HOBBS OCD

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

State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 MAR 1 7 2014 Form C-141 Form C-141 October 10, 2003

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

Santa Fe, NM 87505 Release Notification and Corrective Action OPERATOR Initial Report Name of Company: Regency Field Service, LLC Contact: Crystal Callaway Formerly Southern Union Gas Services Address: 801 South Loop 464 Monahans, Texas 79756 Telephone No.: 817-302-9407 (Office) 817-807-6514 (Cell) Facility Name: Unknown Dinwiddie - Historical Facility Type: Natural Gas Gathering Pipeline Surface Owner: Dinwiddie Mineral Owner Federal API No - 30-025-28822 LOCATION OF RELEASE North/South Line Unit Letter Section Township Range Feet from the Feet from the East/West Line County 11 **26S** 33E D Lea Latitude N32° 03.911' Longitude: W103° 32.949' NATURE OF RELEASE Type of Release: Natural Gas and Produced Water Volume of Release: 236 MCF Volume Recovered: None Nat. Gas, <5 bbls of produced water Source of Release: 16" Natural Gas Pipeline Date and Hour of Occurrence: Date and Hour of Discovery: 5/8/2007 Unknown 0930 hours Was Immediate Notice Given? If YES, To Whom? Gary Wink By Whom? Buddy Hill Date and Hour: 5/8/07 1000 hours Was a Watercourse Reached? If YES, Volume Impacting the Watercourse. ☐ Yes ☒ No If a Watercourse was Impacted, Describe Fully.* Describe Cause of Problem and Remedial Action Taken.* A 16" Natural Gas pipeline operating at approximately 35 PSI developed a leak. The line was shut-in and blown down, approximately 333 mcf of natural gas was released during the blow-down event. There was no H2S observed being released during the leak assessment or the blow-down event. Describe Area Affected and Cleanup Action Taken.* The affected area measured approximately 30 feet by 40 feet of pasture land and right-of-way road. In March through May 2013, additional soil investigation and remediation activities were conducted at the release site. Approximately 2,115 cubic yards of impacted material was transported to Sundance Services in Eunice, New Mexico. Soil samples were collected from the excavation sidewalls and floor to demonstrate accordance with NMOCD Guidelines. Please reference the "Soil Investigate Summary and Closure Request" dated December 2013 for additional details. I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. Signature Approved by Environmenta Approval Date: 318114 **Expiration Date** Title: Senior Remediation Specialist Attached crystal.callaway@regencygas.com Conditions of Approval: 1RP-1309

Phone: 817-302-9407

Attach Additional Sheets If Necessary

District I
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State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-141 Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

Name of Co	ompany	South	ern Union	n Gas Services,	Ltd.	Contact				Tony Savoie
Address	27 194	P.C		26 Jal, N.M. 88		Telephone 1	lo.			505-395-2116
acility Na	me		Lea	County Field D	Dept.	Facility Typ	e			Natural Gas Gathering
urface Ow	vner: Dinw	iddie		Mineral C)wner:	Federal			Lease N	lo.
							F. 65			
	To d	T 11	-		_	N OF RE		n		
Init Letter D	Section 11	Township 26S	Range 33E	Feet from the	North	/South Line	Feet from the	East/W	est Line	County
				NAT		Longitude OF REL	W103 32.949 EASE			
ype of Rele	ease : Natura	al Gas and pro	duced wa	ter		The second second	Release: 236 MG 5 bbls of produce		Volume R	decovered 0
	45-15-1	Natural Gas P	ipeline		Ĭ	Not Know		e	Date and Time: 9:3	Hour of Discovery 5/8/07 0 a.m
Vas Immedi	iate Notice (Yes [No Not R	equired	If YES, To Gary Wink		190		
	Buddy Hill						lour: 5/8/07 10:00			10177
as a Water	rcourse Read		Yes 🗵] No		If YES, Vo	lume Impacting t	he Wate	to ourse	13 Mg
A 16" Naturneh of	aral Gas pipural gas wa event. ea Affected d pipe will be tiffy that the itall operators n or the enviroperations homent. In a	peline operat s released du and Cleanup A pe replaced 5/9 information gi are required t ronment. The lave failed to a	Action Tal 2/07 and the ven above o report as acceptance adequately OCD accept	cen. The affected ne affected area we is true and comp nd/or file certain rece of a C-141 report investigate and r	area me vill be re olete to release a ort by the	easured approximated in a the best of my notifications a ne NMOCD mute contaminati	as observed being timately 30 ft. by ecordance to the land knowledge and und perform correcarked as "Final Roon that pose a thr	40ft. of p NMOCD inderstand tive active eport" do eat to gree	pasture land guideline de that pursons for releoses not reliound water	and down approximately 333 gife leak assessment or the dand right-of-way road. It is for leaks and spills. It is uant to NMOCD rules and eases which may endanger eve the operator of liability to surface water, human health ompliance with any other
uctai, state	, or rocar ia	ws and/or rege	nations.	D D			OIL CON	SERV	ATION	DIVISION
ignature:	e: John A.	"Tony" Savo		nee	1	Approved by	ಕ್ಷಾಗ್ರಹ District -Supervis	er:	200	
itle:			Reme	diation Superviso	r	Approval Da	e: 5.22.07	E	Expiration	Date: 7.22.07
-mail Addr	ess:		tony.savo	e@sug.com		Conditions of	Approval:		1	Attached
E-mail Addr Date: 5/907	15 1	di la	Phor	e@sug.com ne: 505-395-2110 1-1(-7)4		SUBJUTTE	OF FINAL			



SOIL INVESTIGATION SUMMARY

AND SITE

HOBBS OCD

CLOSURE REQUEST

MAR 1 7 2014

RECEIVED

Regency Field Services, LLC Formerly Southern Union Gas Services Unknown Dinwiddie - Historical Release Site Lea County, New Mexico UNIT LTR "D" (NW 1/4 /NW 1/4), Section 11, Township 26 South, Range 33 East Latitude 32° 03.911' North, Longitude 103° 32.949' West NMOCD Reference # 1RP-1309



Prepared For:

Regency Field Services, LLC Formerly Southern Union Gas Services

801 South Loop 464 Monahans, Texas 79756

Environmental Specialist

Prepared By:

NMOCD-DIST 1 3/18/14

NOVA Safety & Environmental

2057 Commerce Midland, Texas 79703

February 2014

Curt D. Stanley Project Manager Brittan K. Byerly, P.G.

President

1.0 INTRODUCTION

Nova Safety & Environmental (NOVA), on behalf of Regency Field Services LLC, formerly Southern Union Gas Services (SUGS), has prepared this Soil Investigation Summary and Site Closure Request for the Unknown Dinwiddie Historical Release Site. The legal description of the release site is Unit Letter "D" (NW ¼ NW ¼), Section 11, Township 24 South, Range 33 East, in Lea County, New Mexico. The property affected by the release is owned by Dinwiddie Cattle Company. The release site GPS coordinates are 32° 03.911' North and 103° 32.949' West. Please reference Figure 1 for a Site Location Map and Figure 2 for a Site Details and Soil Sample Locations Map. The Release Notification and Corrective Action (Form C-141) is provided as Appendix B.

On May 8, 2007, Regency Field Services, LLC, discovered a release of produced water and natural gas had occurred from a sixteen (16) inch low pressure steel pipeline. The cause of the release was attributed to failure of a segment of the steel pipeline. The release volume was estimated to be less than five (5) barrels of liquid and two hundred thirty six (236) thousand cubic feet (mcf) of natural gas with no recovery. Approximately three hundred thirty three (333) mcf of natural gas was release during pipeline blow-down activities. The area affected by the release measured approximately thirty (30) feet by forty (40) feet along the pipeline right-of-way and in the adjacent pasture. Regency Field Services, LLC, verbally notified the New Mexico Oil Conversation Division (NMOCD) Hobbs District Office of the release on May 8, 2007, and submitted the Release Notification and Corrective Action (Form C-141) to the NMOCD Hobbs District Office on May 22, 2007. Subsequent to release, the affected pipeline was replaced by Regency Field Services, LLC.

Regency Field Services, LLC, has researched and identified various historical release sites located in New Mexico. At the request of Regency Field Services, LLC, NOVA has reviewed the historical data for these sites and conducted the necessary activities to ensure the sites meet the criteria for closure in accordance with NMOCD regulatory guidelines.

2.0 NMOCD SITE CLASSIFICATION

A search of the New Mexico Office of the State Engineer (NMOSE) database identified a water well located in Unit Letter H, Section 11, Township 26 South, Range 33 East. The identified water well record indicated the water well was installed in December 1949 and encountered groundwater at one hundred forty five (145) feet below ground surface (bgs). A reference map utilized by the NMOCD indicated depth to groundwater at the release site should be encountered at approximately one hundred twelve (112) feet below ground surface (bgs). Site classification of the Unknown Dinwiddie Release Site utilized the NMOCD reference map data stated above. The depth to groundwater at the Unknown Dinwiddie Historical Release Site results in a score of ten (10) points being assigned to the site, based on the NMOCD depth to groundwater criteria.

The water well database, maintained by the NMOSE, indicated there are no water wells less than 1,000 feet from the release, resulting in zero (0) points being assigned to this site as a result of this criteria.

There are no surface water bodies located within 1,000 feet of the site. Based on the NMOCD ranking system zero (0) points will be assigned to the site as a result of the criteria.

The NMOCD guidelines indicate the Unknown Dinwiddie Historical Release Site has ranking score of ten (10). Based on this score, the soil remediation levels for a site with a ranking score of ten (10) points are as follows:

- Benzene 10 mg/Kg (ppm)
- BTEX 50 mg/Kg (ppm)
- TPH 1,000 mg/Kg (ppm)

The NMOCD chloride cleanup level concentrations are site specific and will be determined by the NMOCD Hobbs District Office.

3.0 SUMMARY OF SOIL REMEDIATION ACTIVITIES

On March 4, 2013, NOVA commenced soil investigation activities at the Unknown Dinwiddie Historical Release Site. All marked pipelines within the area to be excavated were hand spotted prior to the beginning of excavation to verify location and depth. The soil investigation and delineation activities began by "stripping" two (2) sixteen (16) inch diameter pipelines (California A and California B). This effort was undertaken to locate the inferred release point. Based on historical documentation and stressed vegetation, eight (8) soil investigation trenches were excavated in the vicinity of the inferred release point and flowpath area in an effort to delineate the horizontal extent of the release. The trenches were completed to varying depths of approximately five (5) to eighteen (18) feet bgs. The final depth of the trenches was determined by a review of the historical data and by field observations conducted during excavation activities.

The first trench (Release Point Trench) was excavated at the inferred release point in an east-west direction. The second trench (East Trench) was excavated in an east-west direction and was located approximately fifty (50) feet east of the inferred release point. The third trench (North Trench-1) was excavated in a north-south direction and was located approximately twenty-five (25) feet north of the inferred release point. The fourth trench (Road Trench) was excavated in an east-west direction and was located approximately twenty-five (25) feet south of the inferred release point in the center line of the right-of-way road. The "Road Trench" was backfilled immediately after the collection of soil samples due to safety concerns. The fifth trench (South Road Trench) was excavated in an east-west direction and was located approximately fifty (50) feet south of the inferred release point. The sixth trench (South Trench-2) was excavated in a north-south direction and was located approximately sixty (60) feet south of the inferred release point. The seventh trench (North Trench-2) was excavated in a north-south direction and was located approximately fifty (50) feet north of the inferred release point. The eighth trench (West Trench) was excavated in an east-west direction and was located approximately fifty (50) feet west of the inferred release point. Please reference Figure 2 for site details.

On March 6, 2013, four (4) soil samples (RP @ 2', RP @ 8', RP @ 12' and RP @ 18') were collected from the Release Point Trench and four (4) soil samples (East Trench @ 2', East Trench @ 6', East Trench @ 8' and East Trench S/W @ 7') were collected the East Trench. The soil samples were submitted to the laboratory for determination of concentrations of benzene,

toluene, ethyl-benzene, and xylene (BTEX), total petroleum hydrocarbons (TPH), and chlorides using EPA SW-846 8021B, 8015M, and E 300, respectively.

The analytical results for the soil samples collected from the Release Point Trench indicated benzene, BTEX and TPH concentrations were less than the appropriate laboratory method detection limits (MDL) for all submitted soil samples. Chloride concentrations ranged from 153 mg/Kg for soil sample RP @ 18' to 1,970 mg/Kg for soil sample RP @ 8'. Table 1 summarizes the Concentrations of Benzene, BTEX, TPH, and Chlorides in Soil. Laboratory analytical reports are provided as Appendix A.

The analytical results for soil samples collected from the East Trench indicated benzene, BTEX and TPH concentrations were less than the appropriate laboratory MDL for all submitted soil samples. Chloride concentrations ranged from 177 mg/Kg for soil sample East Trench @ 2' to 1,230 mg/Kg for soil sample East Trench @ 6'.

On March 7, 2013, three (3) soil samples (North Trench-1 @ 2', North Trench-1 @ 6' and North Trench-1 S/W @ 5') were collected from the North Trench-2 and three (3) soil samples (North Trench-2 @ 2', North Trench-2 @ 6' and North Trench-2 S/W @ 5') were collected from the North Trench-2. In addition, four (4) soil samples (West Trench @ 2', West Trench @ 6', West Trench @ 10' and West Trench S/W @ 9') were collected from the West Trench and four (4) soil samples (Road @ 2', Road @ 4', Road @ 10' and Road S/W @ 9') were collected from the Road Trench. In addition, one (1) soil sample (South Road-1 @ 9") was collected from the South Road-1 Trench and four (4) soil samples (South Trench-2 @ 9', South Trench-2 @ 8', South Trench-2 @ 16' and South Trench-2 S/W @ 15') were collected from the South Trench-2.

The analytical results for soil samples collected from the North Trench-1 indicated benzene, BTEX and TPH concentrations were less than the appropriate laboratory MDL for all submitted soil samples. Chloride concentrations ranged from 158 mg/Kg for soil sample North Trench-1 @ 6' to 687 mg/Kg for soil sample North Trench-1 S/W @ 5'.

The analytical results for soil samples collected from the North Trench-2 indicated benzene, BTEX and TPH concentrations were less than the appropriate laboratory MDL for all submitted soil samples. Chloride concentrations ranged from 40 mg/Kg for soil sample North Trench-2 @ 5' to 88.5 mg/Kg for soil sample North Trench-2 @ 6'.

The analytical results for soil samples collected from the West Trench indicated benzene, BTEX and TPH concentrations were less than the appropriate laboratory MDL for all submitted soil samples. Chloride concentrations ranged from 49.4 mg/Kg for soil sample West Trench @ 10' to 148 mg/Kg for soil sample West Trench @ 2'.

The analytical results for soil samples collected from the Road Trench indicated benzene, BTEX and TPH concentrations were less than the appropriate laboratory MDL, with the exception of soil sample Road @ 10', which exhibited a TPH concentration of 21.3 mg/Kg. Chloride concentrations ranged from 60.6 mg/Kg for soil sample Road @ 10' to 1,100 mg/Kg for soil sample Road S/W @ 9'.

The analytical results for soil samples collected from the South Trench-2 indicated benzene, BTEX and TPH concentrations were less than the appropriate laboratory MDL, with the

exception of soil sample South Trench-2 S/W @ 15' which exhibited a TPH concentration of 63.2 mg/Kg. Chloride concentrations ranged from 50.7 mg/Kg for soil sample South Trench-2 @ 16' to 945 mg/Kg for soil sample South Trench-2 @ 2'.

On March 27, 2013, in a meeting attended by Regency Field Services, LLC, NOVA and NMOCD representatives, Regency Field Services, LLC, requested and received NMOCD approval to excavate and backfill the excavation with locally purchased non-impacted caliche as the project proceeded. Regency Field Services, LLC, requested approval based on the proximity of the excavation to a well-travelled caliche road. In addition, the NMOCD granted permission to leave in situ soil exhibiting chloride concentrations less than 1,000 mg/Kg, provided delineation soil sample exhibited chloride concentration less than 250 mg/Kg.

On April 30, 2013 through May 2, 2013, six (6) soil samples (North Excavation Floor @ 6', North Excavation Floor @ 15', North Excavation S/W @ 14', North Excavation East S/W @ 14', and North Excavation East S/W @ 7') were collected from the North Excavation. The analytical results for soil samples collected from the North Excavation indicated benzene, BTEX and TPH concentrations were less than the appropriate laboratory MDL for all soil samples. Chloride concentrations ranged from 88.1 mg/Kg for soil sample North Excavation North S/W @ 14' to 161 mg/Kg for soil sample North Excavation East S/W @ 14'.

On May 6, 2013, three (3) soil samples (Road Trench C @ 2', Road Trench C @ 4' and Road Trench @ 10') were collected from Road Trench C. The analytical results for soil samples collected from Road Trench C indicated benzene, BTEX and TPH concentrations were less than the appropriate laboratory MDL for all soil samples. Chloride concentrations ranged from 90.4 mg/Kg for soil sample Road Trench C @ 10' to 224 mg/Kg for soil sample Road Trench C @ 2'.

On May 7, 2013 and May 8, 2013, four (4) soil samples (North Excavation South S/W @ 14' and North Excavation West S/W @ 14', North Excavation West Floor @ 8' and North Excavation West S/W @ 7') were collected from the North Excavation. The analytical results for soil samples collected from North Excavation indicated benzene, BTEX and TPH concentrations were less than the appropriate laboratory MDL for all soil samples. Chloride concentrations ranged from 139 mg/Kg for soil sample North Excavation West S/W @ 14' to 237 mg/Kg for soil sample North Excavation South S/W @ 14'.

On May 9, 2013, three (3) soil samples (Trench E @ 2', Trench E @ 4' and Trench E @ 10') were collected from Trench E. The analytical results for soil samples collected from Trench E indicated benzene, BTEX and TPH concentrations were less than the appropriate laboratory MDL for all soil samples. Chloride concentrations ranged from 86.9 mg/Kg for soil sample Trench E @ 10' to 246 mg/Kg for soil sample Trench E @ 4'.

On May 13, 2013 through May 16, 2013, eight (8) soil samples (South Excavation Floor @ 12', South Excavation North S/W @ 11', South Excavation West S/W @ 11', South Excavation East S/W @ 11', South Excavation South Floor-2, South Excavation SSW @ 11', South Excavation West S/W-2 @ 11' and South Excavation East S/W-2 @ 11') were collected from South Excavation. The analytical results for soil samples collected from the South Excavation indicated benzene, BTEX and TPH concentrations were less than the appropriate laboratory MDL for all soil samples. Chloride concentrations ranged from 82.1 mg/Kg for soil sample South Excavation Floor @ 12' to 254 mg/Kg for soil sample South Excavation North S/W @ 11'.

Based on the analytical results of trench and excavation confirmation soil samples, the Release Site has been excavated to concentrations less than the approved NMOCD regulatory guidelines and no further excavation is warranted. Based on the analytical results, Regency Field Services, LLC, opted to transport and dispose of all impacted soil at Sundance Services, Inc. (Sundance Services) located in Eunice, New Mexico. From May 13, 2013 through May 20, 2013, approximately 2,115 cubic yards of impacted soil was transported to Sundance Services. Sundance Services, Inc. Waste Manifests are provided on the enclosed disk. As stated above, the excavation was backfilled with locally obtained non-impacted caliche as the project proceeded. Following the completion of the backfilling activities, the disturbed area was contoured to fit the surrounding topography.

4.0 QA/QC PROCEDURES

4.1 Soil Sampling

Soil Samples were delivered to Xenco Laboratories of Odessa, Texas for BTEX and/or TPH and/or chloride analyses using the methods described below. Soil samples were analyzed for BTEX and/or TPH and/or chloride concentrations within fourteen (14) days following the sampling event.

The soil samples were analyzed as follows:

- BTEX concentrations in accordance with EPA Method 8021B, 5030
- TPH concentrations in accordance with modified EPA Method 8015M GRO/DRO
- Chloride concentration in accordance with Method E 300.

4.2 Decontamination of Equipment

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

4.3 Laboratory Protocol

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

5.0 SITE CLOSURE REQUEST

Based on the analytical results of confirmation soil samples, NOVA recommends Regency Field Services, LLC, provide the NMOCD a copy of this Soil Investigation Summary and Site Closure Request and request the NMOCD grant final closure to the Unknown Dinwiddie Historical Release Site.

6.0 LIMITATIONS

NOVA Safety and Environmental has prepared this Report on behalf of, and for the sole and exclusive use of Regency Field Services, LLC. This report was prepared by NOVA Safety and Environmental for the benefit of Regency Field Services, LLC. The information contained in this Report may be released to third parties, who may use and rely upon the information at their discretion. However, any use of or reliance upon the information by a party other than specifically named above shall create no rights, obligations, or liabilities on the part of NOVA Safety and Environmental with respect to any such party. The information shall not be used or relied upon by a party that does not agree to be bound by the above statement.

In preparing this Report, NOVA Safety and Environmental may have obtained and relied upon information from multiple sources including the Regency Field Services, LLC, and other consultants working for the Regency Field Services, LLC, or other parties. Unless specifically stated, NOVA Safety and Environmental has made no attempt to verify the accuracy or completeness of such information.

7.0 DISTRIBUTION

Copy 1: Geoffrey Leking

New Mexico Energy, Minerals and Natural Resources Department

Oil Conservation Division (District 1)

1625 French Drive

Hobbs, New Mexico 88240

Copy 2: Rachel Johnson

Regency Field Services, LLC

801 South Loop 464 Monahans, Texas 79756

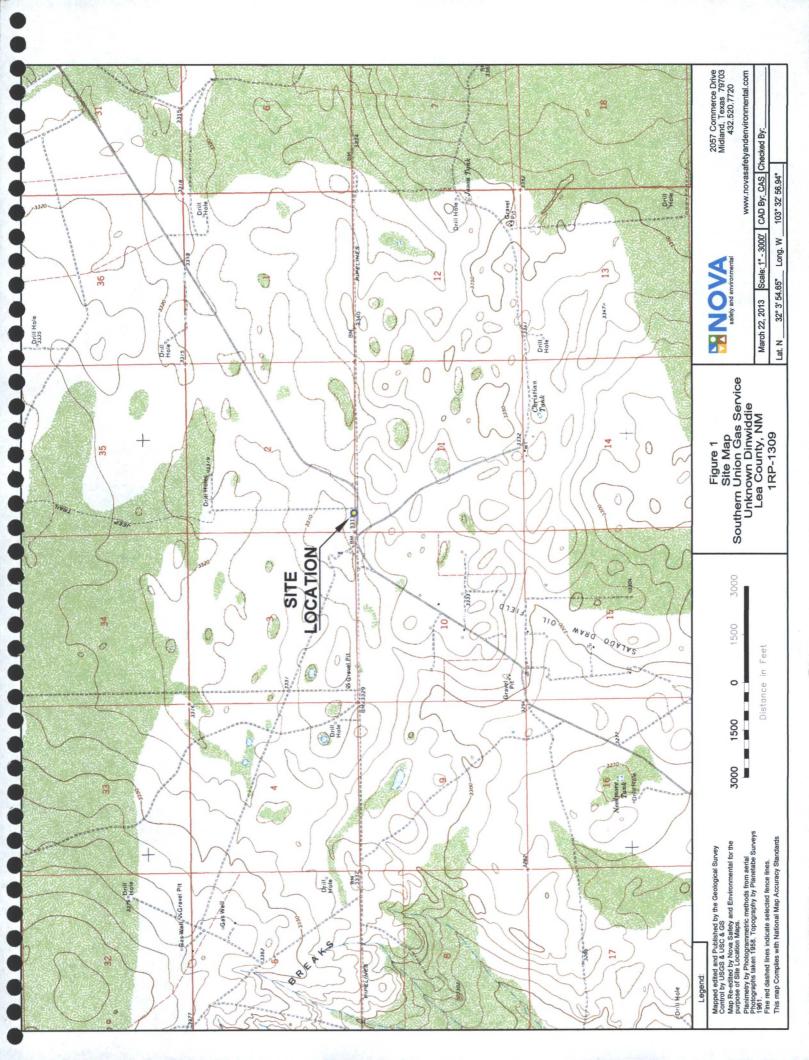
Copy 3: Crystal Callaway, BSN, RN, CHMM

Regency Field Services, LLC 301 Commerce Street, Suite 700

Fort Worth, Texas 76102

Copy 4: NOVA Safety & Environmental

2057 Commerce Street Midland, Texas 79703



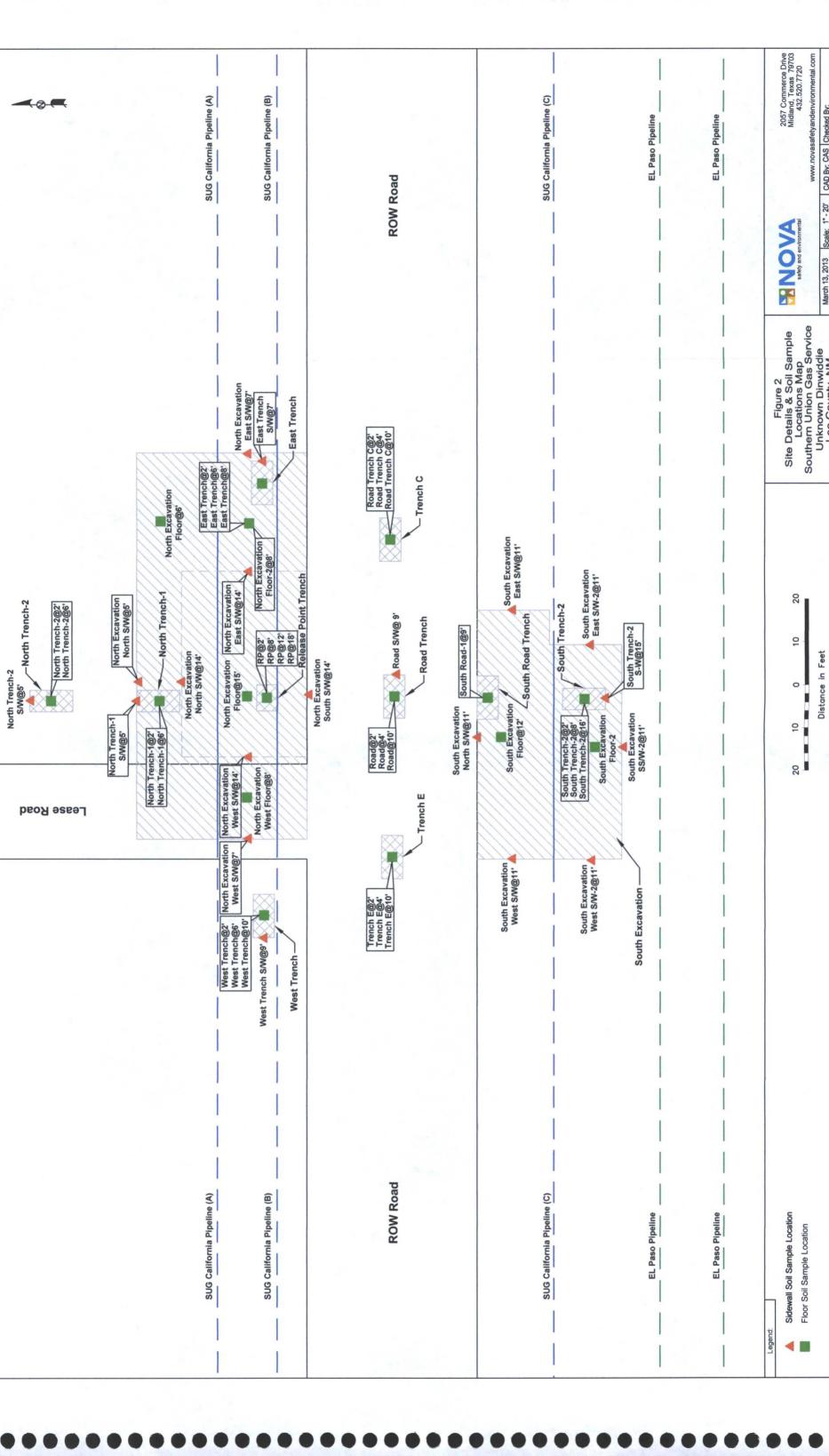


TABLE 1

CONCENTRATIONS OF BENZENE, BTEX, TPH AND CHLORIDE IN SOIL

SOUTHERN UNION GAS SERVICES UNKNOWN DINWIDDIE HISTORICAL RELEASE SITE LEA COUNTY, NEW MEXICO NMOCD REFERENCE # 1RP-1309

All concentrations are reported in mg/Kg

				METUODE.	NY 046 00315				AATTION.	NAME OF STREET		1 200 1
				METHODS: SW 046-8021B	3W 040-0041D				اڌ	MCIOS WS		E 300.1
SAMPLE LOCATION	SAMPLE	BENZENE TOL	TOLUENE	ETHYL- BENZENE	m, p -	0 - XVI.ENE	TOTAL	GRO	TPH	ORO	TOTAL	CHLORIDE
								C ₆ -C ₁₂	C ₁₂ -C ₂₈	C28-C35	C ₆ -C ₃₅	
NMOCD Regulatory Guideline	Carlotte Comment	10	•		A		20				1,000	1
RP @ 2'	03/06/13	<0.00106	<0.00212	<0.00106	<0.00212	<0.00106	<0.00212	<15.9	<15.9	<15.9	<15.9	1,130
RP @ 8'	03/06/13	<0.00106	<0.00212	<0.00106	<0.00212	<0.00106	<0.00212	<15.9	<15.9	<15.9	<15.9	1,970
RP @ 12'	03/06/13	<0.00107	<0.00214	<0.00107	< 0.00214	<0.00107	<0.00214	<16.1	<16.1	<16.1	<16.1	268
RP @ 18'	03/06/13	< 0.00103	<0.00206	<0.00103	<0.00206	<0.00103	<0.00206	<15.5	<15.5	<15.5	<15.5	153
East Trench @ 2'	03/06/13	<0.00105	<0.00210	<0.00105	<0.00210	<0.00105	<0.00210	<15.9	<15.9	<15.9	<15.9	151
East Trench @ 6'	03/06/13	<0.00105	<0.00211	<0.00105	<0.00211	<0.00105	<0.00211	<15.8	<15.8	<15.8	<15.8	1,230
East Trench @ 8'	03/06/13	<0.00109	<0.00218	<0.00109	<0.00218	<0.00109	<0.00218	<16.3	<16.3	<16.3	<16.3	177
East Trench S/W @ 7'	03/06/13	<0.00106	<0.00212	<0.00106	<0.00212	<0.00106	<0.00212	<15.9	<15.9	<15.9	<15.9	974
North Trench-1 @ 2'	03/07/13	<0.00112	<0.00224	<0.00112	<0.00224	<0.00112	<0.00224	<16.9	<16.9	<16.9	<16.9	172
North Trench-1 @ 6'	03/07/13	<0.00106	<0.00213	<0.00106	<0.00213	<0.00106	<0.00213	<15.9	<15.9	<15.9	<15.9	158
North Trench-1 S/W @ 5'	03/07/13	<0.00108	<0.00216	<0.00108	<0.00216	<0.00108	<0.00216	<16.2	<16.2	<16.2	<16.2	289
North Trench-2 @ 2'	03/07/13	<0.00106	<0.00211	<0.00106	<0.00211	<0.00106	<0.00211	<16.0	<16.0	<16.0	<16.0	78.2
North Trench-2 @ 6'	03/07/13	<0.00106	<0.00211	<0.00106	<0.00211	<0.00106	<0.00211	<16.0	<16.0	<16.0	<16.0	88.5
North Trench-2 S/W @ 5'	03/07/13	<0.00103	<0.00206	<0.00103	<0.00206	<0.00103	<0.00206	<15.5	<15.5	<15.5	<15.5	40.0
West Trench @ 2'	03/07/13	<0.00103	<0.00206	<0.00103	<0.00206	<0.00103	<0.00206	<15.5	<15.5	<15.5	<15.5	148
West Trench @ 6'	03/07/13	<0.00105	<0.00209	<0.00105	<0.00209	<0.00105	<0.00209	<15.7	<15.7	<15.7	<15.7	49.5
West Trench @ 10'	03/07/13	<0.00103	<0.00206	<0.00103	<0.00206	<0.00103	<0.00206	<15.6	<15.6	<15.6	<15.6	49.4
West Trench S/W @ 9'	03/07/13	<0.00104	<0.00207	<0.00104	<0.00207	<0.00104	<0.00207	<15.5	<15.5	<15.5	<15.5	9.09
Road @ 2'	03/07/13	<0.00105	<0.00210	<0.00105	<0.00210	<0.00105	<0.00210	<15.7	<15.7	<15.7	<15.7	391
Road @ 4'	03/07/13	<0.00109	<0.00217	<0.00109	<0.00217	<0.00109	<0.00217	<16.5	<16.5	<16.5	<16.5	809
Road @ 10'	03/07/13	<0.00105	<0.00211	<0.00105	<0.00211	<0.00105	<0.00211	21.3	<15.8	<15.8	21.3	173
Road S/W @ 9'	03/07/13	<0.00106	<0.00212	<0.00106	<0.00212	<0.00106	<0.00212	<16.0	<16.0	<16.0	<16.0	1,100
South Road-1 @ 9'	03/07/13	<0.00107	<0.00214	<0.00107	<0.00214	<0.00107	<0.00214	<16.2	<16.2	<16.2	<16.2	477
South Trench-2 @ 2'	03/07/13	<0.00110	<0.00219	<0.00110	<0.00219	<0.00110	<0.00219	<16.5	<16.5	<16.5	<16.5	945
South Trench-2 @ 8'	03/07/13	<0.00108	<0.00216	<0.00108	<0.00216	<0.00108	<0.00216	<16.3	<16.3	<16.3	<16.3	437
South Trench-2 @ 16'	03/07/13	<0.00102	<0.00203	<0.00102	<0.00203	<0.00102	<0.00203	<15.2	<15.2	<15.2	<15.2	50.7
South Trench-2 S/W @ 15'	03/07/13	<0.00104	<0.00207	<0.00104	<0.00207	<0.00104	<0.00207	<15.6	63.2	<15.6	63.2	482
					THE PERSON NAMED IN	のない。						
North Excavation Floor @ 6'	04/30/13	>0.000996	<0.00199	>0.000996	<0.00199	966000.0>	<0.00199	<15.0	<15.0	<15.0	<15.0	129
North Excavation Floor @ 15'	04/30/13	<0.00101	<0.00001	<0.00101	100000	-0.00101	100000	0 215	0 21-	0		

TABLE 1

CONCENTRATIONS OF BENZENE, BTEX, TPH AND CHLORIDE IN SOIL

SOUTHERN UNION GAS SERVICES UNKNOWN DINWIDDIE HISTORICAL RELEASE SITE LEA COUNTY, NEW MEXICO NMOCD REFERENCE # 1RP-1309

All concentrations are reported in mg/Kg

				METHODS: SW 846-8021b	ETHODS: SW 846-8021b	00			METHOD: SW 8015M	W 8015M		E 300.1
SAMPLETOCATION	SAMPLE			1	m. n -	- 0	TOTAL	TPH	TPH	TPH	TOTAL	
	DATE	BENZENE TOL	TOLUENE	-	XYLENES	XYLENE	BTEX	GRO C_6 - C_{12}	DRO C ₁₂ -C ₂₈	ORO C ₂₈ -C ₃₅	TPH C ₆ -C _{3s}	CHLORIDE
NMOCD Regulatory Guideline		10		1			50	-		1	1,000	
North Excavation North SW @ 14'	04/30/13	<0.00100	<0.00200	<0.00100	<0.00200	<0.00100	<0.00200	<15.0	<15.0	<15.0	<15.0	88.1
North Excavation North SW @ 5'	04/30/13	<0.00101	<0.00201	<0.00101	<0.00201	<0.00101	<0.00201	<15.0	<15.0	<15.0	<15.0	100
North Excavation East S/W @ 14'	05/01/13	<0.00106	<0.00212	<0.00106	<0.00212	<0.00106	<0.00212	<15.0	<15.0	<15.0	<15.0	161
North Excavation Floor-2 @ 8'	05/02/13	<0.00106	<0.00212	<0.00106	<0.00212	<0.00106	<0.00212	<15.0	<15.0	<15.0	<15.0	120
North Excavation East S/W @ 7'	05/02/13	<0.00104	<0.00208	<0.00104	<0.00208	<0.00104	<0.00208	<15.0	<15.0	<15.0	<15.0	160
	05/06/13	<0.00107	<0.00214	<0.00107	<0.00214	<0.00107	<0.00214	<15.0	<15.0	<15.0	<15.0	224
Road Trench C @ 4'	05/06/13	<0.00106	<0.00212	<0.00106	<0.00212	<0.00106	<0.00212	<15.0	<15.0	<15.0	<15.0	75.6
Road Trench C @ 10'	05/06/13	<0.00105	<0.00210	<0.00105	<0.00210	<0.00105	<0.00210	<15.0	<15.0	<15.0	<15.0	90.4
	THE REAL PROPERTY.											
North Excavation South S/W @ 14'	05/07/13	<0.00105	<0.00211	<0.00105	<0.00211	<0.00105	<0.00221	<15.8	<15.8	<15.8	<15.8	237
North Excavation West SW @ 14'	05/07/13	<0.00104	<0.00207	<0.00104	<0.00207	<0.00104	<0.00207	<15.7	<15.7	<15.7	<15.7	139
										THE REAL PROPERTY.		
North Excavation West Floor @ 8'	05/08/13	<0.00103	<0.00206	<0.00103	<0.00206	<0.00103	<0.00206	<15.6	<15.6	<15.6	<15.6	124
North Excavation West S/W @ 7'	05/08/13	<0.00106	<0.00212	<0.00106	<0.00212	<0.00106	<0.00212	<16.1	<16.1	<16.1	<16.1	141
Trench E @ 2'	05/09/13	>0.000996	<0.00199	966000.0>	<0.00199	966000.0>	<0.00199	<17.5	<17.5	<17.5	<17.5	133
Trench E @ 4'	05/09/13	<0.000994	<0.00199	<0.000994	<0.00199	<0.000994	<0.00199	<16.6	<16.6	<16.6	<16.6	246
Trench E @ 10'	05/09/13	<0.000996	<0.00199	>0.000996	<0.00199	966000.0>	0.00199	<16.1	<16.1	<16.1	<16.1	6.98
			Transfer and the									
South Excavation Floor @ 12'	05/13/13	<0.00104	<0.00208	<0.00104	<0.00208	<0.00104	<0.00208	<15.6	<15.6	<15.6	<15.6	82.1
South Excavation North S/W @ 11'	05/13/13	<0.00106	<0.00212	<0.00106	<0.00212	<0.00106	<0.00212	<16.0	<16.0	<16.0	<16.0	254
		R. M. Hard							THE REAL PROPERTY.			
South Excavation West S/W @ 11'	05/15/13	<0.00105	<0.00211	<0.00105	<0.00211	<0.00105	<0.00211	<15.9	<15.9	<15.9	<15.9	113
South Excavation East S/W @ 11'	05/15/13	<0.00104	<0.00208	<0.00104	<0.00208	<0.00104	<0.00208	<15.7	<15.7	<15.7	<15.7	131
					1 Sec. 100 100 100 100 100 100 100 100 100 10	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						
South Excavation South Floor-2	05/15/13	<0.00103	<0.00207	<0.00103	<0.00207	<0.00103	<0.00207	<15.6	<15.6	<15.6	<15.6	233
South Excavation SSW (a) 11'	05/15/13	<0.00104	<0.00207	<0.00104	<0.00207	<0.00104	<0.00207	<15.7	<15.7	<15.7	<15.7	198
South Excavation West S/W-2 @ 11'	05/16/13		<0.00200	<0.00100	<0.00200	<0.00100	<0.00200	<15.4	<15.4	<15.4	<15.4	97
South Excavation East S/W-2 @ 11' 05/16/13	05/16/13	<0.00100	<0.00200	<0.00100	<0.00200	<0.00100	<0.00200	<15.5	<15.5	<15.5	<15.5	170

Analytical Report 459027

for

Southern Union Gas Services- Monahans

Project Manager: Camille Bryant

SUGS Historical Unknown Dinwiddie 1RP-1309

18-MAR-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)

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Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code: AZ000989): Arizona (AZ0758)





18-MAR-13

Project Manager: Camille Bryant

Southern Union Gas Services- Monahans

801 South Loop 464 Monahans, TX 79756

Reference: XENCO Report No(s): 459027

SUGS Historical Unknown Dinwiddie 1RP-1309 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) 459027. 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. 459027 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Nicholas Straccione

Project Manager

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Sample Cross Reference 459027



Southern Union Gas Services- Monahans, Monahans, TX

SUGS Historical Unknown Dinwiddie 1RP-1309

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
RP @ 2'	S	03-06-13 14:30		459027-001
RP @ 8'	S	03-06-13 14:40		459027-002
RP @ 12'	S	03-06-13 14:50		459027-003
RP @ 18'	S	03-06-13 15:10		459027-004
East Trench @ 2'	S	03-06-13 15:20		459027-005
East Trench @ 6'	S	03-06-13 15:30		459027-006
East Trench @ 8'	S	03-06-13 15:40		459027-007
East Trench S/W @ 7'	S	03-06-13 15:50		459027-008
North Trench-1 @ 2'	S	03-07-13 10:40		459027-009
North Trench-1 @ 6'	S	03-07-13 10:50		459027-010
North Trench-1 S/W @ 5'	S	03-07-13 11:05		459027-011
North Trench-2 @ 2'	S	03-07-13 11:30		459027-012
North Trench-2 @ 6'	S	03-07-13 11:50		459027-013
North Trench-2 S/W @ 5'	S	03-07-13 12:10		459027-014
West Trech @ 2'	S	03-07-13 13:30		459027-015
West Trench @ 6'	S	03-07-13 13:50		459027-016
West Trench @ 10'	S	03-07-13 14:10		459027-017
West Trench S/W @ 9'	S	03-07-13 14:20		459027-018
Road @ 2'	S	03-07-13 15:00		459027-019
Road @ 4'	S	03-07-13 15:10		459027-020
Road @ 10'	S	03-07-13 15:30		459027-021
Road S/W @ 9'	S	03-07-13 15:50		459027-022
South Road-1 @ 9'	S	03-07-13 16:00		459027-023
South Trench-2 @ 2'	S	03-07-13 16:50		459027-024
South Trench-2 @ 8'	S	03-07-13 17:00		459027-025
South Trench-2 @ 16'	S	03-07-13 17:30		459027-026
South Trench-2 S/W @ 15'	S	03-07-13 17:40		459027-027

CASE NARRATIVE



Client Name: Southern Union Gas Services- Monahans Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309



Project ID:

Work Order Number(s): 459027

Report Date: 18-MAR-13 Date Received: 03/11/2013

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None



Contact: Camille Bryant

Project Location: Lea County, New Mexico

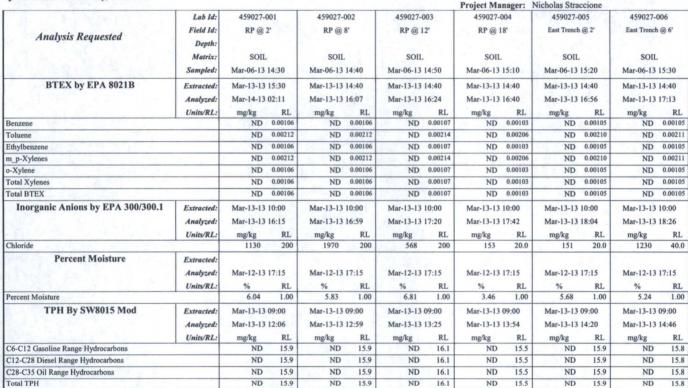
Certificate of Analysis Summary 459027

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Date Received in Lab: Mon Mar-11-13 12:25 pm Report Date: 18-MAR-13

Report Date: 18-MAR-13
Project Manager: Nicholas Straccione



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Nicholas Straccione Project Manager

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Project Id:

Contact: Camille Bryant

Project Location: Lea County, New Mexico

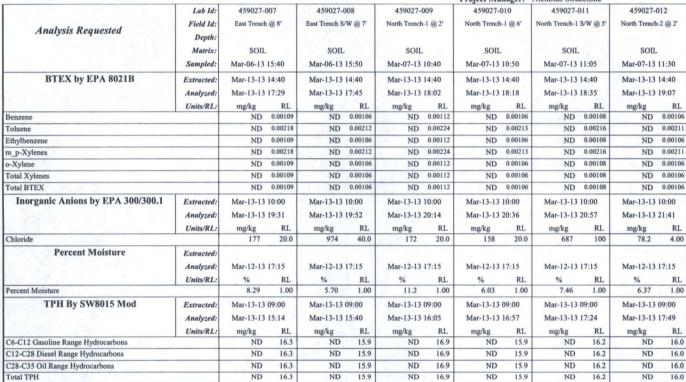
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Nicholas Straccione Project Manager

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Project Id:

Contact: Camille Bryant

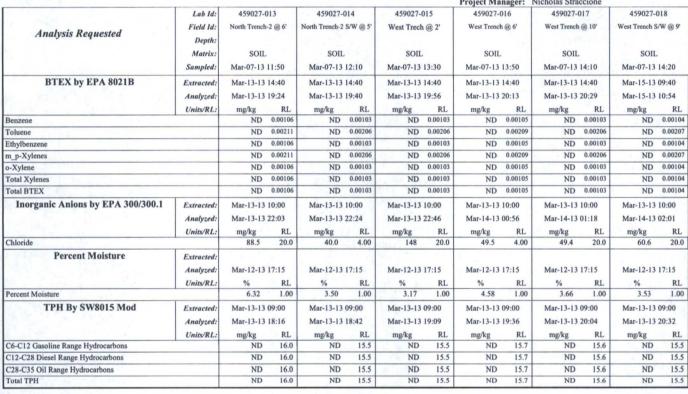
Certificate of Analysis Summary 459027

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Date Received in Lab: Mon Mar-11-13 12:25 pm Report Date: 18-MAR-13 Project Location: Lea County, New Mexico

Project Manager: Nicholas Straccione



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Nicholas Straccione Project Manager

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Certificate of Analysis Summary 459027

Southern Union Gas Services- Monahans, Monahans, TX Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Project Id:

Contact: Camille Bryant

Project Location: Lea County, New Mexico

Date Received in Lab: Mon Mar-11-13 12:25 pm

Report Date: 18-MAR-13

					-			Project Ma	nager:	Nicholas Strae	ccione		
The second second	Lab Id:	459027-0	019	459027-0	20	459027-0	021	459027-0	022	459027-0)23	459027-	024
Analysis Requested	Field Id: Depth:	Road @	2'	Road @	4'	Road @	10'	Road S/W	@ 9'	South Road-	1 @ 9'	South Trench	h-2 @ 2'
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	S. 1. 3	SOIL	
	Sampled:	Mar-07-13	15:00	Mar-07-13	15:10	Mar-07-13	15:30	Mar-07-13	15:50	Mar-07-13	16:00	Mar-07-13	16:50
BTEX by EPA 8021B	Extracted:	Mar-15-13	09:40	Mar-15-13	09:40	Mar-15-13	09:40	Mar-15-13	09:40	Mar-15-13	09:40	Mar-15-13	09:40
	Analyzed:	Mar-15-13	11:27	Mar-15-13	11:44	Mar-15-13	12:00	Mar-15-13	12:16	Mar-15-13	12:33	Mar-15-13	12:49
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.00105	ND	0.00109	ND	0.00105	ND	0.00106	ND	0.00107	ND	0.00110
Toluene		ND	0.00210	ND	0.00217	ND	0.00211	ND	0.00212	ND	0.00214	ND	0.00219
Ethylbenzene		ND	0.00105	ND	0.00109	ND	0.00105	ND	0.00106	ND	0.00107	ND	0.00110
m_p-Xylenes		ND	0.00210	ND	0.00217	ND	0.00211	ND	0.00212	ND	0.00214	ND	0.00219
o-Xylene		ND	0.00105	ND	0.00109	ND	0.00105	ND	0.00106	ND	0.00107	ND	0.00110
Total Xylenes		ND	0.00105	ND	0.00109	ND	0.00105	ND	0.00106	ND	0.00107	ND	0.00110
Total BTEX		ND	0.00105	ND	0.00109	ND	0.00105	ND	0.00106	ND	0.00107	ND	0.00110
Inorganic Anions by EPA 300/300.1	Extracted: Analyzed:	Mar-13-13 Mar-14-13		Mar-13-13 Mar-14-13	100 100 70	Mar-13-13 Mar-14-13		Mar-13-13 Mar-14-13		Mar-13-13 Mar-14-13		Mar-13-13 Mar-14-13	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride	Cmis/RE.	391	100	608	100	173	100	1100	100	477	100	945	100
Percent Moisture	Extracted:			1 1981	9.1				7.5		14		11.7
	Analyzed:	Mar-12-13	17:15	Mar-12-13	17:15	Mar-12-13	17:15	Mar-12-13	17:15	Mar-12-13	17:15	Mar-12-13	17:15
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		4.76	1.00	8.91	1.00	5.05	1.00	6.19	1.00	7.37	1.00	9.04	1.00
TPH By SW8015 Mod	Extracted:	Mar-13-13	09:00	Mar-15-13	13:10	Mar-15-13	13:10	Mar-15-13	13:10	Mar-15-13	13:10	Mar-15-13	13:10
	Analyzed:	Mar-13-13	21:00	Mar-16-13	01:00	Mar-16-13	01:36	Mar-16-13	02:13	Mar-16-13	02:50	Mar-16-13	03:26
	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	16.5	21.3	15.8	ND	16.0	ND	16.2	ND	16.5
C12-C28 Diesel Range Hydrocarbons		ND	15.7	ND	16.5	ND	15.8	ND	16.0	ND	16.2	ND	16.5
C28-C35 Oil Range Hydrocarbons		ND	15.7	ND	16.5	ND	15.8	ND	16.0	ND	16.2	ND	16.5
Total TPH		ND	15.7	ND	16.5	21.3	15.8	ND	16.0	ND	16.2	ND	16.5

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Project Id:

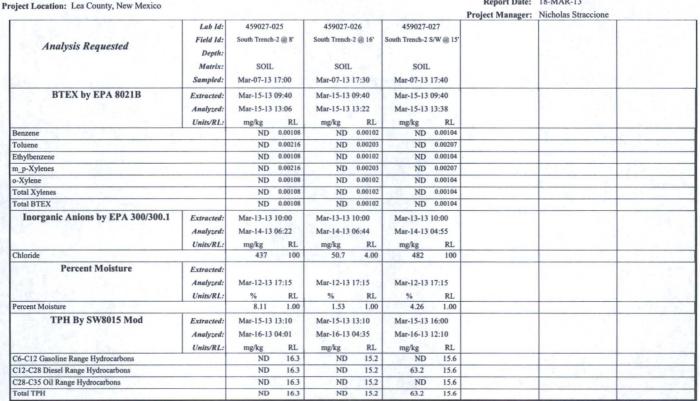
Contact: Camille Bryant

Certificate of Analysis Summary 459027

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Date Received in Lab: Mon Mar-11-13 12:25 pm Report Date: 18-MAR-13



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

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

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

DL Method Detection Limit

NC Non-Calculable

- + NELAC certification not offered for this compound.
- * (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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3725 E. Atlanta Ave, Phoenix, AZ 85040	(602) 437-0330	



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Orders: 459027,

Project ID:

Lab Batch #: 908908

Sample: 459027-001 / SMP

Matrix: Soil Batch: 1

Units: mg/kg Date Analyzed: 03/13/13 12:06	SU	RROGATE RI	ECOVERY	STUDY	
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.9	103	70-135	7
o-Terphenyl	53.3	50.0	107	70-135	-

Lab Batch #: 908908

Sample: 459027-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg	Date Analyzed: 03/13/13 12:59	SU	RROGATE R	ECOVERY	STUDY	
ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		102	100	102	70-135	N 1- 42
o-Ternhenyl	9491 CA	52.0	50.1	104	70-135	12 /2 / -

Lab Batch #: 908908

Sample: 459027-003 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/13/13 13:25	SU	RROGATE R	ECOVERY	STUDY	17
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.9	103	70-135	700
o-Terphenyl	52.2	50.0	104	70-135	N/A

Lab Batch #: 908908

Sample: 459027-004 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/13/13 13:54	SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.5	99.8	99	70-135	100
o-Terphenyl	49.4	49.9	99	70-135	4

Lab Batch #: 908908

Sample: 459027-005 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/13/13 14:20	SU	RROGATE R	ECOVERY	STUDY	Eur.
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	100	102	70-135	47.00
o-Terphenyl	51.5	50.1	103	70-135	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Orders: 459027,

Project ID:

Lab Batch #: 908908

Sample: 459027-006 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/13/13 14:46	SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	99.6	102	70-135	
o-Terphenyl	51.7	49.8	104	70-135	

Lab Batch #: 908908

Sample: 459027-007 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/13/13 15:14	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	101	99.9	101	70-135			
o-Terphenyl	51.7	50.0	103	70-135			

Lab Batch #: 908908

Sample: 459027-008 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/13/13 15:40	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	101	99.9	101	70-135	4.		
o-Terphenyl	51.6	50.0	103	70-135			

Lab Batch #: 908908

Sample: 459027-009 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/13/13 16:05	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	104	99.9	104	70-135	T F		
o-Terphenyl	53.3	50.0	107	70-135	1.6.4		

Lab Batch #: 908958

Sample: 459027-002 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/13/13 16:07	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0294	0.0300	98	80-120			
4-Bromofluorobenzene	0.0265	0.0300	88	80-120	1 9/1 W		

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Orders: 459027,

Project ID:

Lab Batch #: 908958

Sample: 459027-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 03/13/13 16:24	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene	0.0320	0.0300	107	80-120		
4-Bromofluorobenzene	0.0315	0.0300	105	80-120	-	

Lab Batch #: 908958

Sample: 459027-004 / SMP

Batch: 1 Matrix: Soil

SURROGATE RECOVERY STUDY					
Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
0.0329	0.0300	110	80-120	-	
0.0280	0.0300	93	80-120	7.	
	Amount Found [A]	Amount Found Amount [A] [B] 0.0329 0.0300	Amount True Recovery %R [D]	Found Amount Recovery Limits %R [D] %R 0.0329 0.0300 110 80-120	

Lab Batch #: 908958

Sample: 459027-005 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/13/13 16:56	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene	0.0315	0.0300	105	80-120		
4-Bromofluorobenzene	0.0265	0.0300	88	80-120		

Lab Batch #: 908908

Sample: 459027-010 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/13/13 16:57	SURROGATE RECOVERY 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	51.3	49.8	103	70-135	Mark to	

Lab Batch #: 908958

Sample: 459027-006 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/13/13 17:13	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene	0.0358	0.0300	119	80-120	14 or -	
4-Bromofluorobenzene	0.0344	0.0300	115	80-120	智.	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Orders: 459027,

Project ID:

Lab Batch #: 908908

Sample: 459027-011 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/13/13 17:24	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane	102	100	102	70-135	0,50	
o-Terphenyl	52.1	50.0	104	70-135		

Lab Batch #: 908958

Sample: 459027-007 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/13/13 17:29	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0251	0.0300	84	80-120			
4-Bromofluorobenzene	0.0261	0.0300	87	80-120	50		

Lab Batch #: 908958

Sample: 459027-008 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/13/13 17:45	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene	0.0336	0.0300	112	80-120		
4-Bromofluorobenzene	0.0274	0.0300	91	80-120	761	

Lab Batch #: 908908

Sample: 459027-012 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/13/13 17:49	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane	103	99.9	103	70-135	2.	
o-Terphenyl	53.2	50.0	106	70-135	e g T	

Lab Batch #: 908958

Sample: 459027-009 / SMP

Batch:

: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 03/13/13 18:02	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene	0.0251	0.0300	84	80-120	843713	
4-Bromofluorobenzene	0.0252	0.0300	84	80-120	2053	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Orders: 459027,

Project ID:

Lab Batch #: 908908

Sample: 459027-013 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 03/13/13 18:16	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane	104	100	104	70-135		
o-Terphenyl	52.8	50.0	106	70-135		

Lab Batch #: 908958

Sample: 459027-010 / SMP

Matrix: Soil Batch: 1

Date Analyzed: 03/13/13 18:18

SURROGATE	RECOVERY	STUDY

Units: mg/kg Date Analyzed: 03/13/13 18:18	SCHROGHTE RECOVERT STEET				
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	11	[2]	[D]	701	
1,4-Difluorobenzene	0.0305	0.0300	102	80-120	1976
4-Bromofluorobenzene	0.0320	0.0300	107	80-120	126 %

Lab Batch #: 908958

Sample: 459027-011 / SMP

Batch: 1

Matrix: Soil

Units:	mg/kg	4
Units:	mg/kg	

Date Analyzed: 03/13/13 18:35

SU	RROGATE	RECOVERY	STUDY

	The Mark of A				
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes		- F	[D]	10 12	
1,4-Difluorobenzene	0.0341	0.0300	114	80-120	7.4
4-Bromofluorobenzene	0.0308	0.0300	103	80-120	1

Lab Batch #: 908908

Sample: 459027-014 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/13/13 18:42	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane	104	99.8	104	70-135	Trans	
o-Terphenyl	52.9	49.9	106	70-135	US V	

Lab Batch #: 908958

Sample: 459027-012 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/13/13 19:07	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene	0.0292	0.0300	97	80-120		
4-Bromofluorobenzene	0.0311	0.0300	104	80-120	1	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Orders: 459027,

Project ID:

Lab Batch #: 908908

Sample: 459027-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 03/13/13 19:09	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane	100	100	100	70-135		
o-Terphenyl -	50.5	50.0	101	70-135	276	

Lab Batch #: 908958

Sample: 459027-013 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/13/13 19:24	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene	0.0303	0.0300	101	80-120		
4-Bromofluorobenzene	0.0259	0.0300	86	80-120		

Lab Batch #: 908908

Sample: 459027-016 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/13/13 19:36	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane	99.7	99.6	100	70-135	7	
o-Terphenyl	50.6	49.8	102	70-135		

Lab Batch #: 908958

Sample: 459027-014 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/13/13 19:40	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene	0.0272	0.0300	91	80-120		
4-Bromofluorobenzene	0.0246	0.0300	82	80-120		

Lab Batch #: 908958

Sample: 459027-015 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/13/13 19:56	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0267	0.0300	89	80-120	N - 5		
4-Bromofluorobenzene	0.0249	0.0300	83	80-120	CAR .		

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Orders: 459027,

Project ID:

Lab Batch #: 908908

Sample: 459027-017 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/13/13 20:04	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane	97.6	99.9	98	70-135		
o-Terphenyl -	49.4	50.0	99	70-135	ME TO	

Lab Batch #: 908958

Sample: 459027-016 / SMP

Batch: 1

Matrix: Soil

Unite ma/ka

Date Analyzed: 03/13/13 20:13

SURROGATE RECOVERY STUDY

Units: mg/kg Date Analyzed: 03/13/13 20:13	SCHROOTTE RECOVERT STOET					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes		[-1	[D]			
1,4-Difluorobenzene	0.0321	0.0300	107	80-120		
4-Bromofluorobenzene	0.0281	0.0300	94	80-120		

Lab Batch #: 908958

Sample: 459027-017 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/13/13 20:29	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0282	0.0300	94	80-120			
4-Bromofluorobenzene	0.0258	0.0300	86	80-120	77		

Lab Batch #: 908908

Sample: 459027-018 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/13/13 20:32	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane	97.5	99.8	98	70-135		
o-Terphenyl	49.4	49.9	99	70-135	The state of	

Lab Batch #: 908908

Sample: 459027-019 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/13/13 21:00	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane	102	100	102	70-135	4936	
o-Terphenyl	52.1	50.0	104	70-135		

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Orders: 459027,

Project ID:

Lab Batch #: 908965

Sample: 459027-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 03/14/13 02:11	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene	0.0316	0.0300	105	80-120		
4-Bromofluorobenzene	0.0341	0.0300	114	80-120		

Lab Batch #: 909159

Sample: 459027-018 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 03/15/13 10:54	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]	100		
1,4-Difluorobenzene	0.0314	0.0300	105	80-120	1.48	
4-Bromofluorobenzene	0.0318	0.0300	106	80-120	3	

Lab Batch #: 909159

Sample: 459027-019 / SMP

Batch: 1

Matrix: Soil

SURROGATE RECOVERY STUDY					
Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
0.0261	0.0300	87	80-120		
0.0256	0.0300	85	80-120		
	Amount Found [A]	Amount Found Amount [A] [B] 0.0261 0.0300	Amount Found Amount [B] Recovery %R [D] 0.0261 0.0300 87	Amount Found [A] True Amount [B] Recovery %R [D] Control Limits %R 0.0261 0.0300 87 80-120	

Lab Batch #: 909159

Sample: 459027-020 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/15/13 11:44	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0263	0.0300	88	80-120			
4-Bromofluorobenzene	0.0302	0.0300	101	80-120			

Lab Batch #: 909159

Sample: 459027-021 / SMP

Batch: 1

Matrix: Soil

SURROGATE RECOVERY STUDY						
Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
0.0247	0.0300	82	80-120			
0.0304	0.0300	101	80-120	ET TO		
	Amount Found [A]	Amount Found Amount [A] [B] 0.0247 0.0300	Amount Found Amount [B] Recovery %R [D] 0.0247 0.0300 82	Amount Found [A] True Amount [B] Recovery %R [D] Control Limits %R 0.0247 0.0300 82 80-120		

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Orders: 459027,

Project ID:

Lab Batch #: 909159

Sample: 459027-022 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 03/15/13 12:16	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene	0.0313	0.0300	104	80-120		
4-Bromofluorobenzene	0.0250	0.0300	83	80-120	S to the text	

Lab Batch #: 909159

Sample: 459027-023 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 03/15/13 12:33	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0268	0.0300	89	80-120	3		
4-Bromofluorobenzene	0.0296	0.0300	99	80-120	Day.		

Lab Batch #: 909159

Sample: 459027-024 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/15/13 12:49	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0304	0.0300	101	80-120			
4-Bromofluorobenzene	0.0276	0.0300	92	80-120			

Lab Batch #: 909159

Sample: 459027-025 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 03/15/13 13:06	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene	0.0297	0.0300	99	80-120	, , 2	
4-Bromofluorobenzene	0.0281	0.0300	94	80-120		

Lab Batch #: 909159

Sample: 459027-026 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 03/15/13 13:22	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene	0.0285	0.0300	95	80-120		
4-Bromofluorobenzene	0.0261	0.0300	87	80-120	14	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Orders: 459027,

Project ID:

Lab Batch #: 909159

Sample: 459027-027 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 03/15/13 13:38	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0267	0.0300	89	80-120	700		
4-Bromofluorobenzene	0.0243	0.0300	81	80-120			

Lab Batch #: 909178

Sample: 459027-020 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/16/13 01:00	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
Analytes 1-Chlorooctane	92.5	99.9	93	70-135			
o-Terphenyl	47.4	50.0	95	70-135	100		

Lab Batch #: 909178

Sample: 459027-021 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/16/13 01:36	SURROGATE RECOVERY 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	50.9	49.9	102	70-135	178		

Lab Batch #: 909178

Sample: 459027-022 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/16/13 02:13	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	86.1	100	86	70-135			
o-Terphenyl	43.6	50.0	87	70-135	4		

Lab Batch #: 909178

Sample: 459027-023 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/16/13 02:50	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	89.1	99.8	89	70-135	No. of London		
o-Terphenyl	45.8	49.9	92	70-135	5.2		

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Orders: 459027,

Project ID:

Lab Batch #: 909178

Sample: 459027-024 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/16/13 03:26	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	93.6	99.8	94	70-135	121		
o-Terphenyl	47.9	49.9	96	70-135			

Lab Batch #: 909178

Sample: 459027-025 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/16/13 04:01	SU	RROGATE R	RECOVERY	STUDY					
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1-Chlorooctane	95.2	100	95	70-135					
o-Terphenyl	49.3	50.0	99	70-135					

Lab Batch #: 909178

Sample: 459027-026 / SMP

Batch: 1

1 Matrix: Soil

Units: mg/kg Date Analyzed: 03/16/13 04:35	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	92.8	99.9	93	70-135			
o-Terphenyl	46.8	50.0	94	70-135			

Lab Batch #: 909154

Sample: 459027-027 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/16/13 12:10	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	76.4	99.6	77	70-135			
o-Terphenyl	39.9	49.8	80	70-135			

Lab Batch #: 908908

Sample: 635050-1-BLK / BLK

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 03/13/13 11:39	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane	102	99.8	102	70-135		
o-Terphenyl	53.5	49.9	107	70-135		

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Orders: 459027,

Project ID:

Lab Batch #: 908958

Sample: 635071-1-BLK / BLK

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 03/13/13 15:51	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0286	0.0300	95	80-120	*		
4-Bromofluorobenzene	0.0320	0.0300	107	80-120	alvest so		

Lab Batch #: 908965

Sample: 635091-1-BLK / BLK

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 03/13/13 22:23	SU	RROGATE R	RECOVERY	STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1,4-Difluorobenzene	0.0321	0.0300	107	80-120	45.11				
4-Bromofluorobenzene	0.0292	0.0300	97	80-120	17.0%				
					1				

Lab Batch #: 909159

Sample: 635213-1-BLK / BLK

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 03/15/13 11:11	SU	RROGATE R	RECOVERY STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluorobenzene	0.0312	0.0300	104	80-120				
4-Bromofluorobenzene	0.0304	0.0300	101	80-120	- 7			

Lab Batch #: 909178

Sample: 635224-1-BLK / BLK

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 03/15/13 16:37	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane	96.2	100	96	70-135		
o-Terphenyl	49.7	50.0	99	70-135		

Lab Batch #: 909154

Sample: 635210-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 03/16/13 11:42	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	70.9	99.9	71	70-135	1 7		
o-Terphenyl	42.4	50.0	85	70-135	e-cv		

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Orders: 459027,

Project ID:

Lab Batch #: 908908

Sample: 635050-1-BKS / BKS

Batch:

Matrix: Solid

Units: mg/kg Date Analyzed: 03/13/13 10:45	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane	97.0	99.8	97	70-135		
o-Terphenyl	55.7	49.9	112	70-135	N. T.	

Lab Batch #: 908958

Sample: 635071-1-BKS / BKS

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 03/13/13 15:19	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0282	0.0300	94	80-120			
4-Bromofluorobenzene	0.0267	0.0300	89	80-120	77.		

Lab Batch #: 908965

Sample: 635091-1-BKS / BKS

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 03/13/13 21:51	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0301	0.0300	100	80-120			
4-Bromofluorobenzene	0.0299	0.0300	100	80-120			

Lab Batch #: 909159

Sample: 635213-1-BKS / BKS

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 03/15/13 10:38	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0347	0.0300	116	80-120			
4-Bromofluorobenzene	0.0269	0.0300	90	80-120			

Lab Batch #: 909178

Sample: 635224-1-BKS / BKS

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 03/15/13 15:36	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane	102	99.9	102	70-135		
o-Terphenyl	55.0	50.0	110	70-135	-	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Orders: 459027,

Project ID:

Lab Batch #: 909154

Sample: 635210-1-BKS / BKS

Matrix: Solid Batch: 1

Units: mg/kg Date Analyzed: 03/16/13 10:48	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	94.4	100	94	70-135			
o-Terphenyl	53.8	50.0	108	70-135	The state of		

Lab Batch #: 908908

Sample: 635050-1-BSD / BSD

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 03/13/13 11:13	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	101	99.7	101	70-135	ITA-		
o-Terphenyl	56.9	49.9	114	70-135	*		

Lab Batch #: 908958

Sample: 635071-1-BSD / BSD

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 03/13/13 15:35	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0305	0.0300	102	80-120			
4-Bromofluorobenzene	0.0288	0.0300	96	80-120	24/ 1		

Lab Batch #: 908965

Sample: 635091-1-BSD / BSD

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 03/13/13 22:07	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0324	0.0300	108	80-120	-		
4-Bromofluorobenzene	0.0314	0.0300	105	80-120			

Lab Batch #: 909159

Sample: 635213-1-BSD / BSD

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 03/15/13 10:05	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0332	0.0300	111	80-120			
4-Bromofluorobenzene	0.0319	0.0300	106	80-120			

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Orders: 459027,

Project ID:

Lab Batch #: 909178

Sample: 635224-1-BSD / BSD

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 03/15/13 16:05	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane	91.4	99.9	91	70-135		
o-Terphenyl	51.8	50.0	104	70-135		

Lab Batch #: 909154

Sample: 635210-1-BSD / BSD

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 03/16/13 11:15	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	80.4	99.9	80	70-135	<		
o-Terphenyl	52.9	50.0	106	70-135			

Lab Batch #: 908958

Sample: 459027-002 S / MS

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/13/13 20:45	SURROGATE RECOVERY STUDY							
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluorobenzene	0.0319	0.0300	106	80-120	-			
4-Bromofluorobenzene	0.0333	0.0300	111	80-120				

Lab Batch #: 908908

Sample: 459027-001 S / MS

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/13/13 21:27	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chlorooctane	96.1	100	96	70-135				
o-Terphenyl	51.8	50.1	103	70-135	14			

Lab Batch #: 908965

Sample: 459027-001 S / MS

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/14/13 02:59	SURROGATE RECOVERY STUDY							
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluorobenzene	0.0350	0.0300	117	80-120				
4-Bromofluorobenzene	0.0321	0.0300	107	80-120				

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Orders: 459027,

Project ID:

Lab Batch #: 909159

Sample: 459027-018 S / MS

Batch: Matrix: Soil

Units: mg/kg Date Analyzed: 03/15/13 15:33	SURROGATE RECOVERY STUDY							
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluorobenzene	0.0296	0.0300	99	80-120				
4-Bromofluorobenzene	0.0329	0.0300	110	80-120	· sn-			

Lab Batch #: 909178

Sample: 459027-020 S / MS

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/16/13 05:09	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chlorooctane	93.0	99.9	93	70-135	12			
o-Terphenyl	54.3	50.0	109	70-135	Marie 1			

Lab Batch #: 909154

Sample: 459027-027 S / MS

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/16/13 12:37	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chlorooctane	102	100	102	70-135	3.			
o-Terphenyl	56.1	50.1	112	70-135	140			

Lab Batch #: 908958

Sample: 459027-002 SD / MSD

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 03/13/13 21:01	SURROGATE RECOVERY STUDY							
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluorobenzene	0.0288	0.0300	96	80-120				
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	4			

Lab Batch #: 908908

Sample: 459027-001 SD / MSD

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/13/13 21:55	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chlorooctane	102	100	102	70-135	1 7 7			
o-Terphenyl	56.6	50.1	113	70-135	Sec. 1			

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Orders: 459027,

Project ID:

Lab Batch #: 908965

Sample: 459027-001 SD / MSD

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/14/13 03:16	SURROGATE RECOVERY STUDY							
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluorobenzene	0.0312	0.0300	104	80-120				
4-Bromofluorobenzene	0.0345	0.0300	115	80-120				

Lab Batch #: 909159

Sample: 459027-018 SD / MSD

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/15/13 15:49	SURROGATE RECOVERY STUDY							
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluorobenzene	0.0345	0.0300	115	80-120	1.3			
4-Bromofluorobenzene	0.0314	0.0300	105	80-120	į.			

Lab Batch #: 909178

Sample: 459027-020 SD / MSD

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 03/16/13 05:43	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chlorooctane	89.3	100	89	70-135	West.			
o-Terphenyl	52.3	50.1	104	70-135	all the			

Surrogate Recovery [D] = 100 * A / B

^{*} Surrogate outside of Laboratory QC limits

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution





Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

0.200

0.100

0.190

0.0957

Work Order #: 459027

Analyst: KEB Lab Batch ID: 908958

Sample: 635071-1-BKS

Date Prepared: 03/13/2013 Batch #: 1

Project ID: Date Analyzed: 03/13/2013

Matrix: Solid

Units: mg/kg		BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY									
BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000998	0.0998	0.0747	75	0.100	0.0994	99	28	70-130	35	17
Toluene	<0.00200	0.0998	0.0738	74	0.100	0.0981	98	28	70-130	35	XI, XI,
Ethylbenzene	<0.000998	0.0998	0.0731	73	0.100	0.0999	100	31	71-129	35	

Analyst: KEB Lab Batch ID: 908965

m_p-Xylenes

o-Xylene

Sample: 635091-1-BKS

< 0.00200

<0.000998

Date Prepared: 03/13/2013 Batch #: 1

0.141

0.0729

0.200

0.0998

Date Analyzed: 03/13/2013

Matrix: Solid

70-135

71-133

35

35

Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag	
Benzene	<0.000992	0.0992	0.0854	86	0.0998	0.0835	84	2	70-130	35	-	
Toluene	< 0.00198	0.0992	0.0854	86	0.0998	0.0781	78	9	70-130	35	44	
Ethylbenzene	<0.000992	0.0992	0.0793	80	0.0998	0.0783	78	1	71-129	35		
m_p-Xylenes	< 0.00198	0.198	0.152	77	0.200	0.146	73	4	70-135	35	1	
o-Xylene	<0.000992	0.0992	0.0811	82	0.0998	0.0759	76	7	71-133	35	173	

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

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Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Order #: 459027

Analyst: KEB

Sample: 635213-1-BKS

Date Prepared: 03/15/2013 **Batch #:** 1 Project ID:

Date Analyzed: 03/15/2013

Matrix: Solid

Lab Batch ID: 909159

BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.0835	84	0.100	0.0890	89	6	70-130	35	
Toluene	<0.00200	0.100	0.0854	85	0.100	0.0884	88	3	70-130	35	
Ethylbenzene	<0.00100	0.100	0.0864	86	0.100	0.0957	96	10	71-129	35	121
m_p-Xylenes	<0.00200	0.200	0.164	82	0.200	0.184	92	11	70-135	35	14 15
o-Xylene	<0.00100	0.100	0.0890	89	0.100	0.0941	94	6	71-133	35	

Analyst: AMB Lab Batch ID: 909078

Sample: 635159-1-BKS

Date Prepared: 03/13/2013 **Batch #:** 1

Date Analyzed: 03/13/2013

Matrix: Solid

Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag	
Chloride	<2.00	50.0	51.9	104	50.0	52.1	104	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

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104



20

Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

50.0

52.3

Work Order #: 459027

Analyst: AMB Lab Batch ID: 909083

Sample: 635164-1-BKS

Date Prepared: 03/13/2013 Batch #: 1

Project ID:

105

Date Analyzed: 03/14/2013

Matrix: Solid

Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Inorganic Anions by EPA 300/300.1	Blank Sample Result	Spike Added	Blank Spike	Blank Spike	Spike Added	Blank Spike	Blk. Spk Dup.	RPD	Control Limits	Control Limits	Flag	
Analytes	[A]	[B]	Result [C]	%R [D]	[E]	Duplicate Result [F]	%R [G]	%	%R	%RPD	10.00	

52.2

Analyst: KEB

Chloride

Sample: 635050-1-BKS

<2.00

Date Prepared: 03/13/2013

50.0

Date Analyzed: 03/13/2013

80-120

Matrix: Solid

Lab Batch ID: 908908 Batch #: 1 BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY Units: mg/kg Blank Sample Result Spike Added Blank Spike Control Limits TPH By SW8015 Mod Blank Blank Blk. Spk Control Spike Spike %R Dup. RPD Flag Added Limits [A] Duplicate %R %RPD [B] [C] [D] [E] Result [F] [G] Analytes C6-C12 Gasoline Range Hydrocarbons <15.0 998 972 97 997 971 97 70-135 35 C12-C28 Diesel Range Hydrocarbons <150 998 1010 101 1010 70-135 35 101

Analyst: KEB

Date Prepared: 03/15/2013

Date Analyzed: 03/16/2013

Lab Batch ID: 909154

Sample: 635210-1-BKS

Matrix: Solid

Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag	
C6-C12 Gasoline Range Hydrocarbons	<15.0	1000	806	81	999	812	81	1	70-135	35	W.S.	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	911	91	999	860	86	6	70-135	35		

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

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Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Order #: 459027

Analyst: KEB

Lab Batch ID: 909178

Sample: 635224-1-BKS

Date Prepared: 03/15/2013
Batch #: 1

Project ID:

Date Analyzed: 03/15/2013

Matrix: Solid

Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag	
C6-C12 Gasoline Range Hydrocarbons	<15.0	999	953	95	999	931	93	2	70-135	35		
C12-C28 Diesel Range Hydrocarbons	<15.0	999	984	98	999	992	99	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

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Form 3 - MS Recoveries



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Order #: 459027 Lab Batch #: 909078

Project ID:

Date Analyzed: 03/13/2013

Date Prepared: 03/13/2013

Analyst: AMB

QC- Sample ID: 459027-001 S rting Unite: mg/kg

Batch #:

Matrix: Soil

Reporting Units: mg/kg	MATRIX / MATRIX SPIKE RECOVERY STUDY									
Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag				
Chloride	1130	5000	6490	107	80-120	-				

Lab Batch #: 909078

Date Analyzed: 03/13/2013

Date Prepared: 03/13/2013

Analyst: AMB

QC- Sample ID: 459027-011 S

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg	MATRIX / MATRIX SPIKE RECOVERY STUDY									
Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag				
Chloride	687	2500	3200	101	80-120	Mar.				

Lab Batch #: 909083

Date Analyzed: 03/14/2013

Date Prepared: 03/13/2013

Analyst: AMB

QC- Sample ID: 459027-017 S

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg	MATI	RIX / MA	TRIX SPIKE	RECO	VERY STU	DY
Inorganic Anions by EPA 300	Parent Sample Result	Spike Added	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes	[A]	[B]	[0]	[D]	7010	
Chloride	49.4	500	609	112	80-120	

Lab Batch #: 909154

Date Analyzed: 03/16/2013

Date Prepared: 03/15/2013

Analyst: KEB

QC- Sample ID: 459027-027 S

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg	MATRIX / MATRIX SPIKE RECOVERY STUDY									
TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag				
C6-C12 Gasoline Range Hydrocarbons	<15.7	1050	1040	99	70-135					
C12-C28 Diesel Range Hydrocarbons	63.2	1050	1080	97	70-135	1 1 1 1 1				

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 Unknown Dinwiddie 1RP-1309

Work Order #: 459027

Lab Batch ID: 908958

QC- Sample ID: 459027-002 S Date Prepared: 03/13/2013

Batch #: Matrix: Soil

Project ID:

Analyst: KEB

Date Analyzed: 03/13/2013

Reporting Units: mg/kg MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY Parent Control Limits Control Limits Spiked Sampl Spiked Duplicate Spiked BTEX by EPA 8021B Flag Sample Spike Spike piked Samp RPD Dup. Result Sample Result [C] %R Added Result [F] %R %RPD Analytes [A] [B] [D] [E] [G] < 0.00106 77 0.106 0.0945 89 0.106 0.0812 15 70-130 35 < 0.00213 76 70-130 Toluene 0.106 0.0901 85 0.106 0.0804 11 35 Ethylbenzene < 0.00106 0.106 0.0894 84 0.106 0.0774 73 14 71-129 35 < 0.00213 71 70-135 35 m_p-Xylenes 0.213 0.173 81 0.212 0.150 14 < 0.00106 0.106 0.0907 86 0.106 0.0805 71-133 35 o-Xylene 12

Lab Batch ID: 908965 Date Analyzed: 03/14/2013 QC- Sample ID: 459027-001 S

Batch #:

Matrix: Soil

Date Prepared: 03/13/2013

Analyst: KEB

Reporting Units: mg/kg	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY 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	<0.00106	0.106	0.0882	83	0.106	0.0966	91	9	70-130	35	111
Toluene	<0.00212	0.106	0.0797	75	0.106	0.0819	77	3	70-130	35	
Ethylbenzene	< 0.00106	0.106	0.0785	74	0.106	0.0844	80	7	71-129	35	
m_p-Xylenes	<0.00212	0.212	0.149	70	0.213	0.157	74	5	70-135	35	
o-Xylene	< 0.00106	0.106	0.0788	74	0.106	0.0829	78	5	71-133	35	40

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

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

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

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Form 3 - MS / MSD Recoveries



71-133

35

Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Order #: 459027

Lab Batch ID: 909159

QC- Sample ID: 459027-018 S

Batch #:

Project ID: Matrix: Soil

Date Analyzed: 03/15/2013

Date Prepared: 03/15/2013

Analyst: KEB

Reporting Units: mg/kg MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY Parent Sniked Sampl Spiked Duplicate Spiked Control Control BTEX by EPA 8021B Sample Spike Dup. Limits Limits Spike oiked Sampl Flag Result Sample Added [B] [C] %R Added Result [F] %R %RPD Analytes [A] [D] [E] [G] < 0.00104 0.0818 79 0.0799 77 70-130 Benzene 0.104 0.104 2 35 Toluene < 0.00207 0.104 0.0814 78 0.104 0.0850 82 70-130 35 4 Ethylbenzene 0.0813 0.0838 < 0.00104 0.104 78 0.104 81 3 71-129 35 m_p-Xylenes < 0.00207 0.159 77 0.160 77 35 0.207 0.207 70-135

0.0824

Lab Batch ID: 908908

o-Xylene

QC- Sample ID: 459027-001 S

0.104

0.104 Batch #:

79

Matrix: Soil

81

2

0.0839

Date Analyzed: 03/13/2013

Date Prepared: 03/13/2013

< 0.00104

KEB Analyst:

Reporting Units: mg/kg	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY												
TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag		
C6-C12 Gasoline Range Hydrocarbons	<16.0	1070	1010	94	1070	1050	98	4	70-135	35			
C12-C28 Diesel Range Hydrocarbons	<16.0	1070	1040	97	1070	1090	102	5	70-135	35			

Lab Batch ID: 909178

Date Analyzed: 03/16/2013

QC- Sample ID: 459027-020 S Date Prepared: 03/15/2013

Batch #: Matrix: Soil

Analyst: KEB

Reporting Units: mg/kg		N	MATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
TPH By SW8015 Mod	Parent Sample	Spike	Spiked Sample Result	Sample		Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
C6-C12 Gasoline Range Hydrocarbons	<16.5	1100	981	89	1100	926	84	6	70-135	35	11/2/4
C12-C28 Diesel Range Hydrocarbons	<16.5	1100	1140	104	1100	1090	99	4	70-135	35	

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

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

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

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Sample Duplicate Recovery



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Order #: 459027

Lab Batch #: 908880

Project ID:

Date Analyzed: 03/12/2013 17:15

Date Prepared: 03/12/2013

Analyst: WRU

OC- Sample ID: 459027-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %

Percent Moisture

SAMPLE / SAMPLE DUPLICATE RECOVERY

reporting cints.	Diameter Day	DIRITIAL EDE	DULLIO	THE REAL	O I LIZZE
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte	[6]	[B]		,,,,,,	1 4
Percent Moisture	6.04	6.05	0	20	

Lab Batch #: 908883

Date Analyzed: 03/12/2013 17:15

Date Prepared: 03/12/2013

5.05

Analyst: WRU

QC- Sample ID: 459027-021 D

Batch #: 1

Matrix: 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]	7		

1043

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East Odessa, Texas 79765

Chryant@novatraining.cc ToSe, slade@sug.com ToTAL:	
City/State/Zip: Midland, TX 79703 PO #:	
Telephone No: 432.520.7720 Fax No:	,
Sampler Signature: Chrysnt@novatraining.cc Cose. slade@sug.com	
Comparison of the control of the c	NPI
Total: T	
PRINCIPLE #: 100 PRINCIPLE	T g
Columbia	48, 72
O1 RP @ 2' 3/6/2013 14:30 1 X Soil X X X Ø3 RP @ 8' 3/6/2013 14:40 1 X Soil X X X X Ø3 RP @ 12' 3/6/2013 14:50 1 X Soil X X X OЧ RP @ 18' 3/6/2013 15:10 1 X Soil X X X 05 East Trench @ 2' 3/6/2013 15:20 1 X Soil X X X	RUSH TAT (Pre-Schedule) 34,
03 RP@12' 3/6/2013 14:40 1 X Soil X X X X 03 RP@12' 3/6/2013 14:50 1 X Soil X X X X 0식 RP@18' 3/6/2013 15:10 1 X Soil X X X X 05 East Trench@2' 3/6/2013 15:20 1 X Soil X X X	
03 RP@12' 3/6/2013 14:50 1 X Soil X X X 0억 RP@18' 3/6/2013 15:10 1 X Soil X X X 05 East Trench@2' 3/6/2013 15:20 1 X Soil X X X	
0년 RP@18' 3/6/2013 15:10 1 X Soil X X X X 05 East Trench@2' 3/6/2013 15:20 1 X Soil X X X	
At a second of the second of t	
0(0 East Trench @ 6' 3/6/2013 15:30 1 X Soil X X X	1
01 East Trench @ 8' 3/6/2013 15:40 1 X Soil X X	
08 East Trench S/W @ 7' 3/6/2013 15:50 1 X Soil X X X	
() North Trench-1 @ 2' 3/7/2013 10:40 1 X Soil X X X	
1(7) North Trench-1 @ 6' 3/7/2013 10:50 1 X Soil X X X	

20f3

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East Odessa, Texas 79765

	Project Manager: Camil	lle Brya	nt			_		_				_			_ P	roje	ct Na	ime:	SUC	S H	storic	cal Ur	nkno	wn D	inwi	ddie 1	RP-13	109
2	Company Name Nova Safety and Environm	nental								_		_			_	P	roje	ct#:	_									
9	Company Address: 2057 Commerce														_	Pro	ject	Loc:				Lea (Cour	nty, M	lew	Mexic	20	
	City/State/Zip: Midlend, TX 79703		7							Ĺ							P	0#:										
	Telephone No: 432.520.7720 Sampler Signature	R	4C = -	\	Fax No:	-	432.	cb	rya	nt@					-	ort Fo	orma	ıt:	¥	Stan	dard			TR	RP		☐ NF	7
(lab use or		.4	2					ro	se.	slad	e@	sug	LCOI	n		F	_		TC	LP:	Ana	lyze	For:	Т	1		T	-
ORDER	4500014						_	Do	nean	ration		of Co	ntalas	-	Matrix	_		_	TOT	AL:	1	+	T					, 72 hrs
AB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers		SOUL SOUL	6		6		Other (Specify)	DW-Drinking Water SL-Shuge GW = Groundwater S=Sol/Solid	NP=Non-Potable Specify Other TPH: 418.1 6015M 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	EC	Metals: As Ag Ba Cd Cr Pb Hg Se	Semivolatiles	BTEX 8021B/603 or BTEX 8280	SCI	N.O.R.M.	CO 300)		RUSH TAT (Pre-Schedule) 24, 48, Standard TAT
1	North Trench-1 S/W @ 5'	-		3/7/2013	11:05		_	x			T	1	1		Soil	X	1	Ĭ				1	X			x		X
12	North Trench-2 @ 2'			3/7/2013	11:30		11	x			1	T	T	T	Soil	×	_			1	1	1	X			x		х
13	North Trench-2 @ 6'			3/7/2013	11:50		1	X			T				. Soil	X							X			х		х
14	North Trench-2 S/W @ 5'			3/7/2013	12:10		1	x			I	I			Soil	X							X		,	X		х
15	West Trench @ 2'			3/7/2013	13:30		1	X							Soil	X							X			X		x
16	West Trench @ 6'			3/7/2013	13:50		1	X							Soil	X						1	X			х		х
171	West Trench @ 10'			3/7/2013	14:10		1	X							Soil	X							X			X		X
18	West Trench S/W @ 9'			3/7/2013	14:20		1 2	X	1		1	1	_	L	Soil	X							X			X	,	х
19	Road @ 2'			3/7/2013	15:00		1	X	1		1	1			Soil	. X							X		•	Х		х
20	Road @ 4'		<u> </u>	3/7/2013	15:10		1	X.	1			1	L	L	Soil	X							X			X	:	X
Relinquishe Relinquishe Relinquishe	Ole Expert 3/11/13	122	me	Received by: Received by: Received by:		di	- N	- - -	H	1			3	1 DE	ate	Tin Tin Tin	ne ne	San VO Lab Cus Cus San	nple Cs Fi els o tody tody nple by S by C	Contree of seal seal Handample ourie	taine of He ntain is on is on d Del er/Cli	mentadspacer(s) contacool liverelent R UF	tact? tace? taine ter(s) ed tep.	r(s)		FedE 3	X Lor	N D N N N N ne Star

3043

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East Odessa, Texas 79765

	Project Manager:	Can	ille Brya	ant	-							-				Proje	ect Na	me:	SUG	SH	storic	al Ur	nkno	wn D	inwi	ddie 1	RP-13	309	
	Company Name	Nova Safety and Environ	mental												_		Proje	ct #:	_									-	
	Company Address:	2057 Commerce													_ '	Pro	oject	Loc:			ı	ea (Cour	nty, N	lew	Mexic	20		
	City/State/Zip:	Midland, TX 79703					-								_		P	0#:	_				_						
	Telephone No:	432.520.7720	-			Fax No:	4	432.	520.7	701					Rep	ort F	orma	ıt:	¥ :	Stan	dard			TR	RP	1	□ N	PI	
	Sampler Signature:	amille	Ka	Kro	}	e-mail:							raini		c	-					Anni		-		-	-	1		,
lab use	only) //Cana		,	U					108	0.0	aue	wsu	19.00	ш		þ			TOT		Anal	yze	For.	T	Г	П	Ť	72 hrs	l
ORDE	R#: 45902	9				-		_	Pre	serva	tion &	# of C	ontain	ers	Matri	x g	0	Ė	Π	-	90	+	8	1		П		8	L
AB # (lab use only)	FIELD	O CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	leid Filtered	Total #. of Containers	HNO.	HG	H ₂ SO ₄	NaOH	Na ₂ S ₂ O ₃	Other (Specify)	DW=Drinking Water SL=Studge GW = Groundwater S=Soli/Solid	NP=Non-Potable Specify Other	TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	EC	Netals: As Ag Ba Cd Cr Pb Hg : Adletiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260		N.O.R.M.	(26.30)	5	RUSH TAT (Pre-Schedule) 24,	Standard TAT
21		1@ 10'		1	3/7/2013	15:30	-	_	x	T	П	П	\top	+	Soil		-	Ĭ			+	-	X		_	x	+	۴	X
22		S/W @ 9'	1		3/7/2013	15:50		1	_	T	П	П	\top	T	Soil		_		\Box	1	\top	T	X	_		x	\top	T	X
23		pad -1 @ 9'			3/7/2013	16:00		1	_	T				1	Soil		_			\top	T	T	X			x	\top		X
24	South Tre	ench-2 @ 2'	,		3/7/2013	16:50		1	x						Soil)	(1		1	X			х	T	Т	x
25	South Tre	ench-2 @ 8'			3/7/2013	17:00	П	1	x				T		Soil)	(\Box	T	T	T	X			х	T		X
26	South Tre	nch-2 @ 16'			3/7/2013	17:30		1	x						Soil	×	(X			Х	1		x
27	South Trend	h-2 S/W @ 15'	-		3/7/2013	17:40	H	1	X	-	H	H	-	+	Soil	×	(-	1	+	H	X			Х	-	L	х
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02-MAY-13

Project Manager: Camille Bryant

Southern Union Gas Services- Monahans

801 South Loop 464 Monahans, TX 79756

Reference: XENCO Report No(s): 462314

SUGS Historical Unkown Dinwiddie 1RP-1309

Project Address: Lea County, NM

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) 462314. 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. 462314 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

Knus Broak

Project Manager

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Sample Cross Reference 462314



Southern Union Gas Services- Monahans, Monahans, TX

SUGS Historical Unkown Dinwiddie 1RP-1309

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
North Excavation Floor @ 6'	S	04-30-13 10:25		462314-001
North Excavation Floor @ 15'	S	04-30-13 13:30		462314-002
North Excavation North SW @14'	S	04-30-13 16:00		462314-003
North Excavation North SW @ 5'	S	04-30-13 16:35		462314-004

CASE NARRATIVE



Client Name: Southern Union Gas Services- Monahans Project Name: SUGS Historical Unkown Dinwiddie 1RP-1309



Project ID:

Work Order Number(s):

462314

Report Date: 02-MAY-13 Date Received: 05/01/2013

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-912773 Inorganic Anions by EPA 300/300.1

E300

Batch 912773, Chloride recovered below QC limits in the laboratory control sample.

Samples affected are: 462314-003, -001, -002, -004.

E300

Batch 912773, Chloride RPD was outside laboratory control limits.

Samples affected are: 462314-003, -001, -002, -004



Certificate of Analysis Summary 462314

Southern Union Gas Services- Monahans, Monahans, TX Project Name: SUGS Historical Unkown Dinwiddie 1RP-1309 8

Project Id:

Contact: Camille Bryant
Project Location: Lea County, NM

Date Received in Lab: Wed May-01-13 02:20 pm

Report Date: 02-MAY-13

								Project Ma	nager:	Kelsey Brooks	
	Lab Id:	462314-0	01	462314-0	02	462314-0	003	462314-	004		
Analysis Requested	Field Id: N	North Excavation	Floor @ 6	North Excavation 1	Floor @ 136	orth Excavation N	North SW (orth Excavation	North SW (
	Matrix:	SOIL		SOIL	- 1	SOIL		SOIL		2.5	
	Sampled:	Apr-30-13	10:25	Apr-30-13 1	3:30	Apr-30-13 1	16:00	Apr-30-13	16:35		mak and
BTEX by EPA 8021B	Extracted:	May-01-13	15:00	May-01-13 1	5:00	May-01-13	15:00	May-01-13	15:00		
	Analyzed:	May-01-13	21:07	May-01-13 2	20:18	May-01-13	20:51	May-01-13	20:35	196	8 - 8
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Benzene	-		0.000996		0.00101		0.00100	ND	0.00101		30
Toluene -		ND	0.00199	ND	0.00201	ND	0.00200	ND	0.00201		The state of
Ethylbenzene		ND	0.000996	ND	0.00101	ND	0.00100	ND	0.00101		1 100
m_p-Xylenes		ND	0.00199	ND	0.00201	ND	0.00200	ND	0.00201		
o-Xylene		ND	0.000996	ND	0.00101	ND	0.00100	ND	0.00101		
Total Xylenes		ND	0.000996	ND	0.00101	ND	0.00100	ND	0.00101		-/
Total BTEX		ND	0.000996	ND	0.00101	ND	0.00100	ND	0.00101		A A TOTAL OF
Inorganic Anions by EPA 300/300.1	Extracted: Analyzed:	May-02-13	13:00	May-02-13	13:44	May-02-13	14:41	May-02-13	15:03		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	14, V, 1, 9	1 12 4 2 1
Chloride		129	10.0	123	10.0	88.1	10.0	100	10.0		
Percent Moisture	Extracted: Analyzed:	May-01-13	17:15	May-01-13	17:15	May-01-13	17:15	May-01-13	17:15	= =	
	Units/RL:	%	RL	%	RL	%	RL	%	RL		2-200
Percent Moisture	Children.	4.80	1.00	3.07	1.00	2.14	1.00	3.01	1.00		
TPH By SW8015 Mod	Extracted:	May-01-13	14:30	May-01-13	14:30	May-01-13	14:30	May-01-13	14:30	1 1 1 1 1 1 1 1	1 1
	Analyzed:	May-01-13	18:50	May-01-13	17:16	May-01-13	18:18	May-01-13	17:47		E The state of
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		The second
C6-C12 Gasoline Range Hydrocarbons		ND	15.0	ND	15.0	ND	15.0	ND	15.0	P 2	
C12-C28 Diesel Range Hydrocarbons		ND	15.0	ND	15.0	ND	15.0	ND	15.0		
C28-C35 Oil Range Hydrocarbons		ND	15.0	ND	15.0	ND	15.0	ND	15.0	1.1767	rea Flact
Total TPH		ND	15.0	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.

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Kelsey Brooks Project Manager

Knus Boah

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

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

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

DL Method Detection Limit

NC Non-Calculable

- + NELAC certification not offered for this compound.
- * (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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



Project Name: SUGS Historical Unkown Dinwiddie 1RP-1309

Work Orders: 462314,

Project ID:

Lab Batch #: 912688

Sample: 462314-002 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/01/13 17:16	SU	JRROGATE R	RECOVERY	STUDY	
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	114	100	114	70-135	Tyr of
o-Terphenyl	60.0	50.0	120	70-135	

Lab Batch #: 912688

Sample: 462314-004 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/01/13 17:47	SU	RROGATE R	RECOVERY	STUDY	
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	113	100	113	70-135	144
o-Terphenyl	59.3	50.1	118	70-135	1

Lab Batch #: 912688

Sample: 462314-003 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/01/13 18:18	SU	RROGATE R	RECOVERY	STUDY	Q is
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	114	99.9	114	70-135	
o-Terphenyl	58.9	50.0	118	70-135	100

Lab Batch #: 912688

Sample: 462314-001 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/01/13 18:50	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	115	99.9	115	70-135			
o-Terphenyl	60.7	50.0	121	70-135			

Lab Batch #: 912710

Sample: 462314-002 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/01/13 20:18	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0348	0.0300	116	80-120			
4-Bromofluorobenzene	0.0271	0.0300	90	80-120	Water 1		

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: SUGS Historical Unkown Dinwiddie 1RP-1309

Work Orders: 462314,

Project ID:

Lab Batch #: 912710

Sample: 462314-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 05/01/13 20:35	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene	0.0344	0.0300	115	80-120	Fire of	
4-Bromofluorobenzene	0.0281	0.0300	94	80-120		

Lab Batch #: 912710

Sample: 462314-003 / SMP

Batch: 1 Ma

Matrix: Soil

Units: mg/kg Date Analyzed: 05/01/13 20:51	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0314	0.0300	105	80-120	j. 44		
4-Bromofluorobenzene	0.0271	0.0300	90	80-120			

Lab Batch #: 912710

Sample: 462314-001 / SMP

Batch: 1

1 Matrix: Soil

Units: mg/kg Date Analyzed: 05/01/13 21:07	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0265	0.0300	88	80-120			
4-Bromofluorobenzene	0.0279	0.0300	93	80-120	1 3 4		

Lab Batch #: 912688

Sample: 637421-1-BLK / BLK

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/01/13 13:32	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	115	99.5	116	70-135			
o-Terphenyl	61.4	49.8	123	70-135	. c % x 8		

Lab Batch #: 912710

Sample: 637433-1-BLK / BLK

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/01/13 20:02	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene	0.0253	0.0300	84	80-120	YEL	
4-Bromofluorobenzene	0.0249	0.0300	83	80-120	7.60	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: SUGS Historical Unkown Dinwiddie 1RP-1309

Work Orders: 462314,

Project ID:

Lab Batch #: 912688

Sample: 637421-1-BKS / BKS

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/01/13 12:28	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane	114	100	114	70-135	(1) - C	
o-Terphenyl	55.8	50.2	111	70-135	784817	

Lab Batch #: 912710

Sample: 637433-1-BKS / BKS

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/01/13 19:29	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
1,4-Difluorobenzene	0.0339	0.0300	113	80-120	8 1		
4-Bromofluorobenzene	0.0304	0.0300	101	80-120			

Lab Batch #: 912688

Sample: 637421-1-BSD / BSD

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/01/13 13:00	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	128	99.8	128	70-135			
o-Terphenyl	55.9	49.9	112	70-135	100		

Lab Batch #: 912710

Sample: 637433-1-BSD / BSD

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/01/13 19:46	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0272	0.0300	91	80-120	ar. X		
4-Bromofluorobenzene	0.0272	0.0300	91	80-120	2.7		

Lab Batch #: 912688

Sample: 462225-002 S / MS

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/01/13 16:13	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	120	99.9	120	70-135	F 11 6		
o-Terphenyl	50.0	50.0	100	70-135	124		

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: SUGS Historical Unkown Dinwiddie 1RP-1309

Work Orders: 462314,

Project ID:

Lab Batch #: 912688

Sample: 462225-002 SD / MSD

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/01/13 16:45	SURROGATE RECOVERY STUDY											
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
1-Chlorooctane	118	99.5	119	70-135								
o-Terphenyl Terphenyl	52.4	49.8	105	70-135	12 Ta / 16 - 1							

Lab Batch #: 912710

Sample: 462314-004 SD / MSD

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/01/13 21:40	SURROGATE RECOVERY STUDY											
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
1,4-Difluorobenzene	0.0305	0.0300	102	80-120								
4-Bromofluorobenzene	0.0312	0.0300	104	80-120								

Surrogate Recovery [D] = 100 * A / B

^{*} Surrogate outside of Laboratory QC limits

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution





Project Name: SUGS Historical Unkown Dinwiddie 1RP-1309

Work Order #: 462314

Analyst: DYV

Sample: 637433-1-BKS

Date Prepared: 05/01/2013

Project ID: Date Analyzed: 05/01/2013

Matrix: Solid

Lab Batch ID: 912710

Batch #: 1

Units: mg/kg	BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY													
BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag			
Benzene	<0.00101	0.101	0.110	109	0.0992	0.0820	83	29	70-130	35				
Toluene	<0.00201	0.101	0.111	110	0.0992	0.0819	83	30	70-130	35				
Ethylbenzene	< 0.00101	0.101	0.118	117	0.0992	0.0885	89	29	71-129	35				
m_p-Xylenes	<0.00201	0.201	0.222	110	0.198	0.160	81	32	70-135	35	T. Carl			
o-Xylene	< 0.00101	0.101	0.109	108	0.0992	0.0829	84	27	71-133	35	77			

Analyst: AMB Lab Batch ID: 912773

Sample: 912773-1-BKS

Date Prepared: 05/02/2013 Batch #: 1

Date Analyzed: 05/02/2013

Matrix: Solid

Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY														
Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag				
Chloride	<2.00	50.0	50.9	102	50.0	50.9	102	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

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Project Name: SUGS Historical Unkown Dinwiddie 1RP-1309

Work Order #: 462314

Analyst: DYV

Lab Batch ID: 912688

1600

Sample: 637421-1-BKS

Date Prepared: 05/01/2013
Batch #: 1

Project ID:

Date Analyzed: 05/01/2013

Matrix: Solid

Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY														
TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag				
C6-C12 Gasoline Range Hydrocarbons	<15.0	1000	957	96	998	902	90	6	70-135	35					
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	1070	107	998	1030	103	4	70-135	35	37				

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

Page 12 of 17



Form 3 - MS Recoveries



Project Name: SUGS Historical Unkown Dinwiddie 1RP-1309

Work Order #: 462314 Lab Batch #: 912773

Project ID:

Date Analyzed: 05/02/2013

Date Prepared: 05/02/2013

Analyst: AMB

QC- Sample ID: 462314-001 S

Batch #: 1 Matrix: Soil

Reporting Units: mg/kg	MATRIX / MATRIX SPIKE RECOVERY STUDY											
Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag						
Chloride	129	250	414	114	80-120	5 1 40						

 $\label{eq:matrix_pike_percent_recovery} \begin{tabular}{l} 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 Unkown Dinwiddie 1RP-1309

Work Order #: 462314

Lab Batch ID: 912688

QC- Sample ID: 462225-002 S

Batch #:

Project ID: Matrix: Soil

Date Analyzed: 05/01/2013

Date Prepared: 05/01/2013

Analyst: DYV

Reporting Units: mg/kg	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY													
TPH By SW8015 Mod	Parent Sample Result	Spike Added	Spiked Sample Result [C]	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]		7	k"				
C6-C12 Gasoline Range Hydrocarbons	<15.2	1010	828	82	1010	819	81	1	70-135	35				
C12-C28 Diesel Range Hydrocarbons	18.1	1010	989	96	1010	970	94	2	70-135	35				

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

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

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

Page 14 of 17



Sample Duplicate Recovery



Project Name: SUGS Historical Unkown Dinwiddie 1RP-1309

Work Order #: 462314

Lab Batch #: 912716

Project ID:

Date Analyzed: 05/01/2013 17:15

Date Prepared: 05/01/2013

Analyst: WRU

QC- Sample ID: 462276-001 D

Batch #: 1

Matrix: 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	9.63	9.79	2	20	

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East Odessa, Texas 79765

elinquished by:	anquished by:	elinquishe	pecial II										LAB # (lab use only)	RDER #:	ab use only)							
ed by: Date		69 by: 5/1/13	pecial instructions:						North Excavation North SW @ 5'	North Excavation North SW @ 14	North Excavation Floor @ 15'	North Excavation Floor @ 6'	FIELD CODE	LICERI #		A	Sampler Signature:	Telephone No: 432.520.7720	City/State/Zip: Midland, TX 79703	Company Address: 2057 Commerce	Company Name Nova Safety and Environmental	
ō	6																				ronment	
Time	Time	04.41				_		-	-	-			Beginning Depth				1				2	
	a	9								2			Ending Depth									
Received by ELOT:	Received by:	Received by:							4/30/2013	4/30/2013	4/30/2013	4/30/2013	Date Sampled									
OT:									16:35	16:00	13:30	10:25	Time Sampled				e-mail:	Fax No:				
			5		٠.								Field Filtered							-		
				4						-	-	-	Total #. of Containers					432.520.7701	1.1			į.
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	1148	. 11		-	_	_		\vdash	1	-	-	1	HNO ₃	Preservation & # of Cor		Se.	cbryant@novatra	770				
				-	1	-	-	-	-	-	+	+	HCI	/ation		slac	nta	1				
		F 13		-		-	-			+	+	+	H₂SO₄ NaOH	- Qo	:	le(a	ono					
			4	-	\vdash	-	-	-	+	+	+	1	Na ₂ S ₂ O ₃	- C	100	gus	atra					
				-	-	-	-		+	1		+	None	ntainers		rose.slade@sug.com	Nin.			Trans.		
0	0	0		1 1					1	1	+	1	Other (Specify)	- 3		ı	ining.cc		, l	1		
Date	Date	Date					1				1	1	DW=Drinking Water SL=Sludge				liù.		1	4		
			-		1				Soil	Soil	Soil	Soil	GW = Groundwater S=Soll/Solid	Matrix				Report Format:				
4	-	4		-	-	-			1	-			NP=Non-Potable Specify Other			_	1	ñ.		Pro		
ime	Time	ime		-	-	-	-	\vdash	×	×	×	×	TPH: 418.1 (8015M) 8	8015B		1		om		Project Loc:	Project #:	-
_	CO	005	< 0 E		-	-	-		-	+	+		Cations (Ca, Mg, Na, K)		1	1		Lt.	PO #:	5	ect #	
9	due	usto	amp				100		1	-	+	+	Anions (Cl, SO4, Alkalinity)	- 1,-				×	1"	1"	1"	
6	Sar	dy s	Fre Fre	-					+	+	+	+	SAR / ESP / CEC		TOTAL:	TCI P					. A.	
by Couner?	and	con	onta e of		+		-		+	+	1	+	Metals: As Ag Ba Cd Cr Pb H	lg Se	1			Standard		1		
-	Del Del	on	iner Hea	-	+	-			1	+	+	+	Volatiles		H	- Day		and	1	-		
0	Sample Hand Delivered by Sampler/Client Rep.	Labels on container(s) Custody seals on cool Custody seals on cool	Laboratory Comments: Sample Containers Intac VOCs Free of Headspac	-	+	-	-		+	+	-	+	Semivolatiles			- YZe				Lea (
UPS	ed.	Labels on container(s) Custody seals on container Custody seals on cooler(s)	Laboratory Comments: Sample Containers Intact? VOCs Free of Headspace?	-	+	+	-		×	×	×	×	BTEX 6021B 5030 or BTEX 8	8260	H	Analyze For.	1 1			Cou		
-	~	Labels on container(s) Custody seals on container(s) Custody seals on cooler(s)	20	-	+	-	1		+	+	+	+	RCI			-	1			nty,		. 10
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Oldi	1	00	A	-	+	+	-		X	×	×	×	Standard TAT	7		, ,	1					
											1	1	Totalidadid IAI						1 .	L	1	



XENCO Laboratories



Prelogin/Nonconformance Report- Sample Log-In

Client: Southern Union Gas Services- Monahan

Date/ Time Received: 05/01/2013 02:20:00 PM

Work Order #: 462314

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

Temperature Measuring device used :

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	4	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping container/ cooler?	Yes	esta-
#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	

Analyst: PH [Device/Lot#:		
Checklist completed by:	Kunz Hoah Kelsey Brooks	Date: 05/02/2013	
Checklist reviewed by:	Kunz Horah	Date: 05/02/2013	

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

Analytical Report 462601

fo

Southern Union Gas Services- Monahans

Project Manager: Camille Bryant
SUGS Historical Unknown Dinwiddie 1RP-1309

08-MAY-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)





08-MAY-13

Project Manager: Camille Bryant

Southern Union Gas Services- Monahans

801 South Loop 464 Monahans, TX 79756

Reference: XENCO Report No(s): 462601

SUGS Historical Unknown Dinwiddie 1RP-1309

Project Address: Lea County, NM

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) 462601. 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. 462601 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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Certificate of Analysis Summary 462601

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Date Received in Lab: Tue May-07-13 10:02 am

Contact: Camille Bryant
Project Location: Lea County, NM

(TH)

Report Date: 08-MAY-13

roject Location: Lea County, NM								Kepor	Date.	00-WIA 1-13			
Ex 25 Control of the								Project Ma	nager:	Kelsey Brook	cs		
	Lab Id:	462601-0	001	462601-0	002	462601-0	003	462601-	004	462601-	005	462601-	006
Analysis Requested	Field Id:	orth Excavation	East S/W	North Excavation	Floor-2 @	North Excavation	East S/W @	Road Trench	C @ 2'	Road Trench	C @ 4'	Road Trench	C @ 10'
Analysis Requested	Depth:												
	Matrix:	SOIL		SOIL		SOIL	.	SOIL		SOII		SOIL	
	Sampled:	May-01-13	15:25	May-02-13	13:50	May-02-13	13:55	May-06-13	13:30	May-06-13	13:40	May-06-13	14:10
BTEX by EPA 8021B	Extracted:	May-07-13	14:00	May-07-13	14:00	May-07-13	14:00	May-07-13	14:00	May-07-13	14:00	May-07-13	14:00
	Analyzed:	May-07-13	20:11	May-07-13	20:27	May-07-13	20:44	May-07-13	21:00	May-07-13	21:16	May-07-13	21:33
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.00106	ND	0.00106	ND	0.00104	ND	0.00107	ND	0.00106	ND	0.00105
Toluene		ND	0.00212	ND	0.00212	ND	0.00208	ND	0.00214	ND	0.00212	ND	0.00210
Ethylbenzene		ND	0.00106	ND	0.00106	ND	0.00104	ND	0.00107	ND	0.00106	ND	0.00105
m_p-Xylenes		ND	0.00212	ND	0.00212	ND	0.00208	ND	0.00214	ND	0.00212	ND	0.00210
o-Xylene		ND	0.00106	ND	0.00106	ND	0.00104	ND	0.00107	ND	0.00106	ND	0.00105
Total Xylenes		ND	0.00106	ND	0.00106	ND	0.00104	ND	0.00107	ND	0.00106	ND	0.00105
Total BTEX		ND	0.00106	ND	0.00106	ND	0.00104	ND	0.00107	ND	0.00106	ND	0.00105
Inorganic Anions by EPA 300/300.1	Extracted:	May-07-13	11:00	May-07-13	11:00	May-07-13	11:00	May-07-13	11:00	May-07-13	11:00	May-07-13	11:00
	Analyzed:	May-07-13	19:36	May-07-13	20:20	May-07-13	20:41	May-07-13	21:03	May-07-13	21:25	May-07-13	21:46
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		161	20.0	120	10.0	160	10.0	224	10.0	75.6	10.0	90.4	10.0
Percent Moisture	Extracted:			1	-	7							
	Analyzed:	May-07-13	13:46	May-07-13	13:46	May-07-13	13:46	May-07-13	13:46	May-07-13	13:46	May-07-13	13:46
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture	1	5.96	1.00	5.89	1.00	4.07	1.00	6.93	1.00	6.66	1.00	5.72	1.00
TPH By SW8015 Mod	Extracted:	May-07-13	14:00	May-07-13	14:00	May-07-13	14:00	May-07-13	14:00	May-07-13	14:00	May-07-13	14:00
	Analyzed:	May-07-13	21:04	May-07-13	21:34	May-07-13	22:04	May-07-13	22:34	May-07-13	23:06	May-07-13	23:35
	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	15.0	ND	15.0	ND	15.0		15.0	ND	15.0
C12-C28 Diesel Range Hydrocarbons		ND	15.0	ND	15.0	ND	15.0	ND	15.0	ND	15.0	ND	15.0
C28-C35 Oil Range Hydrocarbons		ND	15.0	ND	15.0	ND	15.0	ND	15.0	ND	15.0	ND	15.0
Total TPH		ND	15.0	ND	15.0	ND	15.0	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.

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Kelsey Brooks Project Manager

Page 5 of 16



Flagging Criteria

- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantiation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K Sample analyzed outside of recommended hold time.
- JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- * Surrogate recovered outside laboratory control limit.
- **BRL** Below Reporting Limit.
- **RL** Reporting Limit

MDL Method Detection Limit SDL Sample Detection Limit

LOD Limit of Detection

POL Practical Quantitation Limit

MQL Method Quantitation Limit

LOO 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 Unknown Dinwiddie 1RP-1309

Work Orders: 462601,

Project ID:

Lab Batch #: 913132

Sample: 462601-001 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/07/13 20:11	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene	0.0346	0.0300	115	80-120	- Man J	
4-Bromofluorobenzene	0.0324	0.0300	108	80-120	Sept. Mary	

Lab Batch #: 913132

Sample: 462601-002 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/07/13 20:27	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0263	0.0300	88	80-120			
4-Bromofluorobenzene	0.0258	0.0300	86	80-120			

Lab Batch #: 913132

Sample: 462601-003 / SMP

Batch: 1

1 Matrix: Soil

Units: mg/kg Date Analyzed: 05/07/13 20:44	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene	0.0301	0.0300	100	80-120		
4-Bromofluorobenzene	0.0299	0.0300	100	80-120		

Lab Batch #: 913132

Sample: 462601-004 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/07/13 21:00	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
Analytes 1,4-Difluorobenzene	0.0297	0.0300	99	80-120			
4-Bromofluorobenzene	0.0286	0.0300	95	80-120			

Lab Batch #: 913125

Sample: 462601-001 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/07/13 21:04	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane	104	100	104	70-135		
o-Terphenyl	48.9	50.0	98	70-135		

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Orders: 462601,

Project ID:

Lab Batch #: 913132

Sample: 462601-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 05/07/13 21:16	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene	0.0285	0.0300	95	80-120		
4-Bromofluorobenzene	0.0270	0.0300	90	80-120		

Lab Batch #: 913132

Sample: 462601-006 / SMP

Batch: 1 M

Matrix: Soil

Units: mg/kg Date Analyzed: 05/07/13 21:33	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes		*	[D]			
1,4-Difluorobenzene	0.0265	0.0300	88	80-120		
4-Bromofluorobenzene	0.0319	0.0300	106	80-120		

Lab Batch #: 913125

Sample: 462601-002 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/07/13 21:34	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane	106	99.7	106	70-135		
o-Terphenyl	49.1	49.9	98	70-135		

Lab Batch #: 913125

Sample: 462601-003 / SMP

Batch: 1

Matrix: Soil

CUDDOCATE DECOVEDY CTUDY					
30	KROGATE N	ECOVERT	STUDI		
Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
106	100	106	70-135		
49.0	50.0	98	70-135		
	Amount Found [A]	Amount Found Amount [A] [B]	Amount Found Amount [A] [B] Recovery %R [D] 106 100 106	Found Amount Recovery Limits %R [D] 106 100 106 70-135	

Lab Batch #: 913125

Sample: 462601-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 05/07/13 22:34	SURROGATE RECOVERY STUDY				
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	99.7	129	70-135	
o-Terphenyl	59.9	49.9	120	70-135	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Orders: 462601,

Project ID:

Lab Batch #: 913125

Sample: 462601-005 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/07/13 23:06	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
Analytes 1-Chlorooctane	108	100	108	70-135	199	
o-Terphenyl	50.0	50.0	100	70-135		

Lab Batch #: 913125

Sample: 462601-006 / SMP

Batch: 1

Matrix: Soil SURROGATE RECOVERY STUDY

Units: mg/kg Date Analyzed: 05/07/13 23:35	SURROGATE RECOVERT STUDI					
TPH By SW8015 Mod	Amount Found	True Amount	Recovery %R	Control Limits %R	Flags	
Analytes	[A]	[B]	[D]	70 K	= 1	
1-Chlorooctane	109	99.8	109	70-135	1 4	
o-Terphenyl	50.4	49.9	101	70-135		

Lab Batch #: 913132

Sample: 637721-1-BLK / BLK

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/07/13 19:54	SURROGATE RECOVERY STUDY								
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1,4-Difluorobenzene	0.0240	0.0300	80	80-120	n Ta				
4-Bromofluorobenzene	0.0262	0.0300	87	80-120	2				

Lab Batch #: 913125

Sample: 637715-1-BLK / BLK

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/07/13 20:33	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chlorooctane	111	100	111	70-135				
o-Terphenyl	52.5	50.1	105	70-135	de la Santa			

Lab Batch #: 913132

Sample: 637721-1-BKS / BKS

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/07/13 19:22	SURROGATE RECOVERY STUDY								
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
Analytes 1.4-Difluorobenzene	0.0339	0.0300	113	80-120	45.0				
4-Bromofluorobenzene	0.0326	0.0300	109	80-120					

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Orders: 462601,

Project ID:

Lab Batch #: 913125

Sample: 637715-1-BKS / BKS

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/07/13 19:33	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chlorooctane	126	99.9	126	70-135				
o-Terphenyl	52.3	50.0	105	70-135				

Lab Batch #: 913132

Sample: 637721-1-BSD / BSD

Batch:

Matrix: Solid

Units: mg/kg Date Analyzed: 05/07/13 19:38	SURROGATE RECOVERY STUDY								
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1,4-Difluorobenzene	0.0352	0.0300	117	80-120	-14 .				
4-Bromofluorobenzene	0.0292	0.0300	97	80-120					

Lab Batch #: 913125

Sample: 637715-1-BSD / BSD

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/07/13 20:03	SURROGATE RECOVERY STUDY								
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1-Chlorooctane	127	99.9	127	70-135					
o-Terphenyl	53.0	50.0	106	70-135					

Lab Batch #: 913125

Sample: 462601-001 S/MS

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/08/13 07:16	SURROGATE RECOVERY STUDY								
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1-Chlorooctane	123	99.9	123	70-135	A				
o-Terphenyl	48.8	50.0	98	70-135					

Lab Batch #: 913132

Sample: 462601-001 SD / MSD

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/07/13 22:05	SURROGATE RECOVERY STUDY								
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1,4-Difluorobenzene	0.0264	0.0300	88	80-120	1.2				
4-Bromofluorobenzene	0.0275	0.0300	92	80-120	1				

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



BS / BSD Recoveries



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Order #: 462601

Analyst: DYV

Date Prepared: 05/07/2013

Project ID: Date Analyzed: 05/07/2013

Matrix: Solid

Lab Batch ID: 913132

Sample: 637721-1-BKS

Batch #: 1

Units: mg/kg		BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag	
Benzene	<0.000992	0.0992	0.102	103	0.0994	0.0856	86	17	70-130	35		
Toluene	<0.00198	0.0992	0.101	102	0.0994	0.0874	88	14	70-130	35		
Ethylbenzene	<0.000992	0.0992	0.108	109	0.0994	0.0895	90	19	71-129	35		
m_p-Xylenes	<0.00198	0.198	0.195	98	0.199	0.165	83	17	70-135	35		
o-Xylene	<0.000992	0.0992	0.102	103	0.0994	0.0878	88	15	71-133	35		

Analyst: AMB

Sample: 637720-1-BKS

Date Prepared: 05/07/2013 Batch #: 1

Date Analyzed: 05/07/2013

Lab Batch ID: 913131 Sample: 63772	0-1-BKS	BKS Batch #: 1 BLANK /BLANK SPIKE				Matrix: Solid					
Units: mg/kg		BLAN	K/BLANK	SPIKE / I	BLANK S	PIKE DUPI	LICATE 1	RECOVI	ERY STUD	Y	
Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Centrol Limits %R	Control Limits %RPD	Flag
Chloride	<2.00	50.0	50.9	102	50.0	50.5	101	1	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

Page 11 of 16



BS / BSD Recoveries



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Order #: 462601

Analyst: DYV Lab Batch ID: 913125

Sample: 637715-1-BKS

Date Prepared: 05/07/2013 **Batch #:** 1 Project ID:

Date Analyzed: 05/07/2013

Matrix: Solid

Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.0	999	980	98	999	977	98	0	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	999	1090	109	999	1090	109	0	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

Page 12 of 16



Form 3 - MS Recoveries



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Order #: 462601 Lab Batch #: 913131

Project ID:

Date Analyzed: 05/08/2013 QC- Sample ID: 462447-005 S Date Prepared: 05/07/2013

Analyst: AMB

Batch #:

Matrix: Soil

Reporting Units: mg/kg	MATRIX / MATRIX SPIKE RECOVERY STUDY								
Inorganic Anions by EPA 300	Parent Sample Result	Spike Added	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag			
Analytes	[A]	[B]	1-7						
Chloride	64.9	105	182	112	80-120				

Lab Batch #: 913131

Date Analyzed: 05/07/2013

Date Prepared: 05/07/2013

Analyst: AMB

QC- Sample ID: 462601-001 S

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg	MATRIX / MATRIX SPIKE RECOVERY STUDY									
Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag				
Chloride	161	500	708	109	80-120					

Lab Batch #: 913125

Date Analyzed: 05/08/2013

Date Prepared: 05/07/2013

Analyst: DYV

QC- Sample ID: 462601-001 S

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg	MATRIX / MATRIX SPIKE RECOVERY STUDY									
TPH by SW8015 Mod	Parent Sample Result	Spike Added	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag				
Analytes	[A]	[B]								
C6-C12 Gasoline Range Hydrocarbons	<15.0	999	949	95	70-135					
C12-C28 Diesel Range Hydrocarbons	<15.0	999	1090	109	70-135					

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



Sample Duplicate Recovery



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Order #: 462601

Lab Batch #: 913136

Project ID:

Date Analyzed: 05/07/2013 13:46

Date Prepared: 05/07/2013

Analyst: WRU

QC- Sample ID: 462516-003 D

Batch #: 1

Matrix: Soil

Reporting Units: %	SAMPLE /	SAMPLE / SAMPLE DUPLICATE RECOVERY								
Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag					
Percent Moisture	3.87	3.70	4	20						

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

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST
12600 West 1-20 East
Phone: 432-563-1800
Odessa, Texas 79765
Fax: 432-563-1713

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XENCO Laboratories



Prelogin/Nonconformance Report- Sample Log-In

Client: Southern Union Gas Services- Monahan

Date/ Time Received: 05/07/2013 10:02:00 AM Air and Metal samples Acceptable Range

Work Order #: 462601

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

Temperature Measuring device used :

Sample Receipt	Checklist Comments	
#1 *Temperature of cooler(s)?	1	
#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 bu	ubble)? Yes	
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	Yes	
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc-	+NaOH? Yes	

Analyst: P	H Device/Lot#:	
Checklist completed I	by: Mushoah Kelsey Brooks	Date: <u>05/07/2013</u>
Checklist reviewed b	y: Kelsey Brooks	Date: 05/07/2013

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

Analytical Report 462780

for

Southern Union Gas Services- Monahans

Project Manager: Camille Bryant
SUGS Historical Unkown Dinwiddie 1RP-1309

10-MAY-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)





10-MAY-13

Project Manager: Camille Bryant

Southern Union Gas Services- Monahans

801 South Loop 464 Monahans, TX 79756

Reference: XENCO Report No(s): 462780

SUGS Historical Unkown Dinwiddie 1RP-1309 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) 462780. 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. 462780 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 462780



Southern Union Gas Services- Monahans, Monahans, TX

SUGS Historical Unkown Dinwiddie 1RP-1309

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
North Excavation South S/W @ 14'	S	05-07-13 14:10		462780-001
North Excavation West S/W @ 14'	S	05-07-13 15:00		462780-002
North Excavation West Floor @ 8'	S	05-08-13 13:20		462780-003
North Excavation West S/W @ 7'	S	05-08-13 13:40		462780-004

CASE NARRATIVE



Client Name: Southern Union Gas Services- Monahans Project Name: SUGS Historical Unkown Dinwiddie 1RP-1309



Project ID:

Work Order Number(s): 462780

Report Date: 10-MAY-13 Date Received: 05/09/2013

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-913372 Inorganic Anions by EPA 300/300.1

E300

Batch 913372, Chloride recovered below QC limits in the Matrix Spike.

Samples affected are: 462780-003, -004, -001, -002.

The Laboratory Control Sample for Chloride is within laboratory Control Limits



Certificate of Analysis Summary 462780

Southern Union Gas Services- Monahans, Monahans, TX Project Name: SUGS Historical Unkown Dinwiddie 1RP-1309 8

Project Id:

Contact: Camille Bryant

Project Location: Lea County, New Mexico

Date Received in Lab: Thu May-09-13 10:02 am

Report Date: 10-MAY-13

oject Location: Lea County, New Mexico								Project Ma	nager:	Kelsey Brooks	
	Lab Id:	462780-0	01	462780-0	02	462780-	003	462780-0	004		
Analysis Requested	Field Id: N	orth Excavation	South S/W	orth Excavation W	/est S/W (North Excavation	West Floo	Forth Excavation	West S/W (
	Matrix:	SOIL		SOIL	1, 2	SOIL		SOIL			
	Sampled:	May-07-13	14:10	May-07-13	5:00	May-08-13	13:20	May-08-13	13:40		
BTEX by EPA 8021B	Extracted:	May-09-13	10:30	May-09-13	0:30	May-09-13	10:30	** ** **	**		
	Analyzed:	May-09-13	12:32	May-09-13	3:03	May-09-13	13:20	May-09-13	13:36		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Benzene		ND	0.00105	ND	0.00104	ND	0.00103	ND	0.00106		
Toluene		ND	0.00211	ND	0.00207	ND	0.00206	ND	0.00212		
Ethylbenzene		ND	0.00105	ND	0.00104	ND	0.00103	ND	0.00106	77	. 1
m_p-Xylenes		ND	0.00211	ND	0.00207	ND	0.00206	ND	0.00212		
o-Xylene		ND	0.00105	ND	0.00104	ND	0.00103	ND	0.00106	Y 4	
Total Xylenes		ND	0.00105	ND	0.00104	ND	0.00103	ND	0.00106	S	
Total BTEX		ND	0.00105	ND	0.00104	ND	0.00103	ND	0.00106		
Inorganic Anions by EPA 300/300.1	Extracted: Analyzed:	May-09-13 16:00 May-10-13 00:08		May-09-13 16:00 May-10-13 00:29		May-09-13 16:00 May-10-13 00:51		May-09-13 16:00 May-10-13 01:13			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		237	10.0	139	10.0	124	4.00	141	10.0		
Percent Moisture	Extracted:			- 1	7					-	
	Analyzed:	May-09-13	12:39	May-09-13	2:39	May-09-13	12:39	May-09-13	12:39		
	Units/RL:	%	RL	%	RL	%	RL	%	RL		13.50
Percent Moisture		5.33	1.00	4.32	1.00	3.98	1.00	6.56	1.00		
TPH By SW8015 Mod	Extracted:	May-09-13	13:30	May-09-13	6:45	May-09-13	16:45	May-09-13	16:45		
	Analyzed:	May-10-13	02:16	May-10-13 (2:46	May-10-13	03:17	May-10-13	03:48	- 10	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	3. 3	1
C6-C12 Gasoline Range Hydrocarbons		ND	15.8	ND	15.7	ND	15.6	ND	16.1		14 2 2 3 3 3
C12-C28 Diesel Range Hydrocarbons		ND	15.8	ND	15.7	ND	15.6	ND	16.1		A TOTAL AND
C28-C35 Oil Range Hydrocarbons		ND	15.8	ND	15.7	ND	15.6	ND	16.1		A REAL PROPERTY.
Total TPH		ND	15.8	ND	15.7	ND	15.6	ND	16.1		A PRINCIPLE SERVICE

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 XENOC Laboratories. XENOC 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

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

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

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

DL Method Detection Limit

NC Non-Calculable

- + NELAC certification not offered for this compound.
- * (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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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
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3725 E. Atlanta Ave, Phoenix, AZ 85040	(602) 437-0330	



Project Name: SUGS Historical Unkown Dinwiddie 1RP-1309

Work Orders: 462780,

Project ID:

Lab Batch #: 913324

Sample: 462780-001 / SMP

Batch: 1 Matrix: Soil

SURROGATE RECOVERY STUDY								
Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
0.0271	0.0300	90	80-120					
0.0255	0.0300	85	80-120	5-				
	Amount Found [A]	Amount Found Amount [A] [B] 0.0271 0.0300	Amount Found Amount [A] [B] Recovery %R [D] 0.0271 0.0300 90	Amount True Recovery Control Limits %R [D]				

Lab Batch #: 913324

Sample: 462780-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 05/09/13 13:03	SURROGATE RECOVERY STUDY								
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1,4-Difluorobenzene	0.0326	0.0300	109	80-120	1 24				
4-Bromofluorobenzene	0.0324	0.0300	108	80-120					

Lab Batch #: 913324

Sample: 462780-003 / SMP

Batch: 1

1 Matrix: Soil

Units: mg/kg Date Analyzed: 05/09/13 13:20	SURROGATE RECOVERY STUDY								
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1,4-Difluorobenzene	0.0266	0.0300	89	80-120					
4-Bromofluorobenzene	0.0243	0.0300	81	80-120	1				

Lab Batch #: 913324

Sample: 462780-004 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/09/13 13:36	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0274	0.0300	91	80-120	275		
4-Bromofluorobenzene	0.0286	0.0300	95	80-120			

Lab Batch #: 913385

Sample: 462780-001 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg	SURROGATE RECOVERY STUDY						
	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane		108	100	108	70-135	the second	
o-Terphenyl	100	50.8	50.0	102	70-135		

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: SUGS Historical Unkown Dinwiddie 1RP-1309

Work Orders: 462780,

Project ID:

Lab Batch #: 913385

Sample: 462780-002 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 05/10/13 02:46	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	108	100	108	70-135			
o-Terphenyl	50.5	50.0	101	70-135	1000		

Lab Batch #: 913385

Sample: 462780-003 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 05/10/13 03:17	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	108	100	108	70-135	4,8 %		
o-Terphenyl	50.3	50.0	101	70-135	12 3 8		

Lab Batch #: 913385

Sample: 462780-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 05/10/13 03:48	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	107	100	107	70-135	g let 1		
o-Terphenyl	51.0	50.0	102	70-135			

Lab Batch #: 913324

Sample: 637828-1-BLK / BLK

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/09/13 10:00	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0251	0.0300	84	80-120	-1/6		
4-Bromofluorobenzene	0.0273	0.0300	91	80-120	1033		

Lab Batch #: 913385

Sample: 637860-1-BLK / BLK

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/10/13 01:45	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	108	100	108	70-135	MOS N		
o-Terphenyl	50.9	50.0	102	70-135	ALTES,		

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: SUGS Historical Unkown Dinwiddie 1RP-1309

Work Orders: 462780,

Project ID:

Lab Batch #: 913324

Sample: 637828-1-BKS / BKS

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/09/13 09:11	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0337	0.0300	112	80-120	777		
4-Bromofluorobenzene	0.0316	0.0300	105	80-120	The same		

Lab Batch #: 913385

Sample: 637860-1-BKS / BKS

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/10/13 00:45 SURROGATE R				STUDY	
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	122	100	122	70-135	
o-Terphenyl	51.2	50.0	102	70-135	1 - 44

Lab Batch #: 913324

Sample: 637828-1-BSD / BSD

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/09/13 09:28	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0344	0.0300	. 115	80-120			
4-Bromofluorobenzene	0.0288	0.0300	96	80-120			

Lab Batch #: 913385

Sample: 637860-1-BSD / BSD

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/10/13 01:15	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	123	100	123	70-135			
o-Terphenyl	49.7	50.0	99	70-135	- 4		

Lab Batch #: 913324

Sample: 462780-004 S / MS

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/09/13 13:53	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0321	0.0300	107	80-120	William .		
4-Bromofluorobenzene	0.0255	0.0300	85	80-120	o King		

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: SUGS Historical Unkown Dinwiddie 1RP-1309

Work Orders: 462780,

Project ID:

Lab Batch #: 913324

Sample: 462780-004 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 05/09/13 14:09	SI	JRROGATE R	ECOVERY	STUDY	Y HV
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0253	0.0300	84	80-120	Vien.
4-Bromofluorobenzene	0.0265	0.0300	88	80-120	

Lab Batch #: 913385

Sample: 462780-001 SD / MSD

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/10/13 04:49	SU	RROGATE R	RECOVERY	STUDY	Viet .
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	100	124	70-135	1,71
o-Terphenyl	50.4	50.0	101	70-135	

Surrogate Recovery [D] = 100 * A / B

^{*} Surrogate outside of Laboratory QC limits

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



BS / BSD Recoveries



Project Name: SUGS Historical Unkown Dinwiddie 1RP-1309

0.0998

0.0883

Work Order #: 462780

Analyst: DYV Lab Batch ID: 913324

Sample: 637828-1-BKS

Date Prepared: 05/09/2013 Batch #: 1

Project ID: Date Analyzed: 05/09/2013

Matrix: Solid

Units: mg/kg		BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag	
Benzene	< 0.000996	0.0996	0.0845	85	0.0998	0.0830	83	2	70-130	35		
Toluene	< 0.00199	0.0996	0.0903	91	0.0998	0.0844	85	7	70-130	35		
Ethylbenzene	< 0.000996	0.0996	0.0926	93	0.0998	0.0930	93	0	71-129	35		
m_p-Xylenes	< 0.00199	0.199	0.169	85	0.200	0.167	84	1	70-135	35		

0.0863

Analyst: AMB

Date Prepared: 05/09/2013

Date Analyzed: 05/09/2013

71-133

Lab Batch ID: 913372

o-Xylene

Sample: 637855-1-BKS

Batch #: 1

0.0996

<0.000996

Matrix: Solid

Eab Dates 1D: 715572	ico	Date	1								
Units: mg/kg		BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY									
Inorganic Anions by EPA 300/300.1	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]				
Chloride	<2.00	50.0	51.6	103	50.0	51.7	103	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

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Form 3 - MS Recoveries



Project Name: SUGS Historical Unkown Dinwiddie 1RP-1309

Work Order #: 462780 Lab Batch #: 913372

Project ID:

Date Analyzed: 05/10/2013

Date Prepared: 05/09/2013

Analyst: AMB

QC- Sample ID: 462651-020 S

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg	MATRIX / MATRIX SPIKE RECOVERY STUDY									
Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag				
Chloride	3420	1070	2240	0	80-120	X				

Lab Batch #: 913372

Date Analyzed: 05/09/2013

Date Prepared: 05/09/2013

Analyst: AMB

QC- Sample ID: 462827-001 S

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg	MATRIX / MATRIX SPIKE RECOVERY STUDY										
Inorganic Anions by EPA 300	Parent Sample Result	Spike Added	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag					
Analytes	[A]	[B]									
Chloride	87.3	100	190	103	80-120	2 / 1					

 $\label{eq:matrix_power_power} \begin{tabular}{ll} 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 $[E] = 100*(C-A)/(C+B)$ \\ All Results are based on MDL and Validated for QC Purposes $[E] = 100*(C-A)/(C+B)$ \\ All Results are based on MDL and Validated for QC Purposes $[E] = 100*(C-A)/(C+B)$ \\ All Results are based on MDL and Validated for QC Purposes $[E] = 100*(C-A)/(C+B)$ \\ All Results are based on MDL and Validated for QC Purposes $[E] = 100*(C-A)/(C+B)$ \\ All Results are based on MDL and Validated for QC Purposes $[E] = 100*(C-A)/(C+B)$ \\ All Results are based on MDL and Validated for QC Purposes $[E] = 100*(C-A)/(C+B)$ \\ All Results are based on MDL and Validated for QC Purposes $[E] = 100*(C-A)/(C+B)$ \\ All Results are based on MDL and Validated for QC Purposes $[E] = 100*(C-A)/(C+B)$ \\ All Results are based on MDL and Validated for QC Purposes $[E] = 100*(C-A)/(C+B)$ \\ All Results are based on MDL and Validated for QC Purposes $[E] = 100*(C-A)/(C+B) \\ All Results are based on MDL and Validated for QC Purposes $[E] = 100*(C-A)/(C+B) \\ All Results are based on MDL and Validated for QC Purposes $[E] = 100*(C-A)/(C+B) \\ All Results are based on MDL and Validated for QC Purposes \\ All Results are based on MDL and Validated for QC Purposes \\ All Results are based on MDL and Validated for QC Purposes \\ All Results are based on MDL and Validated for QC Purposes \\ All Results are based on MDL and Validated for QC Purpose \\ All Results are based on MDL and Validated for QC Purpose \\ All Results are based on MDL and Validated for QC Purpose \\ All Results are based on MDL and Validated for QC Purpose \\ All Results are based on MDL and Validated for QC Purpose \\ All Results are based on MDL and Validated for QC Purpose \\ All Results are based on MDL and Validated for QC Purpose \\ All Results are based on MDL and Validated for QC Purpose \\ All Results are based on MDL and Validated for QC Purpose \\ Al$

BRL - Below Reporting Limit



Form 3 - MS / MSD Recoveries

Project Name: SUGS Historical Unkown Dinwiddie 1RP-1309



Work Order #: 462780

Lab Batch ID: 913324

QC- Sample ID: 462780-004 S

Project ID:

Batch #: 1 Matrix: Soil

Date Analyzed: 05/09/2013 Reporting Units: mg/kg Date Prepared: 05/09/2013 Analyst: DYV

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY 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	< 0.00107	0.107	0.0906	85	0.107	0.0873	82	4 .	70-130	35	
Toluene	< 0.00214	0.107	0.0949	89	0.107	0.0901	84	5	70-130	35	13
Ethylbenzene	< 0.00107	0.107	0.0956	89	0.107	0.0965	90	1	71-129	35	- Y- 1
m_p-Xylenes	< 0.00214	0.214	0.175	82	0.213	0.176	83	1	70-135	35	
o-Xylene	< 0.00107	0.107	0.0884	83	0.107	0.0895	84	1	71-133	35	

Matrix Spike Percent Recovery [D] = 100*(C-A)BRelative Percent Difference RPD = 200*(C-F)(C+F) Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

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Sample Duplicate Recovery



Project Name: SUGS Historical Unkown Dinwiddie 1RP-1309

Work Order #: 462780

Lab Batch #: 913370 **Date Analyzed:** 05/09/2013 12:39 **Project ID:**

Date Prepared: 05/09/2013

Analyst: WRU

QC- Sample ID: 462780-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %	SAMPLE /	SAMPLE / SAMPLE DUPLICATE RECOVER									
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag						
Analyte		[D]	-								
Percent Moisture	5.33	5.54	4	20	Samp of						

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East Odessa, Texas 79765

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

Relinquished by	Relinqui	Specia	1	-		The state of the s		-	San San San	LAB # (lab use only)	ORDE	(lab use						nigy a-
Relinguished by Deer	Relinquished by:	Special Instructions:				North Excavation West S/W @ 7	North ExcavationWest Floor @ 8	North Excavation West S/W @ 14	North Excavation South S/W @ 14	FIELD CODE	R# 180 100	USCUT (Aluo asn qel)	1 1	Sampler Signature:	7	City/State/Zip: Mid	Company Address: 2057 Commerce	Company Name Nov
\$/9/13 Date	5)9 B					Nest S/W @ 7"	Vest Floor @ 8'	Vest S/W @ 14'	outh S/W @ 14"	ODm				mee 1x	432.520.7720	Midland, TX 79703	7 Commerce	Nova Safety and Environmental
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	9				\vdash		T	+	T	Other (Specify)	3		n	g.c				
Date	Date 5/9/1/3					Soil	Soil	Soil	Soil	OW=Orinking Water SL=Studge GW ≈ Groundwater S=Soil/Solid	Matrix			IΩ	Rep			
	10		+	-			-	-	-	NP=Non-Potable Specify Other		-			ů.		Pre	11/21
ime	No.	-	+	-		×	×	×	×	TPH: 418.1 (8015M) 80 TPH: TX 1005 TX 1006)15B		П		Report Format:	2	Project Loc:	Project #:
CO.	2005 <	S E	-	-		-	-	+	-	Cations (Ca, Mg, Na, K)			П		att	PO #:	Loc	ect #
Sample Hand Delivered by Sampler/Client Rep by Courier? UPS	VOCs Free of Headspace? Labels on container(s) Custody seals on container(s) Custody seals on cooler(s)	Laboratory Comments: Sample Containers Intact?	-				+	+	+	Anions (Cl., SO4, Alkalinity)		7	П		×	1	1"	1
San	Fre dy s	e Co					+	+	+	SAR/ESP/CEC		TOTAL:						1
by Sampler/Client Rep. by Courier? UPS	e of con eals	y Co	1	1			+			Metals: As Ag Ba Cd Cr Pb Hg	Se	11 27	1.		Standard			1/2
Clie	Hea	omn	1				1		1	Volatiles		1	Analyze For.		ard	13	-	
ont Rep	er(s)	nent S Int	1			\vdash	1			Semivolatiles	-	1	Ze I			13	Lea C	
-	aine er(s)	act?	-			×	×	×	×	BTEX 8021B/5030 or BTEX 82	260	1	Or.				County,	
PHL	7(5)		1				1	1	1	RCI			1		Ħ	100	ty.	
F							+	1		N.O.R.M.			1		TRRP		dew	
7	1 1	_	-	_		×	×	×	×	CC E 300			1				New Mexico	
A PA	918-	()					1						1				OOD	
50	00 0												1		Z	1		
100	岩名之村	Z				×	×	×	×	RUSH TAT (Pre-Schedule) 24	48,	72 hrs			-		1	
one Sta	1217 194						-							_				



XENCO Laboratories



Prelogin/Nonconformance Report- Sample Log-In

Client: Southern Union Gas Services- Monahan

Date/ Time Received: 05/09/2013 10:02:00 AM

Work Order #: 462780

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

Temperature Measuring device used :

Sam	ple 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 Cu	ustody?	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 the	nan 1/4 inch bubble)?	N/A	
#21 <2 for all samples preserved with HNO3,HC	:L, H2SO4?	N/A	
#22 >10 for all samples preserved with NaAsO2	+NaOH, ZnAc+NaOH?	N/A	

Analyst:	PH Device/Lot#:	
Checklist comp	leted by: Mury Horah Kelsey Brook	
Checklist revie	wed by: Kung froak	Date: 05/10/2013

Analytical Report 462924

for Southern Union Gas Services- Monahans

Project Manager: Camille Bryant
SUGS Historical Unkown Dinwiddie 1RP-1309

13-MAY-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)





13-MAY-13

Project Manager: Camille Bryant

Southern Union Gas Services- Monahans

801 South Loop 464 Monahans, TX 79756

Reference: XENCO Report No(s): 462924

SUGS Historical Unkown Dinwiddie 1RP-1309 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) 462924. 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. 462924 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

Knishoah

Project Manager

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Sample Cross Reference 462924



Southern Union Gas Services- Monahans, Monahans, TX

SUGS Historical Unkown Dinwiddie 1RP-1309

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Trench E @ 2'	S	05-09-13 10:00		462924-001
Trench E @ 4'	S	05-09-13 10:10		462924-002
Trench E @ 10'	S	05-09-13 10:40		462924-003

CASE NARRATIVE



Client Name: Southern Union Gas Services-Monahans Project Name: SUGS Historical Unkown Dinwiddie 1RP-1309



Project ID:

Work Order Number(s):

462924

Report Date: 13-MAY-13 Date Received: 05/10/2013

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-913545 Inorganic Anions by EPA 300/300.1

E300

Batch 913545, Chloride recovered above QC limits in the Matrix Spike.

Samples affected are: 462924-003, -002, -001.

The Laboratory Control Sample for Chloride is within laboratory Control Limits



Certificate of Analysis Summary 462924

Southern Union Gas Services- Monahans, Monahans, TX Project Name: SUGS Historical Unkown Dinwiddie 1RP-1309 0

Project Id:

Contact: Camille Bryant

Project Location: Lea County, New Mexico

Date Received in Lab: Fri May-10-13 03:48 pm

Report Date: 13-MAY-13

								Project Manager:	Kelsey Brooks	
	Lab Id:	462924-0	001	462924-0	02	462924-00	03			
() ()	Field Id:	Trench E	@ 2'	Trench E	0 4'	Trench E @	0 10'			
Analysis Requested	Depth:									
	Matrix:	SOIL		SOIL		SOIL				
	Sampled:	May-09-13	10:00	May-09-13 1	10:10	May-09-13 I	10:40			
BTEX by EPA 8021B	Extracted:	May-13-13	08:00	May-13-13 (08:00	May-13-13 0	08:00			
	Analyzed:	May-13-13	12:58	May-13-13 1	10:16	May-13-13 1	10:32			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL			
Benzene		ND	0.000996	ND (0.000994	ND 0	0.000996		1000	
Toluene		ND	0.00199	ND	0.00199	ND	0.00199		1	
Ethylbenzene		ND	0.000996	ND (0.000994	ND (0.000996			. 1
m_p-Xylenes		ND	0.00199	ND	0.00199	ND	0.00199			
o-Xylene		ND	0.000996	ND (0.000994	ND 0	0.000996			
Total Xylenes		ND	0.000996	ND (0.000994	ND (0.000996			
Total BTEX		ND	0.000996	ND (0.000994	ND 0	0.000996			
Inorganic Anions by EPA 300/300.1	Extracted:	May-13-13	10:00	May-13-13 1	10:00	May-13-13 1	10:00			
	Analyzed:	May-13-13	13:21	May-13-13 1	14:04	May-13-13 1	14:26			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL			
Chloride		133	4.00	246	10.0	86.9	4.00			
Percent Moisture	Extracted:									
	Analyzed:	May-13-13	11:30	May-13-13	11:30	May-13-13 1	11:30			
	Units/RL:	%	RL	%	RL	%	RL			
Percent Moisture		14.1	1.00	9.48	1.00	6.76	1.00			
TPH By SW8015 Mod	Extracted:	** ** **	**	** ** **	*	** ** ** *	**			e 1
	Analyzed:	May-10-13	20:34	May-13-13	12:59	May-10-13 2	21:34			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL			
C6-C12 Gasoline Range Hydrocarbons		ND	17.5	ND	16.6	ND	16.1			
C12-C28 Diesel Range Hydrocarbons		ND	17.5	ND	16.6	ND	16.1		The state of	
C28-C35 Oil Range Hydrocarbons		ND	17.5	ND	16.6	ND	16.1		7 -87-0	e en fina
Total TPH		ND	17.5	ND	16.6	ND	16.1			

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

Kelsey Brooks Project Manager

Page 5 of 16



Flagging Criteria

- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantiation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K Sample analyzed outside of recommended hold time.
- JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- * Surrogate recovered outside laboratory control limit.
- **BRL** Below Reporting Limit.
- **RL** Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

- + NELAC certification not offered for this compound.
- * (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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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 Unkown Dinwiddie 1RP-1309

Work Orders: 462924,

Project ID:

Lab Batch #: 913526

Sample: 462924-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 05/10/13 20:34	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chlorooctane	111	100	111	70-135				
o-Terphenyl	52.6	50.0	105	70-135	***			

Lab Batch #: 913526

Sample: 462924-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 05/10/13 21:34	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chlorooctane	110	100	110	70-135				
o-Terphenyl	51.5	50.0	103	70-135	8			

Lab Batch #: 913520

Sample: 462924-002 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/13/13 10:16	SURROGATE RECOVERY STUDY							
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluorobenzene	0.0276	0.0300	92	80-120				
4-Bromofluorobenzene	0.0250	0.0300	83	80-120				

Lab Batch #: 913520

Sample: 462924-003 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/13/13 10:32 BTEX by EPA 8021B	SURROGATE RECOVERY STUDY							
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluorobenzene	0.0257	0.0300	86	80-120	144			
4-Bromofluorobenzene	0.0273	0.0300	91	80-120	Puls			

Lab Batch #: 913520

Sample: 462924-001 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/13/13 12:58	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0272	0.0300	91	80-120	22.2.6		
4-Bromofluorobenzene	0.0319	0.0300	106	80-120	79.50		

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: SUGS Historical Unkown Dinwiddie 1RP-1309

Work Orders: 462924,

Project ID:

Lab Batch #: 913526

Sample: 462924-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 05/13/13 12:59	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	110	100	110	70-135			
o-Terphenyl	50.4	50.0	101	70-135	- P		

Lab Batch #: 913520

Sample: 637964-1-BLK / BLK

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/13/13 09:44	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0271	0.0300	90	80-120			
4-Bromofluorobenzene	0.0294	0.0300	98	80-120			

Lab Batch #: 913526

Sample: 637957-1-BLK / BLK

Batch:

Matrix: Solid

Units: mg/kg Date Analyzed: 05/13/13 12:29 TPH By SW8015 Mod	SU	RROGATE R	ECOVERY	STUDY	7.
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	100	111	70-135	
o-Terphenyl	51.6	50.0	103	70-135	27 171

Lab Batch #: 913520

Sample: 637964-1-BKS / BKS

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/13/13 09:11	SURROGATE RECOVERY STUDY							
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluorobenzene	0.0260	0.0300	87	80-120				
4-Bromofluorobenzene	0.0319	0.0300	106	80-120				

Lab Batch #: 913526

Sample: 637957-1-BKS / BKS

Batch:

Matrix: Solid

Units: mg/kg Date Analyzed: 05/13/13 11:29	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	116	99.6	116	70-135	THE PERSON		
o-Terphenyl	45.1	49.8	91	70-135	STATE		

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: SUGS Historical Unkown Dinwiddie 1RP-1309

Work Orders: 462924,

Project ID:

Lab Batch #: 913520

Sample: 637964-1-BSD / BSD

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/13/13 09:27	SURROGATE RECOVERY STUDY							
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	19. 18			
4-Bromofluorobenzene	0.0261	0.0300	87	80-120				

Lab Batch #: 913526

Sample: 637957-1-BSD / BSD

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/13/13 11:59	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chlorooctane	122	99.6	122	70-135				
o-Terphenyl	49.0	49.8	98	70-135	The Carlo			

Lab Batch #: 913520

Sample: 462924-002 S / MS

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/13/13 10:49	SURROGATE RECOVERY STUDY								
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1,4-Difluorobenzene	0.0258	0.0300	86	80-120	1 7 7				
4-Bromofluorobenzene	0.0327	0.0300	109	80-120	- 4 ·				

Lab Batch #: 913526

Sample: 462924-002 S / MS

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/13/13 13:30	SURROGATE RECOVERY STUDY								
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1-Chlorooctane	127	99.9	127	70-135	45				
o-Terphenyl	50.3	50.0	101	70-135	No.				

Lab Batch #: 913520

Sample: 462924-002 SD / MSD

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/13/13 11:05	SURROGATE RECOVERY STUDY								
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1,4-Difluorobenzene	0.0354	0.0300	118	80-120					
4-Bromofluorobenzene	0.0311	0.0300	104	80-120					

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



BS / BSD Recoveries



Project Name: SUGS Historical Unkown Dinwiddie 1RP-1309

Work Order #: 462924

Analyst: DYV Lab Batch ID: 913520

Sample: 637964-1-BKS

Date Prepared: 05/13/2013 Batch #: 1

Project ID:

Date Analyzed: 05/13/2013

Matrix: Solid

Units: mg/kg	BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY								ΟY	4	
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]	Result [F]	[G]				
Benzene	< 0.000996	0.0996	0.103	103	0.0992	0.0991	100	4	70-130	35	
Toluene	< 0.00199	0.0996	0.110	110	0.0992	0.0898	91	20	70-130	35	
Ethylbenzene	< 0.000996	0.0996	0.116	116	0.0992	0.109	110	6	71-129	35	
m_p-Xylenes	< 0.00199	0.199	0.216	109	0.198	0.198	100	9	70-135	35	
o-Xylene	<0.000996	0.0996	0.109	109	0.0992	0.0978	99	11	71-133	35	

Analyst: AMB

Date Prepared: 05/13/2013 Batch #: 1

Date Analyzed: 05/13/2013

Lab Batch ID: 913545 Sample: 637967-	-BKS Batch #: 1				Matrix: Solid						
Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<2.00	50.0	51.4	103	50.0	51.4	103	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

Page 10 of 16



BS / BSD Recoveries



Project Name: SUGS Historical Unkown Dinwiddie 1RP-1309

Work Order #: 462924

Analyst: DYV

Date Prepared: 05/10/2013

Project ID: Date Analyzed: 05/13/2013

Matrix: Solid

Lab Batch ID: 913526	Sample: 637957-1-BKS	В	atch #: 1					Matrix: 5	Solid				
Units: mg/kg		BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
TPH By SW80	D15 Mod Blan Sample F	Result Adde		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 Hydrod	carbons <14.	9 996	891	89	996	948	95	6	70-135	35			
C12-C28 Diesel Range Hydroca	urbons <14.	9 996	983	99	996	1040	104	6	70-135	35			

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

Page 11 of 16



Form 3 - MS Recoveries



Project Name: SUGS Historical Unkown Dinwiddie 1RP-1309

Work Order #: 462924 Lab Batch #: 913545

Project ID:

Date Prepared: 05/13/2013

Analyst: AMB

Date Analyzed: 05/13/2013 **QC- Sample ID:** 462924-001 S

Batch #:

Matrix: Soil

Reporting Units: mg/kg	MATRIX / MATRIX SPIKE RECOVERY STUDY									
Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag				
Chloride	133	100	280	147	80-120	X				

Lab Batch #: 913526

Date Analyzed: 05/13/2013

Date Prepared: 05/10/2013

Analyst: DYV

QC- Sample ID: 462924-002 S

Batch #:

Matrix: Soil

Reporting Units: mg/kg	MATRIX / MATRIX SPIKE RECOVERY STUDY									
TPH by SW8015 Mod	Parent Sample Result	Spike Added	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag				
Analytes	[A]	[B]								
C6-C12 Gasoline Range Hydrocarbons	<16.6	1100	1070	97	70-135					
C12-C28 Diesel Range Hydrocarbons	<16.6	1100	1220	111	70-135					

 $\label{eq:matrix_pike_percent_recovery} \begin{tabular}{l} Matrix Spike Percent Recovery [D] = 100*(C-A)/B \\ Relative Percent Difference [E] = 200*(C-A)/(C+B) \\ All Results are based on MDL and Validated for QC Purposes \\ \end{tabular}$

BRL - Below Reporting Limit



Form 3 - MS / MSD Recoveries

Project Name: SUGS Historical Unkown Dinwiddie 1RP-1309



Work Order #:

Lab Batch ID: 913520 QC- Sample ID: 462924-002 S

Project ID: Matrix: Soil

Date Analyzed: 05/13/2013 Reporting Units: mg/kg

Date Prepared: 05/13/2013

Analyst: DYV

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY 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	<0.000996	0.0996	0.0911	91	0.0996	0.0912	92	0	70-130	35	
Toluene	< 0.00199	0.0996	0.0946	95	0.0996	0.0846	85	11	70-130	35	3 =
Ethylbenzene	< 0.000996	0.0996	0.100	100	0.0996	0.0827	83	19	71-129	35	
m_p-Xylenes	< 0.00199	0.199	0.184	92	0.199	0.146	73	23	70-135	35	
o-Xylene	< 0.000996	0.0996	0.0914	92	0.0996	0.0774	78	17	71-133	35	

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

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Page 13 of 16



Sample Duplicate Recovery



Project Name: SUGS Historical Unkown Dinwiddie 1RP-1309

Work Order #: 462924

Lab Batch #: 913521

Project ID:

Date Analyzed: 05/13/2013 11:30

Date Prepared: 05/13/2013

Analyst: WRU

QC- Sample ID: 462924-001 D

Batch #: 1

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY									
Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag					
14.1	14.1	0	20	E. 11					
	Parent Sample Result	Parent Sample Result [A] Sample Duplicate Result [B]	Parent Sample Result [A] Sample Duplicate Result [B]	Parent Sample Result [A] Sample Duplicate Result [B] Control Limits %RPD					

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East Odessa, Texas 79765

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

Relinquished by	Relinquish	Refinquished by	Special					Measure	03	02	0	LAB # (lab use only)	ORDER #:	lab use only)			-				
ned by:	ally She	Neg by:	Special Instructions:						Tren	Tre	Tre		_	_	0	Sampler Signature	Telephone No:	City/State/Zip:	Company Address: 2057 Commerce	Company Name	Project Manager:
	5	A C							Trench E @ 10'	Trench E @ 4'	Trench E @ 2'	FIELD CODE	1999	-	1 1 20	2300	432.520.7720	Midland, TX 79703	: 2057 Commerce	Nova Safety and Environmental	
Date	-	Date DIO 3														X		03		Environmen	Camille Bryant
Time	1548	N Time					Ц	1				Beginning Depth			9	E				Ital	Bryant
ĕ	8/2	0 *										Ending Depth			1	1					
Received by ELOT:	Received by:	Received by:							5/9/2013	5/9/2013	5/9/2013	Date Sampled									
mee		i Brus							10:40	10:10	10:00	Time Sampled				e-mail:	Fax No:				
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T =	-	10 =		-	-	+	\vdash	+	×	×	-	NP=Non-Potable Specify Other TPH: 418.1 (8015M) 80	15B	_			Ä		Pro	-	- OG
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7	· ·		Y S E			-	+	+	+	+	\vdash	Cations (Ca, Mg, Na, K)	\dashv		П		17	PO #:	Project Loc:	Project #:	ame
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Jpor	Cia	on on in	Hea				+	_	1			Volatiles		1	naly		ā		5		Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309
5-48 Temperature Upon Receipt:	by Sampler/Client Rep.	Labels on container(s) Custody seals on container(s) Custody seals on cooler(s)	Laboratory Comments: Sample Containers Intact? VOCs Free of Headspace?			1			1		T	Semivolatiles		1	Analyze For:				Lea County,		Ch
ceip	S eg	aine er(s)	act?						×	×	×	BTEX 8021B/5030 or BTEX 82	260	1	9				nuo		KNOV
rit.	DHL	r(s)							1	1	T	RCI			11		TRRP	1	ty. 7		3
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5	-	U,		-		+	11	_	+	+	1		7		11		Z	18			13
c	N Star	2002	ZZ				+	_	×	×	×	RUSH TAT (Pre-Schedule) 24	48,	72 hrs		31	THR.				80
	E.	VV	B		1		+		+	1	1	Standard TAT	T				TITL				
				_					_		_		_						1	1	-



XENCO Laboratories



Prelogin/Nonconformance Report- Sample Log-In

Client: Southern Union Gas Services- Monahan

Date/ Time Received: 05/10/2013 03:48:00 PM

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

Work Order #: 462924

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	4.5
#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)?	N/A
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	N/A
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	N/A

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

Analyst:	PH Device/Lot#:		
Checklist complete	ed by: Kelsey Brooks	Date: 05/13/2013	
Checklist reviewe	ed by: Kelsey Brooks	Date: 05/13/2013	

Analytical Report 463111

fo

Southern Union Gas Services- Monahans

Project Manager: Camille Bryant
SUGS Historical Unknown Dinwiddie 1RP-1309

15-MAY-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)





15-MAY-13

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

Reference: XENCO Report No(s): 463111

SUGS Historical Unknown Dinwiddie 1RP-1309 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) 463111. 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. 463111 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, Hoah

Kelsey Brooks

Project Manager

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Sample Cross Reference 463111



Southern Union Gas Services- Monahans, Monahans, TX

SUGS Historical Unknown Dinwiddie 1RP-1309

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
South Excavation Floor @ 12'	S	05-13-13 14:30		463111-001
South Excavation North S/W @ 11'	S	05-13-13 15:00		463111-002

CASE NARRATIVE



Client Name: Southern Union Gas Services- Monahans Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309



Project ID:

Work Order Number(s): 463111

Report Date: 15-MAY-13 Date Received: 05/14/2013

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 463111

Southern Union Gas Services- Monahans, Monahans, TX Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309 700

Project Id:

Contact: Camille Bryant

Project Location: Lea County, New Mexico

Date Received in Lab: Tue May-14-13 04:51 pm

Report Date: 15-MAY-13
Project Manager: Kelsey Brooks

				Project Manager:	Keisey Diooks
The state of the s	Lab Id:	463111-001	463111-002		
Analysis Dominated	Field Id: S	outh Excavation Floor @ 1	South Excavation North S/W		
Analysis Requested	Depth:				
	Matrix:	SOIL	SOIL		
	Sampled:	May-13-13 14:30	May-13-13 15:00		
BTEX by EPA 8021B	Extracted:	May-14-13 17:30	May-14-13 17:30		
	Analyzed:	May-15-13 03:51	May-15-13 04:07		
	Units/RL:	mg/kg RL	mg/kg RL		
Benzene	Chilly RE.	ND 0.00104	ND 0.00106		
Toluene		ND 0.00208	ND 0.00212		
Ethylbenzene		ND 0.00104	ND 0.00106		
m p-Xylenes		ND 0.00208	ND 0.00212		100000000000000000000000000000000000000
o-Xylene		ND 0.00104	ND 0.00106		
Total Xylenes		ND 0.00104	ND 0.00106		
Total BTEX		ND 0.00104	ND 0.00106		
Inorganic Anions by EPA 300/300.1	Extracted:	May-15-13 10:00	May-15-13 10:00	Transition of the second	
	Analyzed:	May-15-13 12:47	May-15-13 13:09		
	Units/RL:	mg/kg RL	mg/kg RL		124
Chloride		82.1 10.0	254 10.0	No. of the second	
Percent Moisture	Extracted:				1 1 1 1 1 1 1 1 1 1 1 1
	Analyzed:	May-14-13 17:15	May-14-13 17:15		
	Units/RL:	% RL	% RL		
Percent Moisture		3.68 1.00	5.85 1.00		
TPH By SW8015 Mod	Extracted:	May-15-13 08:00	May-15-13 08:00		7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 -
	Analyzed:	May-15-13 14:21	May-15-13 12:49		
	Units/RL:	mg/kg RL	mg/kg RL		
C6-C12 Gasoline Range Hydrocarbons		ND 15.6	ND 16.0		(2) (2) (3) (3) (3) (3)
C12-C28 Diesel Range Hydrocarbons		ND 15.6	ND 16.0		
C28-C35 Oil Range Hydrocarbons		ND 15.6	ND 16.0		- 2 2 1 1 1 1 1 1
Total TPH		ND 15.6	ND 16.0		The state of the s

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

Kelsey Brooks Project Manager

Kmis Roah

Page 5 of 16



Flagging Criteria

- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantiation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K Sample analyzed outside of recommended hold time.
- JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- * Surrogate recovered outside laboratory control limit.
- **BRL** Below Reporting Limit.
- **RL** Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

- + NELAC certification not offered for this compound.
- * (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Orders: 463111,

Project ID:

Lab Batch #: 913765

Sample: 463111-001 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/15/13 03:51	SURROGATE RECOVERY STUDY							
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluorobenzene	0.0360	0.0300	120	80-120				
4-Bromofluorobenzene	0.0304	0.0300	101	80-120				

Lab Batch #: 913765

Sample: 463111-002 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/15/13 04:07	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0287	0.0300	96	80-120			
4-Bromofluorobenzene	0.0286	0.0300	95	80-120	6 Mail		

Lab Batch #: 913793

Sample: 463111-002 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/15/13 12:49	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	102	100	102	70-135	3 7		
o-Terphenyl	47.9	50.2	95	70-135	100		

Lab Batch #: 913793

Sample: 463111-001 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/15/13 14:21	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	102	100	102	70-135	E ST		
o-Terphenyl	47.9	50.2	95	70-135	11 327		

Lab Batch #: 913765

Sample: 638104-1-BLK / BLK

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/15/13 03:34	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0249	0.0300	83	80-120			
4-Bromofluorobenzene	0.0252	0.0300	84	80-120	TAS I		

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Orders: 463111,

Project ID:

Lab Batch #: 913793

Sample: 638123-1-BLK / BLK

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/15/13 11:16	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	116	100	116	70-135			
o-Terphenyl	49.7	50.1	99	70-135	w)		

Lab Batch #: 913765

Sample: 638104-1-BKS / BKS

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/15/13 03:01	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0361	0.0300	120	80-120			
4-Bromofluorobenzene	0.0321	0.0300	107	80-120	1 1		

Lab Batch #: 913793

Sample: 638123-1-BKS / BKS

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/15/13 10:16	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane	124	99.9	124	70-135		
o-Terphenyl	56.5	50.0	113	70-135		

Lab Batch #: 913765

Sample: 638104-1-BSD / BSD

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/15/13 03:18	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0339	0.0300	113	80-120	SIN		
4-Bromofluorobenzene	0.0339	0.0300	113	80-120			

Lab Batch #: 913793

Sample: 638123-1-BSD / BSD

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/15/13 10:46	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane	130	100	130	70-135	811 19	
o-Terphenyl	55.3	50.2	110	70-135	174 3 + 3	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Orders: 463111,

Project ID:

Lab Batch #: 913765

Sample: 463111-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 05/15/13 04:40	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0290	0.0300	97	80-120			
4-Bromofluorobenzene	0.0288	0.0300	96	80-120	The Park		

Lab Batch #: 913793

Sample: 463111-001 S/MS

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/15/13 17:02	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	121	100	121	70-135	111		
o-Terphenyl	43.1	50.1	86	70-135			

Lab Batch #: 913793

Sample: 463111-001 SD / MSD

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/15/13 17:35	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	126	99.6	127	70-135	8 1		
o-Terphenyl	51.6	49.8	104	70-135			

Surrogate Recovery [D] = 100 * A / B

^{*} Surrogate outside of Laboratory QC limits

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



BS/BSD Recoveries



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Order #: 463111

Analyst: DYV

Lab Batch ID: 913765

Sample: 638104-1-BKS

Date Prepared: 05/14/2013 Batch #: 1

Project ID:

Date Analyzed: 05/15/2013

Matrix: Solid

	BLAN	K/BLANK	SPIKE / E	BLANK SI	PIKE DUP	LICATE	RECOVERY	STUD	Y
Ī	Spike	Blank	Blank	Spike	Blank	Blk. Spk		Control	Co

Ulitis											
BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000998	0.0998	0.107	107	0.100	0.101	101	6	70-130	35	
Toluene	<0.00200	0.0998	0.111	111	0.100	0.0930	93	18	70-130	35	
Ethylbenzene	<0.000998	0.0998	0.115	115	0.100	0.108	108	6	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.218	109	0.201	0.199	99	9	70-135	35	
o-Xylene	<0.000998	0.0998	0.109	109	0.100	0.101	101	8	71-133	35	

Analyst: AMB

Lab Batch ID: 913792

Sample: 638124-1-BKS

Date Prepared: 05/15/2013 Batch #: 1

Date Analyzed: 05/15/2013

Matrix: Solid

Units: mg/kg	I-BK5	BLANI		SPIKE / I	BLANK S	SPIKE DUPI	LICATE I	RECOVI	ERY STUL	ΟY	-
Inorganic Anions by EPA 300/300.1	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]			5.00	100
Chloride	<2.00	50.0	49.5	99	50.0	49.3	99	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

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BS/BSD Recoveries



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Order #: 463111

Analyst: DYV

Lab Batch ID: 913793

Sample: 638123-1-BKS

Date Prepared: 05/15/2013

Batch #: 1

Project ID:

Date Analyzed: 05/15/2013

Matrix: Solid

Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.0	999	1010	101	1000	990	99	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	999	1090	109	1000	1080	108	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

Page 11 of 16



Form 3 - MS Recoveries



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Order #: 463111 Lab Batch #: 913765

Project ID:

Date Analyzed: 05/15/2013

Date Prepared: 05/14/2013

Analyst: DYV

QC-Sample ID: 463111-001 S

Batch #:

Matrix: Soil

Translation of the second									
MATRIX / MATRIX SPIKE RECOVERY STUDY									
Parent Sample Result	Spike Added	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag				
[A]	[B]								
< 0.00103	0.103	0.0831	81	70-130					
< 0.00206	0.103	0.0894	87	70-130					
< 0.00103	0.103	0.0926	90	71-129	2 - 2				
<0.00206	0.206	0.170	83	70-135	2				
< 0.00103	0.103	0.0858	83	71-133					
	Parent Sample Result [A] <0.00103 <0.00206 <0.00103 <0.00206	Parent Sample Result [A] <0.00103 <0.00206 0.103 <0.00103 0.103 <0.00103 0.103 0.103 0.103 0.103	Parent Sample Result [C]	Parent Sample Result Result [C] [D]	Parent Sample Result [C] [D]				

 $\label{eq:matrix_pike_percent_recovery} \begin{tabular}{l} 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 $[E] = 100*(C-A)/(C+B)$ \\ All Results are based on MDL and Validated for QC Purposes $[E] = 100*(C-A)/(C+B)$ \\ All Results are based on MDL and Validated for QC Purposes $[E] = 100*(C-A)/(C+B)$ \\ All Results are based on MDL and Validated for QC Purposes $[E] = 100*(C-A)/(C+B)$ \\ All Results are based on MDL and Validated for QC Purposes $[E] = 100*(C-A)/(C+B)$ \\ All Results are based on MDL and Validated for QC Purposes $[E] = 100*(C-A)/(C+B)$ \\ All Results are based on MDL and Validated for QC Purposes $[E] = 100*(C-A)/(C+B)$ \\ All Results are based on MDL and Validated for QC Purposes $[E] = 100*(C-A)/(C+B)$ \\ All Results are based on MDL and Validated for QC Purposes $[E] = 100*(C-A)/(C+B)$ \\ All Results are based on MDL and Validated for QC Purposes $[E] = 100*(C-A)/(C+B)$ \\ All Results are based on MDL and Validated for QC Purposes $[E] = 100*(C-A)/(C+B) \\ All Results are based on MDL and Validated for QC Purposes $[E] = 100*(C-A)/(C+B) \\ All Results are based on MDL and Validated for QC Purposes $[E] = 100*(C-A)/(C+B) \\ All Results are based on MDL and Validated for QC Purposes $[E] = 100*(C-A)/(C+B) \\ All Results are based on MDL and Validated for QC Purpose $[E] = 100*(C-A)/(C+B) \\ All Results are based on MDL and Validated for QC Purpose $[E] = 100*(C-A)/(C+B) \\ All Results are based on MDL and Validated for QC Purpose $[E] = 100*(C-A)/(C+B) \\ All Results are based on MDL and Validated for QC Purpose $[E] = 100*(C-A)/(C+B) \\ All Results are based on MDL and Validated for QC Purpose $[E] = 100*(C-A)/(C+B) \\ All Results are based on MDL and Validated for QC Purpose $[E] = 100*(C-A)/(C+B) \\ All Results are based on MDL and Validated for QC Purpose $[E] = 100*(C-A)/(C+B) \\ All Results are based on MDL and Validated for QC Purpose $[E] = 100*(C-A)/(C+B) \\ All Results are based on MDL$

BRL - Below Reporting Limit



Form 3 - MS / MSD Recoveries

Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309



Work Order #:

Lab Batch ID: 05/15/2013 Date Analyzed: Reporting Units: mg/kg

QC- Sample ID: 463111-001 S

Project ID: Batch #: Matrix: Soil

Date Prepared: 05/15/2013 Analyst: DYV

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.6	1040	980	94	1030	958	93	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.6	1040	1130	109	1030	1080	105	5	70-135	35	2

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

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Page 13 of 16



Sample Duplicate Recovery



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Order #: 463111

Lab Batch #: 913725

Project ID:

Date Prepared: 05/14/2013

Analyst: WRU

QC- Sample ID: 463111-001 D

Date Analyzed: 05/14/2013 17:15

Batch #: 1

Matrix: Soil

Reporting Units: %	SAMPLE/SAMPLE DUPLICATE RECOVERY							
Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag			
Percent Moisture	3.68	3.47	6	20				

Xenco Laboratories

The Environmental Lab of Texas

(lab use only) ORDER #:

Sampler Signature.

5360

LAB # (lab use only)

Beginning Depth

Ending Depth

South Excavation North S/W @ 11' South Excavation Floor @ 12' FIELD CODE

Odessa, Texas 79765 12600 West I-20 East Phone: 432-563-1800 Fax: 432-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

,	Camille Bryant			
Carting of the State of	Project Name:			
-	SUGS Historic			
	al Unknown Dire			
	MIDDIE TRP-1308	-		
	8	,		

Company Address: 2057 Commerce Telephone No: City/State/Zip: Company Name Project Manager: Nova Safety and Environmental Midland, TX 79703 432.520.7720 Fax No 432.520.7701 Report Format: Project Loc: Project #: PO #: Standard Lea County, New Mexico ☐ TRRP No Final 1.000

						1	5/13/2013	5/13/2013	Date Sampled				5
							15:00	14:30	Time Sampled				o'llidii.
61		1	\neg	+	+				Field Filtered	1			•
		7					_	-	Total #. of Containers	1			1
	-	T					×	×	tce				
		7							HNO ₃	Preservation & # of Containers			rose.slade@sug.com
		7							HCI	BAS			ose.slade@sug.com
2.1		T							H ₂ SO ₄	ion 8			ade
		7	\neg						NaOH	# 01			(D)S
		7							Na ₂ S ₂ O ₃	Con			UQ.
Aspet		1				37	7		None	aine			000
						-			Other (Specify)	14			13 6
							Soil	Soil	DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Soild NP=Non-Potable Specify Other	Matrix			1
Ay.							×	×	TPH: 418.1 (8015M) 80	158			П
									TPH: TX 1005 TX 1006			П	П
Sar									Cations (Ca, Mg, Na, K)				П
nple									Anions (CI, SO4, Alkalinity)		10	-	П
00			1						SAR / ESP / CEC		A	TCLP:	П
Laboratory Comments: Sample Containers Intact?							-		Metals: As Ag Ba Cd Cr Pb Hg	Se			≥
ners						-			Volatiles				Analyze For:
Int									Semivolatiles				Ze F
s:							×	×	BTEX 8021B/5030 or BTEX 82	60		Г	9
						100			RCI	**********	Access	Browne	Н
									N.O.R.M.				П
0							×	×	Chloride E 300.0	-			11
(4)													
	4							1.3					

RUSH TAT (Pre-Schedule) 24, 48, 72 hrs

Standard TAT

Page 15 of 16

Special Instructions:

Relinquished by

Relinquished by

1/1/

Time

wed by ELOT

20

Temperature Upon Receipt

ô

Sample Hand Delivered by Sampler/Client Rep. ? by Courier? UPS Custody seals on cooler(s) Labels on container(s)
Custody seals on container(s) VOCs Free of Headspace?

Date



XENCO Laboratories



Prelogin/Nonconformance Report- Sample Log-In

Client: Southern Union Gas Services- Monahan

Date/ Time Received: 05/14/2013 04:51:00 PM

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

Work Order #: 463111

Temperature Measuring device used :

Sample	e Receipt Checklist Comments	
#1 *Temperature of cooler(s)?	4.5	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping container/ coo	oler? 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 Custo	ody? Yes	
#9 Any missing/extra samples?	No	
#10 Chain of Custody signed when relinquished/ re	ceived? 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, I	H2SO4? Yes	
#22 >10 for all samples preserved with NaAsO2+Na	aOH, 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: Mws Moah Kelsey Brooks	Date: 05/14/2013
	Checklist reviewed	by: Moah Kelsey Brooks	Date: 05/14/2013

Analytical Report 463156

fo

Southern Union Gas Services- Monahans

Project Manager: Camille Bryant
SUGS Historical Unknown Dinwiddie 1RP-1309

16-MAY-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)





16-MAY-13

Project Manager: Camille Bryant
Southern Union Gas Services- Monahans

801 South Loop 464 Monahans, TX 79756

Reference: XENCO Report No(s): 463156

SUGS Historical Unknown Dinwiddie 1RP-1309 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) 463156. 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. 463156 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

Knus Boah

Project Manager

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

Certified and approved by numerous States and Agencies.

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



Sample Cross Reference 463156



Southern Union Gas Services- Monahans, Monahans, TX

SUGS Historical Unknown Dinwiddie 1RP-1309

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
South Excavation West S/W @ 11'	S	05-15-13 10:00		463156-001
South Excavation East S/W @ 11'	S	05-15-13 08:00		463156-002

CASE NARRATIVE



Client Name: Southern Union Gas Services- Monahans Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309



Project ID:

Work Order Number(s): 463156

Report Date: 16-MAY-13 Date Received: 05/15/2013

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 463156

Southern Union Gas Services- Monahans, Monahans, TX Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309 6

Project Id:

Contact: Camille Bryant

Project Location: Lea County, New Mexico

Date Received in Lab: Wed May-15-13 10:16 am

Report Date: 16-MAY-13

						Project Manager:	Kelsey Brooks	
	Lab Id:	463156-0	100	463156-00)2			
Analysis Bannastad	Field Id:	outh Excavation	West S/W	South Excavation E	ast S/W @			
Analysis Requested	Depth:							
	Matrix:	SOIL		SOIL				
	Sampled:	May-15-13	10:00	May-15-13 0	8:00			
Inorganic Anions by EPA 300/300.1	Extracted:	May-15-13	10:30	May-15-13 1	0:30		1 2	
	Analyzed:	May-15-13	22:17	May-15-13 2	2:39			
	Units/RL:	mg/kg	RL	mg/kg	RL			
Chloride		113	10.0	131	40.0			
Percent Moisture	Extracted:							
	Analyzed:	May-15-13	15:30	May-15-13 1	5:30			
	Units/RL:	%	RL	%	RL			
Percent Moisture		6.11	1.00	5.02	1.00			

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

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

Kelsey Brooks Project Manager

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Certificate of Analysis Summary 463156

Southern Union Gas Services- Monahans, Monahans, TX Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Project Id:

Contact: Camille Bryant

Project Location: Lea County, New Mexico

Date Received in Lab: Wed May-15-13 10:16 am

Report Date: 16-MAY-13

						 Project Manager:	Kelsey Brooks	
Analysis Requested	Lab Id: Field Id:	463156-001 outh Excavation We		463156-002 South Excavation Eas				
717miysis requesien	Depth:							
	Matrix:	SOIL		SOIL				
	Sampled:	May-15-13 10	:00:	May-15-13 08	:00			
BTEX by EPA 8021B	Extracted:	** ** ** **		** ** **				
	Analyzed:	May-15-13 20):26	May-16-13 08	:55			
	Units/RL:	mg/kg	RL	mg/kg	RL			3.7
Benzene		ND 0	.00105	ND 0	.00104			Y. I
Toluene		ND 0	.00211	ND 0	.00208			
Ethylbenzene		ND 0	.00105	ND 0	.00104		1 2 10 2 10	A LINE
n_p-Xylenes		ND 0	.00211	ND 0	.00208			
o-Xylene		ND 0	.00105	ND 0	.00104	187		
Total Xylenes	-	ND 0	.00105	ND 0	.00104			1/4
Total BTEX		ND 0	.00105	ND 0	.00104			L. F. Ing. By
TPH By SW8015 Mod	Extracted:	May-15-13 11	:00	May-15-13 11	:00		1 1	
	Analyzed:	May-15-13 13	3:20	May-15-13 13	:51			
	Units/RL:	mg/kg	RL	mg/kg	RL			,
C6-C12 Gasoline Range Hydrocarbons		ND	15.9	ND	15.7		1 100	
C12-C28 Diesel Range Hydrocarbons		ND	15.9	ND	15.7			18, 1
C28-C35 Oil Range Hydrocarbons		ND	15.9	ND	15.7	8		
Total TPH		ND	15.9	ND	15.7			

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

Page 6 of 16



Flagging Criteria

- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantiation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K Sample analyzed outside of recommended hold time.
- JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- * Surrogate recovered outside laboratory control limit.
- **BRL** Below Reporting Limit.
- **RL** Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

- + NELAC certification not offered for this compound.
- * (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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4143 Greenbriar Dr, Stafford, TX 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd, Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
6017 Financial Drive, Norcross, GA 30071	(770) 449-8800	(770) 449-5477
3725 E. Atlanta Ave, Phoenix, AZ 85040	(602) 437-0330	



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Orders: 463156,

Project ID:

Lab Batch #: 913793

Sample: 463156-001 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/15/13 13:20	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	99.7	99.8	100	70-135			
o-Terphenyl	46.7	49.9	94	70-135			

Lab Batch #: 913793

Sample: 463156-002 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/15/13 13:51 SURROGATE RECOVERY STUDY

TPH By SW8015 Mod

Amount Found [A]

Amount Recovery Limits %R %R
[B]

Analytes

Flags

1-Chlorooctane
o-Terphenyl

Lab Batch #: 913828

Sample: 463156-001 / SMP

Batch:

101

46.7

Matrix: Soil

102

94

70-135

70-135

99.5

49.8

1

1

SURROGATE RECOVERY STUDY Units: mg/kg Date Analyzed: 05/15/13 20:26 Amount True Control BTEX by EPA 8021B Found Amount Recovery Limits Flags [B] %R %R [A] [D] **Analytes** 1,4-Difluorobenzene 0.0270 0.0300 90 80-120 4-Bromofluorobenzene 0.0293 0.0300 98 80-120

Lab Batch #: 913828

Sample: 463156-002 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 05/16/13 08:55	SU	RROGATE R	RECOVERY	STUDY	. 5
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0284	0.0300	95	80-120	0.3
4-Bromofluorobenzene	0.0357	0.0300	119	80-120	-7

Lab Batch #: 913793

Sample: 638123-1-BLK / BLK

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/15/13 11:16	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	116	100	116	70-135	The last		
o-Terphenyl	49.7	50.1	99	70-135			

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Orders: 463156,

Project ID:

Lab Batch #: 913828

Sample: 638132-1-BLK / BLK

Matrix: Solid

Units: mg/kg Date Analyzed: 05/15/13 15:31	SU	RROGATE R	ECOVERY	STUDY	
BTEX 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	0.0324	0.0300	108	80-120	

Lab Batch #: 913793

Sample: 638123-1-BKS / BKS

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/15/13 10:16	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	124	99.9	124	70-135			
o-Terphenyl	56.5	50.0	113	70-135	F-14 22		

Lab Batch #: 913828

Sample: 638132-1-BKS / BKS

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/15/13 14:58	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					6.1
1,4-Difluorobenzene	0.0266	0.0300	89	80-120	
4-Bromofluorobenzene	0.0286	0.0300	95	80-120	Service to

Lab Batch #: 913793

Sample: 638123-1-BSD / BSD

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/15/13 10:46	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	130	100	130	70-135			
o-Terphenyl	55.3	50.2	110	70-135	7.17		

Lab Batch #: 913828

Sample: 638132-1-BSD / BSD

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/15/13 15:14	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	Y Y		
4-Bromofluorobenzene	0.0268	0.0300	89	80-120	3 1 7 1		

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Orders: 463156,

Project ID:

Lab Batch #: 913793

Sample: 463111-001 S / MS

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/15/13 17:02	SURROGATE RECOVERY STUDY								
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1-Chlorooctane	121	100	121	70-135	50454				
o-Terphenyl	43.1	50.1	86	70-135	A PARTY				

Lab Batch #: 913828

Sample: 462516-001 S / MS

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/15/13 21:15	SURROGATE RECOVERY STUDY								
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1,4-Difluorobenzene	0.0280	0.0300	93	80-120	7 37				
4-Bromofluorobenzene	0.0329	0.0300	110	80-120	7				

Lab Batch #: 913793

Sample: 463111-001 SD / MSD

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 05/15/13 17:35	SURROGATE RECOVERY STUDY								
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1-Chlorooctane	126	99.6	127	70-135	25.7				
o-Terphenyl	51.6	49.8	104	70-135	2				

Lab Batch #: 913828

Sample: 462516-001 SD / MSD

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/15/13 21:32	SURROGATE RECOVERY STUDY								
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1,4-Difluorobenzene	0.0352	0.0300	117	80-120	Feet S				
4-Bromofluorobenzene	0.0281	0.0300	94	80-120	3 18				

Surrogate Recovery [D] = 100 * A / B

^{*} Surrogate outside of Laboratory QC limits

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



BS / BSD Recoveries



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Order #: 463156

Analyst: DYV Lab Batch ID: 913828

Sample: 638132-1-BKS

Date Prepared: 05/15/2013 Batch #: 1

Project ID: Date Analyzed: 05/15/2013

Matrix: Solid

Units: mg/kg		BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag	
Benzene	< 0.000994	0.0994	0.0889	89	0.100	0.0868	87	2	70-130	35		
Toluene	< 0.00199	0.0994	0.0894	90	0.100	0.0942	94	5	70-130	35		
Ethylbenzene	< 0.000994	0.0994	0.0993	100	0.100	0.0959	96	3	71-129	35	-	
m_p-Xylenes	< 0.00199	0.199	0.182	91	0.200	0.177	89	3	70-135	35		
o-Xylene	<0.000994	0.0004	0.0004	01	0.100	0.0883	99	2	71.133	25		

Analyst: AMB

Date Prepared: 05/15/2013

Date Analyzed: 05/15/2013

Matrix: Solid

Lab Batch ID: 913792 Batch #: 1 Sample: 638124-1-BKS BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Units: mg/kg		DLAN	K/BLANK S	of IKE / E	LAINKS	TIKE DUTL	ICATE	RECOVE	KI SIUD	1	day d
Inorganic Anions by EPA 300/300.1	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]			1	
Chloride	<2.00	50.0	49.5	99	50.0	49.3	99	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

Page 11 of 16



BS/BSD Recoveries



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Order #: 463156

Analyst: DYV

Date Prepared: 05/15/2013

Project ID: Date Analyzed: 05/15/2013

Lab Batch ID: 913793

Sample: 638123-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.0	999	1010	101	1000	990	99	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	999	1090	109	1000	1080	108	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

Page 12 of 16



Form 3 - MS / MSD Recoveries

Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309



Work Order #:

Reporting Units: mg/kg

Lab Batch ID: 913828 QC- Sample ID: 462516-001 S

Batch #:

Project ID: Matrix: Soil

Date Analyzed: 05/15/2013

Date Prepared: 05/15/2013

Analyst: DYV

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY 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	<0.00111	0.111	.0.0944	85	0.110	0.0975	89	3	70-130	35	
Toluene	<0.00222	0.111	0.0943	85	0.110	0.0945	86	0	70-130	35	
Ethylbenzene	< 0.00111	0.111	0.0993	89	0.110	0.0944	86	5	71-129	35	
m_p-Xylenes	<0.00222	0.222	0.192	86	0.221	0.180	81	6	70-135	35	
o-Xylene	< 0.00111	0.111	0.0930	84	0.110	0.0900	82	3	71-133	35	

Lab Batch ID:

QC- Sample ID: 463111-001 S

Matrix: Soil

Date Analyzed: 05/15/2013 Reporting Units: mg/kg

Date Prepared: 05/15/2013

Analyst: DYV

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added	Spiked Sample Result [C]	Sample %R	Added	Duplicate Spiked Sample Result [F]	%R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Allarytes	[A]	[B]		[D]	[E]	-	[G]		1000		
C6-C12 Gasoline Range Hydrocarbons	<15.6	1040	980	94	1030	958	93	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.6	1040	1130	109	1030	1080	105	5	70-135	35	

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

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

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.

Page 13 of 16



Sample Duplicate Recovery



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Order #: 463156

Lab Batch #: 913826

Project ID:

Date Analyzed: 05/15/2013 15:30

Date Prepared: 05/15/2013

Analyst: WRU

QC- Sample ID: 463156-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY

Reporting Units: %	SAMPLE / SAMPLE DUPLICATE RECOVERY								
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag				
Analyte	[-4	[B]							
Percent Moisture	6.11	6.19	1	20	Contain of the				

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST
12600 West I-20 East
Phone: 432-563-1800
Odessa, Texas 79765
Fax: 432-563-1713

202	Sp		TT		-				S	, indu	fish			*****			
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and by	Special instructions:				-	South Excava	South Excava		# 10010	コルスに	nly)	Sampler Signature	Telephone No:	City/State/Zip:	Company Address:	Company Name	
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Date Date					\prod	Soil	Soil	DW=Drinking Water SL=Studge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Matrix			0	Report Format:		•		
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San Court	San							Cations (Ca, Mg, Na, K)					11	PO #:	00:	**	
Cs F leds tody tody by S	oral							Anions (Cl, SO4, Alkalinity)		TOTAL	컹		×			1	
VOCs Free of Headspace? Labels on container(s) Custody seals on container(s) Custody seals on cooler(s) Sample Hand Delivered by SampleriClient Rep. 7	Laboratory Comments: Sample Containers Intact?							SAR / ESP / CEC		P.	TCLP:		Standard		1		
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XENCO Laboratories



Prelogin/Nonconformance Report- Sample Log-In

Client: Southern Union Gas Services- Monahan

Date/ Time Received: 05/15/2013 10:16:00 AM

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

Work Order #: 463156

Temperature Measuring device used :

S	Sample Receipt Checklist		Comments
#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 contain	ner/ 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 o	of Custody?	Yes	
#9 Any missing/extra samples?		No	
#10 Chain of Custody signed when relinquis	hed/ received?	Yes	
#11 Chain of Custody agrees with sample la	bel(s)?	Yes	
#12 Container label(s) legible and intact?		Yes	
#13 Sample matrix/ properties agree with Ch	nain 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 to	est(s)?	Yes	
#18 All samples received within hold time?		Yes	
#19 Subcontract of sample(s)?		Yes	
#20 VOC samples have zero headspace (les	ss than 1/4 inch bubble)?	Yes	
#21 <2 for all samples preserved with HNO3	3,HCL, H2SO4?	Yes	
#22 >10 for all samples preserved with NaAs	sO2+NaOH, ZnAc+NaOH?	Yes	

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

Analytical Report 463289

for

Southern Union Gas Services- Monahans

Project Manager: Camille Bryant

SUGS Historical Unknown Dinwiddie 1RP-1309

17-MAY-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)

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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)





17-MAY-13

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

Reference: XENCO Report No(s): 463289

SUGS Historical Unknown Dinwiddie 1RP-1309 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) 463289. 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. 463289 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

Knus Broak

Project Manager

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

Certified and approved by numerous States and Agencies.

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



Sample Cross Reference 463289



Southern Union Gas Services- Monahans, Monahans, TX

SUGS Historical Unknown Dinwiddie 1RP-1309

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
South Excavation South Floor-2	S	05-15-13 11:00		463289-001
South Excavation SSW@11'	S	05-15-13 11:20		463289-002

CASE NARRATIVE



Client Name: Southern Union Gas Services- Monahans Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309



Project ID:

Work Order Number(s):

463289

Report Date: 17-MAY-13 Date Received: 05/16/2013

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Project Id:

Certificate of Analysis Summary 463289

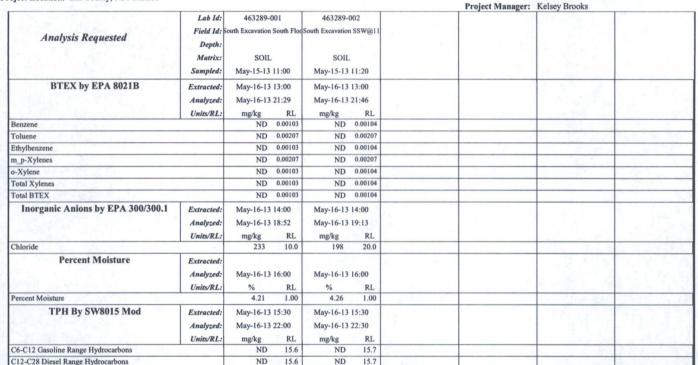
Southern Union Gas Services- Monahans, Monahans, TX

Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Date Received in Lab: Thu May-16-13 12:45 pm

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

Report Date: 17-MAY-13



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.

C28-C35 Oil Range Hydrocarbons

Total TPH

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

Kelsey Brooks Project Manager

Page 5 of 15

ND

ND

15.7

15.7

ND

ND

15.6

15.6



Flagging Criteria

- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantiation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K Sample analyzed outside of recommended hold time.
- JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- * Surrogate recovered outside laboratory control limit.
- BRL Below Reporting Limit.
- **RL** Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

- + NELAC certification not offered for this compound.
- * (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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	Phone	Fax
4143 Greenbriar Dr, Stafford, TX 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd, Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
6017 Financial Drive, Norcross, GA 30071	(770) 449-8800	(770) 449-5477
3725 E. Atlanta Ave, Phoenix, AZ 85040	(602) 437-0330	



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Orders: 463289,

Project ID:

Lab Batch #: 913929

Sample: 463289-001 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/16/13 21:29	SURROGATE RECOVERY STUDY							
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluorobenzene	0.0291	0.0300	97	80-120				
4-Bromofluorobenzene	0.0307	0.0300	102	80-120				

Lab Batch #: 913929

Sample: 463289-002 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/16/13 21:46	SURROGATE RECOVERY STUDY							
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluorobenzene	0.0326	0.0300	109	80-120				
4-Bromofluorobenzene	0.0356	0.0300	119	80-120				

Lab Batch #: 913934

Sample: 463289-001 / SMP

Batch: 1

Matrix: Soil

SURROGATE RECOVERY STUDY							
Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
99.8	99.9	100	70-135	Walter .			
44.0	50.0	88	70-135	in a			
	Amount Found [A]	Amount Found Amount [B] 99.8 99.9	Amount True Recovery %R [D] 99.8 99.9 100	Amount Found [A] True Amount [B] Recovery %R [D] Control Limits %R 99.8 99.9 100 70-135			

Lab Batch #: 913934

Sample: 463289-002 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/16/13 22:30	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chlorooctane	101	100	101	70-135	3.55			
o-Terphenyl	43.6	50.0	87	70-135	gwn e			

Lab Batch #: 913929

Sample: 638223-1-BLK / BLK

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/16/13 21:13	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	1925		
4-Bromofluorobenzene	0.0262	0.0300	87	80-120	1		

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Orders: 463289,

Project ID:

Lab Batch #: 913934

Sample: 638226-1-BLK / BLK

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/16/13 21:29	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	100	100	100	70-135	F 1 1		
o-Terphenyl	44.8	50.1	89	70-135	(a=1/2 = _a+1		

Lab Batch #: 913934

Sample: 638226-1-BKS / BKS

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/16/13 20:28	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	115	99.8	115	70-135	37.3		
o-Terphenyl	53.0	49.9	106	70-135	Offer		

Lab Batch #: 913929

Sample: 638223-1-BKS / BKS

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/16/13 20:40	SURROGATE RECOVERY STUDY							
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluorobenzene	0.0306	0.0300	102	80-120	N P			
4-Bromofluorobenzene	0.0303	0.0300	101	80-120	La Corner			

Lab Batch #: 913929

Sample: 638223-1-BSD / BSD

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/16/13 20:56	SU	RROGATE R	RECOVERY	STUDY	Carl.
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0319	0.0300	106	80-120	340
4-Bromofluorobenzene	0.0341	0.0300	114	80-120	Nu no

Lab Batch #: 913934

Sample: 638226-1-BSD / BSD

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/16/13 20:58	SURROGATE RECOVERY STUDY									
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
1-Chlorooctane	115	99.6	115	70-135	175					
o-Terphenyl	48.9	49.8	98	70-135	TWEET					

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Orders: 463289,

Project ID:

Lab Batch #: 913929

Sample: 463289-001 S / MS

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/16/13 22:02	SURROGATE RECOVERY STUDY									
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
1,4-Difluorobenzene	0.0315	0.0300	105	80-120	43.00					
4-Bromofluorobenzene	0.0348	0.0300	116	80-120	Transportation					

Lab Batch #: 913934

Sample: 463289-001 S / MS

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 05/16/13 23:01	SU	RROGATE R	RECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1-Chlorooctane	128	99.8	128	70-135	
o-Terphenyl	59.0	49.9	118	70-135	A day

Lab Batch #: 913929

Sample: 463289-001 SD / MSD

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/16/13 22:19	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0341	0.0300	114	80-120	P. State
4-Bromofluorobenzene	0.0351	0.0300	117	80-120	13.31

Lab Batch #: 913934

Sample: 463289-001 SD / MSD

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 05/16/13 23:31	SURROGATE RECOVERY STUDY									
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
1-Chlorooctane	121	100	121	70-135	- A.3					
o-Terphenyl	52.5	50.2	105	70-135	法定					

Surrogate Recovery [D] = 100 * A / B

^{*} Surrogate outside of Laboratory QC limits

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



BS / BSD Recoveries



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Order #: 463289

Analyst: DYV

Lab Batch ID: 913929 Sample: 638223-1-BKS Date Prepared: 05/16/2013 Batch #: 1

Project ID:

Date Analyzed: 05/16/2013

Matrix: Solid

Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY													
BTEX by EPA 8021B Analytes	Blank Sample Result [A]	imple Result Added		Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag			
Benzene	<0.00101	0.101	0.0870	86	0.0990	0.0898	91	3	70-130	35	21 -			
Toluene	<0.00201	0.101	0.0948	94	0.0990	0.0859	87	10	70-130	35	100			
Ethylbenzene	< 0.00101	0.101	0.102	101	0.0990	0.103	104	1	71-129	35	6 -			
m_p-Xylenes	<0.00201	0.201	0.190	95	0.198	0.188	95	1	70-135	35				
o-Xylene	< 0.00101	0.101	0.0982	97	0.0990	0.0973	98	1	71-133	35				

Analyst: AMB

Sample: 638244-1-BKS

Date Prepared: 05/16/2013

Date Analyzed: 05/16/2013

Matrix: Solid

Lab Batch ID: 913971 Sample: 638244-	1-BKS	Batch	#: 1		Matrix: Solid								
Units: mg/kg		BLAN	K/BLANK	/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY									
Inorganic Anions by EPA 300/300.1	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]			1			
Chloride	<2.00	50.0	50.9	102	50.0	50.7	101	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

Page 10 of 15



BS/BSD Recoveries

98

104



35

35

Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

996

996

1000

1050

Work Order #: 463289

C6-C12 Gasoline Range Hydrocarbons

C12-C28 Diesel Range Hydrocarbons

Analyst: DYV

Date Prepared: 05/16/2013

998

998

<15.0

<15.0

100

105

Project ID: Date Analyzed: 05/16/2013

Matrix: Solid

2

70-135

70-135

Lab Batch ID: 913934 Sample: 638226-1-BKS Batch #: 1 BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY Units: mg/kg Blk. Spk Blank TPH By SW8015 Mod Spike Blank Blank Spike Added Blank Control Control Dup. %R [G] Spike Spike Spike Result %R Duplicate Result [F] %R [A] %RPD [B] [C] [D] [E] Analytes

980

1040

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

Page 11 of 15



Form 3 - MS / MSD Recoveries

Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309



Work Order #:

Lab Batch ID: 913929 Date Analyzed: 05/16/2013

Reporting Units: mg/kg

QC- Sample ID: 463289-001 S

Batch #:

Project ID: Matrix: Soil

Date Prepared: 05/16/2013

Analyst: DYV

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY 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	< 0.00105	0.105	0.0862	82	0.104	0.0851	82	1	70-130	35	- 1
Toluene	<0.00209	0.105	0.0976	93	0.104	0.0887	85	10	70-130	35	14 16 2
Ethylbenzene	< 0.00105	0.105	0.103	98	0.104	0.105	101	2	71-129	35	1120
m_p-Xylenes	< 0.00209	0.209	0.188	90	0.207	0.193	93	3	70-135	35	185
o-Xylene	<0.00105	0.105	0.0968	92	0.104	0.0991	95	2	71-133	35	

Lab Batch ID:

913934

QC- Sample ID: 463289-001 S

Matrix: Soil

Date Analyzed: 05/16/2013 Reporting Units: mg/kg

Date Prepared: 05/16/2013

Analyst: DYV

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.6	1040	1030	99	1050	1020	97	1	70-135	35	58
C12-C28 Diesel Range Hydrocarbons	<15.6	1040	1120	108	1050	1120	107	0	70-135	35	

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

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

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Sample Duplicate Recovery



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Order #: 463289

Lab Batch #: 913968

Project ID:

Date Analyzed: 05/16/2013 16:20

Date Prepared: 05/16/2013

Analyst: WRU

QC- Sample ID: 463099-013 D

Batch #: 1

Matrix: Soil

..... TI-14-- 0/

CAMPLE / CAMPLE DUDI ICATE DECOVEDY

SAMPLE / SAMPLE DUPLICATE RECOVER										
Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag						
	[B]									
3.11	2.85	9	20							
	Parent Sample Result [A]	Parent Sample Result [A] Sample Duplicate Result [B]	Parent Sample Result [A] Sample Duplicate Result [B]	Result Duplicate RPD Limits [A] Result %RPD [B]						

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

Xenco Laboratories

The Environmental Lab of Texas

12600 West I-20 East Odessa, Texas 79765 CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST Phone: 432-563-1800 Fax: 432-563-1713

Relinquished by	Relinquished by	Relinquished	Special								4	LAB # (lab use only)	ORDER #:	(lab use only)	1				w		
hed by:	hed by:	the Report	Special Instructions:							South Excav	South Excava	FIEL	SHOOO !	1	and A	Sampler Signature:	Telephone No:	City/State/Zip:	Company Address:	Company Name	Project Manager:
Date	Date	5//6/13								South Excavation SSW@ 11"	South Excavation South Floor-2	FIELD CODE	0 -	2		Constitue Leave	432 520 7720	Midland, TX 79703	2057 Commerce	Nova Safety and Environmental	Cam
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Time	Time	13.73 June				+		\vdash				Ending Depth	1			3					yant
Received by ELOT:	Received by:	-	A CONTRACTOR OF							5/15/2013	5/15/2013	Date Sampled				Kick Person					
LIN OR MIN										11:20	11:00	Time Sampled				e-mail:	Fax No:				
R												Field Filtered					37				1
21										-	-4	Total #. of Containers		5			432				
1	-	1200								×	×	Ice	ارا		12	10	432.520.7701	la è		13	
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0	_		Navy.			+	_	+		_	-	Other (Specify)	- 8		100	ng.					
Date	Date	Date						+		-		DW=Drinking Water SL=Sludge	Н	1		18	1	1	1	1	1
										Soil	Soil	GW = Groundwater S×Soll/Solid NP×Non-Potable Specify Other	Matrix				Report Format:		70		Pro
ンドレベ Oma	i ime	lime								×	×	TPH: 418.1 8015M 80	015B	T	Т	1	For		Project Loc:	9	ject
3												TPH: TX 1005 TX 1006	100		ı		ma	P	2	Project #:	Na
Ten	San	Cus	San						- 7			Cations (Ca, Mg, Na, K)			ı	1		PO #:	9	*	ne:
per	nple Hand I by Sampler/ by Courier?	tody tody	orat Os F									Anions (CI, SQ4, Alkalinity)		TOTAL	d	1	*		1		SUS
ature	Han	sea sea	Con					_				SAR / ESP / CEC		2	TCLP		Star				ESH
Temperature Upon Receipt:	Sample Hand Delivered by Sampler/Client Rep by Courier? UPS	Labels on container(s) Custody seals on containe Custody seals on cooler(s)	Laboratory Comments: Sample Containers Intact? VOCs Free of Headspace?									Metals: As Ag Ba Cd Cr Pb Hg	Se	1	13		Standard				istor
9	lient	n 00	nmo ers l			_		_			_	Volatiles		4	g				Les	18	8
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pt:	~	Labels on container(s) Custody seats on container(s) Custody seats on cooler(s)	6 2			-		-		×	×	BTEX 8021B/5030 or BTEX 8;	260		1				unty		OWN
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2.5%	SON SON) < < 6	00							×	×	Chlondes E	30	10	1		NP	-	Lea County, New Mexico		Project Name: SUGS Historical Unknown Dinwiddle 1RP-1309
1	N N	Ala-	A -	_		-		-				mumu ma	_		\perp	-	P				1309
0	Star	3 3 z	(1) Z			-		-		×	×	RUSH TAT (Pre-Schedule) 24	48.	72 h	-8	1			10		
	100							1			1	Standard TAT	1					1	1		

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Final 1.000



XENCO Laboratories



Prelogin/Nonconformance Report- Sample Log-In

Client: Southern Union Gas Services- Monahan

Date/ Time Received: 05/16/2013 12:45:00 PM

Work Order #: 463289

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

Temperature Measuring device used :

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

Analyst:	PH Device/Lot#:	
Checklist comple	ted by: Kelsey Brooks	Date: <u>05/17/2013</u>
Checklist review	ed by: Kuns Hoah	Date: 05/17/2013

Analytical Report 463332

for

Southern Union Gas Services- Monahans

Project Manager: Camille Bryant
SUGS Historical Unknown Dinwiddie 1RP-1309

20-MAY-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)





20-MAY-13

Project Manager: Camille Bryant

Southern Union Gas Services- Monahans

801 South Loop 464 Monahans, TX 79756

Reference: XENCO Report No(s): 463332

SUGS Historical Unknown Dinwiddie 1RP-1309

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) 463332. 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. 463332 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

Knishoah

Project Manager

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Sample Cross Reference 463332



Southern Union Gas Services- Monahans, Monahans, TX

SUGS Historical Unknown Dinwiddie 1RP-1309

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
South Excavation West S/W-2 @11	S	05-16-13 09:40		463332-001
South Excavation East S/W-2 @ 11'	S	05-16-13 11:46		463332-002



CASE NARRATIVE



Client Name: Southern Union Gas Services- Monahans Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Project ID:

Work Order Number(s):

463332

Report Date: 20-MAY-13 Date Received: 05/17/2013

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Project Id:

Certificate of Analysis Summary 463332

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Date Received in Lab: Fri May-17-13 09:38 am

Report Date: 20-MAY-13
Project Manager: Kelsey Brooks



Contact: Camille Bryant

Project Location: Lea County, New Mexico

					Project Manager:	Keisey Brooks	
	Lab Id:	463332-001	463332-002		1		
Analysis Desiranted	Field Id: S	outh Excavation West S/W	South Excavation East S/W-				
Analysis Requested	Depth:					4,	
	Matrix:	SOIL	SOIL				
	Sampled:	May-16-13 09:40	May-16-13 11:46			1 1 1 1 1 1	
BTEX by EPA 8021B	Extracted:	May-17-13 11:00	May-17-13 11:00			1 2 2 2 2	17 17 17
	Analyzed:	May-17-13 12:24	May-17-13 12:40				
	Units/RL:	mg/kg RL	mg/kg RL			Land Broken	
Benzene		ND 0.00100	ND 0.00100			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Toluene		ND 0.00200	ND 0.00200			1 (A) (A) (A)	ESTAL THE
Ethylbenzene		ND 0.00100	ND 0.00100			- 1	
m_p-Xylenes		ND 0.00200	ND 0.00200		74	The second of the	FINE CONTRACTOR
o-Xylene		ND 0.00100	ND 0.00100				The state of the s
Total Xylenes		ND 0.00100	ND 0.00100				THE RESERVE
Total BTEX	7	ND 0.00100	ND 0.00100				A CAMPAN
Inorganic Anions by EPA 300/300.1	Extracted:	May-17-13 11:00	May-17-13 11:00			1 12	A TENANT
	Analyzed:	May-17-13 14:46	May-17-13 15:30			4. 1. 1. 1.	
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		97.0 4.00	170 4.00			7 7 7 7 10	THE PROPERTY OF
Percent Moisture	Extracted:	-				1 1 1 1 1 1 1	THE RESERVE OF THE PERSON NAMED IN
	Analyzed:	May-20-13 11:15	May-20-13 11:15			1	
	Units/RL:	% RL	% RL			- v (4 vc+ 1)	
Percent Moisture	Unus/KL:	2.94 1.00	3.40 1.00				
TPH By SW8015 Mod	Extracted:	May-17-13 10:15	May-17-13 10:15				10 Sept. 12 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Ti ii by Swoots Mou						38.	
	Analyzed:	May-17-13 10:48	May-17-13 11:19			3/01	
	Units/RL:	mg/kg RL	mg/kg RL			131-3	
C6-C12 Gasoline Range Hydrocarbons		ND 15.4	ND 15.5			150	William Control
C12-C28 Diesel Range Hydrocarbons		ND 15.4	ND 15.5	4	-	A TOTAL	27 1
C28-C35 Oil Range Hydrocarbons		ND 15.4	ND 15.5			12.00	
Total TPH		ND 15.4	ND 15.5	The second second			

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

Kelsey Brooks Project Manager

Knis Boah

Page 5 of 16



Flagging Criteria



- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantiation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K Sample analyzed outside of recommended hold time.
- JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- * Surrogate recovered outside laboratory control limit.
- **BRL** Below Reporting Limit.
- **RL** Reporting Limit

MDL Method Detection Limit SDL Sample Detection Limit

LOD Limit of Detection

PQL Practical Quantitation Limit

MQL Method Quantitation Limit

LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

- + NELAC certification not offered for this compound.
- * (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Orders: 463332,

Project ID:

Lab Batch #: 913934

Sample: 463332-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 05/17/13 10:48	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane	99.0	99.7	99	70-135	613/11	
o-Terphenyl	42.7	49.9	86	70-135	eminer of	

Lab Batch #: 913934

Sample: 463332-002 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/17/13 11:19	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane	98.2	99.9	98	70-135		
o-Terphenyl	42.5	50.0	85	70-135	-9.5	

Lab Batch #: 913981

Sample: 463332-001 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/17/13 12:24	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene	0.0254	0.0300	85	80-120	1200	
4-Bromofluorobenzene	0.0257	0.0300	86	80-120	Milais	

Lab Batch #: 913981

Sample: 463332-002 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 05/17/13 12:40	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene	0.0264	0.0300	88	80-120		
4-Bromofluorobenzene	0.0285	0.0300	95	80-120	File	

Lab Batch #: 913934

Sample: 638226-1-BLK / BLK

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/16/13 21:29	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane	100	100	100	70-135		
o-Terphenyl	44.8	50.1	89	70-135	450	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Orders: 463332,

Project ID:

Lab Batch #: 913981

Sample: 638249-1-BLK / BLK

Matrix: Solid Batch: 1

Units: mg/kg Date Analyzed: 05/17/13 12:08	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene	0.0342	0.0300	114	80-120	570	
4-Bromofluorobenzene	0.0318	0.0300	106	80-120		

Lab Batch #: 913934

Sample: 638226-1-BKS / BKS

Batch: 1

Matrix: Solid

Date Analyzed: 05/16/13 20:28

SURROGATE RECOVERY STUDY

Units: mg/kg Date Analyzed: 05/16/13 20:28	SURROGATE RECOVERT STUDI					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes	[]	(-)	[D]			
1-Chlorooctane	115	99.8	115	70-135	34-17	
o-Terphenyl	53.0	49.9	106	70-135	7 (8) (9)	

Lab Batch #: 913981

Sample: 638249-1-BKS / BKS

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/17/13 11:34	SU	RROGATE R	ECOVERY	STUDY	
BTEX 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	197
4-Bromofluorobenzene	0.0321	0.0300	107	80-120	

Lab Batch #: 913934

Sample: 638226-1-BSD / BSD

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/16/13 20:58	SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	99.6	115	70-135	0 1150
o-Terphenyl	48.9	49.8	98	70-135	STEN

Lab Batch #: 913981

Sample: 638249-1-BSD / BSD

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 05/17/13 11:51	SU	RROGATE R	ECOVERY	STUDY	
BTEX 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 26
4-Bromofluorobenzene	0.0284	0.0300	95	80-120	Chil.

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Orders: 463332,

Project ID:

Lab Batch #: 913934

Sample: 463289-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 05/16/13 23:01	SU	RROGATE R	RECOVERY	STUDY	
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	128	99.8	128	70-135	3/12/20
o-Terphenyl	59.0	49.9	118	70-135	FOR DE VISION

Lab Batch #: 913934

Sample: 463289-001 SD / MSD

Batch: 1 Ma

Matrix: Soil

Units: mg/kg Date Analyzed: 05/16/13 23:31	SU	RROGATE R	RECOVERY	STUDY	
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	100	121	70-135	STE SE
o-Terphenyl	52.5	50.2	105	70-135	315 23

Lab Batch #: 913981

Sample: 463332-002 SD / MSD

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 05/17/13 13:13	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0331	0.0300	110	80-120	100
4-Bromofluorobenzene	0.0311	0.0300	104	80-120	10.50

Surrogate Recovery [D] = 100 * A / B

^{*} Surrogate outside of Laboratory QC limits

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



BS / BSD Recoveries



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Order #: 463332

Analyst: DYV Lab Batch ID: 913981

Sample: 638249-1-BKS

Date Prepared: 05/17/2013 Batch #: 1

Project ID:

Date Analyzed: 05/17/2013

Matrix: Solid

Units: mg/kg		BLANI	K/BLANK	SPIKE / I	BLANK S	SPIKE DUP	LICATE	RECOVI	ERY 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
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]			
Danzana	<0.000006	0.0006	0.100	100	0.0004	0.0000	01	17	70 120	26

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000996	0.0996	0.108	108	0.0994	0.0909	91	17	70-130	35	
Toluene	< 0.00199	0.0996	0.106	106	0.0994	0.0914	92	15	70-130	35	7797
Ethylbenzene	<0.000996	0.0996	0.107	107	0.0994	0.102	103	5	71-129	35	1.6
m_p-Xylenes	< 0.00199	0.199	0.201	101	0.199	0.193	97	. 4	70-135	35	83
o-Xylene	< 0.000996	0.0996	0.0961	96	0.0994	0.0938	94	2	71-133	35	- 12-17

Analyst: AMB

Sample: 638307-1-BKS

Date Prepared: 05/17/2013 Batch #: 1

Date Analyzed: 05/17/2013

Matrix: Solid

Lab Batch ID: 914054 Sample: 638307-	1-BKS	Batch	#: 1					Matrix:	Solid		
Units: mg/kg		BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY									
Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	18.7	50.0	51.7	103	50.0	51.6	103	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

Page 10 of 16



BS/BSD Recoveries



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Order #: 463332

Analyst: DYV Lab Batch ID: 913934

Sample: 638226-1-BKS

Date Prepared: 05/16/2013
Batch #: 1

Project ID:

Date Analyzed: 05/16/2013

Matrix: Solid

Units: mg/kg		BLAN	K/BLANK	SPIKE / E	BLANK S	SPIKE DUP	LICATE 1	RECOVI	ERY STUE	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	998	980	98	996	1000	100	2	70-135	35	700
C12-C28 Diesel Range Hydrocarbons	<15.0	998	1040	104	996	1050	105	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

Page 11 of 16



Form 3 - MS Recoveries



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Order #: 463332 Lab Batch #: 914054

Project ID:

Date Analyzed: 05/17/2013 **QC- Sample ID:** 463332-001 S

Date Prepared: 05/17/2013

Analyst: AMB

Penarting Units: mg/kg

Batch #:

Matrix: Soil

Reporting Units: mg/kg	MAT	RIX / MA	TRIX SPIKE	RECO	VERY STU	DY
Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
	07.0	100	210	112	00 120	In STABLES - CO
Chloride	97.0	100	210	113	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 Unknown Dinwiddie 1RP-1309



Work Order #:

Reporting Units: mg/kg

Date Analyzed:

Lab Batch ID:

05/16/2013

QC- Sample ID: 463289-001 S

Project ID: Batch #: Matrix: Soil

Date Prepared: 05/16/2013

Analyst: DYV

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.6	1040	1030	99	1050	1020	97	1	70-135	35	10/
C12-C28 Diesel Range Hydrocarbons	<15.6	1040	1120	108	1050	1120	107	0	70-135	35	

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

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

 $ND = Not \ Detected, J = Present \ Below \ Reporting \ Limit, B = Present \ in \ Blank, NR = Not \ Requested, I = Interference, NA = Not \ Applicable \\ N = See \ Narrative, EQL = Estimated \ Quantitation \ Limit, NC = Non \ Calculable - Sample \ amount \ is <math>> 4$ times the amount spiked.



Sample Duplicate Recovery



Project Name: SUGS Historical Unknown Dinwiddie 1RP-1309

Work Order #: 463332

Lab Batch #: 914096

Project ID:

Date Analyzed: 05/20/2013 11:15

Date Prepared: 05/20/2013

Analyst: WRU

QC- Sample ID: 463332-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %	SAMPLE / SAMPLE DUPLICATE RECOVERY								
Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag				
Percent Moisture	2.94	2.36	22	20	F				

Xenco Laboratories

The Environmental Lab of Texas

12600 West I-20 East Odessa, Texas 79765 CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST Phone: 432-563-1800 Fax: 432-563-1713

Relinquished by	Relinquish	Relinquished b	Special I				-					LAB # (lab use only)	ORDER #:	otra d	(lab use only)	~						
red by:	ned by	red by	Special Instructions:							South Excavation	South Excavation West S/W-2	FIEL		とととこと	-	Sampler Signature		Telephone No:	City/State/Zip:	Company Address:	Company Name	Project Manager:
Date	een s/n/13	mt 5 Date								South Excavation East S/W-2 @ 11'	n West S/W-2 @ 11'	FIELD CODE	200	72 7)	S ANTICKLES)	432,520,7720	Midland, TX 79703	2057 Commerce	Nova Safety and Environmental	Cami
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190	plen plen	als	of I				7,1	\Box				Metals: As Ag Ba Cd Cr Pb He	g Se	T		A		Standard				Tist
Temperature Upon Receipt:	Sample Hand Delivered by Sampler/Client Rep. by Courier? UPS	Labels on container(s) Custody seals on container(s) Custody seals on cooler(s)	Laboratory Comments: Sample Containers Intact? VOCs Free of Headspace?							1		Volatiles		-		Analyze For.		a	10	5		Project Name: SUGS Historical Unknown Dinwiddle 1RP-1309
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XENCO Laboratories





Client: Southern Union Gas Services- Monahan

Date/ Time Received: 05/17/2013 09:38:00 AM

Work Order #: 463332

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

Temperature Measuring device used :

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	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	

Analyst:	PH Device/Lo	ot#:		
Checklist co	mpleted by:	Works Kelsey Brooks	Date: <u>05/17/2013</u>	
Checklist re	eviewed by:	vo Roah	Date: 05/17/2013	

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