	ND	10.0	mg/kg dry	1	EI60813	09/08/06	09/08/06	EPA 8015M	
Carbon Ranges C12-C28	ND	10.0	•	"	"	н	**	11	
Carbon Ranges C28-C35	ND	10.0	"	"	,,	"	"		
Total Hydrocarbons	ND	10.0	п			"	"	"	
Surrogate: 1-Chlorooctane		74.4 %	70-1	30	"	"	"	"	
Surrogate: 1-Chlorooctadecane		77.4 %	70-1	30	"	"	"	"	

General Chemistry Parameters by EPA / Standard Methods

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SW-1 (6108004-01) Soil									
% Moisture	15.6	0.1	%	1	EI61103	09/08/06	09/11/06	% calculation	

Environmental Lab of Texas

Fax: 505-395-2326

Organics by GC - Quality Control

Environmental Lab of Texas

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch El60813 - Solvent Extraction (GC)										
Blank (EI60813-BLK1)				Prepared &	k Analyzed:	09/08/06				
Carbon Ranges C6-C12	ND	10.0	mg/kg wet							
Carbon Ranges C12-C28	ND	10.0	"							
Carbon Ranges C28-C35	ND	10.0	"							
Total Hydrocarbons	ND	10.0	"							
Surrogate: 1-Chlorooctane	39.3		mg/kg	50.0		78.6	70-130			· · · · · · · · ·
Surrogate: 1-Chlorooctadecane	37.7		"	50,0		75.4	70-130			
LCS (E160813-BS1)				Prepared &	k Analyzed:	09/08/06				
Carbon Ranges C6-C12	464	10.0	mg/kg wet	500		92.8	75-125			
Carbon Ranges C12-C28	403	10.0		500		80.6	75-125			
Carbon Ranges C28-C35	ND	10.0	"	0.00			75-125			
Total Hydrocarbons	867	10.0	"	1000		86.7	75-125			
Surrogate: 1-Chlorooctane	51.4		mg/kg	50.0		103	70-130			
Surrogate: 1-Chlorooctadecane	40.2		"	50.0		80.4	70-130			
Calibration Check (El60813-CCV1)				Prepared &	& Analyzed:	09/08/06				
Carbon Ranges C6-C12	208		mg/kg	250		83.2	80-120			
Carbon Ranges C12-C28	271		и	250		108	80-120			
Total Hydrocarbons	479		"	500		95.8	80-120			
Surrogate: 1-Chlorooctane	51.0		"	50.0		102	70-130			
Surrogate: 1-Chlorooctadecane	46.3		"	50.0		92.6	70-130			
Matrix Spike (E160813-MS1)	Sou	ırce: 6108009	-02	Prepared &	k Analyzed:	09/08/06				
Carbon Ranges C6-C12	556	10.0	mg/kg dry	577	ND	96.4	75-125			
Carbon Ranges C12-C28	478	10.0		577	ND	82.8	75-125			
Carbon Ranges C28-C35	ND	10.0		0.00	ND		75-125			
Total Hydrocarbons	1030	10.0	"	1150	ND	89.6	75-125			
Surrogate: 1-Chlorooctane	53.0		mg/kg	50.0		106	70-130			
Surrogate: 1-Chlorooctadecane	43.8		"	50.0		87.6	70-130			

Organics by GC - Quality Control

Environmental Lab of Texas

Reporting Spike Source %REC RPD Analyte Result Limit Units Level Result %REC Limit Notes						_					
Analyte Result Limit Units Level Result %REC Limits RPD Limit Notes			Reporting		Spike	Source		%REC		RPD	
	Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch El60813 - Solvent Extraction (GC)

Matrix Spike Dup (El60813-MSD1)	Source: 6108009-02			Prepared &	Analyzed:	09/08/06			
Carbon Ranges C6-C12	567	10.0	mg/kg dry	577	ND	98.3	75-125	1.96	20
Carbon Ranges C12-C28	498	10.0	"	577	ND	86.3	75-125	4.10	20
Carbon Ranges C28-C35	ND	10.0	"	0.00	ND		75-125		20
Total Hydrocarbons	1060	10.0	"	1150	ND	92.2	75-125	2.87	20
Surrogate: 1-Chlorooctane	54.5		mg/kg	50.0		109	70-130		
Surrogate: 1-Chlorooctadecane	45.1		"	50.0		90.2	70-130		

General Chemistry Parameters by EPA / Standard Methods - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch El61103 - General Preparation (Prep)										
Blank (El61103-BLK1)				Prepared: 0	9/08/06	Analyzed: 09	/11/06			
% Solids	99.9		%							
Duplicate (EI61103-DUP1)	Sou	rce: 6108001-()1	Prepared: 0	9/08/06	Analyzed: 09	/11/06			
% Solids	100		%		100			0.00	20	

Environmental Lab of Texas

Notes and Definitions

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:

Raland K Junits Date:

9/11/2006

Raland K. Tuttle, Lab Manager Celey D. Keene, Lab Director, Org. Tech Director Peggy Allen, QA Officer Jeanne Mc Murrey, Inorg. Tech Director LaTasha Cornish, Chemist Sandra Sanchez, Lab Tech.

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If you have received this material in error, please notify us immediately at 432-563-1800.

Environmental Lab of Texas

	Phone: 432-563-1800 Fax: 432-563-1713									,	<i>COM</i> IN									SIS RE		
Project Manage	TONY SAVOIS						• • • • •					Proj	ject l	Name		50	1/2		4	" 4	<u>Ale</u>	<u>\$</u> /
Company Nam	e 54.6.5.												Pro	ject #	k:	20	00	6-	03	3Е (нм	, .	••••••
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		·	······································			Dee	servat				Matrix				OTAL:							
LAB # (lab use only)	FIELD CODE	Date Sampled	Ime Sampled	No. of Containers		HKO3	HOEN	None	Other (Specify)	Viater			C TPH: 418.1 (015.4) DOIS 1006	Cations (Ca, Mg, Na, K) Anions (Cl SOA CO3 HCO3)	SARIES ICEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	A Scrinvolaties		N.O.R.M.		
Special Instructions:	Date Time	Received by:					<u> </u>		 	Date			Îme	La Ci Te	bels (ustod) imper	on co / Sea ature	intair ils: C Upc	Conta	ceipt:	7 7 Coole 3 (1

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

ent:	SUGA	
ite/ Time:	alelde 9.55	
bID#:	670×009	. <u></u>
tials:		

Sample Receipt Checklist

			Client	Initials
Temperature of container/ cooler?	Yes	No	2,0 °C	
Shipping container in good condition?	YES	No		
Custody Seals intact on shipping container/ cooler?	Yes	No	Not Present	
Custody Seals intact on sample bottles/ container?	Yes	No	Not Present	
Chain of Custody present?	Yes	No		
Sample instructions complete of Chain of Custody?	Yes	No		
Chain of Custody signed when relinquished/ received?	Yes	No		
Chain of Custody agrees with sample label(s)?	Ves	No	ID written on Cont./ Lid	
Container label(s) legible and intact?	Yes	No	Not Applicable	
0 Sample matrix/ properties agree with Chain of Custody?	(Yes	No		
1 Containers supplied by ELOT?	Xes.	No		
2 Samples in proper container/ bottle?	(Yes	No	See Below	
3 Samples properly preserved?	Jes .	No	See Below	
4 Sample bottles intact?	Yes	No		
5 Preservations documented on Chain of Custody?	Yes	No		
6 Containers documented on Chain of Custody?	Yes	No		
7 Sufficient sample amount for indicated test(s)?	Ves	No	See Below	
8 All samples received within sufficient hold time?	785	No	See Below	
9 VOC samples have zero headspace?	Yes	No	Not Applicable	

Variance Documentation

intact:	Contacted by:	Date/ Time:
garding:		
rrective Action Taken;		
eck 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



Analytical Report

Prepared for:

Tony Savoie Southern Union Gas Services- Jal P.O. Box 1226 Jal, NM 88252

Project: SW 4" Lateral Project Number: 2006-036 Location: None Given

Lab Order Number: 6118008

Report Date: 09/20/06

	Southern Union Gas Services- Jal	Project:	SW 4" Lateral	Fax: 505-395-2326
	P.O. Box 1226	Project Number:	2006-036	
i	Jal NM, 88252	Project Manager:	Tony Savoie	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
P.R.@ 9'	6118008-01	Soil	09/18/06 12:00	09-18-2006 14:45
B- Comp.	6118008-02	Soil	09/18/06 12:00	09-18-2006 14:45
S- Comp.	6118008-03	Soil	09/18/06 12:00	09-18-2006 14:45
NW- Comp.	6118008-04	Soil	09/18/06 12:00	09-18-2006 14:45
SW- Comp.	6118008-05	Soil	09/18/06 12:00	09-18-2006 14:45
P- Comp.	6118008-06	Soil	09/18/06 12:00	09-18-2006 14:45
S-5	6118008-07	Soil	09/18/06 12:00	09-18-2006 14:45

Organics by GC

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
P.R.@ 9' (6118008-01) Soil				Difference	Buildin				
Carbon Ranges C6-C12	ND	10.0	mg/kg dry	1	E161820	09/18/06	09/19/06	EPA 8015M	
Carbon Ranges C12-C28	ND	10.0	11		**	"	"	"	
Carbon Ranges C28-C35	ND	10.0	н		15	"	н	"	
Total Hydrocarbons	ND	10.0	**	"	"	11	"	"	
Surrogate: 1-Chlorooctane		93.8 %	70-1	30	"	"	"	"	
Surrogate: 1-Chlorooctadecane		123 %	70-1	30	"	n	"	"	
B- Comp. (6118008-02) Soil									
Carbon Ranges C6-C12	ND	10.0	mg/kg dry	1	EI61820	09/18/06	09/19/06	EPA 8015M	
Carbon Ranges C12-C28	ND	10.0	"	**	"	"	11	"	
Carbon Ranges C28-C35	ND	10.0	"	11	"	"	11	"	
Total Hydrocarbons	ND	10.0	"	11	"	"	"	"	
Surrogate: 1-Chlorooctane		80.0 %	70-1	30	"	"	"	"	
Surrogate: 1-Chlorooctadecane		102 %	70-1	30	"	"	"	n	
S- Comp. (6118008-03) Soil									
Carbon Ranges C6-C12	ND	10.0	mg/kg dry	1	E161820	09/18/06	09/19/06	EPA 8015M	
Carbon Ranges C12-C28	ND	10.0	"	51	"			n	
Carbon Ranges C28-C35	ND	10.0	"		"	"	"	"	
Total Hydrocarbons	ND	10.0	"	"	"	"	n	"	
Surrogate: 1-Chlorooctane		79.0 %	70-1	30	"	"	"	n	
Surrogate: 1-Chlorooctadecane		100 %	70-1	30	"	"	n	n	
NW- Comp. (6118008-04) Soil									
Carbon Ranges C6-C12	ND	10.0	mg/kg dry	1	EI61820	09/18/06	09/19/06	EPA 8015M	
Carbon Ranges C12-C28	ND	10.0	"	"		"	11	11	
Carbon Ranges C28-C35	ND	10.0	"	"	"	**	"	11	
Total Hydrocarbons	ND	10.0	"	"	"	n	"	"	
Surrogate: 1-Chlorooctane		78.8 %	70-1	30	"	"	n	"	
Surrogate: 1-Chlorooctadecane		102 %	70-1	30	n	"	"	"	

Organics by GC

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SW- Comp. (6118008-05) Soil		<u> </u>							
Carbon Ranges C6-C12	ND	10.0	mg/kg dry	1	E161820	09/18/06	09/19/06	EPA 8015M	
Carbon Ranges C12-C28	ND	10.0		"	"	"	"	**	
Carbon Ranges C28-C35	ND	10.0	"	"		"	"		
Total Hydrocarbons	ND	10.0	**	и	"	н	U.	**	
Surrogate: 1-Chlorooctane		79.4 %	70-	130	"	"	"	"	
Surrogate: 1-Chlorooctadecane		100 %	70-	130	"	"	"	"	
P- Comp. (6118008-06) Soil									
Carbon Ranges C6-C12	ND	10.0	mg/kg dry	1	E161820	09/18/06	09/19/06	EPA 8015M	
Carbon Ranges C12-C28	ND	10.0	"		•	"	п		
Carbon Ranges C28-C35	ND	10.0	11		11	"	п	11	
Total Hydrocarbons	ND	10.0	п	"	н	п		**	
Surrogate: 1-Chlorooctane		76.8 %	70-	130	"	"	"	"	
Surrogate: 1-Chlorooctadecane		98.0 %	70-	130	"	"	"	11	
S-5 (6118008-07) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EI61904	09/19/06	09/19/06	EPA 8021B	
Toluene	J [0.0136]	0.0250	н	"	tr	н	"	**	
Ethylbenzene	J [0.0162]	0.0250	"		"	"	"	**	
Xylene (p/m)	0.0316	0.0250	"	u	**	"	"	**	
Xylene (o)	ND	0.0250	**	u	"		11	"	
Surrogate: a.a.a-Trifluorotoluene		123 %	80-	120	"	"	"	,,	S-0-
Surrogate: 4-Bromofluorobenzene		107 %	80-	120	"	"	"	"	
Carbon Ranges C6-C12	10.3	10.0	mg/kg dry	1	E161820	09/18/06	09/19/06	EPA 8015M	
Carbon Ranges C12-C28	J [8.93]	10.0	**	"	"	"	"	31	
Carbon Ranges C28-C35	ND	10.0		11	"	п	н	п	
Total Hydrocarbons	ND	10.0	"	п	n		н	"	
Surrogate: 1-Chlorooctane		81.2 %	70-	130	"	"	"	"	
Surrogate: 1-Chlorooctadecane		102 %	70-	130	"	"	"	n	

General Chemistry Parameters by EPA / Standard Methods

Environmental Lab of Texas

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
P.R.@ 9' (6118008-01) Soil									
% Moisture	1.5	0.1	%	1	E161901	09/18/06	09/19/06	% calculation	
B- Comp. (6118008-02) Soil									
% Moisture	1.9	0.1	%	1	EI61901	09/18/06	09/19/06	% calculation	
S- Comp. (6118008-03) Soil									
% Moisture	8.8	0.1	%	I	E161901	09/18/06	09/19/06	% calculation	
NW- Comp. (6118008-04) Soil									
% Moisture	1.9	0.1	%	1	E161901	09/18/06	09/19/06	% calculation	
SW- Comp. (6118008-05) Soil									
% Moisture	4.5	0.1	%	1	EI61901	09/18/06	09/19/06	% calculation	
P- Comp. (6118008-06) Soil									
% Moisture	5.4	0.1	%	1	E161901	09/18/06	09/19/06	% calculation	
S-5 (6118008-07) Soil									
% Moisture	18.1	0.1	%	1	EI61901	09/18/06	09/19/06	% calculation	

Environmental Lab of Texas

Organics by GC - Quality Control

Environmental Lab of Texas

A 1 4	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Analyte	Result	LIIIII	Onits	Level	·	MREC	Linits		Linin	
Batch El61820 - Solvent Extraction (GC)										
Blank (E161820-BLK1)				Prepared &	k Analyzed:	09/18/06				
Carbon Ranges C6-C12	ND	10.0	mg/kg wet							
Carbon Ranges C12-C28	ND	10.0								
Carbon Ranges C28-C35	ND	10.0								
Total Hydrocarbons	ND	10.0	"							
Surrogate: 1-Chlorooctane	38.9		mg/kg	50.0		77.8	70-130			
Surrogate: 1-Chlorooctadecane	48.7		"	50.0		97.4	70-130			
LCS (E161820-BS1)				Prepared &	k Analyzed:	09/18/06				
Carbon Ranges C6-C12	485	10.0	mg/kg wet	500		97.0	75-125			
Carbon Ranges C12-C28	401	10.0	"	500		80.2	75-125			
Carbon Ranges C28-C35	ND	10.0		0.00			75-125			
Total Hydrocarbons	886	10.0	**	1000		88.6	75-125			
Surrogate: 1-Chlorooctane	52.7		mg/kg	50.0		105	70-130			
Surrogate: 1-Chlorooctadecane	52.8		"	50.0		106	70-130			
Calibration Check (EI61820-CCV1)				Prepared: (09/18/06 A	nalyzed: 09	/19/06			
Carbon Ranges C6-C12	229		mg/kg	250		91.6	80-120			
Carbon Ranges C12-C28	298		"	250		119	80-120			
Total Hydrocarbons	527		"	500		105	80-120			
Surrogate: 1-Chlorooctane	51.2		"	50.0		102	70-130			
Surrogate: 1-Chlorooctadecane	58.7		"	50.0		117	70-130			
Matrix Spike (El61820-MS1)	Sou	ırce: 6118006	-01	Prepared 8	k Analyzed:	09/18/06				
Carbon Ranges C6-C12	563	10.0	mg/kg dry	571	ND	98.6	75-125			
Carbon Ranges C12-C28	489	10.0	"	571	ND	85.6	75-125			
Carbon Ranges C28-C35	ND	10.0	н	0.00	ND		75-125			
Total Hydrocarbons	1050	10.0	11	1140	ND	92.1	75-125			
Surrogate: 1-Chlorooctane	52.5		mg/kg	50.0		105	70-130			
Surrogate: 1-Chlorooctadecane	53.4		"	50.0		107	70-130			

Organics by GC - Quality Control

Environmental Lab of Texas

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch El61820 - Solvent Extraction (GC)

Matrix Spike Dup (E161820-MSD1)	Sourc	Source: 6118006-01 Prepared & Analyzed: 09/18/06				09/18/06			
Carbon Ranges C6-C12	547	10.0	mg/kg dry	571	ND	95.8	75-125	2.88	20
Carbon Ranges C12-C28	467	10.0	"	571	ND	81.8	75-125	4.60	20
Carbon Ranges C28-C35	ND	10.0	"	0.00	ND		75-125		20
Total Hydrocarbons	1010	10.0	"	1140	ND	88.6	75-125	3.88	20
Surrogate: 1-Chlorooctane	52.0		mg/kg	50.0		104	70-130		
Surrogate: 1-Chlorooctadecane	51.5		"	50.0		103	70-130		

Batch EI61904 - EPA 5030C (GC)

Blank (EI61904-BLK1)				Prepared & Ana	lyzed: 09/19/06		
Benzene	ND	0.0250	mg/kg wet				
Toluene	ND	0.0250	*				
Ethylbenzene	ND	0.0250	**				
Xylene (p/m)	ND	0.0250	"				
Xylene (o)	ND	0.0250	**				
Surrogate: a,a,a-Trifluorotoluene	38.7		ug/kg	40.0	96.8	80-120	
Surrogate: 4-Bromofluorobenzene	32.4		"	40.0	81.0	80-120	
LCS (E161904-BS1)				Prepared & Ana	lyzed: 09/19/06		
Benzene 9	1.42	0.0250	mg/kg wet	1.25	114	80-120	
Toluene	1.29	0.0250	"	1.25	103	80-120	
Ethylbenzene	1.19	0.0250	11	1.25	95.2	80-120	
Xylene (p/m)	2.65	0.0250	"	2.50	106	80-120	
Xylene (o)	1.22	0.0250	11	1.25	97.6	80-120	
Surrogate: a,a,a-Trifluorotoluene	42.4		ug/kg	40.0	106	80-120	
Surrogate: 4-Bromofluorobenzene	38.7		"	40.0	96.8	80-120	

Organics by GC - Quality Control

Environmental Lab of Texas

A 1 4	n 1	Reporting	TT '2	Spike	Source	0/050	%REC	DDD	RPD Limit	kt
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch El61904 - EPA 5030C (GC)								193		
Calibration Check (El61904-CCV1)				Prepared &	Analyzed:	09/19/06				
Benzene	0.0512		mg/kg wet	0.0500		102	80-120			
Toluene	0.0454			0.0500		90.8	80-120			
Ethylbenzene	0.0450		"	0.0500		90.0	80-120			
Xylene (p/m)	0.0887		"	0.100		88.7	80-120			
Xylene (0)	0.0440			0.0500		88.0	80-120			
Surrogate: a,a,a-Trifluorotoluene	39.4		ug/kg	40.0		98,5	80-120			
Surrogate: 4-Bromofluorobenzene	32.8		"	40.0		82.0	80-120			
Matrix Spike (EI61904-MS1)	Sou	rce: 6I15017-	-30	Prepared &	Analyzed:	09/19/06				
Benzene	1.47	0.0250	mg/kg dry	1.31	ND	112	80-120			
Toluene	1.33	0.0250	"	1.31	ND	102	80-120			
Ethylbenzene	1.21	0.0250	н	1.31	ND	92.4	80-120			
Xylene (p/m)	2.81	0.0250	п	2.62	ND	107	80-120			
Xylene (0)	1.32	0.0250	"	1.31	ND	101	80-120			
Surrogate: a,a,a-Trifluorotoluene	40.2		ug/kg	40.0		100	80-120			
Surrogate: 4-Bromofluorobenzene	39.3		"	40.0		98.2	80-120			
Matrix Spike Dup (El61904-MSD1)	Sou	rce: 6115017	-30	Prepared &	k Analyzed:	09/19/06				
Benzene	1.55	0.0250	mg/kg dry	1.31	ND	118	80-120	5.22	20	
Toluene	1.32	0.0250	"	1.31	ND	101	80-120	0.985	20	
Ethylbenzene	1.32	0.0250	u	1.31	ND	101	80-120	8.89	20	
Xylene (p/m)	2.75	0.0250	"	2.62	ND	105	80-120	1.89	20	
Xylene (0)	1.36	0.0250	"	1.31	ND	104	80-120	2.93	20	
Surrogate: a,a,a-Trifluorotoluene	39.9		ug/kg	40.0		99.8	80-120			
Surrogate: 4-Bromofluorobenzene	44.5		"	40.0		111	80-120			

General Chemistry Parameters by EPA / Standard Methods - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EI61901 - General Preparation (Prep)										
Blank (E161901-BLK1)				Prepared: 0	9/18/06 A	nalyzed: 09	/19/06			
% Solids	100		%							
Duplicate (E161901-DUP1)	Sour	ce: 6I18006-0)1	Prepared: 0	9/18/06 A	nalyzed: 09	/19/06			
% Solids	87.3		%		87.6			0.343	20	

Environmental Lab of Texas

Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
J	Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
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:

Raland K Julies

Date:

9/20/2006

Raland K. Tuttle, Lab Manager Celey D. Keene, Lab Director, Org. Tech Director Peggy Allen, QA Officer Jeanne Mc Murrey, Inorg. Tech Director LaTasha Cornish, Chemist Sandra Sanchez, Lab Tech.

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-563-1800.

Environmental Lab of Texas

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

t:	SUBS	
Time:	9/18/06 1:45	
D#:	10 I 18008	
S:	Cle	

Sample Receipt Checklist

			Client Initials
Temperature of container/ cooler?	Yes	No	2,5 °C
Shipping container in good condition?	Yes?	No	
Custody Seals intact on shipping container/ cooler?	Yes	No	Not Present
Custody Seals intact on sample bottles/ container?	des	No	Not Present
Chain of Custody present?	Yas	No	
Sample instructions complete of Chain of Custody?	Yes	No	
Chain of Custody signed when relinquished/ received?	Xes	No	
Chain of Custody agrees with sample label(s)?	Yes	No	ID written on Cont./ Lid
Container label(s) legible and intact?	Yes	No	Not Applicable
Sample matrix/ properties agree with Chain of Custody?	Yes.	No	
Containers supplied by ELOT?	Yes	No	
Samples in proper container/ bottle?	Yes	No	See Below
Samples properly preserved?	Yes	No	See Below
Sample bottles intact?	Yes	No	
Preservations documented on Chain of Custody?	Yes	No	
Containers documented on Chain of Custody?	Yes	No	
Sufficient sample amount for indicated test(s)?	Yes	No	See Below
All samples received within sufficient hold time?	Yes	No	See Below
VOC samples have zero headspace?	Yes	No	Not Applicable

Variance Documentation

act:	Contacted by:			Date/ Time:	
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ck 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

Analytical Report 454753

for

Southern Union Gas Services- Monahans

Project Manager: Joel Lowry

SW 4-Inch Lateral

1RP-1018

07-JAN-13

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: AZ00989): Arizona (AZ0758)



07-JAN-13

Project Manager: Joel Lowry Southern Union Gas Services- Monahans 801 South Loop 464 Monahans, TX 79756

Reference: XENCO Report No(s): 454753 SW 4-Inch Lateral Project Address: Lovington, NM

Joel Lowry:

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) 454753. 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. 454753 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

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Houston - Dallas - Odessa - San Antonio - Tampa - Lakeland - Atlanta - Phoenix - Oklahoma - Latin America



Sample Cross Reference 454753



Southern Union Gas Services- Monahans, Monahans, TX

SW 4-Inch Lateral

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TT-1 @ Surface	S	12-20-12 09:00		454753-001
TT-1 @ 4'	S	12-20-12 09:05		454753-002
TT-1 @ 6'	S	12-20-12 09:10		454753-003
TT-2 @ Surface	S	12-20-12 09:20		454753-004
TT-2 @ 4'	S	12-20-12 09:25		454753-005
TT-2 @ 6'	S	12-20-12 09:30		454753-006
TT-3 @ Surface	S	12-20-12 09:40		454753-007
TT-3 @ 4'	S	12-20-12 09:45		454753-008
TT3-@6'	S	12-20-12 09:50		454753-009
TT4- @ Surface	S	12-20-12 10:00		454753-010
TT4- @ 4'	S	12-20-12 10:05		454753-011
TT4-@6'	S	12-20-12 10:10		454753-012
TT-5 @ Surface	S	12-20-12 10:20		454753-013
TT-5 @ 4'	S	12-20-12 10:25		454753-014
TT-5 @ 6'	S	12-20-12 10:30		454753-015
TT-6 @ Surface	S	12-20-12 10:40		454753-016
TT-6 @ 4'	S	12-20-12 10:45		454753-017
TT-6 @ 6'	S	12-20-12 10:50		454753-018
TT-7 @ Surface	S	12-20-12 11:00		454753-019
TT-7 @ 4'	S	12-20-12 11:05		454753-020
TT-7 @ 6'	S	12-20-12 11:10		454753-021





Client Name: Southern Union Gas Services- Monahans Project Name: SW 4-Inch Lateral



Project ID:1RP-1018Work Order Number(s):454753

Report Date: 07-JAN-13 Date Received: 12/24/2012

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Sulfide, total

Project Id: 1RP-1018

Contact: Joel Lowry

Certificate of Analysis Summary 454753

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: SW 4-Inch Lateral



Date Received in Lab: Mon Dec-24-12 03:00 pm

Report Date: 07-JAN-13 Project Location: Lovington, NM Project Manager: Nicholas Straccione 454753-004 454753-005 454753-006 Lab Id: 454753-001 454753-002 454753-003 Field Id: TT-2 @ Surface TT-2 @ 4' TT-2 @ 6' TT-1 @ Surface TT-1 @ 4' TT-1 @ 6' Analysis Requested Depth: Matrix: SOIL SOIL SOIL SOIL SOIL SOIL Dec-20-12 09:30 Sampled: Dec-20-12 09:00 Dec-20-12 09:05 Dec-20-12 09:10 Dec-20-12 09:20 Dec-20-12 09:25 BTEX by EPA 8021B Extracted: Jan-03-13 08:30 Jan-03-13 13:36 Analyzed: Units/RL mg/kg RL 0.00103 Benzene ND Toluene ND 0.00206 Ethylbenzene ND 0.00103 0.00206 m,p-Xylenes ND ND 0.00103 o-Xylene Total Xylenes 0.00103 ND Total BTEX ND 0.00103 Inorganic Anions by EPA 300/300.1 Extracted: Dec-28-12 17:06 Dec-28-12 17:41 Dec-28-12 18:15 Dec-28-12 18:33 Dec-28-12 18:50 Dec-28-12 19:42 SUB: E871002 Dec-28-12 18:33 Dec-28-12 18:50 Dec-28-12 19:42 Analyzed: Dec-28-12 17:06 Dec-28-12 17:41 Dec-28-12 18:15 Units/RL: RL RL mg/kg RL RL RL RL mg/kg mg/kg mg/kg mg/kg mg/kg Chloride 4.26 1.31 2.36 1.20 1.79 1.27 ND 1.03 1.28 1.14 ND 1.03 **Percent Moisture** Extracted: SUB: E871002 Dec-28-12 11:06 Dec-28-12 11:06 Dec-28-12 11:06 Dec-28-12 11:06 Dec-28-12 11:06 Dec-28-12 11:06 Analyzed: % RL % RL % RL % RL Units/RL: % RL % RL 1.00 Percent Moisture 23.9 1.00 16.6 1.00 21.0 1.00 2.94 1.00 12.6 1.00 2.78 Sulfides by SW-846 9030B Extracted: SUB: E871002 Jan-03-13 16:36 Analyzed: Units/RL: mg/kg RL ND 50.0

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.

Nul Ct

Nicholas Straccione Project Manager

ETTONICON

Project Id: 1RP-1018 Contact: Joel Lowry Project Location: Lovington, NM

Certificate of Analysis Summary 454753

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: SW 4-Inch Lateral



Date Received in Lab: Mon Dec-24-12 03:00 pm

Report Date: 07-JAN-13

							Report	Dates					
							Project Mar	nager:	Nicholas Strac	cione			
Lab Id:	454753-0	01	454753-0	02	454753-0	03	454753-0	04	454753-0	05	454753-0	06	
Field Id:	TT-1 @ Sur	face	TT-1 @ 4'		TT-I @ 6'		TT-2 @ Surface		TT-2 @ 4'		TT-2 @	6'	
Depth:													
Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL		
Sampled:	Dec-20-12 0	9:00	Dec-20-12 0	9:05	Dec-20-12 0	09:10	Dec-20-12 0	9:20	Dec-20-12 0	9:25	Dec-20-12 (09:30	
Extracted:	Dec-27-12 12:00		Dec-27-12 1	2:00	Dec-27-12 1	12:00	Dec-27-12 1	2:00	Dec-27-12 1	2:00	Dec-27-12	12:00	
Analyzed:	Dec-28-12 (0:10	Dec-28-12 0	0:36	Dec-28-12 0	01:02	Dec-28-12 0	01:28	Dec-28-12 0	1:54	Dec-28-12 (02:20	
Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	
	ND	19.7	ND	18.0	ND	19.0	ND	15.4	ND	17.2	ND	15.4	
	ND	19.7	ND	18.0	ND	19.0	ND	15.4	ND	17.2	ND	15.4	
8-C35 Oil Range Hydrocarbons ND 19.7		ND	18.0	ND	19.0	ND	15.4	ND	17.2	ND	15.4		
otal TPH ND 19.		19.7	ND	18.0	ND	19.0	ND	15.4	ND	17.2	ND	15.4	
	Field Id: Depth: Matrix: Sampled: Extracted: Analyzed:	Field Id: TT-1 @ Sur Depth: Matrix: SOIL Sampled: Dec-20-12 0 Extracted: Dec-27-12 1 Analyzed: Dec-28-12 0 Units/RL: mg/kg ND ND	Field Id: TT-1 @ Surface Depth: TT-1 Matrix: SOIL Sampled: Dec-20-12 09:00 Extracted: Dec-27-12 12:00 Analyzed: Dec-28-12 00:10 Units/RL: mg/kg RL ND 19.7 ND 19.7 ND 19.7	Field Id: TT-1 @ Surface TT-1 @ 4 Depth: TT-1 @ Surface TT-1 @ 4 Matrix: SOIL SOIL Sampled: Dec-20-12 09:00 Dec-20-12 0 Extracted: Dec-27-12 12:00 Dec-27-12 1 Analyzed: Dec-28-12 00:10 Dec-28-12 0 Units/RL: mg/kg RL mg/kg ND 19.7 ND ND 19.7 ND	Field Id: TT-1 @ Surface TT-1 @ 4' Depth: SOIL SOIL Matrix: SOIL Dec-20-12 09:00 Sampled: Dec-20-12 09:00 Dec-20-12 09:05 Extracted: Dec-27-12 12:00 Dec-27-12 12:00 Analyzed: Dec-28-12 00:10 Dec-28-12 00:36 Units/RL: mg/kg RL mg/kg RL ND 19.7 ND 18.0 ND 19.7 ND 18.0	Field Id: TT-1 @ Surface TT-1 @ 4' TT-1 @ Depth: TT-1 @ Surface TT-1 @ 4' TT-1 @ Matrix: SOIL SOIL SOIL SOIL Sampled: Dec-20-12 09:00 Dec-20-12 09:05 Dec-20-12 0 Extracted: Dec-27-12 12:00 Dec-27-12 12:00 Dec-27-12 0 Analyzed: Dec-28-12 00:10 Dec-28-12 00:36 Dec-28-12 0 Units/RL: mg/kg RL mg/kg RL mg/kg ND 19.7 ND 18.0 ND ND 19.7 ND 18.0 ND	Field Id: TT-1 @ Surface TT-1 @ 4' TT-1 @ 6' Depth: TT-1 SOIL SOIL SOIL Matrix: SOIL SOIL SOIL SOIL Sampled: Dec-20-12 09:00 Dec-20-12 09:05 Dec-20-12 09:10 Extracted: Dec-27-12 12:00 Dec-27-12 12:00 Dec-27-12 12:00 Mairyzed: Dec-28-12 00:10 Dec-28-12 00:36 Dec-28-12 01:02 Units/RL: mg/kg RL mg/kg RL ND 19.7 ND 18.0 ND 19.0 ND 19.7 ND 18.0 ND 19.0 ND 19.7 ND 18.0 ND 19.0	Lab Id: 454753-001 454753-002 454753-003 454753-003 454753-003 Field Id: TT-1 @ Surface TT-1 @ 4' TT-1 @ 6' TT-2 @ Surface Depth: Depth: Matrix: SOIL Sampled: Dec-20-12 09:00 Dec-20-12 09:05 Dec-20-12 09:10 Dec-20-12 00:10 Dec-28-12 00:10 Dec-28-12 00:10 Dec-28-12 00:10 Dec-28-12 00:10 Dec-28-12 00:10 <th colspa<="" td=""><td>Lab Id: 454753-001 454753-002 454753-003 454753-004 Field Id: TT-1 @ Surface TT-1 @ 4' TT-1 @ 6' TT-2 @ Surface Matrix: SOIL SOIL<!--</td--><td>Lab Id: 454753-001 454753-002 454753-003 454753-004 454753-004 454753-004 Field Id: TT-1 @ Surface TT-1 @ 4' TT-1 @ 6' TT-2 @ Surface TT-2 @ Surface Depth: </td><td>Lab Id: $454753 \cdot 001$ $454753 \cdot 002$ $454753 \cdot 003$ $454753 \cdot 004$ $454753 \cdot 005$ Field Id: TT-1 @ Surface TT-1 @ 4' TT-1 @ 6' TT-2 @ Surface TT-2 @ 4' Depth: TT-1 @ SOIL SO</td><td>Lab Id: 454753-001 454753-002 454753-003 454753-004 454753-005 454753-004 454753-005 454753-006 Field Id: TT-1 @ Surface TT-1 @ 4' TT-1 @ 6' TT-2 @ Surface TT-2 @ 4' TT-2 @ Matrix: SOIL SOIL</td></td></th>	<td>Lab Id: 454753-001 454753-002 454753-003 454753-004 Field Id: TT-1 @ Surface TT-1 @ 4' TT-1 @ 6' TT-2 @ Surface Matrix: SOIL SOIL<!--</td--><td>Lab Id: 454753-001 454753-002 454753-003 454753-004 454753-004 454753-004 Field Id: TT-1 @ Surface TT-1 @ 4' TT-1 @ 6' TT-2 @ Surface TT-2 @ Surface Depth: </td><td>Lab Id: $454753 \cdot 001$ $454753 \cdot 002$ $454753 \cdot 003$ $454753 \cdot 004$ $454753 \cdot 005$ Field Id: TT-1 @ Surface TT-1 @ 4' TT-1 @ 6' TT-2 @ Surface TT-2 @ 4' Depth: TT-1 @ SOIL SO</td><td>Lab Id: 454753-001 454753-002 454753-003 454753-004 454753-005 454753-004 454753-005 454753-006 Field Id: TT-1 @ Surface TT-1 @ 4' TT-1 @ 6' TT-2 @ Surface TT-2 @ 4' TT-2 @ Matrix: SOIL SOIL</td></td>	Lab Id: 454753-001 454753-002 454753-003 454753-004 Field Id: TT-1 @ Surface TT-1 @ 4' TT-1 @ 6' TT-2 @ Surface Matrix: SOIL SOIL </td <td>Lab Id: 454753-001 454753-002 454753-003 454753-004 454753-004 454753-004 Field Id: TT-1 @ Surface TT-1 @ 4' TT-1 @ 6' TT-2 @ Surface TT-2 @ Surface Depth: </td> <td>Lab Id: $454753 \cdot 001$ $454753 \cdot 002$ $454753 \cdot 003$ $454753 \cdot 004$ $454753 \cdot 005$ Field Id: TT-1 @ Surface TT-1 @ 4' TT-1 @ 6' TT-2 @ Surface TT-2 @ 4' Depth: TT-1 @ SOIL SO</td> <td>Lab Id: 454753-001 454753-002 454753-003 454753-004 454753-005 454753-004 454753-005 454753-006 Field Id: TT-1 @ Surface TT-1 @ 4' TT-1 @ 6' TT-2 @ Surface TT-2 @ 4' TT-2 @ Matrix: SOIL SOIL</td>	Lab Id: 454753-001 454753-002 454753-003 454753-004 454753-004 454753-004 Field Id: TT-1 @ Surface TT-1 @ 4' TT-1 @ 6' TT-2 @ Surface TT-2 @ Surface Depth:	Lab Id: $454753 \cdot 001$ $454753 \cdot 002$ $454753 \cdot 003$ $454753 \cdot 004$ $454753 \cdot 005$ Field Id: TT-1 @ Surface TT-1 @ 4' TT-1 @ 6' TT-2 @ Surface TT-2 @ 4' Depth: TT-1 @ SOIL SO	Lab Id: 454753-001 454753-002 454753-003 454753-004 454753-005 454753-004 454753-005 454753-006 Field Id: TT-1 @ Surface TT-1 @ 4' TT-1 @ 6' TT-2 @ Surface TT-2 @ 4' TT-2 @ Matrix: SOIL SOIL

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Nul Ctr

Nicholas Straccione Project Manager

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Project Id: 1RP-1018 Contact: Joel Lowry Project Location: Lovington, NM

Certificate of Analysis Summary 454753

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: SW 4-Inch Lateral



Date Received in Lab: Mon Dec-24-12 03:00 pm

Report Date: 07-JAN-13

oject Location. Lovington, NM								Project Mar	nager:	Nicholas Strac	cione		
	Lab Id:	454753-0	07	454753-0	08	454753-0	009	454753-0	10	454753-0	11	454753-0	012
Analysis Requested	Field Id:	TT-3 @ Su	rface	TT-3 @	4'	TT3- @	6'	TT4- @ Sur	rface	TT4-@-	4'	TT4- @	6'
Analysis Kequestea	Depth:		1		[[Í		
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Dec-20-12 (09:40	Dec-20-12 (09:45	Dec-20-12	09:50	Dec-20-12 1	0:00	Dec-20-12 1	0:05	Dec-20-12	10:10
BTEX by EPA 8021B	Extracted:	·				Jan-03-13 (08:30					Jan-03-13 (08:30
	Analyzed:					Jan-03-13 1	3:53					Jan-03-13	15:31
	Units/RL:					mg/kg	RL					mg/kg	RL
Benzene						ND	0.00116	·····				ND	0.00122
Toluene						ND	0.00232					ND	0.00244
Ethylbenzene			-			ND	0.00116					ND	0.00122
m,p-Xylenes							0.00232					ND	0.00244
o-Xylene						ND	0.00116					ND	0.00122
Total Xylenes						ND	0.00116					ND	0.00122
Total BTEX						ND	0.00116					ND	0.00122
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-28-12	20:00	Dec-28-12 2	20:17	Dec-28-12	20:35	Dec-28-12 2	20:52	Dec-28-12 2	21:09	Dec-28-12	21:44
SUB: E871002	Analyzed:	Dec-28-12	20:00	Dec-28-12 2	20:17	Dec-28-12	20:35	Dec-28-12 2	20:52	Dec-28-12 2	21:09	Dec-28-12	21:44
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1.54	1.25	1.31	1.24	4.16	1.16	ND	1.31	ND	1.03	ND	1.22
Percent Moisture	Extracted:												
SUB: E871002	Analyzed:	Dec-28-12	11:06	Dec-28-12 1	1:06	Dec-28-12	11:06	Dec-28-12 1	1:06	Dec-28-12 1	1:06	Dec-28-12	11:06
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture	·	19.8	1.00	19.2	1.00	14.1	1.00	23.4	1.00	2.59	1.00	17.9	1.00
Sulfides by SW-846 9030B	Extracted:												
SUB: E871002	Analyzed:					Jan-03-13 1	16:38					Jan-03-13	16:40
	Units/RL:					mg/kg	RL					mg/kg	RL
Sulfide, total	·					ND	50.0					64.0	50.0

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Nul Ctr

Nicholas Straccione Project Manager

Project Id: 1RP-1018 Contact: Joel Lowry Project Location: Lovington, NM

Certificate of Analysis Summary 454753

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: SW 4-Inch Lateral



Date Received in Lab: Mon Dec-24-12 03:00 pm

Report Date: 07-JAN-13

								Project Mar	ager:	Nicholas Strac	cione				
	Lab Id:	454753-0	454753-007		454753-008		09	454753-010		454753-011		454753-012			
Analysis Requested	Field Id:	TT-3 @ Su	TT-3 @ Surface		TT-3 @ 4'		TT3-@6'		face	TT4- @ 4'		TT4- @	6'		
Anutysis Kequesteu	Depth:														
	Matrix:	SOIL	SOIL			SOIL		SOIL		SOIL		SOIL			
	Sampled:	Dec-20-12 (9:40	Dec-20-12 0	9:45	Dec-20-12 0)9:50	Dec-20-12 1	0:00	Dec-20-12 1	0:05	Dec-20-12 1	0:10		
TPH By SW8015 Mod	Extracted:	Dec-28-12	Dec-28-12 15:00		Dec-28-12 15:00		5:00	Dec-28-12 1	5:00	Dec-28-12 1	5:00	Dec-28-12 1	5:00	Dec-28-12	5:00
	Analyzed:	Dec-28-12	9:55	Dec-28-12 20:21		Dec-28-12 20:46		Dec-28-12 21:12		Dec-28-12 21:37		Dec-28-12 22:0			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
C6-C12 Gasoline Range Hydrocarbons		ND	18.7	ND	18.5	ND	17.5	ND	19.5	ND	15.4	ND	18.3		
C12-C28 Diesel Range Hydrocarbons		ND	18.7	ND	18.5	74.1	17.5	ND	19.5	ND	15.4	ND	18.3		
C28-C35 Oil Range Hydrocarbons		ND	18.7	ND	18.5	ND	17.5	ND	19.5	ND	15.4	ND	18.3		
Total TPH		ND	18.7	ND	18.5	74.1	17.5	ND	19.5	ND	15.4	ND	18.3		

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Nicholas Straccione Project Manager

COLLES Belicatorical

Project Id: 1RP-1018 Contact: Joel Lowry Project Location: Lovington, NM

Certificate of Analysis Summary 454753

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: SW 4-Inch Lateral



Date Received in Lab: Mon Dec-24-12 03:00 pm

Report Date: 07-JAN-13

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								Project Mar	nager:	Nicholas Strac	cione		
	Lab Id:	454753-0	13	454753-0	14	454753-0	15	454753-0	16	454753-017		454753-0	18
Analysis Paguastad	Field Id:	TT-5 @ Su	TT-5 @ Surface		TT-5 @ 4'		TT-5 @ 6'		rface	TT-6 @ 4'		TT-6 @ 0	6'
Analysis Requested	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL	ĺ	SOIL		SOIL	
	Sampled:	Dec-20-12	10:20	Dec-20-12 1	0:25	Dec-20-12	0:30	Dec-20-12 1	10:40	Dec-20-12 1	0:45	Dec-20-12 1	0:50
Inorganic Anions by EPA 300/300.1	Extracted:	<i>d:</i> Dec-28-12 22:02		Dec-28-12 2	2:19	Dec-28-12 23:11 Dec-28-12 23:11		Dec-28-12 2	23:29	Dec-28-12 2	23:46	Dec-29-12 0	0:04
SUB: E871002	Analyzed:	Dec-28-12	22:02	Dec-28-12 22:19				Dec-28-12 23:29		Dec-28-12 2	23:46	Dec-29-12 00:04	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		10.9	1.42	4.10	1.32	3.60	1.23	ND	1.32	ND	1.14	ND	1.20
Percent Moisture	Extracted:												
SUB: E871002	Analyzed:	Dec-28-12	11:06	Dec-28-12 1	1:06	Dec-28-12 1	1:06	Dec-28-12 1	11:06	Dec-28-12 1	1:06	Dec-28-12 1	1:06
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		29.6	1.00	24.3	1.00	18.5	1.00	24.4	1.00	12.0	1.00	16.5	1.00
TPH By SW8015 Mod	Extracted:	Dec-28-12	15:00	Dec-28-12 1	5:00	Dec-28-12 1	5:00	Dec-28-12 1	15:00	Dec-28-12 1	5:00	Dec-28-12 1	5:00
	Analyzed:	Dec-28-12	Dec-28-12 22:28		2:53	Dec-28-12 23:17		Dec-28-12 2	23:42	Dec-29-12 0	00:31	Dec-29-12 0	0:56
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		ND	21.2	ND	19.8	ND	18.3	ND	19.8	ND	17.1	ND	18.0
C12-C28 Diesel Range Hydrocarbons		ND	21.2	ND	19.8	ND	18.3	ND	19.8	ND	17.1	ND	18.0
C28-C35 Oil Range Hydrocarbons		ND	21.2	ND	19.8	ND	18.3	ND	19.8	ND	17.1	ND	18.0
Total TPH		ND	21.2	ND	19.8	ND	18.3	ND	19.8	ND	17.1	ND	18.0

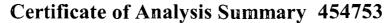
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Nul Ctr

Nicholas Straccione Project Manager

CONCO Belicitated

Project Id: 1RP-1018 Contact: Joel Lowry Project Location: Lovington, NM



Southern Union Gas Services- Monahans, Monahans, TX

Project Name: SW 4-Inch Lateral



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Date Received in Lab: Mon Dec-24-12 03:00 pm

Report Date: 07-JAN-13

Project Manager: Nicholas Straccione

							y o		
Lab Id:	454753-0	19	454753-02	20	454753-0	21			
Field Id:	TT-7 @ Su	face	TT-7 @ 4	4'	TT-7 @ (6'			
Depth:									
Matrix:	SOIL		SOIL		SOIL				
Sampled:	Dec-20-12	1:00	Dec-20-12 1	1:05	Dec-20-12 1	1:10		1	
Extracted:	Dec-29-12 (00:21	Dec-29-12 0	0:38	Dec-29-12 0)1:48			
Analyzed:	Dec-29-12 (00:21	Dec-29-12 0	0:38	Dec-29-12 0	01:48			
Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL			
	ND	1.28	2.16	1.36	ND	1.02			
Extracted:				ĺ					
Analyzed:	Dec-28-12	11:06	Dec-28-12 1	1:06	Dec-28-12 1	1:06			
Units/RL:	%	RL	%	RL	%	RL			
	22.2	1.00	26.3	1.00	1.91	1.00			
Extracted:	Dec-28-12	15:00	Dec-28-12 1	5:00	Dec-28-12 1	5:00			
Analyzed:	Dec-29-12 (01:20	Dec-29-12 0	1:45	Dec-29-12 0	02:09			
Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL			
	ND	19.3	ND	20.3	ND	15.3			
	ND	19.3	ND	20.3	ND	15.3			
	ND	19.3	ND	20.3	ND	15.3			
	ND	19.3	ND	20.3	ND	15.3			
	Field Id: Depth: Matrix: Sampled: Extracted: Analyzed: Units/RL: Extracted: Analyzed: Units/RL:	Field Id:TT-7 @ SurDepth:TT-7 @ SurMatrix:SOILSampled:Dec-20-12 IExtracted:Dec-29-12 (Analyzed:Dec-29-12 (Units/RL:mg/kgMDExtracted:Analyzed:Dec-28-12 IUnits/RL:%22.2Extracted:Dec-28-12 IAnalyzed:Dec-28-12 IUnits/RL:%Dec-29-12 (Units/RL:mg/kgNDNDND	Field Id: TT-7 @ Surface Depth:	Field Id: TT-7 @ Surface TT-7 @ 4 Depth: SOIL SOIL Matrix: SOIL SOIL Sampled: Dec-20-12 11:00 Dec-20-12 1 Extracted: Dec-29-12 00:21 Dec-29-12 0 Analyzed: Dec-29-12 00:21 Dec-29-12 0 Units/RL: mg/kg RL mg/kg Kanalyzed: Dec-28-12 11:06 Dec-28-12 1 Dec-28-12 1 Linits/RL: % RL % Extracted: Dec-28-12 15:00 Dec-28-12 1 Dec-28-12 0 Malyzed: Dec-29-12 01:20 Dec-29-12 0 Dec-28-12 0 Units/RL: mg/kg RL mg/kg Malyzed: Dec-29-12 01:20 Dec-28-12 1 Malyzed: Dec-29-12 01:20 Dec-28-12 1 Malyzed: Dec-29-12 01:20 Dec-28-12 0 Malyzed: Malyzed: Malyzed Malyzed Malyzed: Malyzed: Malyzed Malyzed Malyzed: Malyzed: Malyzed Malyzed Malyzed: Malyzed: Malyzed Malyzed	Field Id: TT-7 @ Surface TT-7 @ 4' Depth: SOIL SOIL Matrix: SOIL Dec-20-12 11:00 Sampled: Dec-20-12 11:00 Dec-20-12 11:05 Extracted: Dec-29-12 00:21 Dec-29-12 00:38 Analyzed: Dec-29-12 00:21 Dec-29-12 00:38 Units/RL: mg/kg RL mg/kg RL Malyzed: Dec-28-12 11:06 Dec-28-12 11:06 Dec-28-12 11:06 Extracted: Z2.2 1.00 Z6.3 1.00 Extracted: Mec-29-12 01:20 Dec-28-12 15:00 Dec-28-12 15:00 Analyzed: Dec-29-12 01:20 Dec-29-12 01:45 Dec-29-12 01:45 Units/RL: mg/kg RL mg/kg RL MD 19.3 ND 20.3 ND 19.3 ND 20.3 ND 19.3 ND 20.3	Field Id: TT-7 @ Surface TT-7 @ 4' TT-7 @ 4' Depth: SOIL SOIL SOIL Matrix: SOIL SOIL SOIL SOIL Sampled: Dec-20-12 11:00 Dec-20-12 11:05 Dec-20-12 11 Extracted: Dec-29-12 00:21 Dec-29-12 00:38 Dec-29-12 00 Matrix: SOI Dec-29-12 00:21 Dec-29-12 00:38 Dec-29-12 00 Analyzed: Dec-29-12 00:21 Dec-29-12 00:38 Dec-29-12 00 Mits/RL: mg/kg RL mg/kg RL mg/kg Matrix/RL: Mg/kg RL Mg/kg RL Mg/kg Linits/RL: % RL % RL % Linits/RL: % RL % RL % Linits/RL: % RL % RL % Linits/RL: Mg/kg RL Mg/kg RL % Malyzed: Dec-29-12 01:20 Dec-29-12 01:45 Dec-29-12 01 Malyzed: Dec-29-12 01:20 Dec-29-12 01:45 Dec-29-12 01 MD 19.3	Field Id: TT-7 @ Surface TT-7 @ 4' TT-7 @ 6' Depth: SOIL SOIL SOIL SOIL Matrix: SOIL Dec-20-12 11:00 Dec-20-12 11:05 Dec-20-12 11:10 Extracted: Dec-29-12 00:21 Dec-29-12 00:38 Dec-29-12 01:48 Analyzed: Dec-29-12 00:21 Dec-29-12 00:38 Dec-29-12 01:48 Units/RL: mg/kg RL mg/kg RL mg/kg RL Analyzed: Dec-28-12 11:06 Dec-28-12 11:06 Dec-28-12 11:06 Dec-28-12 11:06 Extracted: Bec-28-12 11:06 Dec-28-12 11:06 Dec-28-12 11:06 Dec-28-12 11:06 Kanalyzed: Dec-28-12 15:00 Dec-28-12 15:00 Dec-28-12 15:00 Dec-28-12 15:00 Extracted: Dec-29-12 01:20 Dec-29-12 01:45 Dec-29-12 02:09 Units/RL: mg/kg RL mg/kg RL mg/kg RL Malyzed: Dec-29-12 01:20 Dec-29-12 01:45 Dec-29-12 02:09 Dec-29-12 02:09 Malyzed: Dec-29-12 01:20 Dec-29-12 01:45 Dec-29-12 02:09 Malyzed: Dec-29-12 01:20 Dec-29-12 02:09<	Lab Id: 454753-019 454753-020 454753-021 Field Id: TT-7 @ Surface TT-7 @ 4' TT-7 @ 6' Depth: SOIL SOIL SOIL Matrix: SOIL Dec-20-12 11:00 Dec-20-12 11:05 Dec-20-12 11:10 Extracted: Dec-29-12 00:21 Dec-29-12 00:38 Dec-29-12 01:48 Manlyzed: Dec-29-12 00:21 Dec-29-12 00:38 Dec-29-12 01:48 Units/RL: mg/kg RL mg/kg RL mg/kg RL Analyzed: Dec-28-12 11:06 Dec-28-12 11:06 Dec-28-12 11:06 Dec-28-12 11:06 Extracted: Dec-28-12 11:06 Dec-28-12 11:06 Dec-28-12 11:06 Manlyzed: Dec-28-12 11:06 Dec-28-12 11:06 Dec-28-12 11:06 Extracted: Dec-28-12 11:06 Dec-28-12 11:06 Dec-28-12 11:06 Manlyzed: Dec-28-12 11:06 Dec-28-12 11:06 Dec-28-12 11:06 Units/RL: % RL % RL Manlyzed: Dec-29-12 01:20 Dec-28-12 15:00 Dec-28-12 02:09 Units/RL: mg/kg RL mg/kg RL <tr< th=""><th>Field Id: TT-7 @ Surface TT-7 @ 4' TT-7 @ 6' Depth: TT-7 @ 5' TT-7 @ 6' Matrix: SOIL SOIL Sampled: Dec-20-12 11:00 Dec-20-12 11:05 Dec-20-12 11:10 Extracted: Dec-29-12 00:21 Dec-29-12 00:38 Dec-29-12 01:48 Analyzed: Dec-29-12 00:21 Dec-29-12 00:38 Dec-29-12 01:48 Units/RL: mg/kg RL mg/kg RL mg/kg RL Analyzed: Dec-28-12 11:06 Dec-28-12 11:06 Dec-28-12 11:06 Dec-28-12 11:06 Extracted: ND 1.28 2.16 1.36 ND 1.02 Extracted: Dec-28-12 11:06 Dec-28-12 11:06 Dec-28-12 11:06 Units/RL: % RL % RL % RL Malyzed: Dec-28-12 15:00 Dec-28-12 15:00 Dec-28-12 15:00 Dec-28-12 15:00 Malyzed: Dec-29-12 01:45 Dec-29-12 02:09 Dec-29-12 02:09 Dec-29-12 02:09 Units/RL: mg/kg RL mg/kg RL mg/kg RL mg/kg RL</th></tr<>	Field Id: TT-7 @ Surface TT-7 @ 4' TT-7 @ 6' Depth: TT-7 @ 5' TT-7 @ 6' Matrix: SOIL SOIL Sampled: Dec-20-12 11:00 Dec-20-12 11:05 Dec-20-12 11:10 Extracted: Dec-29-12 00:21 Dec-29-12 00:38 Dec-29-12 01:48 Analyzed: Dec-29-12 00:21 Dec-29-12 00:38 Dec-29-12 01:48 Units/RL: mg/kg RL mg/kg RL mg/kg RL Analyzed: Dec-28-12 11:06 Dec-28-12 11:06 Dec-28-12 11:06 Dec-28-12 11:06 Extracted: ND 1.28 2.16 1.36 ND 1.02 Extracted: Dec-28-12 11:06 Dec-28-12 11:06 Dec-28-12 11:06 Units/RL: % RL % RL % RL Malyzed: Dec-28-12 15:00 Dec-28-12 15:00 Dec-28-12 15:00 Dec-28-12 15:00 Malyzed: Dec-29-12 01:45 Dec-29-12 02:09 Dec-29-12 02:09 Dec-29-12 02:09 Units/RL: mg/kg RL mg/kg RL mg/kg RL mg/kg RL

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.

Nul Ctr

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.
- A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or В laboratory contamination.
- The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. D 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.
- RPD exceeded lab control limits. F
- The target analyte was positively identified below the quantiation limit and above the detection limit. J
- 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
- PQL Practical Quantitation Limit MQL Method Quantitation Limit
- **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

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

Certified and approved by numerous States and Agencies.

LOD Limit of Detection

LOQ Limit of Quantitation

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Project Name: SW 4-Inch Lateral

Lab Batch #: 903786 Sample: 454753-001 / SMP Batch: 1 Matrix: Soll Units: mg/kg Date Analyzed: 12/28/12 00:10 SURROGATE RECOVERY SURROGATE TPH By SW8015 Mod Analytes Instantion Recovery Cantral Limits Flags 1-Chlorooctane 97.0 100 97.0 70-135 - - arrphenyl 48.6 50.0 97.0 70-135 - Lab Batch #: 903786 Sample: 454753-002 / SMP Batch: 1 Manoutl Recovery Control Junits: mg/kg Date Analyzed: 12/28/12 00:36 SURROGATE Recovery Control Flags Junits: mg/kg Date Analyzed: 12/28/12 00:36 SURROGATE Recovery Control Flags Lab Batch #: 903786 Sample: 454753-003 / SMP Batch: 1 Matrix: Soll	Work Orders : 454753	Project ID: 1RP-1018					
Drink, marker Drike van Jewe Amount [A] True Annount [A] True Ansunt [B] Control Amount [B] Fase Amount [B] Control Amount [B] Fase Amount [B] Control Amount [B] Fase Amount [B] Control Amount [B] Fase Amount [B]	Lab Batch #: 903786	Sample: 454753-001 / SMP					
Hail by SW8015 Motion Found [A] Amount [B] Recovery with [B] Linits [B] Linits [B] Linits [B] Plags % 1-Chiorooctane 97.0 100 97 70-135 . 0-Terphenyl 48.6 50.0 97 70-135 . Lab Batch #: 903786 Sample: 454753-002 / SM Batch: 1 Matrix:Soit . Lab Batch #: 903786 Date Analyzed: 12/28/12 00:36 SURROGATE RECOVERY STUDY . . 1-Chiorooctane 98.2 100 98 70-135 . 1-Chiorooctane 98.2 100 98 70-135 . 1-Chiorooctane 98.2 100 98 70-135 . 0-Terphenyl Date Analyzed: 12/28/12 01:02 SURROGATE RECOVERY STUDY . . Lab Batch #: 903786 Sample: 454753-003 / SMP Batch: 1 Matrix:Soit . 1-Chiorooctane . 101 100 101 70-135 . 1-Chiorooctane . 101 100 70-135	Units: mg/kg	Date Analyzed: 12/28/12 00:10	SURROGATE RECOVERY STUDY				
1-Chlorooctane 97.0 100 97 70-135 o-Terphenyl 48.6 50.0 97 70-135 Lab Batch #: 903786 Sample: 454753-002 / SMP Batch: I Matrix: Suit Fundamina in the suit Summani in the suit Su	ТРН		Found	Amount	%R	Limits	Flags
Lab Batch #: 903786 Sample: 454753-002 / SMP Batch: 1 Matrix: Soil Units: mg/kg Date Analyzed: 12/28/12 00:36 SURROGATE RECOVERY STUDY TPH By SW8015 Mod Amount [A] Amount [B] Recovery [D] Control Limits %R Flags 1-Chlorooctane 98.2 100 98 70-135 - 0-Terpheryl 49.6 50.0 99 70-135 - Lab Batch #: 903786 Sample: 454753-003 / SMP Batch: 1 Matrix: Soil - TPH By SW8015 Mod Amount [A] True [B] Recovery [NR Control [NR Soft 1-Chlorooctane 101 100 101 70-135 - 1-Chlorooctane	1-Chlorooctane		97.0	100	97	70-135	
Units: mg/kg Date Analyzed: 12/28/12 00:36 SURROGATE RECOVERY STUDY TPH By SW8015 Mod Analytes Amount IAI True Amount IBI Recovery %R IDI Control Limits %R Flags 1-Chlorooctane 98.2 100 98 70-135 - 0-Terphenyl 49.6 50.0 99 70-135 - Lab Batch #: 903786 Sample: 454753-003 / SMP Batch: I Matrix: Soil - TPH By SW8015 Mod Amount IAI Amount IBI Matrix: Soil - - TPH By SW8015 Mod Amount IAI Amount IBI Matrix: Soil - - 1-Chlorooctane 101 100 101 70-135 - 1-Chlorooctane 101 100 101 70-135 - 1-Chlorooctane 50.6 50.0 101 70-135 - Lab Batch #: 903786 Sample: 454753-004 / SMP Batch: I Matrix: Soil - 1-Chlorooctane 101 100 101 70-135 - 1-Chlorooctane	o-Terphenyl		48.6	50.0	97	70-135	
TPH By SW8015 Mod Amount Found True Annalytes True Amount [A] True Amount [B] Recovery %R Control Limits %R Flags 1-Chlorooctane 98.2 100 98 70-135 - o-Terphenyl 49.6 50.0 99 70-135 - Lab Batch #: 903786 Sample: 454753-003 / SMP Batch: 1 Matrix: Soil - TPH By SW8015 Mod Amount [A] True Amount [B] Recovery %R Control Limits %R Flags 1-Chlorooctane 101 100 101 70-135 - 1-Chlorooctane 101 100 101 70-135 - 1-Chlorooctane 101 100 101 70-135 - Lab Batch #: 903786 Sample: 454753-004 / SMP Batch: 1 Matrix: Soil - TPH By SW8015 Mod Amount [A] Flound [A] True Amount [B] Recovery %R Control WR Limits %R Flags 1-Chlorooctane 22.8 99.8 90 70-135 -	Lab Batch #: 903786	Sample: 454753-002 / SMP	Batcl	h: 1 Matrix:	Soil	·	
Hard by SW0015 (Hold Analytes Found [A] Amount [B] Recovery 3/R [D] Limits 3/R [D] Pags 2/R [D] 1-Chlorooctane 98.2 100 98 70-135 0-Terphenyl 49.6 50.0 99 70-135 1-B Batch #: 903786 Sample: 454753-003 / SMP Batch: 1 Matrix: Soil TPH By SW8015 Mod Amount [A] True Analytes Mount [B] Recovery Manuent [B] Control 3/R (D) Flags 7/R (D) 1-Chlorooctane 101 100 101 70-135 1-Chlorooctane 101 100 101 70-135 1-Chlorooctane 50.6 50.0 101 70-135 1-Chlorooctane 50.6 50.0 101 70-135 1-Chlorooctane Sample: 454753-004 / SMP Batch: 1 Matrix:Soil Lab Batch #: 903786 Sample: 454753-004 / SMP Amount [A] Recovery [B] Control Limits %R Flags %R 1-Chlorooctane 928 93 <t< td=""><td>Units: mg/kg</td><td>Date Analyzed: 12/28/12 00:36</td><td>SU</td><td>RROGATE RI</td><td>ECOVERY S</td><td>STUDY</td><td></td></t<>	Units: mg/kg	Date Analyzed: 12/28/12 00:36	SU	RROGATE RI	ECOVERY S	STUDY	
1-Chlorooctane 98.2 100 98 70-135 o-Terphenyl 49.6 50.0 99 70-135 Lab Batch #: 903786 Units: mg/kg Sample: 454753-003 / SMP Date Analyzed: 12/28/12 01:02 Batch: 1 Matrix: Soil TPH By SW8015 Mod Analytes Amount [A] True Amount [B] Recovery %R [D] Control Limits %R Flags 1-Chlorooctane 101 100 101 70-135 1-Chlorooctane 101 100 101 70-135 0-Terphenyl 50.6 50.0 101 70-135 1-Chlorooctane 101 100 101 70-135 1-String/kg Date Analyzed: 12/28/12 01:28 SUEROGATE RECOVERY SUDY Lab Batch #: 903786 Sample: 454753-004 / SMP Analytes Amount [A] True Amount [B] Recovery %R [D] Sourol Limits Flags 1-Chlorooctane 92.8 99.8 93 70-135 1-Chlorooctane 92.8 99.8 93 70-135	Found [A]			Amount	%R	Limits	Flags
oracle of the point And the point Processing of the point of the	1-Chlorooctane		98.2	100	98	70-135	
Units: mg/kgDate Analyzed: 12/28/12 01:02SURROGATE RECOVERY STUDYTPH By SW8015 ModAmount Found [A]True Amount [B]Recovery $%R$ [D]Limits $%R$ (D)Flags1-Chlorooctane10110010170-135-o-Terphenyl50.650.010170-135-Lab Batch #: 903786Sample: 454753-004 / SMP Date Analyzed: 12/28/12 01:28Batch: 1Matrix: Soit-TPH By SW8015 ModAmount [A]Amount [B]True Amount [B]Control (D)Flags1-Chlorooctane92.899.89370-135-1-Chlorooctane92.899.89370-135-1-Chlorooctane92.899.89370-135-1-Chlorooctane92.899.89370-135-1-Chlorooctane92.899.89370-135-1-Chlorooctane92.899.89370-135-1-Chlorooctane92.899.89370-135-1-Chlorooctane92.899.89370-135-1-Chlorooctane92.899.89370-135-1-Chlorooctane12/28/12 01:54 Surrook True Recovery % Recovery % % R (D) 1-Chlorooctane93.770-1351-Chlorooctane93.71070-1351-Chlorooctane95.61009670-135							
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TPH By SW8015 Mod Analytes Amount Found [A] True Amount [B] Recovery %R [D] Control Limits %R [D] Flags 1-Chlorooctane 101 100 101 70-135 - o-Terphenyl 50.6 50.0 101 70-135 - Lab Batch #: 903786 Sample: 454753-004 / SMP Batch: 1 1 101 70-135 Units: mg/kg Date Analyzed: 12/28/12 01:28 SUEROGATE Recovery Recovery [A] Control True Amount [A] Flags 1-Chlorooctane 92.8 99.8 93 70-135 - 0-Terphenyl Analytes Date Analyzed: 12/28/12 01:54 SUEROGATE ECOVERY SUDY Lab Batch #: 903786 Sample: 454753-005 / SMP Batch: 1 <t< td=""><td></td><td>·</td><td colspan="5"></td></t<>		·					
1-Chlorooctane 101 100 101 70-135 - o-Terphenyl 50.6 50.0 101 70-135 - Lab Batch #: 903786 Sample: 454753-004 / SMP Batch: 1 Matrix: Soil - Units: mg/kg Date Analyzed: 12/28/12 01:28 SURROGATE RECOVERY STUDY Flags Analytes Amount Flugs %R 101 70-135 Flags 1-Chlorooctane 92.8 99.8 93 70-135 - 1-Chlorooctane 92.8 99.8 93 70-135 - Lab Batch #: 903786 Sample: 454753-005 / SMP Batch: 1 Matrix: Soil - Lab Batch #: 903786 Sample: 12/28/12 01:54 SUPCOPATE RECOVERY STUDY - - Lab Batch #: 903786 Sample: 454753-005 / SMP Batch: 1 Matrix: Soil - Lab Batch #: 903786 Sample: 454753-005 / SMP Batch: 1 Matrix: Soil - Lab Batch #: 903786 Sample: 454753-005 / SMP Batch: 1 Matrix: Soil - Inits: mg/kg Date Analyzed: 1	TPH By SW8015 Mod		Found	Amount	%R	Limits	Flags
Lab Batch #: 903786 Sample: 454753-004 / SMP Batch: 1 Matrix: Soil Units: mg/kg Date Analyzed: 12/28/12 01:28 SURROGATE RECOVERY STUDY TPH By SW8015 Mod Amount [A] True Analytes Recovery (B] Recovery %R Control Limits %R Flags 1-Chlorooctane 92.8 99.8 93 70-135 - o-Terphenyl 45.0 49.9 90 70-135 - Lab Batch #: 903786 Sample: 454753-005 / SMP Batch: 1 Matrix:Soil - Units: mg/kg Date Analyzed: 12/28/12 01:54 SURROGATE RECOVERY STUDY - - TPH By SW8015 Mod Amount [A] True Amount [B] Matrix:Soil - TPH By SW8015 Mod Amount [A] Amount [B] True Amount [B] Recovery %R Control Limits %R Flags 1-Chlorooctanc 95.6 100 96 70-135 -	1-Chlorooctane		101	100	101	70-135	
Units: mg/kgDate Analyzed: 12/28/12 01:28SURROGATE RECOVERY STUDYTPH By SW8015 ModAmount Found [A]True Amount [B]Recovery %R (D]Control Limits %R (D]Flags1-Chlorooctane92.899.89370-135-o-Terphenyl45.049.99070-135-Lab Batch #: 903786Sample: 454753-005 / SMP Date Analyzed: 12/28/12 01:54Batch: 1Matrix: Soil-TPH By SW8015 ModAmount Found [A]True Found [B]Recovery %R (D]Control Limits %R %R (D]Flags1-Chlorooctane95.61009670-135-	o-Terphenyl		50.6	50.0	101	70-135	
TPH By SW8015 ModAmount Found [A]True Amount [B]Recovery %R [D]Control Limits %RFlags1-Chlorooctane92.899.89370-135-o-Terphenyl45.049.99070-135-Lab Batch #: 903786Sample: 454753-005 / SMP Date Analyzed: 12/28/12 01:54Batch: 1Matrix: Soil-TPH By SW8015 ModAmount Found [A]True Amount [B]Control QTPH By SW8015 ModAmount Found [A]True Amount [B]Recovery MR (D]Control Limits Flags1-Chlorooctane95.61009670-135	Lab Batch #: 903786	Sample: 454753-004 / SMP	Batc	h: 1 Matrix:	Soil		·
Found [A]Amount [B]Recovery %R [D]Limits %RFlags %R1-Chlorooctane92.899.89370-135-o-Terphenyl45.049.99070-135-Lab Batch #: 903786Sample: 454753-005 / SMP Date Analyzed: 12/28/12 01:54Batch:1Matrix: Soil-TPH By SW8015 ModAmount [A]True Found [A]Recovery %R (B]Control Limits %RFlags1-Chlorooctane95.61009670-135-	Units: mg/kg	Date Analyzed: 12/28/12 01:28					
1-Chlorooctane 92.8 99.8 93 70-135 o-Terphenyl 45.0 49.9 90 70-135 Lab Batch #: 903786 Sample: 454753-005 / SMP Batch: 1 Matrix: Soil Units: mg/kg Date Analyzed: 12/28/12 01:54 SURROGATE RECOVERY STUDY TPH By SW8015 Mod Amount [A] True Amount [B] Recovery %R [D] Control Limits %R Flags 1-Chlorooctane 95.6 100 96 70-135 1	ТРН	·	Found	Amount	%R	Limits	Flags
o-Terphenyl 45.0 49.9 90 70-135 Lab Batch #: 903786 Sample: 454753-005 / SMP Batch: 1 Matrix: Soil Units: mg/kg Date Analyzed: 12/28/12 01:54 SURROGATE RECOVERY STUDY Found Image: Stude Amount Image: Stud	1 Chlorooctane	Analytes	02.8	00.8		70.125	
Lab Batch #: 903786Sample: 454753-005 / SMPBatch:1Matrix: SoilUnits: mg/kgDate Analyzed: 12/28/12 01:54SURROGATERECOVERY STUDYTPH By SW8015 ModAmount Found [A]True (B]Recovery %R (B]Control Limits %R (B]Flags1-Chlorooctanc95.61009670-135							
Units: mg/kgDate Analyzed: 12/28/12 01:54SURROGATE RECOVERY STUDYTPH By SW8015 ModAmount Found [A]True Amount [B]Recovery %R [D]Control Limits %R %R %RFlags1-Chlorooctanc95.61009670-135		Sample: 454753-005 / SMP			l		
TPH By SW8015 ModAmount Found [A]True Amount [B]Recovery %R [D]Control Limits %RFlags1-Chlorooctane95.61009670-135							
1-Chlorooctanc 95.6 100 96 70-135		By SW8015 Mod	Amount Found	True Amount	Recovery %R	Control Limits	Flags
	1-Chlorooctane	· · · · · · · · · · · · · · · · · · ·	95.6	100		70-135	
					ļ		

* 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



Project Name: SW 4-Inch Lateral

Lab Batch #: 903786	, 454753 Sample: 454753-006 / SMP	Bate	h: 1 Matrix	:Soil		
Units: mg/kg	Date Analyzed: 12/28/12 02:20	SURROGATE RECOVERY STUDY				
ТРНІ	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
1-Chlorooctane		93.7	99.8	94	70-135	
o-Terphenyl		46.0	49.9	92	70-135	
Lab Batch #: 903894	Sample: 454753-007 / SMP	Bate	ch: ¹ Matrix	:Soil		
Units: mg/kg	Date Analyzed: 12/28/12 19:55	SU	RROGATE R	ECOVERY	STUDY	
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chiorooctane		93.2	99.9	93	70-135	
o-Terphenyl		47.1	50.0	94	70-135	
Lab Batch #: 903894	Sample: 454753-008 / SMP	Bate	h: 1 Matrix	: Soil		
Units: mg/kg	Date Analyzed: 12/28/12 20:21	SURROGATE RECOVERY STUDY				
TPH By SW8015 Mod Analytes		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		92.5	99.6	93	70-135	
o-Terphenyl		46.8	49.8	94	70-135	
Lab Batch #: 903894	Sample: 454753-009 / SMP	Bate	h: 1 Matrix	: Soil	1	
Units: mg/kg	Date Analyzed: 12/28/12 20:46	SURROGATE RECOVERY STUDY				
TPH 1	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
I-Chlorooctane		94.2	100	94	70-135	
o-Terphenyl		48.3	50.1	96	70-135	
Lab Batch #: 903894	Sample: 454753-010 / SMP	Bate	ch: 1 Matrix	c:Soil		
Units: mg/kg	Date Analyzed: 12/28/12 21:12	SURROGATE RECOVERY STUDY				
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		92.0	99.7	92	70-135	
			1		1	

* 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



Project Name: SW 4-Inch Lateral

Work Orders : 454753, 454753			Project ID: 1RP-1018				
Lab Batch #: 903894	Sample: 454753-011 / SMP	Batcl	h: ¹ Matrix:	Soil			
Units: mg/kg	Date Analyzed: 12/28/12 21:37	SURROGATE RECOVERY STUDY					
ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R {D]	Control Limits %R	Flags	
1-Chlorooctane		92.9	100	93	70-135		
o-Terphenyl		45.8	50.0	92	70-135		
Lab Batch #: 903894	Sample: 454753-012 / SMP	Batel	h: 1 Matrix:	Soil	••		
Units: mg/kg	Date Analyzed: 12/28/12 22:03	SU	RROGATE RE	ECOVERY	STUDY	-	
ТРН	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	Analytes	94.9	100	95	70-135		
o-Terphenyl		48.3	50.0	97	70-135		
Lab Batch #: 903894	Sample: 454753-013 / SMP	Bate	h: 1 Matrix:	Soil	11		
Units: mg/kg	Date Analyzed: 12/28/12 22:28	Batch: 1 Matrix: Soil SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod Analytes		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane		106	99.7	106	70-135		
o-Terphenyl		53.3	49.9	107	70-135		
Lab Batch #: 903894	Sample: 454753-014 / SMP	Batc	h: ¹ Matrix:	Soil	·		
Units: mg/kg	Date Analyzed: 12/28/12 22:53	SURROGATE RECOVERY STUDY					
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane	Analytes	94.4	100	94	70-135		
o-Terphenyl		47.3	50.0	94 95	70-135		
Lab Batch #: 903894		Bate		l Soil			
Units: mg/kg	Date Analyzed: 12/28/12 23:17	Batch: 1 Matrix: Soil SURROGATE RECOVERY STUDY					
	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane	U	97.9	99.7	98	70-135		
o-Terphenyl							

* 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



Project Name: SW 4-Inch Lateral

Vork Orders: 454753	Project ID: 1RP-1018					
Lab Batch #: 903894	Sample: 454753-016 / SMP	Bate				
Units: mg/kg	Date Analyzed: 12/28/12 23:42	SURROGATE RECOVERY STUDY				
ТРН І	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		95.7	99.7	96	70-135	
o-Terphenyl		46.7	49.9	94	70-135	
Lab Batch #: 903894	Sample: 454753-017 / SMP	Batc	h: ¹ Matrix	:Soil		
Units: mg/kg	Date Analyzed: 12/29/12 00:31	SU	RROGATE R	ECOVERY S	STUDY	
TPH	By SW8015 Mod Analytes	AmountTrueControlFoundAmountRecoveryLimits[A][B]%R%R[D]				Flags
1-Chlorooctane		97.1	100	97	70-135	
o-Terphenyl		48.1	50.1	96	70-135	
Lab Batch #: 903894	Sample: 454753-018 / SMP	Batc	h: ¹ Matrix	:Soil	<u> </u>	
Units: mg/kg	Date Analyzed: 12/29/12 00:56	SURROGATE RECOVERY STUDY				
TPH By SW8015 Mod Analytes		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		97.5	100	98	70-135	
o-Terphenyl		47.6	50.1	95	70-135	
Lab Batch #: 903894	Sample: 454753-019 / SMP	Batc	h: 1 Matrix	:Soil		
Units: mg/kg	Date Analyzed: 12/29/12 01:20	SURROGATE RECOVERY STUDY				
ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [Đ]	Control Limits %R	Flags
1-Chlorooctane		98.3	100	98	70-135	
o-Terphenyl		49.5	50.0	99	70-135	
Lab Batch #: 903894	Sample: 454753-020 / SMP	Bate	h: ¹ Matrix	: Soil	<u> </u>	1
Units: mg/kg	Date Analyzed: 12/29/12 01:45	SURROGATE RECOVERY STUDY				
ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		96.1	99.8	96	70-135	
o-Terphenyl		48.2	49.9	97	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



Project Name: SW 4-Inch Lateral

Vork Orders: 454753	, 454753	Project ID: 1RP-1018				
Lab Batch #: 903894	Sample: 454753-021 / SMP	Batel	h: ¹ Matrix:	Soil		
Units: mg/kg	Date Analyzed: 12/29/12 02:09	SURROGATE RECOVERY STUDY				
ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		93.0	100	93	70-135	
o-Terphenyl		44.1	50.1	88	70-135	
Lab Batch #: 904067	Sample: 454753-006 / SMP	Batc	h: ¹ Matrix:	Soil	1	
Units: mg/kg	Date Analyzed: 01/03/13 13:36		RROGATE RE		STUDY	
BTE	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene	Analytes	0.0254	0.0300	85	80-120	
4-Bromofluorobenzene		0.0325	0.0300	108	80-120	
Lab Batch #: 904067	Sample: 454753-009 / SMP	Bate	h: 1 Matrix:	Soil	I I	
Units: mg/kg	Date Analyzed: 01/03/13 13:53	SURROGATE RECOVERY STUDY				
BTEX by EPA 8021B Analytes		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0302	0.0300	101	80-120	
4-Bromofluorobenzene		0.0339	0.0300	113	80-120	
Lab Batch #: 904067	Sample: 454753-012 / SMP	Bate	h: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 01/03/13 15:31	SURROGATE RECOVERY STUDY				
BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0262	0.0300	87	80-120	
4-Bromofluorobenzene		0.0257	0.0300	86	80-120	
Lab Batch #: 903786	Sample: 631807-1-BLK / B	LK Bate	h: 1 Matrix:	Solid	·	
Units: mg/kg	Date Analyzed: 12/27/12 15:52	SURROGATE RECOVERY STUDY				
ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	·	94.4	100	94	70-135	
	I	<i>y</i>				

* 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



Project Name: SW 4-Inch Lateral

Vork Orders : 454753	, 454753	Project ID: 1RP-1018								
Lab Batch #: 903894	Sample: 631869-1-BLK / B									
Units: mg/kg	Date Analyzed: 12/28/12 19:29	SU	RROGATE R	ECOVERY S	STUDY					
ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1-Chlorooctane		93.6	99.7	94	70-135					
o-Terphenyl		47.5	49.9	95	70-135					
Lab Batch #: 904067	Sample: 631984-1-BLK / B	BLK Batel	h: ¹ Matrix	Solid						
Units: mg/kg	Date Analyzed: 01/03/13 09:49	SU	RROGATE R	ECOVERY	STUDY					
BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1,4-Difluorobenzene	Analytes	0.0252	0.0300	84	80-120					
4-Bromofluorobenzene		0.0232	0.0300	82	80-120					
LLLLLLLL	Sample: 631807-1-BKS / B			<u> </u>						
Units: mg/kg	Date Analyzed: 12/27/12 14:57		RROGATE R		STUDY					
	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1-Chlorooctane	2 mary 005	91.1	100	91	70-135					
o-Terphenyl		52.9	50.1	106	70-135					
Lab Batch #: 903894	Sample: 631869-1-BKS / E	BKS Bate	h: ¹ Matrix	r: Solid						
Units: mg/kg	Date Analyzed: 12/28/12 18:36		RROGATE R		STUDY					
ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1-Chlorooctane	•	100	99.7	100	70-135					
o-Terphenyl		59.4	49.9	119	70-135					
Lab Batch #: 904067	Sample: 631984-1-BKS / E	BKS Batc	h: ¹ Matrix	c: Solid	-					
Units: mg/kg	Date Analyzed: 01/03/13 09:17	SU	RROGATE R	ECOVERY	STUDY					
		1			Control					
BTE.	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Limits %R	Flags				
BTE:	X by EPA 8021B Analytes	Found	Amount	%R	Limits	Flags				

* 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



Project Name: SW 4-Inch Lateral

ork Orders : 454753 Lab Batch #: 903786	Sample: 631807-1-BSD / B	SD Batc	-	D: 1RP-1018		
Units: mg/kg	Date Analyzed: 12/27/12 15:25	SU	RROGATE R	ECOVERY S	STUDY	
ТРН І	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
1-Chlorooctane		93.7	100	94	70-135	
o-Terphenyl		47.8	50.1	95	70-135	
Lab Batch #: 903894	Sample: 631869-1-BSD / B			:Solid	-	
Units: mg/kg	Date Analyzed: 12/28/12 19:03	SU	RROGATE R	ECOVERY	STUDY	
ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1-Chlorooctane		94.5	99.8	95	70-135	
o-Terphenyl		54.0	49.9	108	70-135	<u> </u>
Lab Batch #: 904067	Sample: 631984-1-BSD / B	SD Batc	h: 1 Matrix	r:Solid		
Units: mg/kg	Date Analyzed: 01/03/13 09:33		RROGATE R	ECOVERY	STUDY	
BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flag
	Analytes			[D]		
1,4-Difluorobenzene		0.0317	0.0300	106	80-120	
4-Bromofluorobenzene		0.0333	0.0300	111	80-120	
Lab Batch #: 903786	Sample: 454643-001 S / MS					
Units: mg/kg	Date Analyzed: 12/27/12 16:52	SU	RROGATE R	ECOVERY	STUDY	
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1-Chlorooctane		84.9	100	85	70-135	
o-Terphenyl		49.3	50.1	98	70-135	
Lab Batch #: 903894	Sample: 454753-009 S / MS	5 Bate	h: 1 Matrix	c:Soil		
Units: mg/kg	Date Analyzed: 12/29/12 03:22	SU	RROGATE R	ECOVERY	STUDY	
ТРНІ	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
l-Chlorooctane	J	97.9	99.9	98	70-135	
			1	1	· · ·	

* 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



Project Name: SW 4-Inch Lateral

ork Orders : 454753			•	D: 1RP-1018		
Lab Batch #: 904067	Sample: 454753-006 S / M		h: ¹ Matrix RROGATE R		TUDV	
Units: mg/kg	Date Analyzed: 01/03/13 15:47	50	RRUGATE R	ECOVERY		
BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	•	0.0273	0.0300	91	80-120	
4-Bromofluorobenzene		0.0353	0.0300	118	80-120	
Lab Batch #: 903786	Sample: 454643-001 SD / N	MSD Bate	h: ¹ Matrix	:Soil	·	
Units: mg/kg	Date Analyzed: 12/27/12 17:23	SU	RROGATE R	ECOVERY	STUDY	
TPH)	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		92.0	99.9	92	70-135	
o-Terphenyl		48.6	50.0	97	70-135	
Lab Batch #: 903894	Sample: 454753-009 SD / N	MSD Bate	h: 1 Matrix	r: Soil	l	
Units: mg/kg	Date Analyzed: 12/29/12 03:46	SU	RROGATE R	ECOVERY	STUDY	
TPH 1	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		97.2	99.9	97	70-135	
o-Terphenyl		54.4	50.0	109	70-135	
Lab Batch #: 904067	Sample: 454753-006 SD / 1	MSD Batc	h: 1 Matrix	r: Soil	I I	
Units: mg/kg	Date Analyzed: 01/03/13 16:03		RROGATE R		STUDY	
BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0315	0.0300	105	80-120	
4-Bromofluorobenzene		0.0349	0.0300	116	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





Work Order #: 454753, 454753							Pro	ject ID: 1	RP-1018		
Analyst: KEB	D	ate Prepar	ed: 01/03/201	3			Date A	nalyzed: (01/03/2013		
Lab Batch ID: 904067 Sample: 631984-1-E	BKS	Bate	h #: 1					Matrix: S	Solid		
Units: mg/kg		BLAN	K /BLANK S	SPIKE / E	BLANK S	SPIKE DUPI	LICATE	RECOVE	ERY STUD	ŶY	
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	<0.000992	0.0992	0.0829	84	0.0998	0.0821	82	1	70-130	35	
Toluene	<0.00198	0.0992	0.0795	80	0.0998	0.0817	82	3	70-130	35	
Ethylbenzene	<0.000992	0.0992	0.0780	79	0.0998	0.0817	82	5	71-129	35	
m,p-Xylenes	<0.00198	0.198	0.153	77	0.200	0.160	80	4	70-135	35	
o-Xylene	<0.000992	0.0992	0.0775	78	0.0998	0.0829	83	7	71-133	35	
Analyst: JOL		-	ed: 12/28/201	2	_			nalyzed: 1 Matrix: S	2/28/2012		
Lab Batch ID: 903868 Sample: 631862-1-E			h #: 1								. <u> </u>
Units: mg/kg		BLAN	K/BLANK §	SPIKE / E	BLANK S	SPIKE DUPI	LICATE	RECOVE	ERY STUD	Y	
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	<1.00	100	105	105	100	105	105	0	80-120	20	

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





Work Order #: 454753, 454753							Pro	ject ID: 🛛	1RP-1018				
Analyst: JOL	D	ate Prepar	ed: 12/29/201	12					2/29/2012				
Lab Batch ID: 903869 Sample: 631863	-1-BKS	Bate	h #: 1					Matrix: S	Solid				
Units: ^{mg/kg}		BLAN	K/BLANK S	SPIKE / I	BLANK S	SPIKE DUPI	LICATE	RECOVI	ERY STUD	Y			
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	<1.00	100	107	107	100	108	108	1	80-120	20			
Analyst: PRB	D	ate Prepar	ed: 01/03/201	13			Date A	nalyzed: ()1/03/2013				
Lab Batch ID: 904060 Sample: 904060		Matrix: Solid											
Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY												
Sulfides by SW-846 9030B 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		
Sulfide, total	<50.0	10000	10800	108	10000	10800	108	0	60-120	20			
Analyst: KEB Lab Batch ID: 903786 Sample: 631807	Date Prepared: 12/27/2012 Date Analyzed: 12/27/2012 -1-BKS Batch #: 1 Matrix: Solid												
Units: mg/kg		BLAN	K/BLANK S	SPIKE / I	BLANK S	SPIKE DUPI	LICATE	RECOVE	ERY STUD	PY			
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	1000	1040	104	1000	1000	100	4	70-135	35			
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	998	100	1000	966	97	3	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





Work Order #: 454753, 45 Analyst: KEB Lab Batch ID: 903894	54753 Sample: 631869-1-BKS		ared: 12/28/20 tch #: 1	12			Date A		IRP-1018 12/28/2012 Solid		
Units: mg/kg		BLA	NK /BLANK	SPIKE / I	BLANK S	PIKE DUPI	LICATE	RECOVI	ERY STUD	Ŷ	
TPH By SW80	15 Mod Blan Sample I [A]	Result Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
C6-C12 Gasoline Range Hydroc	arbons <15.	0 997	1090	109	998	1040	104	5	70-135	35	
C12-C28 Diesel Range Hydroca	bons <15.	0 997	1080	108	998	1020	102	6	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: SW 4-Inch Lateral

Work Order #: 454753						
Lab Batch #: 903868			Pro	oject ID:	1RP-1018	
Date Analyzed: 12/28/2012	Date Prepared: 12/28/	2012	Α	nalyst: J	OL	
QC- Sample ID: 454753-001 S	Batch #: 1		N	Matrix: S	oil	
Reporting Units: mg/kg	MATRI	X / MA	TRIX SPIKE	RECO	VERY STU	DY
Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	4.26	131	144	107	80-120	
Lab Batch #: 903868	<u>ц •</u>					
Date Analyzed: 12/28/2012	Date Prepared: 12/28/	2012	А	nalyst: J	OL	
QC-Sample ID: 454753-011 S	Batch #: 1		Ν	Matrix: S	oil	
Reporting Units: mg/kg	MATRI	X / MA	TRIX SPIKE	RECO	VERY STU	DY
Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	<1.03	103	110	107	80-120	
Lab Batch #: 903869						
Date Analyzed: 12/29/2012	Date Prepared: 12/29/	2012	А	nalyst: J	OL	
QC- Sample ID: 454797-001 S	Batch #: 1		Γ	Matrix: S	oil	
Reporting Units: mg/kg	MATRI	X / MA	TRIX SPIKE	RECO	VERY STU	DY
Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	8.73	115	130	105	80-120	

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

BRL - Below Reporting Limit



Work Order #: 454753						Project II	D: IRP-10	018			
Lab Batch ID: 904067 Date Analyzed: 01/03/2013	QC- Sample ID: Date Prepared:				tch #: alyst:	l Matri : KEB	k: Soil				
Reporting Units: mg/kg	<u> </u>	M	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
BTEX by EPA 8021B 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
Benzene	<0.00103	0.103	0.0907	88	0.102	0.101		11	70-130	35	
Toluene	<0.00206	0.103	0.0910	88	0.102	0.0988	97	8	70-130	35	
Ethylbenzene	< 0.00103	0.103	0.0880	85	0.102	0.0953	93	8	71-129	35	
m,p-Xylenes	<0.00206	0.206	0.170	83	0.205	0.177	86	4	70-135	35	
o-Xylene	< 0.00103	0.103	0.0869	84	0.102	0.0959	94	10	71-133	35	
Lab Batch ID: 903786 Date Analyzed: 12/27/2012	QC- Sample ID: Date Prepared:				tch #: alyst:	l Matrix KEB	k: Soil				
Reporting Units: mg/kg		M	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	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	<16.3	1090	1020	94	1090	1070	98	5	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<16.3	1090	1010	93	1090	1020	94	1	70-135	35	
Lab Batch ID: 903894 Date Analyzed: 12/29/2012	QC- Sample ID: Date Prepared:				tch #: alyst:	l Matri KEB	c: Soil				
		M	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
Reporting Units: mg/kg			1 1	a 11 1		Duplicate	Spiked		Control	Control	
TPH By SW8015 Mod	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Sample %R	Spike Added	Spiked Sample Result [F]	Dup. %R	RPD %	Limits %R	Limits %RPD	Flag
· · · · · · · · · · · · · · · · · · ·	Sample		Result	Sample		Spiked Sample		1			Flag
TPH By SW8015 Mod	Sample Result	Added	Result	Sample %R	Added	Spiked Sample	%R	1			Flag

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



Sample Duplicate Recovery



Project Name: SW 4-Inch Lateral

Project ID: IRP-1018 Date Analyzed: 12/28/2012 11:06 Bate Prepared: 12/28/2012 Analyst: RKO QC- Sample ID: 454753-001 D Bate H #: 1 Matrix: Soi Percent Moisture Parent Sample Result [A] Sample Control Linits Fing Analyte Percent Moisture Parent Sample Result [A] RPD Control Linits Lab Batch #: 903801 Date Prepared: 12/28/2012 Analyst: RKO QC-Sample ID: 454753-011 D Bate Prepared: 12/28/2012 Analyst: REO Percent Moisture Parent Sample Result [A] Rample Result [A] Rample Result [A] Reporting Units: % SAMPLE / SAMPLE DUPLICATE RECOVERY Percent Moisture Parent Sample Result [A] Sample Duplicate Result [B] Reporting Units: % SAMPLE / SAMPLE DUPLICATE RECOVERY Lab Batch #: 903801 Date Prepared: 12/28/2012 Analyst: RKO QC- Sample ID: 454753-021 D Batch #: 1 Matrix: Soil <th>Work Order #: 454753</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>	Work Order #: 454753						
Date Analyzed: 12/28/2012 Date Prepared: 12/28/2012 Analyst: RKO QC-Sample ID: 454753-001 D Batch #: 1 Matrix: Solid Reporting Units: % SAMPLE / SAMPLE DUPLICATE RECOVERY Percent Moisture Parent Sample [A] Sample Buplicate [B] RPD Limits % (RPD Flag Percent Moisture 23.9 23.8 0 20 Image: Sample Buplicate [B] Sample Duplicate Result RPD Control Limits % (RPD Flag Date Analyzed: 12/28/2012 Analyst: RECOVERY Sample Result Sample Buplicate [A] RPD Control Limits Flag Percent Moisture 2.9 2.56 1 20 Entrol % (RPD) Flag Percent Moisture 2.59 2.56 1 20 Entrol % (RPD) Flag Percent Moisture 2.59 2.56 1 20 Entrol % (RPD) Flag Date Analyzed: 1/228/2012 Date Precent Sample Result [A] Sample Result [B] <t< th=""><th>Lab Batch #: 903801</th><th></th><th></th><th></th><th>Project I</th><th>D: 1RP-1018</th><th>3</th></t<>	Lab Batch #: 903801				Project I	D: 1RP-1018	3
QC- Sample ID: 454753-001 D Batch #: 1 Matrix: Soil Reporting Units: % SAMPLE / SAMPLE UULLCATE RECOVERY Percent Moisture Percent Moisture Sample Result [A] Sample Duplicate Result [B] RPD Control Limits %RPD Flag Percent Moisture 23.9 23.8 0 20 Lab Batch #: 903801 Date Prepared: 12/28/2012 Analyte QC- Sample ID: 545753-011 D Batch #: 1 Matrix: Soil Reporting Units: % SAMPLE / SAMPLE DUPLICATE RECOVERY Flag Analyte Parent Sample [A] Sample Result [A] RPD Control binsit %RPD Flag Percent Moisture Parent Sample Result [A] Sample Result [B] RPD Control binsit %RPD Flag QC- Sample ID: 54753-021 D Batch #: 1 Matrix: Soil Reporting Units: % SAMPLE / SAMPLE DUPLICATE RECOVERY QC- Sample ID: 5473-021 D Batch #: 1 Matrix:		Date Prepare	ed: 12/28/2012	2 Ana			
Percent Moisture Parent Sample Result [A] Sample Result [B] Sample Duplicate Result [B] Control Limits %RPD Flag Percent Moisture 23.9 23.8 0 20		Batch	#: 1	Mat	t rix: Soil		
Result [A]Duplicate Result [B]RPDLimits %RPDFlagPercent Moisture23.923.8020Lab Batch #: 903801 Date Analyzed: 12/28/2012 11:06Date Prepared: 12/28/2012 12:06Analyst:RKOQC- Sample ID: 4 54753-011 D44753-011 DBatch #: Batch #: 1Matrix: SoilReporting Units: Percent MoistureParent Sample Result [A]Sample Result [B]RPDControl Limits %RPDPercent Moisture2.592.56120Lab Batch #: 903801 Date Analyzed: (12/28/2012 11:06 Date Prepared: 12/28/2012 11:06 Date Prepared: 12/28/2012 12:06Analyst:RKO Matrix: SoilReporting Units: %%SAMPLE / SAMPLE / SAMPLE DUPLICATE RECOVERYPercent Moisture2.592.561Lab Batch #: [B]1Matrix: SoilReporting Units: %%SAMPLE / SAMPLE / SAMPLE DUPLICATE RECOVERYPercent Moisture1.911.87222.01Lab Batch #: [A]Matrix: SoilReporting Units: (AnalyteDate Prepared: 01/03/2013 Batch #:RPD Matrix: SoilPercent Moisture1.911.872Lab Batch #: (AnalyteDate Prepared: 01/03/2013 (Analyt: PRBQC- Sample ID: (Analyzed:Date Prepared: 01/03/2013 (Analyzed:Analyzed: (D1/3/2013 16:42 (Analyzed:Date Prepared: 01/03/2013 (Analyzed:Matrix: SoilSAMPLE / SAMPLE DUPLICATE RECOVERYSulfides by SW-846 9030B	Reporting Units: %		SAMPLE /	SAMPLE	DUPLIC	ATE RECO	OVERY
Lab Batch #: 903801 Date Analyzed: 12/28/2012 11:06 Date Prepared: 12/28/2012 Analyst: RKO QC-Sample ID: 454753-011 D Batch #: 1 Matrix: Soil Reporting Units: % SAMPLE / SAMPLE DUPLICATE RECOVERY Percent Moisture Parent Sample Result [A] Sample Duplicate RPD Limits % Control Limits % Percent Moisture Parent Sample Result [B] Control Limits % Flag Date Prepared: 12/28/2012 Analyst: RKO Date Analyzed: 12/28/2012 11:06 Date Prepared: 12/28/2012 Analyst: RKO QC- Sample ID: 454753-021 D Batch #: 1 Matrix: Soil Reporting Units: % SAMPLE / SAMPLE DUPLICATE RECOVERY Percent Moisture Parent Sample Result [A] RPD Control Limits % Parent Sample Result [A] Sample DupLiCATE RECOVERY Analyte Date Prepared: 01/03/2013 Analyst: PRB Percent Moisture 1.91 1.87 <td></td> <td></td> <td>Result</td> <td>Duplicate Result</td> <td>RPD</td> <td>Limits</td> <td>Flag</td>			Result	Duplicate Result	RPD	Limits	Flag
Date Analyzed:12/28/2012Analyst:RKOQC- Sample ID:454753-011 DBatch #:1Matrix: SoilReporting Units:%SAMPLE / SAMPLE DUPLICATE RECOVERYPercent MoistureParent Sample Result [A]RPDControl Limits %RPDPercent Moisture2.592.56120Lab Batch #:903801 903801 Date Prepared:12/28/2012 12/28/2012 11:06Analyst:RKOQC- Sample ID:454753-021 DBatch #:1Matrix: SoilReporting Units:%SAMPLE / SAMPLE DUPLICATE RECOVERYPercent Moisture12/28/2012 11:06 12/28/2012 11:06Date Prepared:12/28/2012 12/28/2012 Analyst:RKOReporting Units:%SAMPLE / SAMPLE DUPLICATE RECOVERYPercent MoistureParent Sample ResultSample Duplicate ResultFlagPercent Moisture1.911.87220Lab Batch #:904060Date Prepared:01/03/2013 16:42Analyst: PRBQC- Sample ID:454753-012 DBatch #:1Matrix: SoilPercent Moisture1.911.87220Lab Batch #:904060Date Prepared:01/03/2013 ResultAnalyst: PRBQC- Sample ID:454753-012 DBatch #:1Matrix: SoilReporting Units:mg/kgSAMPLE / SAMPLE DUPLICATE RECOVERYSulfides by SW-846 9030BParent Sample Result [A]Sample Buplicate Result [B]RPDControl Limits %RPD <t< td=""><td>Percent Moisture</td><td></td><td>23.9</td><td>23.8</td><td>0</td><td>20</td><td></td></t<>	Percent Moisture		23.9	23.8	0	20	
Date Analyzed:12/28/2012Analyst:RKOQC- Sample ID:454753-011 DBatch #:1Matrix: SoilReporting Units:%SAMPLE / SAMPLE DUPLICATE RECOVERYPercent MoistureParent Sample Result [A]RPDControl Limits %RPDPercent Moisture2.592.56120Lab Batch #:903801 903801 Date Prepared:12/28/2012 12/28/2012 11:06Analyst:RKOQC- Sample ID:454753-021 DBatch #:1Matrix: SoilReporting Units:%SAMPLE / SAMPLE DUPLICATE RECOVERYPercent Moisture12/28/2012 11:06 12/28/2012 11:06Date Prepared:12/28/2012 12/28/2012 Analyst:RKOReporting Units:%SAMPLE / SAMPLE DUPLICATE RECOVERYPercent MoistureParent Sample ResultSample Duplicate ResultFlagPercent Moisture1.911.87220Lab Batch #:904060Date Prepared:01/03/2013 16:42Analyst: PRBQC- Sample ID:454753-012 DBatch #:1Matrix: SoilPercent Moisture1.911.87220Lab Batch #:904060Date Prepared:01/03/2013 ResultAnalyst: PRBQC- Sample ID:454753-012 DBatch #:1Matrix: SoilReporting Units:mg/kgSAMPLE / SAMPLE DUPLICATE RECOVERYSulfides by SW-846 9030BParent Sample Result [A]Sample Buplicate Result [B]RPDControl Limits %RPD <t< td=""><td>Lab Batch #: 903801</td><td>••••••</td><td><u></u></td><td></td><td>•</td><td></td><td></td></t<>	Lab Batch #: 903801	••••••	<u></u>		•		
Reporting Units: % SAMPLE / SAMPLE DUPLICATE RECOVERY Percent Moisture Parent Sample Result [A] Sample Duplicate Result [B] RPD Control Limits %RPD Flag Percent Moisture 2.59 2.56 1 20		Date Prepare	ed: 12/28/2012	2 Ana	lyst:RKO		
Percent Moisture Parent Sample Result [A] Sample Duplicate Result [B] Sample Duplicate Result [B] RPD Control Limits %RPD Flag Percent Moisture 2.59 2.56 1 20 Lab Batch #: 903801 Date Prepared: 12/28/2012 Analyst: RKO QC- Sample ID: 454753-021 D Batch #: 1 Matrix: Soil Reporting Units: % SAMPLE / SAMPLE DUPLICATE RECOVERY Percent Moisture Parent Sample Result [A] Sample Duplicate Result [B] RPD Control Limits %RPD Flag Percent Moisture Parent Sample Result [A] Sample Duplicate Result [B] Sample Duplicate Result [B] Control Limits %RPD Flag Percent Moisture 1.91 1.87 2 20 Lab Batch #: 904060 Date Prepared: 01/03/2013 Analyst: PRB QC- Sample ID: 454753-012 D Batch #: 1 Matrix: Soil Reporting Units: mg/kg SAMPLE / SAMPLE DUPLICATE RECOVERY Sulfides by SW-846 9030B Parent Sample Result [A] Sample Duplicate Result [A] RPD Control Limits %RPD Flag	QC- Sample ID: 454753-011 D	Batch	#: 1	Ma	trix: Soil		
Result [A]Duplicate Result [B]RPDLimits %RPDFlagPercent Moisture2.592.56120Lab Batch #:903801 Date Analyzed:12/28/2012 11:06 12/28/2012 11:06Date Prepared:12/28/2012 Matrix: SoilAnalyst: RKOQC- Sample ID:454753-021 D 454753-021 DBatch #:1Matrix: SoilReporting Units:%SAMPLE / SAMPLE DUPLICATE RECOVERYPercent MoistureParent Sample Result [A]Sample Buplicate Result [B]RPDControl Limits %RPDFlagPercent Moisture1.911.87220Lab Batch #:904060 Date Analyzed:01/03/2013 16:42Analyst: PRBFlagQC- Sample ID:454753-012 D Batch #:1Matrix: SoilReporting Units:mg/kgSAMPLE / SAMPLE DUPLICATE RECOVERYSulfides by SW-846 9030B AnalyteParent Sample Result [A]Sample Duplicate Result [B]RPDControl Limits %RPDSulfides by SW-846 9030B AnalyteParent Sample Result [A]Sample Duplicate Result [B]RPDControl Limits %RPD	Reporting Units: %		SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture 2.59 2.56 1 20 Lab Batch #: 903801 Date Analyzed: 12/28/2012 Analyst: RKO QC- Sample ID: 454753-021 D Batch #: 1 Matrix: Soil Reporting Units: % SAMPLE / SAMPLE DUPLICATE RECOVERY Percent Moisture Parent Sample Result [A] Sample Duplicate Result [A] RPD Control Limits %RPD Percent Moisture Parent Sample Result [A] Sample Duplicate Result Sample Duplicate Result RPD Control Limits %RPD Percent Moisture 1.91 1.87 2 20 Lab Batch #: 904060 Date Prepared: 01/03/2013 Analyst: PRB QC- Sample ID: 454753-012 D Batch #: 1 Matrix: Soil Reporting Units: mg/kg SAMPLE / SAMPLE DUPLICATE RECOVERY Sulfides by SW-846 9030B Parent Sample Result [A] Sample Duplicate Result [A] RPD Control Limits %RPD Sulfides by SW-846 9030B Parent Sample Result [A] Sample Result [B] Sample Result [B] Sample Result [B]			Result	Duplicate Result	RPD	Limits	Flag
Lab Batch #: 903801 Date Analyzed: 12/28/2012 11:06 Date Prepared: 12/28/2012 Analyst:RKO QC- Sample ID: 454753-021 D Batch #: 1 Matrix: Soil Reporting Units: % SAMPLE / SAMPLE DUPLICATE RECOVERY Percent Moisture Parent Sample Result [A] Sample Duplicate Result [B] Control Limits %GPD Flag Percent Moisture 1.91 1.87 2 20 Image: Sample Sample Control Flag Percent Moisture 1.91 1.87 2 20 Image: Sample Control Flag Percent Moisture 1.91 1.87 2 20 Image: Sample Sample Control Flag Percent Moisture 1.91 1.87 2 20 Image: Sample Flag Date Analyzed: 01/03/2013 16:42 Date Prepared: 01/03/2013 Analyst: PRB Flag QC- Sample ID: 454753-012 D Batch #: 1 Matrix: Soil Flag Reporting Units: mg/kg SAMPLE / SAMPLE / SAMPLE DUPLICATE RECOVERY Sample RPD Control </td <td></td> <td></td> <td>2.50</td> <td></td> <td><u> </u></td> <td></td> <td></td>			2.50		<u> </u>		
Date Analyzed:12/28/2012Analyst: RKOQC- Sample ID:454753-021 DBatch #:1Matrix: SoilReporting Units:%SAMPLE / SAMPLE DUPLICATE RECOVERYPercent MoistureParent Sample Result [A]Sample Duplicate Result [B]RPDControl Limits %RPDFlagPercent Moisture1.911.87220Lab Batch #:904060 Date Analyzed:01/03/2013 16:42 01/03/2013 16:42Date Prepared:01/03/2013 01/03/2013Analyst: PRB Matrix: SoilReporting Units:mg/kgSAMPLE / SAMPLE DUPLICATE RECOVERYSulfides by SW-846 9030BParent Sample Result [A]Sample Matrix:Control Limits %RPDSulfides by SW-846 9030BParent Sample Result [A]Sample Matrix:Control Limits %RPDFlagAnalyteIIMatrix:Sample Matrix:Flag			2.59	2.56	1	20	
QC- Sample ID: 454753-021 D Batch #: 1 Matrix: Soil Reporting Units: % SAMPLE / SAMPLE DUPLICATE RECOVERY Percent Moisture Parent Sample Result [A] Sample Duplicate Result [B] Control Limits %RPD Flag Analyte 1.91 1.87 2 20 Lab Batch #: 904060 Date Analyzet: Date Prepared: 01/03/2013 Date Prepared: Analyst: PRB Matrix: Soil Reporting Units: mg/kg SAMPLE / SAMPLE DUPLICATE RECOVERY Sulfides by SW-846 9030B Parent Sample Result [A] Sample Duplicate Result [A] Flag Matrix: Sample Sample Duplicate Result [A] Flag Flag							
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AnalyteResult [A]Duplicate Result [B]RPDLimits %RPDFlagPercent Moisture1.911.87220Lab Batch #: 904060 Date Analyzed: 01/03/2013 16:42 QC- Sample ID: 454753-012 DDate Prepared: 01/03/2013 Batch #: 1Analyst: PRB Matrix: SoilReporting Units: mg/kgSAMPLE / SAMPLE DUPLICATE RECOVERYSulfides by SW-846 9030B AnalyteParent Sample Result [A]Sample Duplicate Result [B]RPDControl Limits %RPDAnalyteOutplicate Result [A]Parent Sample Result [B]Sample %RPDFlag	Reporting Units: %		SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
Lab Batch #: 904060 Date Analyzed: 01/03/2013 16:42 Date Prepared: 01/03/2013 Analyst: PRB QC- Sample ID: 454753-012 D Batch #: 1 Matrix: Soil Reporting Units: mg/kg SAMPLE / SAMPLE DUPLICATE RECOVERY Sulfides by SW-846 9030B Parent Sample [A] Sample Duplicate [A] Control Limits [B]			Result	Duplicate Result	RPD	Limits	Flag
Date Analyzed: 01/03/2013 16:42 Date Prepared: 01/03/2013 Analyst: PRB QC- Sample ID: 454753-012 D Batch #: 1 Matrix: Soil Reporting Units: mg/kg SAMPLE / SAMPLE DUPLICATE RECOVERY Sulfides by SW-846 9030B Parent Sample Result [A] Sample Duplicate Result [B] Control Limits %RPD Analyte Image: Control	Percent Moisture		1.91	1.87	2	20	
Date Analyzed: 01/03/2013 16:42 Date Prepared: 01/03/2013 Analyst: PRB QC- Sample ID: 454753-012 D Batch #: 1 Matrix: Soil Reporting Units: mg/kg SAMPLE / SAMPLE DUPLICATE RECOVERY Sulfides by SW-846 9030B Parent Sample Result [A] Sample Duplicate Result [B] Control Limits %RPD Analyte Image: Control	Lab Batch #: 904060				•		
QC- Sample ID: 454753-012 D Batch #: 1 Matrix: Soil Reporting Units: mg/kg SAMPLE / SAMPLE DUPLICATE RECOVERY Sulfides by SW-846 9030B Parent Sample Result [A] Sample Duplicate Result [B] Control Limits %RPD Analyte Parent Sample Result Sample Duplicate Result Flag		Date Prepar	ed:01/03/2013	3 Ana	lyst:PRB		
Sulfides by SW-846 9030BParent Sample Result [A]Sample Duplicate Result [B]Control Limits %RPDAnalyteParent Sample NepulationSample Duplicate Result [B]RPDControl Limits %RPD		Batch	# : 1	Ma	trix: Soil		
Result Duplicate RPD Limits Flag Analyte [A] [B] [B] [B]	Reporting Units: mg/kg		SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
			Result	Duplicate Result	RPD	Limits	Flag
			64.0	72.0	12	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

Lab	Houston: 4143 Greenbria Hobbs: 4008 N Grimes H			1)240-4200	:						432)563-1	800		Pag W.O # illable H			54753	VC Vial Clear TS Te VP Vial Pre-preserved AC Ai GA Glass Amber TB Te GC Glass Clear ZB Zi PA Plastic Amber PC P	icore Sampler prraCore Sampler ir Canister edlar Bag jo Lock Bag Plastic Clear
Compa	ny: Basin Environmental Service Tech	inologies, LL(c :	Phone:	(575)3	96-23	878	TAT W	ork Day	/s = D	Need r	results b	y:	- <u></u>	• • • • •	Tim	e:	PC Plastic Clear Other	
Address	3100 Plains Hwy		•	Fax:	(575)3	96-14	29		Std (5-	7D) 5H	rs 1D 2	2D 3D	4D <u>5D</u>	<u>7D</u> 10	D 14D	Other_	· · · · · ·	Size(s): 20z, 40z, 80z, 160z, 320z , 40ml, 125 ml, 250 ml, 500 ml, 1L,	1Gal Other
City:	Lovington		State: NM	Zip:	88260			1				N ^E XSI		du s		6 3°		Preservative by	pe.Codes
PM/Attn	Joel Lowry; Rose Slade		Email:	pm@ba rose_sla					GC	oc	60	. :						A: None E. HCL I. Ice B. HNO ₃ F. MeOH J. MO	CAA Z-5 C.
Project	ID: S&W 4-Inch Lateral (1RP-1018)			PO#:	SUGO	009			: :	i. Tu	1					: .		H ₂ SO ₄ G. Na ₂ S ₂ O ₃ K. ZnAc D. NaOH H. NaHSO ₄ L As	&NaOH
Invoice	To: Southern Union Gas Services - Mo	onahans	• • • •	Quote #					· · ·	:								o Matrix Typer	Codes
Sample	r Signature: <u> </u>	Circle One E Semi-Annual Cisiliaci		Weekly N/A	Monthly	Qui	artely	Voltant IV	Н	BTEX	Chloride			····				GW Ground Water S Soll WW Waste Water W Wit DW Dinking Water A Air SW Surface Water O Oil OW Ocean/Sea Water T Tiss PL Product-Liquid U Unir PS Product-Solid B Bloo	VSediment/Solid be sue ne
			an a					- 1400A/	Lab Only	V:	I				·····	· · · · · · · · · · · · · · · · · · ·		Other REMARK	S
<u> </u>	TT-1 @ Surface	12/20/12	9:00	S			1		X		X _	···· ·						Hold for BTEX & Irc	on Sulfide
_2	TT-1 @ 4'	12/20/12	9:05	S	:		1		X	· · · ·	x			:	: .	. : ·			
3	TT-1 @ 6'	12/20/12	9:10	S		•	1		X	· · ·	x							11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
4	TT-2 @ Surface	12/20/12	9:20	S			1	<	х		Х				: : :				. ·
5	TT-2 @ 4'	12/20/12	9:25	s	:		1		X		х	:		:				ti da la companya de	
6	TT-2 @ 6'	12/20/12	9:30	S			1		x		X			••	••••				
7	TT-3 @ Surface	12/20/12	9:40	s		··.	1				Х					 		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	· · · · · · · · · · · · · · · · · · ·
8	 TT-3 @ 4'	12/20/12	9:45	s			1		X	÷	. X ,					:*			
_9	TT-3 @ 6'	12/20/12	9:50	S			1		X		X	. <u>.</u>						(I)	
0	TT-4 @ Surface	12/20/12	10:00	s	·. : .		1		X		X .		•	:		• • • •		v	
	ed Project Cleanance		ler Capita A	1300 B	.C/A	10,03,1	άγ. C	2.Cajin	្នាល់ផ្ទុះ	2	iil Dipe.		COC.	Leféléle		ଭାରଙ୍କ	Tenne S	Series Centy	VES CE NA
CTLs T Other:	RRP DW NPDES LPST DryCin	FL TX GA N AL NM Othe	er:		1 <u>2</u> NELAC			AFCEE QA Other:	нн ::::	ADaPT XLS Othe	SEDD [l ar:	ERPIMS	Match Ir Absent	Unclear	1	_2	_3 <u>··</u>	Non-Conformances found? Samples intact upon errival?	$\overline{\mathbf{x}}$
1	Stat - las, and		Basin	an metho a second scites for a	17	21-	12	B.O	0	1.	Wall	6	Basi			16 21-12	800	Received on Wet Ice? Labeled with proper preservatives? Received within holding time?	≩ ==
2	A la la la la	· .	Basi			21-1		9.0		1	26	the.	Shipp			4-12	0500	Custody seals intact? VOCs rec'd w/o headspace?	$\mathbf{X}^{\mathbf{X}}$
3	yoguner-			<u> </u>					<u> </u>	1	\sim	Ne	Xen	60		4-12	151.00	Proper containers used? pH venfied-acceptable, excl VOCs?	$\mathbf{X} = \mathbf{X}$
4							:				· · · · · · · · · · · · · · · · · · ·			.: :				Received on time to meet HTs?	X

B&A Laboratories: Hobbs 575-392-7550 Dallas 214-902-0300 Houston 281-242-4200 Odessa 432-563-1800 San Antonio 210-509-3334 Phoenix 602-437-0330 FTS Service Centers: Atlanta 770-449-8800 Lakeland 863-646-8526 Tampa 803-543-8099 Philadelphia 610-955-5649 South Carolina 803-543-8099

C.O.C. Serial #

Execution of this document by client creates a legal and binding agreement between client and Xenco for analytical and testing services provided by Xenco to client under Xenco's standard terms and conditions unless previously agreed in writing. Terms of payment are Net 30 days, and all past due amounts shall accrue interest at 1.5% per month until paid in full. All laboratory analytical data and reports generated by Xenco remain the exclusive property of Xenco until invoices for such data are paid in full. Revision Date: Nov 12, 2009

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Labo	Houston: 4143 Greenbrian Hobbs: 4008 N Grimes H			•	Odessa	: 12600	West I-20 I	East Odessa,	TX 79765	(432)563-1	800	· . ·	W.O # illable H		lis	4753	VC Vial Clear TS TerraCore Sampler VP .Vial Pre-preserved AC Air Canister GA Glass Amber TB Tedlar Bag GC Glass Clear ZB Zip Lock Bag PA Plastic Amber PC Plastic Clear PC Plastic Clear
Company	Basin Environmental Service Tech	nologies, LLC	c	Phone:	(575)39	6-2378		Work Da	ys = D	Need r	esults b	у:	<u>.</u>	: ::::::::::::::::::::::::::::::::::::	Tim	ie:	Other
ddress:	3100 Plains Hwy.			Fax:	(575)39	96-1429) ¹¹	Std (5	5-7D) 5H	lrs 1D 2	2D 3D	4D <u>5D</u>	<u>7D</u> 101	<u>. 14D</u>	Other		Size(s): 20z, 40z, 80z, 160z, 320z , 1Gal 40ml, 125 ml, 250 ml, 500 ml, 1L, Other
City:	Lovington	111 111	State: NM	Zip:	88260						<u>i</u> gai	is re	តិម៉ៃខ្លួន	u zdov			Preservative type Codes
M/Attn:	Joel Lowry; Rose Slade		Email:		sinenv.co de@sua			66	60	66							A. None E. HCL Lice B. HNO3 F. MeOH J. MCAA Z.S
roject ID	S&W 4-Inch Lateral (1RP-1018)			PO#:	SUG00	09				1					:		H ₂ SO ₄ G. Na ₂ S ₂ O ₃ K. ZnAc&NaOH D. NaOH H. NaHSO ₄ L Asbc Acid&NaOH
voice To	D: Southern Union Gas Services - Mo	onahans	·	Quote #:						1 ₁ - 212		·					Matrix Type Codes
ampler	Signature:	Circle One E			Monthly	Quart	ely 🤤	H		nide				· .			GW Ground Water S Soil/Sediment/Solid WW Waste Water W Wipe
	Sol lough	Semi-Annual	Annual	IN/A				TPH	BTEX	Chloride			: • .				DW Drinking Water A Air SW Surface Water O Oil OW Ocean/Sea Water T Tissue
	Sengle Car	Collegia Ceres	, Collean Sinc														PL Product-Liquid U Unne PS Product-Solid B Blood SL Sludge
	and the second			le state and		6		Din Lab Or	nly:				<u></u>				
			40.05			H.								:	· · ·		
_1	TT-4 @ 4'	12/20/12	10:05	S				X		X							Hold for BTEX & Iron Sulfide
_2	TT-4@6'	12/20/12	10:10	S			1	X	· · ·	X							
_3	TT-5 @ Surface	12/20/12	10:20	S			1	X		X							
_4	TT-5@4'	12/20/12	10:25	S			1	X		X			<u> </u>				
_5	TT-5 @ 6'	12/20/12	10:30	S			1	<u>х</u>	: :	X		<u></u>	:				
_6	TT-6 @ Surface	12/20/12	10:40	S	┃		1	X		: X. :	:			:			
_7	TT-6@4'	12/20/12	10:45	s			1	X		<u>x</u>							
8	TT-6@6'	12/20/12	10:50	···S			1	Х		• . X • ,		· · ·		• • .			
_9	TT-7 @ Surface	12/20/12	11:00	s			1	X		X				· · · ·			9
0	TT-7 @ 4'	12/20/12	11:05	s			1	X		x		· · · ·					
	St. Briggerij Wolfen uit Sio.	SAM	ter (1945)	Rece	je j	¢Ç 4	vile G			PDDs		heata a	1. jus		States	Jame C	
her:	RP DW NPDES LPST DryCln	FL TX GA N AL NM Othe	er:		NELAC	DoD-EL	AP AFCE	÷	XLS Oth			Absent	Incomplete Unclear	1	_2	3	Non-Conformances found?
	Relation Relationships of the					•					awe i .				1.1		Labeled with proper preservatives?
1 2	for longy	: :	Basin		12.2			:00	10	Wall				12.2		8:00	Received within holding time?
2	you walter	: •	Baso	2	12.2	172		00	- M	we []	riller	4hij	wher	12-2	1-12	0900	VOCs rec'd w/o headspace?
4		-						<u>.</u>			<u> </u>	; ···		· · · · ·	<u>: : '</u>		pH verified-acceptable, excl VOCs?
1	horatories: Hobbs 575-392-7550		4 000 000			040 4		420				1	0004		COD 42	7 0220	

B&A Laboratories: Hobbs 575-392-7550 Dallas 214-902-0300 Houston 281-242-4200 Odessa 432-563-1800 San Antonio 210-509-3334 Phoenix 602-437-0330 FTS Service Centers: Atlanta 770-449-8800 Lakeland 863-646-8526 Tampa 803-543-8099 Philadelphia 610-955-5649 South Carolina 803-543-8099

Execution of this document by client creates a legal and binding agreement between client and Xenco for analytical and testing services provided by Xenco to client under Xenco's standard terms and conditions unless previously agreed in writing. Terms of payment are Net 30 days, and all past due amounts shall accrue interest at 1.5% per month until paid in full. All laboratory analytical data and reports generated by Xenco remain the exclusive property of Xenco until invoices for such data are paid in full. All laboratory analytical data and reports generated by Xenco remain the exclusive property of Xenco until invoices for such data are paid in full. Revision Date: Nov 12, 2009

	Houston: 4143 Greenbriar Hobbs: 4008 N Grimes H)240-4200			1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	11		(432)563-1	800	LAB	W.O #			1757	3	VC Vial Clear TS T VP Vial Pre-preserved AC A GA Glass Amber TB T GC Glass Clear ZB Z	ncore Sampler erraCore Sampler ir Canister edlar Bag ip Lock Bag
Company:	Basin Environmental Service Tech	nologies, LL	c ::	Phone:	(575)39	6-2378	TAT W	/ork Day		Need r	esults b	Field bi	llable H	<u>rs :</u>	 Time	a•	}F		Plastic Clear
Address:	3100 Plains Hwy.			Fax:	(575)39	6-1429	-	··· ··· · · ·		se a transference	1. A.A.	4D <u>5D</u>	7D 100) 14D				Size(s): 20z, 40z, 80z, 160z, 320z 40ml, 125 ml, 250 ml, 500 ml, 1L,	, 1Gai Other
City:	Lovington		State: NM	Zip:	88260		200 100 81											Preservative IN	
PM/Attn:	Joel Lowry; Rose Slade		Email:		sinenv.co		00000000	BC	66	ec					an a			A.None E.HCL I.Ic	
Project ID:	S&W 4-Inch Lateral (1RP-1018)		· · · · ·	PO#:	SUG00					1								B. HNO_3 F. $MeOH$ J. M H_2SO_4 G. $Na_2S_2O_3$ K. $ZnAc$ D. $NaOH$ H. $NaHSO_4$ L A	CAA Z-S C. &NaOH sbc Acid&NaOH
Invoice To	Southern Union Gas Services - Mo	onahans		Quote #														0	
Sampler S	ignature:	Circle One Semi-Annua	Event: Daily I Annual Collegiu Tiltac	Weekly N/A	Monthiy	Quartel	Viole (Carlor and	ΗdΤ	BTEX	Chloride							10,	GW Ground Water GW Ground Water W Waste Water W Orinking Water SW Surface Water SW Surface Water DU Coean/Sea Water T Ts PL Product-Liquid U Uni PS Product-Solid B Blo SL Sludge Other	il/Sediment/Solid pe sue ne
							1.0000	Lab Oni	y:		·····							REMARK	(S
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3			÷				7 7							`				· · · · · · · · ·	
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2	Aug Nal =		Basin		12-2	1-12	9.0	20	12	The B	atter	Ship	oer .	12-2	FR.	0900)	ustody seals intact? 'OCs rec'd w/o headspace?	$\mathbf{x} = \mathbf{x}$
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B&A Laboratories: Hobbs 575-392-7550 Dallas 214-902-0300 Houston 281-242-4200 Odessa 432-563-1800 San Antonio 210-509-3334 Phoenix 602-437-0330 FTS Service Centers: Atlanta 770-449-8800 Lakeland 863-646-8526 Tampa 803-543-8099 Philadelphia 610-955-5649 South Carolina 803-543-8099

C.O.C. Serial #

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XENCO Laboratories



Comments

Prelogin/Nonconformance Report- Sample Log-In

Client: Southern Union Gas Services- Monahan	Acceptable Temperature Range: 0 - 6 degC
Date/ Time Received: 12/24/2012 03:00:00 PM	Air and Metal samples Acceptable Range: Ambient
Work Order #: 454753	Temperature Measuring device used :

Sample Receipt Checklist	
#1 *Temperature of cooler(s)?	2.5
#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: 12/26/2012

Checklist reviewed by:

Date: 12/26/2012

Analytical Report 456428

for

Southern Union Gas Services- Monahans

Project Manager: Ben Arguijo

S&W 4-Inch

RP-1018

29-JAN-13

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)



29-JAN-13

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

Reference: XENCO Report No(s): 456428 S&W 4-Inch 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) 456428. 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. 456428 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

> 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

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Sample Cross Reference 456428



Southern Union Gas Services- Monahans, Monahans, TX

S&W 4-Inch

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SP#1 @ 8'	S	01-24-13 12:00	8 ft	456428-001
SP#1 @ 10'	S	01-24-13 12:15	10 ft	456428-002



CASE NARRATIVE

Client Name: Southern Union Gas Services- Monahans Project Name: S&W 4-Inch



Project ID:RP-1018Work Order Number(s):456428

Report Date: 29-JAN-13 Date Received: 01/25/2013

Sample receipt non conformances and comments: None

Sample receipt non conformances and comments per sample:

None

XENCO Laboratories

Project Id: RP-1018

Project Location: Lea County, NM

Contact: Ben Arguijo

Certificate of Analysis Summary 456428

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: S&W 4-Inch



Date Received in Lab: Fri Jan-25-13 03:25 pm

Report Date: 29-JAN-13

Project Manager: Nicholas Straccione

	Lab Id:	456428-001	456428-002			
Analysis Requested	Field Id:	SP#1 @ 8'	SP#1 @ 10'			
Analysis Requested	Depth:	8- ft	10- ft			1
	Matrix:	SOIL	SOIL			1
	Sampled:	Jan-24-13 12:00	Jan-24-13 12:15			1
Percent Moisture	Extracted:					
	Analyzed:	Jan-28-13 17:30	Jan-28-13 17:30			1
	Units/RL:	% RL	% RL			
Percent Moisture		6.29 1.00	2.75 1.00	-		
TPH By SW8015 Mod	Extracted:	Jan-28-13 08:35	Jan-28-13 08:35			
	Analyzed:	Jan-28-13 19:31	Jan-28-13 19:57			
	Units/RL:	mg/kg RL	mg/kg RL	 		
C6-C12 Gasoline Range Hydrocarbons		ND 16.0	ND 15.4			
C12-C28 Diesel Range Hydrocarbons		ND 16.0	ND 15.4			
C28-C35 Oil Range Hydrocarbons		ND 16.0	ND 15.4			
Total TPH		ND 16.0	ND 15.4			

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.

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Nul Ctr.

Nicholas Straccione Project Manager

Final 1.000



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 quantitation 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.

LOD Limit of Detection

LOQ Limit of Quantitation

Phone

(281) 240-4200

(214) 902 0300

(210) 509-3334

(813) 620-2000

(432) 563-1800

(770) 449-8800

(602) 437-0330

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit SDL Sample Detection Limit

PQL Practical Quantitation Limit MQL Method Quantitation Limit

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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2505 North Falkenburg Rd, Tampa, FL 33619
12600 West I-20 East, Odessa, TX 79765
6017 Financial Drive, Norcross, GA 30071
3725 E. Atlanta Ave, Phoenix, AZ 85040

Fax

(281) 240-4280

(214) 351-9139

(210) 509-3335

(813) 620-2033

(432) 563-1713

(770) 449-5477



Project Name: S&W 4-Inch

Work Orders : 456428	,		Project II): RP-1018		
Lab Batch #: 905671	Sample: 456428-001 / SMP	Batcl				
Units: mg/kg	Date Analyzed: 01/28/13 19:31	SU:	STUDY			
ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		104	99.8	104	70-135	
o-Terphenyl		56.5	49.9	113	70-135	
Lab Batch #: 905671	Sample: 456428-002 / SMP	Batel	h: 1 Matrix	:Soil		
Units: mg/kg	Date Analyzed: 01/28/13 19:57	SU	RROGATE RI	ECOVERY	STUDY	
ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		102	100	102	70-135	
o-Terphenyl		55.4	50.0	111	70-135	
Lab Batch #: 905671	Sample: 632981-1-BLK / B	LK Batcl	h: ¹ Matrix	Solid	I	
Units: mg/kg	Date Analyzed: 01/28/13 11:24	SU	RROGATE RI	ECOVERY	STUDY	
ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		102	100	102	70-135	
o-Terphenyl		55.4	50.1	111	70-135	
Lab Batch #: 905671	Sample: 632981-1-BKS / B	KS Bate	h: ¹ Matrix	Solid	·	
Units: mg/kg	Date Analyzed: 01/28/13 10:31	SU	RROGATE RI	ECOVERY	STUDY	
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		96.8	100	97	70-135	
o-Terphenyl		56.7	50.1	113	70-135	· · · · · · · · · · · · · · · · · · ·
Lab Batch #: 905671	Sample: 632981-1-BSD / B	SD Batcl	h: 1 Matrix	Solid	·	· · · · · ·
Units: mg/kg	Date Analyzed: 01/28/13 10:58	SU	RROGATE RI	ECOVERY	STUDY	
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
I-Chlorooctane		94.1	100	94	70-135	
o-Terphenyl		56.8	50.1	113	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



Project Name: S&W 4-Inch

Vork Orders: 456428		Project ID: RP-1018											
Lab Batch #: 905671	Sample: 456251-001 S / M3	Batch: 1 Matrix: Soil											
Units: mg/kg	Date Analyzed: 01/28/13 21:15	Date Analyzed: 01/28/13 21:15 SURROGATE RECOVERY STU											
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
1-Chlorooctane		102	100	102	70-135								
o-Terphenyl		61.1 50.1 122 70-135											
Lab Batch #: 905671	Sample: 456251-001 SD / N	MSD Bate	h: ¹ Matrix	x:Soil									
Units: mg/kg	Date Analyzed: 01/28/13 21:42	SU	RROGATE R	ECOVERY	STUDY								
ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
1-Chlorooctane		103	99.6	103	70-135								
o-Terphenyl		58.1	49.8	117	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





Project Name: S&W 4-Inch

Work Order #: 456428 Analyst: KEB Lab Batch ID: 905671	Sample: 632981-1-B	Date Prepared: 01/28/2013 Project ID: RP-1018 BKS Batch #: 1 Matrix: Solid										
Units: mg/kg			BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY									
TPH By SW80	15 Mod	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes			[B]	[C]	[D]	[E]	Result [F]	[U]				
C6-C12 Gasoline Range Hydroc	arbons	<15.0 1000 956 96 1000 945 95 1 70-135 35										
C12-C28 Diesel Range Hydroca	rbons	<15.0	1000	1030	103	1000	1020	102	1	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



Project Name: S&W 4-Inch



Work Order # : 456428						Project II): RP-101	18			
Lab Batch ID: 905671 Date Analyzed: 01/28/2013	QC- Sample ID: Date Prepared:				tch #: alyst:		: Soil				
Reporting Units: mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
TPH By SW8015 Mod	Parent Sample	Spike	Spiked Sample Result	Spiked Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
C6-C12 Gasoline Range Hydrocarbons	<15.8	1060	1110	105	1050	1090	104	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.8	1060	1200	113	1050	1180	112	2	70-135	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



Sample Duplicate Recovery



Project Name: S&W 4-Inch

Work Order #: 456428

Lab Batch #: 905649 Date Analyzed: 01/28/2013 17:30 QC- Sample ID: 456340-001 D	Date Prepared: 01/28/20 Batch #: 1		Project I alyst: WRU trix: Soil	D: RP-1018	
Reporting Units: %	SAMPLI	E / SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture Analyte	Parent Samp Result [A]	le Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	5.83	5.95	2	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 Low	/ry			······································									<u>.</u>	F	roje	ct Na	ame	<u>s</u> 8	<u>x</u> W	4-1	nch			<u> </u>	<u> </u>		: 	· ·	_
:*	Company Name	Basin Environmental Ser	vice Te	chnol	logies, LLC			<u>.</u>	. :			<u></u>	<u> </u>		:	• : •	F	roje	ct #:	RP	-10	18		-				· : ·			-
	Company Address:	P.O. Box 301							•	·.			••••				Pro	ject	Loc:	Lea	Co	unty	, NM		:		<u> </u>	<u> </u>	•	:	
	City/State/Zip:	Lovington, NM 88260	. ::	· · ·	· · · · · · · · · · · · · · · · · · ·	·					. :				_	. :	·:	۰P	0 #:	<u></u> B	51	1:	5	00	H	he	11	1	U	nie	<u>)</u> n
.:	Telephone No:	(575)396-2378				Fax No:		(57	5) 3	96-142	9				. <u> </u>	Repo	ort Fe	orma	it:	X	Stai	ndar	d j	: [ат [RP			NPD	ES	•
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B # (la			Beginning Depth	Ending Dept	Date Sa	Time Sampled	Field Filtered	Total #. of Containers		HCI 3	H ₂ SO4	NaOH	2S203	None Other (Snorifu)	DW = Drinking Wa	- Crot	- 1001-POL		Cations (Ca, Mg,	Anions (Cl, SO4,	SAR / ESP / CEC	als: As	Volatiles	BTEX 8021B		N.O.R.M.	CHLORIDES	tal Dis	of the	Standard TAT	ľ
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XENCO Laboratories



Prelogin/Nonconformance Report- Sample Log-In

Client: Southern Union Gas Services- Monahan	Acceptable Temperature Range: 0 - 6 degC
Date/ Time Received: 01/25/2013 03:25:13 PM	Air and Metal samples Acceptable Range: Ambient
Work Order #: 456428	Temperature Measuring device used :

Sample Rece	ipt Checklist	Comments
#1 *Temperature of cooler(s)?	9	
#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	h bubble)? Yes	
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	Yes	
#22 >10 for all samples preserved with NaAsO2+NaOH, Zr	Ac+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: _____

Appendix C Release Notification and Corrective Action (Form C-141)

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State of New Mexico Energy Minerals and Natural Resources

Form C-141 Revised October 10, 2003

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

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Lease No.

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	Natu	ral Gas Gathering
				·····

Surface Owner: State of New Mexico

LOCATION OF RELEASE

Mineral Owner: State of New Mexico

ſ	Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County	
	J	16	205	37Ē					Lea	ŀ
										Ĺ

Latitude N32 34.160 Longitude W103 15.249

NATURE OF RELEASE

Type of Release	Natural Gas, gas liquids and iron	Volume of Release 22.5 mcf	Volume Recovered 0 bbls			
sulfide.		nat. gas, 15 bbls nat.gas liquids				
Source of Release	Pipeline	Date and Hour of Occurrence	Date and Hour of Discovery 5/27/06			
	_	5/27/06. Hour unknown.	Hour unknown			
Was Immediate Notice Given?		If YES, To Whom?				
	🔲 Yes 🛛 No 🗌 Not Required					
By Whom?		Date and Hour:				
Was a Watercourse Reached?		If YES, Volume Impacting the Wate	ercourse.			
	🔲 Yes 🖾 No					
If a West-resource to a to be			122324			
If a Watercourse was Impacted, Describe Fully.*						
Describe Cause of Problem and R	emedial Action Taken.*					
The 4" steel gathering pipeline, or	perating at 20 psi developed a leak, the l	ine was blocked in an allowed to blow	down or 5/27/06. Reparciews replaced			
the affected area of pipe by replace	ing approximately 400 ft. of steel pipe v	vith poly-pipe on 8/11/06. Normal ope	rating pressure on the line is 20 psi to 30			
psi, with a potential H2S content of	of 4000 ppm.					
		, ,	40:00 997			
Describe Area Affected and Clear	up Action Taken.* An area measuring	approximately 2175 sq. ft of pasture la	and was affected around the immediate leak			
			oil will be remediated using the NMOCD			
	sketch and remediation plan is attached.		· · · · ·			
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						
	red to report and/or file certain release n					
public health or the environment.	The acceptance of a C-141 report by the	e NMOCD marked as "Final Report" of	does not relieve the operator of liability			
should their operations have failed	d to adequately investigate and remediat	e contamination that pose a threat to g	round 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.						
rederal, state, or local laws and/or	regulations.	OIL CONSERV	ATION DIVISION			
		<u>OIL CONSERV</u>	ATION DIVISION			
Signature:	Tony Savoie	ETVIRO EN				
		Approved by District Supervisor:				
Printed Name:	John A. Savoie		Jok -			
	······································					
Title:	EH&S Comp. Coord.	Approval Date: 8.28.04	Expiration Date:			
		×				
E-mail Address:		Conditions of Approval:	Attached			
Date: 8/11/06	Phone: 505 205 211/	RESULTS FOR THE, SU	MIZ I			
Date: 8/11/06 Phone: 505-395-2116 Results for The sulting Attach Additional Sheets If Necessary Image: State						
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