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REMEDIATION SUMMARY & SOIL CLOSURE REQUEST

Property:

REGENCY FIELD SERVICES LLC. A-14 6" Lateral Historical Release Site Lea County, New Mexico Unit Letter "E", Section 2, Township 24 South, Range 34 East Latitude 32.24915, Longitude -103.44687 1RP-1062

> February 2015 Apex Project No. 7250715009

> > Prepared for:

Regency Field Services LLC 421 West 3rd Street, Suite 250 Fort Worth, TX 76102 Attn: Ms. Crystal Callaway, BSN, RN, CHMM

Prepared by:

1 K Julli

Thomas Franklin Project Manager

Liz Scaggs, P.G. Senior Technical Review



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REMEDIATION SUMMARY & SOIL CLOSURE REQUEST

REGENCY FIELD SERVICES LLC. A-14 6" Lateral Historical Release Site Lea County, New Mexico Unit Letter "E", Section 2, Township 24 South, Range 34 East Latitude 32.24915, Longitude -103.44687

February 2015 Apex Project No. 7250715009

1.0 INTRODUCTION

1.1 Site Description & Background

Apex TITAN, Inc. (Apex) has prepared this Remediation Summary and Soil Closure Request for the Regency Field Services, LLC (Regency) A-14 6" Lateral leak (referred to hereinafter as the "Site" or "subject Site"). Remedial actions were reportedly conducted in accordance with New Mexico Energy, Minerals, and Natural Resources Department (EMNRD), Oil Conservation Division (NMOCD) rules (*NMAC 19.15.29 Release Notification*) and the NMOCD *Guidelines for Remediation of Leaks, Spills and Releases* as guidance.

The A-14 6" Lateral Line leak is located east of Antelope Road, 18 miles northwest of Jal, New Mexico (GPS 32.24915, -103.44687). According to documentation provided by Southern Union Gas Services, (SUG), the Initial C-141 was submitted by SUG, the operator at the time, to the New Mexico Oil Conservation Division (NMOCD) in September of 2006. Regency Field Services, LLC. has subsequently acquired this site.

The previous remedial activities were reportedly conducted by Ocotillo Environmental, LLC. (Ocotillo) and NOVA Safety and Environmental (NOVA). This Closure Request is solely based upon the interpretation of the data provided by Ocotillo and NOVA.

1.2 **Project Objective**

The objective of the Remediation Summary and Soil Closure Request is to present documentation of the activities that were performed to date and to request closure of the site.

1.3 Standard of Care

Apex's services are performed in accordance with standards customarily provided by a firm rendering the same or similar services in the area during the same time period. Apex makes no warranties, express or implied, as to the services performed hereunder. Additionally, Apex does not warrant the work of third parties supplying information used in

the report (e.g. laboratories, regulatory agencies, or other third parties). This scope of services will be performed in accordance with the scope of work agreed with the client.

1.4 Reliance

This report has been prepared for the exclusive use of Regency, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the Site) is prohibited without the express written authorization of Regency and Apex. Any unauthorized distribution or reuse is at the client's sole risk. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions and limitations stated in the proposal, the report, and Apex's Agreement. The limitation of liability defined in the agreement is the aggregate limit of Apex's liability to the client.

2.0 SITE RANKING & PROPOSED REMEDIAL ACTION GOALS

The Site is subject to regulatory oversight by the NMOCD. To address activities related to releases, the NMOCD utilizes the *Guidelines for Remediation of Leaks, Spills and Releases* as guidance, in addition to the NMOCD rules, specifically NMAC 19.15.29 *Release Notification.* These documents establish investigation and abatement action requirements for sites subject to reporting and/or corrective action.

In accordance with the NMOCD's *Guidelines for Remediation of Leaks, Spills and Releases*, Apex utilized the general site characteristics to determine the appropriate "ranking" for the Site. The ranking criteria and associated scoring are provided in the table below:

Rankin	g Criteria		Ranking Score
	<50 feet	20	
Depth to Groundwater	50 to 99 feet	10	0
	>100 feet	0	
Wellhead Protection Area,	Yes	20	
<1,000 feet from a water source, or; <200 feet from private domestic water source.	No	0	0
Distance to Surface	<200 feet	20	
Water Body	200 to 1,000 feet	10	0
	>1,000 feet	0	
Total Rai	0		

Based on Apex's evaluation of the scoring criteria, the Site would have a Total Ranking Score of 0. This ranking is based on the following:

- The depth to the initial groundwater-bearing zone is greater than 100 feet at the Site.
- The impacted area is greater than 200 feet from a private domestic water source.

• Distance to the nearest surface water body is greater than 1,000 ft.

Based on a Total Ranking Score of 0, cleanup goals for soils remaining in place include: 10 milligrams per kilogram (mg/Kg) for benzene, 50 mg/Kg for total benzene, toluene, ethlybenzene and xylene (BTEX), 5,000 mg/Kg for total petroleum hydrocarbons (TPH) and 1,000 mg/Kg for chloride.

3.0 INITIAL RESPONSE, EXCAVATION & TRENCHING ACTIVITIES

3.1 Initial Response

In 2006, SUG conducted an initial investigation at the Site. A ranking analysis was completed which ranked the site as a zero (0) and stated that ground water was an average of one hundred and forty five (145) feet deep in the area. During the investigation, samples were collected from the surface and field screened for hydrocarbons.

3.2 Excavation Activities

Excavation remediation activities were conducted by Ocotillo and began in April of 2007 and extended into 2008. The excavation activities included removing impacted material from the release, field screening for hydrocarbons and blending onsite. Material that exceeded regulatory levels was hauled to the Pitchfork Land farm for proper disposal. Based on the Bill of Ladings, included in Appendix E, approximately 264 cubic yards of impacted material was disposed. The final dimensions of the excavation were approximately five hundred (500) feet in length and fifty (50) feet to seventy five (75) feet in width as shown on Figure 3, Appendix A. The depth of the excavated areas was not documented by Ocotillo.

3.3 Excavation Confirmation Soil Sampling Program

According to the daily time tickets from Ocotillo, soil samples were field screened for hydrocarbons and then collected and sent to a laboratory for analysis. The daily time tickets do not specify a particular laboratory or show the field analysis from sampling. The laboratory analytical results are not available from Ocotillo for submittal.

3.4 Trenching Activities

NOVA personnel supervised trenching activities in the area that was not previously documented for vertical delineation. In May and June of 2013, NOVA personnel were present to observe on-Site activities and to collect soil samples. Eight (8) trenches (Trench-1 through Trench-8) and the Release Point (RP) were installed and sampled as shown in Figure 3.

3.5 Trenching Confirmation Soil Sampling Program

Soil samples were collected by NOVA personnel and analyzed for BTEX, TPH and chlorides as shown in Appendix B, Table 1. The analytical sample results were below the NMOCD regulatory levels for BTEX and TPH. Elevated chloride concentrations were found in Trench-4, Trench-5, Tench-6 and Trench-7. Trench-4 showed elevated chloride

concentrations of 450 mg/Kg at two (2) feet declining to 325 mg/Kg at seven (7) feet below grade surface (bgs). Trench-5 showed elevated chloride concentrations of 950 mg/Kg at one (1) foot declining to 42.8 mg/Kg at two (2) feet bgs. Trench-6 showed elevated chloride concentrations of 1,610 mg/Kg at two (2) feet declining to 242 mg/Kg at six (6) feet bgs. Trench-7 showed elevated chloride concentrations of 1,940 mg/Kg at four (4) feet declining to 248 mg/Kg at ten (10) feet bgs. Trench-6 and Trench-7 were vertically delineated with depth and exhibited concentrations below the NMOCD regulatory levels. Trench-4 was not vertically delineated, however, the chlorides were declining with depth and were not at a significant concentration.

4.0 LABORATORY ANALYTICAL METHODS

Soil samples collected were analyzed for TPH GRO/DRO utilizing EPA method SW-846 8015, BTEX using EPA method SW-846 8021B and chlorides utilizing EPA method SW-846 300.1. Copies of the laboratory analytical reports are provided in Appendix D.

Soil samples were collected and placed in laboratory prepared glassware, placed on ice in a cooler. The sample coolers and completed chain-of-custody forms were relinquished to an approved laboratory for normal turn-around time.

Figure 3 is a Site plan that indicates the approximate location of the confirmation soil samples and test trench locations in relation to pertinent land features and general Site boundaries.

5.0 CLOSURE

Based upon the data provided by Ocotillo and NOVA with the photos shown in Appendix C, the constituents of concern were horizontally and vertically delineated. The excavation was backfilled and brought to grade. Based upon the response actions and laboratory analytical results, no additional investigation and/or remediation appears warranted at this time. Regency respectfully requests closure of this Site. Copies of the Initial and Final C-141 are provided in Appendix F.



APPENDIX A

Figures



Regency - A-14 6 Inch Lateral Lea County, New Mexico 32.24915N, 103.44687W



Apex TITAN, Inc. 505 N. Big Spring Street, Suite 301A Midland, Texas 79701 Phone: (432) 695-6016 www.apexcos.com A Subsidiary of Apex Companies, LLC FIGURE 1 Topographic Map Woodley Flat, NM Quadrangle 1973

Project No. 7250715009



Lea County, New Mexico 32.24915N, 103.44687W



Apex TITAN, Inc. 505 N. Big Spring Street, Suite 301A Midland, Texas 79701 Phone: (432) 695-6016 www.apexcos.com A Subsidiary of Apex Companies, LLC

FIGURE 2 Site Vicinity Map

Project No. 7250715009



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APPENDIX B

Soil Analytical Results

TABLE 1

CONCENTRATIONS OF BENZENE, BTEX, TPH AND CHLORIDE IN SOIL

SOUTHERN UNION GAS SERVICES A-14 6 INCH LATERAL HISTORICAL RELEASE SITE LEA COUNTY, NEW MEXICO NMOCD REFERENCE # 1RP-1062

All concentrations are reported in mg/Kg

		METHODS: SW 846-8021b							METHOD: SW 8015M			
SAMPLE LOCATION	SAMPLE			FTHVI -	m n-	0 -	ΤΟΤΑΙ	ТРН	ТРН	TPH	TOTAL	
SAMILE LOCATION	DATE	BENZENE	TOLUENE	BENZENE	III, p -	U- XVI FNF	RTEY	GRO	DRO	ORO	TPH	CHLORIDE
				DENZENE	AILENES	ATLENE	DILA	C ₆ -C ₁₂	$C_{12}-C_{28}$	$C_{28}-C_{35}$	C ₆ -C ₃₅	
NMOCD Regulatory Limit		10	-	-	-	-	50	-	-	-	5,000	1,000
RP Floor @ 14'	05/30/13	< 0.00102	< 0.00204	< 0.00102	< 0.00204	< 0.00102	< 0.00204	<15.0	<15.0	<15.0	<15.0	5.45
RP West S/W @ 13'	05/30/13	< 0.00108	< 0.00217	< 0.00108	< 0.00217	< 0.00108	< 0.00217	<14.9	<14.9	<14.9	<14.9	4.65
RP East S/W @ 13'	05/30/13	< 0.00109	< 0.00218	< 0.00109	< 0.00218	< 0.00109	< 0.00218	<15.0	<15.0	<15.0	<15.0	6.57
SP-1	05/30/13	< 0.00104	< 0.00208	< 0.00104	< 0.00208	< 0.00104	< 0.00208	<14.9	323	82.3	405	69.3
RP South S/W @ 16'	05/31/13	< 0.00104	< 0.00208	< 0.00104	< 0.00208	< 0.00104	< 0.00208	<15.0	<15.0	<15.0	<15.0	2.59
Trench-1 Floor @ 3'	05/31/13	< 0.00106	< 0.00212	< 0.00106	< 0.00212	< 0.00106	< 0.00212	<15.0	<15.0	<15.0	<15.0	100
Trench-1 East S/W @ 2'	05/31/13	< 0.00107	< 0.00214	< 0.00107	< 0.00214	< 0.00107	< 0.00214	<15.0	<15.0	<15.0	<15.0	49.6
Trench-1 West S/W @ 2'	05/31/13	< 0.00104	< 0.00208	< 0.00104	< 0.00208	< 0.00104	< 0.00208	<14.9	<14.9	<14.9	<14.9	28.1
RP North S/W @ 13'	06/03/13	< 0.00101	< 0.00202	< 0.00101	< 0.00202	< 0.00101	< 0.00202	<15.0	211	43.7	255	106
Trench-2 Floor @ 7'	06/03/13	< 0.000996	< 0.00199	< 0.000996	< 0.00199	< 0.000996	< 0.00199	<14.9	<14.9	<14.9	<14.9	30.5
Trench-2 East S/W @ 6'	06/03/13	< 0.00101	< 0.00202	< 0.00101	< 0.00202	< 0.00101	< 0.00202	<14.9	<14.9	<14.9	<14.9	51.1
Trench-2 West S/W @ 6'	06/03/13	< 0.000998	< 0.00200	< 0.000998	< 0.00200	< 0.000998	< 0.00200	<14.9	<14.9	<14.9	<14.9	<2.00
Trench-3 Floor @ 2'	06/03/13	< 0.00100	< 0.00201	< 0.00100	< 0.00201	< 0.00100	< 0.00201	<15.0	<15.0	<15.0	<15.0	156
Trench-3 North S/W @ 1'	06/03/13	< 0.000996	< 0.00199	< 0.000996	< 0.00199	< 0.000996	< 0.00199	<15.0	<15.0	<15.0	<15.0	64.8
Trench-3 South S/W @ 1'	06/03/13	< 0.00101	< 0.00201	< 0.00101	< 0.00201	< 0.00101	< 0.00201	<14.9	<14.9	<14.9	<14.9	89.2
Trench-4 Floor @ 2'	06/04/13	< 0.000996	< 0.00199	< 0.000996	< 0.00199	< 0.000996	< 0.00199	<15.0	<15.0	<15.0	<15.0	450
Trench-4 Floor @ 7'	06/04/13	< 0.000990	< 0.00198	< 0.000990	< 0.00198	< 0.000990	< 0.00198	<14.9	<14.9	<14.9	<14.9	325
Trench-4 North S/W-1 @ 6'	06/04/13	< 0.000996	< 0.00199	< 0.000996	< 0.00199	< 0.000996	< 0.00199	<15.0	<15.0	<15.0	<15.0	297
Trench-4 North S/W-2 @ 6'	06/04/13	< 0.000996	< 0.00199	< 0.000996	< 0.00199	< 0.000996	< 0.00199	<15.0	<15.0	<15.0	<15.0	158
Trench-4 South S/W-1 @ 6'	06/04/13	< 0.000994	< 0.00199	< 0.000994	< 0.00199	< 0.000994	< 0.00199	<14.9	<14.9	<14.9	<14.9	458
Tench-4 South S/W-2 @ 6'	06/04/13	< 0.000994	< 0.00199	< 0.000994	< 0.00199	< 0.000994	< 0.00199	<15.0	<15.0	<15.0	<15.0	85.8
Trench-5 Floor @ 2'	06/04/13	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<15.0	<15.0	<15.0	<15.0	42.8
Trench-5 South S/W @ 1'	06/04/13	< 0.000994	< 0.00199	< 0.000994	< 0.00199	< 0.000994	< 0.00199	<15.0	<15.0	<15.0	<15.0	2.96
Trench-5 North S/W-1 @ 1'	06/04/13	< 0.000990	< 0.00198	< 0.000990	< 0.00198	< 0.000990	< 0.00198	<15.7	<15.7	<15.7	<15.7	950
Trench-5 North S/W-2 @ 1'	06/04/13	< 0.000996	< 0.00199	< 0.000996	< 0.00199	< 0.000996	< 0.00199	<15.8	<15.8	<15.8	<15.8	39.9

TABLE 1

CONCENTRATIONS OF BENZENE, BTEX, TPH AND CHLORIDE IN SOIL

SOUTHERN UNION GAS SERVICES A-14 6 INCH LATERAL HISTORICAL RELEASE SITE LEA COUNTY, NEW MEXICO NMOCD REFERENCE # 1RP-1062

All concentrations are reported in mg/Kg

		METHODS: SW 846-8021b						METHOD: SW 8015M				E 300.1
SAMPLE LOCATION	SAMPLE DATE	BENZENE	TOLUENE	ETHYL- BENZENE	m, p - XYLENES	o - XYLENE	TOTAL BTEX	TPH GRO C ₆ -C ₁₂	TPH DRO C ₁₂ -C ₂₈	TPH ORO C ₂₈ -C ₃₅	TOTAL TPH C ₆ -C ₃₅	CHLORIDE
NMOCD Regulatory Limit		10	-	-	-	-	50	-	-	-	5,000	1,000
Trench-6 Floor @ 2'	06/05/13	< 0.000992	< 0.00198	< 0.000992	< 0.00198	< 0.000992	< 0.00198	<15.8	<15.8	<15.8	<15.8	1,610
Trench-6 Floor @ 6'	06/05/13	< 0.000998	< 0.00200	< 0.000998	< 0.00200	< 0.000998	< 0.00200	<15.1	<15.1	<15.1	<15.1	242
Floor-6 North S/W-1 @ 5'	06/05/13	< 0.000994	< 0.00199	< 0.000994	< 0.00199	< 0.000994	< 0.00199	<15.6	<15.6	<15.6	<15.6	738
Trench-6 South S/W-1 @ 5'	06/05/13	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<15.7	<15.7	<15.7	<15.7	190
Trench-6 North S/W-2 @ 5'	06/05/13	< 0.000998	< 0.00200	< 0.000998	< 0.00200	< 0.000998	< 0.00200	<15.3	<15.3	<15.3	<15.3	87.8
Trench-6 South S/W-2 @ 5'	06/05/13	< 0.00101	< 0.00201	< 0.00101	< 0.00201	< 0.00101	< 0.00201	<15.5	<15.5	<15.5	<15.5	128
Trench-7 Floor @ 4'	06/06/13	< 0.000998	< 0.00200	< 0.000998	< 0.00200	< 0.000998	< 0.00200	<16.2	<16.2	<16.2	<16.2	1,940
Trench-7 Floor @ 10'	06/06/13	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<15.5	<15.5	<15.5	<15.5	248
Trench-7 North S/W @ 9'	06/06/13	< 0.000994	< 0.00199	< 0.000994	< 0.00199	< 0.000994	< 0.00199	<15.8	<15.8	<15.8	<15.8	59.9
Trench-7 South S/W-1 @ 9'	06/06/13	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<15.7	<15.7	<15.7	<15.7	714
Trench-7 South S/W-2 @ 9'	06/06/13	< 0.00106	< 0.00211	< 0.00106	< 0.00211	< 0.00106	< 0.00211	<15.7	<15.7	<15.7	<15.7	333
Trench-8 Topsoil	06/07/13	< 0.00102	< 0.00205	< 0.00102	< 0.00205	< 0.00102	< 0.00205	<15.3	31.4	<15.3	31.4	26.2
Trench-8 Floor @ 2'	06/07/13	< 0.00114	< 0.00229	< 0.00114	< 0.00229	< 0.00114	< 0.00229	<17.0	<17.0	<17.0	<17.0	19.3
Trench-8 North S/W @ 1'	06/07/13	< 0.00108	< 0.00217	< 0.00108	< 0.00217	< 0.00108	< 0.00217	<16.3	<16.3	<16.3	<16.3	21.0
Trench-8 East S/W @ 1'	06/07/13	< 0.00110	< 0.00221	< 0.00110	< 0.00221	< 0.00110	< 0.00221	<16.6	<16.6	<16.6	<16.6	5.84
Trench-8 South S/W @ 1'	06/07/13	< 0.00107	< 0.00215	< 0.00107	< 0.00215	< 0.00107	< 0.00215	<16.3	<16.3	<16.3	<16.3	6.39



APPENDIX C

Photos



View North – Approximate area of release



View North – Spill path with new growth



APPENDIX D

Laboratory Data Reports & Chain-of-Custody Documents

Analytical Report 464286

for

Southern Union Gas Services- Monahans

Project Manager: Camille Bryant

SUGS Historical A-14 6 Inch Lateral 1RP-1062

04-JUN-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)



04-JUN-13



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

Reference: XENCO Report No(s): 464286 SUGS Historical A-14 6 Inch Lateral 1RP-1062 Project Address: Lea County, New Mexico

Camille Bryant:

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) 464286. 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. 464286 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.

Kelsey Brooks 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

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



Sample Cross Reference 464286



Southern Union Gas Services- Monahans, Monahans, TX

SUGS Historical A-14 6 Inch Lateral 1RP-1062

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
RP Floor @ 14'	S	05-30-13 14:00		464286-001
RP West S/W @ 13'	S	05-30-13 14:30		464286-002
RP East S/W @ 13'	S	05-30-13 15:00		464286-003
SP-1	S	05-30-13 14:05		464286-004
RP SOuth S/W @ 16'	S	05-31-13 10:00		464286-005
Trench-1 Floor @ 3'	S	05-31-13 11:10		464286-006
Trench-1 East S/W @ 2'	S	05-31-13 13:00		464286-007
Trench- 1 West S/W @ 2'	S	05-31-13 13:15		464286-008



CASE NARRATIVE



Client Name: Southern Union Gas Services- Monahans Project Name: SUGS Historical A-14 6 Inch Lateral 1RP-1062

Project ID: Work Order Number(s): 464286 Report Date: 04-JUN-13 Date Received: 06/03/2013

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Project Id:

Certificate of Analysis Summary 464286

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: SUGS Historical A-14 6 Inch Lateral 1RP-1062



Date Received in Lab: Mon Jun-03-13 11:25 am

Report Date: 04-JUN-13

Contact: Camille Bryant Project Location: Lea County, New Mexico

oject Docation. Lea County, New Mexico								Project Ma	nager:	Kelsey Brook	S		
	Lab Id:	464286-0	01	464286-0	02	464286-0	003	464286-0	004	464286-0	005	464286-	006
Amaluaia Banuastad	Field Id:	RP Floor @	9 14'	RP West S/W	@ 13'	RP East S/W	@ 13'	SP-1		RP SOuth S/W	V@16'	Trench-1 Flo	oor @ 3'
Analysis Kequesiea	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-30-13	14:00	May-30-13	14:30	May-30-13	15:00	May-30-13	14:05	May-31-13	10:00	May-31-13	11:10
BTEX by EPA 8021B	Extracted:	** ** **	**	** ** **	**	** ** **	**	** ** **	**	** ** **	**	** ** **	**
	Analyzed:	Jun-03-13 1	6:04	Jun-04-13 (08:57	Jun-03-13	16:37	Jun-03-13	16:53	Jun-03-13	17:09	Jun-03-13	17:26
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.00102	ND	0.00108	ND	0.00109	ND	0.00104	ND	0.00104	ND	0.00106
Toluene		ND	0.00204	ND	0.00217	ND	0.00218	ND	0.00208	ND	0.00208	ND	0.00212
Ethylbenzene		ND	0.00102	ND	0.00108	ND	0.00109	ND	0.00104	ND	0.00104	ND	0.00106
m,p-Xylenes		ND	0.00204	ND	0.00217	ND	0.00218	ND	0.00208	ND	0.00208	ND	0.00212
o-Xylene		ND	0.00102	ND	0.00108	ND	0.00109	ND	0.00104	ND	0.00104	ND	0.00106
Total Xylenes		ND	0.00102	ND	0.00108	ND	0.00109	ND	0.00104	ND	0.00104	ND	0.00106
Total BTEX		ND	0.00102	ND	0.00108	ND	0.00109	ND	0.00104	ND	0.00104	ND	0.00106
Inorganic Anions by EPA 300/300.1	Extracted:	Jun-03-13	2:00	Jun-03-13	2:00	Jun-03-13	12:00	Jun-03-13	12:00	Jun-03-13	12:00	Jun-03-13	12:00
	Analyzed:	Jun-03-13 2	21:57	Jun-03-13 2	22:40	Jun-03-13	23:02	Jun-03-13	23:23	Jun-03-13	23:45	Jun-04-13	00:07
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		5.45	2.00	4.65	2.00	6.57	2.00	69.3	4.00	2.59	2.00	100	4.00
Percent Moisture	Extracted:												
	Analyzed:	Jun-03-13	2:55	Jun-03-13	2:55	Jun-03-13	12:55	Jun-03-13	13:00	Jun-03-13	13:00	Jun-03-13	13:00
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		2.86	1.00	7.74	1.00	9.12	1.00	4.75	1.00	4.11	1.00	5.83	1.00
TPH By SW8015 Mod	Extracted:	Jun-03-13	5:30	Jun-03-13	5:30	Jun-03-13	15:30	Jun-03-13	15:30	Jun-03-13	15:30	Jun-03-13	15:30
	Analyzed:	Jun-03-13	7:01	Jun-03-13	7:28	Jun-03-13	17:55	Jun-03-13	18:22	Jun-03-13	18:48	Jun-03-13	19:15
	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	15.0	ND	14.9	ND	15.0	ND	14.9	ND	15.0	ND	15.0
C12-C28 Diesel Range Hydrocarbons		ND	15.0	ND	14.9	ND	15.0	323	14.9	ND	15.0	ND	15.0
C28-C35 Oil Range Hydrocarbons		ND	15.0	ND	14.9	ND	15.0	82.3	14.9	ND	15.0	ND	15.0
Total TPH		ND	15.0	ND	14.9	ND	15.0	405	14.9	ND	15.0	ND	15.0

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.

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Kelsey Brooks Project Manager

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Project Id:

Contact: Camille Bryant

Project Location: Lea County, New Mexico

Certificate of Analysis Summary 464286

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: SUGS Historical A-14 6 Inch Lateral 1RP-1062



Date Received in Lab: Mon Jun-03-13 11:25 am

Report Date: 04-JUN-13

Project Manager: Kelsey Brooks

	Lab Id:	464286-0	007	464286-0	08		
Anglusis Deguested	Field Id:	Trench-1 East S	S/W @ 2'	Trench- 1 West S	S/W @ 2'		
Analysis Kequestea	Depth:						
	Matrix:	SOIL	,	SOIL			
	Sampled:	May-31-13	13:00	May-31-13	13:15		
BTEX by EPA 8021B	Extracted:	** ** **	**	** ** **	**		
	Analyzed:	Jun-03-13	17:42	Jun-03-13 1	8:17		
	Units/RL:	mg/kg	RL	mg/kg	RL		
Benzene		ND	0.00107	ND	0.00104		
Toluene		ND	0.00214	ND	0.00208		
Ethylbenzene		ND	0.00107	ND	0.00104		
m,p-Xylenes		ND	0.00214	ND	0.00208		
o-Xylene		ND	0.00107	ND	0.00104		
Total Xylenes		ND	0.00107	ND	0.00104		
Total BTEX		ND	0.00107	ND	0.00104		
Inorganic Anions by EPA 300/300.1	Extracted:	Jun-03-13	12:00	Jun-03-13 1	12:00		
	Analyzed:	Jun-04-13	00:29	Jun-04-13 (00:50		
	Units/RL:	mg/kg	RL	mg/kg	RL		
Chloride		49.6	4.00	28.1	2.00		
Percent Moisture	Extracted:						
	Analyzed:	Jun-03-13	13:00	Jun-03-13 1	13:00		
	Units/RL:	%	RL	%	RL		
Percent Moisture		7.18	1.00	4.32	1.00		
TPH By SW8015 Mod	Extracted:	Jun-03-13	15:30	Jun-03-13 1	15:30		
	Analyzed: Jun-03-13 19:41		19:41	Jun-03-13 2	20:07		
	Units/RL:	mg/kg	RL	mg/kg	RL		
C6-C12 Gasoline Range Hydrocarbons		ND	15.0	ND	14.9		
C12-C28 Diesel Range Hydrocarbons		ND	15.0	ND	14.9		
C28-C35 Oil Range Hydrocarbons		ND	15.0	ND	14.9		
Total TPH		ND	15.0	ND	14.9		

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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Kelsey Brooks Project Manager

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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.
- 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 LOD Limit of Detection
- LOQ Limit of Quantitation **POL** 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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Project Name: SUGS Historical A-14 6 Inch Lateral 1RP-1062

Work Orders: 464286	ō,		Project II):		
Lab Batch #: 915314	Sample: 464286-001 / SMP	Batc	h: ¹ Matrix:	Soil		
Units: mg/kg	Date Analyzed: 06/03/13 16:04	SU	RROGATE RE	ECOVERY	STUDY	
BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0257	0.0300	86	80-120	
4-Bromofluorobenzene		0.0276	0.0300	92	80-120	
Lab Batch #: 915314	Sample: 464286-003 / SMP	Batc	h: ¹ Matrix:	Soil		
Units: mg/kg	Date Analyzed: 06/03/13 16:37	SU	RROGATE RE	ECOVERY	STUDY	
BTE	BTEX by EPA 8021B Analytes			Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0265	0.0300	88	80-120	
4-Bromofluorobenzene		0.0297	0.0300	99	80-120	
Lab Batch #: 915314	Sample: 464286-004 / SMP	Batc	h: ¹ Matrix:	Soil		
Units: mg/kg	Date Analyzed: 06/03/13 16:53	SURROGATE RECOVERY STUDY				
BTE	BTEX by EPA 8021B			Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0284	0.0300	95	80-120	
4-Bromofluorobenzene		0.0296	0.0300	99	80-120	
Lab Batch #: 915286	Sample: 464286-001 / SMP	Batc	h: 1 Matrix:	Soil	<u>, </u>	
Units: mg/kg	Date Analyzed: 06/03/13 17:01	SU	RROGATE RE	ECOVERY	STUDY	
TPH	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			լոյ		
1-Chlorooctane		105	99.9	105	70-135	
o-Terphenyl		57.7	50.0	115	70-135	
Lab Batch #: 915314	Sample: 464286-005 / SMP	Batc	h: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 06/03/13 17:09	SU	RROGATE RE	ECOVERY S	STUDY	
BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0248	0.0300	83	80-120	
4-Bromofluorobenzene		0.0268	0.0300	89	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution



Project Name: SUGS Historical A-14 6 Inch Lateral 1RP-1062

Work Orders: 464286	, ,	Project ID:						
Lab Batch #: 915314	Sample: 464286-006 / SMP	Batc	h: ¹ Matrix:	Soil				
Units: mg/kg	Date Analyzed: 06/03/13 17:26	SU	RROGATE RE	ECOVERY	STUDY			
BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene		0.0264	0.0300	88	80-120			
4-Bromofluorobenzene		0.0271	0.0300	90	80-120			
Lab Batch #: 915286	Sample: 464286-002 / SMP	Batc	h: ¹ Matrix:	Soil				
Units: mg/kg	Date Analyzed: 06/03/13 17:28	SU	RROGATE RE	ECOVERY	STUDY			
TPH	TPH By SW8015 Mod Analytes			Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane		105	99.5	106	70-135			
o-Terphenyl		58.0	49.8	116	70-135			
Lab Batch #: 915314	Sample: 464286-007 / SMP	Batc	h: ¹ Matrix:	Soil				
Units: mg/kg	Date Analyzed: 06/03/13 17:42	SURROGATE RECOVERY STUDY						
BTE	BTEX by EPA 8021B			Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene		0.0257	0.0300	86	80-120			
4-Bromofluorobenzene		0.0249	0.0300	83	80-120			
Lab Batch #: 915286	Sample: 464286-003 / SMP	Batc	h: 1 Matrix:	Soil	•			
Units: mg/kg	Date Analyzed: 06/03/13 17:55	SU	RROGATE RE	ECOVERY	STUDY			
TPH	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
1 Chlanssetana	Analytes	102		102	70.105			
1-Chiorooctane		57.3	99.8	102	70.135			
	G 1 464296 009 / SND	57.5 D ()	49.9	0.1	/0-135			
Lab Batch #: 915314	Sample: 464286-008 / SMP	Batch	h: 1 Matrix:	Soil	STUDV			
Units: mg/kg	Date Analyzed: 06/03/13 18:17	30	KROGATE KI			1		
BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene		0.0265	0.0300	88	80-120			
4-Bromofluorobenzene		0.0266	0.0300	89	80-120			

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution



Project Name: SUGS Historical A-14 6 Inch Lateral 1RP-1062

Work Orders : 464286, Lab Batch #: 915286	Sample: 464286-004 / SMP	Batch	Project II : 1 Matrix:	D: :Soil				
Units: mg/kg	Date Analyzed: 06/03/13 18:22	SUF	RROGATE RI	ECOVERY	STUDY			
TPH H	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane		109	99.5	110	70-135			
o-Terphenyl		61.9	49.8	124	70-135			
Lab Batch #: 915286	Sample: 464286-005 / SMP	Batch	: 1 Matrix	Soil				
Units: mg/kg	Date Analyzed: 06/03/13 18:48	SUF	RROGATE RI	ECOVERY	STUDY			
ТРН Н	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane		106	99.8	106	70-135			
o-Terphenyl		58.8	49.9	118	70-135			
Lab Batch #: 915286	Sample: 464286-006 / SMP	Batch	: 1 Matrix	Soil				
Units: mg/kg	Date Analyzed: 06/03/13 19:15	SURROGATE RECOVERY STUDY						
ТРН Н	TPH By SW8015 Mod			Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	-	97.2	100	97	70-135			
o-Terphenyl		53.6	50.0	107	70-135			
Lab Batch #: 915286	Sample: 464286-007 / SMP	P Batch: 1 Matrix: Soil						
Units: mg/kg	Date Analyzed: 06/03/13 19:41	SUF	RROGATE RI	ECOVERY	STUDY			
ТРН Н	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes			[D]				
1-Chlorooctane		95.1	99.7	95	70-135			
o-Terphenyl		52.2	49.9	105	70-135			
Lab Batch #: 915286	Sample: 464286-008 / SMP	IP Batch: 1 Matrix: Soil						
Units: mg/kg	Date Analyzed: 06/03/13 20:07	SUF	ROGATE RI	ECOVERY	STUDY	1		
TPH F	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane		94.6	99.5	95	70-135			
o-Terphenyl		51.1	49.8	103	70-135			

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution



Project Name: SUGS Historical A-14 6 Inch Lateral 1RP-1062

Work Orders : 464286 Lab Batch #: 915314	, Sample: 464286-002 / SMP	Batch:	Project II 1 Matrix:): Soil		
Units: mg/kg	Date Analyzed: 06/04/13 08:57	SUR	ROGATE RI	ECOVERY	STUDY	
BTEX	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0355	0.0300	118	80-120	
4-Bromofluorobenzene		0.0282	0.0300	94	80-120	
Lab Batch #: 915314	Sample: 639110-1-BLK / BI	LK Batch:	1 Matrix:	Solid		
Units: mg/kg	Date Analyzed: 06/03/13 14:59	SUR	ROGATE RI	ECOVERY S	STUDY	
ВТЕХ	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0300	0.0300	100	80-120	
4-Bromofluorobenzene		0.0277	0.0300	92	80-120	
Lab Batch #: 915286	Sample: 639101-1-BLK / BI	LK Batch:	1 Matrix:	Solid	I	I
Units: mg/kg	Date Analyzed: 06/03/13 16:34	SUR	ROGATE RI	ECOVERY	STUDY	
ТРН І	3y SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	-	107	99.9	107	70-135	
o-Terphenyl		59.7	50.0	119	70-135	
Lab Batch #: 915314	Sample: 639110-1-BKS / BB	KS Batch:	1 Matrix:	Solid		-
Units: mg/kg	Date Analyzed: 06/03/13 14:10	SUR	ROGATE RI	ECOVERY S	STUDY	
ВТЕХ	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			נען		
1,4-Difluorobenzene		0.0297	0.0300	99	80-120	
4-Bromofluorobenzene		0.0306	0.0300	102	80-120	
Lab Batch #: 915286	Sample: 639101-1-BKS / BF	KS Batch:	1 Matrix:	Solid		
Units: mg/kg	Date Analyzed: 06/03/13 15:41	SUR	KUGALE KI		SIUDY	1
TPH I	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		107	99.8	107	70-135	
o-Terphenyl		62.5	49.9	125	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution



Project Name: SUGS Historical A-14 6 Inch Lateral 1RP-1062

Vork Orders : 464286	,	Project ID:											
Lab Batch #: 915314	Sample: 639110-1-BSD / B	SD Bate	h: <u>1</u> Matrix:	Solid									
Units: mg/kg	Date Analyzed: 06/03/13 14:26	SU	RROGATE RF	COVERY	STUDY								
BTEX	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
1,4-Difluorobenzene		0.0259	0.0300	86	80-120								
4-Bromofluorobenzene		0.0271	0.0300	90	80-120								
Lab Batch #: 915286	Sample: 639101-1-BSD / B	3SD Batch: 1 Matrix: Solid											
Units: mg/kg	Date Analyzed: 06/03/13 16:08	SURROGATE RECOVERY STUDY											
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
1-Chlorooctane		103	100	103	70-135								
o-Terphenyl		63.1	50.2	126	70-135								
Lab Batch #: 915314	Sample: 464286-005 S / MS	S Batch: 1 Matrix: Soil											
Units: mg/kg	Date Analyzed: 06/03/13 21:02	SU	RROGATE RF	ECOVERY	STUDY								
BTEX	X by EPA 8021B Analvtes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
1,4-Difluorobenzene		0.0276	0.0300	92	80-120	 							
4-Bromofluorobenzene		0.0347	0.0300	116	80-120								
Lab Batch #: 915286	Sample: 464286-006 S / MS	IS Batch: 1 Matrix: Soil											
Units: mg/kg	Date Analyzed: 06/04/13 02:00	SU	RROGATE RF	COVERY	STUDY								
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags							
1 Chlorooctane	Analytes	106	00.5	107	70.125								
o-Terphenyl		64.0	49.8	107	70-135								
I ah Ratch #• 915314	Sample: 464286-005 SD / N	MSD Bate	h. 1 Matrix	Soil	,0100	1							
Lab Daten #, 21001	Date Analyzed: 06/03/13 21.19	SU SU	RROGATE RF	ECOVERY S	STUDY								
BTEX	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
1,4-Difluorobenzene		0.0340	0.0300	113	80-120								
4-Bromofluorobenzene		0.0319	0.0300	106	80-120								

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution



Project Name: SUGS Historical A-14 6 Inch Lateral 1RP-1062

Work Orders : 464286,		Project ID:											
Lab Batch #: 915286	Sample: 464286-006 SD / M	MSD Batch: 1 Matrix: Soil											
Units: mg/kg	Date Analyzed: 06/04/13 02:25	SURROGATE RECOVERY STUDY											
TPH B	y SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags							
I	Analytes			լոյ									
1-Chlorooctane		108	100	108	70-135								
o-Terphenyl		64.1	50.0	128	70-135								

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution



Project Name: SUGS Historical A-14 6 Inch Lateral 1RP-1062

Work Order #: 464286				Project ID:									
Analyst: DYV	Da	ate Prepar	ed: 06/03/201	3	Date Analyzed: 06/03/2013								
Lab Batch ID: 915314 Sample: 639110-1-B	KS	Batcl	h#: 1		Matrix: Solid								
Units: mg/kg		BLAN	K /BLANK S	SPIKE / E	BLANK SPIKE DUPLICATE RECOVERY STUDY								
BTEX by EPA 8021B	Blank Sample Result [A]	Spike 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]	Kesult [F]	[6]						
Benzene	<0.000990	0.0990	0.100	101	0.0996	0.0825	83	19	70-130	35			
Toluene	<0.00198	0.0990	0.101	102	0.0996	0.0882	89	14	70-130	35			
Ethylbenzene	<0.000990	0.0990	0.103	104	0.0996	0.0874	88	16	71-129	35			
m,p-Xylenes	<0.00198	0.198	0.197	99	0.199	0.165	83	18	70-135	35			
o-Xylene	<0.000990	0.0990	0.0986	100	0.0996	0.0823	83	18	71-133	35			
Analyst: AMB	Da	ate Prepar	ed: 06/03/201	3			Date A	nalyzed: (6/04/2013				
Lab Batch ID: 915357 Sample: 639154-1-B	SKS	Batcl	h #: 1					Matrix: S	olid				
Units: ^{mg/kg}		BLAN	K /BLANK S	SPIKE / E	BLANK S	PIKE DUPI	JCATE 1	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	<2.00	50.0	47.8	96	50.0	47.7	95	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





Project Name: SUGS Historical A-14 6 Inch Lateral 1RP-1062

Work Order #: 464286			Project ID:												
Analyst: DYV		Da	ate Prepar	red: 06/03/201	3		Date Analyzed: 06/03/2013								
Lab Batch ID: 915286	Sample: 639101-1-B	KS	Batcl	n #: 1			Matrix: Solid								
Units: mg/kg		BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY													
TPH By SW801	5 Mod	Blank Sample Result [A]	Spike 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 Hydrocar	rbons	<15.0	998	995	100	1000	1010	101	1	70-135	35				
C12-C28 Diesel Range Hydrocart	oons	<15.0	998	1070	107	1000	1050	105	2	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



Work Order #: 464286												
Lab Batch #: 915357		Pr	oject ID:									
Date Analyzed: 06/03/2013	Date Prepared: 06/03/2013Analyst: AMB											
QC- Sample ID: 464286-001 S	Batch #: 1]	Matrix: So	oil								
Reporting Units: mg/kg	MATRIX / MATRIX SPIKE RECOVERY STUDY											
Inorganic Anions by EPA 300	Parent Sample Spi Result Ado	ike Spiked Sample ike Result ded [C]	%R [D]	Control Limits %R	Flag							
Analytes	[A] [H	3]										
Chloride	5.45 50	0.0 53.0	95	80-120								

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

BRL - Below Reporting Limit



Form 3 - MS / MSD Recoveries

Project Name: SUGS Historical A-14 6 Inch Lateral 1RP-1062



35

Work Order # : 464286						Project II	D:				
Lab Batch ID: 915314	QC- Sample ID:	464286	-005 S	Ba	tch #:	1 Matri	x: Soil				
Date Analyzed: 06/03/2013	Date Prepared:	06/03/2	013	An	alyst: I	DYV					
Reporting Units: mg/kg		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
BTEX by EPA 8021B	Parent Sample Result	Spike	Spiked Sample Result	Spiked Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	[A]	[B]	[0]	[D]	[E]	Kesun [F]	[G]	70	701	70KI D	
Benzene	<0.00104	0.104	0.0969	93	0.104	0.102	98	5	70-130	35	
Toluene	<0.00209	0.104	0.117	113	0.104	0.102	98	14	70-130	35	
Ethylbenzene	< 0.00104	0.104	0.112	108	0.104	0.110	106	2	71-129	35	
m,p-Xylenes	< 0.00209	0.209	0.207	99	0.208	0.207	100	0	70-135	35	
o-Xylene	< 0.00104	0.104	0.108	104	0.104	0.0988	95	9	71-133	35	
Lab Batch ID: 915286	QC- Sample ID:	464286	-006 S	Ba	tch #:	1 Matri	x: Soil				
Date Analyzed: 06/04/2013	Date Prepared:	06/03/2	013	An	alyst: I	DYV					
Reporting Units: mg/kg		Μ	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	<14.9	995	1090	110	1000	1070	107	2	70-135	35	

<14.9

995

1150

116

1000

1140

114

1

70-135

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

C12-C28 Diesel Range Hydrocarbons

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



Sample Duplicate Recovery



Project Name: SUGS Historical A-14 6 Inch Lateral 1RP-1062

Work Order #: 464286

Lab Batch #: 915292				Project I	D:	
Date Analyzed: 06/03/2013 11:55	Date Prepar	ed: 06/03/2013	Anal			
QC- Sample ID: 464278-001 D	Batcl	n#: 1				
Reporting Units: %		SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture		Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte			[B]			
Percent Moisture		2.70	2.86	6	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

	Relinquist	Special I			90	07	90	50	64	803	Od	0	LAB # (lab use only)	ORDER	(iap use c	-							Xen The Envi
/	ned by: Ned	nstructions:			Trench-1 West S/M	Trench-1 East S/W	Trench-1 Floor @	RP South S/W @	SP-1	RP East S/W @	RP West S/W @	RP Floor @ 14	FIELD CODE	# 19 (209	UNSCHUTH "		Sampler Signature	Telephone No: 432.520.7	City/State/Zip: Midland,	Company Address: 2057 Con	Company Name Nova Saf	Project Manager:	ICO Laboratori
	lo[3]13 lo[3]13 lo[3]13 Date	-			/@2'	@ 2'	3'	16'		13'	13'	-	Reginning Douth				nuel 15	7720	TX 79703	nmerce	ety and Environment	Camille B	es
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XENCO Laboratories



Prelogin/Nonconformance Report- Sample Log-In

Client: Southern Union Gas Services- Monahan Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient Date/ Time Received: 06/03/2013 11:25:00 AM **Temperature Measuring device used :** Work Order #: 464286

Comments Sample Receipt Checklist #1 *Temperature of cooler(s)? 3 #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: Hung Horah Kelsey Brooks Checklist reviewed by: Hung Horah Kelsey Brooks

Date: 06/04/2013

Date: 06/04/2013
Analytical Report 464484

for

Southern Union Gas Services- Monahans

Project Manager: Camille Bryant

SUGS Historical A-14 6 Inch Lateral 1RP-1062

06-JUN-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)



06-JUN-13



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

Reference: XENCO Report No(s): 464484 SUGS Historical A-14 6 Inch Lateral 1RP-1062 Project Address: Lea County, New Mexico

Camille Bryant:

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) 464484. 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. 464484 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.

Kelsey Brooks 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

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



Sample Cross Reference 464484



Southern Union Gas Services- Monahans, Monahans, TX

SUGS Historical A-14 6 Inch Lateral 1RP-1062

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
RP North S/W @ 13'	S	06-03-13 10:30		464484-001
Trench-2 Floor @ 7'	S	06-03-13 11:20		464484-002
Trench-2 East S/W @ 6'	S	06-03-13 11:40		464484-003
Trench-2 West S/W @ 6'	S	06-03-13 11:45		464484-004
Trench-3 Floor @ 2'	S	06-03-13 13:40		464484-005
Trench-3 North S/W @ 1'	S	06-03-13 14:05		464484-006
Trench-3 South S/W @ 1'	S	06-03-13 14:10		464484-007
Trench-4 Floor @ 2'	S	06-04-13 08:45		464484-008
Trench-4 Floor @ 7'	S	06-04-13 08:50		464484-009
Trench-4 North S/W-1 @ 6'	S	06-04-13 10:00		464484-010
Trench-4 North S/W-2 @ 6'	S	06-04-13 10:57		464484-011
Trench-4 South S/W-1 @ 6'	S	06-04-13 11:00		464484-012
Trench-4 South S/W-2 @ 6'	S	06-04-13 11:35		464484-013
Trench-5 Floor @ 2'	S	06-04-13 13:20		464484-014
Trench-5 South S/W @ 1	S	06-04-13 13:30		464484-015



CASE NARRATIVE



Client Name: Southern Union Gas Services- Monahans Project Name: SUGS Historical A-14 6 Inch Lateral 1RP-1062

Project ID: Work Order Number(s): 464484
 Report Date:
 06-JUN-13

 Date Received:
 06/05/2013

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Contact: Camille Bryant

Project Location: Lea County, New Mexico

Certificate of Analysis Summary 464484

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: SUGS Historical A-14 6 Inch Lateral 1RP-1062



Date Received in Lab: Wed Jun-05-13 03:27 pm

Report Date: 06-JUN-13

oject Location. Lea county, new mexico								Project Ma	nager:	Kelsey Brook	S		
	Lab Id:	464484-0	001	464484-0	02	464484-0	003	464484-0	004	464484-0	005	464484-	006
A maturin Descurated	Field Id:	RP North S/W	/@13'	Trench-2 Floo	or @ 7'	Trench-2 East	S/W @ 6'	Trench-2 West	S/W @ 6'	Trench-3 Flo	or @ 2'	Trench-3 North	n S/W @ 1'
Analysis Kequestea	Depth:												
	Matrix:	SOIL		SOIL		SOIL	,	SOIL	,	SOIL		SOII	
	Sampled:	Jun-03-13	10:30	Jun-03-13 1	1:20	Jun-03-13	11:40	Jun-03-13	11:45	Jun-03-13	13:40	Jun-03-13	14:05
BTEX by EPA 8021B	Extracted:	Jun-05-13	16:45	Jun-05-13 1	6:45	Jun-05-13	16:45	Jun-05-13	16:45	Jun-05-13	16:45	Jun-05-13	16:45
	Analyzed:	Jun-06-13	08:06	Jun-05-13 1	8:32	Jun-05-13	18:48	Jun-05-13	19:05	Jun-05-13	19:22	Jun-05-13	19:38
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.00101	ND	0.000996	ND	0.00101	ND	0.000998	ND	0.00100	ND	0.000996
Toluene		ND	0.00202	ND	0.00199	ND	0.00202	ND	0.00200	ND	0.00201	ND	0.00199
Ethylbenzene		ND	0.00101	ND	0.000996	ND	0.00101	ND	0.000998	ND	0.00100	ND	0.000996
m,p-Xylenes		ND	0.00202	ND	0.00199	ND	0.00202	ND	0.00200	ND	0.00201	ND	0.00199
o-Xylene		ND	0.00101	ND	0.000996	ND	0.00101	ND	0.000998	ND	0.00100	ND	0.000996
Total Xylenes		ND	0.00101	ND	0.000996	ND	0.00101	ND	0.000998	ND	0.00100	ND	0.000996
Total BTEX		ND	0.00101	ND	0.000996	ND	0.00101	ND	0.000998	ND	0.00100	ND	0.000996
Inorganic Anions by EPA 300/300.1	Extracted:	Jun-06-13	08:00	Jun-06-13 0	08:00	Jun-06-13	08:00	Jun-06-13	08:00	Jun-06-13	08:00	Jun-06-13	08:00
SUB: TX104704215	Analyzed:	Jun-06-13	09:37	Jun-06-13 1	0:54	Jun-06-13	11:14	Jun-06-13	11:33	Jun-06-13	11:53	Jun-06-13	12:51
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		106	2.00	30.5	2.00	51.1	2.00	ND	2.00	156	2.00	64.8	2.00
Percent Moisture	Extracted:												
	Analyzed:	Jun-05-13	16:58	Jun-05-13 1	6:58	Jun-05-13	16:58	Jun-05-13	16:58	Jun-05-13	16:58	Jun-05-13	17:00
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		8.14	1.00	2.54	1.00	2.31	1.00	1.81	1.00	2.60	1.00	2.72	1.00
TPH By SW8015 Mod	Extracted:	Jun-05-13	16:30	Jun-05-13 1	6:30	Jun-05-13	16:30	Jun-05-13	16:30	Jun-05-13	16:30	Jun-05-13	16:30
	Analyzed:	Jun-06-13	02:34	Jun-06-13 0	2:59	Jun-06-13	04:16	Jun-06-13	04:41	Jun-06-13	05:07	Jun-06-13	05:32
	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	15.0	ND	14.9	ND	14.9	ND	14.9	ND	15.0	ND	15.0
C12-C28 Diesel Range Hydrocarbons		211	15.0	ND	14.9	ND	14.9	ND	14.9	ND	15.0	ND	15.0
C28-C35 Oil Range Hydrocarbons		43.7	15.0	ND	14.9	ND	14.9	ND	14.9	ND	15.0	ND	15.0
Total TPH		255	15.0	ND	14.9	ND	14.9	ND	14.9	ND	15.0	ND	15.0

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.

roah

Kelsey Brooks Project Manager



Contact: Camille Bryant

Project Location: Lea County, New Mexico

Certificate of Analysis Summary 464484

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: SUGS Historical A-14 6 Inch Lateral 1RP-1062



Date Received in Lab: Wed Jun-05-13 03:27 pm

Report Date: 06-JUN-13

Project Manager: Kelsey Brooks

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	Lab Id:	464484-0	007	464484-0	08	464484-()09	464484-0	010	464484-	011	464484	-012
An alusia De au este d	Field Id:	Trench-3 South	S/W @ 1'	Trench-4 Floo	or @ 2'	Trench-4 Flo	or @ 7'	Trench-4 North S	/W-1 @ 6	Trench-4 North	S/W-2 @ 6	Trench-4 South	S/W-1 @ 6'
Analysis Kequesiea	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOL	L
	Sampled:	Jun-03-13	14:10	Jun-04-13 0	08:45	Jun-04-13 (08:50	Jun-04-13	10:00	Jun-04-13	10:57	Jun-04-13	11:00
BTEX by EPA 8021B	Extracted	Jun-05-13	16.45	Iun-05-13 1	6.45	Jun-05-13	16.45	Jun-05-13	16:45	Jun-05-13	16.45	Jun-05-13	16.45
	Analyzed:	Jun-05-13	19:55	Jun-05-13 2	20.11	Jun-05-13	20.27	Jun-05-13	20:43	Jun-05-13	21:16	Jun-05-13	21:33
	Inits/RI ·	mo/ko	RL.	mo/ko	RL	mo/ko	RI.	mo/ko	RL	mo/ko	RL	mo/ko	RL
Benzene	Chuis/ RE.	ND	0.00101	ND (0.000996	ND	0.000990	ND	0.000996	ND	0.000996	ND	0.000994
Toluene		ND	0.00201	ND	0.00199	ND	0.00198	ND	0.00199	ND	0.00199	ND	0.00199
Ethylbenzene		ND	0.00101	ND	0.000996	ND	0.000990	ND	0.000996	ND	0.000996	ND	0.000994
m,p-Xylenes		ND	0.00201	ND	0.00199	ND	0.00198	ND	0.00199	ND	0.00199	ND	0.00199
o-Xylene		ND	0.00101	ND	0.000996	ND	0.000990	ND	0.000996	ND	0.000996	ND	0.000994
Total Xylenes		ND	0.00101	ND	0.000996	ND	0.000990	ND	0.000996	ND	0.000996	ND	0.000994
Total BTEX		ND	0.00101	ND	0.000996	ND	0.000990	ND	0.000996	ND	0.000996	ND	0.000994
Inorganic Anions by EPA 300/300.1	Extracted:	Jun-06-13	08:00	Jun-06-13 0	08:00	Jun-06-13	08:00	Jun-06-13	08:00	Jun-06-13	08:00	Jun-06-13	08:00
SUB: TX104704215	Analyzed:	Jun-06-13	13:10	Jun-06-13 1	3:30	Jun-06-13	13:49	Jun-06-13	14:08	Jun-06-13	14:28	Jun-06-13	14:47
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		89.2	2.00	450	2.00	325	1.95	297	2.00	158	2.00	458	2.00
Percent Moisture	Extracted:												
	Analyzed:	Jun-05-13	17:00	Jun-05-13 1	7:00	Jun-05-13	17:00	Jun-05-13	17:00	Jun-05-13	17:15	Jun-05-13	17:15
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		2.37	1.00	4.65	1.00	4.16	1.00	5.05	1.00	3.42	1.00	4.47	1.00
TPH By SW8015 Mod	Extracted:	Jun-05-13	16:30	Jun-05-13 1	6:30	Jun-05-13	16:30	Jun-05-13	16:30	Jun-05-13	16:30	Jun-05-13	16:30
	Analyzed:	Jun-06-13	05:58	Jun-06-13 0	06:23	Jun-06-13	07:16	Jun-06-13	07:42	Jun-06-13	08:08	Jun-06-13	08:33
	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	14.9	ND	15.0	ND	14.9	ND	15.0	ND	15.0	ND	14.9
C12-C28 Diesel Range Hydrocarbons		ND	14.9	ND	15.0	ND	14.9	ND	15.0	ND	15.0	ND	14.9
C28-C35 Oil Range Hydrocarbons		ND	14.9	ND	15.0	ND	14.9	ND	15.0	ND	15.0	ND	14.9
Total TPH		ND	14.9	ND	15.0	ND	14.9	ND	15.0	ND	15.0	ND	14.9

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.

Huns Boah

Kelsey Brooks Project Manager



Contact: Camille Bryant

Project Location: Lea County, New Mexico

Certificate of Analysis Summary 464484

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: SUGS Historical A-14 6 Inch Lateral 1RP-1062



Date Received in Lab: Wed Jun-05-13 03:27 pm

Report Date: 06-JUN-13

Project Manager: Kelsey Brooks

	Lab Id:	464484-0	13	464484-01	14	464484-	015		
An alugia De su este d	Field Id:	Trench-4 South S	/W-2 @ 6'	Trench-5 Floor	r @ 2'	Trench-5 South	S/W @ 1		
Analysis Kequestea	Depth:								
	Matrix:	SOIL		SOIL		SOIL	,		
	Sampled:	Jun-04-13 1	1:35	Jun-04-13 1	3:20	Jun-04-13	13:30		
BTEX by EPA 8021B	Extracted:	Jun-05-13 J	16:45	Jun-05-13 1	6:45	Jun-05-13	16:45		
	Analyzed:	Jun-05-13 2	21:49	Jun-05-13 22	2:06	Jun-05-13	22:22		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Benzene		ND (0.000994	ND	0.00100	ND	0.000994		
Toluene		ND	0.00199	ND	0.00200	ND	0.00199		
Ethylbenzene		ND (0.000994	ND	0.00100	ND	0.000994		
m,p-Xylenes		ND	0.00199	ND	0.00200	ND	0.00199		
o-Xylene		ND (0.000994	ND	0.00100	ND	0.000994		
Total Xylenes		ND	0.000994	ND	0.00100	ND	0.000994		
Total BTEX		ND	0.000994	ND	0.00100	ND	0.000994		
Inorganic Anions by EPA 300/300.1	Extracted:	Jun-06-13 ()8:00	Jun-06-13 0	8:00	Jun-06-13	08:00		
SUB: TX104704215	Analyzed:	Jun-06-13 1	15:07	Jun-06-13 1	5:26	Jun-06-13	15:43		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		85.8	2.00	42.8	2.00	2.96	1.96		
Percent Moisture	Extracted:								
	Analyzed:	Jun-05-13 1	17:15	Jun-05-13 1	7:15	Jun-05-13	17:15		
	Units/RL:	%	RL	%	RL	%	RL		
Percent Moisture		3.99	1.00	5.86	1.00	5.63	1.00		
TPH By SW8015 Mod	Extracted:	Jun-05-13 1	6:30	Jun-05-13 1	6:30	Jun-05-13	16:30		
	Analyzed:	Jun-06-13 ()8:59	Jun-06-13 0	9:25	Jun-06-13	09:51		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
C6-C12 Gasoline Range Hydrocarbons		ND	15.0	ND	15.0	ND	15.0		
C12-C28 Diesel Range Hydrocarbons		ND	15.0	ND	15.0	ND	15.0		
C28-C35 Oil Range Hydrocarbons		ND	15.0	ND	15.0	ND	15.0		
Total TPH		ND	15.0	ND	15.0	ND	15.0		

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.

Huns Boah

Kelsey Brooks Project Manager



Flagging Criteria



- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the 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.

* Surrogate recovered outside laboratory control limit.

- BRL Below Reporting Limit.
- RL Reporting Limit
- MDL Method Detection Limit
 SDL Sample Detection Limit
 LOD Limit of Detection
- PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation
- **DL** Method Detection Limit
- NC Non-Calculable
- + NELAC certification not offered for this compound.
- * (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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



Project Name: SUGS Historical A-14 6 Inch Lateral 1RP-1062

Vork Orders : 464484	, 464484		Project II):		
Lab Batch #: 915497	Sample: 464484-002 / SMP	Batcl	h: <u>1</u> Matrix:	: Soil		
Units: mg/kg	Date Analyzed: 06/05/13 18:32	SU	RROGATE RE	COVERY	STUDY	
BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0257	0.0300	86	80-120	
4-Bromofluorobenzene		0.0245	0.0300	82	80-120	
Lab Batch #: 915497	Sample: 464484-003 / SMP	Batcl	h: ¹ Matrix:	Soil		
Units: mg/kg	Date Analyzed: 06/05/13 18:48	SU	RROGATE RE	ECOVERY S	STUDY	
BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0244	0.0300	81	80-120	ļ,
4-Bromofluorobenzene		0.0243	0.0300	81	80-120	
Lab Batch #: 915497	Sample: 464484-004 / SMP	Batc	h: 1 Matrix:	Soil	<u>, </u>	
Units: mg/kg	Date Analyzed: 06/05/13 19:05	SU	RROGATE RE	ECOVERY	STUDY	
BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0243	0.0300	81	80-120	
4-Bromofluorobenzene		0.0267	0.0300	89	80-120	
Lab Batch #: 915497	Sample: 464484-005 / SMP	Batc	h: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 06/05/13 19:22	SU	RROGATE RF	ECOVERY S	STUDY	
BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes	0.0005	0.0000	[1]	00.100	
1,4-Diffuorobenzene		0.0287	0.0300	96	80-120	
	C 1 4(4494.00(/ SMD	0.0271	0.0300	90	00-120	<u> </u>
Lab Batch #: 915497	Sample: 404484-000 / SIVIF	Batci	h: 1 Matrix: PROCATE RE	SOIL	STUDY	
Units: mg/kg	Date Analyzed: 06/05/13 19:38				31001	1
BTEX	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0294	0.0300	98	80-120	
4-Bromofluorobenzene		0.0284	0.0300	95	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution



Project Name: SUGS Historical A-14 6 Inch Lateral 1RP-1062

Vork Orders: 464484	, 464484		Project II):		
Lab Batch #: 915497	Sample: 464484-007 / SMP	Batcl	h: <u>1</u> Matrix:	Soil		
Units: mg/kg	Date Analyzed: 06/05/13 19:55	SU	RROGATE RE	ECOVERY	STUDY	
BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0241	0.0300	80	80-120	
4-Bromofluorobenzene		0.0253	0.0300	84	80-120	
Lab Batch #: 915497	Sample: 464484-008 / SMP	Batcl	h: ¹ Matrix:	Soil		
Units: mg/kg	Date Analyzed: 06/05/13 20:11	SU	RROGATE RE	ECOVERY S	STUDY	
BTEX	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0242	0.0300	81	80-120	
4-Bromofluorobenzene		0.0247	0.0300	82	80-120	
Lab Batch #: 915497	Sample: 464484-009 / SMP	Batcl	h: ¹ Matrix:	Soil	<u>.</u>	
Units: mg/kg	Date Analyzed: 06/05/13 20:27	SU	RROGATE RF	ECOVERY S	STUDY	
BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0310	0.0300	103	80-120	
4-Bromofluorobenzene		0.0242	0.0300	81	80-120	
Lab Batch #: 915497	Sample: 464484-010 / SMP	Batel	h: 1 Matrix:	Soil	·	
Units: mg/kg	Date Analyzed: 06/05/13 20:43	SU	RROGATE RF	ECOVERY S	STUDY	
BTE	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
1 4 Diffuorshanzana	Analytes	0.0257	0.0200	رما رما	00.120	
4-Bromofluorobenzene		0.0257	0.0300	93	80-120	
Lab Datab #, 915497	Sample: 464484-011 / SMP	Bate	L. 1 Motriv	Soil	00120	
Lao Daun #. 213727	Date Analyzed 06/05/13 21.16	SU	RROGATE RF	ECOVERY	STUDY	
BTE	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0325	0.0300	108	80-120	
4-Bromofluorobenzene		0.0274	0.0300	91	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution



Project Name: SUGS Historical A-14 6 Inch Lateral 1RP-1062

Vork Orders : 464484	-, 464484	Project ID:					
Lab Batch #: 915497	Sample: 464484-012 / SMP	Batc	h: <u>1</u> Matrix:	Soil			
Units: mg/kg	Date Analyzed: 06/05/13 21:33	SU	RROGATE RE	COVERY	STUDY		
BTEX	K 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		0.0287	0.0300	96	80-120		
Lab Batch #: 915497	Sample: 464484-013 / SMP	Batcl	h: 1 Matrix:	Soil			
Units: mg/kg	Date Analyzed: 06/05/13 21:49	SU	RROGATE RE	ECOVERY	STUDY		
BTEX	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene		0.0326	0.0300	109	80-120		
4-Bromofluorobenzene		0.0264	0.0300	88	80-120		
Lab Batch #: 915497	Sample: 464484-014 / SMP	Batc	h: 1 Matrix:	Soil	<u> </u>		
Units: mg/kg	Date Analyzed: 06/05/13 22:06	SU	RROGATE RF	COVERY	STUDY		
BTEX	K by EPA 8021B Analvtes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene		0.0278	0.0300	93	80-120		
4-Bromofluorobenzene		0.0258	0.0300	86	80-120		
Lab Batch #: 915497	Sample: 464484-015 / SMP	Batel	h: 1 Matrix:	; Soil			
Units: mg/kg	Date Analyzed: 06/05/13 22:22	SU	RROGATE RF	COVERY	STUDY		
BTEX	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
	Analytes			נען			
1,4-Difluorobenzene		0.0243	0.0300	81	80-120	 	
4-Bromofluorobenzene		0.0286	0.0300	95	80-120		
Lab Batch #: 915496	Sample: 464484-001 / SMP	Batcl	h: 1 Matrix:	Soil	C'TH 11 X /		
Units: mg/kg	Date Analyzed: 06/06/13 02:34	SU	RROGATE RE	COVERY :	STUDY		
TPH I	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane		99.8	99.7	100	70-135		
o-Terphenyl		55.1	49.9	110	70-135		

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution



Project Name: SUGS Historical A-14 6 Inch Lateral 1RP-1062

Work Orders : 464484	, 464484	Project ID:						
Lab Batch #: 915496	Sample: 464484-002 / SMP	Batc	h: ¹ Matrix:	Soil				
Units: mg/kg	Date Analyzed: 06/06/13 02:59	SU	RROGATE RE	ECOVERY	STUDY			
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane		98.3	99.6	99	70-135			
o-Terphenyl		53.4	49.8	107	70-135			
Lab Batch #: 915496	Sample: 464484-003 / SMP	Batc	h: ¹ Matrix:	Soil				
Units: mg/kg	Date Analyzed: 06/06/13 04:16	SU	RROGATE RE	ECOVERY	STUDY			
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane		94.5	99.6	95	70-135			
o-Terphenyl		52.3	49.8	105	70-135			
Lab Batch #: 915496	Sample: 464484-004 / SMP	Batc	h: ¹ Matrix:	Soil	•			
Units: mg/kg	Date Analyzed: 06/06/13 04:41	SU	RROGATE RE	ECOVERY	STUDY			
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	Analytes	05.2	00.5	06	70.125			
o-Terphenyl		52.2	49.8	105	70-135			
Lab Patch #: 015/06	Somple: 464484-005 / SMP	Poto	h. 1 Matrix	Soil	10100			
Lab Batch #. 919490	Date Analyzed: 06/06/13 05:07	SU	RROGATE RE	ECOVERY	STUDY			
TPH :	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes			[D]				
1-Chlorooctane		100	100	100	70-135			
o-Terphenyl		53.5	50.0	107	70-135			
Lab Batch #: 915496	Sample: 464484-006 / SMP	Batc	h: ¹ Matrix:	Soil				
Units: mg/kg	Date Analyzed: 06/06/13 05:32	SU	RROGATE RE	ECOVERY	STUDY			
ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane		101	100	101	70-135			
o-Terphenyl		53.3	50.2	106	70-135			

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution



Project Name: SUGS Historical A-14 6 Inch Lateral 1RP-1062

Work Orders: 464484	, 464484	Project ID:						
Lab Batch #: 915496	Sample: 464484-007 / SMP	IP Batch: 1 Matrix:Soil						
Units: mg/kg	Date Analyzed: 06/06/13 05:58	SU	RROGATE RH	ECOVERY	STUDY			
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane		101	99.5	102	70-135			
o-Terphenyl		54.0	49.8	108	70-135			
Lab Batch #: 915496	Sample: 464484-008 / SMP	Batc	h: 1 Matrix:	Soil				
Units: mg/kg	Date Analyzed: 06/06/13 06:23	SU	RROGATE RE	ECOVERY	STUDY			
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane		94.7	100	95	70-135			
o-Terphenyl		50.4	50.0	101	70-135			
Lab Batch #: 915496	Sample: 464484-009 / SMP	Batc	h: 1 Matrix:	Soil	<u>.</u>			
Units: mg/kg	Date Analyzed: 06/06/13 07:16	SU	RROGATE RE	ECOVERY	STUDY			
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane		112	99.6	112	70-135			
o-Terphenyl		59.9	49.8	120	70-135			
Lab Batch #: 915496	Sample: 464484-010 / SMP	Batc	h: 1 Matrix:	Soil	<u>.</u>			
Units: mg/kg	Date Analyzed: 06/06/13 07:42	SU	RROGATE RE	ECOVERY	STUDY			
TPH	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes			[D]				
1-Chlorooctane		96.2	100	96	70-135			
o-Terphenyl		51.8	50.0	104	70-135			
Lab Batch #: 915497	Sample: 464484-001 / SMP	Bate	h: 1 Matrix:	:Soil				
Units: mg/kg	Date Analyzed: 06/06/13 08:06	SU	RROGATE RE	ECOVERY	STUDY			
BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene		0.0320	0.0300	107	80-120	[
4-Bromofluorobenzene		0.0317	0.0300	106	80-120			

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution



Project Name: SUGS Historical A-14 6 Inch Lateral 1RP-1062

Work Orders : 464484	, 464484	Project ID:						
Lab Batch #: 915496	Sample: 464484-011 / SMP	Bate	h: ¹ Matrix:	Soil				
Units: mg/kg	Date Analyzed: 06/06/13 08:08	SU	RROGATE RE	ECOVERY	STUDY			
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane		97.1	99.8	97	70-135			
o-Terphenyl		52.7	49.9	106	70-135			
Lab Batch #: 915496	Sample: 464484-012 / SMP	Batc	h: ¹ Matrix:	Soil				
Units: mg/kg	Date Analyzed: 06/06/13 08:33	SU	RROGATE RE	ECOVERY	STUDY			
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane		95.3	99.5	96	70-135			
o-Terphenyl		51.3	49.8	103	70-135			
Lab Batch #: 915496	Sample: 464484-013 / SMP	Batc	h: 1 Matrix:	Soil				
Units: mg/kg	Date Analyzed: 06/06/13 08:59	SU	RROGATE RH	COVERY	STUDY			
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane		94.7	99.7	95	70-135			
o-Terphenyl		50.4	49.9	101	70-135			
Lab Batch #: 915496	Sample: 464484-014 / SMP	Batc	h: 1 Matrix:	Soil	· · · ·			
Units: mg/kg	Date Analyzed: 06/06/13 09:25	SU	RROGATE RE	ECOVERY	STUDY			
TPH	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes			[IJ]				
1-Chlorooctane		102 54.6	100	102	70-135			
		34.0	30.0	109	/0-133			
Lab Batch #: 915496	Sample: 464484-015 / SMP	Bate	h: 1 Matrix:	Soil	STUDV			
Units: mg/kg	Date Analyzed: 06/06/13 09:51	30	KROGATE KI			1		
TPH 1	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane		97.7	99.9	98	70-135			
o-Terphenyl		52.7	50.0	105	70-135			

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution



Project Name: SUGS Historical A-14 6 Inch Lateral 1RP-1062

Vork Orders : 464484 Lab Batch #: 915497	, 464484 Sample: 639240-1-BLK / B	LK Batch:	Project II 1 Matrix): :Solid		
Units: mg/kg	Date Analyzed: 06/05/13 17:59	SURI	ROGATE RI	ECOVERY S	STUDY	
BTEZ	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	-	0.0337	0.0300	112	80-120	
4-Bromofluorobenzene		0.0289	0.0300	96	80-120	
Lab Batch #: 915496	Sample: 639238-1-BLK / B	LK Batch:	1 Matrix	Solid		
Units: mg/kg	Date Analyzed: 06/06/13 01:15	SURI	ROGATE RI	ECOVERY S	STUDY	
TPH]	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		101	99.8	101	70-135	
o-Terphenyl		55.0	49.9	110	70-135	
Lab Batch #: 915497	Sample: 639240-1-BKS / B	KS Batch:	1 Matrix	Solid	1	
Units: mg/kg	Date Analyzed: 06/05/13 17:26	SURI	ROGATE RI	ECOVERY S	STUDY	
BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0347	0.0300	116	80-120	
4-Bromofluorobenzene		0.0332	0.0300	111	80-120	
Lab Batch #: 915496	Sample: 639238-1-BKS / B	KS Batch:	1 Matrix	:Solid	<u>, </u>	
Units: mg/kg	Date Analyzed: 06/06/13 00:23	SURI	ROGATE RI	ECOVERY S	STUDY	
TPH	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes					
1-Chlorooctane		99.1	99.9	99	70-135	
o-1erpnenyi		61.3	50.0	123	/0-135	
Lab Batch #: 915497	Sample: 639240-1-BSD / B	SD Batch:	1 Matrix:	Solid	OTH DV	
Units: mg/kg	Date Analyzed: 06/05/13 17:43	SURI	KUGATE KI			
BTE	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0317	0.0300	106	80-120	
4-Bromofluorobenzene		0.0255	0.0300	85	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution



Project Name: SUGS Historical A-14 6 Inch Lateral 1RP-1062

Vork Orders : 464484	., 464484 Sample: 639238-1-BSD / B	SD Batch:	Project II	D: : Solid		
Units: mg/kg	Date Analyzed: 06/06/13 00:49	SURI SURI	ROGATE RI	ECOVERY	STUDY	
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		103	100	103	70-135	
o-Terphenyl		61.6	50.1	123	70-135	
Lab Batch #: 915497	Sample: 464484-003 S / MS	S Batch:	1 Matrix	Soil	<u> </u>	
Units: mg/kg	Date Analyzed: 06/05/13 23:11	SURI	ROGATE RI	ECOVERY	STUDY	
BTE	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0257	0.0300	86	80-120	
4-Bromofluorobenzene		0.0314	0.0300	105	80-120	
Lab Batch #: 915496		S Batch:	1 Matrix	: Soil	<u> </u>	
Units: mg/kg	Date Analyzed: 06/06/13 03:25	SURI	ROGATE RI	ECOVERY	STUDY	
TPH 1	By SW8015 Mod Analvtes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		100	100	100	70-135	
o-Terphenyl		58.2	50.1	116	70-135	
Lab Batch #: 915497	Sample: 464484-003 SD / M	MSD Batch:	1 Matrix	:Soil		
Units: mg/kg	Date Analyzed: 06/05/13 23:27	SURI	ROGATE RI	ECOVERY	STUDY	
BTEX	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
1.4 Difluorobanzana	Analytes	0.0255	0.0200	110	80.120	
4-Bromofluorobenzene		0.0355	0.0300	118	80-120	
Lab Batch # 015406	Somela: 464484 002 SD / N	ASD Bataba	1 Motrin	Soil	00 120	<u> </u>
Lab Batch #: 915490	Date Analyzed: 06/06/13 03:50	SURI	ROGATE RI	ECOVERY	STUDY	
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		99.2	99.7	99	70-135	
o-Terphenyl		60.0	49.9	120	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution





Project Name: SUGS Historical A-14 6 Inch Lateral 1RP-1062

Work Order #: 464484	Project ID:						
Lab Batch #: 915597	Sa	ample: 639259-	1-BKS	Matrix:	Solid		
Date Analyzed: 06/06/2013	Date Pre	pared: 06/06/20)13	Analyst:	RKO		
Reporting Units: mg/kg	Ba	atch #: 1	BLANK /H	BLANK SPI	KE REC	OVERY S	STUDY
Inorganic Anions by EPA 300)/300.1	Blank Result	Spike Added	Blank Spike	Blank Spike	Control Limits	Flags
Analytes		[A]	[B]	[C]	%R [D]	%R	
Chloride		<2.00	100	101	101	80-120	

Blank Spike Recovery [D] = 100*[C]/[B] All results are based on MDL and validated for QC purposes. BRL - Below Reporting Limit





Project Name: SUGS Historical A-14 6 Inch Lateral 1RP-1062

Work Order #: 464484, 464484							Pro	ject ID:			
Analyst: DYV	Da	ate Prepar	ed: 06/05/201	3			Date A	nalyzed: 0	6/05/2013		
Lab Batch ID: 915497 Sample: 639240-1-E	SKS	Batc	h#: 1					Matrix: S	olid		
Units: mg/kg		BLAN	K /BLANK S	SPIKE / E	BLANK S	PIKE DUPI	ICATE 1	RECOVE	CRY STUD	Y	
BTEX by EPA 8021B	Blank Sample Result [A]	Spike 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		[D]	[C]	נשן	[E]	Kesult [F]	[6]				
Benzene	< 0.00100	0.100	0.0903	90	0.0994	0.0827	83	9	70-130	35	
Toluene	<0.00200	0.100	0.0986	99	0.0994	0.0932	94	6	70-130	35	
Ethylbenzene	<0.00100	0.100	0.109	109	0.0994	0.0986	99	10	71-129	35	
m,p-Xylenes	< 0.00200	0.200	0.203	102	0.199	0.180	90	12	70-135	35	
o-Xylene	<0.00100	0.100	0.111	111	0.0994	0.0937	94	17	71-133	35	
Analyst: DYV	Da	ate Prepar	ed: 06/05/201	3			Date A	nalyzed: 0	6/06/2013		
Lab Batch ID: 915496 Sample: 639238-1-E	BKS	Batc	h #: 1					Matrix: S	olid		
Units: mg/kg		BLAN	K /BLANK S	SPIKE / B	BLANK S	PIKE DUPI	JCATE 1	RECOVE	RY STUD	Y	
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	999	1100	110	1000	1120	112	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	999	1160	116	1000	1170	117	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

XENCO Laboratories

Form 3 - MS / MSD Recoveries

Project Name: SUGS Historical A-14 6 Inch Lateral 1RP-1062



Work Order # : 464484						Project II):				
Lab Batch ID: 915497	QC- Sample ID:	464484	-003 S	Ba	tch #:	1 Matrix	k: Soil				
Date Analyzed: 06/05/2013	Date Prepared:	06/05/2	013	An	alyst: I	DYV					
Reporting Units: mg/kg		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
BTEX by EPA 8021B	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]		[D]	[E]		[G]				
Benzene	<0.000990	0.0990	0.0806	81	0.100	0.0815	82	1	70-130	35	
Toluene	< 0.00198	0.0990	0.0850	86	0.100	0.0828	83	3	70-130	35	
Ethylbenzene	<0.000990	0.0990	0.0887	90	0.100	0.0906	91	2	71-129	35	
m,p-Xylenes	< 0.00198	0.198	0.165	83	0.200	0.165	83	0	70-135	35	
o-Xylene	<0.000990	0.0990	0.0889	90	0.100	0.0821	82	8	71-133	35	
Lab Batch ID: 915597	QC- Sample ID:	464484	-001 S	Ba	tch #:	1 Matrix	k: Soil				
Date Analyzed: 06/06/2013	Date Prepared:	06/06/2	013	An	alyst: H	RKO					
Date Analyzed:06/06/2013Reporting Units:mg/kg	Date Prepared:	06/06/2 M	013 I ATRIX SPIK	An E / MAT	alyst: 4 RIX SPI	RKO KE DUPLICA	TE REC	OVERY	STUDY		
Date Analyzed:06/06/2013Reporting Units:mg/kgInorganic Anions by EPA 300/300.1	Date Prepared: Parent Sample	06/06/2 M Spike	013 ATRIX SPIK Spiked Sample Result	An E / MAT Spiked Sample	alyst: F RIX SPI	RKO KE DUPLICA Duplicate Spiked Sample	TE REC Spiked Dup.	OVERY RPD	STUDY Control Limits	Control Limits	Flag
Date Analyzed: 06/06/2013 Reporting Units: mg/kg Inorganic Anions by EPA 300/300.1 Analytes	Date Prepared: Parent Sample Result [A]	06/06/2 M Spike Added [B]	013 IATRIX SPIK Spiked Sample Result [C]	An E / MAT Spiked Sample %R [D]	nalyst: F RIX SPI Spike Added [E]	KO KE DUPLICA Duplicate Spiked Sample Result [F]	TE REC Spiked Dup. %R [G]	OVERY RPD %	STUDY Control Limits %R	Control Limits %RPD	Flag
Date Analyzed: 06/06/2013 Reporting Units: mg/kg Inorganic Anions by EPA 300/300.1 Analytes Chloride	Date Prepared: Parent Sample Result [A] 106	06/06/2 M Spike Added [B] 100	013 IATRIX SPIK Spiked Sample Result [C] 187	An E / MAT Spiked Sample %R [D] 81	nalyst: F RIX SPI Spike Added [E] 100	KO KE DUPLICA Duplicate Spiked Sample Result [F]	TE REC Spiked Dup. %R [G] 82	OVERY RPD %	STUDY Control Limits %R 80-120	Control Limits %RPD 20	Flag
Date Analyzed:06/06/2013Reporting Units:mg/kgInorganic Anions by EPA 300/300.1AnalytesChlorideLab Batch ID:915597	Date Prepared: Parent Sample Result [A] 106 QC- Sample ID:	06/06/2 M Spike Added [B] 100 464486	013 ATRIX SPIK Spiked Sample Result [C] 187 -002 S	An E / MAT Spiked Sample %R [D] 81 Ba	nalyst: H RIX SPI Spike Added [E] 100 tch #:	KO KE DUPLICA Duplicate Spiked Sample Result [F] 188 1 Matrix	TE REC Spiked Dup. %R [G] 82 x: Soil	OVERY RPD %	STUDY Control Limits %R 80-120	Control Limits %RPD 20	Flag
Date Analyzed:06/06/2013Reporting Units:mg/kgInorganic Anions by EPA 300/300.1AnalytesChlorideLab Batch ID:915597Date Analyzed:06/06/2013	Date Prepared: Parent Sample Result [A] 106 QC- Sample ID: Date Prepared:	06/06/2 M Spike Added [B] 100 464486 06/06/2	013 IATRIX SPIK Spiked Sample Result [C] 187 -002 S 013	An E / MAT Spiked Sample %R [D] 81 Ba An	AALANSE AND	KO KE DUPLICA Duplicate Spiked Sample Result [F] 188 1 Matrix KO	TE REC Spiked Dup. %R [G] 82 x: Soil	OVERY RPD %	STUDY Control Limits %R 80-120	Control Limits %RPD 20	Flag
Date Analyzed:06/06/2013Reporting Units:mg/kgInorgan: Anions by EPA 300/300.1AnalytesChlorideLab Batch ID:915597Date Analyzed:06/06/2013Reporting Units:mg/kg	Date Prepared: Parent Sample Result [A] 106 QC- Sample ID: Date Prepared:	06/06/2 M Spike Added [B] 100 464486 06/06/2 M	013 ATRIX SPIK Spiked Sample Result [C] 187 -002 S 013 IATRIX SPIK	An E / MAT Spiked Sample %R [D] 81 Ba An E / MAT	Aalyst: H RIX SPI Added [E] 100 Atch #: aalyst: H RIX SPI	KO KE DUPLICA Duplicate Spiked Sample Result [F] 188 1 Matrix KO KE DUPLICA	TE REC Spiked Dup. %R [G] 82 x: Soil TE REC	OVERY RPD % 1 OVERY	STUDY Control Limits %R 80-120 STUDY	Control Limits %RPD 20	Flag
Date Analyzed:06/06/2013Reporting Units:mg/kgInorganic Anions by EPA 300/300.1AnalytesChlorideLab Batch ID:915597Date Analyzed:06/06/2013Reporting Units:mg/kgInorganic Anions by EPA 300/300.1Analytes	Date Prepared: Parent Sample Result [A] 106 QC- Sample ID: Date Prepared: Parent Sample Result [A]	06/06/2 M Spike Added [B] 100 464486 06/06/2 M Spike Added [B]	013 IATRIX SPIK Spiked Sample Result [C] 187 -002 S 013 IATRIX SPIK Spiked Sample Result [C]	An Spiked Sample %R [D] 81 Ba An E / MAT Spiked Sample %R [D]	Adlyst: F RIX SPI Added [E] 100 ttch #: nalyst: F RIX SPI Spike Added [E]	KO KE DUPLICA Duplicate Spiked Sample Result [F] 188 1 Matrix KO KE DUPLICA Duplicate Spiked Sample Result [F]	TE REC Spiked Dup. %R [G] 82 x: Soil TE REC Spiked Dup. %R [G]	OVERY RPD % 1 OVERY %	STUDY Control Limits %R 80-120 STUDY Control Limits %R	Control Limits %RPD 20 Control Limits %RPD	Flag

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 Applicable N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



Form 3 - MS / MSD Recoveries

Project Name: SUGS Historical A-14 6 Inch Lateral 1RP-1062



Work Order # :	464484						Project II):				
Lab Batch ID:	915496	QC- Sample ID:	464484	-002 S	Ba	tch #:	1 Matrix	k: Soil				
Date Analyzed:	06/06/2013	Date Prepared:	06/05/2	013	An	alyst: I	DYV					
Reporting Units:	mg/kg		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY S	STUDY		
Т	PH By SW8015 Mod	Parent Sample	Spike	Spiked Sample Result	Spiked Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
	Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
C6-C12 Gasoline	Range Hydrocarbons	<15.4	1030	1090	106	1020	1070	105	2	70-135	35	
C12-C28 Diesel I	Range Hydrocarbons	<15.4	1030	1190	116	1020	1140	112	4	70-135	35	

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



Work Order #: 464484

Sample Duplicate Recovery



Project Name: SUGS Historical A-14 6 Inch Lateral 1RP-1062

Lab Batch #: 915505 **Project ID:** Date Prepared: 06/05/2013 Analyst: WRU Date Analyzed: 06/05/2013 14:50 QC- Sample ID: 464291-001 D Batch #: 1 Matrix: Soil SAMPLE / SAMPLE DUPLICATE RECOVERY **Reporting Units:** % Sample Control **Percent Moisture** Parent Sample RPD Duplicate Limits Result Flag Result %RPD [A] [B] Analyte Percent Moisture <1.00 < 1.000 20 U Lab Batch #: 915509 Date Analyzed: 06/05/2013 17:15 Date Prepared: 06/05/2013 Analyst: WRU Batch #: 1 Matrix: Soil QC- Sample ID: 464484-011 D SAMPLE / SAMPLE DUPLICATE RECOVERY **Reporting Units:** % **Percent Moisture** Parent Sample Sample Control RPD Result Duplicate Limits Flag %RPD Result [A] [B] Analyte 3.42 3.52 3 20 Percent Moisture

Analytical Report 464685

for

Southern Union Gas Services- Monahans

Project Manager: Camille Bryant SUG Historical A-14 6 Inch Lateral 1RP-1062

14-JUN-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)







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

Reference: XENCO Report No(s): 464685 SUG Historical A-14 6 Inch Lateral 1RP-1062 Project Address: Lea County, New Mexico

Camille Bryant:

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) 464685. 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. 464685 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.

Kelsey Brooks Project Manager

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



Sample Cross Reference 464685



Southern Union Gas Services- Monahans, Monahans, TX

SUG Historical A-14 6 Inch Lateral 1RP-1062

Matrix	Date Collected	Sample Depth	Lab Sample Id
S	06-04-13 14:45		464685-001
S	06-04-13 14:50		464685-002
S	06-05-13 09:30		464685-003
S	06-05-13 10:25		464685-004
S	06-05-13 10:50		464685-005
S	06-05-13 11:45		464685-006
S	06-05-13 14:33		464685-007
S	06-05-13 14:45		464685-008
S	06-06-13 09:45		464685-009
S	06-06-13 12:00		464685-010
S	06-06-13 13:45		464685-011
S	06-06-13 13:50		464685-012
S	06-06-13 15:00		464685-013
	Matrix S S S S S S S S S S S S S S S S	$\begin{array}{llllllllllllllllllllllllllllllllllll$	MatrixDate CollectedSample DepthS $06-04-13$ $14:45$ S $06-04-13$ $14:50$ S $06-05-13$ $09:30$ S $06-05-13$ $10:25$ S $06-05-13$ $10:50$ S $06-05-13$ $11:45$ S $06-05-13$ $14:33$ S $06-05-13$ $14:45$ S $06-06-13$ $09:45$ S $06-06-13$ $12:00$ S $06-06-13$ $13:45$ S $06-06-13$ $13:50$ S $06-06-13$ $15:00$



CASE NARRATIVE



Client Name: Southern Union Gas Services- Monahans Project Name: SUG Historical A-14 6 Inch Lateral 1RP-1062

Project ID: Work Order Number(s): 464685 Report Date:14-JUN-13Date Received:06/07/2013

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments: Batch: LBA-916078 Inorganic Anions by EPA 300/300.1 E300

Batch 916078, Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Samples affected are: 464685-005, -004, -011, -009, -006, -012, -008, -003, -007, -010, -013. The Laboratory Control Sample for Chloride is within laboratory Control Limits



Contact: Camille Bryant

Certificate of Analysis Summary 464685

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: SUG Historical A-14 6 Inch Lateral 1RP-1062



Date Received in Lab: Fri Jun-07-13 02:18 pm

Report Date: 14-JUN-13

roject Location: Lea County, New Mexico								Report	Date:	14-JUN-13			
								Project Ma	nager:	Kelsey Brook	68		
	Lab Id:	464685-0)01	464685-0	02	464685-	003	464685-0)04	464685-0	005	464685-	.006
Analysis Paguested	Field Id:	Trench-5 North S	/W-1 @ 1	Trench-5 North S	/W-2 @ 1	Trench-6 Flo	oor @ 2'	Trench-6 Floo	or @ 6'	Trench-6 North S	S/W-1 @ 5'	Trench-6 South	S/W-1 @ 5'
Anaiysis Kequesieu	Depth:												
	Matrix:	SOIL		SOIL		SOII		SOIL		SOIL		SOIL	L
	Sampled:	Jun-04-13	14:45	Jun-04-13	14:50	Jun-05-13	09:30	Jun-05-13	10:25	Jun-05-13	10:50	Jun-05-13	11:45
BTEX by EPA 8021B	Extracted:	Jun-10-13	16:00	Jun-10-13	16:00	Jun-10-13	16:00	Jun-10-13	16:00	Jun-10-13	16:00	Jun-10-13	16:00
	Analyzed:	Jun-10-13	19:39	Jun-11-13 (08:40	Jun-10-13	20:12	Jun-10-13 2	20:28	Jun-11-13	09:13	Jun-10-13	21:34
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.000990	ND	0.000996	ND	0.000992	ND	0.000998	ND	0.000994	ND	0.00100
Toluene		ND	0.00198	ND	0.00199	ND	0.00198	ND	0.00200	ND	0.00199	ND	0.00200
Ethylbenzene		ND	0.000990	ND	0.000996	ND	0.000992	ND	0.000998	ND	0.000994	ND	0.00100
m,p-Xylenes		ND	0.00198	ND	0.00199	ND	0.00198	ND	0.00200	ND	0.00199	ND	0.00200
o-Xylene		ND	0.000990	ND	0.000996	ND	0.000992	ND	0.000998	ND	0.000994	ND	0.00100
Total Xylenes		ND	0.000990	ND	0.000996	ND	0.000992	ND	0.000998	ND	0.000994	ND	0.00100
Total BTEX		ND	0.000990	ND	0.000996	ND	0.000992	ND	0.000998	ND	0.000994	ND	0.00100
Inorganic Anions by EPA 300/300.1	Extracted:	Jun-11-13	11:30	Jun-11-13	11:30	Jun-11-13	11:30	Jun-12-13 (09:20	Jun-12-13	09:20	Jun-12-13	09:20
SUB: TX104704215	Analyzed:	Jun-12-13 (08:50	Jun-12-13 ()9:08	Jun-12-13	09:29	Jun-12-13 2	22:04	Jun-12-13	22:22	Jun-12-13	22:41
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		950	2.00	39.9	2.00	1610 D	20.0	242	2.00	738	2.00	190	2.00
Percent Moisture	Extracted:												
	Analyzed:	Jun-10-13	15:38	Jun-10-13	15:38	Jun-10-13	15:38	Jun-10-13	15:38	Jun-10-13	15:38	Jun-10-13	15:38
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		4.64	1.00	5.38	1.00	5.05	1.00	1.44	1.00	4.39	1.00	4.86	1.00
TPH By SW8015 Mod	Extracted:	Jun-11-13	15:00	Jun-11-13	15:00	Jun-11-13	15:00	Jun-11-13	15:00	Jun-11-13	15:00	Jun-11-13	15:00
	Analyzed:	Jun-12-13 (05:29	Jun-12-13 ()5:54	Jun-12-13	06:20	Jun-12-13 (06:45	Jun-12-13	07:11	Jun-12-13	07:37
	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	15.7	ND	15.8	ND	15.8	ND	15.1	ND	15.6	ND	15.7
C12-C28 Diesel Range Hydrocarbons		ND	15.7	ND	15.8	ND	15.8	ND	15.1	ND	15.6	ND	15.7
C28-C35 Oil Range Hydrocarbons		ND	15.7	ND	15.8	ND	15.8	ND	15.1	ND	15.6	ND	15.7
Total TPH		ND	15.7	ND	15.8	ND	15.8	ND	15.1	ND	15.6	ND	15.7

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Kelsey Brooks Project Manager



Contact: Camille Bryant

Project Location: Lea County, New Mexico

Certificate of Analysis Summary 464685

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: SUG Historical A-14 6 Inch Lateral 1RP-1062



Date Received in Lab: Fri Jun-07-13 02:18 pm

Report Date: 14-JUN-13

ofeet Docution. Lea county, new mexico								Project Ma	nager:	Kelsey Brook	CS .		
	Lab Id:	464685-0)07	464685-0	08	464685-0	009	464685-	010	464685-0	011	464685-	-012
to a los in Decay and a l	Field Id:	Trench-6 North S	/W-2 @ 5'	Trench-6 South S	/W-2 @ 5	Trench-7 Flo	or @ 4'	Trench-7 Flo	or @ 10'	Trench-7 North	S/W @ 9'	Trench-7 South	S/W-1 @ 9
Analysis Kequested	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOII	L
	Sampled:	Jun-05-13 1	14:33	Jun-05-13 1	4:45	Jun-06-13	09:45	Jun-06-13	12:00	Jun-06-13	13:45	Jun-06-13	13:50
BTEX by EPA 8021B	Extracted:	Jun-10-13	16:00	Jun-10-13 1	6:00	Jun-10-13	16:00	Jun-10-13	16:00	Jun-10-13	16:00	Jun-10-13	16:00
	Analyzed:	Jun-10-13	21:50	Jun-11-13 ()9:30	Jun-11-13	09:46	Jun-10-13	22:55	Jun-10-13	23:12	Jun-10-13	23:28
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.000998	ND	0.00101	ND	0.000998	ND	0.00100	ND	0.000994	ND	0.00100
Toluene		ND	0.00200	ND	0.00201	ND	0.00200	ND	0.00200	ND	0.00199	ND	0.00200
Ethylbenzene		ND	0.000998	ND	0.00101	ND	0.000998	ND	0.00100	ND	0.000994	ND	0.00100
m,p-Xylenes		ND	0.00200	ND	0.00201	ND	0.00200	ND	0.00200	ND	0.00199	ND	0.00200
o-Xylene		ND	0.000998	ND	0.00101	ND	0.000998	ND	0.00100	ND	0.000994	ND	0.00100
Total Xylenes		ND	0.000998	ND	0.00101	ND	0.000998	ND	0.00100	ND	0.000994	ND	0.00100
Total BTEX		ND	0.000998	ND	0.00101	ND	0.000998	ND	0.00100	ND	0.000994	ND	0.00100
Inorganic Anions by EPA 300/300.1	Extracted:	Jun-12-13 (09:20	Jun-12-13 0)9:20	Jun-12-13	09:20	Jun-12-13	09:20	Jun-12-13	09:20	Jun-12-13	09:20
SUB: TX104704215	Analyzed:	Jun-12-13	22:59	Jun-12-13 2	23:17	Jun-13-13	00:13	Jun-13-13	00:31	Jun-13-13	00:49	Jun-13-13	01:45
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		87.8	2.00	128	2.00	1940 D	4.00	248	2.00	59.9	2.00	714	2.00
Percent Moisture	Extracted:												
	Analyzed:	Jun-10-13	15:38	Jun-10-13 1	5:38	Jun-10-13	15:38	Jun-10-13	15:38	Jun-10-13	15:38	Jun-10-13	15:38
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		2.35	1.00	3.53	1.00	7.75	1.00	3.49	1.00	4.73	1.00	4.49	1.00
TPH By SW8015 Mod	Extracted:	Jun-11-13	15:00	Jun-11-13 1	5:00	Jun-11-13	15:00	Jun-11-13	15:00	Jun-11-13	15:00	Jun-11-13	15:00
	Analyzed:	Jun-12-13 (08:03	Jun-12-13 (08:28	Jun-12-13	09:46	Jun-12-13	10:13	Jun-12-13	11:06	Jun-12-13	12:29
	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	15.3	ND	15.5	ND	16.2	ND	15.5	ND	15.8	ND	15.7
C12-C28 Diesel Range Hydrocarbons		ND	15.3	ND	15.5	ND	16.2	ND	15.5	ND	15.8	ND	15.7
C28-C35 Oil Range Hydrocarbons		ND	15.3	ND	15.5	ND	16.2	ND	15.5	ND	15.8	ND	15.7
Total TPH		ND	15.3	ND	15.5	ND	16.2	ND	15.5	ND	15.8	ND	15.7

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Kelsey Brooks Project Manager



Contact: Camille Bryant

Project Location: Lea County, New Mexico

Certificate of Analysis Summary 464685

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: SUG Historical A-14 6 Inch Lateral 1RP-1062



Date Received in Lab: Fri Jun-07-13 02:18 pm

Report Date: 14-JUN-13

Project Manager: Kelsey Brooks

	Lab Id:	464685-0	013			
Amelusia Degradad	Field Id:	Trench-7 South S	S/W-2 @ 9'	•		
Analysis Kequesiea	Depth:					
	Matrix:	SOIL				
	Sampled:	Jun-06-13	15:00			
BTEX by EPA 8021B	Extracted:	Jun-10-13	16:00			
	Analyzed:	Jun-10-13	23:45			
	Units/RL:	mg/kg	RL			
Benzene		ND	0.00106			
Toluene		ND	0.00211			
Ethylbenzene		ND	0.00106			
m,p-Xylenes		ND	0.00211			
o-Xylene		ND	0.00106			
Total Xylenes		ND	0.00106			
Total BTEX		ND	0.00106			
Inorganic Anions by EPA 300/300.1	Extracted:	Jun-12-13 (09:20			
SUB: TX104704215	Analyzed:	Jun-13-13 (02:03			
	Units/RL:	mg/kg	RL			
Chloride		333	2.00			
Percent Moisture	Extracted:					
	Analyzed:	Jun-10-13	16:00			
	Units/RL:	%	RL			
Percent Moisture		4.90	1.00			
TPH By SW8015 Mod	Extracted:	Jun-11-13	15:00			
	Analyzed:	Jun-12-13	12:57			
	Units/RL:	mg/kg	RL			
C6-C12 Gasoline Range Hydrocarbons		ND	15.7			
C12-C28 Diesel Range Hydrocarbons		ND	15.7			
C28-C35 Oil Range Hydrocarbons		ND	15.7			
Total TPH		ND	15.7			

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Huns Boah

Kelsey Brooks Project Manager

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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.
- RPD exceeded lab control limits. F
- J The target analyte was positively identified below the quantiation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K Sample analyzed outside of recommended hold time.
- JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

LOD Limit of Detection

* Surrogate recovered outside laboratory control limit.

- BRL Below Reporting Limit.
- RL Reporting Limit
- MDL Method Detection Limit SDL Sample Detection Limit
- LOQ Limit of Quantitation **POL** 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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Phone

(281) 240-4200

Final 1.000

Fax

(281) 240-4280



Project Name: SUG Historical A-14 6 Inch Lateral 1RP-1062

Vork Orders: 464685	,		Project II):		
Lab Batch #: 915863	Sample: 464685-001 / SMP	Bate	h: ¹ Matrix:	Soil		
Units: mg/kg	Date Analyzed: 06/10/13 19:39	SU	RROGATE RI	ECOVERY	STUDY	
BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0251	0.0300	84	80-120	
4-Bromofluorobenzene		0.0283	0.0300	94	80-120	
Lab Batch #: 915863	Sample: 464685-003 / SMP	Batc	h: ¹ Matrix:	Soil		
Units: mg/kg	Date Analyzed: 06/10/13 20:12	SU	RROGATE RI	ECOVERY	STUDY	
BTEZ	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4-Difluorobenzene		0.0286	0.0300	95	80-120	
4-Bromofluorobenzene		0.0292	0.0300	97	80-120	
Lab Batch #: 915863	Sample: 464685-004 / SMP	Batc	h: ¹ Matrix:	Soil	I	
Units: mg/kg	Date Analyzed: 06/10/13 20:28	SU	RROGATE RI	ECOVERY	STUDY	
BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0259	0.0300	86	80-120	
4-Bromofluorobenzene		0.0280	0.0300	93	80-120	
Lab Batch #: 915863	Sample: 464685-006 / SMP	Batc	h: 1 Matrix:	Soil	1	1
Units: mg/kg	Date Analyzed: 06/10/13 21:34	SU	RROGATE RI	ECOVERY	STUDY	
BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
1,4-Difluorobenzene		0.0314	0.0300	105	80-120	
4-Bromofluorobenzene		0.0308	0.0300	103	80-120	
Lab Batch #: 915863	Sample: 464685-007 / SMP	Batc	h: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 06/10/13 21:50	SU	RROGATE RE	ECOVERY	STUDY	1
BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0255	0.0300	85	80-120	
4-Bromofluorobenzene		0.0297	0.0300	99	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution



Project Name: SUG Historical A-14 6 Inch Lateral 1RP-1062

Work Orders : 464685	, ,		Project II):		
Lab Batch #: 915863	Sample: 464685-010 / SMP	Batch: 1 Matrix: Soil				
Units: mg/kg	Date Analyzed: 06/10/13 22:55	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		0.0246	0.0300	82	80-120	
4-Bromofluorobenzene		0.0260	0.0300	87	80-120	
Lab Batch #: 915863	Sample: 464685-011 / SMP	Batc	h: ¹ Matrix:	Soil		
Units: mg/kg	Date Analyzed: 06/10/13 23:12	SU	RROGATE RE	ECOVERY	STUDY	
BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0248	0.0300	83	80-120	
4-Bromofluorobenzene		0.0256	0.0300	85	80-120	
Lab Batch #: 915863	Sample: 464685-012 / SMP	Batc	h: ¹ Matrix:	Soil		
Units: mg/kg	Date Analyzed: 06/10/13 23:28	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	-	0.0358	0.0300	119	80-120	
4-Bromofluorobenzene		0.0348	0.0300	116	80-120	
Lab Batch #: 915863	Sample: 464685-013 / SMP	Batch: 1 Matrix: Soil				
Units: mg/kg	Date Analyzed: 06/10/13 23:45	SURROGATE RECOVERY STUDY				
BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
14.0.0	Analytes	0.0250	0.0200	[U]	00.400	
1,4-Difluorobenzene		0.0258	0.0300	86	80-120	
4-Biomonuorobenzene		0.0354	0.0300	118	80-120	
Lab Batch #: 915863	Sample: 464685-002 / SMP	Batch	h: 1 Matrix:	Soil	STUDV	
Units: mg/kg	Date Analyzed: 06/11/13 08:40	50	KKUGAIE KI			1
BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0328	0.0300	109	80-120	
4-Bromofluorobenzene		0.0348	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



Project Name: SUG Historical A-14 6 Inch Lateral 1RP-1062

Work Orders : 464685	,		Project II):		
Lab Batch #: 915863	Sample: 464685-005 / SMP	Batch: 1 Matrix: Soil				
Units: mg/kg	Date Analyzed: 06/11/13 09:13	SURROGATE RECOVERY STUDY				
BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0274	0.0300	91	80-120	
4-Bromofluorobenzene		0.0256	0.0300	85	80-120	
Lab Batch #: 915863	Sample: 464685-008 / SMP	Batcl	h: ¹ Matrix:	Soil		
Units: mg/kg	Date Analyzed: 06/11/13 09:30	SURROGATE RECOVERY STUDY				
BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0297	0.0300	99	80-120	
4-Bromofluorobenzene		0.0291	0.0300	97	80-120	
Lab Batch #: 915863	Sample: 464685-009 / SMP	Batcl	h: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 06/11/13 09:46	SURROGATE RECOVERY STUDY				
BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0279	0.0300	93	80-120	
4-Bromofluorobenzene		0.0282	0.0300	94	80-120	
Lab Batch #: 916004	Sample: 464685-001 / SMP	Batcl	h: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 06/12/13 05:29	SURROGATE RECOVERY STUDY				
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1 Chlorooctana	Anarytes	01.5	100	02	70.125	
o-Terphenyl		49.3	50.0	92	70-135	
Lob Botob # 016004	Sompley 464685 002 / SMD	Patal	h. 1 Matrice	Soil	10 155	
Lab Batch #: 910004	Date Analyzed: 06/12/13 05:54	SURROGATE RECOVERY STUDY				
TPH 1	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		89.2	99.5	90	70-135	
o-Terphenyl		48.9	49.8	98	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution



Project Name: SUG Historical A-14 6 Inch Lateral 1RP-1062

Work Orders : 464685	,		Project II):		
Lab Batch #: 916004	Sample: 464685-003 / SMP	Batch: 1 Matrix: Soil				
Units: mg/kg	Date Analyzed: 06/12/13 06:20	SURROGATE RECOVERY STUDY				
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		96.5	100	97	70-135	
o-Terphenyl		53.2	50.1	106	70-135	
Lab Batch #: 916004	Sample: 464685-004 / SMP	Batcl	h: ¹ Matrix:	Soil		
Units: mg/kg	Date Analyzed: 06/12/13 06:45	SURROGATE RECOVERY STUDY				
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		92.4	99.5	93	70-135	
o-Terphenyl		48.7	49.8	98	70-135	
Lab Batch #: 916004	Sample: 464685-005 / SMP	Batel	h: ¹ Matrix:	Soil		
Units: mg/kg	Date Analyzed: 06/12/13 07:11	SURROGATE RECOVERY STUDY				
TPH By SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		95.6	99.7	96	70-135	
o-Terphenyl		50.6	49.9	101	70-135	
Lab Batch #: 916004	Sample: 464685-006 / SMP	Batcl	h: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 06/12/13 07:37	SU	RROGATE RI	ECOVERY	STUDY	
TPH	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes				50.105	
1-Chlorooctane		95.5	99.8	96	70-135	
		51.1	49.9	102	/0-135	
Lab Batch #: 916004	Sample: 464685-007 / SMP	Batch: 1 Matrix: Soil				
Units: mg/kg	Date Analyzed: 06/12/13 08:03	50	KROGATE KI			
TPH 1	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		97.1	99.7	97	70-135	
o-Terphenyl		51.2	49.9	103	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution



Project Name: SUG Historical A-14 6 Inch Lateral 1RP-1062

Work Orders : 464685	,		Project II):		
Lab Batch #: 916004	Sample: 464685-008 / SMP	Batch: 1 Matrix: Soil				
Units: mg/kg	Date Analyzed: 06/12/13 08:28	SURROGATE RECOVERY STUDY				
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		93.9	99.5	94	70-135	
o-Terphenyl		48.8	49.8	98	70-135	
Lab Batch #: 916004	Sample: 464685-009 / SMP	Batc	h: ¹ Matrix:	Soil		
Units: mg/kg	Date Analyzed: 06/12/13 09:46	SURROGATE RECOVERY STUDY				
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		92.7	99.5	93	70-135	
o-Terphenyl		49.8	49.8	100	70-135	
Lab Batch #: 916004	Sample: 464685-010 / SMP	Bate	h: ¹ Matrix:	Soil		
Units: mg/kg	Date Analyzed: 06/12/13 10:13	SURROGATE RECOVERY STUDY				
TPH By SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		93.4	100	93	70-135	
o-Terphenyl		49.9	50.0	100	70-135	
Lab Batch #: 916004	Sample: 464685-011 / SMP	Batc	h: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 06/12/13 11:06	SURROGATE RECOVERY STUDY				
TPH	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
1 Chloropatona	Analytes	05.5	100		70.125	
o-Terphenyl		95.5 51.2	50.1	96	70-135	
L - L D - 4 - L # 016004	S1 464695-012 / SMD			Soil	10 155	
Lab Balch #: 910004	Date Applyzed: 06/12/12 12:20	Batch: 1 Matrix: Soll SURROGATE RECOVERV STUDV				
	Date Analyzed: 06/12/13 12:29					
	By SW8015 Mod Analytes	Amount Found [A]	Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		96.2	99.7	96	70-135	
o-Terphenyl		51.1	49.9	102	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution



Project Name: SUG Historical A-14 6 Inch Lateral 1RP-1062

Work Orders : 464685,			Project II):		
Lab Batch #: 916004	Sample: 464685-013 / SMF	Batch: 1 Matrix: Soil				
Units: mg/kg	Date Analyzed: 06/12/13 12:57	SURROGATE RECOVERY STUDY				
TPH By	SW8015 Mod nalytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		99.5	99.7	100	70-135	
o-Terphenyl		53.2	49.9	107	70-135	
Lab Batch #: 915863	Sample: 639469-1-BLK / B	LK Batel	h: ¹ Matrix:	Solid		
Units: mg/kg	Date Analyzed: 06/10/13 19:06	SURROGATE RECOVERY STUDY				
BTEX t	oy EPA 8021B nalytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0269	0.0300	90	80-120	
4-Bromofluorobenzene		0.0308	0.0300	103	80-120	
Lab Batch #: 916004	Sample: 639551-1-BLK / B	LK Batel	h: ¹ Matrix:	Solid		
Units: mg/kg	Date Analyzed: 06/12/13 05:03	SURROGATE RECOVERY STUDY				
ТРН Ву	SW8015 Mod nalytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		98.7	99.8	99	70-135	
o-Terphenyl		54.4	49.9	109	70-135	
Lab Batch #: 915863	Sample: 639469-1-BKS / B	KS Batcl	h: 1 Matrix:	Solid		
Units: mg/kg	Date Analyzed: 06/10/13 18:33	SURROGATE RECOVERY STUDY				
BTEX E	oy EPA 8021B nalvtes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	•	0.0360	0.0300	120	80-120	
4-Bromofluorobenzene		0.0321	0.0300	107	80-120	
Lab Batch #: 916004	Sample: 639551-1-BKS / B	KS Batcl	h: 1 Matrix:	Solid		
Units: mg/kg	Date Analyzed: 06/12/13 04:13	SURROGATE RECOVERY STUDY				
TPH By	SW8015 Mod nalytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		95.9	100	96	70-135	
o-Terphenyl		58.2	50.2	116	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution



Project Name: SUG Historical A-14 6 Inch Lateral 1RP-1062

Nork Orders : 464685	, ,		Project II):		
Lab Batch #: 915863	Sample: 639469-1-BSD / B	BSD Batch: 1 Matrix: Solid				
Units: mg/kg	Date Analyzed: 06/10/13 18:49	SURROGATE RECOVERY STUDY				
BTEX	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0274	0.0300	91	80-120	
4-Bromofluorobenzene		0.0294	0.0300	98	80-120	
Lab Batch #: 916004	Sample: 639551-1-BSD / B	SD Batcl	h: 1 Matrix:	Solid		
Units: mg/kg	Date Analyzed: 06/12/13 04:38	SURROGATE RECOVERY STUDY				
ТРН 1	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		95.3	99.9	95	70-135	
o-Terphenyl		59.8	50.0	120	70-135	
Lab Batch #: 915863	Sample: 464685-004 S / MS	S Batcl	h: ¹ Matrix:	:Soil	<u> </u>	
Units: mg/kg	Date Analyzed: 06/10/13 20:45	SU	RROGATE RE	COVERY	STUDY	
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0303	0.0300	101	80-120	
4-Bromofluorobenzene		0.0348	0.0300	116	80-120	
Lab Batch #: 916004	Sample: 464685-008 S / MS	S Batcl	h: 1 Matrix:	:Soil	<u>'</u>	
Units: mg/kg	Date Analyzed: 06/12/13 08:54	SURROGATE RECOVERY STUDY				
ТРН І	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			נען		
1-Chlorooctane		96.6	100	97	70-135	ļ
o-Terphenyl		62.3	50.0	125	70-135	<u>. </u>
Lab Batch #: 915863	Sample: 464685-004 SD / N	MSD Batcl	h: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 06/10/13 21:01	SU.	RROGATE RE	COVERY :	STUDY	
BTEX	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0349	0.0300	116	80-120	
4-Bromofluorobenzene		0.0312	0.0300	104	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution


Project Name: SUG Historical A-14 6 Inch Lateral 1RP-1062

Work Orders : 464685,		Project ID:										
Lab Batch #: 916004	Sample: 464685-008 SD / M	MSD Batch: 1 Matrix: Soil										
Units: mg/kg	Date Analyzed: 06/12/13 09:20	SURROGATE RECOVERY STUDY										
ТРН Ву	y SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags						
A	Analytes			լոյ								
1-Chlorooctane		95.6	99.7	96	70-135							
o-Terphenyl		61.0	49.9	122	70-135							

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution





Project Name: SUG Historical A-14 6 Inch Lateral 1RP-1062

Work Order #: 464685		Pr	oject ID:						
Lab Batch #: 916039	Sample: 639474	-1-BKS	Matrix:	Solid					
Date Analyzed: 06/12/2013 Date	Prepared: 06/11/2	013	Analyst:	RKO					
Reporting Units: mg/kg	Batch #: 1	BLANK /	COVERY S	STUDY					
Inorganic Anions by EPA 300/300.1	Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags			
Analytes			[C]	[D]					
Chloride	<2.00	100	102	102	80-120				
Lab Batch #: 916078 Date Analyzed: 06/12/2013 Date 1	Sample: 639592 Prepared: 06/12/2	-1-BKS 013	Matrix: Analyst:	Solid RKO					
Reporting Units: mg/kg	Batch #: 1	BLANK /	NK /BLANK SPIKE RECOVERY						
Inorganic Anions by EPA 300/300.1 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags			
Inorganic Anions by EPA 300/300.1 Analytes Chloride	Blank Result [A]	Spike Added [B] 100	Blank Spike Result [C] 104	Blank Spike %R [D] 104	Control Limits %R 80-120	Flags			
Inorganic Anions by EPA 300/300.1 Analytes Chloride Lab Batch #: 916198 Date Analyzed: 06/13/2013 Date	Blank Result [A] <2.00 Sample: 639653 Prepared: 06/13/2	Spike Added [B] 100 -1-BKS 013	Blank Spike Result [C] 104 Matrix: Analyst:	Blank Spike %R [D] 104 Solid RKO	Control Limits %R 80-120	Flags			
Inorganic Anions by EPA 300/300.1 Analytes Chloride Chloride Lab Batch #: 916198 Date Analyzed: 06/13/2013 Date 2 Reporting Units: mg/kg	Blank Result [A] <2.00 Sample: 639653 Prepared: 06/13/2 Batch #: 1	Spike Added [B] 100 -1-BKS 013 BLANK /F	Blank Spike Result [C] 104 Matrix: Analyst: BLANK SP	Blank Spike %R [D] 104 Solid RKO KE REC	Control Limits %R 80-120	Flags			
Inorganic Anions by EPA 300/300.1 Analytes Chloride Lab Batch #: 916198 Date Analyzed: 06/13/2013 Date 3 Reporting Units: mg/kg Inorganic Anions by EPA 300/300.1 Analytes	Blank Result [A] <2.00 Sample: 639653 Prepared: 06/13/2 Batch #: 1 Blank Result [A]	Spike Added [B] 100 -1-BKS 013 BLANK /F Spike Added [B]	Blank Spike Result [C] 104 Matrix: Analyst: BLANK SPI Blank Spike Result [C]	Blank Spike %R [D] 104 Solid RKO KE REC Blank Spike %R [D]	Control Limits %R 80-120 COVERY S Control Limits %R	Flags STUDY Flags			

Blank Spike Recovery [D] = 100*[C]/[B] All results are based on MDL and validated for QC purposes.



Project Name: SUG Historical A-14 6 Inch Lateral 1RP-1062

Work Order #: 464685							Pro	ject ID:					
Analyst: DYV	Da	ate Prepar	ed: 06/10/201	3	Date Analyzed: 06/10/2013								
Lab Batch ID: 915863 Sample: 639469-1-E	SKS	Batcl	h#: 1					Matrix: S	olid				
Units: mg/kg		BLAN	K /BLANK S	SPIKE / E	BLANK S	PIKE DUPI	ICATE 1	RECOVE	CRY STUD	Y			
BTEX by EPA 8021B	Blank Sample Result [A]	Spike 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		[D]	[C]	נשן		Kesuit [F]	[6]						
Benzene	<0.000998	0.0998	0.0851	85	0.0996	0.0824	83	3	70-130	35			
Toluene	<0.00200	0.0998	0.0838	84	0.0996	0.0905	91	8	70-130	35			
Ethylbenzene	<0.000998	0.0998	0.0954	96	0.0996	0.0932	94	2	71-129	35			
m,p-Xylenes	< 0.00200	0.200	0.180	90	0.199	0.174	87	3	70-135	35			
o-Xylene	<0.000998	0.0998	0.0919	92	0.0996	0.0833	84	10	71-133	35			
Analyst: DYV	Da	ate Prepar	ed: 06/11/201	3			Date A	nalyzed: ()	6/12/2013				
Lab Batch ID: 916004 Sample: 639551-1-E	KS	Batcl	h #: 1					Matrix: S	olid				
Units: ^{mg/kg}		BLAN	K /BLANK S	SPIKE / F	BLANK S	PIKE DUPI	JCATE]	RECOVE	RY STUD	Y			
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	<15.1	1000	1020	102	999	1020	102	0	70-135	35			
C12-C28 Diesel Range Hydrocarbons	<15.1	1000	1070	107	999	1060	106	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



Form 3 - MS / MSD Recoveries

Project Name: SUG Historical A-14 6 Inch Lateral 1RP-1062



Work Order # : 464685						Project II):				
Lab Batch ID: 915863	QC- Sample ID:	464685	-004 S	Ba	tch #:	1 Matrix	x: Soil				
Date Analyzed: 06/10/2013	Date Prepared:	06/10/2	013	An	alyst: I	DYV					
Reporting Units: mg/kg		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
BTEX by EPA 8021B	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]		[D]	[E]		[G]				
Benzene	<0.000998	0.0998	0.0953	95	0.0996	0.0875	88	9	70-130	35	
Toluene	<0.00200	0.0998	0.104	104	0.0996	0.0912	92	13	70-130	35	
Ethylbenzene	< 0.000998	0.0998	0.107	107	0.0996	0.0998	100	7	71-129	35	
m,p-Xylenes	<0.00200	0.200	0.200	100	0.199	0.185	93	8	70-135	35	
o-Xylene	<0.000998	0.0998	0.108	108	0.0996	0.0920	92	16	71-133	35	
Lab Batch ID: 916039	QC- Sample ID:	464683	-014 S	Ba	tch #:	1 Matrix	x: Soil				
Date Analyzed: 06/12/2013	Date Prepared:	06/11/2	013	An	nalyst: F	RKO					
Date Analyzed:06/12/2013Reporting Units:mg/kg	Date Prepared:	06/11/2 M	013 I ATRIX SPIK	An E / MAT	alyst: 	RKO KE DUPLICA	TE REC	OVERY	STUDY		
Date Analyzed: 06/12/2013 Reporting Units: mg/kg Inorganic Anions by EPA 300/300.1	Date Prepared: Parent Sample	06/11/2 M Spike	013 IATRIX SPIK Spiked Sample Result	An E / MAT Spiked Sample	nalyst: F RIX SPI Spike	RKO KE DUPLICA Duplicate Spiked Sample	TE REC	OVERY RPD	STUDY Control Limits	Control Limits	Flag
Date Analyzed: 06/12/2013 Reporting Units: mg/kg Inorganic Anions by EPA 300/300.1 Analytes	Date Prepared: Parent Sample Result [A]	06/11/2 M Spike Added [B]	013 IATRIX SPIK Spiked Sample Result [C]	An E / MAT Spiked Sample %R [D]	nalyst: F RIX SPI Spike Added [E]	KO KE DUPLICA Duplicate Spiked Sample Result [F]	TE REC Spiked Dup. %R [G]	OVERY RPD %	STUDY Control Limits %R	Control Limits %RPD	Flag
Date Analyzed: 06/12/2013 Reporting Units: mg/kg Inorganic Anions by EPA 300/300.1 Analytes Chloride	Date Prepared: Parent Sample Result [A] 100	06/11/2 M Spike Added [B] 100	013 IATRIX SPIK Spiked Sample Result [C] 182	An E / MAT Spiked Sample %R [D] 82	nalyst: F RIX SPI Spike Added [E] 100	KO KE DUPLICA Duplicate Spiked Sample Result [F]	TE REC Spiked Dup. %R [G] 83	OVERY RPD %	STUDY Control Limits %R 80-120	Control Limits %RPD 20	Flag
Date Analyzed: 06/12/2013 Reporting Units: mg/kg Inorganic Anions by EPA 300/300.1 Analytes Chloride Lab Batch ID: 916078	Date Prepared: Parent Sample Result [A] 100 QC- Sample ID:	06/11/2 M Spike Added [B] 100 464552	013 IATRIX SPIK Spiked Sample Result [C] 182 -001 S	An E / MAT Spiked Sample %R [D] 82 Ba	nalyst: F RIX SPI Spike Added [E] 100 ttch #:	KO KE DUPLICA Duplicate Spiked Sample Result [F] 183 1 Matrix	TE RECC Spiked Dup. %R [G] 83 x: Soil	OVERY RPD %	STUDY Control Limits %R 80-120	Control Limits %RPD	Flag
Date Analyzed: 06/12/2013 Reporting Units: mg/kg Inorganic Anions by EPA 300/300.1 Analytes Chloride 20078 Date Analyzed: 06/12/2013	Date Prepared: Parent Sample Result [A] 100 QC- Sample ID: Date Prepared:	06/11/2 M Spike Added [B] 100 464552 06/12/2	013 IATRIX SPIK Spiked Sample Result [C] 182 -001 S 013	An E / MAT Spiked Sample %R [D] 82 Ba An	nalyst: F RIX SPI Spike Added [E] 100 ntch #: nalyst: F	KO KE DUPLICA Duplicate Spiked Sample Result [F] 183 1 Matrix KO	TE REC Spiked Dup. %R [G] 83 x: Soil	OVERY RPD %	STUDY Control Limits %R 80-120	Control Limits %RPD 20	Flag
Date Analyzed:06/12/2013Reporting Units:mg/kgInorgan: Anions by EPA 300/300.1AnalytesChlorideLab Batch ID:916078Date Analyzed:06/12/2013Reporting Units:mg/kg	Date Prepared: Parent Sample Result [A] 100 QC- Sample ID: Date Prepared:	06/11/2 M Spike Added [B] 100 464552 06/12/2 M	013 IATRIX SPIK Spiked Sample Result [C] 182 -001 S 013 IATRIX SPIK	An E / MAT Spiked Sample %R [D] 82 Ba An E / MAT	nalyst: F RIX SPI Spike Added [E] 100 ntch #: nalyst: F RIX SPI	KO KE DUPLICA Duplicate Spiked Sample Result [F] 183 1 Matrix KO KE DUPLICA	TE REC Spiked Dup. %R [G] 83 x: Soil TE REC	OVERY RPD % 1	STUDY Control Limits %R 80-120 STUDY	Control Limits %RPD 20	Flag
Date Analyzed:06/12/2013Reporting Units:mg/kgInorganic Anions by EPA 300/300.1AnalytesChlorideLab Batch ID:916078Date Analyzed:06/12/2013Reporting Units:mg/kgInorganic Anions by EPA 300/300.1Analytes	Date Prepared: Parent Sample Result [A] 100 QC- Sample ID: Date Prepared: Parent Sample Result [A]	06/11/2 M Spike Added [B] 100 464552 06/12/2 M Spike Added [B]	013 IATRIX SPIK Spiked Sample Result [C] 182 -001 S 013 IATRIX SPIK Spiked Sample Result [C]	An Spiked Sample %R [D] 82 Ba An E / MAT Spiked Sample %R [D]	nalyst: F RIX SPI Added [E] 100 ntch #: nalyst: F RIX SPI Spike Added [E]	KO KE DUPLICA Duplicate Spiked Sample Result [F] 183 1 Matri: KO KE DUPLICA Duplicate Spiked Sample Result [F]	TE REC Spiked Dup. %R [G] 83 x: Soil TE REC Spiked Dup. %R [G]	OVERY RPD % 1 OVERY %	STUDY Control Limits %R 80-120 STUDY Control Limits %R	Control Limits %RPD 20 Control Limits %RPD	Flag

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 Applicable N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



Form 3 - MS / MSD Recoveries

Project Name: SUG Historical A-14 6 Inch Lateral 1RP-1062



Work Order # : 464685						Project II):				
Lab Batch ID: 916078	QC- Sample ID:	464685	-008 S	Ba	tch #:	1 Matrix	k: Soil				
Date Analyzed: 06/12/2013	Date Prepared:	06/12/2	013	An	alyst: F	RKO					
Reporting Units: mg/kg		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
Inorganic Anions by EPA 300/300.1	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]		[D]	[E]		[G]				
Chloride	128	100	206	78	100	208	80	1	80-120	20	Х
Lab Batch ID: 916198	QC- Sample ID:	464741	-001 S	Ba	tch #:	1 Matrix	:: Soil				
Date Analyzed: 06/13/2013	Date Prepared:	06/13/2	013	An	alyst: F	RKO					
Reporting Units: mg/kg		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
Inorganic Anions by EPA 300/300.1	Parent Sample Result	Spike	Spiked Sample Result	Spiked Sample	Spike	Duplicate Spiked Sample Bosult [E]	Spiked Dup. % P	RPD	Control Limits	Control Limits	Flag
Analytes	[A]	[B]		50K [D]	E]	Kesuit [F]	%K [G]	70	70K	%KPD	
Chloride	39.1	100	137	98	100	137	98	0	80-120	20	
Lab Batch ID: 916004	QC- Sample ID:	464685	-008 S	Ba	tch #:	1 Matrix	k: Soil				
Date Analyzed: 06/12/2013	Date Prepared:	06/11/2	013	An	alyst: I	DYV					
Reporting Units: mg/kg		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
TPH By SW8015 Mod	Parent Sample Result	Spike Added	Spiked Sample Result	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %B	RPD	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]	[0]	[D]	[E]	incourt [r]	[G]	/0			
C6-C12 Gasoline Range Hydrocarbons	<15.5	1040	1040	100	1030	1010	98	3	70-135	35	
C12 C29 Dissel Dance Hudrosorthans	15.5	10.40	1100								

Matrix Spike Percent Recovery $[D] = 100^{\circ}(C-A)/B$ Relative Percent Difference RPD = $200^{\circ}|(C-F)/(C+F)|$ 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 Applicable N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



Sample Duplicate Recovery



Project Name: SUG Historical A-14 6 Inch Lateral 1RP-1062

Work Order #: 464685

Lab Batch #: 915869				Project I	D:	
Date Analyzed: 06/10/2013 15:38	Date Prepar	ed: 06/10/2013	Anal	lyst:WRU		
QC- Sample ID: 464683-014 D	Batch	n#: 1	Mat	rix: Soil		
Reporting Units: %		SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture		Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte			[B]			
Percent Moisture		3.56	3.41	4	20	

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

Relinquish	Relinquish	Relinquist	>	Special I	(0)	09	80	507	06	50	PO	50	bo	0	LAB # (lab use only)	ORDER	(lab use								The Env	Xer
ed by:		nello Ridert)	nstructions:	Trench-7 Floor @ 1	Trench-7 Floor @	Trench-6 South S/W-2	Trench-6 North S/W-2	Trench-6 South S/W-1	Trench-6 North S/W-1	Trench-6 Floor @	Trench-6 Floor @	Trench-5 North S/W-2	Trench-5 North S/W-1	FIELD CODE	CSDHAL #		Sampler Signature	Telephone No: 432.520.77		Citu/State/Jin: Midland T	Company Address: 2057 Com	Company Name Nova Safe	Project Manager:	ironmental Lab of Texas	uce Laboratori
Date	1 Date	1 Date			Q.	4	@ <u>5</u>	@ 5'	@ 5 ¹	@ 5'	<u>o</u>	2	@ 1'	@ 1'	Reginning Donth			Lalle Id	20	~ 19100	X 70703	nerce	ty and Environment	Camille E		es
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Page 22 of 24

Final 1.000

Relinquish	Relinquish	Special II						ا درک	12	11	LAB # (lab use only)	ORDER	(lab use o							The Envi	Xen
ed by:	nalla Ra	nstructions:						Trench-7 S	Trench-7 S	Trench-7	Fie	HON #	viv)	Sampler Signature	Telephone No:	City/State/Zip:	Company Address	Company Name	Project Manager:	ronmental Lab of Te	co Labor
	and los							outh S/W-2 @ 9'	outh S/W-1 @ 9'	North S/W @ 9'	LD CODE	187	2		432,520.7720	Midland, TX 79703	: 2057 Commerce	Nova Safety and En		(as	atories
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Final 1.000



XENCO Laboratories



Comments

Prelogin/Nonconformance Report- Sample Log-In

Client: Southern Union Gas Services- Monahan Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient Date/ Time Received: 06/07/2013 02:18:00 PM **Temperature Measuring device used :** Work Order #: 464685

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

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

Analyst:

PH Device/Lot#:

Checklist completed by: Mmg Koah Kelsey Brooks Checklist reviewed by: Mmg Koah Kelsey Brooks

Date: 06/07/2013

Date: 06/07/2013

Analytical Report 464773

for

Southern Union Gas Services- Monahans

Project Manager: Camille Bryant SUG Historical A-14 6 Inch Lateral 1RP-1062

17-JUN-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)







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

Reference: XENCO Report No(s): 464773 SUG Historical A-14 6 Inch Lateral 1RP-1062 Project Address: Lea County, New Mexico

Camille Bryant:

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) 464773. 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. 464773 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.

Kelsey Brooks Project Manager

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



Sample Cross Reference 464773



Southern Union Gas Services- Monahans, Monahans, TX

SUG Historical A-14 6 Inch Lateral 1RP-1062

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Trench-8 Topsoil	S	06-07-13 08:35		464773-001
Trench-8 Floor @ 2'	S	06-07-13 08:40		464773-002
Trench-8 North S/W @ 1'	S	06-07-13 09:20		464773-003
Trench-8 East S/W @ 1'	S	06-07-13 09:30		464773-004
Trench-8 South S/W @ 1'	S	06-07-13 09:35		464773-005



CASE NARRATIVE



Client Name: Southern Union Gas Services- Monahans Project Name: SUG Historical A-14 6 Inch Lateral 1RP-1062

Project ID: Work Order Number(s): 464773
 Report Date:
 17-JUN-13

 Date Received:
 06/10/2013

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Project Id:

Contact: Camille Bryant

Certificate of Analysis Summary 464773

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: SUG Historical A-14 6 Inch Lateral 1RP-1062



Date Received in Lab: Mon Jun-10-13 04:50 pm

Report Date: 17-JUN-13

roiect Location: Lea County, New Mexico								Kepor	Date:	17-JUN-15		
								Project Ma	nager:	Kelsey Brooks	3	
	Lab Id:	464773-0	001	464773-0	002	464773-	003	464773-0	004	464773-0	05	
An aluaia Danu asta I	Field Id:	Trench-8 To	opsoil	Trench-8 Floo	or @ 2'	Trench-8 North	S/W @ 1'	Trench-8 East	S/W @ 1'	Trench-8 South S	S/W @ 1'	
Analysis Kequesiea	Depth:											
	Matrix:	SOIL		SOIL	SOIL			SOIL		SOIL		
	Sampled:	Jun-07-13	08:35	Jun-07-13 (08:40	Jun-07-13	09:20	Jun-07-13	09:30	Jun-07-13 0	9:35	
BTEX by EPA 8021B	Extracted:	Jun-12-13	10:00	Jun-12-13	10:00	Jun-12-13	10:00	Jun-12-13	10:00	Jun-12-13 1	0:00	
	Analyzed:	Jun-12-13	12:43	Jun-12-13	15:44	Jun-12-13	13:48	Jun-12-13	16:00	Jun-12-13 1	6:17	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	
Benzene		ND	0.00102	ND	0.00114	ND	0.00108	ND	0.00110	ND	0.00107	
Toluene		ND	0.00205	ND	0.00229	ND	0.00217	ND	0.00221	ND	0.00215	
Ethylbenzene		ND	0.00102	ND	0.00114	ND	0.00108	ND	0.00110	ND	0.00107	
m,p-Xylenes		ND	0.00205	ND	0.00229	ND	0.00217	ND	0.00221	ND	0.00215	
o-Xylene		ND	0.00102	ND	0.00114	ND	0.00108	ND	0.00110	ND	0.00107	
Total Xylenes		ND	0.00102	ND	0.00114	ND	0.00108	ND	0.00110	ND	0.00107	
Total BTEX		ND	0.00102	ND	0.00114	ND	0.00108	ND	0.00110	ND	0.00107	
Inorganic Anions by EPA 300/300.1	Extracted:	Jun-13-13	17:33	Jun-13-13	17:33	Jun-13-13	17:33	Jun-13-13	17:33	Jun-13-13 1	7:33	
SUB: TX104704215	Analyzed:	Jun-13-13	23:11	Jun-14-13 (00:13	Jun-14-13	00:33	Jun-14-13	00:53	Jun-14-13 0	01:14	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	
Chloride		26.2	2.05	19.3	2.27	21.0	2.16	5.84	2.23	6.39	2.16	
Percent Moisture	Extracted:											
	Analyzed:	Jun-11-13	16:00	Jun-11-13	16:00	Jun-11-13	16:00	Jun-11-13	16:00	Jun-11-13 1	6:00	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	
Percent Moisture		2.21	1.00	12.0	1.00	7.42	1.00	10.2	1.00	7.23	1.00	
TPH By SW8015 Mod	Extracted:	Jun-13-13	12:30	Jun-13-13	12:30	Jun-13-13	12:30	Jun-13-13	12:30	Jun-13-13 1	2:30	
	Analyzed:	Jun-13-13	19:36	Jun-13-13	20:02	Jun-13-13	20:27	Jun-13-13	20:53	Jun-13-13 2	1:18	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	
C6-C12 Gasoline Range Hydrocarbons		ND	15.3	ND	17.0	ND	16.3	ND	16.6	ND	16.3	
C12-C28 Diesel Range Hydrocarbons		31.4	15.3	ND	17.0	ND	16.3	ND	16.6	ND	16.3	
C28-C35 Oil Range Hydrocarbons		ND	15.3	ND	17.0	ND	16.3	ND	16.6	ND	16.3	
Total TPH		31.4	15.3	ND	17.0	ND	16.3	ND	16.6	ND	16.3	

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.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Huns Boah

Kelsey Brooks Project Manager



Flagging Criteria



- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the 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

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 LOQ Limit of Quantitation
- **DL** Method Detection Limit
- NC Non-Calculable
- + NELAC certification not offered for this compound.
- * (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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5332 Blackberry Drive, San Antonio TX 78238
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: SUG Historical A-14 6 Inch Lateral 1RP-1062

Work Orders : 464773	',		Project II):		
Lab Batch #: 916079	Sample: 464773-001 / SMP	Batch	h: 1 Matrix:	:Soil		
Units: mg/kg	Date Analyzed: 06/12/13 12:43	SU	RROGATE RF	COVERY S	STUDY	
BTEX	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0309	0.0300	103	80-120	
4-Bromofluorobenzene		0.0257	0.0300	86	80-120	
Lab Batch #: 916079	Sample: 464773-003 / SMP	Batcl	h: 1 Matrix:	:Soil		
Units: mg/kg	Date Analyzed: 06/12/13 13:48	SU	RROGATE RF	COVERY S	STUDY	
BTEX	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0253	0.0300	84	80-120	
4-Bromofluorobenzene		0.0281	0.0300	94	80-120	
Lab Batch #: 916079	Sample: 464773-002 / SMP	Batcl	h: ¹ Matrix:	:Soil	<u> </u>	
Units: mg/kg	Date Analyzed: 06/12/13 15:44	SU	RROGATE RF	ECOVERY	STUDY	
BTEX	K by EPA 8021B Analvtes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0282	0.0300	94	80-120	
4-Bromofluorobenzene		0.0294	0.0300	98	80-120	
Lab Batch #: 916079	Sample: 464773-004 / SMP	Batel	h: 1 Matrix:	:Soil	<u>.</u>	
Units: mg/kg	Date Analyzed: 06/12/13 16:00	SU	RROGATE RF	COVERY S	STUDY	
ВТЕХ	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			נען		ļ
1,4-Difluorobenzene		0.0257	0.0300	86	80-120	
4-Bromofluorobenzene		0.0288	0.0300	96	80-120	1
Lab Batch #: 916079	Sample: 464773-005 / SMP	Batel	h: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 06/12/13 16:17	30.	RRUGATE KE			
BTEX	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0260	0.0300	87	80-120	
4-Bromofluorobenzene		0.0335	0.0300	112	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution



Project Name: SUG Historical A-14 6 Inch Lateral 1RP-1062

Work Orders : 464773 Lab Batch #: 916300	, Sample: 464773-001 / SMP	Batel	Project II): Soil		
Units: mg/kg	Date Analyzed: 06/13/13 19:36	SU	RROGATE RI	ECOVERY	STUDY	
ТРН І	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		98.1	99.7	98	70-135	
o-Terphenyl		53.4	49.9	107	70-135	
Lab Batch #: 916300	Sample: 464773-002 / SMP	Batcl	h: ¹ Matrix:	Soil		
Units: mg/kg	Date Analyzed: 06/13/13 20:02	SU	RROGATE RE	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		54.2	50.0	108	70-135	
Lab Batch #: 916300	Sample: 464773-003 / SMP	Batcl	h: ¹ Matrix:	Soil		
Units: mg/kg	Date Analyzed: 06/13/13 20:27	SU	RROGATE RI	ECOVERY	STUDY	
ТРН І	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		90.9	101	90	70-135	
o-Terphenyl		49.9	50.3	99	70-135	
Lab Batch #: 916300	Sample: 464773-004 / SMP	Batel	h: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 06/13/13 20:53	SU	RROGATE RI	ECOVERY	STUDY	
TPH	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			נען		
1-Chlorooctane		95.6	99.6	96	70-135	
		55.5	49.8	107	/0-135	
Lab Batch #: 916300	Sample: 464773-0057 SMP	Batel	h: 1 Matrix:	Soil	STUDY	
Units: mg/kg	Date Analyzed: 06/13/13 21:18	50.	KRUGAIE KI			
TPH I	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		93.9	101	93	70-135	
o-Terphenyl		51.8	50.3	103	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution



Project Name: SUG Historical A-14 6 Inch Lateral 1RP-1062

Work Orders : 464773, Lab Batch #: 916079	Sample: 639597-1-BLK / BL	K Batch:	Project II 1 Matrix:): Solid		
Units: mg/kg	Date Analyzed: 06/12/13 11:37	SUR	ROGATE RE	COVERY S	STUDY	
BTEX	by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	•	0.0256	0.0300	85	80-120	
4-Bromofluorobenzene		0.0290	0.0300	97	80-120	
Lab Batch #: 916300	Sample: 639745-1-BLK / BL	K Batch:	1 Matrix:	Solid		
Units: mg/kg	Date Analyzed: 06/13/13 19:10	SUR	ROGATE RE	COVERY S	STUDY	
ТРН В	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		99.5	100	100	70-135	
o-Terphenyl		54.8	50.2	109	70-135	
Lab Batch #: 916079	Sample: 639597-1-BKS / BK	S Batch:	1 Matrix:	Solid	11	
Units: mg/kg	Date Analyzed: 06/12/13 11:04	SUR	ROGATE RE	COVERY S	STUDY	
BTEX	by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0335	0.0300	112	80-120	
4-Bromofluorobenzene		0.0321	0.0300	107	80-120	 I
Lab Batch #: 916300	Sample: 639745-1-BKS / BK	S Batch:	1 Matrix:	Solid		
Units: mg/kg	Date Analyzed: 06/13/13 18:17	SUR	ROGATE RE	COVERY S	STUDY	
ТРН В	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
1.011	Analytes			[D]		
1-Chlorooctane		99.1	99.9 50.0	99	70-135	
	a	57.7	50.0	115	/0-135	
Lab Batch #: 916079	Sample: 639597-1-BSD / BS	D Batch:	1 Matrix:	Solid	TUDV	
Units: mg/kg	Date Analyzed: 06/12/13 11:20	SUK	KUGAIE KI			
BTEX	L by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	-	0.0255	0.0300	85	80-120	
4-Bromofluorobenzene		0.0343	0.0300	114	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution



Project Name: SUG Historical A-14 6 Inch Lateral 1RP-1062

Work Orders : 464773 Lab Batch #: 916300	, Sample: 639745-1-BSD / B	SD Batcl	Project II h: ¹ Matrix:): Solid		
Units: mg/kg	Date Analyzed: 06/13/13 18:44	SU.	RROGATE RE	ECOVERY	STUDY	
ТРН І	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	<i>v</i>	98.8	99.5	99	70-135	
o-Terphenyl		57.9	49.8	116	70-135	
Lab Batch #: 916079	Sample: 464773-002 S / MS	5 Batcl	h: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 06/12/13 13:16	SU	RROGATE RE	ECOVERY	STUDY	
ВТЕХ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4-Difluorobenzene	Anarytes	0.0359	0.0300	120	80-120	
4-Bromofluorobenzene		0.0320	0.0300	107	80-120	
Lah Batch #: 916300	Sample: 464805-003 S / MS	5 Batcl	h: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 06/13/13 22:58	SU	RROGATE RH	ECOVERY	STUDY	
TPH I	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
1 Chlorecotono	Analytes	04.0	00.0	[P2]	70.125	
o-Terphenyl		94.9 56.6	50.0	95	70-135	
	g 1 4(4772 002 SD /)	50.0	50.0	- 115 - C - 11	70-133	
Lab Batch #: 916079	Sample: 464773-002 SD7 F	ASD Batch	h: 1 Matrix: RROGATE RE	COVERV	STUDY	
BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
1,4-Difluorobenzene		0.0351	0.0300	117	80-120	
4-Bromofluorobenzene		0.0342	0.0300	114	80-120	
Lab Batch #: 916300	Sample: 464805-003 SD / N	ASD Batcl	h: ¹ Matrix:	Soil		
Units: mg/kg	Date Analyzed: 06/14/13 07:50	SU.	RROGATE RE	ECOVERY	STUDY	
ТРН І	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		91.6	100	92	70-135	
o-Terphenyl		60.6	50.0	121	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution





Project Name: SUG Historical A-14 6 Inch Lateral 1RP-1062

Work Order #: 464773	Project ID:								
Lab Batch #: 916198	Sa	ample: 639653-							
Date Analyzed: 06/13/2013	Prepared: 06/13/2013 Analyst: RKO								
Reporting Units: mg/kg	Ba	atch #: 1	BLANK /H	BLANK SPI	KE REC	OVERY S	TUDY		
Inorganic Anions by EPA 30	0/300.1	Blank Result	Spike Added	Blank Spike	Blank Spike	Control Limits	Flags		
Analytes		[A]	[B]	Result [C]	%R [D]	%R			
Chloride		<2.00	500	529	106	80-120			

Blank Spike Recovery [D] = 100*[C]/[B] All results are based on MDL and validated for QC purposes. BRL - Below Reporting Limit



Project Name: SUG Historical A-14 6 Inch Lateral 1RP-1062

Work Order #: 464773							Pro	ject ID:					
Analyst: DYV	Da	ate Prepar	ed: 06/12/201	3		Date Analyzed: 06/12/2013							
Lab Batch ID: 916079 Sample: 639597-1-E	SKS	Bate	h #: 1			Matrix: Solid							
Units: mg/kg		BLAN	K /BLANK S	SPIKE / E	BLANK S	PIKE DUPI	UPLICATE RECOVERY STUDY						
BTEX by EPA 8021B	Blank Sample Result [A]	Spike 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]	נטן	[E]	Result [F]	[6]						
Benzene	<0.000994	0.0994	0.0869	87	0.0996	0.0828	83	5	70-130	35			
Toluene	<0.00199	0.0994	0.0942	95	0.0996	0.0891	89	6	70-130	35			
Ethylbenzene	< 0.000994	0.0994	0.108	109	0.0996	0.103	103	5	71-129	35			
m,p-Xylenes	<0.00199	0.199	0.198	99	0.199	0.190	95	4	70-135	35			
o-Xylene	<0.000994	0.0994	0.0951	96	0.0996	0.0975	98	2	71-133	35			
Analyst: DYV	Da	ate Prepar	ed: 06/13/201	3	Date Analyzed: 06/13/2013								
Lab Batch ID: 916300 Sample: 639745-1-E	SKS	Batc	h #: 1		Matrix: Solid								
Units: mg/kg		BLAN	K /BLANK S	SPIKE / B	BLANK S	PIKE DUPI	JCATE 1	RECOVE	RY STUD	Y			
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	999	1020	102	995	1020	103	0	70-135	35			
C12-C28 Diesel Range Hydrocarbons	<15.0	999	1060	106	995	1050	106	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

XENCO Laboratories

Form 3 - MS / MSD Recoveries

Project Name: SUG Historical A-14 6 Inch Lateral 1RP-1062



Work Order # : 464773						Project II) :				
Lab Batch ID: 916079	QC- Sample ID:	464773	-002 S	Ba	tch #:	1 Matrix	x: Soil				
Date Analyzed: 06/12/2013	Date Prepared:	06/12/2	013	An	alyst: I	DYV					
Reporting Units: mg/kg		N	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	<0.00113	0.113	0.0902	80	0.113	0.0926	82	3	70-130	35	
Toluene	<0.00225	0.113	0.104	92	0.113	0.112	99	7	70-130	35	
Ethylbenzene	<0.00113	0.113	0.114	101	0.113	0.127	112	11	71-129	35	
m,p-Xylenes	<0.00225	0.225	0.210	93	0.226	0.217	96	3	70-135	35	
o-Xylene	<0.00113	0.113	0.101	89	0.113	0.108	96	7	71-133	35	
Lab Batch ID: 916198	QC- Sample ID:	464741	-001 S	Ba	tch #:	1 Matrix	k: Soil				
Date Analyzed: 06/13/2013	Date Prepared:	06/13/2	013	An	alyst: I	RKO					
	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
Reporting Units: mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
Reporting Units: mg/kg Inorganic Anions by EPA 300/300.1 A polytos	Parent Sample Result	Spike Added	IATRIX SPIK Spiked Sample Result [C]	E / MAT Spiked Sample %R	RIX SPI Spike Added	KE DUPLICA Duplicate Spiked Sample Result [F]	TE REC Spiked Dup. %R	OVERY RPD %	STUDY Control Limits %R	Control Limits %RPD	Flag
Reporting Units: mg/kg Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	N Spike Added [B]	IATRIX SPIK Spiked Sample Result [C]	E / MAT Spiked Sample %R [D]	RIX SPI Spike Added [E]	KE DUPLICA Duplicate Spiked Sample Result [F]	TE REC Spiked Dup. %R [G]	OVERY RPD %	STUDY Control Limits %R	Control Limits %RPD	Flag
Reporting Units: mg/kg Inorganic Anions by EPA 300/300.1 Analytes Chloride	Parent Sample Result [A] 39.1	M Spike Added [B] 100	IATRIX SPIK Spiked Sample Result [C] 137	E / MAT Spiked Sample %R [D] 98	RIX SPI Spike Added [E] 100	KE DUPLICA Duplicate Spiked Sample Result [F] 137	TE REC Spiked Dup. %R [G] 98	OVERY RPD %	STUDY Control Limits %R 80-120	Control Limits %RPD 20	Flag
Reporting Units: mg/kg Inorganic Anions by EPA 300/300.1 Analytes Chloride Lab Batch ID: 916300	Parent Sample Result [A] 39.1 QC- Sample ID:	N Spike Added [B] 100 464805	IATRIX SPIK Spiked Sample Result [C] 137 -003 S	E / MAT Spiked Sample %R [D] 98 Ba	RIX SPI Spike Added [E] 100 tch #:	KE DUPLICA Duplicate Spiked Sample Result [F] 137 1 Matrix	TE REC Spiked Dup. %R [G] 98 x: Soil	OVERY RPD %	STUDY Control Limits %R 80-120	Control Limits %RPD 20	Flag
Reporting Units: mg/kg Inorganic Anions by EPA 300/300.1 Analytes Chloride Lab Batch ID: 916300 Date Analyzed: 06/13/2013	Parent Sample Result [A] 39.1 QC- Sample ID: Date Prepared:	N Spike Added [B] 100 464805 06/13/2	ATRIX SPIK Spiked Sample Result [C] 137 -003 S 013	E / MAT Spiked Sample %R [D] 98 Ba An	RIX SPI Spike Added [E] 100 tch #: aalyst: I	KE DUPLICA Duplicate Spiked Sample Result [F] 137 1 Matrix DYV	TE REC Spiked Dup. %R [G] 98 x: Soil	OVERY RPD % 0	STUDY Control Limits %R 80-120	Control Limits %RPD 20	Flag
Reporting Units:mg/kgInorganic Anions by EPA 300/300.1AnalytesChlorideLab Batch ID:916300Date Analyzed:06/13/2013Reporting Units:mg/kg	Parent Sample Result [A] 39.1 QC- Sample ID: Date Prepared:	M Spike Added [B] 100 464805 06/13/2 M	IATRIX SPIK Spiked Sample Result [C] 137 -003 S 013 IATRIX SPIK	E / MAT Spiked Sample %R [D] 98 Ba Ba An E / MAT	RIX SPI Spike Added [E] 100 tch #: nalyst: I RIX SPI	KE DUPLICA Duplicate Spiked Sample Result [F] 137 1 Matrix DYV KE DUPLICA	TE REC Spiked Dup. %R [G] 98 x: Soil TE REC	OVERY RPD % 0 OVERY	STUDY Control Limits %R 80-120 STUDY	Control Limits %RPD 20	Flag
Reporting Units: mg/kg Inorganic Anions by EPA 300/300.1 Analytes Chloride Chloride Lab Batch ID: 916300 Date Analyzed: 06/13/2013 Reporting Units: mg/kg TPH By SW8015 Mod Analytes	Parent Sample Result [A] 39.1 QC- Sample ID: Date Prepared: Parent Sample Result [A]	M Spike Added [B] 100 464805 06/13/2 M Spike Added [B]	IATRIX SPIK Spiked Sample Result [C] 137 -003 S 013 IATRIX SPIK Spiked Sample Result [C]	E / MAT Spiked Sample %R [D] 98 Ba An E / MAT Spiked Sample %R [D]	RIX SPI Spike Added [E] 100 tch #: alyst: I RIX SPI Spike Added [E]	KE DUPLICA Duplicate Spiked Sample Result [F] 137 1 Matrix DYV KE DUPLICA Duplicate Spiked Sample Result [F]	TE REC Spiked Dup. %R [G] 98 x: Soil TE REC Spiked Dup. %R [G]	OVERY RPD % 0 OVERY %	STUDY Control Limits %R 80-120 STUDY Control Limits %R	Control Limits %RPD 20 20 Control Limits %RPD	Flag
Reporting Units: mg/kg Inorganic Anions by EPA 300/300.1 Analytes Chloride Lab Batch ID: 916300 Date Analyzed: 06/13/2013 Reporting Units: mg/kg TPH By SW8015 Mod Analytes C6-C12 Gasoline Range Hydrocarbons	Parent Sample Result [A] 39.1 QC- Sample ID: Date Prepared: Parent Sample Result [A] <15.5	M Spike Added [B] 100 464805 06/13/2 M Spike Added [B] 1040	IATRIX SPIK Spiked Sample Result [C] 137 -003 S 013 IATRIX SPIK Spiked Sample Result [C] 1050	E / MAT Spiked Sample %R [D] 98 Ba An E / MAT Spiked Sample %R [D] 101	RIX SPI Spike Added [E] 100 tch #: nalyst: I RIX SPI RIX SPI Spike Added [E] 1040	KE DUPLICA Duplicate Spiked Sample Result [F] 137 1 Matrix DYV KE DUPLICA Duplicate Spiked Sample Result [F] 1010	TE REC Spiked Dup. %R [G] 98 x: Soil X: Soil TE REC Spiked Dup. %R [G] 97	OVERY RPD % 0 OVERY % 4	STUDY Control Limits %R 80-120 STUDY Control Limits %R 70-135	Control Limits %RPD 20 20 Control Limits %RPD 35	Flag

Matrix Spike Percent Recovery $[D] = 100^{\circ}(C-A)/B$ Relative Percent Difference RPD = $200^{\circ}|(C-F)/(C+F)|$ 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 Applicable N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



Sample Duplicate Recovery



Project Name: SUG Historical A-14 6 Inch Lateral 1RP-1062

Work Order #: 464773

Lab Batch #: 915976				Project I	D:	
Date Analyzed: 06/11/2013 13:00	Date Prepar	ed: 06/11/2013	Anal	yst:WRU		
QC- Sample ID: 464805-001 D	Batch	n#: 1	Mat	rix: Soil		
Reporting Units: %		SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture		Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte			[B]			
Percent Moisture		3.39	3.34	1	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

Refinquish	Reinquish	Special I					20	hO	03	02	0	LAB # (lab use only)	ORDER	(lab use o							Xen The Envi
ed by:	nd by Agent	nstructions:					Trench-8 South S/V	Trench-8 East S/W	Trench-8 North S/V	Trench-8 Floor @	Trench-8 Tops	FIELD CODE	# IW4.11	MALL MAR	Sampler Signature:	Telephone No: 432.520.	City/State/Zip: Midland,	Company Address: 2057 Cor	Company Name Nova Saf	Project Manager:	CO Laboratori
Date	bate bate bate bate bate bate bate bate						V@1'	@ 1'	V@1'	2'	Si				Nale	7720	TX 79703	nmerce	ety and Environme	Camille	les
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ne												Ending Depth]		A					P#	
Received by FLO	Received by:						6/7/2013	6/7/2013	6/7/2013	6/7/2013	6/7/2013	Date Sampled			F	0					
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0-14					_		_			-		Other (Specify)			.cc						UST
34							Soil	Soil	Soil	Soil	Soil	DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Matrix			Report		ס		Pro	ODY RE
S	Time Time						×	×	×	×	×	TPH: 418.1 8015M 80	015B			For		rojec	Pro	ject	co
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Page 15 of 16

Final 1.000



XENCO Laboratories



Prelogin/Nonconformance Report- Sample Log-In

Client: Southern Union Gas Services- Monahan Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient Date/ Time Received: 06/10/2013 04:50:00 PM **Temperature Measuring device used :** Work Order #: 464773

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1
#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: Mmg Moah Kelsey Brooks Checklist reviewed by: Mmg Moah Kelsey Brooks

Date: 06/11/2013

Date: 06/11/2013



APPENDIX E

Bill of Lading

	H-1416" LAT. #2- 2006-047)-15-09 -7-LOBUS TO-RE LAW 7-40AUS FROM RE PI OTILLO ENVIRONMENTAL. 1	SiTE#5 CFARM (CONTAMINATED) T. (TOPSOIL) LC.
HOURS WORKED 10	â S PER	HOUR S
RUCKER O. TIPTON	/2YD. DUMP TRUC	CK 1105 DATE /- 15-08
DDRESS		
OMPANY		
II OWNER	TOTAL YDS	
DDRESS	DATE PAID	CK. NO
	12 13 14 15 16 17 18 19 20 21 22 23 24 25	26 27 28 29 30 RATE LOADS TOTAL

A-14 FLAT. #1 - SITE #5 2006-047 1-15-08 7-LOADS TO RE-LAND FARM (CONTAMIN'S 7-40ADS FROM PR PIT (TOPSOIL) OCOTILLO ENVIRONMENTAL. LLC.	+'T&!
IOURS WORKED 10 a S PER HOUR S	
RUCKER L. Combs 12YD. DUMP TRUCK 1102 DATE 1-15-0	- 25-
JDDRESS	
OMPANY 54.65.	
IT OWNER PITCHERK LAND FORM TOTAL YDS RATE TOTAL	9
DDRESS DATE PAID CK. NO	
RUG V V V V V V V V V V V V V V V V V V V	
7 84	yds
esciZ X X X X X X X 7 84	Ids

D.4.6.2. H-14,6" LAT. # 1 2006-047 I-16-08 SLengds To PIL OCOTILLO ENVIRONMENTA	- SITE#5 TELFORKLAND FARM (CONTAMINATED) PITELFORK PIT (TOPSOIL) L.LLC.
IOURS WORKED 10 a S	PER HOUR S
RUCKER O. TIPTON /2 YD. DUMP I	RUCK 1105 DATE 1-16-08
JDDRESS	
OMPANY <u>54.6.5</u>	
IT OWNER PITZY FORK LAND FARMY TOTAL YDS.	RATE TOTAL
DDRESS DATE PAID	CK. NO
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 3 3 4 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 3 4 7	24 25 26 27 28 29 30 RATE LOADS TOTAL 8 96 8 96

.



APPENDIX F

Initial and Final C-141

State of New Mexico Energy Minerals and Natural Resources

> 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

Release Notification and Corrective Action											
						OPERA	ΓOR	C	🛛 Initi	al Report	Final Repo
Name of Co	ompany	South	ern Unio	n Gas Services,	Ltd.	Contact		1			Tony Savoie
Address		P.C). Box 12	226 Jal, N.M. 8	8252	Telephone 1	No.		<u> </u>		505-395-2116
Facility Nat	me		Lea	a County Field I	Dept.	Facility Typ	be			Nati	ural Gas Gathering
Surface Ow	mer: State	of New Mex	ico	Mineral (Owner	: State of Nev	w Mexico	_	Lease 1	No.	
				LOCA	ATIC	ON OF RE	LEASE				
Unit Letter E	Section 2	Township 24S	Range 34E	Feet from the	Nort	h/South Line	Feet from the	East/	West Line	County	Lea
	Latitude N32 14.947 Longitude W103 26.813										
Type of Rele	ease : Crude	oil and natura	al gas			Volume.of	Release: 330 m	cf gas,	Volume l	Recovered	0 bbls
Source of Re	elease			Pipeline		Date and Hour of Occurrence Date and Hour of Discovery 9/12/06 Unknown Time: unknown					scovery 9/12/06
Was Immedi	ate Notice (Given?	Yes 🗵	No 🗌 Not R	equire	lf YES, To d Chris Will	Whom? iams was contact	ed rega	rding this re	lease @08:4	45 on 9/15/06
By Whom? 7	Fony Savoie	, Southern Ur	nion Gas S	Services		Date and H	lour: 9/15/06 08	8:45 a.m	l.		
Was a Water	course Read	hed?	Yes 🗵	No		If YES, Vo	olume Impacting	the Wa	tercourse.		
Describe Cau The 6" steel All of the oil pressure on t	use of Probl gathering pi released so he line is 2	em and Reme peline, operat aked into the 0 psi to 30 psi	dial Actio ing at 25 1 ground. C , with a po	n Taken.* psi developed a le lean soil was add otential H2S conte	eak, the ed to th ent of 4	e line was excar ne impacted are 4000 ppm.	vated and the affe a to eliminate the	ected are e risk to	ca was clam livestock a	ped on:9/12 nd wildlife.	26. time unknown. Normal operating
Describe Are and response 3".Remediati Guidelines F	a Affected a activities. A ion activities or The Rem	and Cleanup An additional s will start aft ediation of Le	Action Tal 6,668 of p er a sectio eaks and S	ken. The affected basture land was a on of the pipeline l spills.	area is iffected has bee	by the oil resi n replaced. Al	ea covering appro due migrating fro l remediation acti	om the r vities w	ly 18,100 so elease site c vill follow th	q. ft. was aff luring a rain he NMOCD	event in excess of Recommended
I hereby certi regulations a public health should their o or the enviro federal, state,	ify that the i ll operators or the envir operations h nment. In a , or local law	nformation gi are required t ronment. The ave failed to a ddition, NMC ws and/or regu	iven above o report an acceptanc adequately OCD accep ulations.	e is true and comp nd/or file certain n ce of a C-141 repo v investigate and n otance of a C-141	olete to release ort by t remedia report	the best of my notifications a the NMOCD m ate contaminati does not reliev	knowledge and u nd perform corre- narked as "Final R ion that pose a thu re the operator of	indersta ctive ac Report" reat to g respons	and that pur tions for rel does not rel ground wate sibility for c	suant to NM eases which ieve the ope r, surface w ompliance w	OCD rules and may endanger rator of liability ater, human health with any other
Signature:				Tony Savoie			5.1	<u>Cu</u>		DIVIDI	
Printed Name	e:			John A. Savoie		Approved by	District Supervis	or-	Jol	\$ \$	
Title:			EH&S	S Comp. Coord.		Approval Da	te: 6-27.0	77	Expiration	Date: 8	-30-07
E-mail Addro	ess:		tony.savoi	ie@sugs.com	~	Conditions of	f Approval:	~ *	. 1	Attached	
Date: 9/25/00	5 +11-01-		Pho	one: 505-395-21	16	SUBM	IT Figurie (Ľ-14	-10	<u> </u>	
Attach Addi M(appl	icati	the strine cess	o PA	CO(27 CO(27	63° 43	7848	NPACTED E DISPOSIT	501L 1013 	(2 O (-) 	RP#	= 1062

Title:

State of New Mexico **Energy Minerals and Natural Resources**

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

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

Release Notification and Corrective Action

		OPERATOR	Initial Report	Final Report
Name of Company: Regency Field Services L	Contact: Crystal Callaway			
Address: 421 W. 3rd Street, Suite 250, Ft. Wor	Telephone No.: 817-302-940	07		
Facility Name: A-14 6 inch Lateral (#1RP-100	Facility Type: Natural Gas C	Gathering		
Surface Owner: State of New Mexico	Mineral Owner: State of New Mexico		API No.	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
E	2	24S	34E					Lea

Latitude 32.24915 Longitude -103.44687

NATURE OF RELEASE

NATURE OF RELEASE							
Type of Release: Crude Oil and Natural Gas	Volume of Release: 330 mcf gas, 80 bbls oil	Volume Recovered: 0 bbls					
Source of Release: Pineline	Date and Hour of Occurrence:	Date and Hour of Discovery: 09/12/2006					
Source of Release. I iponite	Unknown	Time: Unknown					
Was Immediate Notice Civen?	If VES To Whom?						
Vac No. Not Pequired	Chris Williams was contacted regar	ding this release @ 08:45 on 09/15/2006					
	Chills williams was contacted regai	ung uns release @ 08.45 01 09/19/2000					
By Whom? Tony Savoie, Southern Union Gas Services	Date and Hour: 09/15/2006 08:45 a	.m.					
Was a Watercourse Reached?	If YES, Volume Impacting the Wat	ercourse.					
🗌 Yes 🖾 No							
If a Watercourse was Impacted, Describe Fully.*							
Describe Cause of Problem and Remedial Action Taken.*	entennin in seteme aller and an and a set of the set of						
The 6" steel gathering pipeline, operating at 25 psi developed a leak, the	line was excavated and the affected are	ea was clamped on 09/12/2006, time					
unknown. All of the oil released soaked into the ground. Clean soil was	added to the impacted area to eliminat	e the risk to livestock and wildlife. Normal					
operating pressure on the line is 20 psi to 30 psi, with a potential H2S co	ntent of 4,000 ppm.						
The affected area is pasture. An area covering approximately 18,100 sq.	ft, was affected by the release and resp	oonse activities. An additional 6.668 sq. ft.					
of pasture land was affected by the oil residue migrating from the release	site during a rain event in excess of 3"	. Remediation activities will start after a					
section of the pipeline has been replaced. All remediation activities will	follow the NMOCD Recommended G	uidelines For The Remediation of Leaks and					
Spills.							
Describe Area Affected and Cleanup Action Taken.*							
The site was reportedly remediated by Ocotillo Environmental in 2007 and by NOVA Environmental in 2013 impacted material was excavated and							
transported to the Pitchfork Land farm for proper disposal. Based on the information provided by both Ocotillo and NOVA Environmental the site has							
been determined to meet NMOCD regulatory standards.							
Liberaby 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							
nublic health or the environment. The accentance 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 nose a threat to around 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 of local laws and/or regulations							
reactar, state, or rocar raws and/or regulations.							
	OIL CONSERV	VATION DIVISION					
and Analal Alla							
Signature: Myta Ullucy							
Restard Clark In have	Approved by Environmental Specialis	st:					
Printed Name: // // XDX / /// //							

HUP Menta Approval Date: **Expiration Date:** Attached 🗌 E-mail Address: Conditions of Approval:

- COY