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REMEDIATION SUMMARY AND

PROPOSED RISK-BASED SITE CLOSURE STRAGEY

ETC FIELD SERVICES, LLC
(Formerly known as Southern Union Gas Services and Regency Field Services, LLC)
4 Inch Lateral (2/18/13)
Lea County, New Mexico
UNIT LTR "A" (NE ¼ /NE ¼), Section 17, Township 25 South, Range 37 East
Latitude 32° 08.142' North, Longitude 103° 10.729' West
NMOCD Reference # 1RP-2904

HOBBS OCD

NOV 19 2015

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Prepared For:

ETC Field Services, LLC
800 East Sonterra
San Antonio, Texas 78258

Prepared By:

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2057 Commerce
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November 2015

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TABLE OF CONTENTS

INTRODUCTION……...…….…….……...……..1

NMOCD SITE CLASSIFICATION……..…….…..…..……..1

SUMMARY OF SOIL REMEDIATION ACTIVITIES .....…….……..2

PROPOSED SOIL CLOSURE STRATEGY.....…….……...…..7

REPORTING …….……..……...7

LIMITATIONS…….……..……..……..……7

DISTRIBUTION…….……..…….……...……..….9

FIGURES

Figure 1 – Site Location Map
Figure 2 – Site Details and Confirmation Soil Sample Location Map

TABLES

Table 1 – Concentrations of Benzene, BTEX, TPH, and Chlorides in Soil

APPENDICES

Appendix A – Analytical Reports
Appendix B – Photographs
Appendix C – Soil Boring Logs
Appendix D – Release Notification and Corrective Action (Form C-141)

INTRODUCTION

TRC Environmental Corporation (TRC) formerly NOVA Safety and Environmental (NOVA), on behalf of ETC Field Services, LLC (ETC), formerly known as Southern Union Gas Services (SUGS) and Regency Field Services, LLC (Regency), has prepared this Remediation Summary and Proposed Risk-Based Site Closure Strategy for the Release Site known as 4 Inch Lateral (2/18/13). The legal description of the Release Site is Unit Letter "A" (NE ¼ NE ¼), Section 17, Township 25 South, Range 37 East, in Lea County, New Mexico. The property affected by the release is owned by The Woolworth Trust. The Release Site GPS coordinates are 32° 08.142' North and 103° 10.729' West. Please reference Figure 1 for the Site Location Map and Figure 2 for the Site Details and Confirmation Soil Sample Location Map. The Release Notification and Corrective Action (Form C-141) is provided as Appendix D.

On February 18, 2013, SUGS discovered a crude oil, produced water, and natural gas release from a four (4)-inch steel pipeline. The release fluid flowed from the release point to the south approximately two hundred (200) feet. The release was reported to the New Mexico Oil Conservation Division (NMOCD) on February 18, 2013. During initial response activities, SUGS installed a temporary pipeline clamp on the pipeline to mitigate the release. Approximately twenty-five (25) barrels of fluid was released from the pipeline, with no recovery. Approximately sixty (60) cubic yards (cy) of heavily saturated soil was excavated from the release flowpath and placed on a plastic liner. On February 25, 2013, the heavily saturated stockpiled soil was transported to Sundance Services in Eunice, New Mexico. General photographs of the site are provided as Appendix B.

NMOCD SITE CLASSIFICATION

According to data obtained from the New Mexico Office of the State Engineer (NMOSE), one (1) water well is registered in Section 17, Township 25S, Range 37E. The water well is located in Unit Letter "M" of Section 17, was installed in 1920 and no information is available as to the depth to groundwater in the water well. A depth to groundwater reference map utilized by the NMOCD indicates groundwater should be encountered at approximately eighty (80) feet below ground surface (bgs), according to the NMOCD Hobbs District Office. The depth to groundwater at the 4 Inch Lateral (2/18/13) Release Site results in 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 4-Inch Lateral (2/18/13) Release Site has a 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.

SUMMARY OF SOIL REMEDIATION ACTIVITIES

On March 19, 2013, following initial response activities, delineation and excavation of the impacted soil began at the Release Site. Soil samples were periodically collected, field screened for concentrations of chloride and the selected soil samples were submitted to the laboratory for analysis. Please reference Figure 2 for site details and soil sampling locations.

On March 19, 2013, a soil sample (RP Baseline) was collected beneath the release point. The soil sample was submitted to the laboratory and was analyzed for concentrations of benzene, toluene, ethylbenzene, and xylene (BTEX) using EPA Method SW 846-8021b, Total Petroleum Hydrocarbons (TPH) using EPA Method SW 846-8015M and chloride using EPA Method E 300.0. The analytical results indicated the benzene concentration was less than the laboratory Method Detection Limit (MDL) of 0.00107 mg/Kg, the BTEX concentration was less than the laboratory MDL of 0.00214 mg/Kg, the TPH concentration was 297 mg/Kg and the chloride concentration was 2,140 mg/Kg. Table 1 summarizes the Concentrations of Benzene, BTEX, TPH, and Chlorides in Soil. Analytical reports are provided as Appendix A.

In addition, a five (5) point composite stockpile soil sample (SP Baseline) was collected from a soil stockpile adjacent to the release point. The analytical results indicated the benzene and BTEX concentrations of the stockpile were less than the laboratory MDL. The TPH concentration of the stockpiled soil was 264.7 mg/Kg and the chloride concentration was 2,165 mg/Kg.

On March 21, 2013, a trench was advanced adjacent to the release point to investigate the vertical depth of impact at the release point. Soil samples (RP-1 @ 8', RP-2 @ 10', RP-3 @ 15') were collected at eight (8) feet below ground surface (bgs), ten (10) feet bgs and fifteen (15) feet bgs as the trench was advanced. The soil samples were submitted to the laboratory and the analytical results indicated soil sample RP-1 @ 8' exhibited a benzene, BTEX and TPH concentration less than the laboratory MDL. Chloride analysis indicated soil samples RP-1 @ 8', RP-2 @ 10' and RP-3 @ 15' exhibited concentrations of 663 mg/Kg, 775 mg/Kg and 4,840 mg/Kg, respectively. Please refer to Figure 2 for soil sample locations.

Based on the analytical results of the investigation trench, vertical delineation of the Release Site could not be achieved using an excavator. Horizontal delineation of Release Site continued to the north, south and west of the release point. Impacted soil from the surface to four (4) feet bgs was excavated and stockpiled on site. An investigation trench was utilized to delineate impacted soil at depths greater than four (4) feet bgs. Soil adjacent to and northeast of the release point was left in-situ to allow for mobilization of a drilling rig to advance a soil boring. Soil investigation activities and results will be discussed below.

On March 22, 2013, two (2) soil samples (WW-1 @ 3' and WW-1 @ 14') were collected from the west sidewall of the excavation and delineation trench. The soil samples were submitted to the laboratory and analytical results indicated benzene, BTEX and TPH concentrations were less the laboratory MDL. The analytical results indicated chloride concentrations for soil sample WW-1 @ 3' and WW-1 @ 14' were 437 mg/Kg and 193 mg/Kg, respectively. Based on the analytical results, soil represented by soil sample WW-1 @ 3' was excavated and stockpiled on site as the excavation progressed an additional five (5) feet to the west. Based on the analytical results, the delineation trench was not advanced to the west. Please refer to Figure 2 for soil sample locations.

An additional soil sample (WW-1A @ 3') was collected from the west sidewall of the excavation. The soil sample was submitted to the laboratory and analytical results indicated the benzene, BTEX and TPH concentrations were less the laboratory MDL and the chloride concentration was 1,320 mg/Kg. Based on the analytical results, soil represented by soil sample WW-1A @ 3' was excavated and stockpiled on site as the excavation progressed an additional five (5) feet to the west.

An additional soil sample (WW-1B @ 3') was collected from the west sidewall of the excavation. The soil sample were submitted to the laboratory and analytical results indicated the benzene, BTEX and TPH concentrations was less the laboratory MDL. The analytical results indicated the chloride concentration was 856 mg/Kg. Based on the analytical results, soil represented by soil sample WW-1B @ 3' was excavated and stockpiled on site as the excavation progressed an additional five (5) feet to the west. Please refer to Figure 2 for soil sample locations. Please refer to Figure 2 for soil sample locations.

On March 25, 2013, an additional soil sample (WW-1C @ 3') was collected from the west sidewall of the excavation. The soil sample was submitted to the laboratory and analytical results indicated the benzene, BTEX and TPH concentrations was less the laboratory MDL. The analytical results indicated the chloride concentration was 679 mg/Kg. Based on the analytical results, soil represented by soil sample WW-1C @ 3' was excavated and stockpiled on site as the excavation progressed an additional five (5) feet to the west.

An additional soil sample (WW-1D @ 3') was collected from the west sidewall of the excavation. The soil sample was submitted to the laboratory and analytical results indicated the benzene, BTEX and TPH concentrations was less the laboratory MDL. The analytical results indicated the chloride concentration was 73.6 mg/Kg. Based on the analytical results, no additional excavation was warranted on the west sidewall of the excavation. Please refer to Figure 2 for soil sample locations.

The excavation and delineation trench progressed to the south; periodic soil sampling and chloride field screening indicated chloride concentrations exceeded the NMOCD regulatory guidelines for the Release Site.

On April 2, 2013, two (2) soil samples (SW-1@3' and SW-1@15') were collected from the south sidewall of the excavation. The soil samples were submitted to the laboratory and analytical results indicated benzene, BTEX and TPH concentrations were less the laboratory MDL. The analytical results indicated chloride concentrations for SW-1 @ 3' and SW-1 @ 15' were 441 mg/Kg and 340 mg/Kg, respectively. Based on the analytical results, the delineation trench was extended

approximately ten (10) feet to the south and resampled. Soil excavated from the delineation trench was added to the existing soil stockpile.

Soil samples SW-1A@3' and SW-1A@15' were collected from the south sidewall of the excavation and submitted to the laboratory for analysis. The analytical results indicated soil samples SW-1A@3' and SW-1A@15' exhibited chloride concentrations of 154 mg/Kg and 393 mg/Kg, respectively. Based on the analytical results the delineation trench was extended approximately ten (10) feet to the south and resampled. Soil excavated from the trench was added to the existing soil stockpile.

Soil samples SW-1B@3' and SW-1B@15' were collected from the south sidewall and submitted to the laboratory for analysis. The analytical results indicated soil samples SW-1B@3' and SW-1B@15' exhibited chloride concentrations of 236 mg/Kg and 119 mg/Kg, respectively. Based on the analytical results of soil samples submitted to the laboratory the southernmost horizontal extent of impact was delineated. Please refer to Figure 2 for soil sample locations.

On April 3, 2013, delineation of the northernmost extent of impact commenced, soil samples (NWW-1@3' and NWW-1@15') were collected from the northwest sidewall of the excavation. The soil samples were submitted to the laboratory and analytical results indicated benzene, BTEX and TPH concentrations were less the laboratory MDL. The analytical results indicated soil samples NWW-1 @ 3' and NWW-1 @ 15' exhibited chloride concentration of 120 mg/Kg and 760 mg/Kg, respectively. Based on the analytical results the delineation trench was extended approximately five (5) feet to the northwest and resampled. Soil excavated from the trench was added to the existing soil stockpile.

Soil sample NWW-1A@15' was collected from the northwest sidewall of the delineation trench and submitted to the laboratory for analysis. The analytical results indicated the soil sample (NNW-1A@15') exhibited a chloride concentration of 97 mg/Kg. Based on the analytical results the delineation trench was terminated. Based on chloride field screening, it was determined chloride concentrations exceeding NMOCD regulatory guidelines were present at depths above four (4) feet bgs. Delineation and excavation continued approximately twenty (20) feet to the northwest. A soil sample (NWW-1B@3') was collected from the northwest sidewall of the excavation and submitted to the laboratory for chloride analysis. The analytical results the soil sample exhibited a chloride concentration of 1,220 mg/Kg. Based on the analytical results, delineation and excavation continued approximately fifteen (15) feet to the northwest. A soil sample (NWW-1C@3') was collected from the sidewall of the excavation and submitted to the laboratory. The analytical results indicated the soil sample exhibited a chloride concentration of 13.1 mg/Kg. Based on the analytical results of soil samples submitted to the laboratory the northwestern most horizontal extent of impact appears to be delineated. Please refer to Figure 2 for soil sample locations.

As stated above, the area adjacent to and east of the release point was not disturbed to allow a soil boring to be advanced at a future date. A delineation trench was advanced to the east of the undisturbed area to delineate the easternmost extent of horizontal impact.

On April 3, 2013, two (2) soil samples (EW-1@3' and EW-1@15') were collected from the east sidewall of the delineation trench. The analytical results indicated soil samples EW-1@3' and EW-1@15' exhibited benzene, BTEX and TPH concentration less than the laboratory MDL. Chloride

analysis indicated soil samples EW-1@3' and EW-1@15' exhibited chloride concentrations of 3,910 mg/Kg and 1,150 mg/Kg, respectively. Based on the analytical results, the delineation trench was advanced an additional five (5) feet to the east, excavated soil was added to the existing stockpile. A soil sample (EW-1A@15') was collected from the east sidewall of the delineation trench and submitted to the laboratory for chloride analysis. The analytical results indicated the soil sample exhibited a chloride concentration of 1,070 mg/Kg. Based on the analytical results, the delineation trench was advanced an additional five (5) feet to the east. Following advancement of the delineation trench, two (2) soil samples (EW-1B3' and EW-1B@15') were collected from the east sidewall of the delineation trench and submitted to the laboratory for chloride analysis. The analytical results indicated soil samples EW-1B@3' and EW-1B@15' exhibited chloride concentrations of 221 mg/Kg and 165 mg/Kg, respectively. Based on the analytical results of soil samples submitted to the laboratory the easternmost extent of horizontal impact appears to be delineated. Please refer to Figure 2 for soil sample locations.

Following the delineation of the easternmost extent of impact adjacent to the release point, equipment was moved to the south end of the investigation trench to delineate the easternmost extent of impact at the south end of the Release Site. The delineation trench was advanced approximately ten (10) feet to the east of soil sample SW-1B@3'.

On April 5, 2013, two (2) soil samples (EW-2@3' and EW-2@15') were collected and submitted to the laboratory. The analytical results indicated benzene and BTEX concentrations were less than the laboratory MDL. TPH analysis indicated soil sample EW-2@3' exhibited a TPH concentration of 34.5 mg/Kg and soil sample EW-2@15' exhibited a TPH concentration less than the laboratory MDL. Chloride analysis indicated soil samples EW-2@3' and EW-2@15' exhibited chloride concentrations of 2,800 mg/Kg and 4,100 mg/Kg, respectively. Based on the analytical results the delineation trench was advanced approximately thirty (30) feet to the east.

On April 9, 2013, two (2) soil samples (EW-2A@3' and EW-2A@15') were collected and submitted to the laboratory. Chloride analysis indicated soil samples EW-2A@3' and EW-2A@15' exhibited chloride concentrations of 163 mg/Kg and less than the laboratory MDL, respectively. Based on the analytical results of soil samples submitted to the laboratory the easternmost extent of horizontal impact at the south end of the Release Site appears to be delineated. Please refer to Figure 2 for soil sample locations.

Approximately 1,600 cubic yards (cy) of impacted soil was excavated and stockpiled on-site, pending final disposition. The final dimensions of the excavation were approximately two hundred fifty (250) feet in length, ranged from approximately twenty five (25) to one hundred (100) feet in width, and varied in depth from three (3) feet to fifteen (15) feet.

Following excavation and delineation activities, the delineation trenches were backfilled as a safety precaution.

On December 4, 2013, representatives of NOVA and the NMOCD, met in the NMOCD Hobbs District Office and discussed a closure strategy for the Release Site. The NMOCD representative requested three (3) soil boring be advanced at the Release Site to adequately delineate the vertical extent of chloride impact at the Release Site.

On an unknown date, the existing excavation was inadvertently backfilled with soil by another contractor. The analytical status of the backfill soil is unknown, but likely included the approximately 1,600 cy of impacted soil stockpiled on-site, awaiting final disposition.

On February 19, 2014, three (3) soil borings (SB-1 through SB-3) were advanced at the Release Site. Please reference Figure2 for the locations of the soil borings. The soil borings were advanced until chloride field testing and visual and olfactory evidence indicated benzene, BTEX, TPH, and chloride concentrations were less than NMOCD regulatory guidelines for the Release Site. Soil samples were collected at five (5) foot drilling intervals and field screened using a Photo-Ionization Detector (PID) and a chloride field test kit. Selected soil samples were submitted to the laboratory for determination of concentrations of benzene, toluene, ethyl-benzene and xylene (BTEX), total petroleum hydrocarbon (TPH), and chlorides using EPA SW-846 8021b, SW-846 8015M, and E 300.1, respectively.

Soil boring SB-1 was advanced immediately east of the release point to a depth of approximately thirty-five (35) feet bgs. Soil samples collected at ten (10) feet bgs, fifteen (15) feet bgs, twenty (20) feet bgs, twenty-five (25) feet bgs, thirty (30) feet bgs, and thirty-five (35) feet bgs were submitted to the laboratory for analysis. The analytical results indicated benzene, BTEX, and TPH concentrations were less than the laboratory MDL. Chloride concentrations ranged from 68.8 mg/Kg for soil sample SB-1 @ 35' to 1,900 mg/Kg for soil sample SB-1 @ 15'. Based on the analytical results, vertical delineation of chloride impact in soil boring SB-1 was achieved at approximately thirty (30) feet bgs. The soil sample collected at thirty (30) feet bgs exhibited a chloride concentration of 127 mg/Kg. Soil boring logs are provided as Appendix C.

Soil boring SB-2 was advanced in the central area of the Release Site, to a depth of approximately forty (40) feet bgs. Soil samples were collected at ten (10) feet bgs, fifteen (15) feet bgs, twenty (20) feet bgs, twenty-five (25) feet bgs, thirty (30) feet bgs, thirty-five (35) feet bgs, and forty (40) feet bgs and submitted to the laboratory for analysis. The analytical results indicated benzene, BTEX, and TPH concentrations were less than the laboratory MDL. Chloride concentrations ranged from 85.6 mg/Kg for soil sample SB-2 @ 40' to 4,740 mg/Kg for soil sample SB-2 @ 10'. Based on the analytical results, vertical delineation of chloride impact in soil boring SB-2 was achieved at approximately forty (40) feet bgs. The soil sample collected at forty (40) feet bgs exhibited at chloride concentration of 85.6 mg/Kg.

Soil boring SB-3 was advanced in the southern area the Release Site, to a depth of approximately thirty-five (35) feet bgs. Soil samples collected at five (5) feet bgs, ten (10) feet bgs, twenty (20) feet bgs, thirty (30) feet bgs, and thirty-five (35) feet bgs were submitted to the laboratory for analysis. The analytical results indicated benzene, BTEX, and TPH concentrations were less than the laboratory MDL. Chloride concentrations ranged from 14.6 mg/Kg for soil sample SB-3 @ 30' to 204 mg/Kg for soil sample SB-3 @ 20'. Based on the analytical results, vertical delineation of chloride impact in soil boring SB-3 was achieved at approximately five (5) feet bgs. The soil sample collected at five (5) feet bgs exhibited at chloride concentration of 25 mg/Kg. Please refer to Figure 2 for soil sample locations.

On March 18, 2014, representatives of NOVA and the NMOCD, met in the NMOCD Hobbs District Office and discussed a closure strategy for the Release Site. The NMOCD representative reviewed the analytical results of the soil samples collected during the soil boring advancement and verbally approved Regency's request to utilize at Risk-Based closure strategy at the 4-Inch

Lateral (2/18/13) Release Site. The NMOCD representative approved the excavation of the Release Site to approximately twelve (12) feet bgs. In addition, the NMOCD approved the installation of a twenty (20) millimeter (mil) polyethylene liner at approximately twelve (12) feet bgs.

PROPOSED SOIL CLOSURE STRATEGY

Based on analytical results, ETC requests confirmation to proceed with a Risk-Based Closure Strategy at the 4-Inch Lateral (2/18/13) Release Site. The Release Site will be excavated to approximately twelve (12) feet bgs. Excavated soil will be stockpiled adjacent to the excavation, pending final disposition. When confirmation analytical results of the excavation sidewalls indicate benzene, BTEX, TPH, and chloride concentrations are less than the regulatory guidelines for the Release Site, a twenty (20) mil polyurethane liner will be installed at approximately twelve (12) feet bgs. The liner will be cushioned by a six (6) inch layer of sand above and below the liner to protect the liner from damage during backfilling activities. This engineering control will inhibit vertical migration of contaminants below the liner, by the process of shedding moisture to the edge of the liner and beyond the maximum horizontal extent of underlying impacted soil.

Stockpile soil samples will be collected for each five hundred (500) cy yards of excavated soil. The soil samples collected from the stockpiles will be submitted to the laboratory and analyzed for concentrations of benzene, BTEX, TPH, and chloride. In the event, the analytical results indicate benzene, BTEX, TPH, and chloride concentrations are less than 10 mg/Kg, 50 mg/Kg, 1,000 mg/Kg, and 500 mg/Kg, respectively, the stockpiled soil will be utilized as backfill. Should the analytical results indicate the soil stockpile exhibits benzene, BTEX, TPH, or chloride concentrations exceeding the NMOCD regulatory guideline, the stockpile will be transported (under manifest) to a NMOCD approved landfarm or landfill. On NMOCD approval, the excavation will be backfilled with soil deemed suitable by analysis and/or locally purchased non-impacted soil and water compacted in eighteen (18) inch lifts. Following backfill activities the surface will be contoured to fit the surrounding topography.

REPORTING

On completion of the soil closure strategy activities, ETC will submit a Remediation Summary and Risk-Based Site Closure Request for NMOCD approval.

LIMITATIONS

TRC Environmental Corporation has prepared this Remediation Summary and Proposed Site Closure Strategy to the best of its ability. No other warranty, expressed or implied, is made or intended.

TRC Environmental Corporation has examined and relied upon documents referenced in the report and has relied on oral statements made by certain individuals. TRC Environmental Corporation has not conducted an independent examination of the facts contained in referenced materials and statements. We have presumed the genuineness of the documents and that the information provided in documents or statements is true and accurate. TRC Environmental Corporation has prepared this report, in a professional manner, using the degree of skill and care exercised by similar environmental consultants. TRC Environmental Corporation also notes that the facts and

conditions referenced in this report may change over time and the conclusions and recommendations set forth herein are applicable only to the facts and conditions as described at the time of this report.

This report has been prepared for the benefit of ETC Field Services, LLC. The information contained in this report, including all exhibits and attachments, may not be used by any other party without the express consent of TRC Environmental Corporation and/or ETC Field Services, LLC.

DISTRIBUTION

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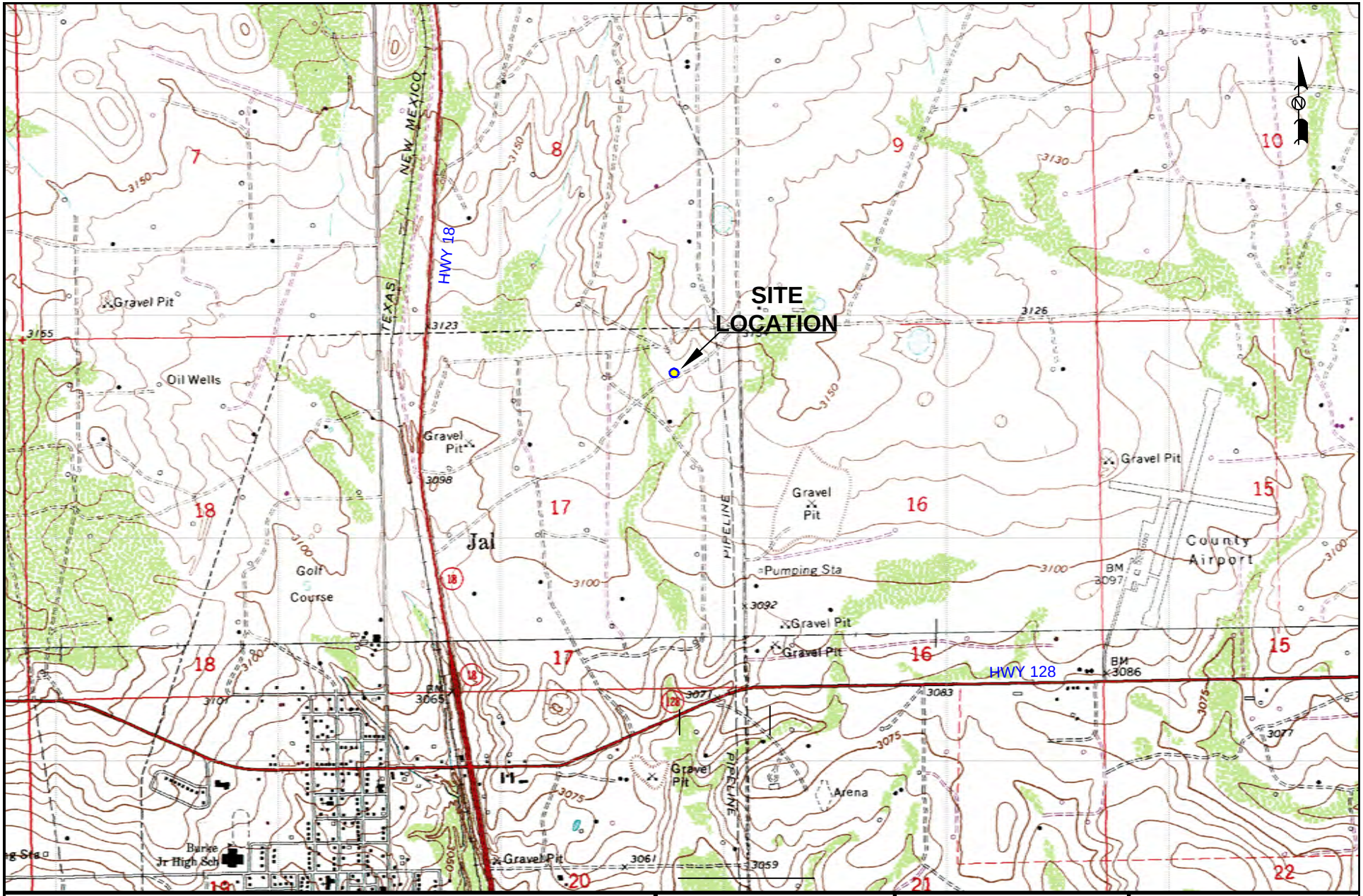


LEGEND:

3000 1500 0 1500 3000

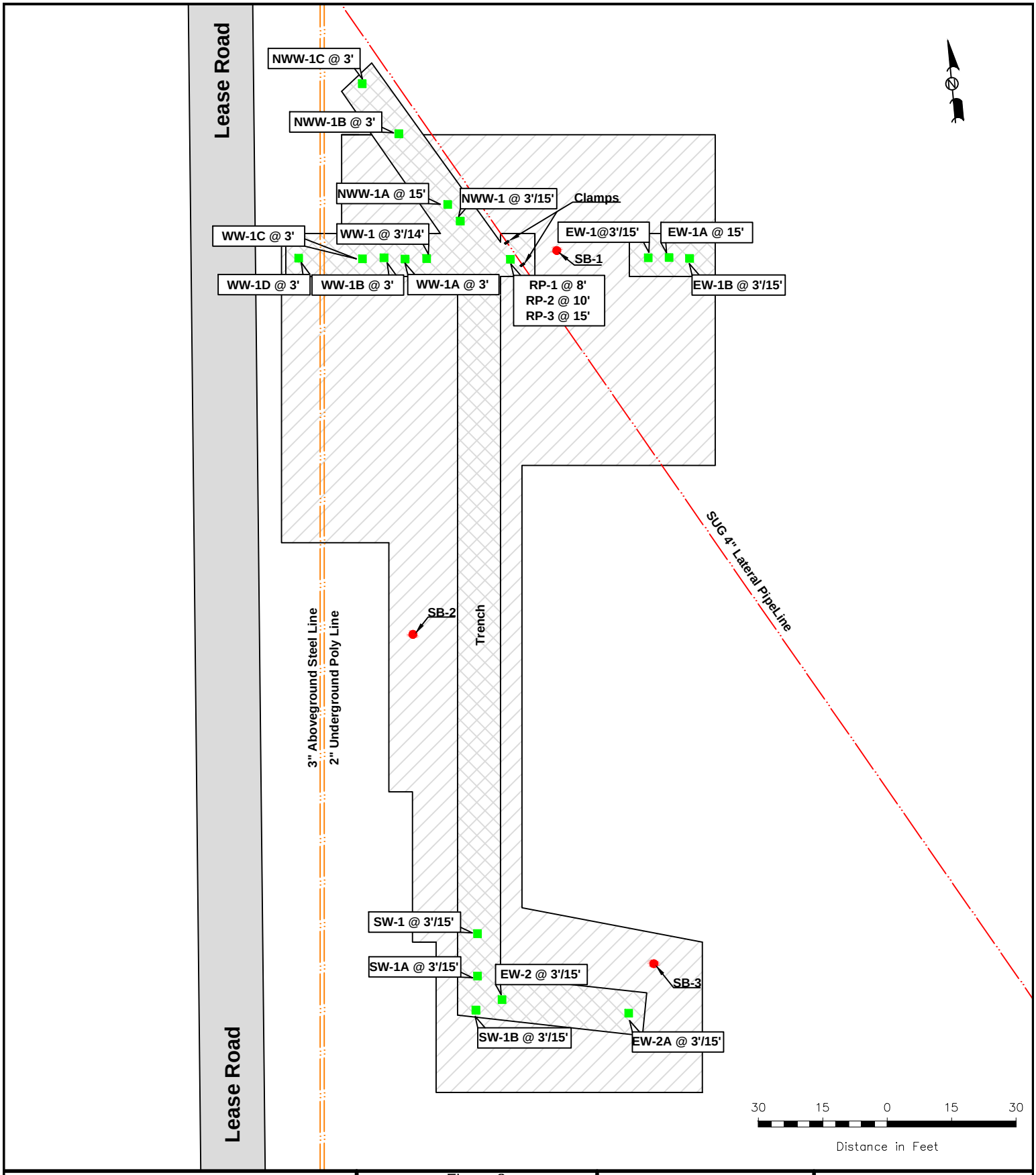
Distance in Feet

Figure 1

Site Location Map
ETC Field Services, LLC
4" Lateral (2/18/2013)
Lea County, NM

Scale: 1" = 3000'
CAD By: CAS
Checked By: CS
Draft: June 7, 2013
Lat. N 32° 8' 8.44" , Long. W 103° 10' 43.66"

TRC
2057 Commerce Drive
Midland, Texas 79703
432.520.7720



LEGEND:

- Soil Sample Location
- Excavation Area
- SUG Pipeline
- Unknow Pipeline
- Soil Boring Location

Figure 2
Site Details & Confirmation
Soil Sample Locations
ETC Field Services, LLC
4" Lateral (2/18/2013)
Lea County, NM

Scale: 1" = 30'
CAD By: CAS
Checked By: CS
Draft: June 7, 2013
Lat. N 32° 8' 8.44" , Long. W 103° 10' 43.66"

TRC
2057 Commerce Drive
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TABLE 1

CONCENTRATIONS OF BENZENE, BTEX, TPH AND CHLORIDE IN SOIL

ETC FIELD SERVICES, LLC
4 INCH LATERAL 2-18-13 RELEASE SITE
LEA COUNTY, NEW MEXICO
1RP-02-13-2904

All concentrations are reported in mg/Kg

SAMPLE LOCATION	SAMPLE DATE	METHODS: SW 846-8021b						METHOD: SW 8015M				E 300.1
		BENZENE	TOLUENE	ETHYL-BENZENE	m, p - XYLENES	o - XYLENE	TOTAL BTEX	TPH GRO C_6-C_{12}	TPH DRO C_{12}-C_{28}	TPH ORO C_{28}-C_{35}	TOTAL TPH C_6-C_{35}	CHLORIDE
RP Baseline	03/19/13	<0.00107	<0.00214	<0.00107	<0.00214	<0.00107	<0.00214	<16.1	297	<16.1	297	**2,140**
SP Baseline	03/19/13	<0.00104	<0.00209	<0.00104	<0.00209	<0.00104	<0.00209	26.7	238	<15.6	264.7	**265**
RP-1 @ 8'	03/21/13	<0.00108	<0.00216	<0.00108	<0.00216	<0.00108	<0.00216	<16.1	<16.1	<16.1	<16.1	**663**
RP-2 @ 10'	03/21/13	-	-	-	-	-	-	-	-	-	-	**775**
RP-3 @ 15'	03/21/13	-	-	-	-	-	-	-	-	-	-	**4,840**
WW-1 @ 14'	03/22/13	<0.00103	<0.00206	<0.00103	<0.00206	<0.00103	<0.00206	<25.9	<25.9	<25.9	<25.9	193
WW-1 @ 3'	03/22/13	<0.00110	<0.00220	<0.00110	<0.00220	<0.00110	<0.00220	<16.5	<16.5	<16.5	<16.5	**437**
WW-1A @ 3'	03/22/13	<0.00111	<0.00223	<0.00111	<0.00223	<0.00111	<0.00223	<16.8	<16.8	<16.8	<16.8	**1,320**
WW-1B @ 3'	03/22/13	<0.00108	<0.00217	<0.00108	<0.00217	<0.00108	<0.00217	<16.3	<16.3	<16.3	<16.3	**856**
WW-1C @ 3'	03/25/13	<0.00111	<0.00222	<0.00111	<0.00222	<0.00111	<0.00222	<16.6	<16.6	<16.6	<16.6	**679**
WW-1D @ 3'	03/25/13	<0.00104	<0.00207	<0.00104	<0.00207	<0.00104	<0.00207	<15.6	<15.6	<15.6	<15.6	73.6
SW-1 @ 3'	04/02/13	<0.00106	<0.00213	<0.00106	<0.00213	<0.00106	<0.00213	<15.9	<15.9	<15.9	<15.9	**441**
SW-1 @ 15'	04/02/13	<0.00106	<0.00212	<0.00106	<0.00212	<0.00106	<0.00212	<16.1	<16.1	<16.1	<16.1	**340**
SW-1A @ 3'	04/02/13	-	-	-	-	-	-	-	-	-	-	154
SW-1A @ 15'	04/02/13	-	-	-	-	-	-	-	-	-	-	**393**
SW-1B @ 3'	04/02/13	-	-	-	-	-	-	-	-	-	-	236
SW-1B @ 15'	04/02/13	-	-	-	-	-	-	-	-	-	-	119
NWW-1 @ 3'	04/03/13	<0.00106	<0.00212	<0.00106	<0.00212	<0.00106	<0.00212	<15.8	<15.8	<15.8	<15.8	120
NWW-1 @15'	04/03/13	<0.00104	<0.00209	<0.00104	<0.00209	<0.00104	<0.00209	<15.7	<15.7	<15.7	<15.7	**760**
NWW-1A @ 15'	04/03/13	-	-	-	-	-	-	-	-	-	-	97.0
NWW-1B @ 3'	04/03/13	-	-	-	-	-	-	-	-	-	-	**1,220**
NWW-1C @ 3'	04/03/13	-	-	-	-	-	-	-	-	-	-	13.1
EW -1 @ 3'	04/03/13	<0.00110	<0.00221	<0.00110	<0.00221	<0.00110	<0.00221	<16.6	<16.6	<16.6	<16.6	**3,910**
EW -1 @ 15'	04/03/13	<0.00102	<0.00204	<0.00102	<0.00204	<0.00102	<0.00204	<15.5	<15.5	<15.5	<15.5	**1,150**
EW-1A @ 15'	04/03/13	-	-	-	-	-	-	-	-	-	-	**1,070**
EW-1B @ 3'	04/03/13	-	-	-	-	-	-	-	-	-	-	221
EW-1B @ 15'	04/03/13	-	-	-	-	-	-	-	-	-	-	165
EW-2 @ 3'	04/05/13	<0.00107	<0.00214	<0.00107	<0.00214	<0.00107	<0.00214	<15.9	34.5	<15.9	34.5	**2,800**

TABLE 1

CONCENTRATIONS OF BENZENE, BTEX, TPH AND CHLORIDE IN SOIL

ETC FIELD SERVICES, LLC
4 INCH LATERAL 2-18-13 RELEASE SITE
LEA COUNTY, NEW MEXICO
1RP-02-13-2904

All concentrations are reported in mg/Kg

SAMPLE LOCATION	SAMPLE DATE	METHODS: SW 846-8021b						METHOD: SW 8015M				E 300.1
		BENZENE	TOLUENE	ETHYL-BENZENE	m, p - XYLENES	o - XYLENE	TOTAL BTEX	TPH GRO C_6-C_{12}	TPH DRO C_{12}-C_{28}	TPH ORO C_{28}-C_{35}	TOTAL TPH C_6-C_{35}	CHLORIDE
EW-2 @ 15'	04/05/13	<0.00109	<0.00218	<0.00109	<0.00218	<0.00109	<0.00218	<16.2	<16.2	<16.2	<16.2	**4,110**
EW-2A @ 3'	04/09/13	-	-	-	-	-	-	-	-	-	-	163
EW-2A @ 15'	04/09/13	-	-	-	-	-	-	-	-	-	-	<20.0
SB-1 @ 10'	02/19/14	<0.00104	<0.00209	<0.00104	<0.00209	<0.00104	<0.00209	<15.7	<15.7	<15.7	<15.7	**1,190**
SB-1 @ 15'	02/19/14	<0.00104	<0.00208	<0.00104	<0.00208	<0.00104	<0.00208	<15.6	<15.6	<15.6	<15.6	**1,900**
SB-1 @ 20'	02/19/14	<0.00102	<0.00205	<0.00102	<0.00205	<0.00102	<0.00205	<15.4	<15.4	<15.4	<15.4	**1,840**
SB-1 @ 25'	02/19/14	<0.00104	<0.00207	<0.00104	<0.00207	<0.00104	<0.00207	<15.7	<15.7	<15.7	<15.7	**596**
SB-1 @ 30'	02/19/14	<0.00104	<0.00207	<0.00104	<0.00207	<0.00104	<0.00207	<15.6	<15.6	<15.6	<15.6	127
SB-1 @ 35'	02/19/14	<0.00103	<0.00206	<0.00103	<0.00206	<0.00103	<0.00206	<15.5	<15.5	<15.5	<15.5	68.8
SB-2 @ 10'	02/19/14	<0.00105	<0.00210	<0.00105	<0.00210	<0.00105	<0.00210	<15.7	<15.7	<15.7	<15.7	**4,740**
SB-2 @ 15'	02/19/14	<0.00103	<0.00207	<0.00103	<0.00207	<0.00103	<0.00207	<15.6	<15.6	<15.6	<15.6	**1,720**
SB-2 @ 20'	02/19/14	<0.00108	<0.00216	<0.00108	<0.00216	<0.00108	<0.00216	<16.3	<16.3	<16.3	<16.3	**824**
SB-2 @ 25'	02/19/14	<0.00104	<0.00207	<0.00104	<0.00207	<0.00104	<0.00207	<15.5	<15.5	<15.5	<15.5	**840**
SB-2 @ 30'	02/19/14	<0.00105	<0.00211	<0.00105	<0.00211	<0.00105	<0.00211	<15.8	<15.8	<15.8	<15.8	**268**
SB-2 @ 35'	02/19/14	<0.00110	<0.00220	<0.00110	<0.00220	<0.00110	<0.00220	<16.5	<16.5	<16.5	<16.5	**420**
SB-2 @ 40'	02/19/14	<0.00121	<0.00243	<0.00121	<0.00243	<0.00121	<0.00243	<18.2	<18.2	<18.2	<18.2	85.6
SB-3 @ 5'	02/19/14	<0.00104	<0.00208	<0.00104	<0.00208	<0.00104	<0.00208	<15.7	<15.7	<15.7	<15.7	25.0
SB-3 @ 10'	02/19/14	<0.00104	<0.00208	<0.00104	<0.00208	<0.00104	<0.00208	<15.6	<15.6	<15.6	<15.6	152
SB-3 @ 20'	02/19/14	<0.00104	<0.00208	<0.00104	<0.00208	<0.00104	<0.00208	<15.7	<15.7	<15.7	<15.7	204
SB-3 @ 30'	02/19/14	<0.00102	<0.00204	<0.00102	<0.00204	<0.00102	<0.00204	<15.4	<15.4	<15.4	<15.4	14.6
SB-3 @ 35'	02/19/14	<0.00113	<0.00225	<0.00113	<0.00225	<0.00113	<0.00225	<16.9	<16.9	<16.9	<16.9	52.6

Analytical Report 459605

for

Southern Union Gas Services- Monahans

Project Manager: Becky Haskell

SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

21-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)
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)

21-MAR-13

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

Reference: XENCO Report No(s): **459605**
SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904
Project Address: Lea County, NM

Becky Haskell:

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) 459605. 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. 459605 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Nicholas Straccione
Project Manager

Sample Cross Reference 459605

Southern Union Gas Services- Monahans, Monahans, TX

SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
RP Baseline	S	03-19-13 13:00		459605-001
SP Baseline	S	03-19-13 13:30		459605-002

CASE NARRATIVE

Client Name: Southern Union Gas Services- Monahans
Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Project ID:
Work Order Number(s): *459605*

Report Date: *21-MAR-13*
Date Received: *03/20/2013*

Sample receipt non conformances and comments:
None

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 459605

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Project Id:
Contact: Becky Haskell
Project Location: Lea County, NM

Date Received in Lab: Wed Mar-20-13 09:14 am
Report Date: 21-MAR-13
Project Manager: Nicholas Straccione

Analysis Requested									
	Lab Id:	459605-001		459605-002					
	Field Id:	RP Baseline		SP Baseline					
	Depth:								
	Matrix:	SOIL		SOIL					
	Sampled:	Mar-19-13 13:00		Mar-19-13 13:30					
BTEX by EPA 8021B	***Extracted:***	Mar-20-13 16:00		Mar-20-13 16:00					
	Analyzed:	Mar-20-13 21:21		Mar-20-13 21:37					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Benzene		ND	0.00107	ND	0.00104				
Toluene		ND	0.00214	ND	0.00209				
Ethylbenzene		ND	0.00107	ND	0.00104				
m_p-Xylenes		ND	0.00214	ND	0.00209				
o-Xylene		ND	0.00107	ND	0.00104				
Total Xylenes		ND	0.00107	ND	0.00104				
Total BTEX		ND	0.00107	ND	0.00104				
Inorganic Anions by EPA 300/300.1	***Extracted:***	Mar-20-13 12:00		Mar-20-13 12:00					
	Analyzed:	Mar-21-13 07:04		Mar-21-13 07:25					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		2140	40.0	265	10.0				
Percent Moisture	***Extracted:***								
	Analyzed:	Mar-20-13 17:00		Mar-20-13 17:00					
	Units/RL:	%	RL	%	RL				
Percent Moisture		7.26	1.00	4.30	1.00				
TPH By SW8015 Mod	***Extracted:***	Mar-20-13 15:00		Mar-20-13 15:00					
	Analyzed:	Mar-21-13 01:33		Mar-21-13 02:01					
	Units/RL:	mg/kg	RL	mg/kg	RL				
C6-C12 Gasoline Range Hydrocarbons		ND	16.1	26.7	15.6				
C12-C28 Diesel Range Hydrocarbons		297	16.1	238	15.6				
C28-C35 Oil Range Hydrocarbons		ND	16.1	ND	15.6				
Total TPH		297	16.1	265	15.6				

Nicholas Straccione
Project Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantiation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

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

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

Form 2 - Surrogate Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Orders : 459605,

Project ID:

Lab Batch #: 909459 **Sample:** 459605-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/20/13 21:21

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0254	0.0300	85	80-120	
4-Bromofluorobenzene	0.0260	0.0300	87	80-120	

Lab Batch #: 909459 **Sample:** 459605-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/20/13 21:37

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0285	0.0300	95	80-120	

Lab Batch #: 909470 **Sample:** 459605-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/21/13 01:33

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.5	99.7	98	70-135	
o-Terphenyl	50.5	49.9	101	70-135	

Lab Batch #: 909470 **Sample:** 459605-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/21/13 02:01

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	99.6	102	70-135	
o-Terphenyl	51.3	49.8	103	70-135	

Lab Batch #: 909459 **Sample:** 635403-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/20/13 20:49

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0249	0.0300	83	80-120	
4-Bromofluorobenzene	0.0276	0.0300	92	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Orders : 459605,

Project ID:

Lab Batch #: 909470 **Sample:** 635407-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/20/13 23:40

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	
o-Terphenyl	51.9	50.0	104	70-135	

Lab Batch #: 909459 **Sample:** 635403-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/20/13 20:16

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0344	0.0300	115	80-120	
4-Bromofluorobenzene	0.0325	0.0300	108	80-120	

Lab Batch #: 909470 **Sample:** 635407-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/20/13 22:44

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.5	99.7	95	70-135	
o-Terphenyl	57.6	49.9	115	70-135	

Lab Batch #: 909459 **Sample:** 635403-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/20/13 20:32

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0292	0.0300	97	80-120	

Lab Batch #: 909470 **Sample:** 635407-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/20/13 23:12

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	99.6	100	70-135	
o-Terphenyl	53.5	49.8	107	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Orders : 459605,

Project ID:

Lab Batch #: 909459 **Sample:** 459606-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/20/13 21:54

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0311	0.0300	104	80-120	
4-Bromofluorobenzene	0.0304	0.0300	101	80-120	

Lab Batch #: 909470 **Sample:** 459606-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/21/13 00:36

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.4	99.6	100	70-135	
o-Terphenyl	55.4	49.8	111	70-135	

Lab Batch #: 909459 **Sample:** 459606-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/20/13 22:10

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0266	0.0300	89	80-120	
4-Bromofluorobenzene	0.0327	0.0300	109	80-120	

Lab Batch #: 909470 **Sample:** 459606-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/21/13 01:04

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.7	99.8	99	70-135	
o-Terphenyl	51.2	49.9	103	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Order #: 459605 **Project ID:**

Analyst: KEB **Date Prepared:** 03/20/2013 **Date Analyzed:** 03/20/2013

Lab Batch ID: 909459 **Sample:** 635403-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000992	0.0992	0.106	107	0.0998	0.0841	84	23	70-130	35	
Toluene	<0.00198	0.0992	0.102	103	0.0998	0.0831	83	20	70-130	35	
Ethylbenzene	<0.000992	0.0992	0.103	104	0.0998	0.0775	78	28	71-129	35	
m_p-Xylenes	<0.00198	0.198	0.196	99	0.200	0.148	74	28	70-135	35	
o-Xylene	<0.000992	0.0992	0.101	102	0.0998	0.0769	77	27	71-133	35	

Analyst: AMB **Date Prepared:** 03/20/2013 **Date Analyzed:** 03/21/2013

Lab Batch ID: 909477 **Sample:** 635411-1-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	<2.00	50.0	50.8	102	50.0	51.9	104	2	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

BS / BSD Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Order #: 459605 **Project ID:**

Analyst: KEB **Date Prepared:** 03/20/2013 **Date Analyzed:** 03/20/2013

Lab Batch ID: 909470 **Sample:** 635407-1-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	997	936	94	996	993	100	6	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	997	984	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

Form 3 - MS Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Order #: 459605

Lab Batch #: 909477

Project ID:

Date Analyzed: 03/21/2013

Date Prepared: 03/20/2013

Analyst: AMB

QC- Sample ID: 459439-001 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	13.6	73.1	76.7	86	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: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Order # : 459605 **Project ID:**

Lab Batch ID: 909459 **QC- Sample ID:** 459606-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/20/2013 **Date Prepared:** 03/20/2013 **Analyst:** KEB

Reporting Units: mg/kg

BTEX by EPA 8021B	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
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	0.0864	82	0.106	0.0993	94	14	70-130	35	
Toluene	<0.00211	0.106	0.0798	75	0.106	0.0913	86	13	70-130	35	
Ethylbenzene	<0.00106	0.106	0.0758	72	0.106	0.0917	87	19	71-129	35	
m_p-Xylenes	<0.00211	0.211	0.148	70	0.212	0.174	82	16	70-135	35	
o-Xylene	<0.00106	0.106	0.0755	71	0.106	0.0907	86	18	71-133	35	

Lab Batch ID: 909470 **QC- Sample ID:** 459606-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/21/2013 **Date Prepared:** 03/20/2013 **Analyst:** KEB

Reporting Units: mg/kg

TPH By SW8015 Mod	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
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	<15.8	1060	1010	95	1060	1010	95	0	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.8	1060	1090	103	1060	1080	102	1	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

Sample Duplicate Recovery

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Order #: 459605

Lab Batch #: 909473 **Project ID:**

Date Analyzed: 03/20/2013 17:00 **Date Prepared:** 03/20/2013 **Analyst:** WRU

QC- Sample ID: 459605-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	7.26	7.31	1	20	

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

BRL - Below Reporting Limit

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

Project Manager: Becky Haskell

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Company Name: Nova Safety and Environmental

Project #:

Company Address: 2057 Commerce

Project Loc: Lea County, NM

City/State/Zip: Midland, TX 79703

PO #:

Telephone No: 432.520.7720

Fax No: 432.520.7701

Report Format: X Standard ☐ TRRP ☐ NPDES

Sampler Signature: Nikki Green

e-mail: rhaskell@novatraining.cc; curt.stanley@sug.com; ngreen@novatraining.cc

(lab use only) ORDER #: 459605

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Analyze For: TPH: 418.1 / 8015M	TPH: TX 1005 / TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	Chlorides E 300.1		RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
	RP Baseline			3/19/2013	1300		1	x								Soil	X								X			X		X	
	SP Baseline			3/19/2013	1330		1	x								Soil	X								X			X		X	

Special Instructions:

Laboratory Comments:

Sample Containers Intact? Y N
VOCs Free of Headspace? Y N N/A
Labels on container(s) Y N
Custody seals on container(s) Y N
Custody seals on cooler(s) Y N
Sample Hand Delivered Y N
by Sampler/Client Rep. ? Y N
by Courier? UPS DHL FedEx Lone Star

Temperature Upon Receipt: 1.0 °C

Relinquished by:	Date	Time	Received by:	Date	Time
Nikki Green	3/20	910			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT:	3/20/13	09:14

Final 1.000

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Nova Safety & Environmental

Date/ Time Received: 03/20/2013 09:14:00 AM

Work Order #: 459605

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 bubble)?	**Yes**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	**Yes**
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**Yes**

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

Analyst:	PH Device/Lot#:

Checklist completed by: _____ Date: _____

Checklist reviewed by: _____ Date: _____

Analytical Report 459844

for

Southern Union Gas Services- Monahans

Project Manager: Becky Haskell

SUG 4"Lateral (2/18/13)

29-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)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

29-MAR-13

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

Reference: XENCO Report No(s): **459844**
SUG 4"Lateral (2/18/13)
Project Address: Lea County, NM

Becky Haskell:

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) 459844. 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. 459844 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Nicholas Straccione
Project Manager

Sample Cross Reference 459844

Southern Union Gas Services- Monahans, Monahans, TX

SUG 4"Lateral (2/18/13)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
RP-1 @ 8'	S	03-21-13 15:00		459844-001
RP-2 @ 10'	S	03-21-13 15:05		459844-002
RP-3 @ 15'	S	03-21-13 15:10		459844-003

CASE NARRATIVE

Client Name: Southern Union Gas Services- Monahans
Project Name: SUG 4"Lateral (2/18/13)

Project ID:
Work Order Number(s): *459844*

Report Date: *29-MAR-13*
Date Received: *03/22/2013*

Sample receipt non conformances and comments:
None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:
Batch: LBA-910129 BTEX by EPA 8021B
SW8021BM

Batch 910129, Ethylbenzene, m_p-Xylenes recovered below QC limits in the Matrix Spike Duplicate.
Samples affected are: 459844-001.
The Laboratory Control Sample for Ethylbenzene, m_p-Xylenes is within laboratory Control Limits

Certificate of Analysis Summary 459844

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: SUG 4"Lateral (2/18/13)

Project Id:
Contact: Becky Haskell
Project Location: Lea County, NM

Date Received in Lab: Fri Mar-22-13 03:58 pm
Report Date: 29-MAR-13
Project Manager: Nicholas Straccione

Analysis Requested													
	Lab Id:	459844-001		459844-002		459844-003							
	Field Id:	RP-1 @ 8'		RP-2 @ 10'		RP-3 @ 15'							
	Depth:												
	Matrix:	SOIL		SOIL		SOIL							
	Sampled:	Mar-21-13 15:00		Mar-21-13 15:05		Mar-21-13 15:10							
BTEX by EPA 8021B	***Extracted:***	Mar-28-13 15:10											
	Analyzed:	Mar-28-13 16:49											
	Units/RL:	mg/kg	RL										
Benzene		ND	0.00108										
Toluene		ND	0.00216										
Ethylbenzene		ND	0.00108										
m_p-Xylenes		ND	0.00216										
o-Xylene		ND	0.00108										
Total Xylenes		ND	0.00108										
Total BTEX		ND	0.00108										
Inorganic Anions by EPA 300/300.1	***Extracted:***	Mar-27-13 10:00		Mar-27-13 10:00		Mar-27-13 10:00							
	Analyzed:	Mar-27-13 18:59		Mar-27-13 19:42		Mar-27-13 20:04							
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL						
Chloride		663	20.0	775	20.0	4840	200						
Percent Moisture	***Extracted:***												
	Analyzed:	Mar-26-13 17:00		Mar-26-13 17:00		Mar-26-13 17:00							
	Units/RL:	%	RL	%	RL	%	RL						
Percent Moisture		7.07	1.00	3.48	1.00	7.94	1.00						
TPH By SW8015 Mod	***Extracted:***	Mar-27-13 08:00											
	Analyzed:	Mar-27-13 12:18											
	Units/RL:	mg/kg	RL										
C6-C12 Gasoline Range Hydrocarbons		ND	16.1										
C12-C28 Diesel Range Hydrocarbons		ND	16.1										
C28-C35 Oil Range Hydrocarbons		ND	16.1										
Total TPH		ND	16.1										

Nicholas Straccione
Project Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantiation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

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

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

Form 2 - Surrogate Recoveries

Project Name: SUG 4"Lateral (2/18/13)

Work Orders : 459844,

Project ID:

Lab Batch #: 909973 **Sample:** 459844-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/27/13 12:18

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.0	99.6	98	70-135	
o-Terphenyl	51.9	49.8	104	70-135	

Lab Batch #: 910129 **Sample:** 459844-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/28/13 16:49

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0275	0.0300	92	80-120	

Lab Batch #: 909973 **Sample:** 635722-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/27/13 09:43

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	99.8	104	70-135	
o-Terphenyl	55.9	49.9	112	70-135	

Lab Batch #: 910129 **Sample:** 635830-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/28/13 15:44

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0285	0.0300	95	80-120	
4-Bromofluorobenzene	0.0297	0.0300	99	80-120	

Lab Batch #: 909973 **Sample:** 635722-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/27/13 08:46

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.2	99.8	96	70-135	
o-Terphenyl	56.6	49.9	113	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: SUG 4"Lateral (2/18/13)

Work Orders : 459844,

Project ID:

Lab Batch #: 910129 **Sample:** 635830-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/28/13 14:38

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0285	0.0300	95	80-120	
4-Bromofluorobenzene	0.0322	0.0300	107	80-120	

Lab Batch #: 909973 **Sample:** 635722-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/27/13 09:16

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.0	104	70-135	
o-Terphenyl	57.5	49.5	116	70-135	

Lab Batch #: 910129 **Sample:** 635830-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/28/13 14:55

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0323	0.0300	108	80-120	
4-Bromofluorobenzene	0.0300	0.0300	100	80-120	

Lab Batch #: 909973 **Sample:** 459844-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/27/13 12:43

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.7	100	98	70-135	
o-Terphenyl	61.1	50.1	122	70-135	

Lab Batch #: 910129 **Sample:** 459879-003 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/28/13 19:01

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	80-120	
4-Bromofluorobenzene	0.0333	0.0300	111	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: SUG 4"Lateral (2/18/13)

Work Orders : 459844,

Project ID:

Lab Batch #: 909973 **Sample:** 459844-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/27/13 13:09

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.1	99.9	97	70-135	
o-Terphenyl	61.3	50.0	123	70-135	

Lab Batch #: 910129 **Sample:** 459879-003 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/28/13 19:17

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0323	0.0300	108	80-120	
4-Bromofluorobenzene	0.0330	0.0300	110	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

BS / BSD Recoveries

Project Name: SUG 4"Lateral (2/18/13)

Work Order #: 459844 **Project ID:**

Analyst: KEB **Date Prepared:** 03/28/2013 **Date Analyzed:** 03/28/2013

Lab Batch ID: 910129 **Sample:** 635830-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000994	0.0994	0.0899	90	0.101	0.0950	94	6	70-130	35	
Toluene	<0.00199	0.0994	0.0840	85	0.101	0.0939	93	11	70-130	35	
Ethylbenzene	<0.000994	0.0994	0.0804	81	0.101	0.0873	86	8	71-129	35	
m_p-Xylenes	<0.00199	0.199	0.163	82	0.201	0.176	88	8	70-135	35	
o-Xylene	<0.000994	0.0994	0.0877	88	0.101	0.0975	97	11	71-133	35	

Analyst: AMB **Date Prepared:** 03/27/2013 **Date Analyzed:** 03/27/2013

Lab Batch ID: 910042 **Sample:** 635789-1-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	<2.00	50.0	52.4	105	50.0	52.8	106	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

BS / BSD Recoveries

Project Name: SUG 4"Lateral (2/18/13)

Work Order #: 459844 **Project ID:**

Analyst: KEB **Date Prepared:** 03/27/2013 **Date Analyzed:** 03/27/2013

Lab Batch ID: 909973 **Sample:** 635722-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.0	998	931	93	990	978	99	5	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	998	1000	100	990	1080	109	8	70-135	35	

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

Form 3 - MS Recoveries

Project Name: SUG 4"Lateral (2/18/13)

Work Order #: 459844

Lab Batch #: 910042 **Project ID:**

Date Analyzed: 03/28/2013 **Date Prepared:** 03/27/2013 **Analyst:** AMB

QC- Sample ID: 459790-001 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	<4.02	100	107	107	80-120	

Lab Batch #: 910042

Date Analyzed: 03/27/2013 **Date Prepared:** 03/27/2013 **Analyst:** AMB

QC- Sample ID: 459844-001 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	663	500	1220	111	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: SUG 4"Lateral (2/18/13)

Work Order # : 459844 **Project ID:**

Lab Batch ID: 910129 **QC- Sample ID:** 459879-003 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/28/2013 **Date Prepared:** 03/28/2013 **Analyst:** KEB

Reporting Units: mg/kg

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
	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
Benzene	<0.00110	0.110	0.0860	78	0.109	0.0852	78	1	70-130	35	
Toluene	<0.00220	0.110	0.0869	79	0.109	0.0821	75	6	70-130	35	
Ethylbenzene	<0.00110	0.110	0.0777	71	0.109	0.0719	66	8	71-129	35	X
m_p-Xylenes	<0.00220	0.220	0.154	70	0.219	0.146	67	5	70-135	35	X
o-Xylene	<0.00110	0.110	0.0868	79	0.109	0.0806	74	7	71-133	35	

Lab Batch ID: 909973 **QC- Sample ID:** 459844-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/27/2013 **Date Prepared:** 03/27/2013 **Analyst:** KEB

Reporting Units: mg/kg

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
	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
C6-C12 Gasoline Range Hydrocarbons	<16.2	1080	1000	93	1080	1020	94	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<16.2	1080	1120	104	1080	1130	105	1	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

Sample Duplicate Recovery

Project Name: SUG 4"Lateral (2/18/13)

Work Order #: 459844

Lab Batch #: 909946 **Project ID:**

Date Analyzed: 03/26/2013 17:00 **Date Prepared:** 03/26/2013 **Analyst:** WRU

QC- Sample ID: 459854-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	9.72	9.04	7	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 I-20 East
Odessa, Texas 79765

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

Project Manager: Becky Haskell

Company Name: Nova Safety and Environmental

Company Address: 2057 Commerce

City/State/Zip: Midland, TX 79703

Telephone No: 432.520.7720 Fax No: 432.520.7701

Sampler Signature: Rebecca Haskell

e-mail: rhaskell@novatraining.cc
curt.stanley@sug.com

Project Name: SUG 4" Lateral (2/18/13)

Project #:

Project Loc: Lea County, NM

PO #:

Report Format: [X] Standard [ ] TRRP [ ] NPDES

(lab use only) ORDER #: 459844

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO3	HCl	H2SO4	NaOH	Na2S2O3	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW=Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Analyze For: TPH: 418.1 (8015M) 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	Chlorides E 300.1			RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
	RP-1 @ 8'			3/21/2013	1500		1	x								Soil	x											x				x
	RP-2 @ 10'			3/21/2013	1505		1	x								Soil												x				x
	RP-3 @ 15'			3/21/2013	1510		1	x								Soil												x				x

Special Instructions:

	Date	Time		Date	Time
Relinquished by: Rebecca Haskell	3/22/13	1518	Received by: Nathan Callicutt	3/22/13	1518
Relinquished by: Nathan Callicutt	3/22/13	1558	Received by:		
Relinquished by:			Received by ELOT: Shawnell Smith	3/22/13	15:58

Laboratory Comments:

Sample Containers Intact? (Y) N
VOCs Free of Headspace? Y N (NA)
Labels on container(s) (Y) N
Custody seals on container(s) Y (N)
Custody seals on cooler(s) Y (N)
Sample Hand Delivered (Y) N
by Sampler/Client Rep. ? (Y) N
by Courier? UPS DHL FedEx Lone Star

Temperature Upon Receipt: 2.7°C

Final 1.001

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Southern Union Gas Services- Monahan

Date/ Time Received: 03/22/2013 03:58:00 PM

Work Order #: 459844

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

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

Analyst:	PH Device/Lot#:

Checklist completed by: _____ Date: _____

Checklist reviewed by: _____ Date: _____

Analytical Report 459913

for

Southern Union Gas Services- Monahans

Project Manager: Becky Haskell

SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

01-APR-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)

01-APR-13

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

Reference: XENCO Report No(s): **459913**
SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904
Project Address: Lea County, NM

Becky Haskell:

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) 459913. 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. 459913 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Nicholas Straccione
Project Manager

Sample Cross Reference 459913

Southern Union Gas Services- Monahans, Monahans, TX

SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
WW-1 @14'	S	03-20-13 14:00		459913-001

CASE NARRATIVE

Client Name: Southern Union Gas Services- Monahans
Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Project ID:
Work Order Number(s): *459913*

Report Date: *01-APR-13*
Date Received: *03/25/2013*

Sample receipt non conformances and comments:
None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:
Batch: LBA-909979 BTEX by EPA 8021B
SW8021BM

Batch 909979, Ethylbenzene, Toluene, m_p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.
Samples affected are: 459913-001.
The Laboratory Control Sample for Toluene, Ethylbenzene, m_p-Xylenes , o-Xylene is within laboratory Control Limits

Batch: LBA-910294 Inorganic Anions by EPA 300/300.1
E300

Batch 910294, Chloride recovered above QC limits in the Matrix Spike.
Samples affected are: 459913-001.
The Laboratory Control Sample for Chloride is within laboratory Control Limits

Certificate of Analysis Summary 459913

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Project Id:
Contact: Becky Haskell
Project Location: Lea County, NM

Date Received in Lab: Mon Mar-25-13 04:30 pm
Report Date: 01-APR-13
Project Manager: Nicholas Straccione

Analysis Requested							
	Lab Id:	459913-001					
	Field Id:	WW-1 @14'					
	Depth:						
	Matrix:	SOIL					
	Sampled:	Mar-20-13 14:00					
BTEX by EPA 8021B	*Extracted:*	Mar-27-13 12:15					
	Analyzed:	Mar-27-13 15:04					
	Units/RL:	mg/kg	RL				
Benzene		ND	0.00103				
Toluene		ND	0.00206				
Ethylbenzene		ND	0.00103				
m_p-Xylenes		ND	0.00206				
o-Xylene		ND	0.00103				
Total Xylenes		ND	0.00103				
Total BTEX		ND	0.00103				
Inorganic Anions by EPA 300/300.1	*Extracted:*	Mar-29-13 00:00					
	Analyzed:	Mar-29-13 17:07					
	Units/RL:	mg/kg	RL				
Chloride		193	10.0				
Percent Moisture	*Extracted:*						
	Analyzed:	Mar-27-13 17:00					
	Units/RL:	%	RL				
Percent Moisture		3.73	1.00				
TPH by Texas1005	*Extracted:*	Mar-27-13 08:00					
	Analyzed:	Mar-27-13 15:43					
	Units/RL:	mg/kg	RL				
C6-C12 Gasoline Range Hydrocarbons		ND	25.9				
C12-C28 Diesel Range Hydrocarbons		ND	25.9				
C28-C35 Oil Range Hydrocarbons		ND	25.9				
Total TPH 1005		ND	25.9				

Nicholas Straccione
Project Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantiation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

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

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

\+ NELAC certification not offered for this compound.

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

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Orders : 459913, **Project ID:**

Lab Batch #: 909979 **Sample:** 459913-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/27/13 15:04

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0296	0.0300	99	80-120	

Lab Batch #: 909973 **Sample:** 459913-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/27/13 15:43

TPH by Texas1005 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	99.8	102	70-135	
o-Terphenyl	53.0	49.9	106	70-130	

Lab Batch #: 909973 **Sample:** 635722-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/27/13 09:43

TPH by Texas1005 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	99.8	104	70-135	
o-Terphenyl	55.9	49.9	112	70-130	

Lab Batch #: 909979 **Sample:** 635736-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/27/13 12:36

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0275	0.0300	92	80-120	
4-Bromofluorobenzene	0.0259	0.0300	86	80-120	

Lab Batch #: 909973 **Sample:** 635722-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/27/13 08:46

TPH by Texas1005 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.2	99.8	96	70-135	
o-Terphenyl	56.6	49.9	113	70-130	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Orders : 459913, **Project ID:**

Lab Batch #: 909979 **Sample:** 635736-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/27/13 12:04

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0314	0.0300	105	80-120	
4-Bromofluorobenzene	0.0343	0.0300	114	80-120	

Lab Batch #: 909973 **Sample:** 635722-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/27/13 09:16

TPH by Texas1005 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.0	104	70-135	
o-Terphenyl	57.5	49.5	116	70-130	

Lab Batch #: 909979 **Sample:** 635736-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/27/13 12:20

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	80-120	
4-Bromofluorobenzene	0.0284	0.0300	95	80-120	

Lab Batch #: 909973 **Sample:** 459844-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/27/13 12:43

TPH by Texas1005 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.7	100	98	70-135	
o-Terphenyl	61.1	50.1	122	70-130	

Lab Batch #: 909979 **Sample:** 459790-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/27/13 13:26

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	
4-Bromofluorobenzene	0.0333	0.0300	111	80-120	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Orders : 459913,

Project ID:

Lab Batch #: 909973 **Sample:** 459844-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/27/13 13:09

TPH by Texas1005 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.1	99.9	97	70-135	
o-Terphenyl	61.3	50.0	123	70-130	

Lab Batch #: 909979 **Sample:** 459790-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/27/13 13:42

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0255	0.0300	85	80-120	
4-Bromofluorobenzene	0.0271	0.0300	90	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

BS / BSD Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Order #: 459913 **Project ID:**

Analyst: KEB **Date Prepared:** 03/27/2013 **Date Analyzed:** 03/27/2013

Lab Batch ID: 909979 **Sample:** 635736-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.100	100	0.100	0.0946	95	6	70-130	35	
Toluene	<0.00200	0.100	0.100	100	0.100	0.0889	89	12	70-130	35	
Ethylbenzene	<0.00100	0.100	0.0963	96	0.100	0.0870	87	10	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.181	91	0.201	0.163	81	10	70-135	35	
o-Xylene	<0.00100	0.100	0.0937	94	0.100	0.0880	88	6	71-133	35	

Analyst: AMB **Date Prepared:** 03/29/2013 **Date Analyzed:** 03/29/2013

Lab Batch ID: 910294 **Sample:** 635946-1-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	<2.00	50.0	52.7	105	50.0	52.8	106	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

BS / BSD Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Order #: 459913 **Project ID:**

Analyst: KEB **Date Prepared:** 03/27/2013 **Date Analyzed:** 03/27/2013

Lab Batch ID: 909973 **Sample:** 635722-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by Texas1005 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	<25.0	998	931	93	990	978	99	5	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<25.0	998	1000	100	990	1080	109	8	70-135	35	

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

Form 3 - MS Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Order #: 459913
Lab Batch #: 910294
Project ID:
Date Analyzed: 03/29/2013
Date Prepared: 03/29/2013
Analyst: AMB
QC- Sample ID: 459899-001 S
Batch #: 1
Matrix: Soil
Reporting Units: mg/kg

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	2240	2500	5770	141	80-120	X

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

RL - Below Reporting Limit

Form 3 - MS / MSD Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Order # : 459913 **Project ID:**

Lab Batch ID: 909979 **QC- Sample ID:** 459790-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/27/2013 **Date Prepared:** 03/27/2013 **Analyst:** KEB

Reporting Units: mg/kg

BTEX by EPA 8021B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000999	0.0999	0.0739	74	0.100	0.0727	73	2	70-130	35	
Toluene	<0.00200	0.0999	0.0579	58	0.100	0.0623	62	7	70-130	35	X
Ethylbenzene	<0.000999	0.0999	0.0456	46	0.100	0.0528	53	15	71-129	35	X
m_p-Xylenes	<0.00200	0.200	0.0804	40	0.201	0.0893	44	10	70-135	35	X
o-Xylene	<0.000999	0.0999	0.0446	45	0.100	0.0514	51	14	71-133	35	X

Lab Batch ID: 909973 **QC- Sample ID:** 459844-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/27/2013 **Date Prepared:** 03/27/2013 **Analyst:** KEB

Reporting Units: mg/kg

TPH by Texas1005 Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<26.9	1080	1000	93	1080	1020	94	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<26.9	1080	1120	104	1080	1130	105	1	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

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Order #: 459913

Lab Batch #: 910039 **Project ID:**

Date Analyzed: 03/27/2013 17:00 **Date Prepared:** 03/27/2013 **Analyst:** WRU

QC- Sample ID: 459879-001 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	8.09	7.64	6	20	

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

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

Project Manager: Becky Haskell

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Company Name: Nova Safety and Environmental

Project #:

Company Address: 2057 Commerce

Project Loc: Lea County, NM

City/State/Zip: Midland, TX 79703

PO #:

Telephone No: 432.520.7720

Fax No: 432.520.7701

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: Rebecca Haskell

e-mail: rhaskell@novatraining.cc; curt.stanley@sug.com; ngreen@novatraining.cc

(lab use only) ORDER #: 459913

Final 1.000

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Preservation & # of Containers: Ice	HNO3	HCl	H2SO4	NaOH	Na2S2O3	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge; GW = Groundwater S=Soil/Solid; NP=Non-Potable Specify Other	Analyze For: TCLP: TPH: 418.1 8015M 8015B	TOTAL: TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	Chlorides E 300.1			RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
	WW-1 @ 14'			3/19/2013	1400		1	x								Soil	X								X			X				x

Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
Rebecca Haskell	3/25/13	1110	Nikki Green	3/25	1110
Nikki Green	3/25	1630	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT:	3/25/13	16:30

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered	Y	N
by Sampler/Client Rep. ?	Y	N

by Courier? UPS DHL FedEx Lone Star

Temperature Upon Receipt: 4.0 °C

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Southern Union Gas Services- Monahan

Date/ Time Received: 03/25/2013 04:30:00 PM

Work Order #: 459913

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

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

Analyst:	PH Device/Lot#:

Checklist completed by: _____ Date: _____

Checklist reviewed by: _____ Date: _____

Analytical Report 459989

for

Southern Union Gas Services- Monahans

Project Manager: Becky Haskell

SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

03-APR-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)

03-APR-13

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

Reference: XENCO Report No(s): **459989**
SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904
Project Address: Lea County, NM

Becky Haskell:

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) 459989. 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. 459989 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Nicholas Straccione
Project Manager

Sample Cross Reference 459989

Southern Union Gas Services- Monahans, Monahans, TX

SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
WW-1 @3'	S	03-22-13 13:30		459989-001
WW-1A @3'	S	03-22-13 14:30		459989-002
WW-1B @3'	S	03-22-13 15:00		459989-003
WW-1C @3'	S	03-25-13 11:00		459989-004
WW-1D @3'	S	03-25-13 16:30		459989-005

CASE NARRATIVE

Client Name: Southern Union Gas Services- Monahans
Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Project ID:
Work Order Number(s): *459989*

Report Date: *03-APR-13*
Date Received: *03/26/2013*

Sample receipt non conformances and comments:
None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:
Batch: LBA-909979 BTEX by EPA 8021B
SW8021BM

Batch 909979, Ethylbenzene, Toluene, m_p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.
Samples affected are: 459989-005, -003, -004, -001, -002.
The Laboratory Control Sample for Toluene, Ethylbenzene, m_p-Xylenes , o-Xylene is within laboratory Control Limits

Certificate of Analysis Summary 459989

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Project Id:
Contact: Becky Haskell
Project Location: Lea County, NM

Date Received in Lab: Tue Mar-26-13 04:45 pm
Report Date: 03-APR-13
Project Manager: Nicholas Straccione

Analysis Requested											
	Lab Id:	459989-001		459989-002		459989-003		459989-004		459989-005	
	Field Id:	WW-1 @3'		WW-1A @3'		WW-1B @3'		WW-1C @3'		WW-1D @3'	
	Depth:										
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Mar-22-13 13:30		Mar-22-13 14:30		Mar-22-13 15:00		Mar-25-13 11:00		Mar-25-13 16:30	
BTEX by EPA 8021B	***Extracted:***	Mar-27-13 12:15		Mar-27-13 12:15		Mar-27-13 12:15		Mar-27-13 12:15		Mar-27-13 12:15	
	Analyzed:	Mar-27-13 15:37		Mar-27-13 15:53		Mar-27-13 16:43		Mar-27-13 16:59		Mar-27-13 17:15	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.00110	ND	0.00111	ND	0.00108	ND	0.00111	ND	0.00104
Toluene		ND	0.00220	ND	0.00223	ND	0.00217	ND	0.00222	ND	0.00207
Ethylbenzene		ND	0.00110	ND	0.00111	ND	0.00108	ND	0.00111	ND	0.00104
m_p-Xylenes		ND	0.00220	ND	0.00223	ND	0.00217	ND	0.00222	ND	0.00207
o-Xylene		ND	0.00110	ND	0.00111	ND	0.00108	ND	0.00111	ND	0.00104
Total Xylenes		ND	0.00110	ND	0.00111	ND	0.00108	ND	0.00111	ND	0.00104
Total BTEX		ND	0.00110	ND	0.00111	ND	0.00108	ND	0.00111	ND	0.00104
Inorganic Anions by EPA 300/300.1	***Extracted:***	Apr-01-13 10:00		Apr-01-13 10:00		Apr-01-13 10:00		Apr-01-13 10:00		Apr-01-13 10:00	
	Analyzed:	Apr-01-13 22:11		Apr-01-13 22:55		Apr-01-13 23:16		Apr-01-13 23:38		Apr-02-13 00:00	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		437	10.0	1320	20.0	856	20.0	679	20.0	73.6	10.0
Percent Moisture	***Extracted:***										
	Analyzed:	Mar-27-13 17:00		Mar-27-13 17:00		Mar-27-13 17:00		Mar-27-13 17:00		Mar-27-13 17:00	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		9.08	1.00	10.6	1.00	7.73	1.00	10.2	1.00	3.87	1.00
TPH By SW8015 Mod	***Extracted:***	Mar-28-13 08:20		Mar-28-13 08:20		Mar-28-13 08:20		Mar-28-13 08:20		Mar-28-13 08:20	
	Analyzed:	Mar-28-13 15:55		Mar-28-13 16:20		Mar-28-13 16:45		Mar-28-13 17:12		Mar-28-13 17:37	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		ND	16.5	ND	16.8	ND	16.3	ND	16.6	ND	15.6
C12-C28 Diesel Range Hydrocarbons		ND	16.5	ND	16.8	ND	16.3	ND	16.6	ND	15.6
C28-C35 Oil Range Hydrocarbons		ND	16.5	ND	16.8	ND	16.3	ND	16.6	ND	15.6
Total TPH		ND	16.5	ND	16.8	ND	16.3	ND	16.6	ND	15.6

Nicholas Straccione
Project Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantiation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

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

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

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Certified and approved by numerous States and Agencies.

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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	

Form 2 - Surrogate Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Orders : 459989,

Project ID:

Lab Batch #: 909979 **Sample:** 459989-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/27/13 15:37

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	
4-Bromofluorobenzene	0.0305	0.0300	102	80-120	

Lab Batch #: 909979 **Sample:** 459989-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/27/13 15:53

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0277	0.0300	92	80-120	
4-Bromofluorobenzene	0.0250	0.0300	83	80-120	

Lab Batch #: 909979 **Sample:** 459989-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/27/13 16:43

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0281	0.0300	94	80-120	
4-Bromofluorobenzene	0.0267	0.0300	89	80-120	

Lab Batch #: 909979 **Sample:** 459989-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/27/13 16:59

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0254	0.0300	85	80-120	
4-Bromofluorobenzene	0.0280	0.0300	93	80-120	

Lab Batch #: 909979 **Sample:** 459989-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/27/13 17:15

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0266	0.0300	89	80-120	
4-Bromofluorobenzene	0.0265	0.0300	88	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Orders : 459989,

Project ID:

Lab Batch #: 910131 **Sample:** 459989-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/28/13 15:55

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.0	99.9	99	70-135	
o-Terphenyl	52.7	50.0	105	70-135	

Lab Batch #: 910131 **Sample:** 459989-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/28/13 16:20

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.6	100	100	70-135	
o-Terphenyl	53.3	50.1	106	70-135	

Lab Batch #: 910131 **Sample:** 459989-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/28/13 16:45

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.1	100	97	70-135	
o-Terphenyl	51.5	50.1	103	70-135	

Lab Batch #: 910131 **Sample:** 459989-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/28/13 17:12

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.4	99.7	96	70-135	
o-Terphenyl	50.6	49.9	101	70-135	

Lab Batch #: 910131 **Sample:** 459989-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/28/13 17:37

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.7	100	97	70-135	
o-Terphenyl	51.2	50.1	102	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Orders : 459989,

Project ID:

Lab Batch #: 909979 **Sample:** 635736-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/27/13 12:36

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0275	0.0300	92	80-120	
4-Bromofluorobenzene	0.0259	0.0300	86	80-120	

Lab Batch #: 910131 **Sample:** 635832-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/28/13 09:50

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.3	99.9	98	70-135	
o-Terphenyl	52.2	50.0	104	70-135	

Lab Batch #: 909979 **Sample:** 635736-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/27/13 12:04

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	
4-Bromofluorobenzene	0.0343	0.0300	114	80-120	

Lab Batch #: 910131 **Sample:** 635832-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/28/13 08:59

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	58.3	50.0	117	70-135	

Lab Batch #: 909979 **Sample:** 635736-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/27/13 12:20

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	80-120	
4-Bromofluorobenzene	0.0284	0.0300	95	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Orders : 459989,

Project ID:

Lab Batch #: 910131 **Sample:** 635832-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/28/13 09:25

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	58.3	50.1	116	70-135	

Lab Batch #: 909979 **Sample:** 459790-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/27/13 13:26

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	
4-Bromofluorobenzene	0.0333	0.0300	111	80-120	

Lab Batch #: 910131 **Sample:** 459989-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/28/13 19:40

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.9	100	95	70-135	
o-Terphenyl	53.9	50.1	108	70-135	

Lab Batch #: 909979 **Sample:** 459790-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/27/13 13:42

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0255	0.0300	85	80-120	
4-Bromofluorobenzene	0.0271	0.0300	90	80-120	

Lab Batch #: 910131 **Sample:** 459989-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/28/13 20:06

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.0	99.8	95	70-135	
o-Terphenyl	57.7	49.9	116	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

BS / BSD Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Order #: 459989 **Project ID:**

Analyst: KEB **Date Prepared:** 03/27/2013 **Date Analyzed:** 03/27/2013

Lab Batch ID: 909979 **Sample:** 635736-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.100	100	0.100	0.0946	95	6	70-130	35	
Toluene	<0.00200	0.100	0.100	100	0.100	0.0889	89	12	70-130	35	
Ethylbenzene	<0.00100	0.100	0.0963	96	0.100	0.0870	87	10	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.181	91	0.201	0.163	81	10	70-135	35	
o-Xylene	<0.00100	0.100	0.0937	94	0.100	0.0880	88	6	71-133	35	

Analyst: AMB **Date Prepared:** 04/01/2013 **Date Analyzed:** 04/01/2013

Lab Batch ID: 910455 **Sample:** 636033-1-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	<2.00	50.0	49.0	98	50.0	49.1	98	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

BS / BSD Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Order #: 459989 **Project ID:**

Analyst: KEB **Date Prepared:** 03/28/2013 **Date Analyzed:** 03/28/2013

Lab Batch ID: 910131 **Sample:** 635832-1-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	949	95	1000	988	99	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	999	1030	103	1000	1080	108	5	70-135	35	

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

Form 3 - MS Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Order #: 459989

Lab Batch #: 910455 **Project ID:**

Date Analyzed: 04/01/2013 **Date Prepared:** 04/01/2013 **Analyst:** AMB

QC- Sample ID: 459989-001 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	437	250	689	101	80-120	

Lab Batch #: 910455

Date Analyzed: 04/02/2013 **Date Prepared:** 04/01/2013 **Analyst:** AMB

QC- Sample ID: 460076-006 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	736	1010	1730	98	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: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Order # : 459989 **Project ID:**

Lab Batch ID: 909979 **QC- Sample ID:** 459790-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/27/2013 **Date Prepared:** 03/27/2013 **Analyst:** KEB

Reporting Units: mg/kg

BTEX by EPA 8021B	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
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	<0.000999	0.0999	0.0739	74	0.100	0.0727	73	2	70-130	35	
Toluene	<0.00200	0.0999	0.0579	58	0.100	0.0623	62	7	70-130	35	X
Ethylbenzene	<0.000999	0.0999	0.0456	46	0.100	0.0528	53	15	71-129	35	X
m_p-Xylenes	<0.00200	0.200	0.0804	40	0.201	0.0893	44	10	70-135	35	X
o-Xylene	<0.000999	0.0999	0.0446	45	0.100	0.0514	51	14	71-133	35	X

Lab Batch ID: 910131 **QC- Sample ID:** 459989-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/28/2013 **Date Prepared:** 03/28/2013 **Analyst:** KEB

Reporting Units: mg/kg

TPH By SW8015 Mod	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
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	<16.5	1100	1010	92	1100	1070	97	6	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<16.5	1100	1130	103	1100	1180	107	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

Sample Duplicate Recovery

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Order #: 459989

Lab Batch #: 910039 **Project ID:**

Date Analyzed: 03/27/2013 17:00 **Date Prepared:** 03/27/2013 **Analyst:** WRU

QC- Sample ID: 459879-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	8.09	7.64	6	20	

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

BRL - Below Reporting Limit

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

Project Manager: Becky Haskell

Company Name: Nova Safety and Environmental

Company Address: 2057 Commerce

City/State/Zip: Midland, TX 79703

Telephone No: 432.520.7720 Fax No: 432.520.7701

Sampler Signature: Rebecca Haskell

e-mail: rhaskell@novatraining.cc; curt.stanley@sug.com; ngreen@novatraining.cc

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Project #:

Project Loc: Lea County, NM

PO #:

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

(lab use only) ORDER #: 459989

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Preservation & # of Containers: Ice	HNO3	HCl	H2SO4	NaOH	Na2S2O3	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Analyze For: TPH: 418.1 8015M 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	Chlorides E 300.1			RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
01	WW-1 @ 3'			3/22/2013	1330		1	x								Soil	X								X			X				x
02	WW-1A @ 3'			3/22/2013	1430		1	x								Soil	X								X			X				x
03	WW-1B @ 3'			3/22/2013	1500		1	x								Soil	X								X			X				x
04	WW-1C @ 3'			3/25/2013	1100		1	x								Soil	X								X			X				x
05	WW-1D @ 3'			3/25/2013	1630		1	x								Soil	X								X			X				x

Special Instructions:

	Date	Time		Date	Time
Relinquished by: Rebecca Haskell	3/26/13	1030	Received by: Nikki Green	3/26	1030
Relinquished by: Nikki Green	3/26/13	1645	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT: Shawnee Smith	3/26/13	16:45

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered	Y	N
by Sampler/Client Rep. ?	Y	N
by Courier? UPS DHL FedEx Lone Star		

Temperature Upon Receipt: 0 °C

Final 1.000

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Southern Union Gas Services- Monahan

Date/ Time Received: 03/26/2013 04:45:00 PM

Work Order #: 459989

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)?	0
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**
#5 Custody Seals intact on sample bottles?	**Yes**
#6 *Custody Seals Signed and dated?	**Yes**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**Yes**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**Yes**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	**Yes**
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**Yes**

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

Analyst:	PH Device/Lot#:

Checklist completed by: _____ Date: _____

Checklist reviewed by: _____ Date: _____

Analytical Report 460525

for

Southern Union Gas Services- Monahans

Project Manager: Becky Haskell

SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

11-APR-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)

11-APR-13

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

Reference: XENCO Report No(s): **460525**
SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904
Project Address: Lea County, NM

Becky Haskell:

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) 460525. 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. 460525 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Nicholas Straccione
Project Manager

Sample Cross Reference 460525

Southern Union Gas Services- Monahans, Monahans, TX

SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW-1 @ 3'	S	04-02-13 09:00		460525-001
SW-1 @ 15'	S	04-02-13 10:00		460525-002
SW-1A @ 3'	S	04-02-13 11:00		460525-003
SW-1A @ 15'	S	04-02-13 14:20		460525-004
SW-1B @ 3'	S	04-02-13 15:15		460525-005
SW-1B @ 15'	S	04-02-13 16:40		460525-006

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 460525

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Project Id:
Contact: Becky Haskell
Project Location: Lea County, NM

Date Received in Lab: Wed Apr-03-13 04:55 pm
Report Date: 11-APR-13
Project Manager: Nicholas Straccione

Analysis Requested													
	Lab Id:	460525-001		460525-002		460525-003		460525-004		460525-005		460525-006	
	Field Id:	SW-1 @ 3'		SW-1 @ 15'		SW-1A @ 3'		SW-1A @ 15'		SW-1B @ 3'		SW-1B @ 15'	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Apr-02-13 09:00		Apr-02-13 10:00		Apr-02-13 11:00		Apr-02-13 14:20		Apr-02-13 15:15		Apr-02-13 16:40	
BTEX by EPA 8021B	Extracted:	Apr-08-13 09:20		Apr-08-13 09:20									
	Analyzed:	Apr-08-13 14:28		Apr-08-13 14:44									
	Units/RL:	mg/kg	RL	mg/kg	RL								
Benzene		ND	0.00106	ND	0.00106								
Toluene		ND	0.00213	ND	0.00212								
Ethylbenzene		ND	0.00106	ND	0.00106								
m_p-Xylenes		ND	0.00213	ND	0.00212								
o-Xylene		ND	0.00106	ND	0.00106								
Total Xylenes		ND	0.00106	ND	0.00106								
Total BTEX		ND	0.00106	ND	0.00106								
Inorganic Anions by EPA 300/300.1	Extracted:	Apr-05-13 10:05		Apr-05-13 10:05		Apr-05-13 10:05		Apr-05-13 10:05		Apr-08-13 10:00		Apr-05-13 10:05	
	Analyzed:	Apr-06-13 12:06		Apr-06-13 12:49		Apr-06-13 13:11		Apr-06-13 13:33		Apr-08-13 17:17		Apr-06-13 13:54	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		441	10.0	340	10.0	154	4.00	393	10.0	236	10.0	119	4.00
Percent Moisture	Extracted:												
	Analyzed:	Apr-04-13 17:00		Apr-04-13 17:00		Apr-04-13 17:00		Apr-04-13 17:00		Apr-04-13 17:00		Apr-04-13 17:00	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		5.60	1.00	6.59	1.00	5.05	1.00	5.47	1.00	4.02	1.00	4.53	1.00
TPH By SW8015 Mod	Extracted:	Apr-04-13 11:40		Apr-04-13 11:40									
	Analyzed:	Apr-05-13 08:36		Apr-04-13 19:14									
	Units/RL:	mg/kg	RL	mg/kg	RL								
C6-C12 Gasoline Range Hydrocarbons		ND	15.9	ND	16.1								
C12-C28 Diesel Range Hydrocarbons		ND	15.9	ND	16.1								
C28-C35 Oil Range Hydrocarbons		ND	15.9	ND	16.1								
Total TPH		ND	15.9	ND	16.1								

Nicholas Straccione
Project Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantiation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

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

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

Form 2 - Surrogate Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Orders : 460525, 460525 **Project ID:**

Lab Batch #: 910671 **Sample:** 460525-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/04/13 19:14

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.5	100	97	70-135	
o-Terphenyl	50.1	50.0	100	70-135	

Lab Batch #: 910671 **Sample:** 460525-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/05/13 08:36

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	100	100	70-135	
o-Terphenyl	51.1	50.0	102	70-135	

Lab Batch #: 910870 **Sample:** 460525-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/08/13 14:28

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0281	0.0300	94	80-120	
4-Bromofluorobenzene	0.0270	0.0300	90	80-120	

Lab Batch #: 910870 **Sample:** 460525-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/08/13 14:44

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0314	0.0300	105	80-120	
4-Bromofluorobenzene	0.0304	0.0300	101	80-120	

Lab Batch #: 910671 **Sample:** 636178-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/04/13 15:20

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.0	100	96	70-135	
o-Terphenyl	49.5	50.1	99	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Orders : 460525, 460525 **Project ID:**

Lab Batch #: 910870 **Sample:** 636306-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/08/13 11:11

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0258	0.0300	86	80-120	
4-Bromofluorobenzene	0.0324	0.0300	108	80-120	

Lab Batch #: 910671 **Sample:** 636178-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/04/13 14:20

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.4	99.7	91	70-135	
o-Terphenyl	55.2	49.9	111	70-135	

Lab Batch #: 910870 **Sample:** 636306-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/08/13 10:22

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0324	0.0300	108	80-120	
4-Bromofluorobenzene	0.0312	0.0300	104	80-120	

Lab Batch #: 910671 **Sample:** 636178-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/04/13 14:52

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.9	100	90	70-135	
o-Terphenyl	55.6	50.0	111	70-135	

Lab Batch #: 910870 **Sample:** 636306-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/08/13 10:55

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0305	0.0300	102	80-120	
4-Bromofluorobenzene	0.0328	0.0300	109	80-120	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Orders : 460525, 460525 **Project ID:**

Lab Batch #: 910671 **Sample:** 460525-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/05/13 01:43

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.5	99.7	88	70-135	
o-Terphenyl	53.2	49.9	107	70-135	

Lab Batch #: 910870 **Sample:** 460525-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/08/13 16:06

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0320	0.0300	107	80-120	
4-Bromofluorobenzene	0.0313	0.0300	104	80-120	

Lab Batch #: 910671 **Sample:** 460525-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/05/13 02:14

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.4	100	88	70-135	
o-Terphenyl	55.1	50.0	110	70-135	

Lab Batch #: 910870 **Sample:** 460525-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/08/13 16:23

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0322	0.0300	107	80-120	
4-Bromofluorobenzene	0.0279	0.0300	93	80-120	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Order #: 460525, 460525 **Project ID:**

Analyst: KEB **Date Prepared:** 04/08/2013 **Date Analyzed:** 04/08/2013

Lab Batch ID: 910870 **Sample:** 636306-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.0923	92	0.0992	0.0953	96	3	70-130	35	
Toluene	<0.00200	0.100	0.0946	95	0.0992	0.0962	97	2	70-130	35	
Ethylbenzene	<0.00100	0.100	0.0820	82	0.0992	0.0844	85	3	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.170	85	0.198	0.174	88	2	70-135	35	
o-Xylene	<0.00100	0.100	0.0938	94	0.0992	0.0951	96	1	71-133	35	

Analyst: AMB **Date Prepared:** 04/05/2013 **Date Analyzed:** 04/06/2013

Lab Batch ID: 911028 **Sample:** 636376-1-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	<2.00	50.0	47.7	95	50.0	48.8	98	2	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

BS / BSD Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Order #: 460525, 460525 **Project ID:**

Analyst: AMB **Date Prepared:** 04/08/2013 **Date Analyzed:** 04/08/2013

Lab Batch ID: 911048 **Sample:** 636424-1-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	<2.00	50.0	49.3	99	50.0	49.2	98	0	80-120	20	

Analyst: KEB **Date Prepared:** 04/04/2013 **Date Analyzed:** 04/04/2013

Lab Batch ID: 910671 **Sample:** 636178-1-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	997	906	91	1000	893	89	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	997	999	100	1000	974	97	3	70-135	35	

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

Form 3 - MS Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Order #: 460525

Lab Batch #: 911028 **Project ID:**

Date Analyzed: 04/06/2013 **Date Prepared:** 04/05/2013 **Analyst:** AMB

QC- Sample ID: 460525-001 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	441	250	682	96	80-120	

Lab Batch #: 911048

Date Analyzed: 04/08/2013 **Date Prepared:** 04/08/2013 **Analyst:** AMB

QC- Sample ID: 460525-005 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	236	250	484	99	80-120	

Lab Batch #: 911048

Date Analyzed: 04/08/2013 **Date Prepared:** 04/08/2013 **Analyst:** AMB

QC- Sample ID: 460712-010 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	165	500	658	99	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: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Order # : 460525 **Project ID:**

Lab Batch ID: 910870 **QC- Sample ID:** 460525-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/08/2013 **Date Prepared:** 04/08/2013 **Analyst:** KEB

Reporting Units: mg/kg

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
	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
Benzene	<0.00106	0.106	0.0958	90	0.106	0.0863	81	10	70-130	35	
Toluene	<0.00212	0.106	0.0984	93	0.106	0.0827	78	17	70-130	35	
Ethylbenzene	<0.00106	0.106	0.0884	83	0.106	0.0749	71	17	71-129	35	
m_p-Xylenes	<0.00212	0.212	0.184	87	0.211	0.153	73	18	70-135	35	
o-Xylene	<0.00106	0.106	0.0971	92	0.106	0.0787	74	21	71-133	35	

Lab Batch ID: 910671 **QC- Sample ID:** 460525-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/05/2013 **Date Prepared:** 04/04/2013 **Analyst:** KEB

Reporting Units: mg/kg

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
	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
C6-C12 Gasoline Range Hydrocarbons	<15.8	1060	935	88	1060	955	90	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.8	1060	1020	96	1060	1030	97	1	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

Sample Duplicate Recovery

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Order #: 460525

Lab Batch #: 910654 **Project ID:**

Date Analyzed: 04/04/2013 17:00 **Date Prepared:** 04/04/2013 **Analyst:** WRU

QC- Sample ID: 460525-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	5.60	5.95	6	20	

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

BRL - Below Reporting Limit

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

Project Manager: Becky Haskell

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Company Name: Nova Safety and Environmental

Project #:

Company Address: 2057 Commerce

Project Loc: Lea County, NM

City/State/Zip: Midland, TX 79703

PO #:

Telephone No: 432.520.7720 Fax No: 432.520.7701

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: Rebecca Haskell

e-mail: rhaskell@novatraining.cc; Rose.Slade@sug.com; ngreen@novatraining.cc

(lab use only) ORDER #: 460525

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO3	HCl	H2SO4	NaOH	Na2S2O3	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW=Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Analyze For: TPH: 418.1 / 8015M / 8015B	TPH: TX 1005 / TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	Chlorides E 300.1			RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
01	SW-1 @ 3'			4/2/2013	9:00		1	x								Soil	X								X			X				x
02	SW-1 @ 15'			4/2/2013	10:00		1	x								Soil	X								X			X				x
03	SW-1A @ 3'			4/2/2013	11:00		1	x								Soil												X				x
04	SW-1A @ 15'			4/2/2013	14:20		1	x								Soil												X				x
05	SW-1B @ 3'			4/2/2013	15:15		1	x								Soil												X				x
06	SW-1B @ 15'			4/2/2013	16:40		1	x								Soil												X				x

Special Instructions:

Relinquished by: Rebecca Haskell	Date 4/3/13	Time 1425	Received by: Nikki Green	Date 4/3/13	Time 1420	
Relinquished by: Nikki Green	Date 4/3	Time 1655	Received by:	Date	Time	
Relinquished by:	Date	Time	Received by ELOT: Shawnee Smith	Date 4-3-13	Time 16:55	

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered	Y	N
by Sampler/Client Rep. ?	Y	N
by Courier? UPS DHL FedEx Lone Star		

Temperature Upon Receipt: 1 °C

Final 1.001

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Southern Union Gas Services- Monahan

Date/ Time Received: 04/03/2013 04:55:00 PM

Work Order #: 460525

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 bubble)?	**Yes**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	**Yes**
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**Yes**

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

Analyst:	PH Device/Lot#:

Checklist completed by: _____ Date: _____

Checklist reviewed by: _____ Date: _____

Analytical Report 460712

for

Southern Union Gas Services- Monahans

Project Manager: Becky Haskell

SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

11-APR-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)

11-APR-13

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

Reference: XENCO Report No(s): **460712**
SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904
Project Address: Lea County, NM

Becky Haskell:

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) 460712. 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. 460712 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Nicholas Straccione
Project Manager

Sample Cross Reference 460712

Southern Union Gas Services- Monahans, Monahans, TX

SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
NWW-1 @ 3'	S	04-03-13 09:30		460712-001
NWW-1 @ 15'	S	04-03-13 10:00		460712-002
NWW-1A @ 15'	S	04-03-13 11:45		460712-003
NWW-1B @ 3'	S	04-03-13 13:30		460712-004
NWW-1C @ 3'	S	04-03-13 14:30		460712-005
EW-1 @ 3'	S	04-03-13 15:00		460712-006
EW-1 @ 15'	S	04-03-13 15:20		460712-007
EW-1A @ 15'	S	04-03-13 16:00		460712-008
EW-1B @ 3'	S	04-03-13 16:30		460712-009
EW-1B @ 15'	S	04-03-13 18:00		460712-010

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 460712

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Project Id:
Contact: Becky Haskell
Project Location: Lea County, NM

Date Received in Lab: Fri Apr-05-13 02:20 pm
Report Date: 11-APR-13
Project Manager: Nicholas Straccione

Analysis Requested													
	Lab Id:	460712-001		460712-002		460712-003		460712-004		460712-005		460712-006	
	Field Id:	NWW-1 @ 3'		NWW-1 @ 15'		NWW-1A @ 15'		NWW-1B @ 3'		NWW-1C @ 3'		EW-1 @ 3'	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Apr-03-13 09:30		Apr-03-13 10:00		Apr-03-13 11:45		Apr-03-13 13:30		Apr-03-13 14:30		Apr-03-13 15:00	
BTEX by EPA 8021B	***Extracted:***	Apr-08-13 09:20		Apr-08-13 09:20								Apr-08-13 09:20	
	Analyzed:	Apr-08-13 15:01		Apr-08-13 15:17								Apr-08-13 15:34	
	Units/RL:	mg/kg	RL	mg/kg	RL							mg/kg	RL
Benzene		ND	0.00106	ND	0.00104							ND	0.00110
Toluene		ND	0.00212	ND	0.00209							ND	0.00221
Ethylbenzene		ND	0.00106	ND	0.00104							ND	0.00110
m_p-Xylenes		ND	0.00212	ND	0.00209							ND	0.00221
o-Xylene		ND	0.00106	ND	0.00104							ND	0.00110
Total Xylenes		ND	0.00106	ND	0.00104							ND	0.00110
Total BTEX		ND	0.00106	ND	0.00104							ND	0.00110
Inorganic Anions by EPA 300/300.1	***Extracted:***	Apr-08-13 10:00		Apr-08-13 10:00		Apr-08-13 10:00		Apr-08-13 10:00		Apr-08-13 10:00		Apr-08-13 10:00	
	Analyzed:	Apr-08-13 18:00		Apr-08-13 18:22		Apr-08-13 18:43		Apr-08-13 19:05		Apr-08-13 19:27		Apr-08-13 20:32	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		120	4.00	760	20.0	97.0	4.00	1220	20.0	13.1	4.00	3910	100
Percent Moisture	***Extracted:***												
	Analyzed:	Apr-08-13 09:30		Apr-08-13 09:30		Apr-08-13 09:30		Apr-08-13 09:30		Apr-08-13 09:30		Apr-08-13 09:30	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		5.69	1.00	4.91	1.00	2.83	1.00	8.57	1.00	5.80	1.00	9.92	1.00
TPH By SW8015 Mod	***Extracted:***	Apr-08-13 13:40		Apr-08-13 13:40								Apr-08-13 13:40	
	Analyzed:	Apr-08-13 20:41		Apr-08-13 21:06								Apr-08-13 21:58	
	Units/RL:	mg/kg	RL	mg/kg	RL							mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		ND	15.8	ND	15.7							ND	16.6
C12-C28 Diesel Range Hydrocarbons		ND	15.8	ND	15.7							ND	16.6
C28-C35 Oil Range Hydrocarbons		ND	15.8	ND	15.7							ND	16.6
Total TPH		ND	15.8	ND	15.7							ND	16.6

Nicholas Straccione
Project Manager

Certificate of Analysis Summary 460712

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Project Id:
Contact: Becky Haskell
Project Location: Lea County, NM

Date Received in Lab: Fri Apr-05-13 02:20 pm
Report Date: 11-APR-13
Project Manager: Nicholas Straccione

Analysis Requested													
	Lab Id:	460712-007		460712-008		460712-009		460712-010					
	Field Id:	EW-1 @ 15'		EW-1A @ 15'		EW-1B @ 3'		EW-1B @ 15'					
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	Apr-03-13 15:20		Apr-03-13 16:00		Apr-03-13 16:30		Apr-03-13 18:00					
BTEX by EPA 8021B	***Extracted:***	Apr-08-13 09:20											
	Analyzed:	Apr-08-13 15:50											
	Units/RL:	mg/kg	RL										
Benzene		ND	0.00102										
Toluene		ND	0.00204										
Ethylbenzene		ND	0.00102										
m_p-Xylenes		ND	0.00204										
o-Xylene		ND	0.00102										
Total Xylenes		ND	0.00102										
Total BTEX		ND	0.00102										
Inorganic Anions by EPA 300/300.1	***Extracted:***	Apr-08-13 10:00		Apr-08-13 10:00		Apr-08-13 10:00		Apr-08-13 10:00					
	Analyzed:	Apr-08-13 20:54		Apr-08-13 21:15		Apr-08-13 21:37		Apr-08-13 21:59					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		1150	20.0	1070	20.0	221	10.0	165	20.0				
Percent Moisture	***Extracted:***												
	Analyzed:	Apr-08-13 09:30		Apr-08-13 09:30		Apr-08-13 09:30		Apr-08-13 09:30					
	Units/RL:	%	RL	%	RL	%	RL	%	RL				
Percent Moisture		3.06	1.00	2.43	1.00	3.95	1.00	2.63	1.00				
TPH By SW8015 Mod	***Extracted:***	Apr-08-13 13:40											
	Analyzed:	Apr-08-13 22:22											
	Units/RL:	mg/kg	RL										
C6-C12 Gasoline Range Hydrocarbons		ND	15.5										
C12-C28 Diesel Range Hydrocarbons		ND	15.5										
C28-C35 Oil Range Hydrocarbons		ND	15.5										
Total TPH		ND	15.5										

Nicholas Straccione
Project Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantiation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

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

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

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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	

Form 2 - Surrogate Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Orders : 460712, 460712 **Project ID:**

Lab Batch #: 910870 **Sample:** 460712-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/08/13 15:01

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene	0.0272	0.0300	91	80-120	

Lab Batch #: 910870 **Sample:** 460712-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/08/13 15:17

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0324	0.0300	108	80-120	
4-Bromofluorobenzene	0.0280	0.0300	93	80-120	

Lab Batch #: 910870 **Sample:** 460712-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/08/13 15:34

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0278	0.0300	93	80-120	

Lab Batch #: 910870 **Sample:** 460712-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/08/13 15:50

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	80-120	
4-Bromofluorobenzene	0.0311	0.0300	104	80-120	

Lab Batch #: 910882 **Sample:** 460712-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/08/13 20:41

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	99.5	101	70-135	
o-Terphenyl	52.3	49.8	105	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Orders : 460712, 460712 **Project ID:**

Lab Batch #: 910882 **Sample:** 460712-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/08/13 21:06 **SURROGATE RECOVERY STUDY**

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	99.8	101	70-135	
o-Terphenyl	52.6	49.9	105	70-135	

Lab Batch #: 910882 **Sample:** 460712-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/08/13 21:58 **SURROGATE RECOVERY STUDY**

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.3	99.8	99	70-135	
o-Terphenyl	53.1	49.9	106	70-135	

Lab Batch #: 910882 **Sample:** 460712-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/08/13 22:22 **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	
o-Terphenyl	52.3	50.0	105	70-135	

Lab Batch #: 910870 **Sample:** 636306-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/08/13 11:11 **SURROGATE RECOVERY STUDY**

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0258	0.0300	86	80-120	
4-Bromofluorobenzene	0.0324	0.0300	108	80-120	

Lab Batch #: 910882 **Sample:** 636320-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/08/13 16:55 **SURROGATE RECOVERY STUDY**

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.6	99.9	100	70-135	
o-Terphenyl	53.3	50.0	107	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Orders : 460712, 460712 **Project ID:**

Lab Batch #: 910870 **Sample:** 636306-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/08/13 10:22

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0324	0.0300	108	80-120	
4-Bromofluorobenzene	0.0312	0.0300	104	80-120	

Lab Batch #: 910882 **Sample:** 636320-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/08/13 16:04

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.8	100	96	70-135	
o-Terphenyl	59.7	50.0	119	70-135	

Lab Batch #: 910870 **Sample:** 636306-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/08/13 10:55

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0305	0.0300	102	80-120	
4-Bromofluorobenzene	0.0328	0.0300	109	80-120	

Lab Batch #: 910882 **Sample:** 636320-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/08/13 16:30

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.9	100	97	70-135	
o-Terphenyl	60.1	50.1	120	70-135	

Lab Batch #: 910870 **Sample:** 460525-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/08/13 16:06

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0320	0.0300	107	80-120	
4-Bromofluorobenzene	0.0313	0.0300	104	80-120	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Orders : 460712, 460712 **Project ID:**

Lab Batch #: 910882 **Sample:** 460785-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/09/13 02:08

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	57.6	50.1	115	70-135	

Lab Batch #: 910870 **Sample:** 460525-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/08/13 16:23

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0322	0.0300	107	80-120	
4-Bromofluorobenzene	0.0279	0.0300	93	80-120	

Lab Batch #: 910882 **Sample:** 460785-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/09/13 02:33

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	58.3	50.1	116	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Order #: 460712, 460712 **Project ID:**

Analyst: KEB **Date Prepared:** 04/08/2013 **Date Analyzed:** 04/08/2013

Lab Batch ID: 910870 **Sample:** 636306-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.0923	92	0.0992	0.0953	96	3	70-130	35	
Toluene	<0.00200	0.100	0.0946	95	0.0992	0.0962	97	2	70-130	35	
Ethylbenzene	<0.00100	0.100	0.0820	82	0.0992	0.0844	85	3	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.170	85	0.198	0.174	88	2	70-135	35	
o-Xylene	<0.00100	0.100	0.0938	94	0.0992	0.0951	96	1	71-133	35	

Analyst: AMB **Date Prepared:** 04/08/2013 **Date Analyzed:** 04/08/2013

Lab Batch ID: 911048 **Sample:** 636424-1-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	<2.00	50.0	49.3	99	50.0	49.2	98	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

BS / BSD Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Order #: 460712, 460712 **Project ID:**

Analyst: KEB **Date Prepared:** 04/08/2013 **Date Analyzed:** 04/08/2013

Lab Batch ID: 910882 **Sample:** 636320-1-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	1000	942	94	1000	944	94	0	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	994	99	1000	981	98	1	70-135	35	

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

Form 3 - MS Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Order #: 460712

Lab Batch #: 911048 **Project ID:**

Date Analyzed: 04/08/2013 **Date Prepared:** 04/08/2013 **Analyst:** AMB

QC- Sample ID: 460525-005 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	236	250	484	99	80-120	

Lab Batch #: 911048

Date Analyzed: 04/08/2013 **Date Prepared:** 04/08/2013 **Analyst:** AMB

QC- Sample ID: 460712-010 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	165	500	658	99	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: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Order # : 460712 **Project ID:**

Lab Batch ID: 910870 **QC- Sample ID:** 460525-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/08/2013 **Date Prepared:** 04/08/2013 **Analyst:** KEB

Reporting Units: mg/kg

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
	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
Benzene	<0.00106	0.106	0.0958	90	0.106	0.0863	81	10	70-130	35	
Toluene	<0.00212	0.106	0.0984	93	0.106	0.0827	78	17	70-130	35	
Ethylbenzene	<0.00106	0.106	0.0884	83	0.106	0.0749	71	17	71-129	35	
m_p-Xylenes	<0.00212	0.212	0.184	87	0.211	0.153	73	18	70-135	35	
o-Xylene	<0.00106	0.106	0.0971	92	0.106	0.0787	74	21	71-133	35	

Lab Batch ID: 910882 **QC- Sample ID:** 460785-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/09/2013 **Date Prepared:** 04/08/2013 **Analyst:** KEB

Reporting Units: mg/kg

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
	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
C6-C12 Gasoline Range Hydrocarbons	<16.9	1130	1110	98	1120	1070	96	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	57.4	1130	1160	98	1120	1130	96	3	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

Sample Duplicate Recovery

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Order #: 460712

Lab Batch #: 910789 **Project ID:**

Date Analyzed: 04/08/2013 09:30 **Date Prepared:** 04/08/2013 **Analyst:** WRU

QC- Sample ID: 460679-007 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	2.28	2.24	2	20	

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

BRL - Below Reporting Limit

Xenco Laboratories

The Environmental Lab of Texas

12600 West I-20 East
Odessa, Texas 79765

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

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Becky Haskell

Company Name: Nova Safety and Environmental

Company Address: 2057 Commerce

City/State/Zip: Midland, TX 79703

Telephone No: 432.520.7720

Fax No: 432.520.7701

Sampler Signature: Rebecca Haskell

e-mail: rhaskell@novatraining.cc
Rose.Slade@sug.com
ngreen@novatraining.cc

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Project #:

Project Loc: Lea County, NM

PO #:

Report Format: [X] Standard [ ] TRRP [ ] NPDES

(lab use only)
ORDER #: 460712

Preservation & # of Containers: Ice, HNO_3, HCl, H_2SO_4, NaOH, $Na_2S_2O_3$, None, Other (Specify)

Matrix: DW=Drinking Water SL=Sludge; GW = Groundwater S=Soil/Solid; NP=Non-Potable Specify Other

Analyze For: TCLP: / TOTAL:

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix	TPH: 418.1 (8015M) 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX (8021B)/5030 or BTEX 8260	RCI	N.O.R.M.	Chlorides E 300.1			RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
01	NWW-1 @ 3'			4/3/2013	9:30		1	x								Soil	X								X			X				x
02	NWW-1 @ 15'			4/3/2013	10:00		1	x								Soil	X								X			X				x
03	NWW-1A @ 15'			4/3/2013	11:45		1	x								Soil												X				x
04	NWW-1B @ 3'			4/3/2013	13:30		1	x								Soil												X				x
05	NWW- 1C @ 3'			4/3/2013	14:30		1	x								Soil												X				x
06	EW-1 @ 3'			4/4/2013	15:00		1	x								Soil	X								X			X				x
07	EW-1 @ 15'			4/4/2013	15:20		1	x								Soil	X								X			X				x
08	EW-1A @ 15'			4/4/2013	16:00		1	x								Soil												X				x
09	EW-1B @ 3'			4/4/2013	16:30		1	x								Soil												X				x
10	EW-1B @ 15'			4/4/2013	18:00		1	x								Soil												X				x

Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
Rebecca Haskell	4/5/13	1350	Jonathan Repman	4/5/13	13:50
Jonathan Repman	4/5/13				
			Received by ELOT: [signature]	4/5/13	14:20

Laboratory Comments:

Sample Containers Intact?	(Y)	N
VOCs Free of Headspace?	Y	(N/A)
Labels on container(s)	(Y)	N
Custody seals on container(s)	(Y)	N
Custody seals on cooler(s)	(Y)	N
Sample Hand Delivered	(Y)	N
by Sampler/Client Rep. ?	Y	(N)
by Courier? UPS DHL FedEx Lone Star		

Temperature Upon Receipt: 0 °C

Final 1.001

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Southern Union Gas Services- Monahan

Date/ Time Received: 04/05/2013 02:20:00 PM

Work Order #: 460712

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)?	0
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**
#5 Custody Seals intact on sample bottles?	**Yes**
#6 *Custody Seals Signed and dated?	**Yes**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**Yes**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**Yes**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	**Yes**
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**Yes**

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

Analyst:	PH Device/Lot#:

Checklist completed by: _____ Date: _____

Checklist reviewed by: _____ Date: _____

Analytical Report 460955

for

Southern Union Gas Services- Monahans

Project Manager: Becky Haskell

SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

17-APR-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)

17-APR-13

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

Reference: XENCO Report No(s): **460955**
SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904
Project Address: Lea County, NM

Becky Haskell:

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) 460955. 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. 460955 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Nicholas Straccione
Project Manager

Sample Cross Reference 460955

Southern Union Gas Services- Monahans, Monahans, TX

SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
EW-2 @ 3'	S	04-05-13 13:21		460955-001
EW-2A @ 3'	S	04-09-13 11:32		460955-002
EW-2 @ 15'	S	04-05-13 13:40		460955-003
EW-2A @ 15'	S	04-09-13 11:50		460955-004

Project ID:
Work Order Number(s): *460955*

Report Date: *17-APR-13*
Date Received: *04/10/2013*

Sample receipt non conformances and comments:
None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:
Batch: LBA-911503 TPH By SW8015 Mod
SW8015MOD_NM

Batch 911503, C12-C28 Diesel Range Hydrocarbons, C6-C12 Gasoline Range Hydrocarbons recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.
Samples affected are: 460955-003.
The Laboratory Control Sample for C12-C28 Diesel Range Hydrocarbons, C6-C12 Gasoline Range Hydrocarbons is within laboratory Control Limits

Certificate of Analysis Summary 460955

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Project Id:
Contact: Becky Haskell
Project Location: Lea County, NM

Date Received in Lab: Wed Apr-10-13 12:53 pm
Report Date: 17-APR-13
Project Manager: Nicholas Straccione

Analysis Requested													
	Lab Id:	460955-001		460955-002		460955-003		460955-004					
	Field Id:	EW-2 @ 3'		EW-2A @ 3'		EW-2 @ 15'		EW-2A @ 15'					
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	Apr-05-13 13:21		Apr-09-13 11:32		Apr-05-13 13:40		Apr-09-13 11:50					
BTEX by EPA 8021B	***Extracted:***	Apr-12-13 09:20				Apr-12-13 09:20							
	Analyzed:	Apr-12-13 11:51				Apr-12-13 10:12							
	Units/RL:	mg/kg	RL			mg/kg	RL						
Benzene		ND	0.00107			ND	0.00109						
Toluene		ND	0.00214			ND	0.00218						
Ethylbenzene		ND	0.00107			ND	0.00109						
m_p-Xylenes		ND	0.00214			ND	0.00218						
o-Xylene		ND	0.00107			ND	0.00109						
Total Xylenes		ND	0.00107			ND	0.00109						
Total BTEX		ND	0.00107			ND	0.00109						
Inorganic Anions by EPA 300/300.1	***Extracted:***	Apr-17-13 10:00		Apr-17-13 10:00		Apr-17-13 10:00		Apr-17-13 10:00					
	Analyzed:	Apr-17-13 13:31		Apr-17-13 14:14		Apr-17-13 14:36		Apr-17-13 15:41					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		2800	100	163	10.0	4110	200	ND	20.0				
Percent Moisture	***Extracted:***												
	Analyzed:	Apr-10-13 17:05		Apr-10-13 17:05		Apr-10-13 17:05		Apr-10-13 17:05					
	Units/RL:	%	RL	%	RL	%	RL	%	RL				
Percent Moisture		6.14	1.00	5.10	1.00	7.87	1.00	3.09	1.00				
TPH By SW8015 Mod	***Extracted:***	Apr-16-13 15:15				Apr-16-13 15:15							
	Analyzed:	Apr-17-13 01:25				Apr-17-13 01:57							
	Units/RL:	mg/kg	RL			mg/kg	RL						
C6-C12 Gasoline Range Hydrocarbons		ND	15.9			ND	16.2						
C12-C28 Diesel Range Hydrocarbons		34.5	15.9			ND	16.2						
C28-C35 Oil Range Hydrocarbons		ND	15.9			ND	16.2						
Total TPH		34.5	15.9			ND	16.2						

Nicholas Straccione
Project Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantiation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

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

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

Form 2 - Surrogate Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Orders : 460955,

Project ID:

Lab Batch #: 911306 **Sample:** 460955-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/12/13 10:12

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0281	0.0300	94	80-120	
4-Bromofluorobenzene	0.0297	0.0300	99	80-120	

Lab Batch #: 911306 **Sample:** 460955-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/12/13 11:51

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0279	0.0300	93	80-120	
4-Bromofluorobenzene	0.0282	0.0300	94	80-120	

Lab Batch #: 911503 **Sample:** 460955-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/17/13 01:25

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.7	99.7	94	70-135	
o-Terphenyl	48.4	49.9	97	70-135	

Lab Batch #: 911503 **Sample:** 460955-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/17/13 01:57

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	99.8	95	70-135	
o-Terphenyl	48.6	49.9	97	70-135	

Lab Batch #: 911306 **Sample:** 636550-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/12/13 09:39

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	
4-Bromofluorobenzene	0.0321	0.0300	107	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Orders : 460955,

Project ID:

Lab Batch #: 911503 **Sample:** 636699-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/16/13 22:41

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	99.6	109	70-135	
o-Terphenyl	57.3	49.8	115	70-135	

Lab Batch #: 911306 **Sample:** 636550-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/12/13 09:07

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0329	0.0300	110	80-120	
4-Bromofluorobenzene	0.0323	0.0300	108	80-120	

Lab Batch #: 911503 **Sample:** 636699-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/16/13 21:32

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	114	99.8	114	70-135	
o-Terphenyl	50.2	49.9	101	70-135	

Lab Batch #: 911306 **Sample:** 636550-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/12/13 09:23

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0307	0.0300	102	80-120	
4-Bromofluorobenzene	0.0301	0.0300	100	80-120	

Lab Batch #: 911503 **Sample:** 636699-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/16/13 22:07

SURROGATE 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	
o-Terphenyl	50.7	50.1	101	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Orders : 460955,

Project ID:

Lab Batch #: 911306 **Sample:** 461087-002 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/12/13 16:30

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0324	0.0300	108	80-120	
4-Bromofluorobenzene	0.0302	0.0300	101	80-120	

Lab Batch #: 911503 **Sample:** 460955-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/17/13 02:31

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	122	100	122	70-135	
o-Terphenyl	51.5	50.1	103	70-135	

Lab Batch #: 911306 **Sample:** 461087-002 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/12/13 16:47

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0328	0.0300	109	80-120	
4-Bromofluorobenzene	0.0301	0.0300	100	80-120	

Lab Batch #: 911503 **Sample:** 460955-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/17/13 03:04

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	99.9	111	70-135	
o-Terphenyl	47.6	50.0	95	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

BS / BSD Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Order #: 460955 **Project ID:**

Analyst: DYV **Date Prepared:** 04/12/2013 **Date Analyzed:** 04/12/2013

Lab Batch ID: 911306 **Sample:** 636550-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.0758	76	0.100	0.0865	87	13	70-130	35	
Toluene	<0.00200	0.100	0.0761	76	0.100	0.0877	88	14	70-130	35	
Ethylbenzene	<0.00100	0.100	0.0839	84	0.100	0.0936	94	11	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.151	76	0.200	0.168	84	11	70-135	35	
o-Xylene	<0.00100	0.100	0.0745	75	0.100	0.0872	87	16	71-133	35	

Analyst: AMB **Date Prepared:** 04/17/2013 **Date Analyzed:** 04/17/2013

Lab Batch ID: 911595 **Sample:** 636746-1-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	<2.00	50.0	51.1	102	50.0	50.8	102	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

BS / BSD Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Order #: 460955 **Project ID:**

Analyst: KEB **Date Prepared:** 04/16/2013 **Date Analyzed:** 04/16/2013

Lab Batch ID: 911503 **Sample:** 636699-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.0	998	940	94	1000	941	94	0	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	998	1050	105	1000	1060	106	1	70-135	35	

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

Form 3 - MS Recoveries

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Order #: 460955
Lab Batch #: 911595
Project ID:
Date Analyzed: 04/17/2013
Date Prepared: 04/17/2013
Analyst: AMB
QC- Sample ID: 460955-001 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	2800	2500	5640	114	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: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Order # : 460955 **Project ID:**

Lab Batch ID: 911306 **QC- Sample ID:** 461087-002 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/12/2013 **Date Prepared:** 04/12/2013 **Analyst:** DYV

Reporting Units: mg/kg

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
	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
Benzene	<0.00103	0.103	0.0860	83	0.103	0.0848	82	1	70-130	35	
Toluene	<0.00205	0.103	0.0887	86	0.103	0.0931	90	5	70-130	35	
Ethylbenzene	<0.00103	0.103	0.0955	93	0.103	0.0982	95	3	71-129	35	
m_p-Xylenes	<0.00205	0.205	0.173	84	0.207	0.179	86	3	70-135	35	
o-Xylene	<0.00103	0.103	0.0890	86	0.103	0.0976	95	9	71-133	35	

Lab Batch ID: 911503 **QC- Sample ID:** 460955-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/17/2013 **Date Prepared:** 04/16/2013 **Analyst:** KEB

Reporting Units: mg/kg

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
	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
C6-C12 Gasoline Range Hydrocarbons	<16.0	1070	1000	93	1060	1030	97	3	70-135	35	
C12-C28 Diesel Range Hydrocarbons	34.5	1070	1160	105	1060	1180	108	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

Sample Duplicate Recovery

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Work Order #: 460955

Lab Batch #: 911058 **Project ID:**

Date Analyzed: 04/10/2013 17:05 **Date Prepared:** 04/10/2013 **Analyst:** WRU

QC- Sample ID: 460897-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	16.6	16.9	2	20	

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

BRL - Below Reporting Limit

Xenco Laboratories

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

Project Manager: Becky Haskell

Company Name: Nova Safety and Environmental

Company Address: 2057 Commerce

City/State/Zip: Midland, TX 79703

Telephone No: 432.520.7720 Fax No: 432.520.7701

Sampler Signature: Rebecca Haskell e-mail: rhaskell@novatraining.cc; Rose.Slade@sug.com; ngreen@novatraining.cc

Project Name: SUG 4 Inch Lateral (2/18/13) 1RP-02-13-2904

Project #:

Project Loc: Lea County, NM

PO #:

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

(lab use only) ORDER #: 460955

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Analyze For: TCLP: TPH: 418.1 8015M 8015B	TOTAL: TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B 5030 or BTEX 8260	RCI	N.O.R.M.	Chlorides E 300.1			RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
01	EW-2 @ 3'			4/5/2013	13:21		1	x								Soil	X								X			X				x
02	EW-2A @ 3'			4/9/2013	11:32		1	x								Soil									X			X				x
03	EW-2 @ 15'			4/5/2013	13:40		1	x								Soil	x								x			X				x
04	EW-2A @ 15'			4/9/2013	11:50		1	x								Soil									X			X				x

Special Instructions:

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N/A
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered	Y	N
by Sampler/Client Rep. ?	Y	N

by Courier? UPS DHL FedEx Lone Star

Temperature Upon Receipt: 1.5 °C

	Date	Time		Date	Time
Relinquished by: Rebecca Haskell	4/10/13	858	Received by: Jonathan Reyna	4/10/13	858
Relinquished by: Jonathan Reyna	4/10/13	12:53	Received by:		
Relinquished by:			Received by ELOT:	4/10/13	12:53

Final 1.000

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Southern Union Gas Services- Monahan

Date/ Time Received: 04/10/2013 12:53:00 PM

Work Order #: 460955

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

Temperature Measuring device used :

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

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

Analyst:	PH Device/Lot#:

Checklist completed by: _____ Date: _____

Checklist reviewed by: _____ Date: _____

Analytical Report 479905

for

Regency Gas

Project Manager: Curt Stanley

4" Lateral 2/18/13

27-FEB-14

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-14-16-TX), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
New Jersey (TX007), North Carolina(681), Oklahoma (9218), Pennsylvania (68-03610)

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

27-FEB-14

Project Manager: **Curt Stanley**
Regency Gas
801 South Loop 464
Monahans, TX 79756

Reference: XENCO Report No(s): **479905**
4" Lateral 2/18/13
Project Address: Lea County, NM

Curt Stanley:

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) 479905. 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. 479905 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 479905

Regency Gas, Monahans, TX

4" Lateral 2/18/13

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SB-1 @10'	S	02-19-14 10:10	- 10 ft	479905-001
SB-1 @15'	S	02-19-14 10:20	- 15 ft	479905-002
SB-1 @20'	S	02-19-14 10:30	- 20 ft	479905-003
SB-1 @25'	S	02-19-14 10:45	- 25 ft	479905-004
SB-1 @30'	S	02-19-14 11:00	- 30 ft	479905-005
SB-1 @35'	S	02-19-14 11:15	- 35 ft	479905-006
SB-2 @10'	S	02-19-14 11:55	- 10 ft	479905-007
SB-2 @15'	S	02-19-14 12:05	- 15 ft	479905-008
SB-2 @20'	S	02-19-14 12:15	- 20 ft	479905-009
SB-2 @25'	S	02-19-14 12:25	- 25 ft	479905-010
SB-2 @30'	S	02-19-14 12:35	- 30 ft	479905-011
SB-2 @35'	S	02-19-14 12:45	- 35 ft	479905-012
SB-2 @40'	S	02-19-14 12:55	- 40 ft	479905-013
SB-3 @5'	S	02-19-14 13:00	- 5 ft	479905-014
SB-3 @10'	S	02-19-14 13:10	- 10 ft	479905-015
SB-3 @20'	S	02-19-14 13:30	- 20 ft	479905-016
SB-3 @30	S	02-19-14 13:50	- 30 ft	479905-017
SB-3 @35'	S	02-19-14 14:10	- 35 ft	479905-018

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 479905

Regency Gas, Monahans, TX

Project Name: 4" Lateral 2/18/13

Project Id:
Contact: Curt Stanley
Project Location: Lea County, NM

Date Received in Lab: Mon Feb-24-14 09:10 am
Report Date: 27-FEB-14
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	479905-001		479905-002		479905-003		479905-004		479905-005		479905-006	
	Field Id:	SB-1 @10'		SB-1 @15'		SB-1 @20'		SB-1 @25'		SB-1 @30'		SB-1 @35'	
	Depth:	10 ft		15 ft		20 ft		25 ft		30 ft		35 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Feb-19-14 10:10		Feb-19-14 10:20		Feb-19-14 10:30		Feb-19-14 10:45		Feb-19-14 11:00		Feb-19-14 11:15	
BTEX by EPA 8021B	Extracted:	Feb-25-14 14:00		Feb-25-14 14:00		Feb-25-14 14:00		Feb-25-14 14:00		Feb-25-14 14:00		Feb-25-14 14:00	
	Analyzed:	Feb-25-14 19:56		Feb-25-14 20:12		Feb-25-14 20:28		Feb-25-14 20:44		Feb-25-14 21:00		Feb-25-14 21:16	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.00104	ND	0.00104	ND	0.00102	ND	0.00104	ND	0.00104	ND	0.00103
Toluene		ND	0.00209	ND	0.00208	ND	0.00205	ND	0.00207	ND	0.00207	ND	0.00206
Ethylbenzene		ND	0.00104	ND	0.00104	ND	0.00102	ND	0.00104	ND	0.00104	ND	0.00103
m_p-Xylenes		ND	0.00209	ND	0.00208	ND	0.00205	ND	0.00207	ND	0.00207	ND	0.00206
o-Xylene		ND	0.00104	ND	0.00104	ND	0.00102	ND	0.00104	ND	0.00104	ND	0.00103
Total Xylenes		ND	0.00104	ND	0.00104	ND	0.00102	ND	0.00104	ND	0.00104	ND	0.00103
Total BTEX		ND	0.00104	ND	0.00104	ND	0.00102	ND	0.00104	ND	0.00104	ND	0.00103
Inorganic Anions by EPA 300/300.1	Extracted:	Feb-25-14 09:00		Feb-25-14 09:00		Feb-25-14 09:00		Feb-25-14 09:00		Feb-25-14 09:00		Feb-25-14 09:00	
	Analyzed:	Feb-25-14 13:01		Feb-25-14 13:46		Feb-25-14 14:09		Feb-25-14 14:32		Feb-25-14 14:54		Feb-25-14 15:17	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1190	42.0	1900	41.7	1840	41.0	596	20.9	127	10.4	68.8	4.13
Percent Moisture	Extracted:												
	Analyzed:	Feb-25-14 10:34		Feb-25-14 10:34		Feb-25-14 10:34		Feb-25-14 10:34		Feb-25-14 10:34		Feb-25-14 10:34	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		4.74	1.00	4.15	1.00	2.51	1.00	4.35	1.00	3.85	1.00	3.13	1.00
TPH By SW8015 Mod	Extracted:	Feb-24-14 16:00		Feb-24-14 16:00		Feb-24-14 16:00		Feb-24-14 16:00		Feb-24-14 16:00		Feb-24-14 16:00	
	Analyzed:	Feb-26-14 10:58		Feb-26-14 12:17		Feb-26-14 12:44		Feb-26-14 13:11		Feb-26-14 13:37		Feb-26-14 14:05	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		ND	15.7	ND	15.6	ND	15.4	ND	15.7	ND	15.6	ND	15.5
C12-C28 Diesel Range Hydrocarbons		ND	15.7	ND	15.6	ND	15.4	ND	15.7	ND	15.6	ND	15.5
C28-C35 Oil Range Hydrocarbons		ND	15.7	ND	15.6	ND	15.4	ND	15.7	ND	15.6	ND	15.5
Total TPH		ND	15.7	ND	15.6	ND	15.4	ND	15.7	ND	15.6	ND	15.5

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 479905

Regency Gas, Monahans, TX

Project Name: 4" Lateral 2/18/13

Project Id:
Contact: Curt Stanley
Project Location: Lea County, NM

Date Received in Lab: Mon Feb-24-14 09:10 am
Report Date: 27-FEB-14
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	479905-007		479905-008		479905-009		479905-010		479905-011		479905-012	
	Field Id:	SB-2 @10'		SB-2 @15'		SB-2 @20'		SB-2 @25'		SB-2 @30'		SB-2 @35'	
	Depth:	10 ft		15 ft		20 ft		25 ft		30 ft		35 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Feb-19-14 11:55		Feb-19-14 12:05		Feb-19-14 12:15		Feb-19-14 12:25		Feb-19-14 12:35		Feb-19-14 12:45	
BTEX by EPA 8021B	*Extracted:*	Feb-25-14 14:00		Feb-25-14 14:00		Feb-25-14 14:00		Feb-25-14 14:00		Feb-25-14 14:00		Feb-25-14 14:00	
	Analyzed:	Feb-25-14 21:31		Feb-25-14 21:47		Feb-25-14 22:03		Feb-25-14 22:19		Feb-25-14 23:06		Feb-25-14 23:22	
	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	0.00103	ND	0.00108	ND	0.00104	ND	0.00105	ND	0.00110
Toluene		ND	0.00210	ND	0.00207	ND	0.00216	ND	0.00207	ND	0.00211	ND	0.00220
Ethylbenzene		ND	0.00105	ND	0.00103	ND	0.00108	ND	0.00104	ND	0.00105	ND	0.00110
m_p-Xylenes		ND	0.00210	ND	0.00207	ND	0.00216	ND	0.00207	ND	0.00211	ND	0.00220
o-Xylene		ND	0.00105	ND	0.00103	ND	0.00108	ND	0.00104	ND	0.00105	ND	0.00110
Total Xylenes		ND	0.00105	ND	0.00103	ND	0.00108	ND	0.00104	ND	0.00105	ND	0.00110
Total BTEX		ND	0.00105	ND	0.00103	ND	0.00108	ND	0.00104	ND	0.00105	ND	0.00110
Inorganic Anions by EPA 300/300.1	*Extracted:*	Feb-25-14 09:00		Feb-25-14 09:00		Feb-25-14 09:00		Feb-25-14 09:00		Feb-25-14 09:00		Feb-25-14 09:00	
	Analyzed:	Feb-25-14 16:25		Feb-25-14 16:48		Feb-25-14 17:10		Feb-25-14 17:33		Feb-25-14 17:56		Feb-25-14 18:41	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		4740	105	1720	41.5	824	21.8	840	20.7	268	10.6	420	11.0
Percent Moisture	*Extracted:*												
	Analyzed:	Feb-25-14 10:34		Feb-25-14 10:34		Feb-25-14 10:34		Feb-25-14 10:34		Feb-25-14 10:34		Feb-25-14 10:34	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		4.81	1.00	3.71	1.00	8.25	1.00	3.42	1.00	5.25	1.00	9.09	1.00
TPH By SW8015 Mod	*Extracted:*	Feb-24-14 16:00		Feb-24-14 16:00		Feb-24-14 16:00		Feb-24-14 16:00		Feb-24-14 16:00		Feb-24-14 16:00	
	Analyzed:	Feb-26-14 14:34		Feb-26-14 14:59		Feb-26-14 15:24		Feb-26-14 15:49		Feb-26-14 17:11		Feb-27-14 09:26	
	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	15.6	ND	16.3	ND	15.5	ND	15.8	ND	16.5
C12-C28 Diesel Range Hydrocarbons		ND	15.7	ND	15.6	ND	16.3	ND	15.5	ND	15.8	ND	16.5
C28-C35 Oil Range Hydrocarbons		ND	15.7	ND	15.6	ND	16.3	ND	15.5	ND	15.8	ND	16.5
Total TPH		ND	15.7	ND	15.6	ND	16.3	ND	15.5	ND	15.8	ND	16.5

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 479905

Regency Gas, Monahans, TX

Project Name: 4" Lateral 2/18/13

Project Id:
Contact: Curt Stanley
Project Location: Lea County, NM

Date Received in Lab: Mon Feb-24-14 09:10 am
Report Date: 27-FEB-14
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	479905-013		479905-014		479905-015		479905-016		479905-017		479905-018	
	Field Id:	SB-2 @40'		SB-3 @5'		SB-3 @10'		SB-3 @20'		SB-3 @30		SB-3 @35'	
	Depth:	40 ft		5 ft		10 ft		20 ft		30 ft		35 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Feb-19-14 12:55		Feb-19-14 13:00		Feb-19-14 13:10		Feb-19-14 13:30		Feb-19-14 13:50		Feb-19-14 14:10	
BTEX by EPA 8021B	*Extracted:*	Feb-25-14 14:00		Feb-25-14 14:00		Feb-25-14 14:00		Feb-25-14 14:00		Feb-25-14 14:00		Feb-25-14 14:00	
	Analyzed:	Feb-25-14 23:37		Feb-25-14 23:53		Feb-26-14 00:09		Feb-26-14 00:25		Feb-26-14 00:41		Feb-26-14 00:57	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.00121	ND	0.00104	ND	0.00104	ND	0.00104	ND	0.00102	ND	0.00113
Toluene		ND	0.00243	ND	0.00208	ND	0.00208	ND	0.00208	ND	0.00204	ND	0.00225
Ethylbenzene		ND	0.00121	ND	0.00104	ND	0.00104	ND	0.00104	ND	0.00102	ND	0.00113
m_p-Xylenes		ND	0.00243	ND	0.00208	ND	0.00208	ND	0.00208	ND	0.00204	ND	0.00225
o-Xylene		ND	0.00121	ND	0.00104	ND	0.00104	ND	0.00104	ND	0.00102	ND	0.00113
Total Xylenes		ND	0.00121	ND	0.00104	ND	0.00104	ND	0.00104	ND	0.00102	ND	0.00113
Total BTEX		ND	0.00121	ND	0.00104	ND	0.00104	ND	0.00104	ND	0.00102	ND	0.00113
Inorganic Anions by EPA 300/300.1	*Extracted:*	Feb-25-14 09:00		Feb-25-14 09:00		Feb-25-14 09:00		Feb-25-14 09:00		Feb-25-14 09:00		Feb-25-14 09:00	
	Analyzed:	Feb-25-14 19:04		Feb-25-14 19:26		Feb-25-14 19:49		Feb-25-14 20:57		Feb-25-14 21:19		Feb-25-14 21:42	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		85.6	4.87	25.0	2.09	152	20.9	204	10.4	14.6	2.05	52.6	4.53
Percent Moisture	*Extracted:*												
	Analyzed:	Feb-25-14 10:34		Feb-25-14 10:34		Feb-25-14 10:34		Feb-25-14 10:34		Feb-25-14 10:34		Feb-25-14 10:34	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		17.8	1.00	4.33	1.00	4.10	1.00	4.28	1.00	2.55	1.00	11.6	1.00
TPH By SW8015 Mod	*Extracted:*	Feb-24-14 16:00		Feb-24-14 16:00		Feb-24-14 16:00		Feb-24-14 16:00		Feb-24-14 16:00		Feb-24-14 16:00	
	Analyzed:	Feb-27-14 09:50		Feb-26-14 18:30		Feb-26-14 18:55		Feb-26-14 19:21		Feb-26-14 19:46		Feb-27-14 10:14	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		ND	18.2	ND	15.7	ND	15.6	ND	15.7	ND	15.4	ND	16.9
C12-C28 Diesel Range Hydrocarbons		ND	18.2	ND	15.7	ND	15.6	ND	15.7	ND	15.4	ND	16.9
C28-C35 Oil Range Hydrocarbons		ND	18.2	ND	15.7	ND	15.6	ND	15.7	ND	15.4	ND	16.9
Total TPH		ND	18.2	ND	15.7	ND	15.6	ND	15.7	ND	15.4	ND	16.9

Kelsey Brooks
Project Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

Form 2 - Surrogate Recoveries

Project Name: 4" Lateral 2/18/13

Work Orders : 479905,

Project ID:

Lab Batch #: 934876 **Sample:** 479905-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/25/14 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	0.0274	0.0300	91	80-120	
4-Bromofluorobenzene	0.0258	0.0300	86	80-120	

Lab Batch #: 934876 **Sample:** 479905-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/25/14 20:12

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0281	0.0300	94	80-120	
4-Bromofluorobenzene	0.0258	0.0300	86	80-120	

Lab Batch #: 934876 **Sample:** 479905-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/25/14 20:28

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0273	0.0300	91	80-120	
4-Bromofluorobenzene	0.0267	0.0300	89	80-120	

Lab Batch #: 934876 **Sample:** 479905-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/25/14 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	0.0274	0.0300	91	80-120	
4-Bromofluorobenzene	0.0258	0.0300	86	80-120	

Lab Batch #: 934876 **Sample:** 479905-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/25/14 21:00

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0275	0.0300	92	80-120	
4-Bromofluorobenzene	0.0262	0.0300	87	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: 4" Lateral 2/18/13

Work Orders : 479905,

Project ID:

Lab Batch #: 934876 **Sample:** 479905-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/25/14 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	0.0276	0.0300	92	80-120	
4-Bromofluorobenzene	0.0264	0.0300	88	80-120	

Lab Batch #: 934876 **Sample:** 479905-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/25/14 21:31

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	
4-Bromofluorobenzene	0.0257	0.0300	86	80-120	

Lab Batch #: 934876 **Sample:** 479905-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/25/14 21:47

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0275	0.0300	92	80-120	
4-Bromofluorobenzene	0.0263	0.0300	88	80-120	

Lab Batch #: 934876 **Sample:** 479905-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/25/14 22:03

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0276	0.0300	92	80-120	
4-Bromofluorobenzene	0.0265	0.0300	88	80-120	

Lab Batch #: 934876 **Sample:** 479905-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/25/14 22:19

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0272	0.0300	91	80-120	
4-Bromofluorobenzene	0.0259	0.0300	86	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: 4" Lateral 2/18/13

Work Orders : 479905,

Project ID:

Lab Batch #: 934876 **Sample:** 479905-011 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/25/14 23:06

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0277	0.0300	92	80-120	
4-Bromofluorobenzene	0.0255	0.0300	85	80-120	

Lab Batch #: 934876 **Sample:** 479905-012 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/25/14 23:22

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0280	0.0300	93	80-120	
4-Bromofluorobenzene	0.0261	0.0300	87	80-120	

Lab Batch #: 934876 **Sample:** 479905-013 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/25/14 23:37

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	
4-Bromofluorobenzene	0.0256	0.0300	85	80-120	

Lab Batch #: 934876 **Sample:** 479905-014 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/25/14 23:53

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0279	0.0300	93	80-120	
4-Bromofluorobenzene	0.0260	0.0300	87	80-120	

Lab Batch #: 934876 **Sample:** 479905-015 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/26/14 00:09

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0275	0.0300	92	80-120	
4-Bromofluorobenzene	0.0260	0.0300	87	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: 4" Lateral 2/18/13

Work Orders : 479905,

Project ID:

Lab Batch #: 934876 **Sample:** 479905-016 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/26/14 00:25

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	0.0258	0.0300	86	80-120	

Lab Batch #: 934876 **Sample:** 479905-017 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/26/14 00:41

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0278	0.0300	93	80-120	
4-Bromofluorobenzene	0.0263	0.0300	88	80-120	

Lab Batch #: 934876 **Sample:** 479905-018 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/26/14 00:57

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0278	0.0300	93	80-120	
4-Bromofluorobenzene	0.0265	0.0300	88	80-120	

Lab Batch #: 934993 **Sample:** 479905-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/26/14 10:58

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	99.7	108	70-135	
o-Terphenyl	52.4	49.9	105	70-135	

Lab Batch #: 934993 **Sample:** 479905-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/26/14 12:17

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	75.7	99.6	76	70-135	
o-Terphenyl	36.9	49.8	74	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: 4" Lateral 2/18/13

Work Orders : 479905,

Project ID:

Lab Batch #: 934993 **Sample:** 479905-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/26/14 12:44

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	81.8	99.9	82	70-135	
o-Terphenyl	39.0	50.0	78	70-135	

Lab Batch #: 934993 **Sample:** 479905-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/26/14 13:11

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.4	99.9	87	70-135	
o-Terphenyl	42.6	50.0	85	70-135	

Lab Batch #: 934993 **Sample:** 479905-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/26/14 13:37

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.1	99.8	88	70-135	
o-Terphenyl	42.6	49.9	85	70-135	

Lab Batch #: 934993 **Sample:** 479905-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/26/14 14:05

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.5	100	83	70-135	
o-Terphenyl	39.8	50.0	80	70-135	

Lab Batch #: 934993 **Sample:** 479905-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/26/14 14:34

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.4	99.8	79	70-135	
o-Terphenyl	37.4	49.9	75	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: 4" Lateral 2/18/13

Work Orders : 479905,

Project ID:

Lab Batch #: 934993 **Sample:** 479905-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/26/14 14:59

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.0	99.9	83	70-135	
o-Terphenyl	39.3	50.0	79	70-135	

Lab Batch #: 934993 **Sample:** 479905-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/26/14 15:24

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.3	99.6	98	70-135	
o-Terphenyl	46.4	49.8	93	70-135	

Lab Batch #: 934993 **Sample:** 479905-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/26/14 15:49

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.9	99.7	94	70-135	
o-Terphenyl	45.6	49.9	91	70-135	

Lab Batch #: 934993 **Sample:** 479905-011 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/26/14 17:11

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	79.0	99.7	79	70-135	
o-Terphenyl	36.3	49.9	73	70-135	

Lab Batch #: 934993 **Sample:** 479905-014 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/26/14 18:30

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.7	99.9	89	70-135	
o-Terphenyl	40.9	50.0	82	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: 4" Lateral 2/18/13

Work Orders : 479905,

Project ID:

Lab Batch #: 934993 **Sample:** 479905-015 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/26/14 18:55

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.3	99.8	82	70-135	
o-Terphenyl	38.1	49.9	76	70-135	

Lab Batch #: 934993 **Sample:** 479905-016 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/26/14 19:21

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	79.0	99.9	79	70-135	
o-Terphenyl	37.5	50.0	75	70-135	

Lab Batch #: 934993 **Sample:** 479905-017 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/26/14 19:46

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.5	99.9	84	70-135	
o-Terphenyl	39.2	50.0	78	70-135	

Lab Batch #: 934993 **Sample:** 479905-012 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/27/14 09:26

SURROGATE RECOVERY 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	
o-Terphenyl	47.7	49.9	96	70-135	

Lab Batch #: 934993 **Sample:** 479905-013 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/27/14 09:50

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.1	99.6	95	70-135	
o-Terphenyl	47.5	49.8	95	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: 4" Lateral 2/18/13

Work Orders : 479905,

Project ID:

Lab Batch #: 934993 **Sample:** 479905-018 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/27/14 10:14

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.2	99.8	93	70-135	
o-Terphenyl	44.1	49.9	88	70-135	

Lab Batch #: 934876 **Sample:** 651606-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/25/14 18:20

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0279	0.0300	93	80-120	
4-Bromofluorobenzene	0.0252	0.0300	84	80-120	

Lab Batch #: 934993 **Sample:** 651498-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/26/14 09:42

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.7	100	99	70-135	
o-Terphenyl	48.5	50.0	97	70-135	

Lab Batch #: 934876 **Sample:** 651606-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/25/14 18:36

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0305	0.0300	102	80-120	
4-Bromofluorobenzene	0.0293	0.0300	98	80-120	

Lab Batch #: 934993 **Sample:** 651498-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/26/14 10:07

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	58.9	50.0	118	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: 4" Lateral 2/18/13

Work Orders : 479905,

Project ID:

Lab Batch #: 934876 **Sample:** 651606-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/25/14 18:52

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0307	0.0300	102	80-120	
4-Bromofluorobenzene	0.0301	0.0300	100	80-120	

Lab Batch #: 934993 **Sample:** 651498-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/26/14 10:32

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	64.0	50.0	128	70-135	

Lab Batch #: 934876 **Sample:** 479905-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/25/14 19:08

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0301	0.0300	100	80-120	

Lab Batch #: 934993 **Sample:** 479905-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/26/14 11:24

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	99.8	120	70-135	
o-Terphenyl	63.6	49.9	127	70-135	

Lab Batch #: 934876 **Sample:** 479905-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/25/14 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	0.0306	0.0300	102	80-120	
4-Bromofluorobenzene	0.0303	0.0300	101	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: 4" Lateral 2/18/13

Work Orders : 479905,

Project ID:

Lab Batch #: 934993 **Sample:** 479905-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/26/14 11:50

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	
o-Terphenyl	58.2	49.9	117	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

BS / BSD Recoveries

Project Name: 4" Lateral 2/18/13

Work Order #: 479905 **Project ID:**

Analyst: ARM **Date Prepared:** 02/25/2014 **Date Analyzed:** 02/25/2014

Lab Batch ID: 934876 **Sample:** 651606-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.104	104	0.100	0.105	105	1	70-130	35	
Toluene	<0.00200	0.100	0.107	107	0.100	0.108	108	1	70-130	35	
Ethylbenzene	<0.00100	0.100	0.107	107	0.100	0.108	108	1	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.212	106	0.200	0.214	107	1	70-135	35	
o-Xylene	<0.00100	0.100	0.108	108	0.100	0.110	110	2	71-133	35	

Analyst: AMB **Date Prepared:** 02/25/2014 **Date Analyzed:** 02/25/2014

Lab Batch ID: 935041 **Sample:** 651664-1-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	<2.00	50.0	46.9	94	50.0	47.2	94	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

BS / BSD Recoveries

Project Name: 4" Lateral 2/18/13

Work Order #: 479905 **Project ID:**

Analyst: ARM **Date Prepared:** 02/24/2014 **Date Analyzed:** 02/26/2014

Lab Batch ID: 934993 **Sample:** 651498-1-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	1000	907	91	1000	988	99	9	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	925	93	1000	1040	104	12	70-135	35	

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

Form 3 - MS Recoveries

Project Name: 4" Lateral 2/18/13

Work Order #: 479905

Lab Batch #: 935041 **Project ID:**

Date Analyzed: 02/25/2014 **Date Prepared:** 02/25/2014 **Analyst:** AMB

QC- Sample ID: 479905-001 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300 Analytes	MATRIX / MATRIX SPIKE RECOVERY STUDY					
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	1190	1050	2380	113	80-120	

Lab Batch #: 935041

Date Analyzed: 02/25/2014 **Date Prepared:** 02/25/2014 **Analyst:** AMB

QC- Sample ID: 479905-011 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300 Analytes	MATRIX / MATRIX SPIKE RECOVERY STUDY					
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	268	264	553	108	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: 4" Lateral 2/18/13

Work Order # : 479905 **Project ID:**

Lab Batch ID: 934876 **QC- Sample ID:** 479905-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 02/25/2014 **Date Prepared:** 02/25/2014 **Analyst:** ARM

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	<0.00105	0.105	0.102	97	0.104	0.101	97	1	70-130	35	
Toluene	<0.00209	0.105	0.105	100	0.104	0.103	99	2	70-130	35	
Ethylbenzene	<0.00105	0.105	0.105	100	0.104	0.103	99	2	71-129	35	
m_p-Xylenes	<0.00209	0.209	0.208	100	0.209	0.204	98	2	70-135	35	
o-Xylene	<0.00105	0.105	0.105	100	0.104	0.104	100	1	71-133	35	

Lab Batch ID: 934993 **QC- Sample ID:** 479905-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 02/26/2014 **Date Prepared:** 02/24/2014 **Analyst:** ARM

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	<15.7	1050	1020	97	1050	949	90	7	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.7	1050	1060	101	1050	1010	96	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.

Sample Duplicate Recovery

Project Name: 4" Lateral 2/18/13

Work Order #: 479905

Lab Batch #: 934733 **Project ID:**

Date Analyzed: 02/25/2014 10:34 **Date Prepared:** 02/25/2014 **Analyst:** WRU

QC- Sample ID: 479816-004 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	2.65	2.70	2	20	

Lab Batch #: 934733

Date Analyzed: 02/25/2014 10:34 **Date Prepared:** 02/25/2014 **Analyst:** WRU

QC- Sample ID: 479905-010 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	3.42	3.42	0	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 1/2

12600 West I-20 East
Odessa, Texas 79765

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

Project Manager: Curt Stanley

Company Name: Nova Safety and Environmental

Company Address: 2057 Commerce

City/State/Zip: Midland, TX 79703

Telephone No: 432.520.7720 Fax No: 432.520.7701

Sampler Signature:

e-mail: crystal.calloway@regencygas.com, cstanley@novatraining.cc, rachel.johnson@regencygas.com

Project Name: Regency

Project #: 4" Lateral 2/18/13

Project Loc: Lea County, NM

PO #:

Report Format: ☐ Standard ☐ TRRP ☐ NPDES

(lab use only)

ORDER #: 479905

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Preservation & # of Containers: Ice	HNO3	HCl	H2SO4	NaOH	Na2S2O3	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Analyze For: TPH: 418.1	8015M	TPH: TX 1005	TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	Chloride E300			RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
	SB-1 @ 10'			2/19/2014	1010		1	x								Soil	X									X			X				x
	SB-1 @ 15'			2/19/2014	1020		1	x								Soil	X									X			X				x
	SB-1 @ 20'			2/19/2014	1030		1	x								Soil	X									X			X				x
	SB-1 @ 25'			2/19/2014	1045		1	x								Soil	X									X			X				x
	SB-1 @ 30'			2/19/2014	1100		1	x								Soil	X									X			X				x
	SB-1 @ 35'			2/19/2014	1115		1	x								Soil	X									X			X				x
	SB-2 @ 10'			2/19/2014	1155		1	x								Soil	X									X			X				x
	SB-2 @ 15'			2/19/2014	1205		1	x								Soil	X									X			X				x
	SB-2 @ 20'			2/19/2014	1215		1	x								Soil	X									X			X				x
	SB-2 @ 25'			2/19/2014	1225		1	x								Soil	X									X			X				x

Special Instructions:
Bill to Regency

Relinquished by:	Date	Time	Received by:	Date	Time
	2/21/14	1135	Matthew Green	2-21-14	1135
Matthew Green	2-24-14	905	Julian Martinez	2-24-14	9:10
	Date	Time	Received by ELOT:	Date	Time

Laboratory Comments:

Sample Containers Intact?	X	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	X	N/A
Custody seals on container(s)	Y	N X
Custody seals on cooler(s)	Y	N X
Sample Hand Delivered	X	N
by Sampler/Client Rep. ?	X	N

by Courier? UPS DHL FedEx Lone Star

Temperature Upon Receipt: 5 °C °C

Final 1.000

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

2/2.

12600 West I-20 East
Odessa, Texas 79765

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

Project Manager: Camille Bryant

Company Name: Nova Safety and Environmental

Company Address: 2057 Commerce

City/State/Zip: Midland, TX 79703

Telephone No: 432.520.7720 Fax No: 432.520.7701

Sampler Signature:

e-mail: crystal.calloway@regencygas.com, cstanley@novatraining.cc, rachel.johnson@regencygas.com

Project Name: Regency

Project #: 4" Lateral 2/18/13

Project Loc: Lea County, NM

PO #:

Report Format: ☐ Standard ☐ TRRP ☐ NPDES

(lab use only) ORDER #: 479905

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Analyze For: TPH: 418.1	8015M	TPH: TX 1005	TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	Chlorides 300	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
	SB-2 @ 30'			2/19/2014	1235		1	x								Soil	X									X			X		x
	SB-2 @ 35'			2/19/2014	1245		1	x								Soil	X									X			X		x
	SB-2 @ 40'			2/19/2014	1255		1	x								Soil	X									X			X		x
	SB-3 @ 5'			2/19/2014	1300		1	x								Soil	X									X			X		x
	SB-3 @ 10'			2/19/2014	1310		1	x								Soil	X									X			X		x
	SB-3 @ 20'			2/19/2014	1330		1	x								Soil	X									X			X		x
	SB-3 @ 30'			2/19/2014	1350		1	x								Soil	X									X			X		x
	SB-3 @ 35'			2/19/2014	1410		1	x								Soil	X									X			X		x

Special Instructions: Bill To Regency

Relinquished by:	Date	Time	Received by:	Date	Time
	2/21/14	1135	Matthew Green	2-21-14	1135
Matthew Green	2-24-14	905	Julian Martinez	2-24-14	9:10
Relinquished by:	Date	Time	Received by ELOT:	Date	Time

Laboratory Comments:

Sample Containers Intact?	X	N
VOCs Free of Headspace?	Y	N NA
Labels on container(s)	X	N
Custody seals on container(s)	Y	X
Custody seals on cooler(s)	Y	X
Sample Hand Delivered	X	N
by Sampler/Client Rep. ?	X	N
by Courier? UPS DHL FedEx Lone Star		

Temperature Upon Receipt: 5°C °C

Final 1.000

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Regency Gas

Date/ Time Received: 02/24/2014 09:10:00 AM

Work Order #: 479905

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)?	
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6 *Custody Seals Signed and dated?	**N/A**
#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 completed by: Kelsey Brooks Date: 02/24/2014

Checklist reviewed by: Kelsey Brooks Date: 02/24/2014

Photographic Documentation

Client: ETC Field Services, LLC
Project Name: 4-Inch Lateral (2/18/13)

Prepared by: TRC Environmental Corp.
Location: Lea County, NM

Photograph No. 1 **Date:** **March 19, 2013** **Description:** **Looking northeast Excavation activities in progress.**	
Photograph No. 2 **Date:** **March 20, 2013** **Description:** **Looking south. Initial response activities in progress.**	

Photographic Documentation

Client: ETC Field Services, LLC
Project Name: 4-Inch Lateral (2/18/13)

Prepared by: TRC Environmental Corp.
Location: Lea County, NM

Photograph No. 3 **Date:** **March 20, 2013** **Description:** **Looking east** **Excavation activities in progress.**	
Photograph No. 4 **Date:** **March 27, 2013** **Description:** **Looking south** **Delineation trench advancing to south.**	

Soil Boring Log SB-1

Depth (feet)	Soil Columns	Odor	Chloride Field Screen	Soil Description
				0 - 4' - Brown silty fine grained sand. well rounded well sorted.
5'		None	1264	4 - 8' - White, fine to very fine grained sand, with caliche. well rounded and moderately sorted.
10'		None	884	8 - 16' - Reddish tan fine to very fine grained sand. sub-angular to sub-rounded and moderately sorted.
15'		None	1264	
				16 - 19.5' - Red hard fine grained sandstone layer with red medium to fine sand.
20'		None	1100	19.5 - 23' - Light tan fine grained sand with gravel. Sub-rounded to well rounded and poorly sorted.
25'		None	536	23 - 28' - Red hard fine grained sandstone layer with red medium to fine sand. Clear quartz pebbles.
30'		None	<112	28 - 35' - Red Silty course grained sand with heavy gravel. Angular to sub-rounded and poorly sorted. Some clay content.
35'	TD	None	<112	

Soil Boring Details

Date Drilled 2-18-14

Depth of Exploratory Well 35 ft

Depth to Water N/A

Completion Notes

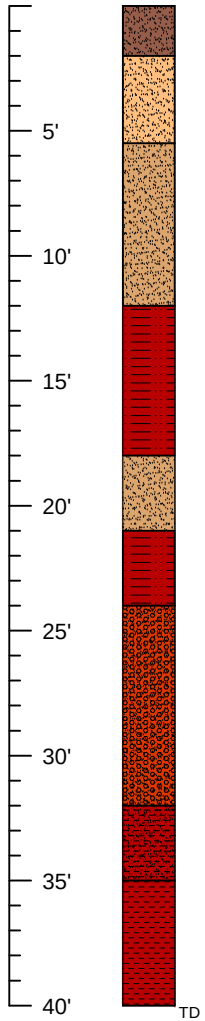
1. Soil boring was plugged same day. Using Air Rotary drilling Technique.
2. 8 bags of Bentonite and 1 bag of Cement.
3. 2' Concrete seal at top.

Soil Boring Log Details
SB - 1
ETC Field Services, LLC
4 Inch Lateral 2/18/13
Lea County, NM

Scale: NTS
CAD By: TA
Checked By: CS
Draft: March 14,2014

TRC
2057 Commerce Drive
Midland, Texas 79703
432.520.7720

Soil Boring Log SB-2



Depth (feet)	Odor	Chloride Field Screen
5'	None	2536
10'	None	2536
15'	None	1552
20'	None	756
25'	None	536
30'	None	164
35'	None	284
40'	None	No Reading

Soil Description

0 - 2' - Brown silty fine grained sand. Well rounded well sorted.

2 - 5.5' - White, fine to very fine grained sand. With caliche.Well rounded and well sorted.

5.5 - 12' - Tan fine to very fine grained sand. Well rounded and moderately sorted.

12 - 18' - Red hard fine grained sandstone layer with red medium to fine sand. Sub-rounded moderately sorted.

18 - 21' - Tan fine grained sand with some gravel. Well rounded and moderately sorted.

21 - 24' - Red hard fine grained sandstone layer with red medium to fine sand. Clear quartz pebbles.

24 - 32' - Reddish tan, silty coarse grained sand with heavy gravel. Angular to sub-rounded and poorly sorted. Some clay content.

32 - 35' - Red fine grained sand well-rounded well sorted. High clay content.

35 - 40' - Red sandy platy clay. Very little sand content, fine to very fine, well-rounded well sorted.

Soil Boring Details

Date Drilled 2-19-14

Depth of Exploratory Well 40 ft

Depth to Water N/A

Completion Notes

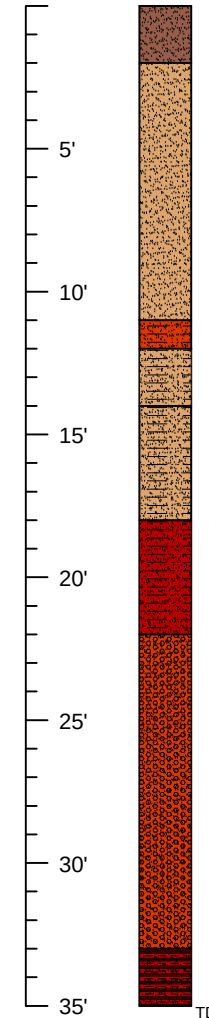
1. Soil boring was plugged same day. Using Air Rotary drilling Technique.
2. 8 bags of Bentonite and 1 bag of Cement.
3. 2' Concrete seal at top.

Soil Boring Log Details
SB - 2
ETC Field Services, LLC
4 Inch Lateral 2/18/13
Lea County, NM

Scale: NTS
CAD By: TA
Checked By: CS
Draft: March 14,2014

TRC
2057 Commerce Drive
Midland, Texas 79703
432.520.7720

Soil Boring Log SB-3



Odor	Chloride Field Screen	Soil Description
		0 - 2' - Brown silty fine grained sand. well rounded well sorted. Some caliche nodules.
None	<112	2 - 11' - Tan, fine to very fine grained sand, well rounded and sorted.
None	164	11 - 12' - Red hard fine grained sandstone layer with tan medium to fine sand. Sub-rounded moderately sorted.
None	136	12 - 14' - Tan medium to fine sand with some red hard fine grained sandstone. Sub rounded moderately sorted.
		14 - 18' - Tan fine grained sand interbeded with soft white calcareous sandstone. Sub-angular to sub-rounded and poorly sorted.
None	164	18 - 22' - Red hard fine grained sandstone layer with tan medium to fine sand. Clear quartz pebbles.
None	<112	22 - 33' - Reddish tan, silty medium to fine graine sand with heavy gravel. Angular to sub-rounded and poorly sorted. Some clay content
None	<112	
None	No Reading	33 - 35' - Red fine grained sand. well rounded well sorted. High clay content.

Soil Boring Details

Date Drilled 2-19-14

Depth of Exploratory Well 35 ft

Depth to Water N/A

Completion Notes

1. Soil boring was plugged same day. Using Air Rotary drilling Technique.
2. 8 bags of Bentonite and 1 bag of Cement.
3. 2' Concrete seal at top.

Soil Boring Log Details
SB - 3
ETC Field Services, LLC
4 Inch Lateral 2/18/13
Lea County, NM

Scale: NTS
CAD By: TA
Checked By: CS
Draft: March 14,2014

TRC
2057 Commerce Drive
Midland, Texas 79703
432.520.7720

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

State of New Mexico
Energy Minerals and Natural Resources

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

HOBBS OCD

FEB 26 2013

RECEIVED

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Repo

Name of Company	Southern Union Gas Services	Contact	Curt Stanley
Address	801 S. Loop 464, Monahans, TX 79756	Telephone No.	575-390-7595
Facility Name	4 Inch Lateral (2/18/13)	Facility Type	Natural Gas Pipeline

Surface Owner Woolworth Trust		Lease No. 30-025-38822

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	17	25S	37E					Eddy

Latitude 32 degrees 08.142' North **Longitude** 103 degrees 10.729' West

NATURE OF RELEASE

Type of Release Natural Gas, Crude Oil and Produced Water	Volume of Release 25 bbls	Volume Recovered None
Source of Release 4 inch Natural Gas Pipeline	Date and Hour of Occurrence Unknown	Date and Hour of Discovery February 18, 2013 – 1108 hours
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Geoff Leking (NMOCD District 1)	
By Whom? Curt Stanley	Date and Hour February 18, 2013 - 1531 hours	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
A four (4)-inch low pressure steel natural gas pipeline developed a leak, resulting in a release of natural gas, crude oil and produced water. During initial response activities the pipeline was clamped to mitigate the release. The affected steel pipeline will be cut and capped and permanently taken out of service.

Describe Area Affected and Cleanup Action Taken.*
An irregular area measuring approximately 60 feet in width and 200 feet in length was impacted by the release. On February 18, 2013, saturated soil was scraped from the ground and stockpiled on 6 mil plastic. The saturated soil was transported to Sundance Services on February 22, 2013. The release will be remediated to NMOCD regulatory Standards.

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:

Printed Name: Curt Stanley

Title: Environmental Specialist

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

Date: February 22, 2013 Phone: 575-390-7595

OIL CONSERVATION DIVISION

Approved by Environmental Specialist: Geoffrey Leking

Environmental Specialist

Approval Date: 2/26/13 Expiration Date: 4/26/13

Conditions of Approval: SUBMIT FINAL C-141 BY 4/26/13

Attached ☐

IRP-02-13-2904

* Attach Additional Sheets If Necessary